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ECONOMIC AND SOCIAL CHANGES: FACTS, TRENDS, FORECAST

A peer-reviewed scientific journal that covers issues of analysis and forecast of changes in the economy and social spheres in various countries, regions, and local territories.

The main purpose of the journal is to provide the scientific community and practitioners with an opportunity to publish socio-economic research findings, review different viewpoints on the topical issues of economic and social development, and participate in the discussion of these issues. The remit of the journal comprises development strategies of the territories, regional and sectoral economy, social development, budget revenues, streamlining expenditures, innovative economy, and economic theory.

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In 2017 the socio-economic research was supplemented by agricultural issues. ISED T RAS was joined by the Northwestern Dairy and Grassland Farming Research Institute, and was reorganized into the Vologda Research Center of the Russian Academy of Sciences.

In 2019 the Center continued expanding having launched the Laboratory of Bioeconomics and Sustainable Development within the framework of the national project “Science”. The Laboratory is engaged in scientific research aimed at introducing biotechnologies into the practice of agriculture.

The VoIRC RAS Director is Aleksandra A. Shabunova (Doctor of Economics). The Academic Leader of the Center is Vladimir A. Ilyin (RAS Corresponding Member, Doctor of Economics, Professor, Honored Worker of Science of the Russian Federation).

MAIN RESEARCH DIRECTIONS

In accordance with the Charter, the Vologda Research Center carries out fundamental, exploratory and applied research in the following fields:

- problems of economic growth, scientific basis of regional policy, sustainable development of territories and municipalities, and transformations of socio-economic space;
- regional integration into global economic and political processes, problems of economic security and competitiveness of territorial socio-economic systems;
- territorial characteristics of living standards and lifestyle, behavioral strategies and world view of different groups of the Russian society;
- development of regional socio-economic systems, implementation of new forms and methods concerning territorial organization of society and economy, development of territories’ recreational area;
- socio-economic problems regarding scientific and innovative transformation activities of territories;
- elaboration of society’s informatization problems, development of intellectual technologies in information territorial systems, science and education;
- development of scientifically based systems of dairy cattle breeding in the conditions of the North-Western region of Russia;
- development of new breeding methods, methods and programs for improving breeding work with cattle;
- development of scientifically based feed production systems, norms, rations and feeding systems for cattle in the conditions of the North-Western region of Russia;

- development of zonal technologies for the cultivation of agricultural crops;
- development of technologies for the creation, improvement and rational use of hayfields and pastures in the conditions of the North-Western region of Russia;
- development of technologies and technical means for agricultural production in the North-Western region of Russia;
- assessment of biodiversity in the North-Western region of Russia;
- development and implementation of biotechnologies in agricultural production;
- improvement of breeding methods and creation of new varieties of forage crops.

INTERNATIONAL TIES AND PROJECTS

VolRC RAS is actively developing its international activities. It is involved in joint international grant projects and regularly holds international conferences and workshops. The Center has Cooperation agreements and Memoranda of understanding with research organizations:

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2008 – Memorandum of agreement is signed with Alexander’s Institute at the Helsinki University (Finland, 2008).

2009 – Cooperation agreement is signed with Center for System Analysis of Strategic Investigations of NAS (Belarus, 2009).

2010 – Cooperation agreement is signed with the Institute of Economics of the National Academy of Sciences of Belarus (Minsk, Belarus, 2010).

2011 – Cooperation agreements are signed with National Institute of Oriental Languages and Civilizations (Paris, France, 2011), Institute of Business Economy at Eszterhazy Karoly College (Hungary, 2011), Republican research and production unitary enterprise “Energy Institute of NAS” (Belarus, 2011). Memoranda of understanding are signed with Jiangxi Academy of Social Sciences (China, 2011), Research and Development Center for Evaluation and Socio-Economic Development and the Science Foundation of Abruzzo region (Italy, 2011).

2012 – Cooperation agreement is signed with Center for Social Research at the Dortmund Technical University (Germany, 2012).

2013 – Memorandum of understanding is signed with Jiangxi Academy of Social Sciences (China, 2013). July 2013 – The application for research performance by international consortium involving ISED T RAS within the 7th Framework Programme of European Community.

2014 – Cooperation agreement is signed with Center for System Analysis and Strategic Research of the National Academy of Sciences of Belarus (Belarus, 2014). Memoranda of understanding are signed with Jiangxi Academy of Social Sciences (Mao Zhiyong, China, 2014), National Institute for Oriental Studies INALCO (Julien Vercueil, France, 2014).

2015 – Memorandum of understanding is signed with Jiangxi Academy of Social Sciences (China, 2015). Cooperation agreement is signed with the Institute of Sociology of the National Academy of Sciences of Belarus (Belarus, 2015).

2016 – Cooperation agreements are signed with the Center for the Study of Industrialization Modes of the School of Advanced Studies in the Social Sciences (EHESS) (Paris, France, 2016); Institute of Philosophy, Sociology and Law of NAS RA (Yerevan, Armenia, 2016); Yerevan Northern University (Armenia, 2016), Yerevan State University (Armenia, 2016). Memoranda of understanding are signed with Jiangxi Academy of Social Sciences (China, 2016).

2018 – Cooperation agreements are signed with the Department of Agrarian Sciences of the National Academy of Sciences of Belarus (Belarus, 2018); the Republican Unitary Enterprise “Scientific and Practical Center of the National Academy of Sciences of Belarus for Agricultural Mechanization” (Belarus, 2018). Memorandum of understanding is signed with the European School of Social Innovation (ESSI) (Germany, 2018).

2019 – Memorandum of understanding is signed with Jiangxi Academy of Social Sciences (China, 2019).

2020 – Memorandum of understanding is signed with Jiangxi Academy of Social Sciences (China, 2020).

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EDITORIAL

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What a 30-Year Absence of State Ideology Leads to: “Great Nations Are Not Built Without Great, Guiding Ideas, and Having Lost Them, They Collapse with a Thunderous Crash”



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Abstract. This article is the third in a series of editorial publications released in April – August 2025 and dedicated to analyzing expert opinions on the necessity and feasibility of creating an official state ideology in the country. The relevance of this issue is driven, on the one hand, by national security concerns, which have sharply intensified since the start of the special military operation in Ukraine, and on the other hand, by the goals of national development related to the need to define a vision for Russia’s future in the context of the transition from a unipolar to a multipolar world order. A synthesis of expert assessments, facts, statistical data, and monitoring sociological studies, which reflect the state of society and people’s subjective opinions about the situation in the country, leads to the conclusion that one of Russia’s key internal problems is the unsatisfactory quality of its ruling elites. A significant portion of them are unprepared for change, continue to live by the principles of the country’s departing era of “liberal

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fog”, and in every way, willingly or unwillingly, hinder Russia’s transition to a new stage of historical development, thereby jeopardizing its present and future. In this sense, the ideology proposed by many experts, which would be “mandatory for those who aspire to join the cohort of leaders of the Russian state” (S.A. Karaganov), appears to the authors as a completely logical and necessary step on the part of the President and the ruling political party. As long as there is no clear answer to the question “What kind of state are we building?” at all levels of government, such an answer is also absent among the general public, and as a consequence, people’s real lives often diverge from the public rhetoric of the authorities. The article focuses on the practical possibilities of implementing an ideology that could take on the character of a “philosophy of a common destiny” (Zh.T. Toshchenko) and form the basis of a new Social Contract, the need for which many experts have noted for our country. The authors’ contribution consists of the systematization of expert opinions, statistical data, and public opinion polls covering Russia’s historical development from the late 1990s (from the final years of Boris Yeltsin’s presidency), as well as actual cases of corruption and high treason within the country’s ruling elites (which primarily indicate that many of their representatives cannot be relied upon, as they are guided by personal interests that differ from the interests of the country, state, and society), and the administrative decisions made by the President, the Government, and the State Duma of the Russian Federation in the context of the pressing task of developing an ideology and forming a new Social Contract in Russia.

Key words: ideology, national idea, new Social Contract, public administration effectiveness, special military operation.

This article is the third part of a series of editorial publications united by the common title **“What a 30-year absence of state ideology leads to”**.

The first article published in April 2025¹ discusses objective historical processes that led to the “clash of civilizations” in the first quarter of the 21st century², due to the fact that the West, which is “at the peak of its power,” is faced with the “growth of civilizational self-awareness” and with the fact that non-Western countries are “returning to their own roots”.

In fact, Russian President Vladimir Putin warned the countries of the Collective West about the same thing in his Munich speech on February 10, 2007, when he said that **“for the modern world,**

a unipolar model is not only unacceptable, but even impossible”³. And not as a forecast, but as an established fact, he noted this in his speeches in the mid-2020s, stating that **“the countries of the world community are increasing their potential, changing the balance of power and the entire economic picture of the planet”**⁴.

Indeed, the struggle of civilizations is an eternal process. “The world is a zone of constant conflicts, endless and ruthless competition of small, medium and large social communities (tribes, peoples, nations, civilizations) with plunder, humiliation and destruction for the losers. That’s how it was created... there was always a critical resource that one group wanted to take away from another”⁵.

¹ Ilyin V.A., Morev M.V. (2025). What the 30-year absence of a state ideology leads to: “The enemy is not only on the other side of the frontline”. *Economic and Social Changes: Facts, Trends, Forecast*, 18(2), 9–38.

² Huntington S.P. (1993). The clash of civilizations? *Foreign Affairs*, 72(3).

³ Vladimir Putin’s speech at the Munich Security Conference on February 10, 2007. Available at: <http://www.kremlin.ru/events/president/transcripts/24034>

⁴ Vladimir Putin’s speech at the plenary session of the St. Petersburg International Economic Forum on June 20, 2025. Available at: <http://www.kremlin.ru/events/president/transcripts/77222>

⁵ Tyurin A. The war of civilizations. Western civilization versus Russian civilization. Available at: https://zavtra.ru/blogs/vojna_tcivilizatsij_zapadnaya_tcivilizatsiya_protiv_russkoj?ysclid=me5qwf94202354193

In these conditions, it is extremely important what internal condition a country, civilization, its system of government, the state of society, etc. is in; how much it is internally ready to protect its national security and its national interests.

Especially when we consider the fact that **“the West has never had and will never have a more long-term enemy than Russian civilization. Hatred of Russia has always united Western civilization. The war against Russia has been waged by the West for at least 1,000 years”**⁶.

Therefore, in the first article (with the subtitle **“The enemy is not only on the other side of the frontline”**), attention was focused on the fact that for Russia, **the key internal threat to national security in this historical period is its own elites**; more precisely, that significant part of the elite on all levels of government that has been created and matured over the past 50 years and during the 25 years of Vladimir Putin’s presidential terms has not gotten rid of Western liberal dogmas in its worldview, as a result of which it does not want or cannot meet the new demands of the time, which are formulated by the President and have become key since the beginning of the special military operation (state sovereignty based on the principles of social justice and traditional values); thus the elite endangers the present and future of the country.

The real facts of corruption and high treason occurring at all levels of government are the clearest confirmation of this thesis. Some of them are presented in *Insert 1*. Note that these are only facts that have occurred over the past two months (from June 10 to August 12, 2025), not to mention the much larger “accidents of the Russian statehood”⁷, which the country has had to face in recent years (such as the attempted armed coup carried out by the head of the Wagner Private Military Company E. Prigozhin on June 24, 2023, the arrest of deputy defense minister T. Ivanov on April 23, 2024, a series of detentions in late 2024 – early 2025 of persons involved in the activities of the Kursk Region Development Corporation (including ex-governor A. Smirnov, who was detained on April 15, 2025), which caused the invasion of the Kursk Region by the Armed Forces of Ukraine (AFU) – **“the first case of invasion of Russia since the Second World War”**⁸. The Russian region was under the control of the AFU for 8 months and 20 days⁹. About 70 civilians were killed and 300 people were injured¹⁰, 1,174 residents of the region were on the wanted list¹¹, the material damage caused by the AFU’s attack on the Kursk Region exceeded three billion rubles¹²)...

⁶ Ibidem.

⁷ Dugin A. After the mutiny. The bifurcation point. Available at: <https://izborsk-club.ru/24505>

⁸ The first invasion of Russia since the Second World War.” How does the world react to Ukraine’s attack in the Kursk Region? Available at: <https://dzen.ru/a/ZrXkdxJirVnevuRc?ysclid=m9qos8dxf763086902>

⁹ The invasion took place on August 6, 2024. On April 26, 2025, the head of the General Staff, V. Gerasimov, reported to the President of the Russian Federation that the operation to liberate the Kursk Region from the Armed Forces of Ukraine had been completed. Available at: <https://www.rbc.ru/politics/07/08/2024/66b34e289a7947b960522eb6?ysclid=megtzfzads380256797>.

¹⁰ Such data was provided on October 8, 2024 by R. Miroshnik, Ambassador-at-large of the Ministry of Foreign Affairs of the Russian Federation on crimes of the Kiev regime. Available at: <https://tass.ru/obschestvo/22068355?ysclid=megu0fxzns391934045>.

¹¹ These data were provided by the governor of the Kursk Region A. Khinshtein on January 10, 2025. Available at: <https://russian.rt.com/russia/news/1419434-rozysk-kurskaya-oblast?ysclid=megu30vq3u432258677>.

¹² These data were provided by chairman of the Investigative Committee A. Bastrykin on August 4, 2025. Available at: <https://www.kommersant.ru/doc/7941286?ysclid=megu65s91a40555496>.

Detentions and arrests of representatives of the ruling elites (June 10 – August 18, 2025)¹³

August 11 – N. Tokarchuk, deputy mayor of Salekhard, was detained. He was charged with fraud by a group of persons by prior agreement, the damage from their actions amounted to more than three million rubles.

July 30 – an official of the Ministry of Education and Science was detained in Ingushetia on suspicion of large-scale fraud and abuse of official authority. The amount of damage amounted to more than 10.7 million rubles.

July 25 – head of Millerovsky District administration was detained in the Rostov Region. He is suspected of abuse of authority in handling municipal property. The damage to the budget of Millerovsky District amounted to more than 25 million rubles.

July 24 – former head of the Tambov Region, Mikhail Egorov, was detained in connection with a bribe of 84 million rubles.

July 24 – N. Simonenko, vice-governor of the Bryansk Region, was arrested; he became a defendant in a criminal case on abuse of office with damage of at least 818.8 million rubles.

July 23 – former deputy governor of the Chelyabinsk Region, A. Bogashov, was detained as part of an investigation regarding abuse of office during the construction of a health complex. The manager of the governor and the government of the Chelyabinsk Region, R. Menzhinsky, and the minister of property of the region, E. Belousov, were also detained. According to investigators, the officials, using connections with the director of a construction company, organized the illegal construction of a health complex on the territory of the residence of the governor of the Chelyabinsk Region for a total amount of more than 50 million rubles.

July 23 – S. Brusakov, former head of the Kerch administration, was charged with abuse of official authority. He was taken into custody in connection with a crime related to the disposal of municipal land.

July 22 – head of the Ministry of Transport of the Novgorod Region, K. Kuranov, was arrested for large-scale bribes. He could face up to 15 years in prison. No other details of his arrest are given.

July 20 – I. Smetanyuk, deputy director of FGUP GVSU No. 4, was arrested for abuse of official authority in the execution of a state defense order. The charge against Smetanyuk is based on a crime provided for in Part 2 of Article 285.4 of the Criminal Code of the Russian Federation, which is related to a violation of the rules for fulfilling a state defense order, which eventually led to serious consequences. However, the exact priority details of this case remain undisclosed at the moment.

July 20 – three new defendants – former head of the Capital Construction Department of the region, A. Soshnikov, and two of his subordinates: L. Streletskaia and A. Reshetko – were charged with especially large embezzlement in organizing the construction of fortifications in the Belgorod Region on the border with Ukraine.

July 18 – S. Shultsev, deputy chair of the Government of the Novgorod Region, was arrested in connection with a particularly large bribe. The details of the case and the amount of the bribe, which the deputy chair of the government of the Novgorod Region is accused of receiving, were not disclosed.

July 11 – S. Grebennikov, ex-director of the Russian Association of Electronic Communications, was arrested. He is accused of treason. Grebennikov is a defendant in the case under the article on the issuance of information constituting a state secret to a foreign state or organization, or the provision of any assistance to foreign representatives in activities directed against the security of the Russian Federation.

¹³ Source: RT in Russian. The latest news about the arrests. Available at: <https://russian.rt.com/tag/zaderzhanie?ysclid=mdkzlnnsn147444962>. Materials from TASS, RIA-Novosti, RBC, Kommersant, Vesti.ru, Lenta.ru news agencies were also used.

End of Insert 1

July 7 – colonel-general V. Strigunov, former first deputy head of the Russian Guard, was detained as part of an investigation into abuse of power. The damage caused by Strigunov's actions exceeded 2 billion rubles. He is also charged with accepting a bribe in the amount of more than 66 million rubles.

July 3 – in the Chelyabinsk Region, Colonel A. Skulditsky, head of the Ural Training Rescue Center of the Ministry of Emergency Situations of Russia, was detained on charges of abuse of official authority and using subordinates in the construction of a personal summer residence. In the period from 2022 to March 2024, Skulditsky used the labor of his subordinates (military personnel under contract) to carry out construction and installation works on his personal property.

July 3 – N. Radkova, deputy head of the Russian Hydrometeorological Service, was arrested in a particularly large-scale fraud case. Details of the case are not given.

June 30 – D. Rubinov, former top manager of the Central Bank of Russia, was arrested on charges of large-scale fraud. According to the investigation, the former top manager organized a criminal group in 2020, whose members disguised themselves as police officers and abducted the wife and two-year-old child of businessman Maxim Pivovarov. The criminal scheme was worked out to put pressure on the entrepreneur in order to seize assets worth 6 billion rubles.

June 28 – former assistant to the prime minister of Tatarstan I. Latypov was arrested. UBEP operatives tracked Latypov down after the arrest of an ensign at one of the military facilities in Kazan. He promised to return the mobilized man from the SMO zone, and took 2 million rubles from his relatives to resolve the issue. He handed the money over to another serviceman. He admitted his guilt and said that he had been transferred to Kazan for a bribe of 3 million rubles, and this was done with the help of Latypov. On June 27, he was supposed to receive the last tranche – 800 thousand rubles. When Latypov took the money, he was immediately detained.

June 27 – head of the Ministry of Transport of the Kherson Region, A. Balyshv, was detained in a bribery case. Together with him, the head of the Regional Road Management Department, S. Zhuravlev, was detained. Their case is related to receiving a large bribe from a company engaged in the construction and restoration of roads. It was noted that the officials received several million rubles for the patronage of the company.

June 27 – O. Milyut, a deputy of the Legislative Assembly of Saint Petersburg of the 7th convocation, was detained as part of a criminal case on receiving a particularly large bribe, which has been launched against the head of the Kolpino district administration, Y. Logvinenko, and the head of the Kolpino local administration, D. Kokhno. According to the investigation, the defendants received at least 14.2 million rubles in bribes from December 2024 to June of this year.

June 22 – vice-governor of the Belgorod Region, Rustem Zainullin, was detained by a court decision as part of a fraud investigation. According to investigators, Zainullin stole at least 32 million rubles as part of a group using his official position, of which he personally received up to 4 million rubles. The funds were allocated for the construction of fortifications on the border of the Belgorod Region and Ukraine.

June 11 – former deputy minister of transport of Russia V. Tokarev was sentenced to eight years in prison in the case of embezzlement. According to the investigation, from 2016 to 2018, Tokarev, as the first deputy general director of LLC "Spetstransstroy", involved in illegal activities a number of persons from the management of this enterprise, as well as LLC "Glavstroyinvest" and other affiliated organizations for the purpose of embezzlement on an especially large scale. According to the newspaper Kommersant, the amount of damage exceeds 720 million rubles.

June 10 – first deputy governor of the Vladimir Region, A. Remiga, was arrested in the case of receiving a particularly large bribe. The details of the criminal case and the amount of the bribe are not specified.

The facts presented in Insert 1 indicate the systemic nature of corruption at all levels of government, and we note that this was revealed not after the start of the SMO, but much earlier. For example, A.I. Fursov wrote about this back in 2008. In 2017, V.A. Fadeev drew attention to the fact that large-scale criminal cases related to government corruption, broadcast in the media, are accompanied by “thousands of less high-profile cases” that few people know about...

We have been covering this topic (perhaps starting with one of the most high-profile criminal cases in Russia – against the current minister of economic development A. Ulyukayev¹⁴) on the pages of the Editorial column for many years¹⁵: we have cited official statistics of criminal cases, expert opinions, and specific facts about the actions of law enforcement agencies ...

A. Fursov: “Corruption has been progressing throughout the post-Soviet period and has already acquired a systemic character. At the beginning of the 21st century, the Russian Federation, according to Transparency International, ranks 127th in terms of corruption (there are 174 countries in the list; for comparison: Brazil – 70th place, China – 71st, India – 74th; meaning that the closer to the first place, the lower the degree of corruption). According to the Indem Foundation, the amount of corrupt money in Russia exceeds the budget by 2.5–2.7 times; according to experts, in the last year or two, the standard size of a bribe in the Russian Federation has increased 13 times, and the volume of the corruption market has increased nine times.

The government has been delivering pinpoint strikes (during Putin’s presidency, according to V.S. Ovchinsky, 15 governors, heads of republics and chairmen of regional governments, 22 vice-governors, 15 mayors, 9 vice-mayors of territorial, regional and republican centers, 2 speakers of city dumas were accused and convicted or brought as witnesses); however, of course, this cannot systematically solve the problem: ‘snipers’ are not suitable where ‘katyushas’ are needed”¹⁶.

V. Fadeev: “The criminal cases of big officials are in plain sight, they are reported by the federal media. **But there are thousands of less high-profile cases.** For example, the famous case of Gaizer, head of the Komi Republic. In September 2015, he was arrested and charged with organizing a criminal community. **Along with him, 14 more people were arrested, almost the entire top of the republic.** Everyone knows about this case. It’s in plain sight. But few people outside the republic know about other anti-corruption cases in Komi: **in 2015, 108 people were arrested in such cases, 113 last year, and 36 people were arrested in the 1st quarter of this year.** But this is a very small region in terms of population...”¹⁷

¹⁴ The minister of economic development A. Ulyukayev was arrested red-handed on November 14, 2016 while accepting a 2 million USD bribe from the management of the Rosneft oil company. He was sentenced to eight years in prison and released on May 12, 2022 (the court issued a decision on parole on April 27, 2022). **Ulyukayev became the first Russian federal minister to be detained in the line of duty.** Available at: <https://tass.ru/info/14513983?ysclid=me-2keel0yk422004906>.

¹⁵ See for example:

Ilyin V.A. (2017). Significance of the thesis “cadres decide everything” as applied to modern Russia. *Economic and Social Changes: Facts, Trends, Forecast*, 10(3), 9–31; Ilyin V.A., Morev M.V. (2018). “...And most importantly, there will be no destitute people in Russia”. “Capitalism for the few” – a key problem of national security. *Economic and Social Changes: Facts, Trends, Forecast*, 11(2), 9–23; Ilyin V.A., Morev M.V. (2020). Russian statehood in the face of the “corruption of the elites” threat. *Economic and Social Changes: Facts, Trends, Forecast*, 13(6), 24–53.

¹⁶ Fursov A. The Russian Federation at the beginning of the 21st century. Experience of system-historical assessment Available at: <https://gtmarket.ru/library/articles/5238>

¹⁷ Fadeev V.A. ORT TV channel news from April 9, 2017. Available at: <https://www.1tv.ru/news/issue/2017-04-09/21:00#10>

Excerpt from the report of the analytical center of the Communist Party of the Russian Federation and the Central Committee's department for election campaigns "On cases against regional governors of the Russian Federation in 2000-2025: 29 criminal governors": "Since 2000, according to Russian media, criminal cases have been initiated **against 27 current or former governors**. Almost everyone except S. Furgal (LDPR) and N. Belykh (self-nominated candidate) represented the United Russia party..."¹⁸

S. Obukhov (head of the Analytical Department of the Communist Party of the Russian Federation, member of the Presidium of the Central Committee): "**We observe the results of the management of the bourgeois-oligarchic system, in which the beneficiaries are conditionally 100 thousand families of the managerial elite... All these criminal cases are a clear signal of the crisis of the management model**"¹⁹.

However, judging by the facts (presented in *Insert 1*) that continue during the SMO, this problem is only gaining relevance. Especially after the start of the special military operation, when the price of managerial mistakes, abuse of official authority and imitation of the fulfillment of direct instructions from the head of state sharply increased.

Thus, according to the Ministry of Internal Affairs of the Russian Federation, in the first half of 2025, compared with the same period in 2022, the share of corruption-related crimes in the total number of crimes committed in Russia as a whole increased from 1.9% to 2.9% (or from 19 to 27 thousand cases), of which crimes related to bribery increased from 40 to 61% (or from 7.5 to 16 thousand; *Tab. 1*).

Table 1. Dynamics of corruption-related crimes in Russia

Indicator	January – June 2012 г.		January – June 2018		January – June 2022		January – June 2025		Dynamics (+/-), January – June 2025 to January – June 2022	
	abs.	%	abs.	%	abs.	%	abs.	%	abs.	%
Total number of crimes	1168045	100	992966	100	1003645	100	940519	100	-63126	0
corruption-related crimes*	34049	2.9	18696	1.9	18696	1.9	27124	2.9	+8428	+1
of them: related to bribery	6874	20.1	7519	40.2	7519	40.2	16480	60.8	+8961	+21

* Appears in the statistics of the Ministry of Internal Affairs since 2012.
Source: monthly reports of the Ministry of Internal Affairs of the Russian Federation "The state of crime in Russia". Official website of the Ministry of Internal Affairs of the Russian Federation. Available at: <https://xn--b1aew.xn--p1ai/reports/1/>

"The beginning of the SMO clearly showed the scale of the betrayal of the bureaucratic, cultural, media and business elite. **Among the bribe takers and corrupt officials are generals of the Ministry of Defense, former deputy prime ministers and governors, ministers and heads of state corporations, deputies and cultural figures.** Many, citing their anti-war position, fled to the coveted West.... But quite a few 'elitists' from the fifth column, who hate the president and his campaign, despise the patriotic upsurge in society, **continue to actively work in government structures, in the media, in the field of culture, actually on the side of the enemy**"²⁰.

¹⁸ On cases against the governors of the regions of the Russian Federation in 2000–2025: 29 criminal governors. Available at: <https://kprf.ru/politindx/236322.html>

¹⁹ Garmonenko D. The Communists have prepared a propaganda surprise for the party of power. Available at: https://www.ng.ru/politics/2025-08-13/3_9315_kprf.html

²⁰ Batchikov S. The time of the best. Available at: <https://izborsk-club.ru/27211?ysclid=megpbnxvos897001134>

Thus, it is obvious that there exist large, complex problems in the public administration system related to the moral character of a significant part of the ruling elites. This is evidenced by the real facts of corruption in power, statistical data, and opinions of many experts. But what is the reason for this?

The second article, published in June 2025, was devoted to the search for an answer to the above question²¹. Its subtitle, **“The constitutional ban on state ideology means a ban on revising the ideological tenets of liberalism”**²², explains the reason for the existence of the flaw of the entire post-Soviet system of public administration, which consists in the presence of a significant number of people “imbued” with liberal ideals and values of the “consumer society”, for which the main thing is **“profit, and human rights are just an ideological background that hides the true essence of capitalism”**²³.

As many experts point out, this flaw in the public administration system is caused by **the country’s lack of its own ideology and lack of understanding of what kind of state we are building**, which was fixed in the 1993 Constitution and which automatically consolidated the main outcome of the collapse of the USSR as a result of the defeat in the Cold War at the end of the 20th century – Russia’s “semi-colonial” position in relation to the Collective West; with all the ensuing consequences, starting, first of all, with the “semi-colonial” state of “minds”.

It is no coincidence that it was the Soviet elites – Gorbachev, Yeltsin and other “werewolves in power” (as Zh.T. Toshchenko, RAS Corres-

Yu. Afonin: “Human society always has one ideology or another... Otherwise, society simply could not exist and function. Why? Because ideology is, by and large, an understanding of how society should be organized, how people should behave in it. And also the rationale: why should it be this way and not otherwise...”

You can write in the Constitution that there is no state ideology in the country. This is exactly what was done in the Russian Basic Law of 1993. But this rule has never actually been implemented. In reality, there was a state ideology, and it was openly imposed on society through the state media, through the education system. And this was precisely the ideology of liberalism...”²⁴

ponding Member, calls them) – played a key role in the collapse of the greatest world power of the 20th century – the Soviet Union²⁵. And their very appearance was the culmination of a long process that began after the death of Joseph Stalin, when his era was replaced by the “Khrushchev thaw”, which destroyed the ideological foundations of the USSR, allowed (and even indulged in) the fact that the ruling elites gradually began to form closer ties with the West, share its values and ideals, and eventually were able to deeply imbue themselves with the idea that the Soviet “empire” should come to an end and started to promote this idea within the country, in their practical activities...

²¹ Ilyin V.A., Morev M.V. (2025). “The constitutional ban on state ideology means a ban on revising the ideological tenets of liberalism”: What the 30-year absence of a state ideology leads to. *Economic and Social Changes: Facts, Trends, Forecast*, 18(3), 9–39.

²² Radikov I.V. (2019). The search for ideological guidelines in post-Soviet Russia. *Vestnik Moskovskogo gosudarstvennogo lingvisticheskogo universiteta. Obshchestvennye nauki*, 1(834), p. 57.

²³ Aleksandrov A. So what is more important in liberalism, the person or the profit? Available at: <https://newsland.com/post/2227978-tak-chto-vazhnee-v-liberalizme-chelovek-ili-vsio-taki-pribyl?ysclid=me5s1qq9zi391992910>

²⁴ Does Russia need a state ideology? Available at: <https://msk.kprf.ru/2023/05/25/237731/?ysclid=mdsmiomcpd574535253>

²⁵ In a series of interviews published in the book “Werewolves in Power”, Zh.T. Toshchenko mentions the following surnames: M. Gorbachev, B. Yeltsin, A. Yakovlev, E. Shevarnadze, L. Kravchuk, E. Gaidar, A. Sobchak, G. Burbulis, B. Nemtsov, A. Kozyrev*, G. Popov, O. Kalugin, A. Chubais, B. Berezovsky, R. Abramovich, M. Khodorkovsky*, M. Fridman, K. Borovoy*, D. Volkogonov, V. Korotich, A. Tsipko, N. Svanidze, I. Ponomarev*.

* Included in the register of foreign agents.

Some “werewolves in power”²⁶ and their characteristic:

M. Gorbachev – “low cultural level, unscrupulousness, and primitivism of thinking led to the fact that he betrayed the ideals to which he swore in his youth and which he seemed to serve”;

B. Yeltsin – “betrayed the cause he served, rising to high party and government posts. He betrayed and sided with those for whom our Homeland was an “evil empire”;

N. Yakovlev – “his ambivalence was undeniable, and over time it only grew... there were and still are the most serious reasons to consider him a mole, that is, an enemy agent”;

B. Berezovsky – “his arrogance knew no bounds, and hardly anyone could surpass him in this... He stole on a gigantic scale. And he didn’t just steal, but often also demonstrated his impunity”;

A. Kozyrev* – “the most shameful foreign minister in the history of the country ... he is ready to do anything for the sake of profit”.

“First, in order to justify the overthrow of the Soviet system, the word ‘collapsed’ is used in relation to the USSR. They say that the Soviet Union was originally doomed to such an end, since its existence was an adventure conceived by Lenin and the Bolsheviks....

Second, the undertakers of the USSR and their overt and hidden lackeys are very fond of this argument: they say that the Soviet people did not defend the USSR and agreed to its liquidation and the establishment of the CIS. But these statements completely ignore the fact that until the last days the Soviet people clearly expressed their position – the USSR must exist!

Third, there was a covert and latent deception of the people – manipulation of their consciousness. And the majority of people reacted based on historical experience. After all, there has been a change of leadership in the country from time to time. And each time, the new leader promised changes...

All of the above allows us to conclude that no objective circumstances led to that geopolitical catastrophe. Here, a huge and decisive role was played by the subjective factor – people who, by virtue of their position, consciously or thoughtlessly did everything to ensure that the Soviet country ceased to exist”²⁷.

On the other hand, a correct understanding of the “diagnosis” is the first step on the path to healing, and therefore the expression “A constitutional ban on state ideology means a ban on revising the ideological tenets of liberalism” contains the answer to the question “What should we do?”.

The third article is devoted to the analysis of expert opinions on this subject, the quintessence of which is reflected in the subtitle “Great nations are not built without great, guiding ideas, and having lost them, they collapse with a thunderous crash”²⁸.

Obviously, we are talking about the essence and the very possibility of adopting a state ideology in the country. Against the background of the challenges and tasks of national development that Russia faces today, after the beginning of the SMO, this issue is becoming more and more acute (*Insert 2*).

Is the very idea of adopting a state ideology in Russia a “distortion of the spirit and letter of the Constitution”²⁹, according to K. Remchukov, editor-in-chief of *Nezavisimaya gazeta* newspaper?

²⁶ Toshchenko Zh.T., Kozhemyako V.S. (2025). Werewolves in power: They killed the Soviet country. Moscow: Rodina. 244 p.

²⁷ Ibidem.

²⁸ Karaganov S. (2025). A living idea-dream of Russia. The Code of the Russian in the 21st century: Report within the framework of the project “The Russian Idea-Dream and the Code of the Russian in the 21st Century” under the auspices of the Council on Foreign and Defense Policy and the Faculty of World Economics and World Politics of the National Research University Higher School of Economics. July 2025. P. 11.

²⁹ Remchukov K. The Constitution on ideological diversity as freedom of thought and speech. Available at: https://www.ng.ru/editorial/2025-07-27/2_9302_red.html

* Included in the register of foreign agents.

Or, if we do not have an ideology, will we face the “inevitable decay and then degradation of the people and the country”³⁰, according to S. Karaganov, for instance?

Perhaps the key point in this discussion is the fact that “the term ‘state ideology’ has a negative connotation in modern Russian (political) language”³¹, which is caused by the experience of the Soviet past. In this sense, we agree with K. Remchukov that “the establishment of the principle of ideological diversity in the Constitution is **one of the most important democratic achievements of the peoples of Russia**”³².

Indeed, as the President has repeatedly stressed, “there is no Soviet Union, there is no return to the past. And Russia doesn’t need it anymore”³⁵. **However, we should note that this is also understood by those who today advocate the need to create a state ideology in the country.** Therefore, we are not talking about changing the Constitution, nor about radical methods of imposing ideology, nor even about its binding and directive nature for society.

With only one exception, a potential ideology should be mandatory “for those who seek to join the cohort of leaders of the Russian state”³⁶.

1. “Now, of course, **we don’t necessarily need to repeal Article 13 of the Constitution**, which prohibits state ideology. But I think the article is easy enough to bypass. For example, we can say that we are not offering ideology, but the Russian dream. That’s it”³³.

2. “**It is clear that in the modern world and in modern, relatively free and pluralistic Russia, it is impossible to impose uniform binding ideological principles on everyone, as it was in the USSR.** The imposed Marxist-Leninist unanimity and the lack of religion were among the key reasons for the intellectual emasculation of the ruling stratum of the USSR, which led to its defeat...

3. “**Ideology may not necessarily be called ideology, in which case it will live under the guise of other concepts. Historically, this is often the case**”³⁴.

“The Constitution states: “No ideology can be established as state or compulsory”. **But this does not mean that there cannot be a SUPPORTED ideology. At least an ideology supported by the ruling party. The party not only can, it MUST have its own ideology, otherwise it is not a party, but a hobby club...** No one prohibits or can prohibit the promotion and even the imposition of the moral and ethical “Code of the Russian” from kindergarten or school, the very living idea-dream of Russia, which people can and are called upon to strive for from a young age. **Once again, the Code should not be binding on everyone, but mandatory for those who seek to join the cohort of leaders of the Russian state**”³⁷.

³⁰ Karaganov S. (2025). A living idea-dream of Russia. The Code of the Russian in the 21st century: Report within the framework of the project “The Russian Idea-Dream and the Code of the Russian in the 21st Century” under the auspices of the Council on Foreign and Defense Policy and the Faculty of World Economics and World Politics of the National Research University Higher School of Economics. July 2025. P. 7.

³¹ Ibidem. P. 12.

³² Remchukov K. The Constitution on ideological diversity as freedom of thought and speech. Available at: https://www.ng.ru/editorial/2025-07-27/2_9302_red.html

³³ Hitting Ukraine with nuclear weapons would be a mistake. It is necessary to do so in relation to the West (interview with S. Karaganov). Available at: <https://www.business-gazeta.ru/article/655229>

³⁴ Ideology of Victory as a national project (integral report of the Izborsk Club). Available at: <https://izborsk-club.ru/21816#vvedenie>

³⁵ Vladimir Putin’s speech at the ceremony of signing the agreements on the admission of the DPR, LPR, Zaporozhye and Kherson regions to Russia. Available at: <http://www.kremlin.ru/events/president/news/69465>

³⁶ Karaganov S. (2025). A living idea-dream of Russia. The Code of the Russian in the 21st century: Report within the framework of the project “The Russian Idea-Dream and the Code of the Russian in the 21st Century” under the auspices of the Council on Foreign and Defense Policy and the Faculty of World Economics and World Politics of the National Research University Higher School of Economics. July 2025. P. 17.

³⁷ Ibidem.

Insert 2

Opposing views on the possibility of creating a state ideology in Russia

FOR	AGAINST
<p>1. S.A. Karaganov (Doctor of Sciences (History), political scientist, economist): “We need a leading ideology, supported by the state and rooted through education and upbringing, but not by direct orders, but offered and imposed through textbooks, discussions, images, literature and art. If it does not exist, there will inevitably be a decline, and then a degradation of the people and the country... At the current civilizational turning point that the world is going through, we need such a guiding thread more than ever. Modern civilization is beginning to directly threaten not only the physical, but also the moral and spiritual destruction of humanity...</p> <p>The image of the world in which we would like to live, the living idea – the dream of Russia, the state ideology put forward and promoted, is necessary for everyone, from the President to the farmer, worker, engineer, officer, scientist, entrepreneur, civil servant, to understand what we want to be and what we want our country to be. Without an idea leading to a better future, states (especially such as Russia) do not develop, they rot...</p> <p>The presence of a common ideological platform, a national idea is one of the most important ascertaining signs of a sovereign state – and we do not want and cannot be anything else. Its absence is a sign of insufficient sovereignty”³⁸.</p>	<p>1. K.V. Remchukov (Candidate of Sciences (Economics), economist, journalist, public and political activist, editor-in-chief of <i>Nezavisimaya gazeta</i> newspaper): “In recent years, many politicians and other public figures have called for actions aimed at distorting the spirit and letter of the Russian Constitution... Various man-made codes, charters, and mission options have been proposed states based on a utopian view of human nature, from which they try to make an ideal adept of someone’s fantastic, and therefore unrealizable views and values.</p> <p>An attempt at the regulatory and legislative level to consolidate utopian ideas about the standard of state-approved attitudes of behavior and aspirations of young people often looks like pushing the state ideology prohibited in our Constitution.</p> <p>These attacks on the foundations of Russia’s state system must be firmly suppressed by the state... Undermining these foundations is a direct path to anarchy, chaos and turmoil, and a disastrous weakening of Russian statehood”³⁹.</p>
<p>2. K.A. Chuichenko (Minister of Justice of the Russian Federation): “Of course, we will have to resolve the issue with the article of the Constitution of the Russian Federation, which states that we have neither a state nor a mandatory ideology (Part 2 of Article 13 of the Constitution of the Russian Federation)... no country in the world has such provisions in its constitutions. Only Russia at one time, on the advice of our so-called partners, assumed these increased obligations”⁴⁰.</p>	<p>2. V.I. Matvienko (chair of the Federation Council of the Federal Assembly of the Russian Federation): “If you mean a single national political ideology to which everyone must obey, then I am against such an ideology being fixed in the Constitution. After all, the Constitution does not prohibit ideology, it stands for diversity. And it seems to me that our updated constitution also contains ideology. We are a sovereign, independent state. It contains both patriotism and social guarantees for citizens, and it states that the rights and freedoms of citizens are above all. That we are a multinational state and all our peoples are equal, regardless of nationality or religion... And all this together is our ideology ...”⁴¹</p>

³⁸ Karaganov S. (2025). A living idea-dream of Russia. The Code of the Russian in the 21st century: Report within the framework of the project “The Russian Idea-Dream and the Code of the Russian in the 21st Century” under the auspices of the Council on Foreign and Defense Policy and the Faculty of World Economics and World Politics of the National Research University Higher School of Economics. July 2025.

³⁹ Remchukov K. The Constitution on ideological diversity as freedom of thought and speech. Available at: https://www.ng.ru/editorial/2025-07-27/2_9302_red.html

⁴⁰ The head of the Ministry of Justice believes that the issue of banning state ideology in the Constitution of the Russian Federation will have to be addressed. Available at: <https://tass.ru/politika/17724475?ysclid=me00a7p7yq806794474>

⁴¹ Valentina Matvienko: There should be no easy way to amend the Constitution. Available at: <https://tass.ru/interviews/19510547?ysclid=me00hrb0df286644502>

End of Insert 2

FOR	AGAINST
<p>3. Zh. T. Toshchenko (Corresponding Member of the Russian Academy of Sciences, Doctor of Sciences (Philosophy), Professor, Honorary Doctor of the Institute of Sociology of the Russian Academy of Sciences): "An analysis of the possibilities of ideological attitudes for consolidating Russian society shows that the social contract is under threat in the absence of a state ideology... The real situation requires the formulation of a strategic goal for the development of Russia, its expression in the state-social ideology with a clear designation of the means and methods of achieving it"⁴².</p> <p>4. T.V. Voevodina (entrepreneur, publicist, regular contributor to <i>Literaturnaya gazeta</i> newspaper, <i>Zavtra</i> newspaper, and others): "In order to realize this colossal project – liberation from colonial dependence and the acquisition of true sovereignty – it is necessary to create and introduce into the minds of the broad masses of the people an appropriate belief system... The beliefs of a modern person, which truly guide them through life, today have the form of ideology, not religion. In fact, these are very similar concepts: ideology is a secular religion... Therefore, if we want to achieve independence, we vitally need a national, national ideology-religion. That is, a belief system that should guide the people in their daily behavior"⁴⁴.</p> <p>5. A.V. Shchipkov (Doctor of Sciences (Politics), Rector of the Russian Orthodox University of St. John the Theologian): "Russia is entering an era of great changes, and the demand for ideology will undoubtedly increase. Change is impossible without the support of the social majority, and ideology gives this majority an image of the future, that is, a common historical perspective"⁴⁶.</p>	<p>3. V.V. Fedorov (Candidate of Sciences (Pedagogy), general director of VCIOM): "If the dominant ideology acquires the status of a state ideology, then this is the first step towards its collapse... Almost any ideology at the very beginning is an ideology 'for all that is good, against all that is bad'. But as soon as an ideology becomes a state ideology, it very quickly turns into 'for all that is bad, against all that is good'. Indeed, patriotism has become the dominant ideology, and it is foolish to deny the obvious. But if we want to kill patriotism as the dominant ideology, let's make it a state one. And after a while, people will start spitting at the word 'patriotism'"⁴³.</p> <p>4. Patriarch Kirill (Patriarch of Moscow and All Russia since February 1, 2009): "In response to a question from a number of public forces who certainly want to have some kind of national idea, I can only repeat again: we already have it. What better way, if you will, to motivate a person to work creatively for the benefit of society, than sincere love and devotion to the Motherland? Those who truly love the country, their people and culture do not need any ideology, they do not need to invent and invent anything"⁴⁵.</p> <p>5. V.V. Vyzhutovich (journalist, writer, political commentator for <i>Rossiyskaya gazeta</i> newspaper): "Article 13 of the Constitution of the Russian Federation gives an unequivocally negative answer to this question: ... No ideology can be established as a state one". Therefore, any discussion about whether Russia needs a state ideology or not can be safely considered unconstitutional and not waste intellectual energy on them"⁴⁷.</p>

⁴² Toshchenko Zh.T. (2025). Social contract in modern Russia: Has a balance of interests been achieved? Sotsis, 2, p. 6.

⁴³ It is dangerous to declare any ideology as a state ideology (interview with V. Fedorov). Available at: <https://rg.ru/2015/08/13/fedorov.html?ysclid=mdsj5juw6q514245006>

⁴⁴ Voevodina T. State ideology as a secular religion of a common cause: The 1930s and present days. Available at: https://zavtra.ru/blogs/gosudarstvennaya_ideologiya_kak_svetetskaya_religiya_obshego_dela_30-e_godi_i_nashi_dni?ysclid=mdsid2hujd826109390

⁴⁵ Speech at the plenary session of the 25th World Russian People's Council "The Present and the Future of the Russian World", November 28, 2023. Available at: <https://www.patriarchia.ru/db/text/6080946.html?ysclid=me5mqy0r2i416772444>

⁴⁶ Shchipkov A. (2022). We need an ideology. Available at: <https://litrossia.su/2022/01/28/nam-nuzhna-ideologiya/>

⁴⁷ It is dangerous to declare any ideology as a state ideology (interview with V. Fedorov). Available at: <https://rg.ru/2015/08/13/fedorov.html?ysclid=mdsj5juw6q514245006>

For society, this is not an ideology imposed by “direct orders”, but rather a national idea, introduced from childhood “through textbooks, discussions, images, literature and art... Citizens need moral and patriotic guidelines”, S. Karaganov writes, “if not mandatory, then recommendatory”.

Vladimir Putin (1999): “I am against the restoration of state, official ideology in Russia in any form. There should be no forced civil consent in a democratic Russia. Any public consent here can only be voluntary. But that is why it is so important to achieve it on such fundamental issues as goals, values, and development milestones, which are desirable and attractive to the vast majority of Russians...”⁴⁸

Vladimir Putin (2024): “We had a dominant ideology... But the presence of a dominant ideology did not save the Soviet Union from collapse... Of course, there should be a unifying idea for a multinational country... we need unifying ideas. And of course, such a unifying idea – and today’s events show this – can be patriotism in the best, direct, rather than “patrioteer”, sense of the word”⁴⁹.

Thus, the expert opinion on potential Russian ideology today, taking into account the past 30th anniversary of the “liberal fog”, is as close as possible to the position of Vladimir Putin, who from the very beginning of his presidential term drew a clear distinction between the concepts of “ideology” and “national idea” and currently adheres to the same position.

And in this context, the state ideology (whatever you want to call it: “National Idea”⁵⁰, “Dream Idea”⁵¹, “Future Image”⁵², “Russian Dream”⁵³, etc.) is not just necessary, but natural, like air. **After all, everything is really simple: the state always has one ideology or another, and the Russian Federation had one before 2022. But now it has collapsed, and that means it needs to be changed. If we do not change it ourselves, someone else will take over this niche again (as it was 30 years ago).**

“Let’s make this clear: the Russian Federation had a state ideology, but it collapsed... If the ideology that was imposed on us 30 years ago cannot bring anything good to Russia, of course, it must be changed. We need a new ideology for the country’s development...”⁵⁴

⁴⁸ Putin V. Russia at the turn of the millennium. Available at: https://www.ng.ru/politics/1999-12-30/4_millenium.html?ysclid=me5onavwba647813458

⁴⁹ Vladimir Putin’s speech at the plenary session of the St. Petersburg International Economic Forum on June 7, 2024. Available at: <http://www.kremlin.ru/events/president/news/74234>

⁵⁰ Putin V. Russia at the turn of the millennium. Available at: https://www.ng.ru/politics/1999-12-30/4_millenium.html?ysclid=me5onavwba647813458

⁵¹ Karaganov S. (2025). A living idea-dream of Russia. The Code of the Russian in the 21st century: Report within the framework of the project “The Russian Idea-Dream and the Code of the Russian in the 21st Century” under the auspices of the Council on Foreign and Defense Policy and the Faculty of World Economics and World Politics of the National Research University Higher School of Economics. July 2025.

⁵² Averyanov V. Three projects of the future. Available at: <https://izborsk-club.ru/23815>

⁵³ Prokhanov A. “What is the Russian idea, the ideology of the Russian State?” About the seven codes of the Russian Dream. Available at: https://ruskline.ru/news_rl/2024/05/02/v_chem_russkaya_ideya_ideologiya_gosudarstva_rossiiskogo?ysclid=mdul1zra8jo820647480

⁵⁴ Does Russia need a state ideology? Available at: <https://msk.kprf.ru/2023/05/25/237731/?ysclid=mdsmiomcpd574535253>

The question of what this ideology should be is much more important and difficult. For example, the philosopher A. Dugin writes: “If we want to have an ideology, we will have to make a serious intellectual effort”⁵⁵.

After analyzing many expert opinions, we note the following: we believe that RAS Corresponding Member Zh.T. Toshchenko gave the most comprehensive, systematic answer to this question: he considers ideology not just as a kind of “Code of Honor” for the ruling elites, but in a deeper and broader context as a necessary condition for a new Social Contract.

“An analysis of the possibilities of ideological attitudes for consolidating Russian society shows that the **Social Contract is under threat in the absence of a state ideology...** The real situation requires the **formulation of a strategic goal for the development of Russia, expressed in a state-social ideology with a clear definition of the means and methods of achieving it**”⁵⁶.

Indeed, it is difficult to argue with experts that since the beginning of the SMO Russia has never come so close to forming a new Social Contract in its recent history (since the collapse of the USSR).⁵⁸

Today, for our country, this is not just a natural development of the state, the starting point of which can be called 2000, the year of the beginning of Vladimir Putin’s presidential term. **This is largely**

“A social contract is not a document. It is an independent social phenomenon, which is characterized by a special structure. **This is a basic, but at the same time special state of the relationship between the government and the people, which is expressed in the philosophy of common destiny** – the explicit (open) and latent **mutually coordinated achievement of goals, means and methods** of their implementation in the implementation of socio-economic, socio-political and socio-cultural transformations”⁵⁷.

“The implementation of the SMO, active and contradictory processes of socio-cultural turbulence within Russia and in neighboring countries **require adjustments to the existing social contract**”⁵⁸.

“As a result of the global transformation of the geopolitical system in 2022, the problem of a fundamental revision of the social contract arose... The shifts that have begun mark a radical change in the country’s governance regime from a dependent (colonial) to an independent (sovereign) one... **There is already a need to form a qualitatively different social contract between the supreme power of Russia in the person of its president (and at the same time the leader of the nation!) and the population**”⁵⁹.

a forced necessity dictated by the scenario of events in the foreign political arena.

⁵⁵ Russia needs a new ideology. Available at: https://tsargrad.tv/articles/aleksandr-dugin-rossii-nuzhna-novaja-ideologija_33821?ysclid=mdu21xugp2899113212

⁵⁶ Toshchenko Zh.T. (2025). Social contract in modern Russia: Has a balance of interests been achieved? Sotsis, 2, p. 6.

⁵⁷ Ibidem. P. 5.

⁵⁸ Nemirovsky V.G. (2025). Social contract in modern Russia: Reality or illusion? Reflections of a sociologist on a monograph by Zh.T. Toshchenko “The fate of the social contract in Russia: The evolution of ideas and the lessons of implementation”. Uroven’ zhizni naseleniya regionov Rossii, 21(2), p. 303.

⁵⁹ Balatsky E.V., Ekimova N.A. (2022). Social contract in Russia: Before and after 2022. Journal of Institutional Studies, 14 (3), 74–90.

But in order for a Social Contract to take place in principle, it is necessary that it meets a number of criteria, which, according to Zh.T. Toshchenko, “**form the basis of a social contract**”⁶⁰ (Fig. 1).

The first and main one is the goal.

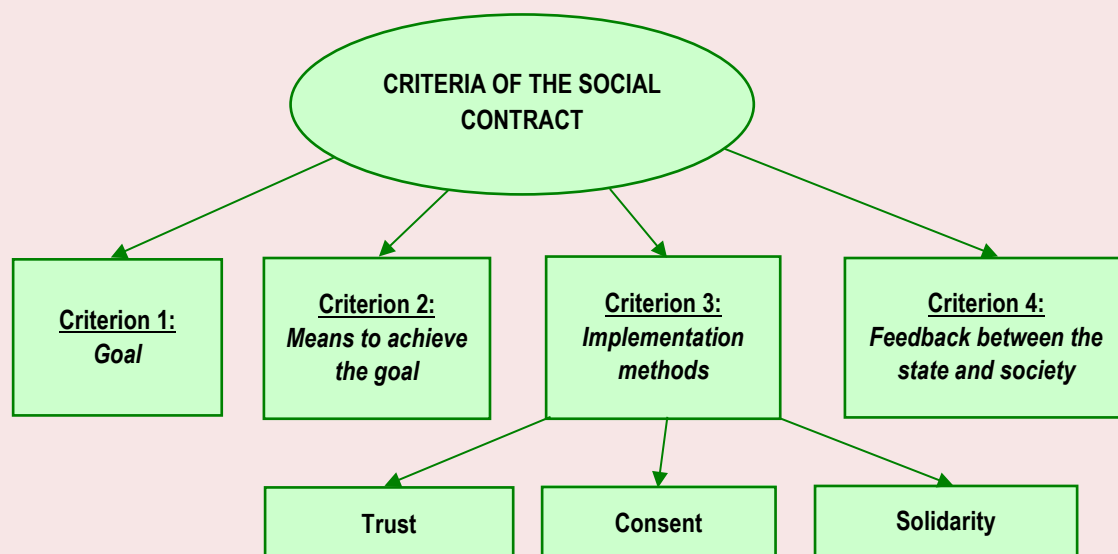
Many experts agree that currently the purpose of the Social Contract has not been formulated by the President of the Russian Federation. Neither, in fact, has been the ideology itself. Sovereignty, patriotism, social justice, etc. are necessary conditions for its realization, but these concepts do not give a definite “**idea of reality, of history, of the place of a particular person in it and his obligations toward others**”. Therefore,

as Zh.T. Toshchenko rightly notes, “it is still unclear to many Russians what kind of State and society they are building”.

“The goal reflects the aspirations and orientations of the people ... The goal is perceived by people as achievable, even in a problematic situation...”

At the same time, the state has a high responsibility to formulate a strategy for the development of the country that would satisfy the people not only in reality, **but also would allow them to see a future life**”⁶¹.

Figure 1. Criteria of a Social Contract



Source: Toshchenko Zh.T. (2025). The fate of the social contract in Russia: The evolution of ideas and the lessons of implementation: Monograph. Moscow: FCTAS RAS. P. 71.

⁶⁰ Toshchenko Zh.T. (2025). The fate of the social contract in Russia: The evolution of ideas and the lessons of implementation: Monograph. Moscow: FCTAS RAS. P. 89.

⁶¹ Ibidem. P. 72.

Zh.T. Toshchenko: **“As for modern Russia, the alignment of the goals of the state and the people largely shows uncertainty. It is still unclear to many Russians what kind of state and society they are building.** The social state proclaimed in the Constitution of the Russian Federation, whose policy is aimed at creating conditions that ensure a decent life and free human development (Article 7.1), designates a certain general attitude that is not sufficiently specified before it is understood and implemented in current socio-economic, socio-political and everyday life”.

A. Shchipkov: “When talking about ideology, such obviously necessary concepts as sovereignty, statehood, patriotism, social justice, and a strong family are mentioned first of all. This series can be continued and refined. **All this is necessary, but it is not an ideology, but the conditions for it**”⁶².

S. Khudiev: “People sometimes consider ‘ideology’ as a set of moral ideals, such as solidarity, freedom or patriotism, or something related to national identity, such as ‘being proud of one’s history’. **But this is not an ideology. Ideology presupposes a common set of ideas about reality, about history, about the place of a particular person in it and their obligations toward others....**”⁶³

In other words, based on the assessments of many experts, we can state that the first and main criterion of a Social Contract in Russia simply does not exist yet.

As for the **second criterion of a Social Contract** – **“means to achieve the goal”** – its condition (which is expressed through the situation in the *“economy; especially in terms of employment and the level of people’s welfare”*⁶⁴) is also difficult to call satisfactory.

As Yu. Afonin writes, “it is possible to proclaim social justice, but it will be an empty phrase if most of the country’s property remains in the hands of several hundred oligarchic families”⁶⁵.

Indeed, the Forbes list of the richest people on the planet continues to be replenished with Russian billionaires. In 2025, “the number of Russians in the ranking of the wealthiest people increased by 21 people and reached 146 people”⁶⁶; **moreover, during the period of the SMO, each of them increased the amount of their annual income by 1.5–2 times (Tab. 2).**

According to the Federal State Statistics Service, the poverty rate of the population in Russia continues to decrease slowly but surely (Fig. 2). This trend began in 2018, and over the period from 2018 to 2024, the proportion of people with incomes below the subsistence level decreased almost twofold (from 13 to 7%, or from 19 to 11 million people).

However, first of all, we should mention that the goal set by the President in the May 2018 Decree is **“to halve the poverty rate in the Russian Federation”**⁶⁷ (from 12.7% in 2018 to 6.4% by 2024) – has not yet been achieved. Second, even with the positive dynamics of poverty reduction observed since 2018, we agree with experts that the condition of

⁶² Shchipkov A. (2022). We need an ideology. Available at: <https://litrussia.su/2022/01/28/nam-nuzhna-ideologiya/>

⁶³ Khudiev S. Why ideology cannot be invented. Available at: <https://vz.ru/opinions/2023/12/6/1242716.html?ysclid=mdsklqfx1w139858272>

⁶⁴ Toshchenko Zh.T. (2025). The fate of the social contract in Russia: The evolution of ideas and the lessons of implementation: Monograph. Moscow: FCTAS RAS. P. 78.

⁶⁵ Does Russia need a state ideology? Available at: <https://msk.kprf.ru/2023/05/25/237731/?ysclid=mdsmiomcpd574535253>

⁶⁶ The number of billionaires in Russia has increased: In 2025, the Forbes ranking includes 146 richest, including 15 newcomers. Available at: <https://refinanc.ru/journal/v-rossii-uvelichilos-chislo-milliardirov-v-2025-godu-v-reytinge-forbes-146-bogateyshikh-iz-nikh-15-n/?ysclid=mdr7ihss7x799933064>

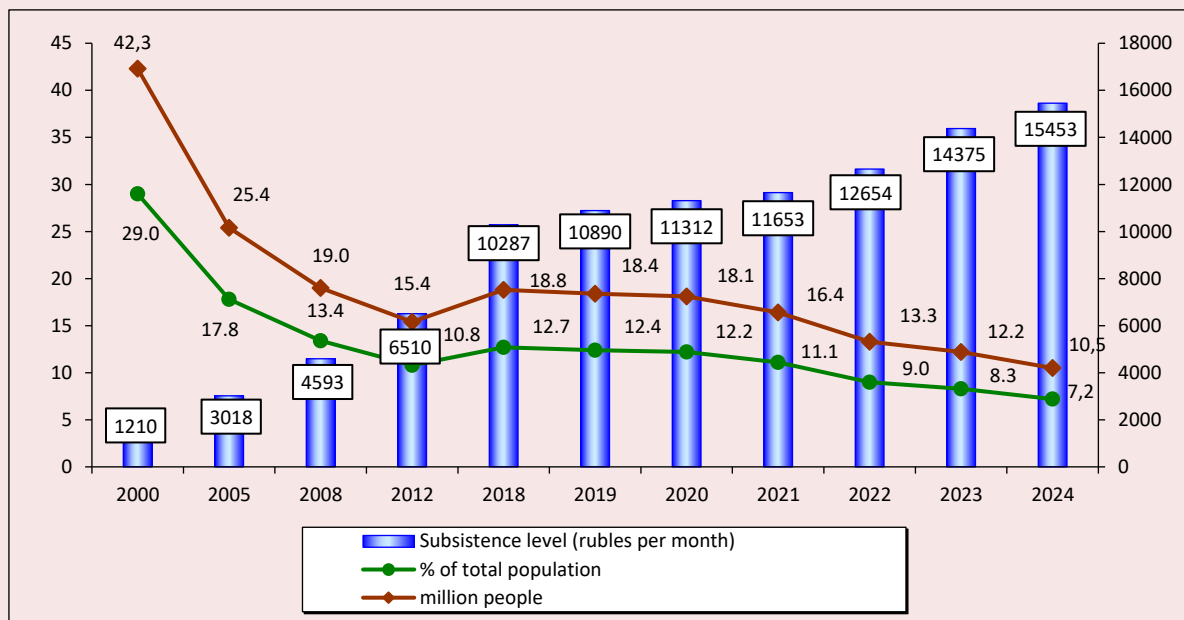
⁶⁷ On national goals and strategic objectives for the development of the Russian Federation for the period up to 2024: Presidential Decree 204, dated May 7, 2018.

Table 2. Dynamics of the wealth of the 10 richest Russian billionaires in the Forbes ranking for the period of the SMO, million USD

	2022	2023	2024	2025	Dynamics (+/-), 2025 to 2022	
					million USD	times
V. Alekperov (Chairman of the Public Council of the "Our Future" Foundation)	10500	20500	28600	28700	18200	2.7
A. Mordashov (CEO of Severgroup Holding)	13200	20900	25500	28600	15400	2.2
L. Mikhelson (Chairman of the Management Board of PJSC Novatek)	14000	21600	27400	28400	14400	2.0
V. Lisin (Chairman of the Management Board of the National Sporting Federation)	18400	22100	26600	26500	8100	1.4
V. Potanin (President of Interros Holding, President of MMC Norilsk Nickel)	17300	23700	23700	24200	6900	1.4
G. Timchenko (Chairman of the Board of Directors of the Kontinental Hockey League)	11300	18500	23400	23200	11900	2.1
A. Melnichenko (private investor)	11100	25200	21100	17400	6300	1.6
P. Durov (founder of Telegram)	15100	11500	15500	17100	2000	1.1
A. Usmanov (founder and main shareholder of USM)	11500	14400	13400	16700	5200	1.5
S. Kerimov (Member of the Federation Council)	4400	10500	10700	16400	12000	3.7

Source: Forbes rating. Available at: <https://www.forbes.ru/milliardery/535280-146-milliardero-rossii-rejting-forbes-2025?ysclid=mdr7gt9gh4931870029>

Figure 2. Population with money incomes below the poverty line / subsistence level



Source: Rosstat.

the Russian economy is “**not as successful as the objective needs of social development require**. Russia is still facing the urgent issue of a **fundamental change in economic policy** and the associated **social unity of the people, without which a social contract cannot exist**”⁶⁸.

So, according to Rosstat, in 2024, **62% of Russians had an average per capita money income of less than 60 thousand rubles per month** (Tab. 3). Of this, a third or a quarter (according to various estimates⁶⁹) is “eaten up” by the minimum “consumer basket”⁷⁰.

Table 3. Distribution of the population by the amount of per capita money income

Population group by income level	2018	2019	2020	2021	2022	2023	2024	Dynamics (+/-), 2024 to...	
								2018	2022
% from total population									
Under 27 thousand rubles	54.7	51.4	49.8	44.5	34.5	29.5	22.9	-32	-12
From 27 to 45 thousand rubles	23.6	24.5	25.2	25.9	27.2	26.2	24.4	+1	-3
From 45 to 60 thousand rubles	9.3	10.1	10.5	11.6	13.8	14.4	15	+6	+1
Under 60 thousand rubles	87.6	86	85.5	82	75.5	70.1	62.3	-25	-13
From 60 to 100 thousand rubles	9.0	10.0	10.4	12.4	16.2	18.5	21.5	+13	+5
Over 100 thousand rubles	3.4	4	4.1	5.6	8.3	11.4	16.2	+13	+8
For reference: the number of permanent residents of the Russian Federation per year on average (million people)	147.8	147.9	147.7	147.2	146.7	146.3	146.1	-2	-1
million people*									
Under 27 thousand rubles	80.9	76.0	73.6	65.5	50.6	43.2	33.5	-47	-17
From 27 to 45 thousand rubles	34.9	36.2	37.2	38.1	39.9	38.3	35.7	+1	-4
From 45 to 60 thousand rubles	13.7	14.9	15.5	17.1	20.2	21.1	21.9	+8	+2
Under 60 thousand rubles	129.5	127.2	126.3	120.7	110.8	102.6	91.0	-38	-20
From 60 to 100 thousand rubles	13.3	14.8	15.4	18.3	23.8	27.1	31.4	+18	+8
Over 100 thousand rubles	5.0	5.9	6.1	8.2	12.2	16.7	23.7	+19	+11
*Own calculation on the basis of official data from Rosstat on the number of permanent residents of Russia on average per year (Official statistics. Demographics. Available at: https://rosstat.gov.ru/folder/12781).									
“Distribution of the population by the amount of per capita money income characterizes the differentiation of the population by the level of material wealth and represents indicators of the number (or shares) of the permanent population, grouped in specified intervals by the level of per capita money income” (source: Russian Statistical Yearbook. 2024: Statistics collection. Rosstat. 2024. P. 177).									

⁶⁸ Toshchenko Zh. T. (2025). The fate of the social contract in Russia: The evolution of ideas and the lessons of implementation: Monograph. Moscow: FCTAS RAS. P. 78.

⁶⁹ Since 2021, the size of the “consumer basket” has not been officially calculated. However:

1) “If the cost of the consumer basket had been calculated so far, in 2025 it would have been 15,498 rubles” (source: Consumer basket: What it includes, how much it is and why it is needed. Available at: <https://t-j.ru/basket-of-goods/#six>);

2) “The cost of the consumer basket in 2025 on average in Russia. For the able-bodied population: 19,329 rubles per month. For pensioners: 15,250 rubles. For children: 17,201 rubles” (source: <https://m.ok.ru/profile/584301282504/statuses/157737201055176>).

⁷⁰ A consumer basket is “the minimum set of food, services, and non-food items that a person needs to ensure their vital activity and maintain their health throughout the year”. It consists of three parts: food, non-food products and services (for more information, see the source: Solovyov V. What is a consumer basket? Available at: <https://t-j.ru/basket-of-goods/#one>).

“The remaining” 20–30 thousand rubles is the approximate cost of two nights in a Russian hotel⁷¹ or a minimum cost of a holiday in a Russian resort for a family of three (and not at all of 5–6) people (that is, parents and one child)⁷² for one week.

And this, we note, applies only to those people who have incomes in the amount of 45–60 thousand rubles per month. In fact, among those 62% of Russians who have incomes of up to 60 thousand rubles, **23% (or 33.5 million people) have an average per capita money income of less than 27 thousand rubles.**

These data confirm other figures from Rosstat, which show the distribution of money income among 20 percent of the population. **In general, the situation has not changed since 1999 and looks even worse than in 1992: almost half of all money incomes in the country (46–47%; in 1992 – 38%) are owned by a small “stratum” of the richest people (Tab. 4).**

And the special military operation, which has been going on for more than three years, has not made any changes to these statistics. On the contrary, in 2022, 20% of the country’s wealthiest

citizens had 45.8% of the total money income, in 2023 – 46.4%, in 2024 – 46.7%.

We should note that the data provided by Rosstat that the income level of the majority of Russians does not exceed 60 thousand rubles fully explain why, with a poverty rate of 7–8% (according to statistics⁷³) **a significantly larger number of people classify themselves as “poor”.** For example, in the Vologda Region (according to VolRC RAS) their proportion is 45–48% (Fig. 3).

At the same time, the main problems of concern to the population were and still are “inflation”, “low standard of living, poverty” and “stratification into poor and rich”. So, on average for 2018–2024 (Vladimir Putin’s fourth presidential term) compared with the period 2000–2003 (his first presidential term):

- ✓ the share of people concerned about inflation increased by 16 percentage points (from 45 to 61%);
- ✓ the problem of low living standards, poverty – by 8 percentage points (from 45 to 53%);
- ✓ stratification into “poor” and “rich” – by 2 percentage points (from 30 to 32%; Fig. 4, Insert 3).

Table 4. Distribution of total money income by quintile group in the Russian Federation, %

Population group	1992	1999	2007	2012	2018	2022	2023	2024	Dynamics (+/-), 2024 to...	
									1992	2022
First (with the lowest incomes)	6.0	6.0	5.1	5.2	5.3	5.6	5.5	5.4	-1	0
Second	11.6	10.5	9.8	9.8	10	10.4	10.2	10.1	-2	0
Third	17.6	14.8	14.8	14.9	15	15.4	15.2	15.1	-3	0
Fourth	26.5	21.1	22.5	22.5	22.6	22.8	22.7	22.7	-4	0
Fifth (with the highest incomes)	38.3	47.6	47.8	47.6	47.1	45.8	46.4	46.7	+8	+1

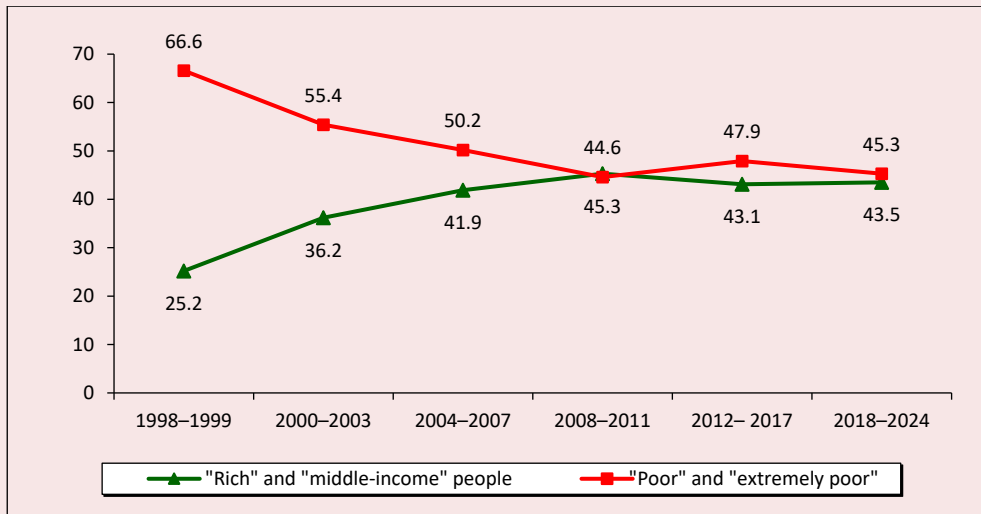
Source: Rosstat data.

⁷¹ The Russian Union of Travel Industry recorded an increase in prices for summer holidays in Russia. The average cost of staying in Russian hotels in 2025 reached 12,021 rubles per day, said Ilya Umansky, president of the Russian Union of Travel Industry (RUTI), speaking at a press conference “Russian Union of Travel Industry: Trends and forecasts for the summer 2025 season” in TASS. According to him, this amount is 12.4% higher than last year (source: RUTI has recorded an increase in prices for summer holidays in Russia. Available at: <https://news.ru/society/v-rst-zafiksirovali-rost-cen-na-letnij-otdyh-v-rossii>).

⁷² In 2025, the cost of summer holidays in Russian resorts with sandy beaches for a family of three will start from 26,950 rubles per week, the press service of the National Tour Operator Aleant (a member of the Russian Union of Travel Industry) told the Prime agency. Available at: <https://ria.ru/20250626/kurort-2025473650.html>

⁷³ 7.2% is the share of the population with incomes below the subsistence level in the whole country (according to Rosstat data for 2024); 8.1% is the share of the population with incomes below the subsistence level in the Vologda Region (source: Territorial Body of the Federal State Statistics Service for the Vologda Region, data for 2024).

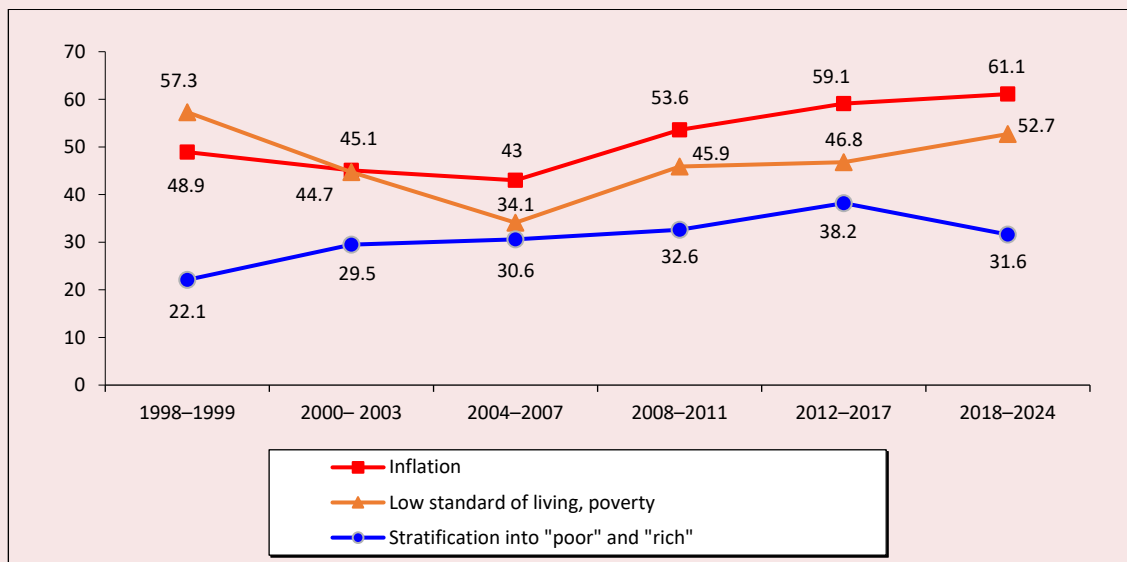
Figure 3. Dynamics of social self-identification*, % of respondents



* Wording of the question “Which category do you belong to, in your opinion?” (responses: “rich”, “middle-income people”, “poor”, “extremely poor”).

Source: VoIRC RAS data.

Figure 4. The most pressing issues of concern to the population, % of respondents



Source: VoIRC RAS data.

More detailed information is provided in *inserts 3–4*.

Insert 3

“What problems of modern life do you consider the most acute for Russia as a whole?”, % of respondents

Issue	1998–1999	2000–2003	2004–2007	2008–2011	2012–2017	2018–2024	2018–2024 to 2000–2003
Inflation	48.9	45.1	43.0	53.6	59.1	61.1	+16
Low standard of living, poverty	57.3	44.7	34.1	45.9	46.8	52.7	+8
Stratification of the population into “poor” and “rich”	22.1	29.5	30.6	32.6	38.2	31.6	+2
Housing provision, low housing affordability	11.0	18.7	25.5	27.9	26.6	24.3	+6
Political instability	19.2	12.4	8.1	7.7	15.5	22.3	+10
Economic instability, shutdown of enterprises	42.4	23.2	15.5	19.8	19.2	20.8	-2
Social insecurity of citizens	32.6	32.2	27.1	23.3	21.9	20.3	-12
Unavailability of healthcare, poor quality of medical services	12.0	17.8	20.4	14.9	15.7	19.0	+1
High crime rate, insecurity from criminals, hooliganism, etc.	31.7	39.3	32.0	27.7	20.5	18.3	-21
Corruption, bribery	14.2	16.3	18.7	18.7	17.7	17.0	+1
Low life expectancy, population decline	no data	no data	16.0	14.1	9.8	15.5	+1**
Dismissal of staff, unemployment	43.6	29.8	23.8	26.4	13.5	14.1	-16
Rise of alcoholism	14.0	28.1	35.6	28.0	21.3	14.0	-14
Poor ecology, environmental pollution	7.9	14.1	15.7	14.6	12.7	13.6	-1
Unfair taxation	8.2	7.7	6.9	6.9	10.6	13.1	+5
Lack of spirituality, rampant immorality	11.3	16.1	15.5	11.2	10.8	12.9	-3
Incompetence of the authorities	14.9	9.5	8.3	6.2	6.2	7.6	-2
Unavailability of educational services, poor quality of education	4.8	7.4	7.9	4.7	6.2	7.3	0
Delays in payment of salaries, pensions, scholarships	37.2	10.0	5.0	6.2	6.2	5.8	-4
Ethnic harassment, ethnic strife	5.1	8.3	8.4	4.2	4.1	4.9	-3
TOTAL: Total number of negative changes / absence of changes / positive changes							9 / 1 / 10

Source: VoIRC RAS data. Ranked according to the average annual data for 2018–2024.

The most acute problems for the country, according to residents of the Vologda Region, are “inflation”, “low standard of living, poverty” and “stratification of the population into poor and rich”. For the period 2000–2003 (average annual data for the first presidential term of Vladimir Putin) to 2018–2024. (on average, during Vladimir Putin’s fourth presidential term), the share of people concerned about inflation increased by 16 percentage points (from 45 to 61%), the problem of poverty – by 8 percentage points (from 45 to 53%), and the problem of income stratification – by 2 percentage points (from 30 to 32%).

Insert 4

“What problems of modern life do you consider the most acute for Russia as a whole?” (the most pressing problems in the context of the main socio-demographic categories of the population; VoIRC RAS data), % of respondents

Population group	Inflation		Low standard of living, poverty			Stratification into “rich” and “poor”			
	2000—2003	2018—2024	Dynamics (+/-), 2018—2024 to 2000—2003	2000—2003	2018—2024	Dynamics (+/-), 2018—2024 to 2000—2003	2000—2003	2018—2024	Dynamics (+/-), 2018—2024 to 2000—2003
Gender									
Men	43.4	60.4	+17	43.7	52.8	+9	28.3	31.5	+3
Women	46.3	61.7	+15	45.4	52.6	+7	30.3	31.7	+1
Age									
Under 30	40.1	60.1	+20	38.9	52.9	+14	23.2	29.9	+7
30—55	46.3	61.1	+15	47.0	52.7	+6	30.5	30.4	0
Over 55	48.2	61.4	+13	46.2	52.6	+6	34.2	33.8	0
Education									
Secondary and incomplete secondary	45.9	64.7	+19	44.8	51.9	+7	27.8	33.3	+5
Secondary vocational	47.0	60.2	+13	45.2	52.7	+8	30.9	30.5	0
Higher and incomplete higher	41.7	58.4	+17	44.0	53.4	+9	30.0	31.2	+1
Income groups									
Bottom 20%	48.7	62.2	+14	48.8	55.2	+6	27.5	30.6	+3
Middle 60%	46.3	61.4	+15	47.3	53.7	+6	32.2	30.3	-2
Top 20%	40.2	57.4	+17	37.4	48.5	+11	28.1	33.4	+5
Territories									
Vologda	47.1	58.4	+11	45.8	61.3	+15	31.0	33.5	+2
Cherepovets	44.9	56.1	+11	42.4	43.9	+2	28.0	36.4	+8
Districts	44.3	65.5	+21	45.4	52.8	+7	29.5	27.7	-2
Region	45.1	61.1	+16	44.7	52.7	+8	29.4	31.6	+2
TOTAL: Total number of negative changes / absence of changes / positive changes									
						13 / 1 / 0		6 / 8 / 0	

For the period from 2000–2003 (on average, during Vladimir Putin’s first presidential term) through 2018–2024 (fourth presidential term), the proportion of people concerned about inflation and low living standards increased in all major socio-demographic groups, especially among people under the age of 30 (with regard to inflation – by 20 percentage points, from 40 up to 60%; regarding poverty – by 14 percentage points, from 39 to 53%).

The urgency of the problem of stratification of the population into poor and rich has become more often noted by representatives of 6 of the 14 main socio-demographic groups. Meanwhile, no positive changes were observed in any of the analyzed groups. Negative changes also occurred primarily among people under the age of 30 (by 7 percentage points, from 23 to 30%).

Similar negative trends are observed in almost all major socio-demographic groups (*Insert 4*). Moreover, we note that we are talking not only about socially vulnerable groups (for example, pensioners or people who, according to self-estimates of their own incomes, fall into the category of bottom 20%), **but primarily about the assessments of young people**. So, on average, for the period from the first to the fourth presidential term of Vladimir Putin:

- ✓ the share of those who are concerned about inflation has increased especially among people under the age of 30 (by 20 percentage points, from 40 to 60%) and residents of districts (by 21 percentage points, from 44 to 65%);

- ✓ the problem of poverty – among residents of Vologda (by 15 percentage points, from 46 to 61%) and among people under the age of 30 (by 14 percentage points, from 39 to 53%);

- ✓ the problem of population stratification among people under the age of 30 (by 7 percentage points, from 23 to 30%) and residents of Cherepovets (by 8 percentage points, from 28 to 36%).

Thus, the data provided by official statistics and sociological surveys of the population speak for themselves and suggest quite legitimate questions – can a new Social Contract take place while there still exist the same key problems that have been troubling Russian society for many years: low living standards, poverty, extreme inequality ...? What is the Image of Russia's Future in relatively peaceful conditions; after the end of the SMO or even after a potential more global conflict with NATO...?

Vladimir Putin: “Russia needs a peace option in Ukraine that would ensure its **stable development and peace**”⁷⁴.

These questions remain unanswered so far, and today the real situation regarding inequality and poverty continues to conflict in many ways with publicly declared government priorities for social justice and a welfare state.

This suggests that the second criterion of a Social Contract – the “means to achieve the goal” (as well as the goal itself) – is still not in a state that would allow us to count on the real achievement of a “common destiny” for society and the State.

According to experts and as the real historical experience of our country shows, “**the people should believe that there is Truth behind ideology. The addressee of an ideology must wholeheartedly believe in it as a truth** worthy of their absolute devotion”⁷⁵. If this is not the case, then there is no Social Contract.

Zh.T. Toshchenko: “Speaking about welfare as an indicator of the stability of a social contract, let’s pay attention to the need to specify it, and not just some statements about the well-being of the people. **In Russia, attempts to overcome the low level of people’s welfare remain unresolved**”⁷⁶.

“In the 1920s – 1960s, our Soviet state... was cemented by the belief that we were building and bringing to the world a new, just way of life – communism... **Is it because of the communist faith, or rather, the belief that we affirm and defend the supreme truth, universal justice? The Soviet people withstood the most difficult trials, war, and devastation...**

⁷⁴ Vladimir Putin’s meeting with the mothers and wives of SMO military service members at the Defenders of the Fatherland Foundation on March 6, 2025. Available at: <http://www.kremlin.ru/catalog/keywords/91/events/76418>

⁷⁵ Khudiev S. Why ideology cannot be invented. Available at: <https://vz.ru/opinions/2023/12/6/1242716.html?ysclid=mdsk1qfx1w139858272>

⁷⁶ Toshchenko Zh.T. (2025). The fate of the social contract in Russia: The evolution of ideas and the lessons of implementation: Monograph. Moscow: FCTAS RAS. P. 79.

Khrushchev's denunciation of Stalin and his subsequent 'cancellation' were a huge trauma to the national organism. A spiritual trauma. The front-line soldiers who went on the attack with the name of Stalin felt insulted, and the youth questioned the very basics and largely came to the conclusion: **everyone is lying... As a result of the 'cancellation' of Stalin and the general feeling of being deceived and disappointed, the people gave up on all these lofty matters, on the slogans and resolutions of the Party and wanted to live a small private life ...**"⁷⁷

The third criterion of a Social Contract – the methods of its implementation – is "the most important structural element"... They are designed to ensure, through their application and use, that the social contract is effective, which allows the State, represented by the political authorities, to know that the people or only a part of them support and approve of the policy being pursued"⁷⁸.

Zh.T. Toshchenko identifies three such methods:

1) trust ("the basis for the existence of all social and political institutions, their representatives, especially those who head state organizations and institutions");

2) consent ("presupposes a variable attitude not toward such a phenomenon as the State in general, but toward its specific actions and acts");

3) solidarity ("a form of social cohesion and interconnectedness of individuals and social groups, which is based on common interests, goals and standards").

Here are some relevant data reflecting the status of each of these methods. According to the results of sociological surveys and assessments by many experts, Russian society demonstrates a high level

of trust and agreement with regard to the President himself, **but not with regard to the system of public administration he created.**

For example, when United Russia wins parliamentary elections or acting governors appointed by the head of state prevail over other candidates during local election campaigns, many experts say in unison that this is a credit of trust not so much to them as to Vladimir Putin personally.

For example:

1. S. Neverov (on the victory of the United Russia party in the 2012 regional election): "The vote that took place yesterday, in fact, throughout the country, which yesterday affected almost all our municipal bodies, local governments, is a real expression of support for the course of President Vladimir Putin"⁷⁹.

2. "The main reason for the success of the United Russia political party in the Duma election was the support of Russian President Vladimir Putin. This was stated by Konstantin Kostin, chair of the Board of the Foundation for the Development of Civil Society during the round table "Single Voting Day – 2021: Results and trends"⁸⁰.

3. K. Kostin, chair of the Board of the Foundation for the Development of Civil Society, on the 2022 regional election: "The **patriotic consensus** that has emerged as a result of the special military operation and Russia's opposition to Western sanctions is the **main factor in this campaign...** The main recipients of this electoral bonus are the governors, who were either appointed by the current president or supported by him when he was nominated for a new term, and the United Russia party, Putin's party"⁸¹.

⁷⁷ Voevodina T. Perestroika: 40 years later. Available at: https://zavtra.ru/blogs/perestrojka_40_let_spustya

⁷⁸ Toshchenko Zh.T. (2025). The fate of the social contract in Russia: The evolution of ideas and the lessons of implementation: Monograph. Moscow: FCTAS RAS. P. 80.

⁷⁹ Political analysts believe that the victory of United Russia in the elections indicates trust in Putin's policy. Available at: https://www.itv.ru/news/2012-10-15/85781-politologi_schitayut_chno_pobeda_edinoj_rossii_na_vyborah_govorit_o_doverii_politike_putina?ysclid=mdy2tsyay1818477296

⁸⁰ Experts named the reasons for the success of United Russia in the State Duma elections. Available at: <http://civilfund.ru/article/43413?ysclid=mdy2ywaiz6651583483>

⁸¹ Round table "Single Voting Day – 2022: Specifics, trends and forecast of results". Available at: <http://civilfund.ru/event/146>

“There is no deep state in Russia, it is all in plain sight, but there is a deep people. The elite shines on the glossy surface, and over the centuries it has been actively (to its credit) involving the people in some of its activities – party meetings, wars, elections, and economic experiments. **People participate in the events, but they are somewhat detached, they do not show themselves on the surface, living a completely different life in their own depths...**

In essence, the society trusts only the top state official... In the new system, all institutions are subordinated to the main task – trusting communication and interaction of the supreme ruler with citizens. The various branches of government converge on the personality of the leader, being considered a value not in themselves, but only to the extent that they provide a connection with him”⁸².

This specificity of the attitude of Russian society toward the President and the state has largely socio-cultural grounds, which are quite clearly outlined in V. Surkov’s concept of the “long state”, all institutions in it ‘are subordinated to the main task – trusting communication and interaction of the President with citizens’.

At the same time, the entire system of public administration built by Vladimir Putin during his presidential term reveals a lot of reasons to discredit the trust of citizens, and many experts ask a logical question: **why hasn’t a “well-established mechanism of disciplinary responsibility based on clear criteria” been created in it or in the party in power? Is there no “mandatory and unavoidable personal responsibility for sabotage or poor-quality execution of management decisions”?**

“There is a complete lack of personal responsibility for non-fulfillment or inadequate execution of government decisions, for functional inconsistencies, for mistakes, and even more so for deliberate sabotage... Most often, an official who has made serious mistakes simply moves to another position and remains in the administration system. And even more often, he/she stays in the same place and continues to engage in the same destructive activities as before.

It is necessary to introduce mandatory and inescapable personal responsibility for sabotage or poor-quality execution of managerial decisions, for ineffective activities of the head in a designated area, and this should be a well-established mechanism of disciplinary responsibility based on clear criteria. This is simply a necessary element of any management... **in the current extreme and extraordinary conditions of the country’s existence, it is already a matter of life and death, and the absence of this mechanism is suicidal, and from the point of view of state interests, it is criminal...**”⁸³

According to VCIOM, as of July 2025, the RF President’s approval rating is 74.7%. The share of positive assessments of the activities of the Government of the Russian Federation is 49.5%; the State Duma is 43.9%, and the Federation Council – 43.7%.

The majority of Russians approve of the activities of “traditional” public institutions – the army (75.7%), the Russian Orthodox Church (61.4%), and law enforcement agencies (52.3%). However, the approval rate for the activities of other public institutions is less than half: the media – 44.9%; the Public Chamber – 34.5%; the judicial system – 38.7%; trade unions – 30.1%; political parties – 37.2%⁸⁴.

⁸² Surkov V. Putin’s Long State. Available at: https://www.ng.ru/ideas/2019-02-11/5_7503_surkov.html?ysclid=mdmy6wh711299959713

⁸³ Kobyakov A. (member of the Izborsk Club). Interview to Business Online, June 23, 2023. Available at: <https://www.business-gazeta.ru/article/598151?ysclid=mdvxn8n9lj173110347>

⁸⁴ Ratings. VCIOM official website. Available at: <https://wciom.ru/ratings>

These features of the attitude of the population toward the President and the system of public administration he created quite logically explain the condition of “trust” and “consent” as methods of implementing a Social Contract: **if we can talk about trust and consent, it is only in relation to the head of state himself** (*Insert 5*):

✓ the share of those who trust the President of the Russian Federation is 55% (the level of trust in all other state and public institutions is from 30 to 47%, that is, less than half of the population trusts them);

✓ the share of those approving the activities of the head of state is 59% (of all other authorities – 40% or less).

The same applies to political parties: it is possible to say that the United Russia party is supported by the majority of Russians only in the electoral context, that is, in comparison with other political forces. **However, this principle “does not work” when it comes to forming a Social Contract.**

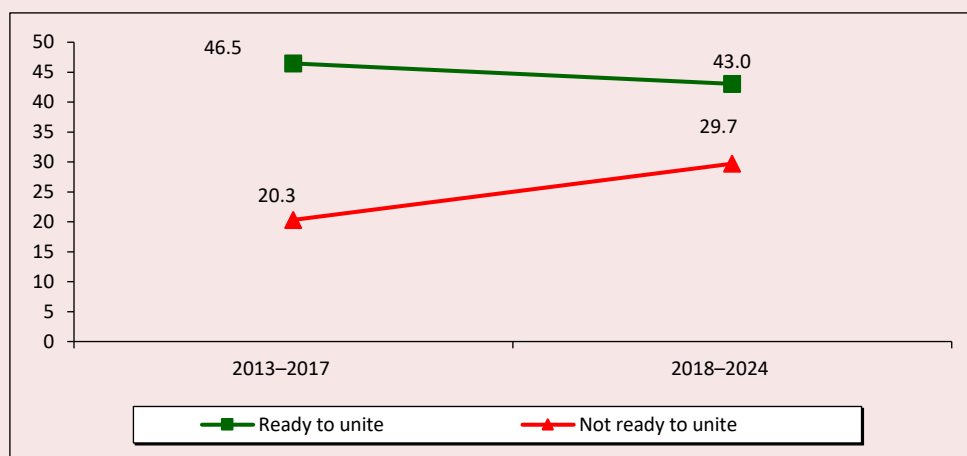
In fact, the level of support for the party in power ranges from 35 to 39%, according to VCIOM,

on average in the country and around 40–43%, according to VolRC RAS, according to the results of research conducted in the Vologda Region (*Insert 6*).

Thus, the situation regarding “trust” and “consent” – the first two methods of implementing a Social Contract, which “work” only in relation to the President, but not the entire system of public administration, can hardly be called satisfactory. At least in the context of presenting an Image of the Future of Russia, in which public trust in government has a stable, systemic character, and does not depend on one person.

With regard to the third method, “solidarity”, which “presupposes the willingness of people to interact”⁸⁵, the results of sociological measurements show that, on average, during Vladimir Putin’s fourth presidential term, compared with his third presidential term, the proportion of people who are not ready to unite for the sake of some kind of joint action, the realization of common goals, increased by 10 percentage points (from 20 to 30%; *Fig. 5*).

Figure 5. “There are people who are ready to unite with other people for any joint actions if their ideas and interests coincide, and there are people who are not ready to unite. Who would you consider yourself to be – the first or the second?”, % of respondents



The question is asked once a year, since 2011, the question was not asked in 2012.

Source: VolRC RAS data.

⁸⁵ Toshchenko Zh.T. (2025). The fate of the social contract in Russia: The evolution of ideas and the lessons of implementation: Monograph. Moscow: FCTAS RAS. P. 84.

Insert 5

Trust in state and non-governmental institutions, % of respondents

Institutions*	1996–1999	2000–2003	2004–2007	2008–2011	2012–2017	2018–2024	Dynamics (+/-), 2018–2024 to 2000–2003
President of the Russian Federation	26.5	58.2	58.6	56.0	55.3	55.1	-3
Church	37.9	42.6	44.3	47.8	44.7	47.2	+5
Prosecutor's Office	18.2	28.9	31.9	36.8	39.5	46.1	+17
Government of the Russian Federation	18.5	39.3	39.3	51.7	45.5	45.1	+6
FSB	12.6	32.6	33.4	37.5	38.5	44.4	+12
Police	14.1	26.0	27.0	33.6	37.2	44.4	+18
Army	34.2	33.8	27.8	35.0	39.6	43.3	+9
Court	19.8	30.9	33.9	37.4	39.1	43.0	+12
Leadership of the region	14.2	28.6	35.3	40.3	36.6	37.7	+9
Federation Council	13.4	27.9	31.7	39.3	37.4	35.8	+8
Local self-government bodies	–	–	29.5	35.9	32.9	35.7	+6**
State Duma	14.8	22.5	27.6	35.3	33.1	32.4	+10
Trade unions	20.2	26.0	27.6	31.0	27.4	32.2	+6
Media	15.4	29.1	29.1	30.5	28.0	30.9	+2
Non-governmental organizations	–	–	22.2	27.5	25.5	29.3	+7**
Directors, heads of enterprises	5.2	20.1	23.8	24.5	23.0	25.4	+5
Banking and business circles	8.5	13.9	20.5	22.2	19.4	23.1	+9
Political parties, movements	6.8	12.9	17.2	23.1	19.5	23.0	+10
TOTAL: Total number of negative changes / absence of changes / positive changes							1 / 0 / 17

* Excluding the "Public Chamber of the Russian Federation", the "Public Chamber of the Vologda Region" (included in the survey since 2010) and "scientific organizations" (since 2018).
** The comparison of the average for 2018–2024 and the indicators of V.V. Putin's second presidential term (2004–2007) is given. These answer options have been included in the survey since 2006.
Source: VoIRC RAS data. Ranked according to the average annual data for 2018–2024.

Approval of the activities of public authorities, % of respondents

Органы власти	1996–1999	2000–2003	2004–2007	2008–2011	2012–2017	2018–2024	Dynamics (+/-), 2018–2024 to 2000–2003
President of the Russian Federation	11.1	65.9	68.9	65.0	62.6	58.7	-7
Governor of the region	36.5	49.2	52.1	49.2	40.5	40.9	-8
Heads of local administration	30.1	38.7	40.3	42.4	38.3	39.7	+1
Government of the Russian Federation	23.8	42.6	46.6	51.0	43.9	39.2	-3
Federation Council	16.6	29.2	37.5	40.7	36.7	34.1	+5
State Duma of the Russian Federation	14.8	25.3	34.6	38.1	34.2	33.1	+8
Legislative Assembly of the region	19.9	29.0	36.3	35.6	32.7	31.6	+3
Representative body of local self-government	18.7	26.6	34.3	35.1	28.9	29.8	+3
TOTAL: Total number of negative changes / absence of changes / positive changes							3 / 0 / 5

Wording of the question "How do you assess the current activities of...?" (the combined responses are "fully approve" and "mostly approve").
Source: VoIRC RAS. Ranked according to the average annual data for 2018–2024.

Insert 6

Which of the following parties would you most likely vote for if election to the Russian State Duma were held next Sunday?
(one answer; VCIOM data on the national average), % of respondents

Respond option	Average annual data								Dynamics (+/-), January – June 2025 to...	
	2018	2019	2020	2021	2022	2023	2024	янв. – июнь 2025	2018	2022
United Russia	42.5	33.6	32.5	29.3	39.0	39.0	39.0	35.3	-7	-4
Communist Party	13.2	15.4	13.6	15.1	11.4	10.2	9.3	9.9	-3	-2
LDPR	10.0	12.3	11.5	9.3	8.2	9.1	9.3	10.9	+1	+3
Just Russia – Patriots for the Truth	5.0	6.0	6.1	7.0	5.8	5.2	3.7	4.0	-1	-2
New People*	–	–	–	7.6	4.9	4.5	6.5	6.4	–	+2
Non-parliamentary parties	7.4	10.0	11.8	12.4	9.6	9.7	9.8	10.2	+3	+1
Other**	21.9	22.7	24.5	24.1	21.1	22.3	22.4	23.2	+1	+2

* The New People party has been a member of the parliamentary parties since 2021.

** The "Other" answer option includes the answers: "I will come and ruin the ballot", "I'm not sure", "I would not participate in the elections".

Source: VCIOM. Rating of political parties / <https://wciom.ru/ratings/reiting-politicheskikh-partii/>

Methodology: telephone survey representing the adult population of Russia according to the main socio-demographic parameters.

Sample size is 1,600 respondents in at least 80 regions of the Russian Federation.

Which party expresses your interests? (one answer; VolIRC RAS data for the Vologda Region), % of respondents

Respond option	2018	2019	2020	2021	2022	2023	2024	Feb. – June 2025	Dynamics (+/-), Feb. – June 2025 to...	
									2018	2022
United Russia	37.9	33.8	31.5	31.7	35.2	39.5	42.9	40.7	+3	+6
Communist Party	9.6	9.1	9.5	9.3	7.3	7.0	7.1	8.0	-2	+1
LDPR	9.2	8.8	8.4	9.9	10.1	9.6	8.9	8.6	-1	-2
Just Russia – Patriots for the Truth	2.9	3.4	4.7	4.7	4.9	4.4	3.5	3.3	0	-2
New People*	–	–	–	2.3	1.5	1.9	2.0	2.6	–	+1
Other**	40.4	45.0	45.8	44.1	41.0	37.7	35.7	36.7	-4	-4

* The New People party has been a member of the parliamentary parties since 2021.

** The respond option "Other" includes the answers: "Other", "None", "I'm not sure".

Source: VolIRC RAS data. Methodology: survey based on the place of residence of the respondents. Surveys are conducted six times a year in Vologda, Cherepovets and 8 municipal districts and okrugs of the Vologda Region. Sample size is 1,500 people aged 18 and older.

Of course, we should note that the proportion of people who are ready to interact remains higher (43%), **but their share is decreasing (by 4 percentage points, from 47 to 43%), and most importantly— it is still not the majority of citizens.**

Thus, if we summarize some interim results of the analysis of the situation regarding the criteria of a Social Contract in Russia, we see that **at least three of them (“goal”, “means of achieving the goal” and “methods of implementing the Social Contract”)** have different problems, but each has not yet been brought to a level that would allow us to count on the real achievement of the **“philosophy of common destiny” between the state and society; on the opportunity to really turn the page of history. Even if an official state ideology is developed and adopted in Russia** (whatever name and form it may have).

The fourth criterion of the Social Contract is **“feedback between the state and society”**.

As Zh.T. Toshchenko writes, it “gets a full and complete embodiment in the case when such a criterion of a social contract as the **involvement of the people in the management of the affairs of society and the state** is realized. Moreover ... in addition to direct participation in the work of governing bodies, in our opinion, it is worth talking about **the possibility of influencing decision-**

making... It is the **awareness of involvement** and engagement in the management process that makes people themselves more responsible in their social and working lives...”⁸⁶

Long-term monitoring studies conducted by VolRC RAS show that this criterion of a Social Contract in Russia remains in a stable and, unfortunately, in a negative condition. It is clear that people do not believe they can influence the state of affairs in the city, region or at the national level. **Only 5–9% of the population thinks otherwise (on average for 2018–2024; Tab. 5).**

We will also cite data from sociological surveys that reflect, perhaps, the quintessence of the state of all criteria of a Social Contract (Tab. 6). On average, during Vladimir Putin’s fourth presidential term (2018–2024), compared with his first presidential term (2000–2003):

- ✓ the proportion of those who believe that “the rich are getting richer and the poor are getting poorer” has not changed and still stands at 54%;
- ✓ the proportion of those who believe that “people in power don’t care about ordinary people” increased by 7 percentage points (from 40 to 47%);
- ✓ the share of those who “do not feel like a participant in the events taking place in the country” has also increased and amounts to 37% (by 3 percentage points, from 34 to 37%).

Table 5. “Do you think you can personally influence the state of affairs today...?”
(response option is “yes”), % of respondents

Area of life	2013–2017	2018–2024	2018–2024 to 2011–2017
In my family	79.8	84.6	+5
At work	41.5	42.2	+1
In the house, in the yard	34.3	35.3	+1
In the city, in the neighborhood	8.1	8.8	+1
In the region	4.0	5.3	+1
In the country	3.6	5.4	+2
TOTAL: Total number of negative changes / absence of changes / positive changes			0 / 0 / 6
The question is asked once a year since 2011. The question was not asked in 2012. Source: VolRC RAS data.			

⁸⁶ Toshchenko Zh.T. (2025). The fate of the social contract in Russia: The evolution of ideas and the lessons of implementation: Monograph. Moscow: FCTAS RAS. P. 87.

Table 6. Please read the following opinions about life in our society and mark those with which you agree, % of respondents

Respond option	Average annual data for presidential terms					Dynamics (+/-), 2018–2024 to 2000–2003
	2000– 2003	2004– 2007	2008– 2011	2012– 2017	2018– 2024	
The rich get richer, and the poor get poorer	53.9	37.8	45.6	47.0	53.5	0
People in power don't care about ordinary people	39.7	38.8	41.2	44.1	47.4	+7
I don't feel like a participant in the events taking place in the country	34.0	26.7	33.8	32.5	36.8	+3
The main thing for the central government in Moscow is to solve its problems at the expense of the regions and republics of Russia	25.5	22.9	21.7	27.9	33.1	+8
Now everyone who can and wants to work is able to ensure their financial well-being	28.7	26.9	29.8	28.5	29.3	+1
The authorities take care of the lives of ordinary people	4.5	6.0	7.2	5.2	8.2	+4
The Center pursues a policy in the interests of the regions	4.0	3.2	5.8	4.6	7.3	+3
Each of us can influence events in the country	5.6	5.6	4.6	6.8	6.2	+1
Source: VolRC RAS data. Ranked according to the average annual data for 2018–2024.						

It only remains to add that in the structure of respondents' judgments about life in the country, the assessments listed above were and remain the most common throughout Vladimir Putin's presidential terms.

Thus, we get a general picture (based on long-term statistical data, expert assessments and opinions of citizens themselves, recorded by sociological surveys), indicating that the state of all

criteria of a Social Contract does not yet allow us to talk about the possibility of its real achievement, at least without a correct assessment (primarily on the part of the President), conclusions and corrections of the situation that has developed today as a result of the country's 30-year stay in a "liberal fog"...⁸⁷

And this essentially correlates with the conclusions of Zh.T. Toshchenko, who points out the "deformation of the existing Social Contract":

"There is a discrepancy between what the state considers important and necessary for its existence, and how people think about this importance and necessity. In other words, **in reality there are disagreements between the state and a part of the people**. This means that the state, represented by the political authorities, will not only have to comprehend this discrepancy, be aware of it, but also minimize it, not bring the situation to social tension, conflict, and even a possible social explosion"⁸⁷.

"In modern Russian reality, the Social Contract has significant reserves for its improvement in terms of coordinating development goals, means of achieving them, ideological support, regular feedback, and, finally, the effective participation of all social communities and groups in managing the affairs of society and the state. **In modern Russian reality, the Social Contract has significant reserves for its improvement in terms of coordinating development goals, means of achieving them, ideological support, regular feedback, and, finally, the effective participation of all social communities and groups in managing the affairs of society and the state.**

⁸⁷ Toshchenko Zh.T. (2025). The fate of the social contract in Russia: The evolution of ideas and the lessons of implementation: Monograph. Moscow: FCTAS RAS. P. 612.

However, at present, solutions to specific state and public problems in a significant number of cases lead to deformed processes and phenomena that do not always embody the equal unity of the people and political power, which leads to various forms of tension reflecting the deformation of the existing Social Contract”⁸⁸.

The situation in the country, which has developed as a result of the constitutional ban on state ideology, and in fact, the establishment of a liberal ideology of the “consumer society”, prevents the formation of a new Social Contract; creates conditions when, even if the official state ideology is adopted, it will face inconsistencies in its content with reality.

For “ordinary” people, for the majority of Russians, it simply will not be the Truth and therefore will not have the effect that Zh.T. Toshchenko calls the “philosophy of the common destiny” of the state and the people – “mutually coordinated achievement of goals, means and methods of their implementation”⁸⁹.

Nevertheless, this only reinforces the urgency of developing and adopting ideology in Russia **in exactly the form in which experts propose to do it today: compulsory “for those who seek to join the cohort of leaders of the Russian state”⁹⁰.**

After all, today many experts are formulating very specific outlines of the Image of the Future of Russia, which correspond to the needs of the population and could well become the basis of a new Social Contract ... **but who will solve all these tasks?**

“Putin expressed confidence that SMO members will be able to take their rightful place in Russia’s managerial elite, where they are planned to be incorporated through various projects and programs. Of course, this vector is absolutely correct. But so far one important question has remained unanswered: **‘How can such an incorporation of patriotic-minded cadres be carried out into the dominant stratum that has been created for decades, a significant part of which is damaged by ultra-liberal ideas, as well as corruption and other vices?’**”⁹¹

“A revised Social Contract includes the following requirements: a new ideology; defining the economic system of the country; ensuring professional social elevators and personal responsibility; integrating the Bank of Russia into the general system of government; de-bureaucratization of the economy; combating extreme forms of inequality; ending uncontrolled immigration; introducing responsibility for political sabotage. The ideology of Russian Civilization is the supporting structure of a new Social Contract”⁹².

⁸⁸ Toshchenko Zh.T. (2025). Social contract in modern Russia: Has a balance of interests been achieved? Sotsis, 2, p. 12.

⁸⁹ Ibidem. P. 5.

⁹⁰ Karaganov S. (2025). A living idea-dream of Russia. The Code of the Russian in the 21st century: Report within the framework of the project “The Russian Idea-Dream and the Code of the Russian in the 21st Century” under the auspices of the Council on Foreign and Defense Policy and the Faculty of World Economics and World Politics of the National Research University Higher School of Economics. July 2025. P. 17.

⁹¹ Kassin O. On the “political oncology” of the modern “elite” and its treatment measures. Available at: https://zavtra.ru/blogs/o_politicheskoy_onkologii_sovremennoj_eliti_i_merakh_eyo_lecheniya?ysclid=mdx0037c62281119492

⁹² Balatsky E.V., Ekimova N.A. (2022). Social contract in Russia: Before and after 2022. Journal of Institutional Studies, 14 (3), p. 74.

Therefore, without a qualitative reorientation of the entire public administration system and its personnel toward publicly stated conditions for the implementation of ideology (statehood, sovereignty, patriotism, traditional values, social justice, etc.), it is extremely difficult to achieve compliance with the country's situation with the criteria of a new Social Contract. **This means that we will not have the Social Contract itself; we will not reach a new stage of historical development; we will not “turn over the page” of a “semi-colonial” Russia to build a sovereign Russia.**

“You can issue decrees about traditional values, write books about heroes, show movies about faith and self-sacrifice, hold festivals and forums about preserving historical memory, but if there is a public enthusiasm for overconsumption, wealth and luxury, then children will be lost and wars will be lost”⁹³.

Even taking into account the fact that the state continues to pursue a very important and necessary active domestic policy to strengthen traditional values in society, social protection of the general

population, support for SMO participants, etc. (Insert 7).

In conclusion, we note that in the discussion about whether Russia needs an ideology or not, whether a “big country” needs a “Big Idea”, we agree more with the position of S. Karaganov and the team of experts whose opinion he generally expresses⁹⁴. It is difficult to disagree with the fact that “great nations are not built without great, guiding ideas, and having lost them, they collapse with a thunderous crash”⁹⁵.

But in order for a Big Idea to captivate the masses, so that it can give people a clear and precise Image of the Future of the country and their personal lives in this country, and not become another “dead project” that contradicts reality and thus undermines trust between society and government, **this Big Idea should not just be formulated. The society should be shown the realism of its implementation** in real practical steps to achieve social justice, overcome inequality, and ensuring personal responsibility of officials, which implies the inevitability of punishment for deliberate abuse of their official position. A. Shkolnikov writes: “If the society sees that the movement toward strategic goals is underway, it begins to support the proposed solutions, trusting the leaders...”⁹⁶

⁹³ N. Mikhalkov's program “Besogon”: “Laziness as an engine of progress” (episode aired August 1, 2025). Available at: <https://besogontv.ru/videos/len-kak-dvigatel-progressa/>

⁹⁴ Yu.V. Popkov, N.S. Mikhalkov, E.V. Panina, K.G. Shakhnazarov, A.G. Dugin, F.A. Lukyanov, P.N. Malyutin, and others. All of them are mentioned in S. Karaganov's report “A living idea-dream of Russia” as people on whose opinions he relied in his conclusions.

⁹⁵ Karaganov S. (2025). A living idea-dream of Russia. The Code of the Russian in the 21st century: Report within the framework of the project “The Russian Idea-Dream and the Code of the Russian in the 21st Century” under the auspices of the Council on Foreign and Defense Policy and the Faculty of World Economics and World Politics of the National Research University Higher School of Economics. July 2025.

⁹⁶ Shkolnikov A. Conciliarity of defining strategic goals and objectives. Available at: https://zavtra.ru/blogs/sobornost_opredeleniya_strategicheskikh_tcelej_i_zadach?ysclid=mdy5h0cmdr763258073

The monitoring of regulatory legal acts (laws, decrees) signed by the RF President in the period from June 22 to August 18, 2025⁹⁷

MEASURES TO SUPPORT SMO PARTICIPANTS AND THEIR FAMILY MEMBERS, TO DEVELOP THE MILITARY-INDUSTRIAL COMPLEX, MEASURES RELATED TO MOBILIZATION, ORGANIZATION OF MARTIAL LAW, INCREASE IN THE ANTI-TERRORIST PROTECTION OF FACILITIES

June 24 – Federal Law 162 “On Countering the Legalization (Laundering) of Proceeds from Crime and the Financing of Terrorism”. The interdepartmental coordinating body responsible for countering the financing of terrorism and extremist activities is authorized to make a decision on freezing (blocking) funds or other property of an organization or individual involved in sabotage activities (including the financing of sabotage).

July 7 – Federal Law 196 “On Amendments to Articles 3 and 4 of the Federal Law on Veterans”. A law has been signed extending the status of a combat veteran to members of the SMO who have performed tasks in the territories of the DPR, LPR, Kherson and Zaporozhye regions since their admission to the Russian Federation.

July 7 – Federal Law 204 “On Amendments to Certain Legislative Acts of the Russian Federation”. Powers of attorney and wills of citizens staying in volunteer formations are equivalent to notarized ones if they are certified by the commanders of military units.

July 7 – Federal Law 212 “On Amendments to Certain Legislative Acts of the Russian Federation”. It provides for granting stateless persons the right to conclude a contract for military service in the Armed Forces of the Russian Federation and military formations.

July 23 – Federal Law 230 “On Amendments to Article 333 of Part Two of the Tax Code of the Russian Federation”. Participants of the SMO and their family members are exempt from paying the state fee when submitting applications to the court for the establishment of facts of legal significance, for the recognition of a citizen as missing or for declaring a citizen deceased.

MEASURES TO PROTECT INFORMATION SECURITY, REGULATE THE ACTIVITIES OF FOREIGN AGENTS, AND UPBRING AND EDUCATE THE YOUNGER GENERATIONS

June 24 – Federal Law 156 “On the Creation of a multifunctional information Exchange service and on Amendments to Certain Legislative Acts of the Russian Federation”. The law on the creation of a national messenger. The messenger’s functionality includes: signing documents using electronic signatures of various degrees of protection; interaction of participants in educational relations; provision by citizens of the Russian Federation of information contained in documents certifying the identity of a citizen of the Russian Federation, if necessary, confirmation of age, confirmation of entitlement to benefits, etc.

June 24 – Federal Law 168 “On Amendments to Certain Legislative Acts of the Russian Federation”. The law on the protection of the Russian language has been signed. The law is aimed at limiting the use of foreign words in public space.

June 24 – Federal Law 171 “On Amendments to the Code of Administrative Offences of the Russian Federation”. Administrative liability has been tightened for failure to comply with the legal requirements of an official of the Ministry of Justice or its territorial body, as well as for obstructing the performance of his official duties. The fine for the absence of labeling of materials of foreign agents – organizations has been increased (from 10 to 30 thousand rubles). When committing offenses abroad, foreign agents can be held administratively liable in absentia for non-compliance with the requirements for their activities. Officials of the Ministry of Justice may conduct an administrative investigation in case of violation of the procedure for the activities of a foreign agent.

⁹⁷ The insert is a continuation of the monitoring of the most important regulatory legal acts signed by the President of the Russian Federation, which we have been conducting since June 2022 (the first issue of the monitoring is presented in the article: Ilyin V.A., Morev M.V. (2022). A difficult road after the Rubicon. Economic and Social Changes: Facts, Trends, Forecast, 15(3), 9–41).

<p>June 24 – Federal Law 173 “On Amendments to Article 282 of the Criminal Code of the Russian Federation” Criminal liability is established for actions aimed at inciting hatred or enmity, as well as humiliating the dignity of a person or group of persons on the grounds of gender, race, nationality, language, origin, attitude to religion, as well as membership in any social group, committed in public.</p> <p>July 11 – Decree 474 “On Approval of the Fundamentals of the State Language Policy of the Russian Federation”. The fundamentals of the state language policy of Russia have been established. The law provides for the introduction of a unified methodology for teaching Russian language and literature in the implementation of basic general education programs; the creation of a single line of textbooks and teaching aids in Russian language, literature and literary reading; professional development of government and municipal employees in additional professional programs that improve the level of proficiency in the Russian language; a comprehensive system for assessing the level of linguistic adaptation of foreigners arriving in Russia; alphabets of the languages of the peoples of Russia based on Cyrillic; a single line of textbooks on the official languages of the republics of Russia and a single methodology for teaching them; a single testing system for Russian as a foreign language.</p> <p>July 23 – Federal Law 215 “On Amendments to Articles 4 and 16 of the Law of the Russian Federation ‘On Mass Media’ and Articles 1 and 9 of the Federal Law ‘On Countering Extremist Activities’”. The definition of an “extremist organization” is being clarified, which also recognizes an extremist community on the basis of a criminal conviction that has entered into force against a person for creating such a community, leading it or participating in it. The activities of such a community will be subject to a ban. The community is included in the list of organizations recognized as extremist in accordance with the legislation of the Russian Federation. Amendments have also been made to clarify responsibility for organizing and participating in the activities of an extremist organization (Federal Law 216) and clarified responsibility for violating the requirements for the dissemination of information about extremist and terrorist organizations (Federal Law 217).</p> <p>July 23 – Federal Law 247 “On Amendments to Article 2434 of the Criminal Code of the Russian Federation”. Criminal liability is established for desecration of military graves, as well as monuments, steles, obelisks, other memorial structures or objects perpetuating the memory of those who died in defense of the Fatherland or its interests or dedicated to the days of military glory of Russia.</p>	<p>MEASURES TO PROVIDE SOCIO-ECONOMIC SUPPORT TO THE GENERAL POPULATION, STRENGTHEN THE COUNTRY’S ECONOMY, INCLUDING IN THE INTERNATIONAL ARENA</p> <p>June 24 – Federal Law 176 “On Amendments to Article 187 of the Criminal Code of the Russian Federation”. Criminal liability has been established for transferring an electronic means of payment and (or) access to it to another person for illegal transactions, as well as for illegal transactions using such a means of payment at the direction of another person and (or) in his interests.</p> <p>July 23 – Federal Law 249 “On Amendments to the Federal Law on State Benefits for Citizens with Children”. Starting from September 1, 2025, the amount of maternity benefits for women studying full-time has been increased to the minimum subsistence level for the able-bodied population established in the subject of the Russian Federation at their place of residence.</p>
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In this sense, ideology, which is obligatory for the ruling elites, seems to be a perfectly reasonable tactical step in the implementation of a more global strategic task – the formation of a new Social Contract in Russia... It is not just about the wording and not only about the “intellectual efforts” (as A. Dugin writes) of representatives of the expert community, but **above all about the efforts of political will on the part of the President and the ruling party.**

“Nowadays, it is necessary to realize that it will not be possible to immediately replace the entire political, economic and cultural social stratum that has dominated Russia since the end of the twentieth century... **At the first stage, it is important to place the current dominant social stratum and the entire so-called ‘old elite’ within the strict framework of new ideological and moral realities, tightly controlling this process**”⁹⁹.

“There is a large-scale and very difficult work ahead. It is obvious that the replacement of key leaders in ministries, departments and in the field should be carried out carefully, gradually, without shocks and disruptions to their functioning... It is necessary to continue the painstaking work to tighten responsibility for embezzlement and corruption, to ensure the inevitability of penalties and to close all loopholes for tax evasion and capital withdrawal...

The problem of elite renewal and the ways to solve it are clear. It’s solely up to the president’s political will to bring what he started to an end”⁹⁸.

We should note that the head of state does not have much time to solve this most difficult task – to complete the process of internal transformation of the country (first of all, the public administration system and its personnel).

Because even with the achievement of long-term agreements on the settlement of the Ukrainian conflict (which, in particular, is indicated by regular contacts between Russia and the United States since the beginning of 2025, including the meeting of Vladimir Putin and Donald Trump on August 15), there are too many signs¹⁰⁰ that the Collective West may make another attempt to encroach on sovereignty and the territorial borders of the Russian Federation. **At the moment when Vladimir Putin will “hand over” the country to his successor**¹⁰¹.

⁹⁸ Batchikov S. The time of the best. Available at: <https://izborsk-club.ru/27211?ysclid=megpbxnvos897001134>

⁹⁹ Kassin O. On the “political oncology” of the modern “elite” and its treatment measures. Available at: https://zavtra.ru/blogs/o_politicheskoy_onkologii_sovremennoj_eliti_i_merakh_eyo_lecheniya?ysclid=mdx0037c62281119492

¹⁰⁰ See for example:

1. “All the efforts of this Euro-Atlantic community are focused on preparing for a new war. And Germany, together with France and the UK, is at the head of this” (Sergey Lavrov’s speech at the Antalya Diplomatic Forum on April 12, 2025. Available at: www.mid.ru/ru/press_service/minister_speeches/2008763/?ysclid=me5q765lxz256468564).

2. “The publications of a number of European think tanks say that short-term sanctions against the Russian Federation have already exhausted most of their resources. **Therefore, their effectiveness should shift toward a structural, long-term weakening of Russia’s capabilities in the international arena.** Sanctions are becoming part of a policy to limit Russian capabilities in the energy, mining, and nuclear industries... **This is now not just a punishment in the context of the Ukrainian crisis, but a tool for restructuring the geopolitical balance in favor of the EU and deterring Russia for years to come**” (source: On the evolution of the EU’s approach to anti-Russian sanctions. Available at: https://www.ng.ru/editorial/2025-07-17/2_9296_red.html).

¹⁰¹ According to the current Constitution of the Russian Federation, Vladimir Putin may nominate his candidacy for the presidential election in 2030, that is, theoretically, we are talking about a maximum of 2036, which by historical standards is not such a long time.

“The West’s strategy toward Russia, after an unsuccessful attempt to inflict a strategic defeat, is to **exhaust it economically and psychologically in the war, to undermine our society, to undermine faith in the country’s leadership and its policies, causing new turmoil**. The opponent proceeds from the fact that its efforts must **reach a climax during the transfer of supreme power**”¹⁰².

This means that by this time the country should be ready for everything; it should be ready internally – to have a well-functioning mechanism for self-reproduction of personnel in the public administration system (and not in the “manual control” mode); to have a common and clear understanding of the present and future between society and government (what Zh.T. Toshchenko calls the “philosophy of the common destiny” of the state and the people); **to have a single Russia**, rather than two, three or four Russias¹⁰³, at least at the moment when the conditions for ensuring national security and protecting national sovereignty require it.

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¹⁰² Trenin D. The Age of wars: The Third World War has already begun, but not everyone understands this. Profil. July 12, 2025.

¹⁰³ See for example:

1. “Colleagues from the company “Minchenko Consulting” have proposed an interesting typology reflecting the changes in our society against the background of the SMO. **According to their version, we have not one Russia, but four Russias. The first is fighting in the war. The second has left. The third is in the capital city. The fourth is ‘deep’**” (source: VCIOM CEO Valery Fedorov in an interview with Rossiyskaya gazeta newspaper spoke about “four Russias” and the trends of 2023. Available at: <https://rg.ru/2023/01/11/chetyre-rossii-ishchut-sebia.html?ysclid=me5kkog1zm688143615>).

2. “The Ukrainian enemy and the Collective West supporting it are working hard to destroy the existing concept of ‘two Russias’: the one that is ‘getting its kicks’ and the one that is ‘fighting in the war’... **The current ‘tactical program’ of the country, according to which some are fighting, and in the Russian regions people live as before**, has its advantages. If tactics change, then ‘a very moody part of the population’, accustomed to rolling in luxury, ‘may get angry’... **Our response to this can be only one thing – transformation of our country into a unified and popularly supported concept of a fighting Russia, which is intensively preparing for future, even bigger troubles**” (source: Kurginyan S. Ukraine expects to collapse the doctrine of a Russia that is ‘getting its kicks’ and a Russia that is ‘fighting in the war’. Available at: <https://rossaprimavera.ru/news/caa70312https://rossaprimavera.ru/news/caa70312?ysclid=m204snstfk186009988>

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Economic Significance of Heterogeneity in the Innovative Development of Russian Regions in the Context of External Shocks



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Abstract. Modern research highlights the role of technological gaps and heterogeneity of innovative development in differentiating the level and pace of economic growth. This actualizes the analysis of trends in convergence and divergence of levels of innovative development of territories and the identification of special technological clubs within which regions develop convergently. The study systematizes theoretical and empirical approaches to the analysis of differentiation of economic development, understood as a result of differentiation of innovative development. A methodology has been designed to analyze the dynamics and differentiation of innovation activity of Russian enterprises over a long period of development (2010–2023 with details for 2010–2014, 2015–2018 and 2019–2023), taking into account changes in the methodology of statistical observation. An important feature of the methodology is tracking the innovative development of territories both in terms of the costs of innovation activities and the production of innovative goods, which allows using a common economic grouping of regions. The trends in regional innovative development have been identified in terms of changes in innovation activity and its differentiation within the economic groups of regions, which allowed formulating some hypotheses about the relationship between innovative and economic development of Russia's regions; the hypotheses are to be tested in future studies.

Key words: innovation, innovation activity, economic development, convergence, divergence, external shocks, Russia's regions.

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Introduction

The processes of convergence and divergence of the levels of economic development of the regions of Russia and foreign countries have been in the focus of attention of researchers for several decades. A close relationship between technology, innovation, and economic growth has been established for the regions of European countries (Badinger, Tondl, 2003; Basile, 2008; Guastella, Timpano, 2016), China (Jimenez-Moro et al., 2023), the United States (Ó'hUallacháin, 2008), and Russia (Domnich, 2023; Nesytykh, 2024). Research highlights the increasing role of innovation and technology gaps in regional divergence of per capita income and labor productivity (Fagerberg, Verspagen, 1996; Rodríguez-Pose, Crescenzi, 2008; Chapman, Meliciani, 2017). Thus, the scientific and practical significance of a multidimensional analysis of regional dynamics and interregional differentiation of innovation activity is determined by the key role of innovation in the mechanism of modern economic growth. In turn, the innovation activity of Russian regions today is enormously and increasingly influenced by external shocks (Shida, 2019; Li, Li, 2022; Shkodinsky et al., 2022; Lenchuk, 2023). It is also necessary to take into account the frequent changes in the methodology of statistical observation of innovations, as well as the multidimensional nature of innovation itself as a phenomenon (Domnich, 2024a).

The aim of the study is to analyze the regional dynamics and differentiation of innovation activity in Russian regions in terms of the costs of innovation and the production of innovative goods. The objectives of the study include theoretical substantiation of the role of technological progress and innovation in differentiating the rates of economic development of countries and regions; substantiation for grouping Russian regions that take into account the comparative level of innovative development; calculation of indicators of innovation activity and

its differentiation within the proposed groups of regions, and an economic analysis of the identified trends.

The subject of research is spatial and temporal differentiation of the innovation activity of Russian enterprises in the regions of Russia. The object of study includes 81 regions in 2010–2023¹ with details for three periods: 2010–2014, 2015–2018 and 2019–2023, due to significant changes in the volume of innovation costs and output during these periods, as well as in the methodology of statistical observation.

Theoretical foundations of the research

Economic growth is a necessary condition for the convergence of economies; therefore, convergence processes are analyzed primarily within the framework of growth theories. Technological progress is considered to be the main source of growth and related processes of convergence or divergence in the long term. Economic growth theories consider the role of technological progress in these processes from different perspectives.

In neoclassical growth models (Solow, 1956; Swan, 1956), technological progress is an exogenous process. It is assumed that technology and knowledge are public goods and all economies (countries and regions) have access to them. Hence, a region-wide and global convergence of growth trajectories is forecasted, based on a decrease in returns on capital accumulation when economies strive for a common long-term sustainable condition.

In endogenous growth models (Romer, 1986; Lucas, 1988), technological progress occurs within the economy due to investments in research and human capital. The unequal ability of countries and regions to accumulate such resources causes the divergence of growth trajectories.

¹ Sevastopol, the Republic of Ingushetia, the Republic of Crimea, and the Chechen Republic were excluded from the sample.

In Schumpeterian models of innovation-based growth (Romer, 1990; Aghion, Howitt, 1992; Grossman, Helpman, 1994), technological progress depends on accumulated knowledge (Coe, Helpman, 1995). Knowledge is considered as appropriated and non-competitive good, which explains the possibility of increasing returns from its use (Castellacci, 2007). The externalities resulting from the dissemination of knowledge are the most important source of sustainable growth in the long term (Koo, 2005). Therefore, differences in innovation potential between countries and regions become the main reason for persistent differences (divergence) in economic indicators (Rodríguez-Pose, Crescenzi, 2008).

In the Schumpeterian multi-country growth model (Howitt, 2000), innovation requires skilled labor and is the only source of technological progress. There are differences between innovative countries that carry out research and development, and non-innovative countries where research and development is not carried out. As a result of technology exchange, innovative countries form clubs whose members develop convergently along parallel growth trajectories; at the same time, non-innovative countries stagnate. In the detailed model (Howitt, Mayer Foulkes, 2005), qualified human resources are already required for both innovation and simulation activities. Accordingly, the countries are divided into three groups: innovation, imitation and stagnation. Innovators and imitators develop along a converging trajectory, but they do not achieve the same level of productivity. The ability of technologically lagging countries and regions to adapt the latest innovations can be undermined by the outflow of human capital, preventing the gap in innovation activity, productivity and income from being bridged.

Thus, in the Schumpeterian tradition, differences in the ability of economies to create and imitate innovations are considered as the most important source of income polarization and the

formation of convergence clubs (Castellacci, 2008). Economic growth is the result of the action of two opposing forces: innovation, which generates a technological and economic gap, and imitation, which, as a rule, reduces it (Fagerberg, 1987). Technological progress can be both a driver of convergence (through imitations) and divergence (through innovations) of development levels (Verspagen, 2010). Technologically backward economies can take advantage of their position and increase their growth rates by spreading technology by imitating it (Castellacci, 2007; Fagerberg, 1987). The rate of convergence or divergence depends on the comparative innovation activity in lagging and advanced economies (Fagerberg, 1987).

Therefore, empirical research is aimed, first, at identifying certain technological clubs of countries and regions, and second, at a comparative analysis of the growth and development drivers of such clubs. Based on the research objectives, we are primarily interested in the first task. In our opinion, there are currently two main approaches to its solution: static and dynamic.

The static allocation of technological clubs of countries and regions is based on the methods of cluster and factor analysis of indicators of science, technology, innovation and education, as well as reducing their size. For example, (Castellacci, 2008) groups 149 countries into advanced (19 countries), follower (87 countries) and marginalized (43 countries) economies, using cluster analysis based on two indicators: number of scientific articles per capita (“innovative ability”) and literacy rate (“absorptive capacity”) in 1990 and 2000. In the advanced version of the study, 131 countries were grouped into clubs of the same names based on two orthogonal factors: “technological infrastructures and human skills” and “creation and diffusion of codified knowledge” (Castellacci, Archibugi, 2008). In turn, these factors represent linear combinations of the following eight indicators: patents per capita, scientific articles, Internet penetration, telephone

penetration, electricity consumption, tertiary science and engineering enrolment, mean years of schooling, and literacy rate. Similarly, in the work (Stollinger, 2013), 142 countries are divided into three clubs: innovators (24 countries), imitators (80 countries) and backward countries (38 countries), based on cluster analysis using three indicators: R&D expenditure as a percentage of GDP, literacy rate, and average years of schooling in 2005–2009.

The regional specification of national economies also makes it possible to use spatial econometrics tools to demarcate technological clubs. Thus, based on the analysis of spatial correlations of 30 indicators assessing the level of education, employment by sector, unemployment rate, level and growth rate of GDP (GRP), population density and patents by industry in the regions of the European Union (EU) for 1999–2003, it is shown that the latter form a spatial hierarchy of four groups: Southern Europe, Eastern Europe, and two groups of Northern and Western Europe (Verspagen, 2010).

The dynamic clustering of technology clubs is based on a methodology developed in (Phillips, Sul, 2007) for identifying converging time series of panel data. Unlike static clustering methods that group regions using a priori criteria, this approach makes it possible to do this endogenously, identifying groups based on implicit (hidden) factors that determine the convergence of development trajectories within each of the groups. It is based on a sigma convergence of a panel of regions and models its structure as a nonlinear relationship in which the coefficients may vary through time (Barrios et al., 2019, p. 1549). Thus, there are not just clusters, but convergence clubs of countries and regions.

Based on the analysis of patent statistics, methodological studies (Phillips, Sul, 2007) have identified technologically convergent clubs in the EU (Barrios et al., 2019) and China (Jimenez-Moro et al., 2023) regions. In both cases, it is proved that there is no single convergent equilibrium trajectory

of innovative development for all regions, which contradicts neoclassical growth models, but is predicted in Schumpeterian models. It is also shown that the number of highly developed leading regions developing convergently in both the EU and China is very small. In the EU in 2002–2012 there were only two such regions in the first club in terms of patent activity (Vorarlberg in Austria and Zeeland in the Netherlands) and six in the second club in terms of development (two regions of Germany, Finland and Sweden each); and in China in 1987–2020 there were seven eastern regions (Anhui, Beijing, Guangdong, Jiangsu, Shandong, Shanghai, Zhejiang), and the composition of the leadership group changed in 1987–2000, 2000–2010, and 2010–2020.

Today, the practice of clustering Russian regions, both innovative and technological, and general economic, is dominated by a static multi-criteria approach (Ketova et al., 2021; Byshev et al., 2024; Verenikin, Verenikina, 2024). Regions are arranged into groups and clusters based on formal manipulation of all available statistical indicators. In contrast to the mainstream foreign approaches to identifying regional innovation clubs (Castellacci, 2008; Verspagen, 2010; Stollinger, 2013; Barrios et al., 2019; Jimenez-Moro, et al., 2023) groupings of Russian regions are de facto not based on any theoretical foundation and, in fact, represent a set of statistical artifacts. In addition, it is not uncommon to use science and technology indicators that are not suitable for assessing the volume of innovation in Russian conditions, such as the number of patents and employment in the scientific sector (Baburin, Zemtsov, 2013; Zemtsov et al., 2015).

We have identified technology clubs in Russian regions based on two important and relevant indicators of innovation (the cost of innovation and the volume of innovative products), and used both static and dynamic clustering techniques to group them.

Research methodology

In accordance with the objectives, the study was conducted in two stages.

At the first stage, specific indicators, time periodization, and the grouping of Russian regions for research purposes were substantiated.

Innovations determine the quality of economic development at all stages of the economic cycle, so it is important to analyze the dynamics and differentiation of innovation activity in the regions of Russia both in terms of innovation costs ($inno_{it}^{input}$), and innovation output ($inno_{it}^{output}$), where i – index of the region, and t – time. The only source of data on innovation costs and output is statistical observation according to Form 4-innovations (Domnich, 2024a; Domnich, 2024b). It allows estimating the indicators of innovation activity by input and output as, respectively, the ratio of the cost of innovation zid_{it} ² and volume of shipped innovative products oit_{it} ³ to the total volume of products shipped by enterprises that filled in Form 4-innovations $output_{it}$ ⁴:

$$inno_{it}^{input} = zid_{it}/output_{it}; \quad (1)$$

$$inno_{it}^{output} = oit_{it}/output_{it}. \quad (2)$$

The cost indicators under consideration are brought to a comparable form by converting them into the 2010 prices using the deflators we consider

most relevant. For oit_{it} и $output_{it}$ it is the producer price index⁵, and for zid_{it} – index of the prices of products (costs, services) for investment purposes⁶.

There are not many works on issues concerning innovative development periodization (Domnich, 2023; Domnich, 2024a). In this case, it is based on the dynamics of innovation costs and the volume of innovative goods in the Russian economy in 2010–2023 (Fig. 1). This dynamic depends both on objective processes in the national economy and on changes in the sectoral coverage of the statistical survey according to Form 4-innovations⁷. We can observe a growth period of 2010–2014, a stagnation period of 2015–2018, and a period of mixed dynamics, due, among other things, to a significant increase in the number of industries covered by the survey, 2019–2023.

We have made an economic grouping of regions whose large and medium enterprises (according to the results of the survey based on Form 4-innovations) carry out innovations on a regular basis (Fig. 2). The idea behind the economic grouping (I1... I6) is to identify such groups of regions that would form a time-stable hierarchy from the most developed regions to the least developed ones. At the same time, it is desirable that the rating of regions by innovation costs correspond to their rating by innovation output, that is, if R_{it} – rank (place in the rating) of region i at time t ,

² Costs of innovative activity of organizations (since 2010). Available at: <https://rosstat.gov.ru/storage/mediabank/Innov-5.xls> (accessed: 20.02.2025).

³ Volume of innovative goods, works, and services in 2016. Available at: <https://www.fedstat.ru/indicator/31278> (accessed: 20.02.2025); Volume of innovative goods of own production shipped, amount of own works and services performed (excluding VAT, excise taxes and other similar payments) since 2017. Available at: <https://www.fedstat.ru/indicator/58761> (accessed: 20.02.2025).

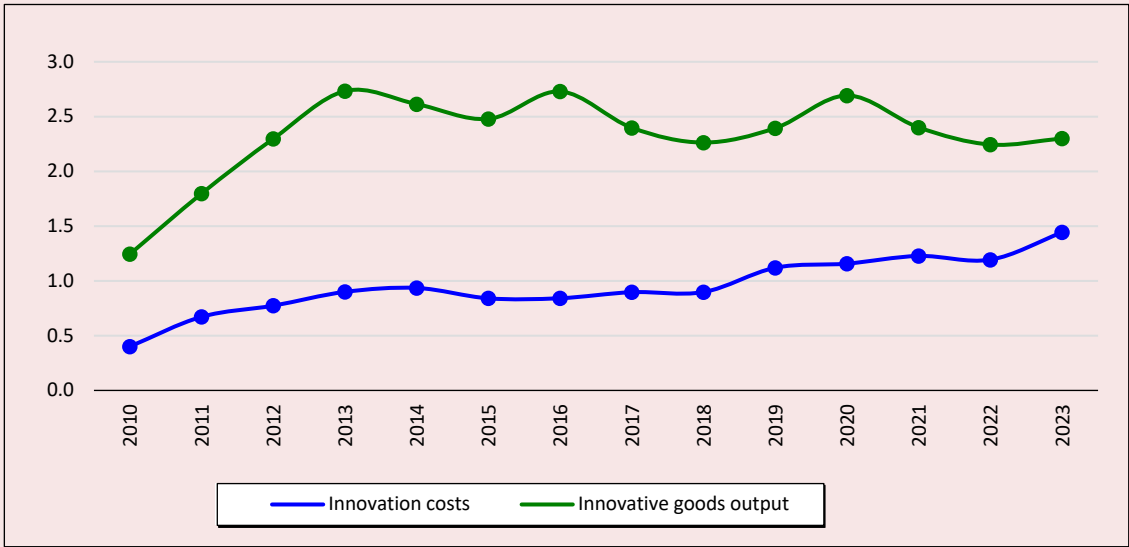
⁴ Volume of goods of own production shipped, amount of own works and services performed (excluding VAT, excise taxes and other similar payments) by industrial production and service organizations in 2016. Available at: <https://www.fedstat.ru/indicator/43014> (accessed: 20.02.2025); Volume of goods of own production shipped, amount of own works and services performed (excluding VAT, excise taxes and other similar payments) since 2017. Available at: <https://www.fedstat.ru/indicator/58763> (accessed: 20.02.2025).

⁵ Producer price indices by type of economic activity up to 2011. Available at: <https://www.fedstat.ru/indicator/40611> (accessed: 20.02.2024); Producer price indices by type of economic activity from 2012 to 2016. Available at: <https://www.fedstat.ru/indicator/43561> (accessed: 20.02.2024); Producer price indices by type of economic activity since 2017. Available at: <https://www.fedstat.ru/indicator/57609> (accessed: 20.02.2024).

⁶ Indices of the prices of products (costs, services) for investment purposes up to 2016. Available at: <https://www.fedstat.ru/indicator/31111> (accessed: 20.02.2025); Indices of the prices of products (costs, services) for investment purposes since 2017. Available at: <https://www.fedstat.ru/indicator/57795> (accessed: 20.02.2025).

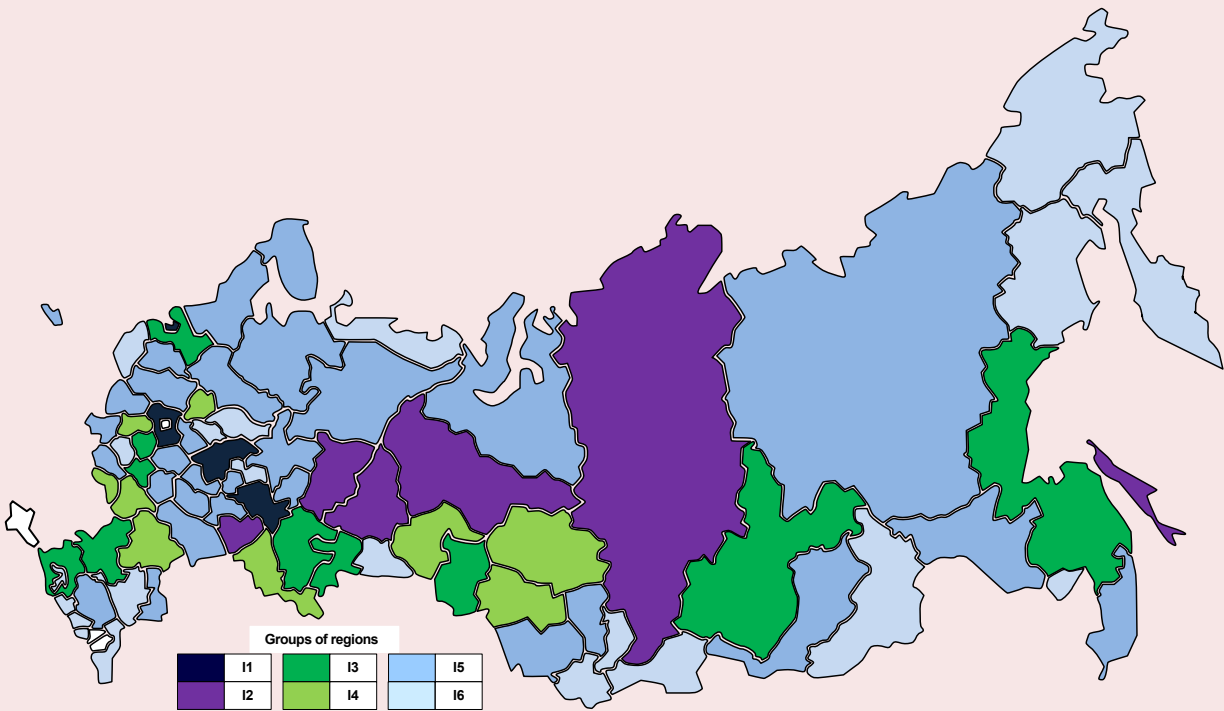
⁷ For more information, see (Domnich, 2024). We should note that it is almost impossible to detail the official statistics of innovations in the country in a regional and sectoral context; therefore, here we use indicators that are cumulative for the economy of the regions.

Figure 1. The costs of innovation activities and the volume of innovative goods of Russian large and medium enterprises in the 2010 prices, trillion rubles



Source: own calculation.

Figure 2. Economic grouping of regions



Source: own compilation.

then it is necessary that $R_{it}^{zid} \approx R_{it}^{oit}$ for any i and t . Ranking by initial indicators zid_{it} and oit_{it} will create two ratings that do not match and vary from year to year, since the indicators are characterized by low mutual correlation and significant spatial and temporal differentiation (Domnich, 2024b).

It has been established that the average annual cost of innovation activity and the volume of innovative goods over a long period of time can be used as a time-stable criterion. Calculations for 2010–2020, 2010–2021, 2010–2022, and 2010–2023 indicate that for each region the average annual values of these indicators remain approximately at the same level, regardless of whether the indicator was calculated for 11, 12, 13, or 14 years, with $R_{it}^{zid} = R_{it}^{oit}$ for all i and t . This made it possible to form a rating of regions that was the same both in terms of innovation costs and innovative product output. Based on it, six groups were identified, with group I1 comprising the most developed regions and group I6 the least developed ones⁸. The groups were selected according to the principle of maximum similarity of objects within one group and maximum dissimilarity of objects within different groups.

Groups (I1... I6) do not overlap in economic indicators and differ greatly in economic weight (Tab. 1). In the four most developed (excluding Moscow) regions (Group I1) a quarter of national expenditures on innovation activities and a third of the volume of innovative goods are localized (in total for 2010–2023). Together with Moscow, the

top-5 regions account for about half of Russian expenditures on innovation and the production of innovative goods. At the same time, the 21 least developed regions (Group I6) account for less than 1% of national innovation costs and slightly more than 1% of the volume of innovative goods.

At the second stage, indicators of the dynamics and differentiation of innovation activity were calculated for each group of regions.

The characteristics of innovation dynamics in 2010–2014, 2015–2018 and 2019–2023 are based on the average values of innovation activity and the average annual growth rates within each group and period. The indicators of innovation activity are calculated according to formulas (1) and (2). The growth rates of innovation activity are calculated based on the geometric averages of the growth rates of innovation activity over the period.

The characteristic of innovation activity differentiation is based on interregional and intragroup variation of innovation activity. The coefficient of variation (CV) is used as a measure of variation, which corresponds to the experience of relevant studies (Phillips, Sul, 2007; Markowska, Strahl, 2012). The coefficient of interregional variation is calculated as follows:

$$CV_t = \sigma_t / \overline{inno}_t, \quad (3)$$

where:

σ_t – standard deviation;

\overline{inno}_t – average value of innovation activity $inno_{it}$ of all regions of the country per year t .

Table 1. Costs of innovation and production of innovative products by group of regions in 2010–2023

Group of regions	Number of regions	Annual average, billion rubles		Share, %	
		Innovation costs	Output of innovative goods	Innovation costs	Output of innovative goods
I1	4	from 50 to 70	from 680 to 980	25.6	33.6
I2	6	from 25 to 36	from 345 to 505	18.7	18.3
I3	10	from 10 to 20	from 150 to 280	16.3	15.6
I4	9	from 5 to 10	from 70 to 120	6.6	9.4
I5	30	from 1 to 5	from 17 to 70	8.9	14.4
I6	21	to 1	to 13	0.7	1.2
city of Moscow	1	215	361	22.6	15.4
Source: own calculation.					

⁸ For more information about the composition of the groups of regions, see (Domnich, 2024a; Domnich, 2024b).

The coefficient of intragroup variation is calculated according to the formula:

$$CV_t^k = \sigma_t^k / \overline{inno}_t^k, \quad (4)$$

where:

σ_t^k – standard deviation;

\overline{inno}_t^k – average value of innovation activity $inno_{it}$ of the regions of group k in year t .

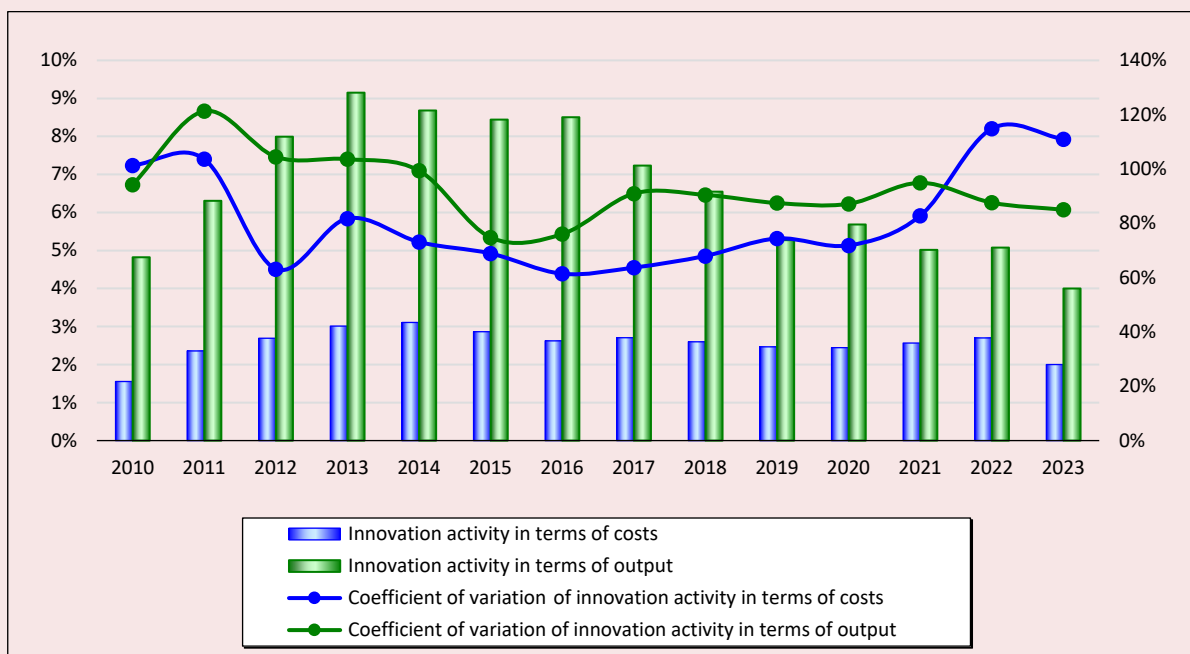
Coefficient of variation values exceeding 33% are considered high. Convergence of indicators occurs when $CV_{t+T} < CV_t$, and divergence – if $CV_{t+T} > CV_t$, where T – period of time (Glushchenko, 2012, p. 26). As a measure of variation, the average annual growth rate is used, calculated on the basis of geometric averages of the growth rate of innovation activity over the period.

The results of the study include the objective trends found, as well as scientific hypotheses to be tested in the course of future research.

Results

The innovation activity of Russian enterprises increased consistently only in the pre-sanctions period of 2010–2014, both in terms of innovation costs and the output of innovative products (Fig. 3). Innovation activity in terms of costs increased from 1.5 to 3%, and innovation activity in terms of output increased from 5 to 8.5%. In 2015–2018, external shocks were reflected in the stagnation of cost innovation activity at about 2.5% and output innovation activity at 6.5–7.5%. A significant expansion of the industry coverage of statistical observation according to Form 4-innovations in 2019–2023, which allowed Rosstat to keep the official values of absolute innovation indicators at the same level, led to a noticeable decline in innovation activity, including in terms of costs to 2–2.5% and output to 5.5–6.5%. Thus, the periods in question differ significantly both in terms of

Figure 3. Innovation activity (left scale) and coefficients of its variation (right scale) in the regions of Russia* in 2010–2023, %



* Moscow, Sevastopol, the Republic of Ingushetia, the Republic of Crimea, and the Chechen Republic were excluded from the sample.

Source: own calculation.

absolute and relative indicators of innovation. The highest average annual innovation activity in terms of costs and output is recorded in 2015–2018, the lowest in 2019–2023, while the initial period of 2010–2014 occupies an intermediate position.

An analysis of the dynamics of innovation activity in the context of the economic grouping of regions allows us to conclude that several of the most developed of them (Group I1) play an exceptional role in shaping the country's innovation landscape (*Tab. 2*). This is the only group of regions whose innovation activity consistently exceeds not only the average Russian values, but also those of the Moscow Region in terms of both the cost of innovation and the output of innovative products. Having achieved in 2015–2018 the level of 4% for the first indicator and 14% for the second, Group I1 fell slightly back in 2019–2023, while all other regions, including Moscow, significantly reduced statistically observed innovation activity during this period. In particular, the innovation activity in the Nizhny Novgorod Region during 2010–2023 did not fall below 10%, and in the Republic of Tatarstan – below 15%. In other words, Group I1 is represented by indisputable and stable leaders who are located exclusively in the European part of the country, specialize in certain manufacturing industries and are supported by government defense orders.

The innovation activity in Group I2 is already comparable to the Russian average, noticeably

inferior to the level of Moscow and was declining considerably in 2019–2023. However, even in this group, the regions are able to maintain high rates for several years. Thus, the innovation activity of the Sakhalin Region in 2011–2014 was 54–60%, significantly elevating the region above all others and making the entire Far East a leader during the pre-sanctions period. The innovation activity in the output of the Samara Region during 2010–2018 did not fall below 14%, and that of the Perm Region in 2016–2020 was not lower than 11%. Thus, if we call this group pure “imitators” in line with the mainstream approach to the classification of regions (Fagerberg, 1987; Castellacci, 2007; Verspagen, 2010; Stollinger, 2013), it would be an oversimplification of the real situation. Rather, they are leaders whose industry structure of innovation is more diversified (compared to Group I1), including due to extractive industries (Krasnoyarsk Territory, Khanty-Mansi Autonomous Area, Sakhalin Region).

Group I3 comprises ten average performers, whose innovation activity roughly corresponds to the national average. Unlike the more developed first two groups, the regions of this group are scattered throughout the country – from the Leningrad Region in the northwest to the Khabarovsk Territory in the east and the Krasnodar Territory in the south. They also have defense enterprises, but their much more modest production base than those of Group I1 and I2 regions does

Table 2. Innovation activity in regions, %

Group of regions	In terms of innovation costs			In terms of innovative products output		
	2010–2014	2015–2018	2019–2023	2010–2014	2015–2018	2019–2023
I1	3.5	4.1	4.1	13.5	13.9	11.2
I2	2.9	3.2	2.4	9.1	7.0	4.8
I3	2.9	2.4	2.5	5.2	7.1	5.0
I4	1.8	1.8	1.4	4.0	7.8	5.7
I5	1.4	1.1	0.8	4.7	5.0	4.1
I6	0.7	0.5	0.4	3.0	2.4	1.5
city of Moscow	3.3	3.6	3.3	9.2	8.5	3.4
Russia, excluding the city of Moscow	2.6	2.7	2.3	7.5	7.6	5.2

Source: own calculation.

not allow them to attract significant and long-term investments from the federal budget. Consistently high innovation activity was observed in enterprises of the Lipetsk Region in 2010–2017 (at least 9%), the Tula Region in 2011–2022 (at least 8%) and the Khabarovsk Territory in 2013–2022 (at least 10%).

The most important feature of the innovative development of the three most developed groups of regions (I1, I2, I3) is its isolation from regional economic development as such. The most powerful innovative enterprises of the defense and resource industries are located here, forming technological enclaves within regional economies. There is reason to believe that Schumpeterian models of growth and convergence (Aghion, Howitt, 1992; Howitt, 2000; Howitt, Mayer-Foulkes, 2005) cannot be applied to regions where the main pool of Russian innovations is concentrated (in value terms). The top-20 regions also do not have the usual mechanism for increasing innovation activity through investment in technology research and exploitation, which distinguishes them from the 60 least developed regions (groups I4, I5 and I6) (Domnich, 2024b).

Let us hypothesize that only in the least developed regions (groups I4, I5 and I6) innovation activity can and should be considered in relation to economic development, including as its volatility factor. Their innovative development in the mirror of official statistics is mainly determined by the enterprises of the civil manufacturing industry, and in agricultural regions also by the activities of

agricultural enterprises since 2016. Groups I4, I5 and I6 differ markedly from each other in terms of innovation activity. The innovation activity cost and output in Group I5 is twice as high as in Group I6, and in Group I4 it is one and a half times higher than in Group I5. Thus, despite the insignificant share of these three groups in the national innovation pool, each of them may have a pronounced specificity of innovation activity, and therefore possess an independent value from the point of view of economic analysis. At the same time, low values of the absolute value of innovation indicators do not mean low innovation activity. For example, the innovation activity in the Republic of Mordovia in 2010–2022 did not fall below 21%, which is unattainable even for Moscow.

More developed regions also have significant advantages over less developed ones in terms of the comparative dynamics of innovation activity (Tab. 3). In the pre-sanctions years 2011–2014, Moscow and the regions of groups I1 and I2 demonstrated the highest average annual growth rates of innovation activity in terms of costs, while Moscow and the regions of groups I1, I2 and I3 demonstrated innovation activity in terms of output. Innovation activity in the regions of Group I6 decreased on average in the pre-sanctions years. Nevertheless, during the periods associated with the sanctions shock, the highest average annual growth rates of innovation activity are observed in less developed regions: Group I4 (innovation activity

Table 3. Average annual growth rate of innovation activity, %

Group of regions	In terms of innovation costs			In terms of innovative products output		
	2011–2014	2015–2018	2019–2023	2011–2014	2015–2018	2019–2023
I1	32.2	-3.5	-1.6	10.9	-2.8	-7.5
I2	25.6	-7.6	-2.7	24.3	-10.8	-12.6
I3	-3.7	-2.6	6.1	14.8	-0.01	-2.3
I4	17.8	-11.3	0.05	-3.4	20.6	-12.2
I5	6.3	-4.8	-6.1	9.6	-5.2	-4.2
I6	-13.6	-4.3	11.3	-9.5	-7.8	-1.1
city of Moscow	45.4	-2.6	1.3	83.5	-27.6	9.7
Russia, excluding the city of Moscow	18.9	-4.4	1.1	15.8	-6.8	-6.3
Source: own calculation.						

in terms of output in 2015–2018) and Group I6 (innovation activity in terms of costs in 2019–2023). We can assume that during periods of increasing external shocks, less developed regions receive the opportunity to increase their innovation potential, while the most developed ones retain their leading positions largely by inertia.

A comparative analysis of the dynamics of the two indicators of innovation activity makes it possible to identify spatio-temporal segments where innovation activity in terms of costs and innovation activity in terms of output changed in the opposite direction relative to each other. Here we should point out the dynamics in Group I3 in 2011–2014 and 2019–2023, Group I4 in 2011–2014, 2015–2018 and 2019–2023, and Group I6 in 2019–2023. The presence of such spatio-temporal segments can be explained by two reasons. The first is the implementation of innovation activities in conditions of a limited production base, when the development of innovations of the current year is possible only by reducing the output of innovative products introduced 2–3 years ago. The second is that two innovation indicators describe innovation processes in various enterprises: some enterprises spend mainly on innovation activities, while others produce innovative products without statistically significant costs.

At the same time, in groups I1, I2, and I5, as well as in the city of Moscow, indicators of

innovation activity have always changed in concert with each other, growing or decreasing simultaneously throughout the entire period 2011–2023. Hence, it is appropriate to assume that the consistency of the dynamics of innovation costs and output is determined by industry specialization and industry diversification of the regional innovation portfolio. It is possible to formulate a hypothesis that innovation processes in the most developed regions (city of Moscow, groups I1 and I2), as well as in Group I5, are more uniform in terms of industry structure and implementation mechanisms than in groups I3, I4 and I6.

The differentiation of innovation activity in Russia's regions is characterized by high values of the coefficient of variation, which did not fall below 60% for innovation activity in terms of costs, and below 75% for innovation activity in terms of output during the entire period 2010–2023 (see Fig. 3). Variation in innovation activity in terms of output has always been higher than variation in innovation activity in terms of costs with the exception of 2010 and 2022. On average, across all regions, excluding the city of Moscow, the variation in innovation activity in terms of costs was minimal in 2015–2018, and maximal in 2019–2023. (*Tab. 4*). In contrast, the variation in innovation activity in terms of output was maximal in the pre-sanctions years 2010–2014, decreased in 2015–2018 and remained at the same level on average in 2019–2023.

Table 4. Average annual coefficient of variation in innovation activity, %

Group of regions	In terms of innovation costs			In terms of innovative products output		
	2010–2014	2015–2018	2019–2023	2010–2014	2015–2018	2019–2023
I1	29.4	27.9	52.2	28.4	30.0	38.5
I2	57.1	33.8	51.6	185.7	96.5	80.3
I3	67.2	50.3	84.3	73.8	76.1	84.2
I4	106.6	64.4	69.3	88.9	62.3	63.0
I5	104.4	107.0	163.1	132.6	126.3	122.5
I6	179.6	96.3	310.8	128.2	130.9	142.5
Russia, excluding the city of Moscow	85.7	66.8	92.5	105.0	80.5	80.6
Source: own calculation.						

The coefficient of variation in innovation activity has a pronounced tendency to increase as it moves from more developed regions to less developed ones. According to the results of 2019–2023, the lowest differentiation of innovation activity in terms of both costs and output is recorded in Group I1, and the highest in Group I6. In Group I1 in 2010–2014 and 2015–2018, the variation in innovation activity was less than 33%, i.e. it could not be considered high. At the same time, in Group I6 the variation in innovation activity in terms of costs in 2010–2014 was 180%, and in 2019–2023 it was 312%, which indicates the extremely high volatility of the indicator within the group. This means that less developed regions have a greater variety of innovative development trajectories than more developed ones (Aghion, Howitt, 1992; Howitt, 2000; Howitt, Mayer-Foulkes, 2005). Hence, it can be hypothesized that the role of innovation in differentiating the pace and level of economic development is higher in less developed regions of Russia than in more developed ones. Currently, it is difficult to carry out econometric verification of this hypothesis, due to a number of statistical limitations.

The coefficient of variation of innovation activity in terms of costs differs from the variation of innovation activity in terms of output by significantly greater volatility both in the direction of increase (divergence) and decrease (convergence;

Tab. 5). At the same time, the trends in variation of the two indicators of innovation activity on average across the regions in 2011–2023 were opposite. The variation in innovation activity in terms of costs decreased (there was convergence) in 2011–2014 and 2015–2018, and increased (there was divergence) in 2019–2023. On the contrary, the variation in innovation activity in terms of output on average Russia's regions increased slightly in 2011–2014, and decreased in 2015–2018 and 2019–2023.

It turns out that our conclusions about the convergence (divergence) of innovative development and about the factors causing convergence (divergence) of economic development may be directly opposite, depending on the choice of the indicator of innovation activity. In this regard, the last hypothesis can be formulated: the results of key mainstream studies on the identification of regional technology clubs (Fagerberg, 1987; Castellacci, 2007; Verspagen, 2010; Stollinger, 2013) are virtually irreproducible when using a different set of statistical indicators of science, technology, innovation and education.

This problem is especially evident if we analyze the dynamics of the coefficient of variation of innovation activity in certain groups of regions. In 2011–2014, the average annual negative increase in innovation activity in terms of costs in Group I1 was very significant: -18.4%, while the convergence of innovation activity in terms of output was no

Table 5. Average annual growth rate of the coefficient of variation of innovation activity, %

Group of regions	In terms of innovation costs			In terms of innovative products output		
	2011–2014	2015–2018	2019–2023	2011–2014	2015–2018	2019–2023
I1	-18.4	21.1	12.4	-1.9	1.3	12.9
I2	-2.8	-8.4	5.6	12.6	-15.6	-5.5
I3	-21.7	13.0	3.3	-1.4	8.3	-7.7
I4	-12.6	0.2	-0.4	-3.2	-4.0	-8.5
I5	14.2	-4.3	22.9	-5.7	4.6	1.6
I6	43.6	-29.4	66.7	6.7	0.2	1.4
Russia, excluding the city of Moscow	-7.8	-1.8	13.6	1.3	-2.3	-0.9

Source: own calculation.

more than -2% per year. Similar contradictory conclusions can be drawn about the convergence of innovation activity in 2011–2014 in groups I3 and I4 and in 2015–2018 in Group I6. Similarly, the divergence of innovation activity in terms of costs was significantly higher than the divergence of innovation activity in terms of output in 2011–2014 in Group I6, in 2015–2018 in groups I1 and I3, and in 2019–2023 in groups I5 and I6. In a number of spatio-temporal segments, the dynamics of the coefficient of variation of one indicator of innovation activity indicates convergence of innovative development, while the other indicates divergence. These are, for example, Group I2 in 2011–2014 and 2019–2023, Group I3 in 2019–2023, Group I5 in 2011–2014 and 2015–2018, and Group I6 in 2015–2018.

The problems and contradictions identified in the course of our study, as well as the hypotheses formulated on their basis, determine the potential for further work in the field of economic analysis of the relationship between innovation and economic dynamics.

Conclusion

In the modern economy, innovation is the most important factor in economic dynamics, largely determining the comparative level of economic development of countries and regions. Therefore, a comparative analysis of the dynamics and differentiation of innovation activity in the regions of the country has considerable relevance, especially over long-time intervals. But here researchers often face statistical and methodological limitations.

The study proposes a methodology that helps to overcome statistical limitations associated with changes in industry coverage using Form 4-innovations, and to analyze the dynamics and differentiation of innovation activity in Russia's regions in 2010–2023. The methodology boils down to a comparative analysis of alternative indicators of innovation activity (in terms of costs and output), as well as their coefficients of variation within

historically significant time periods (2010–2014, 2015–2018, and 2019–2023) and a consistent grouping of regions based on the economic opportunities of each of them. The grouping of regions is based on the average annual values of indicators of innovation costs and the volume of innovative goods (city of Moscow is outside the grouping). Six (I1... I6) time-stable groups of regions have been identified, among which Group I1 comprises the most developed regions (with the highest average annual cost of innovation and the volume of innovative goods), and Group I6 contains the least developed ones (with the lowest average annual values of innovation indicators).

It has been established that only Moscow and the most developed regions (Group I1) are able to ensure a high and stable level of innovation activity over a long period of time. In other groups, innovation activity is sensitive to external shocks and changes in the industry coverage of statistical observations, which is reflected in a significant decrease in innovation activity in terms of costs and output in 2019–2023. Only the most developed regions (groups I1, I2, I3) could provide significant positive growth rates of innovation activity in the pre-sanctions period of 2010–2014. At the same time, during the periods associated with external shocks (2015–2018 and 2019–2023), a consistent and significant increase in innovation activity could be observed only in less developed regions (groups I4 and I6). The spatio-temporal segments were identified, within which innovation activity in terms of costs and innovation activity in terms of output changed in the opposite direction. Such segments are observed only in relatively less developed regions (groups I3, I4, I5, I6), whereas in the most developed regions (city of Moscow, groups I1 and I2) the dynamics of the two indicators of innovation activity is characterized by a positive correlation.

It has been found that the coefficient of variation of innovation activity in Russia's regions, except for the most developed ones (Group I1), significantly

exceeded 33% during the entire period 2010–2023, which indicates a high heterogeneity of innovative development of the territories. The variation of innovation activity in terms of output is usually higher than the variation of innovation activity in terms of costs; the trends of their change are multidirectional. The volatility of the coefficient of variation of innovation activity in terms of costs is noticeably higher than the volatility of the coefficient of variation of innovation activity in terms of output. The coefficient of variation of innovation activity is lower in the most developed regions and higher in the least developed ones.

Based on the established facts, hypotheses have been formulated that are subject to verification in future studies. In general, they postulate the fundamental incompatibility of the most developed (groups I1, I2, I3) and least developed (groups I4, I5, I6) regions in terms of structural characteristics and the mutual impact of economic and innovative development. It is assumed that only in the least developed regions innovation activity can be considered in relation to economic development, including as a factor causing its volatility. During

periods of increasing sanctions pressure, less developed regions have the opportunity to increase their innovation potential, while consistent innovative development in the most developed regions was possible only in the pre-sanctions period. Innovation processes in the most developed regions are more uniform in terms of industry structure and implementation mechanisms than in the least developed regions. The role of innovation in differentiating the pace and level of economic development is higher in less developed regions than in more developed ones.

The scientific significance of the results obtained is related to the transfer of the discussion about the technology clubs of regions and the relationship between their innovative and economic development to the Russian context. The findings of the study open up wide opportunities for further research in this area in line with the mainstream analysis of regional innovative development. Here we can point to two general lines of such analysis: clarification and hierarchical analysis of the composition of technological regional clubs, and comparative analysis of their growth and development factors.

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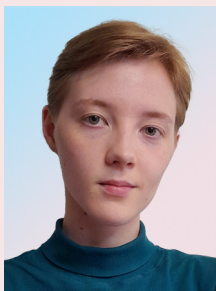
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Modernization of the Industrial System through Digital Intelligent Transformation and Green Development: Experience of Russia and China



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Abstract. In Russia and China, a course has been outlined to accelerate the transformation of traditional and stimulate the development of strategically important sectors of the economy in order to build a modernized industrial system. The aim of the study is to explore the possibilities of modernizing regional

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industrial systems in the Vologda Region and Jiangxi Province from the perspective of digital transformation and green development. To achieve this goal, tasks such as analyzing the state of the regional industrial systems of the designated regions, studying the directions of their modernization, and proposing measures to facilitate this process were solved. In traditional sectors of the economy, the processes of transformation and integration of the real and digital sectors of the economy are accelerating. At the same time, the promotion of the synergy of digital intellectual transformation and green growth is hindered by the weak competitiveness of industries concentrated in the middle and lower links of regional value chains, the lack of necessary technologies, and uncertainty in value chains. In order to overcome these obstacles, it is important to form industrial clusters in promising sectors of the economy, focus on the development of traditional industries, encourage enterprises to use scientific and technological achievements in production, introduce digital platforms, and apply a number of measures aimed at accelerating the integration of the real and digital sectors of the economy. The novelty of the conducted research lies in identifying trends in digital intellectual transformation and green development of regional industries, as well as in forming a set of measures that contribute to the activation of these processes. The information base of the study was made up of data from the Federal State Statistics Service and the National Bureau of Statistics of China, as well as foreign and domestic research in the field of industrial system modernization. The results of the study can be used by regional authorities in the development of strategic documents to substantiate the directions of economic policy.

Key words: industrial system modernization, digital intelligent transformation, green development, Vologda Region, Jiangxi Province.

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Introduction

The global economy is currently undergoing a number of transformational processes involving changes in international political relations, the emergence of new centers of economic influence, the transformation of market conditions, etc. The spread of technologies and digitalization of production leading to the formation of new sectors of the economy are rather significant trends. Under these conditions, states need to diversify and complicate their economies and strive to achieve technological sovereignty for remaining included in the global space.

Russia and China share a similar vision of the development directions of the countries as a whole and in their individual regions. Chinese President Xi Jinping made an inspection visit to Jiangxi

Province in October 2023, during which he emphasized that the province needs to define its position, chart a course, and integrate resources to achieve targeted progress¹. The meeting with the region’s leadership and assets called for accelerating the transformation and upgrading of traditional industries and encouraging the development of new strategic industries to build a modernized industrial system that demonstrates Jiangxi’s competitive advantages.

¹ The Chinese President called for the economic transformation of Jiangxi Province while preserving ecology and cultural heritage. Available at: <https://rg.ru/2023/10/13/predsedatel-knr-prizval-k-ekonomicheskoi-transformacii-provincii-ziansi-pri-sohranении-ekologii-i-kulturnogo-nasledia.html> (accessed: 25.02.2025).

Russia has also set a course for modernization of traditional industries and support of strategically important industries. The national development goals of the Russian Federation include the achievement of technological leadership², and a corresponding strategy has been developed to ensure scientific and technological development³. Due to the sanctions restrictions, the country is developing a policy of import substitution, the purpose of which is to reduce technological dependence on other, primarily unfriendly countries (Lenchuk, 2020). In the long-term sanctions pressure, the transformation of the economy should be based on the concept of innovative development (Shirov et al., 2024).

The development of economic sectors and the introduction of sustainable development principles in them in accordance with global trends requires the formation of an industrial system that can ensure the production of high-quality products that meet international standards, as well as the operation of production that ensures the preservation of the environment. The key to its construction is the fusion of real and digital economy with close interaction of digital intellectual transformation and green development, using comparative advantages as opportunities for transition to a qualitatively new level.

In this regard, the aim of the research is to study the possibilities of modernization of the regional industrial system of Russia and China on the example of Jiangxi Province and the Vologda Region from the position of their digital transformation and green development. Achieving the goal requires the fulfillment of the following tasks:

- to analyze the state of regional industrial systems;

- to study the directions of their modernization;

- to propose measures for promoting the modernization of regional industrial systems.

Theoretical background of the study

Industry is the key sphere of material production, making a significant contribution to the gross domestic product (GDP) of most countries in the world. It occupies a central position in the structure of the economy, other sectors function around it, and links between types of economic activity are strengthened. Ensuring the growth of the share of production services in the real economy is due to the technological development of industry, the growth of labor productivity of enterprises (Akberdina, Romanova, 2021).

The scientific community pays much attention to the issues of sustainable development, including at the enterprise level (Galimulina et al., 2023; Tolstykh et al., 2023; Bugryshev, Panikarova, 2024). The functioning of the economy within the paradigm of sustainable development is possible in the transition to an innovative model of the economy, which is especially important in the conditions of exhaustion of extensive sources of growth. It is worth noting that in this context, scientists take a broad view of innovation; this concept includes, in addition to changes in production technologies, a change in economic relations, institutional factors, etc. (Brink et al., 2010).

The scientific community studies the problems of regional and national industrial systems, among them are the opportunities and ways of its modernization. Some researchers define modernization as a complex process, the purpose of which is the formation of an industrial base with technical equipment and industry structure that meet world standards (Porfiriev et al., 2017), while others reduce its essence to the achievement of progressive shifts in economic development (Shi et al., 2023). Modernization implies purposeful,

² Presidential Decree 145, dated February 28, 2024 “On the strategy for scientific and technological development of the Russian Federation”.

³ Presidential Decree “On the national development goals of the Russian Federation for the period up to 2030 and in the perspective up to 2036”.

irreversible qualitative changes in the economic system, provided through the introduction of new technologies, the full use of the country's intellectual potential. The objectives of economic modernization are mainly to improve the competitiveness of production systems and the country as a whole. Without reducing the essence of modernization of the economic system to the technical and technological changes occurring in it, we still identify them as one of the key factors that condition this process.

The governments of both countries, Russia and China, are setting a modernization course of development, which implements not only economic but also social policy in line with the innovative development of society. The priority of state support is given to high-tech industries, and the goal of innovation activity is to increase the technological level of production (Shirov et al., 2024).

The transformation of industry in Russia is actively supported by the state, as indicated by a number of adopted strategic documents and regulations. The industrial policy pursued by the state, the foundations of which are laid down in the Federal Law "On industrial policy in the Russian Federation"⁴, aims to form a high-tech, competitive industry capable of ensuring the transition of the country's economy from the raw materials export type of development to the innovative one. The fulfillment of the designated goal requires the wide implementation of digital technologies in all spheres of industrial enterprise activities (Lapidus et al., 2019). In addition, the need for technological re-equipment of enterprises, high-tech development, and knowledge-intensive industries is emphasized (Shirokova, Leonidova, 2022).

A similar vision is evident in the economic policy pursued by the Chinese government. The development of science and technology has been one of the country's top national priorities for the

past two decades⁵. For instance, the 14th Five-Year Plan of China's socio-economic development has set the goal of achieving world leadership in innovation by 2035, which indicates the priority of science and technology initiatives. The key policy directions are the development of the intellectual property sphere, increase in financing of R&D expenditures, and increase in the market capacity of the digital economy.

Air pollution control plays an important role in China's industrial modernization policy. In 2017, only 29.3% of China's 338 major cities met the air quality standards set by China's Ministry of Ecology and Environmental Protection. Accordingly, China's State Council has taken a series of measures to control air pollution, such as issuing and implementing the "Action Plan for Air Pollution Prevention and Control" in 2013 and the "Three-Year Action Plan for Winning the War for Blue Sky Defense" in 2017. Enterprises are the largest source of emissions, and as such, the government has undertaken a number of measures to encourage the development of green industry in the country. These include optimizing the structure of the manufacturing sector, transforming the energy sector with the setting of quantitative targets (Zhang et al., 2021).

Green transition, green innovation and carbon neutrality are being actively discussed among researchers (Jie, Jiahui, 2023; Li et al., 2024), which is particularly important for China, whose energy mix is dominated by coal fuel and other combustible carbon, which negatively affects the environmental situation in many communities. Transportation that does not leave a carbon footprint is being developed to make the green transition. In this regard, the demand for lithium batteries is growing, which is especially important for Jiangxi Province, one of the leading regions in China in terms of reserves of this type of raw material (Ma Hui et al., 2025; Abdulkadyrov, Idrisov, 2022).

⁴ Federal Law 488-FZ "On Industrial Policy in the Russian Federation", dated December 31, 2014.

⁵ China's science and technology policy: Toward global leadership. Available at: <https://issek.hse.ru/news/688845347.html> (accessed: March 9, 2025).

Methods and methodology of the research

The object of the study is the regional industrial system; the subject is modernization of regional industrial systems in the Vologda Region and Jiangxi Province. The selection of these regions is based on their similar industrial structure, with a predominance of manufacturing industries and the key role of metallurgical and chemical production. Furthermore, the regions cooperate in economic and socio-cultural spheres and have similar strategic development goals.

This study focuses on the promising industries of regions (provinces and regions). In Jiangxi Province, these are the strategically developing industries that are grouped into the “*1+2+N*” gradient development model. It includes the priority industries most important for the regional economy, selected on the basis of their profitability.

The top “*1*” is electronic information manufacturing, with gross revenue exceeding one trillion yuan. The sub-sectors include the production of electronic devices and components, intelligent terminals, etc. Achieving this magnitude of performance has allowed Jiangxi to rank first among the provinces in central China and fourth in the country as a whole. The “*2*” place is occupied by the new energy equipment industry, in which a new model of rapid development is being established. In 2022, the industry’s revenue amounted to about 720 billion yuan. Part “*N*” includes potential industries where new advantages of advanced manufacturing are cultivated, including aviation, the Internet of Things, and virtual reality.

Promising economic specializations of the Vologda Region were identified according to the methodology developed by the team of authors from VolRC RAS and Vologda State University (VSU) (Rumyantsev et al., 2022). It is based on an integral assessment of the potential of specialization, made up of a number of components: its effectiveness, market potential, innovation activity and the availability of scientific publications on this type of

activity. Based on this methodology, the following branches of specialization are considered as promising: production of basic chemicals, fertilizers and nitrogen compounds, plastics and synthetic rubber in primary forms; production of cast iron, steel and ferroalloys; production of other steel products by primary processing; sawing and planing of wood; production of rubber products; production of pulp, wood pulp, paper and cardboard.; production of machine tools, machinery and equipment for processing metals and other hard materials (Rumyantsev, 2023).

The information base of the study includes data from the Federal State Statistics Service and the National Bureau of Statistics of China, as well as Russian and foreign studies.

Current interplay of digital intelligent transformation and green development in sectors of specialization

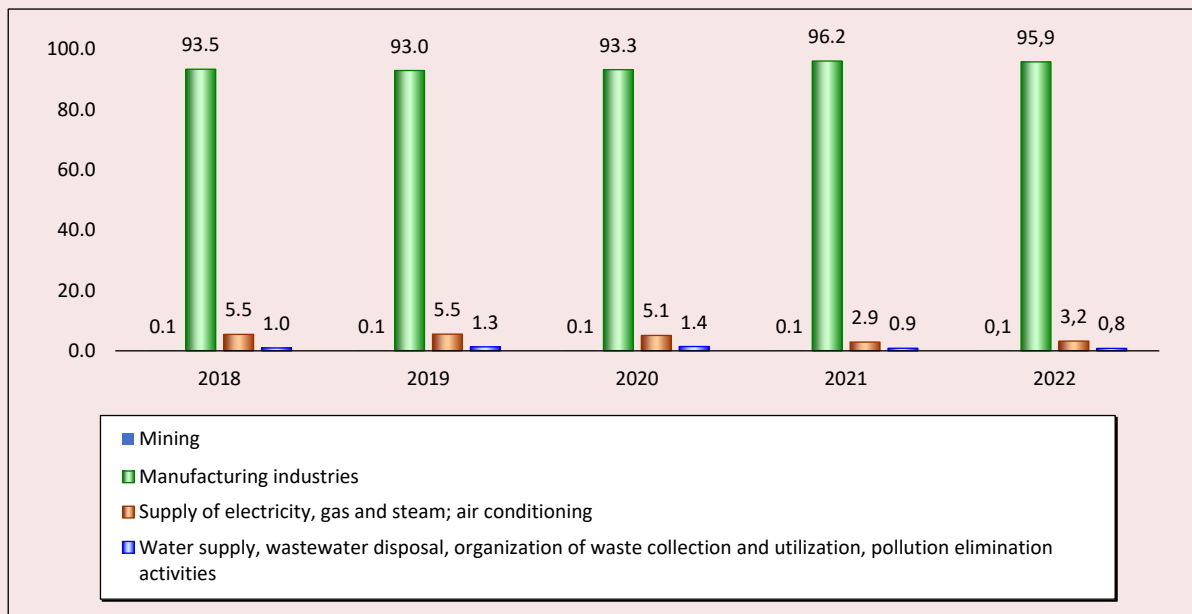
Industrial production prevails in the economic structure of both regions under consideration. The Vologda Region is a representative of Russia’s old-industrial regions (Mel’nikov, 2019). The largest share in the total production volume is occupied by manufacturing industries (*Fig. 1*), based on the technologies of the third technological paradigm.

In 2022, the production of industrial products in the Vologda Region decreased by 3.4%, which is associated with the sanction restrictions imposed on trade with Western countries, the former main buyers of products of this category, primarily metallurgical and wood products (Shirokova, Lukin, 2023).

In the economy of Jiangxi Province, industry is also of great importance. By embarking on industrialization, Jiangxi has increased the share of the secondary sector from 35.0% in 2000 to 44.5% in 2021, putting it in second place after the service sector, which had a share of 47.6% in the same year⁶.

⁶ Jiangxi: Market Profile. Available at: <https://research.hktdc.com/en/data-and-profiles/mcpc/provinces/jiangxi> (accessed: 08.03.2025).

Figure 1. Dynamics of the Vologda Region's industrial production structure in 2018–2022, %



Source: own compilation based on Rosstat data.

The industrial sector is characterized by a complex structure and a high degree of diversification – 38 out of 41 major industries are represented in the province, but non-ferrous metallurgy, namely lithium smelting and processing, and electronic products are the most important for the regional economy⁷. Jiangxi leads China in a number of indicators, with value-added growth rate, industry revenue and total profit ranking 7th, 11th and 10th respectively in 2022.

Traditional industries have comparative advantages, efforts to modernize and improve industrial chains are accelerating. Industrial transformation processes are observed in traditional economic sectors. The acceleration of transformations observed in recent years is associated with the introduction of new production processes, technologies and equipment, and the use of innovative

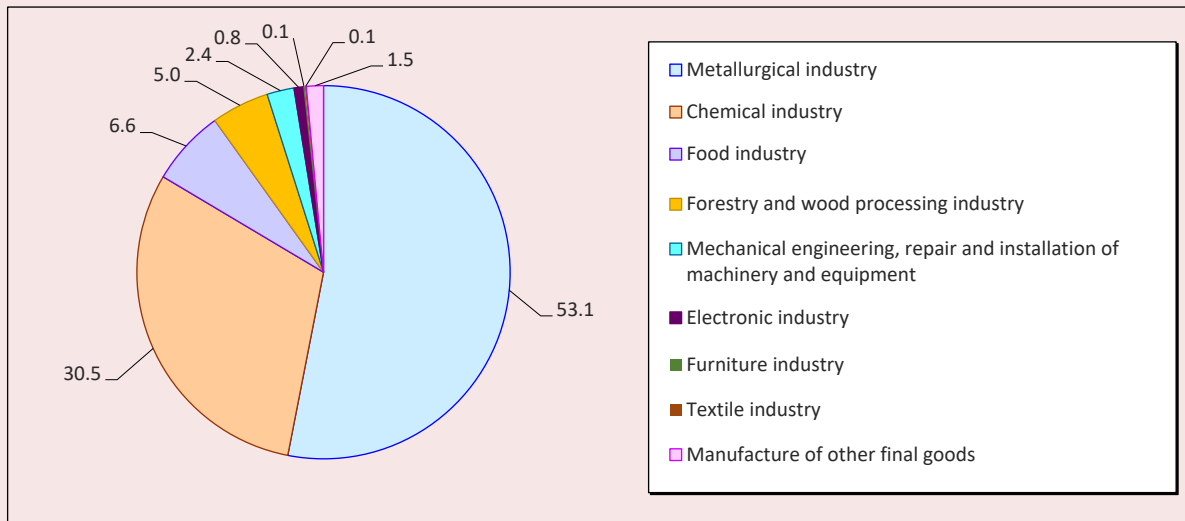
materials. This stimulates industries toward high-tech, intelligent, environmentally friendly, service-oriented production.

The metallurgical complex plays a dominant role in the production sector of the Vologda Region. It accounted for 53.1% of the total volume of shipped goods of the region in 2022. It is followed by the chemical complex. The traditional industries of the region are called the two designated complexes, as well as forestry and woodworking industry (Uskova et al., 2013) (Fig. 2).

The volume of shipments of the **metallurgical complex** amounted to 644.2 billion rubles in 2022. High- and medium-high-tech industries account for only about 15% of all products shipped, which is more than 25% below the national average, and their share has only decreased over the last five years (Bents, Rezepin, 2023). The **chemical complex** industries supplied products worth 343.8 billion rubles (Bents, Rezepin, 2023). The **forestry complex** is characterized by a smaller volume of supplies, only 60.7 billion rubles.

⁷ Jiangxi Province: PRC non-ferrous metallurgy, electronics center. Available at: <https://chinaved.com/provinciya-czyansi-centr-cvetnoy-metallurgii-i-elektroniki-kr> (accessed: 08.03.2025).

Figure 2. Structure of the Vologda Region manufacturing industry in 2022, %

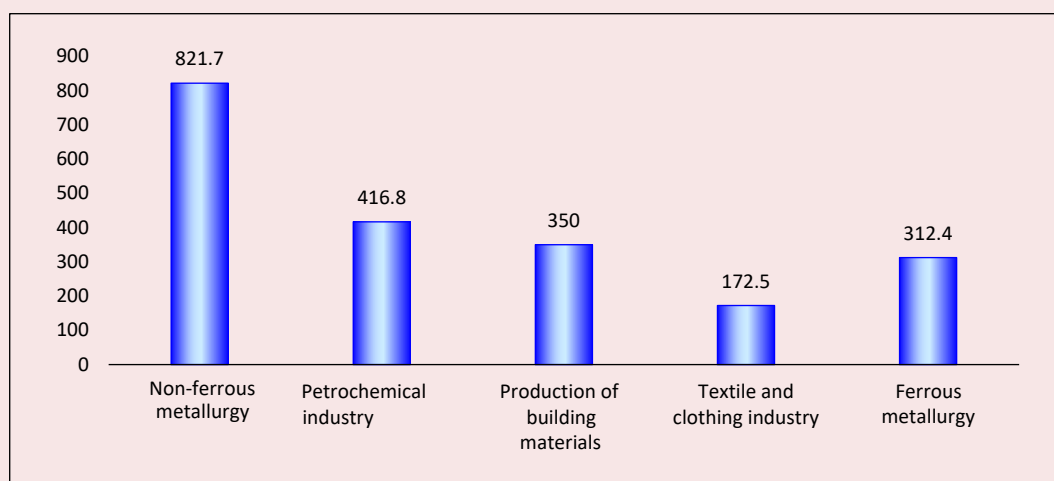


Source: own compilation based on Rosstat data.

In 2022, the volume of supplies decreased compared to the previous year, which is associated with sanctions restrictions on trade with European countries and the United States, which were the main buyers of products of export-oriented complexes. The ban affected the import of goods

used in timber harvesting and processing, which led to difficulties in material and technical support of production facilities. This actualizes the need to develop import substitution and achieve technological sovereignty not only in the forest complex, but also in the industry

Figure 3. Revenue of major traditional industries in Jiangxi Province in 2022, billion yuan



Source: own compilation based on the data from the National Bureau of Statistics of China.

as a whole (Uskova et al., 2022). In Jiangxi Province, the largest traditional industries are grouped into five complexes, among which non-ferrous metallurgy takes center stage. In 2022, it generated 821.7 billion yuan of revenue from enterprises above the set size⁸ (Fig. 3). Total profits amounted to 51 billion yuan, up 28% year-on-year. The processing of copper, tungsten, lithium and rare earth metals play a key role in Jiangxi's non-ferrous metals industry. The main direction of the industries' development is to achieve a higher level of production and utilization of end products. For this purpose, the province has formed a relatively complete industrial system including all stages of non-ferrous metal production – geological exploration, mining, casting, and processing.

The **petrochemical industry** is steadily moving toward a higher level of industrial agglomeration. The industry's products are in demand both domestically and internationally. For example, the proportion of technical gibberellin produced in Jiangxi accounts for more than 80% of the total production in the country, with production capacity ranking first in the world. In the Chinese market, the share of organosilicon monomer produced in the province is more than 25%, with production capacity ranking first in Asia. In addition, the market share of carbon black, gasoline anti-blocking agent and azodicarbonamide foaming agent in China market was more than 20%, with production capacity ranked first in the country. In 2022, the revenue of petrochemical industry amounted to 416.8 billion yuan.

The **building materials industry** is developing toward more environmentally friendly and technologically advanced production. The province is actively promoting the application of new and environmentally friendly building materials

products and related advanced technologies. The industrial agglomeration of industries such as cement and architectural ceramics ranks among the top in China. In the production of fiberglass, architectural ceramics and other building materials, the province ranks first in China. In 2022, the revenue of the building materials industry amounted to 350 billion yuan.

Efforts to accelerate the transformation and modernization of the **textile and garment industry** are being intensified. Paying special attention to the establishment of clusters such as, for example, Gongqingchengt down jacket cluster (urban county of Jiujiang City District of Jiangxi Province), Lianxi cellulose fiber cluster (urban sub-district of Jiujiang City District of Jiangxi Province), the province is striving to achieve the growth of garment industry sectors such as down jacket, knitwear, women's and children's apparel, etc., to achieve growth. In 2022, the gross revenue of the industry totaled 172.5 billion yuan, down 12.1% year-on-year. The export volume reached 6.5 U.S. billion dollars. The export volume reached 6.5 U.S. billion dollars, up 15.8% year-on-year, setting a new record for the province.

The **iron and steel industry** has established a "246" development model that emphasizes:

- two steel groups of companies – Xinyu Iron & Steel Group and Jiangxi Fangda Steel Group;
- four industrial bases – Jiujiang riverside iron & steel industrial base, Xinyu iron, steel and iron & steel processing industrial base, Jinxian steel structure industrial base and Pingxiang powder metallurgy industrial base;
- six product series – construction steel, steel for naval architecture and ocean engineering, for power transmission and transformer equipment, automobiles, household appliances and steel products.

The province's crude steel output reached 26.9 million tons, ranking it 14th in China, and the industry's operating revenue reached 312.4 billion yuan.

⁸ They include data on the performance of industrial enterprises with annual operating income of at least 20 million yuan.

Strategically growing industries have a decisive impact.

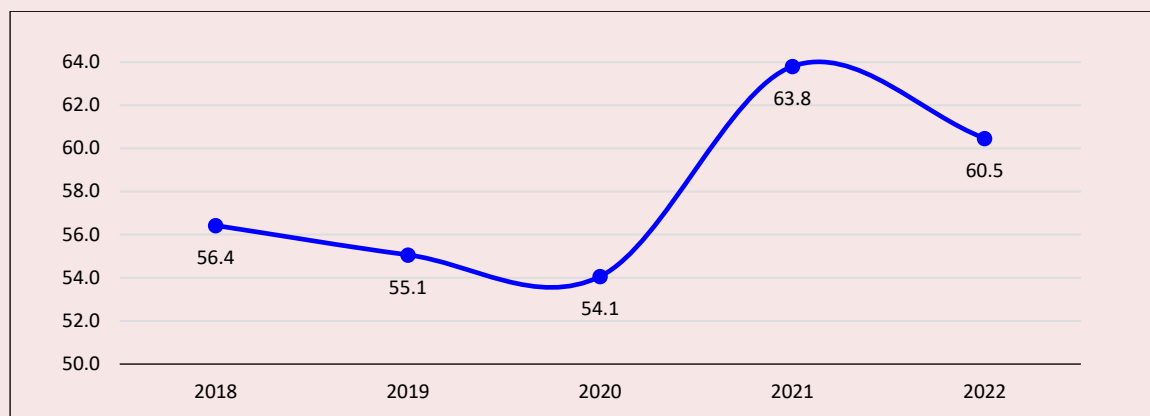
The promising industries of the Vologda Region specialization make a significant contribution to the region's economy. In total, their products account for more than 50% of the region's shipped products, the maximum indicator reached in 2021, amounting to 63.8% (Fig. 4).

Strategic emerging industries in Jiangxi Province also play a major role in the regional economy. They

account for more than a quarter of the value-added of industrial output, and their share is only increasing, up 3.9 p.p. year-on-year in 2022 (Fig. 5). The indicator has been characterized by positive dynamics for more than five years, in 2021 and 2022 its growth rate exceeded 20%.

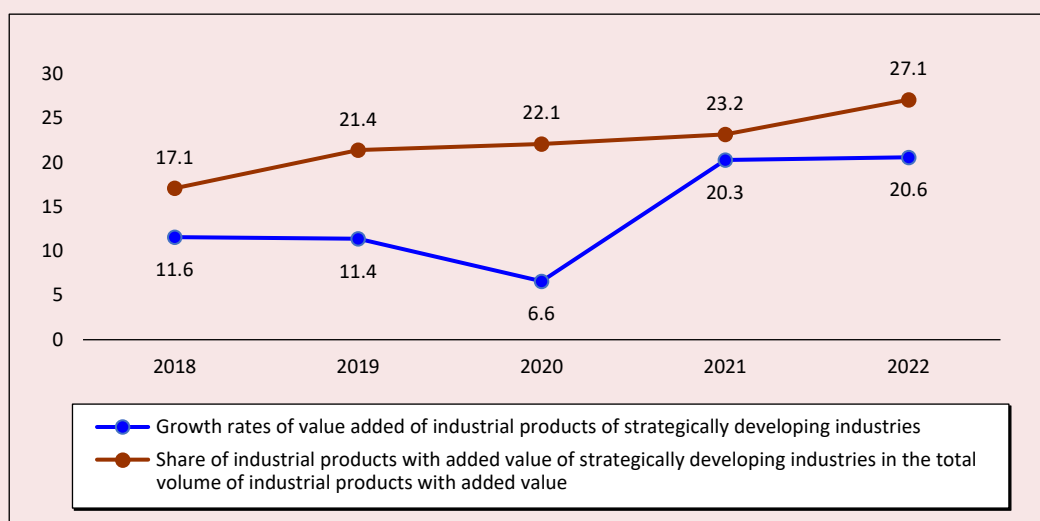
The above-mentioned industries are characterized by high profits showing significant growth. As mentioned above, the profit of electronic information manufacturing in 2022 was about

Figure 4. Share of shipped products of promising industries of the Vologda Region specialization in 2018–2022, %



Source: own compilation based on Rosstat data.

Figure 5. Development of strategically emerging industries in Jiangxi Province in 2018–2022, %



Source: own compilation based on the data from the National Bureau of Statistics of China.

1 trillion yuan, up 32.2% from a year earlier. Equipment manufacturing contributed about 720 billion yuan to the province's GRP, while the new energy industry contributed more than 400 billion yuan. Promising industries are also contributing to Jiangxi's economy. In 2022, the gross revenue of aviation enterprises totaled 160.5 billion yuan, up 13.5% from 2021; the province's Internet of Things industry grew from 50 billion yuan in 2018 to 190 billion yuan in 2022; virtual reality and VR enterprises grew from 4.2 billion yuan in 2018 to 81.2 billion yuan in 2022, increasing 19 times in the past four years. Meanwhile, the growth potential of the industries has not been exhausted, ensuring their development will achieve even greater figures.

Trends in the development of the digital economy.

Digital transformation of economic sectors contributes to increasing labor productivity, improving the quality of services and economic benefits (Lindquist, 2022). In Russia, this process, together with digitalization, is one of the five national development priorities, which is also associated with the task of increasing the efficiency of public administration, ensuring the sustainability and competitiveness of the country (Abramov, Andreev, 2022).

Among the Russian regions, the Vologda Region occupies average positions in terms of the level of digital transformation development. For instance, according to the corresponding rating of regional leaders, compiled by the Center for Expertise and Coordination of Informatization, the region ranked 39th in February 2025, having moved down 13 positions after the revision of the rating calculation methodology⁹. At the same time, the region is one of the leaders in the use of digital services for business. To achieve even greater results in this area, it is planned to create a mobile application

“Inspector”. It will allow for remote inspections of supplies via video communication, save photos and videos, and electronically sign final reports. This measure is aimed at reducing the burden on business, improving the quality and effectiveness of inspections¹⁰.

The degree of transformation of economic sectors reflects the digital maturity indicator, which includes indicators related to different spheres of economic activity, determining the percentage of processes using digital devices. According to its level, the Vologda Region takes only 57th place¹¹. The analysis of this indicator allows not only determining the current state of the region, but also predicting its position in the future in comparison with other regions. For example, if the digital transformation strategy is implemented, the Vologda Region will take 50th place in the rating of regions (Abramov, Andreev, 2023).

This process in the Vologda Region has several main directions. These are the development of digital maturity of the economy, introduction of information technologies in key industries, formation of own cloud technologies, provision of territories with wireless communication, etc. (Krylova et al., 2024). In addition, it is planned to develop feedback platforms in the region, primarily a quick feedback service that allows evaluating services provided to the public. To put these initiatives into practice, the Vologda Region is implementing the federal project “Eliminating digital inequality 2.0”, a macro-project to create a regional video analytics platform, as well as national projects “Digital economy” and “Data economy” that support small and medium businesses, IT companies, etc. An important area of activity is the training of highly qualified personnel in the field of

⁹ Ratings of Russian regions by information technology development. Available at: https://www.tadviser.ru/index.php/Статья:Рейтинги_регионов_России_по_развитию_информационных_технологий (accessed: March 18, 2025).

¹⁰ Digital transformation of the Vologda Region: new solutions-2024. Available at: <https://regcomment.ru/analytics/tsifrovaya-transformatsiya-vologodskoj-oblasti-novye-resheniya-2024/> (accessed: 21.08.2025).

¹¹ Digital maturity rating. Available at: <https://sicmt.ru/dmrating> (accessed: 18.03.2025).

IT industry in secondary and higher educational institutions of the region¹².

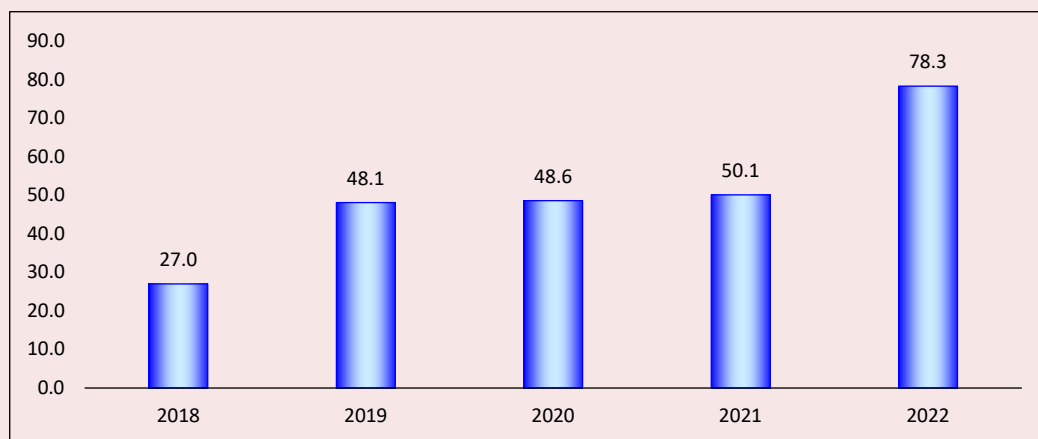
The digital economy in Jiangxi Province has started to reach the forefront, with large-scale efforts in key areas of the economy having a high positive effect on all areas of the economy. In 2022, the added value of this sector of the economy in Jiangxi Province reached 1.19 trillion yuan, up 14.4% year-on-year, and ranked second in China in terms of growth rate. It accounted for 37% of the province's GDP, up 2 p.p. from 2021. In the same year, a conference dedicated to the digital transformation of Jiangxi Province was held in the region. It presented scenarios for the use of digital technologies, designed in the format of a "list of possibilities" and a "list of products". Both lists include two hundred items each, and it is planned to invest about 8.2 billion yuan in their development¹³.

The digital industries in Jiangxi are constantly evolving, with 20 industries and economic sectors

being the main focus. The professional chip manufacturing industry is the most prominent, as indicated by the 160.4% revenue growth in 2022, indicating the increasing demand for the products. Other industries in Jiangxi Province, such as the Internet of Things and the digital services sector, are also showing gradual revenue growth, with increases of 14% and 9%, respectively.

The province is accelerating the integration of the digital and real economy as part of the implementation of the 14th Five-Year Plan. This is supported by the implementation of cloud big data and artificial intelligence initiatives, which promotes the comprehensive transformation and modernization of all sectors of the economy. In 2022, the province's development index for the integration of industrialization and informatization reached 78.3, increasing by 28.2 over the year (*Fig. 6*). The province's smart manufacturing maturity index reached 2.49, showing an increase of 0.02 points.

Figure 6. Development index of industrialization and informatization integration in Jiangxi Province in 2018–2022, units



Source: own compilation based on the data from the National Bureau of Statistics of China.

¹² Plans for digitalization have been outlined in the Vologda Region. Available at: <https://vologda.mk.ru/social/2024/02/26/plany-po-cifrovizacii-oboznachili-v-vologodskoy-oblasti.html> (accessed: 20.08.2025).

¹³ China's Jiangxi Province is experiencing a digital economy boom. Available at: <https://rossaprimavera.ru/news/53e1ec92> (accessed: 20.08.2025).

The digital economy development is impossible without the appropriate infrastructure. Progress is being made everywhere to create a suitable environment, which affects not only production directly, but also the living conditions of citizens. For example, to ensure the availability of the 5G network in 2022, 27,813 base stations were installed in each community in Jiangxi, and a total of 88,529 base stations were built in the province. In 2022, Ganzhou, Jian, Yintan, Yichun, Fuzhou and Pingxiang were included in the list of gigabit cities in China, bringing the total number of Jiangxi cities complying with the gigabit standard to nine, ranking the province fourth in China and first among the country's central regions.

Barriers to promoting synergies between digital intelligent transformation and green development.

1. Weak competitiveness of industries due to their concentration in the middle and lower tiers of value chains (VCs)

Most of the manufactured products are localized in the middle and lower links of the VCs, which does not allow the manufacturing industry to take a competitive position in the world market. The Vologda Region is characterized by the problem consisting in the small size of regional chains, which include mainly two or three stages of production. The mentioned circumstances negatively affect the GDP growth rate, reduce the investment attractiveness of regions, lead to the development of deindustrialization processes, etc. (Sidorov, 2022).

Industry suffers from a general lack of strength, remaining at a low development level, relying mainly on basic processing and simple assembly methods to produce low-quality and low-value-added products. Jiangxi also needs to address the “four surpluses and four deficiencies”¹⁴.

¹⁴ The problem of “four surpluses” refers to the high share of traditional, low-technology, resource- and labor-intensive industries in the industrial structure. The problem of “four deficiencies” implies the lack of developing, high-tech, capital-intensive, and high value-added industries.

2. Lack of key technologies in the main economic sectors to build a new model of industrial development.

This manifests itself in three aspects:

- technological capabilities of production equipment vary greatly from one enterprise to another. For example, Jiangxi Copper Corporation Limited and PAO Severstal use advanced technologies for smelting and processing of non-ferrous and ferrous metals, while small and medium-sized enterprises are hampered by outdated equipment;

- insufficient integration of industrialization and informatization. Actions are being taken to intensify this process. For example, Jiujiang City District supports private businesses to form special funds for their integration, and creates demonstration models, but these measures are not enough due to the small territorial coverage;

- underdeveloped and weakened growth in the producer services sector, which includes e-commerce platforms as well as the financial services sector, such as public databases and non-ferrous metal trading centers.

3. Uncertainty in the VCs, compounded by the difficulties of their factor-based transformation.

Jiangxi Province primarily lacks leading companies in the field of traditional Chinese medicine (TCM). Although companies such as Jemincare and Qingfeng Pharma Group occupy a respectable position in the Chinese TCM industry, there is still a certain gap between them and the leading domestic and world-renowned companies. There is also a lack of efforts in research and development of TCM technologies.

Conclusion

Based on the research results, we formulated a number of proposals to improve the interaction between digital intellectual transformation and environmental development in the promising industries of Jiangxi Province and the Vologda

Region based on the experience of Russian and Chinese regions in accordance with the national strategic plans of the states. Their implementation requires the use of the regions' strengths, the formation of a modern industrial system based on their competitive advantages.

1. Emphasize the primary role of industrial clusters in strategic emerging industries to accelerate the adoption of digital smart technologies.

One of the initial priorities is the creation of advanced manufacturing clusters. Improving the quality of manufacturing has traditionally been a top priority for both regions. It is required to create advanced clusters to accelerate the pace of re-engineering of the industrial base and progress of basic technologies and equipment.

We suppose that it is necessary to include the following in the list of advanced clusters at the national level:

- electronic information cluster in the economic and technological development zone of Jinggangshan Urban County (Jingdezhen Urban District);
- helicopter cluster in the high-tech industrial development zone of Jingdezhen Urban District;
- the mobile Internet of Things cluster in the high-tech industrial development zone of Yingtan Urban District.

In the Vologda Region, according to experts and representatives of regional enterprises, it is promising to form the following clusters:

- industrial cluster of robot manufacturers;
- interregional cluster for the manufacture of pulp and paper products;
- food production cluster¹⁵.

The implementation of these measures will be facilitated by encouraging closer cooperation between clusters and investment institutions. In this

regard, it is necessary to establish fund programs that leverage each institution's expertise in investment and key productive sectors, to accelerate the transition from old to new drivers.

2. Focusing on the development of traditional industries to promote the integration of digital and intellectual transformation and green development.

Under this direction, it is important to accelerate digital transformation in the first place. To this end, we should actively develop 5G communication technologies, form industrial internet platforms and guide enterprises to transition to them, promote a general overview of digital transformation for enterprises, and coordinate efforts to implement cloud-based big data and artificial intelligence initiatives.

For Jiangxi Province, the establishment of ecological and low-carbon development system of traditional industries is of special significance. Supporting the circular economy is necessary in Yintang, Fengcheng and other areas. This requires the widespread application and promotion of integrated resource utilization technologies, and increasing the level of processing in key industries such as copper and lithium smelting and fabrication, and construction materials. In addition, we should boost service-oriented manufacturing, create a platform for the comprehensive development of traditional industrial clusters, and encourage enterprises to network cooperation and personalized customization.

3. To develop the digital economy, emphasis should be placed on industries integrated with the real sector.

The implementation of this direction requires the creation of applied digital economy scenes using "VR+", "5G+" and "blockchain+" technologies, the need for which has grown even as the COVID-19 pandemic and its associated restrictions have spread (Li Zhimen et al., 2021). The latter involve demonstration zones, laboratories, and the

¹⁵ Three industrial clusters were proposed to be created in the Vologda Region. Available at: <https://vo.rbc.ru/vo/15/05/2024/6644a0d29a7947aaf2fbbd26> (accessed: 20.08.2025).

creation and selection of pilot projects. There is a need to strive for more replicable and promotable application scenes of digital transformation in the manufacturing industry.

Further, it is required more efficient utilization of data elements. It is important to encourage market players to legally collect them, actively promote the development of industrial parks and big data demonstration bases, conduct research on data ownership, handling, transaction, access and supervision, and build reliable infrastructure. It is also necessary to emphasize the industrial aspects of the digital economy, intensify efforts to integrate with the real sector, and accelerate the development of subsectors such as electronic devices and components, semiconductor lighting, and intelligent terminals.

4. Optimize VCs implementation models and create a platform for the interaction of digital-smart transformation and green development.

One of the priority tasks is to accurately identify the key areas of transformation of industrial chains. Focusing on specific sectors, it is necessary to promote the expansion of VCs in promising sectors and facilitate their modernization in traditional sectors of specialization.

A prerequisite for the implementation of these measures, as well as for ensuring sustainable economic growth of the regions as a whole, is the targeted stimulation of investment activity and improvement of the investment climate (Yang, 2017). The main emphasis should be placed on development zones to improve the overall level of service of projects throughout their life cycle, focusing on enterprise ratings, in particular, the Global 500, nationwide, regional and sectoral. By forming an innovation consortium and community of interest with other enterprises in the industrial chain, key industries can move from “point-to-point expansion” to “chain-based development”.

It is equally important for Jiangxi Province to modernize the industrial chain leader system. Based

on the experience of advanced models such as Shanghai’s “industrial internet with chain master authority” and Hangzhou’s “chain master factory”, the province should adopt the model of “chain leader + chain master”, establish a consistent system of interaction between leaders and masters, and promote the growth of chain master enterprises. Jiangxi Province should also promote another model, “chain leader + industrial park”, in which leaders can guide the integration of cities, counties and industrial parks into the provincial industrial chain scheme.

5. Promoting the industrial application of science and technology and taking multiple measures to optimize the innovation ecosystem.

Priority should be given to promoting the industrial application of scientific and technological advances. Integration with higher education and scientific centers is necessary. Licensing of S&T achievements for small and medium-sized enterprises on the basis of higher education institutions and regional centers of the Academy of Sciences seems possible. The license fee can be paid by the methods of “zero threshold fee + stage-by-stage payment + income commission” or “deferred payment”.

Encouraging the development of innovative technologies and enterprises is important. Leading companies should be supported to build industrial internet platforms, discover advanced technologies and application scenes, and develop replicable and promotable industry-specific digital solutions. In addition, for Jiangxi Province, it is necessary to intensify efforts to establish a list of key enterprises in the Poyang Lake National Innovation Demonstration Zone and support leading systemically important enterprises to become stronger and larger by applying one policy to one enterprise, thus creating a series of master-chain enterprises.

The implementation of measures in this direction requires the early deployment of digital

infrastructure construction. The goal of the regions is to stay at the forefront of industry trends while implementing an accelerated action plan for key sectors of the digital economy and promoting new industries and business models. The research and development of virtual industrial parks and clusters should be a priority in the emerging Nanchang Future Tech Hub, along with the acceleration of virtual agglomeration, platform operation and networking of industrial resources.

The novelty of the study lies in the identification of the main trends of digital intelligent transformation and green development of industries in the Vologda Region and Jiangxi Province, as well as in the formation of a set of measures aimed at activating their interaction. The practical significance of the study lies in the possibility of using the results obtained by the authorities in the development of regional strategic documents and the formation of structural policy directions.

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Innovation Processes Staffing: Issues and Content



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Abstract. In the context of global competition and geopolitical challenges, the issues of outstripping innovative development and achieving technological sovereignty have become particularly relevant for Russia. Innovative development largely depends on an effectively functioning national innovation system, and technological sovereignty is ensured not by innovations themselves, but by highly qualified specialists capable of generating and implementing breakthrough ideas. An analysis of the trends in the development of artificial intelligence technology, a most relevant innovation of our time, allows us to conclude that there are certain barriers in the interaction of elements of the national innovation system regarding the provision of human resources for the development of this technology. The existing scientific groundwork in this area does not have a formalized theoretical and methodological framework for addressing this problem. The aim of our research is to design the conceptual foundations for staffing innovation processes in the context of Russia's national innovation system. Based on the consideration of various points of view on the interpretation of key categories of innovation theory, the article offers a conceptual scheme of their

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relationship; we formulate our own definition of innovation processes staffing and disclose its content within the framework of Russia's national innovation system. Using the example of artificial intelligence as one of the key innovations, we identify categories of human resources necessary for various stages of the innovation process. Based on the findings of the study, we propose a comprehensive scheme for staffing the innovation process in the context of the Russian national innovation system, where, together with its traditional elements (business; universities and academic structures; the state), society is considered as an important component of staffing innovation development. Taken together, the results obtained make it possible to formalize innovation processes staffing as a scientific category and define the general outline of this process, which needs further elaboration and development.

Key words: artificial intelligence, innovative development, national innovation system, innovation process, innovation potential, resource provision, human resources.

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Introduction

Innovation is one of the key factors promoting the development of modern economies. At the same time, there is no single strategic document in Russia for 2025 that regulates the country's innovative development and long-term goal-setting in this direction. However, in 2023–2024, key documents on scientific and technological development (hereinafter referred to as STD) were updated, ensuring the introduction of innovations in the Russian economy in the coming years (medium-term planning horizon). In 2023, according to the RF Government Resolution, the Concept of Technological Development for the period up to 2030¹ was adopted; and in 2024, under the Presidential Decree, the Strategy of Scientific and Technological Development of the Russian Federation² was updated. These documents state

that the main priority of STD in Russia is to preserve the state's ability to create and apply high-tech technologies that are crucial for ensuring independence and competitiveness, which determine technological sovereignty.

It follows from the lecture by Nobel Laureate S. Kuznets that the effective development of advanced technologies requires appropriate institutional structures and ideological prerequisites that facilitate effective implementation and dissemination of innovative solutions³. V.A. Yasinskii and M.Yu. Kozhevnikov, using the example of China, associate the effectiveness of scientific and technological development and, as a result, the formation of technological sovereignty, with the building of national innovation system (hereinafter – NIS) (Yasinskii, Kozhevnikov, 2023). Following these theses, NIS can be considered as the basis for preserving Russia's technological sovereignty.

¹ On approval of the Concept of Technological Development for the period up to 2030: RF Government Resolution 1315-r, dated May 20, 2023. Available at: <https://www.garant.ru/products/ipo/prime/doc/406831204/> (accessed: 16.01.2025).

² On the Strategy of Scientific and Technological Development of the Russian Federation: Presidential Decree 145, dated February 28, 2024. Available at: <https://www.garant.ru/products/ipo/prime/doc/408518353/> (accessed: 16.01.2025).

³ Kuznets S. Prize Lecture. Modern Economic Growth: Findings and Reflections. Available at: <https://www.nobelprize.org/prizes/economic-sciences/1971/kuznets/lecture/> (accessed: 16.01.2025).

The personnel component plays an equally important role in ensuring innovation processes in the country. Scientists agree that human capital is the most important factor in innovative development in Russia, since it is people who act as carriers of knowledge and sources of new ideas (Zemtsov et al., 2016). For example, one of the conditions for achieving the goals of STD in Russia, indicated in the previously mentioned strategic documents, is the training of qualified personnel. Therefore, one of the key functions of STD is to reproduce human resources.

E.V. Lenchuk and V.I. Filatov note that the resource provision of innovative projects is one of the central issues that need to be addressed before their implementation, and human resources⁴ themselves are one of the limitations in innovation processes (Lenchuk, Filatov, 2024). Thus, personnel training should begin long before the direct implementation of innovation processes.

Let us consider these conclusions using the example of the development of one of the key innovations of our time – artificial intelligence (AI) technology. The important role of institutional structures in the development of innovation is confirmed by the active process of AI development in the 2020s in Russia. In a short period of time, a number of key strategic documents⁵ were elaborated, federal development programs were

launched, an alliance in the field of AI and other structures were created. At the same time, the example of the introduction of AI technology into the Russian economy shows that, despite the measures taken by the Russian government, there is a shortage of highly qualified workers in the field of AI (Averyanov et al., 2024). Thus, according to the authors, there is a situation when the activities of the established institutional structures in terms of personnel training do not keep up with the speed of implementation of innovation processes. This thesis is confirmed by the results of a study by V.V. Volchik and E.V. Maslyukova, noting that “state management of innovation activity” is the most mentioned problem in the Russian innovation environment (Volchik, Maslyukova, 2022). The given example of the AI field demonstrates the existence of gaps in the field of staffing innovation processes.

Consideration of the problem of personnel shortage through the prism of the concept of national innovation systems and a structural and functional approach allows us to hypothesize the cause of these problems in disrupting the stability of the system and reducing the effectiveness of interaction between the elements of the Russian NIS. The first step to addressing these issues is to analyze the available theoretical and methodological framework.

Review of literature and research

The stages of the genesis of innovation theory have been discussed more than once on the pages of scientific periodicals (Yakovets, 2004; Shcherbakov, 2019). The development of the NIS concept dates back to the 1980s–1990s in the works of foreign scientists C. Freeman (Freeman, 1987), B.-O. Lundvall (Lundvall, 2010), R.R. Nelson (Nelson, 1993) and others. In Russia, the development of the NIS concept began somewhat later, and the foundations for innovative development are revealed in the works of N.I. Ivanova (Ivanova, 2002), V.L. Makarov (Makarov, 2003),

⁴ Despite the fact that the concept of “labor resources” is more “informative” at the national level, the concept of “human resources” will be used here and further in relation to the national innovation system as a cohort of the most qualified workers with special knowledge, labor skills and experience for each stage of innovation process. Currently, the concepts of “human resources/staffing” are actively used operational categories of innovation economics and management practice. The comparison of the categories “human resources” and “staffing” in relation to the theory of innovation is not included in the objectives of this study.

⁵ On the development of artificial intelligence in the Russian Federation: Presidential Decree 490, dated October 10, 2019 (as amended February 15, 2024) (together with the “National Strategy for the Development of Artificial Intelligence for the period up to 2030”). Available at: https://www.consultant.ru/document/cons_doc_LAW_335184/ (accessed: 16.01.2025).

O.G. Golichenko (Golichenko, 2014), and others. The ecosystem (Golova, 2021) and narrative (Volchik et al., 2023) approaches to the consideration of innovation development can be identified as modern research areas.

The emergence of the NIS concept is associated both with the versatility and complexity of innovative development processes that require new explanatory models, and with the response to the long-term crisis in the global economy. O.V. Golichenko writes that the NIS concept helps to overcome the key shortcomings of the main economic theories (Golichenko, 2014). N. Sharif, speaking about the origins of the NIS concept, notes that it is based on a synthesis of scientific and political challenges caused by the need to create a new economic policy (Sharif, 2006). This allows us to consider this concept as a management framework for the development of an innovative economy.

The issues of staffing innovation processes are often studied in the context of the category of innovation potential, or its individual components are analyzed. For example, S.V. Yurin's work separates innovation potential and resource provision, and highlights the availability of highly qualified human resources and infrastructure as key components of resource provision (Yurin, 2010). A research led by L.E. Mindeli notes that personnel is the most important and perhaps the most problematic resource in scientific and technological development (Mindeli, 2019). E.E. Golovchanskaya speaks about the importance of intellectual resources, which are understood as the totality of the abilities of individuals involved in research and innovation activities of the national economy (Golovchanskaya, 2023). A.Yu. Klimentyeva considers the resource support of the innovation process as a combination of personnel, financial, information and organizational security (Klimentyeva, 2018).

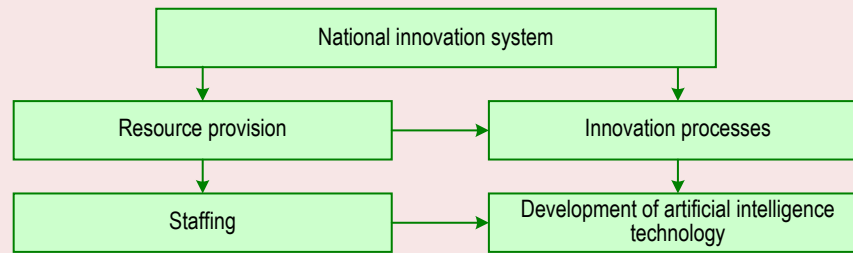
At the same time, the analysis of the content of the above works suggests that both the resource provision of innovation processes and its personnel component have no clear connection with the NIS concept. This conclusion is supported by the thesis that the Russian theory of innovation requires designing a unified terminological paradigm (Cherenkov et al., 2019). Thus, the lack of a unified theoretical and methodological framework requires conceptualizing the staffing of innovation processes as an object of research.

The aim of the study is to conceptualize innovation processes staffing within the framework of the national innovation system of Russia. The research seeks to solve four tasks: positioning human resources for innovation processes relative to the key categories of innovation theory; formulating the concept of "human resources for innovation processes"; correlating the stages of the innovation process with the categories of human resources; designing a conceptual scheme for human resources for innovation processes.

Materials and methods

The study is based on a review of the works of Russian and foreign scientists in the field of innovation theory. The development of AI technologies in the Russian economy is considered as an example of relevant innovation processes. In terms of NIS research, the authors adhere to the structural-object and functional analysis methods proposed by O.G. Golichenko (Golichenko, 2014). Within the framework of this approach, NIS can be considered as a set of individual elements, and resource provision of innovation processes as one of its functions. When identifying the stages of the innovation process, the authors use the approach of G.A. Shcherbakov (Shcherbakov, 2020). Innovation processes staffing is considered as a component of resource provision. Within the framework of this study, we are talking specifically about human resources at the level of the national innovation

Figure 1. Conceptualization of the research object



Source: own compilation.

system, since labor resources are a broader concept that includes the entire working-age population. A distinctive feature of human resources as a scientific category is the emphasis on having special training in the subject area and professional ability to work. Human resources have special skills that allow them to reproduce innovation processes at all stages. An example of such resources are graduates of specialized educational programs in the field of AI. *Figure 1* shows a diagram reflecting this approach to the object of study.

Results and discussion

Interrelation of key categories of innovation theory

Let us consider the content of the key categories of innovation theory, such as innovation, innovation activity, innovation process, NIS, innovation potential and innovation environment.

Comparing Russian research with foreign primary sources, V.I. Cherenkov, V.P. Maryanenko, and N.I. Cherenkova conclude that, in general, innovation is the commercialization of invention (knowledge) (Cherenkov et al., 2019). At the same time, the invention must be understood as broadly as possible, since modern innovation theory considers innovation not only as a product or service in the understanding of J. Schumpeter, but also as a technology. An example of an approach to considering innovation as technology is revealed through the English-language term “General-purpose technology” (Lipsey et al., 2005).

Thus, the concept of innovation process can be defined by the stages of creation, development and use of new knowledge or technology in the economy (Ivanov, 2006). Modeling of innovation process in this sense is presented in the work of G.A. Shcherbakov (Shcherbakov, 2020). We should note that changing the models of the organization of innovation process does not change its essential interpretation – it is always a transition from a new idea to a finished product, even if this process is not linear (Burets, 2014).

Let us move on to the next category – innovation activity (hereinafter – IA). In Russian research, there are concepts of scientific and innovation activity (Sibirskaia et al., 2014), which are also defined at the state level. The federal law “On science and the state policy in the field of science and technology” defines IA as “activity (including scientific, technological, organizational, financial and commercial) aimed at the implementation of innovative projects, as well as the creation of an innovative infrastructure and ensuring its activities”⁶. In turn, scientific activity is aimed at obtaining knowledge. According to M.E. Popov, IA is a type of activity aimed at the implementation of turnkey innovations in public practice (Popov, 2011). However, there are different

⁶ On science and the state policy in the field of science and technology: Federal Law 127-FZ, dated August 23, 1996 (as amended August 8, 2024). Article 2. Available at: <https://base.garant.ru/135919/741609f9002bd54a24e5c49cb5af953b/> (accessed: 16.01.2025).

approaches to the definition of this concept (Bobrov, Medyakina, 2017). In general, innovation activity is a set of specific actions and procedures for the commercialization of knowledge – a set of purposeful actions of NIS entities to implement innovation process. Thus, innovation activity is a broader concept than innovation process. Innovation process formalizes, structures, and describes the sequence of IA in terms of creating, mastering, and distributing innovations. In other words, innovation process formalizes the logic of the movement of innovation over time, and innovation activity is a set of practical efforts that ensure the implementation of innovation process. Following these theses, when developing individual innovations, it is necessary to talk about personnel (resource) support for innovation processes at each of its stages, rather than activities as such.

Let us move on to the content of the key research category – national innovation system. It can be most clearly represented through the classic definition of B.O. Lundvall: NIS – “elements and interrelations that interact in the production, dissemination and use of new economically useful knowledge” (Lundvall, 2010). The elements of the system include universities and R&D departments, as well as marketing and financial subsystems. Thus, NIS study takes into account not only the elements of the system themselves, but also the relationship between them.

According to J.S. Metcalfe, NIS is “a system of interconnected institutions that create, store, and transfer knowledge, skills, and artifacts that define new technologies” (Metcalfe, 1995). From this point of view, NIS is an institutional foundation for the creation, accumulation and implementation of resources necessary for innovation processes.

A different approach to the definition of NIS can be traced in the works of C. Edquist. The scientist defines innovation system as a set of factors that determine innovation processes, or as “all important economic, social, political,

organizational, institutional and other factors that influence the development, dissemination and use of innovations” (Edquist, 2009).

Let us consider the views of Russian scientists on the concept of NIS. O.G. Golichenko interprets innovation system as a set of public, private and public organizations and institutions, as well as the mechanisms of their interaction, within which activities are carried out to create, store and disseminate new knowledge and technology (Golichenko, 2012). A similar approach can be traced in the works of V.V. Volchik’s research team: they consider NIS as a set of institutions and organizations that ensure social and economic interactions: from the creation of knowledge and technologies to their introduction into production (Volchik et al., 2023). Thus, the national innovation system can be interpreted as a set of organizations and institutions whose interaction is aimed at supporting the innovation process.

Let us move on to the next category – national innovation potential. The concept of national innovation potential is considered in the works of D. Furman, M. Porter and S. Stern. Scientists conclude that innovation potential is a country’s ability to produce and commercialize a stream of innovative technologies in the long term (Furman et al., 2002). In other words, innovation potential can be described as a country’s ability to reproduce innovation processes over and over again.

At the same time, as M. Porter notes, “without skilled scientists and engineers working in an environment where there is access to advanced technology, it is unlikely that the country will be able to produce a significant number of innovative products that did not previously exist in the world” (Porter, 1990). This means that innovation potential can be considered both as the ability to implement innovation processes, and as a set of resources providing this ability.

Russian scientists consider innovation potential as “a sign of a socio-economic system that

characterizes the feasibility and maximum possible result of purposeful activities to change the structural and functional properties of this system” (Gureev, Grishin, 2017). The feasibility emphasized by the authors can be interpreted as the ability of NIS to carry out an innovation process, and this opportunity, among other things, determines the level of resource availability necessary for the creation and development of innovations.

On the one hand, innovation potential is a multicomponent evaluation category that characterizes the possibility of implementing innovation process in the long term. On the other hand, the very existence of such an opportunity is due to the presence of some reason, whether it is the effectiveness of the interaction of the elements of an innovation system or the availability of certain resources. Thus, national innovation potential is a measure that determines the sufficiency of the resources and infrastructure available in the country for the implementation of innovation process. Following the stated theses, the staffing of innovation process can be considered as the realization of innovative potential.

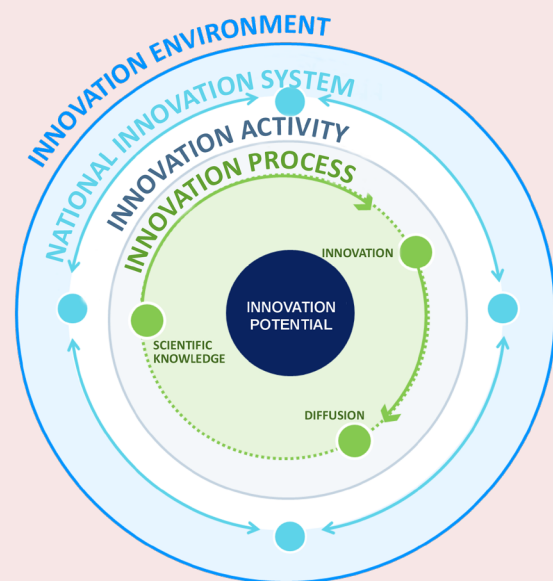
Let us move on to the last highlighted category – innovation environment. Developing V.L. Makarov’s thesis that the number one task in the development of an innovative economy is to create a favorable innovation environment (Makarov, 2010), we can conclude that the current innovation environment characterizes the effectiveness of realizing the country’s innovation potential during innovation processes within the framework of NIS. The concept of innovation environment, introduced by M. Castells is a specific set of relations between management and production aimed at generating new ideas, knowledge and technologies (Castells, 2000). Innovation environment has the ability to create a synergistic effect through the interaction of its elements. Researchers note that a favorable innovation environment significantly increases both the number of innovations and their spread in the existing NIS (Ma et al., 2024).

Creating a favorable environment for the self-realization of human resources is primarily a tool for their conservation and accumulation. I.V. Shatskaya notes that “in the management of human resources for innovation development, the partnership of innovative enterprises and educational organizations is a system of relations that provides for the creation of conditions for the development of their innovative potential, that is, the formation of resources that make them susceptible to the development, generalization and implementation of new ideas, products and technologies” (Shatskaya, 2022).

The content of the considered key categories of innovation theory allows us to formulate a conceptual scheme of their interrelation (Fig. 2).

With regard to innovation processes, NIS is a mechanism that structures and directs the use of national innovation potential in conditions determined by the established innovation environment during the implementation of innovation activities. These three categories complement each other: innovation potential

Figure 2. Conceptual scheme of interrelation of key categories of innovation theory



Source: own compilation.

characterizes the available resources and infrastructure necessary for innovation; NIS organizes and directs innovation processes through resource and infrastructure management, innovation environment determines the external and internal conditions for the implementation of innovation processes in the country.

Innovation processes staffing

According to the scheme proposed in Figure 2, innovation processes staffing is a coordinated interaction of NIS structural elements aimed at reproducing the human component of innovation potential necessary to maintain innovation processes in the country at a competitive level.

We note several accents of the proposed definition. First, the interactions of NIS elements must be coordinated, since it is the synchronization of the actions of various structures that determines the existence of a synergetic effect in the development of innovations, which was mentioned earlier. Second, the reproduction of the personnel component of innovation potential includes both their creation (training) and the accumulation, attraction and allocation of appropriate resources – actions aimed at increasing national innovation potential. Third, the competitive level of implementation of innovation processes is understood as the amount of resources necessary for the successful development of an innovative economy, taking into account the preservation of national technological sovereignty (proposed as the minimum efficiency limit) and competitiveness at the international level (proposed as the target efficiency limit). The study of O.S. Sukharev (Sukharev, 2024) can be cited as an example of assessing technological sovereignty. Fourth, the interactions of NIS elements occur permanently on two levels. The first level is the staffing of the overall national innovation process. The second level is the concentration of efforts to reproduce human resources for the development of certain breakthrough innovative technologies.

Structure of innovation processes staffing on the example of artificial intelligence

We agree with E.E. Golovchanskaya who points out that one of the current trends is the increasing role of highly intelligent personnel as a generator of scientific ideas reproducing new knowledge (Golovchanskaya, 2024). I.V. Shatskaya summarizes that highly competent engineering personnel, ready for proactive, creative activities, are becoming the leading driving force of innovation development (Shatskaya, 2022), which allows considering human resources as a key source of ensuring the dynamics of innovation processes in the country.

Thus, the effectiveness of innovation process, and the very possibility of its implementation, directly depend on the availability of appropriate human resources. We should note that we are talking not only about scientists, designers and engineers, but also marketers, businesspeople, and experienced managers. In a study by V.V. Volchik and S.A. Panteeva, one of the experts expressed the opinion that the importance of an immediate idea (innovation) in a successful business is 10–20%, the rest is the contribution of marketers, economists, etc. (Volchik, Panteeva, 2024).

As noted earlier, innovation process can be formalized in several key stages (Shcherbakov, 2020). Accordingly, a specific category of human resources can be allocated for each of them. In turn, this will make it possible to structure the content of human resources for innovation processes. Within the framework of this study, it is proposed to consider the process of staffing using the example of the development of artificial intelligence technologies as the most relevant innovation.

The first stage of innovation process is the acquisition of knowledge. This stage involves both fundamental research and the generation of ideas by individual innovators. The resource support for this stage is based on highly skilled scientists (Melekh et al., 2023). In the field of AI, this category of human resources is involved in the development

of breakthrough scientific and design solutions, including those formalized by new methods or algorithms in the field of data analysis. As a rule, the main difference between this category of human resources is the availability of scientific publications or an academic degree. As an example of significant AI researchers, we can cite the rating of Russian scientists who have three or more publications at A* conferences⁷. As a rule, researchers in the field of AI can be classified as “one-of-a-kind experts”, but their achievements make a significant contribution to the country’s innovation development.

This is followed by the R&D stage. The activities within this stage are aimed at identifying ways to apply the results of fundamental research, as well as the development of individual AI products. Focusing on the “Basic model of professions and competencies” in the field of AI, developed by the AI Alliance, an example of this category of human resources are representatives of “Data Scientist” and “ML Engineer” professions⁸. Their main focus has shifted to working with big data, as it is the basis for the development of these technologies. This category of human resources is more widespread, but it must also have high skills in the subject area.

According to the same model, a category of human resources can be distinguished for the stage of introducing innovation into production. These include Data Engineer, Technical analyst in AI, and managers. We note that the model under consideration is more applicable when describing production processes, but it differentiates the stages of development or implementation of an innovative product, clearly showing the difference in human resource requirements at different stages of innovation process.

⁷ The Artificial Intelligence Index in Russia: Analytical collection # 13. Artificial intelligence: An almanac. Moscow: Competence Center of the National Technological Initiative based at MIPT in the field of Artificial Intelligence, 2024. December. 48 p. Available at: https://aireport.ru/ai_index_russia-2023 (accessed: 21.03.2025).

⁸ The basic model of professions and competencies. Available at: <https://skills.a-ai.ru/education/methodology/models/> (accessed: 21.03.2025).

If an innovation is aimed not only at solving problems within a development company, but is positioned as a separate market product or service (good), its dissemination (the stage of innovation diffusion) requires involvement of qualified executives, managers, marketers, etc. The transformation of scientific and technological developments into an innovative product can be provided by professionally trained specialists in the field of innovation management (Pligina, 2010).

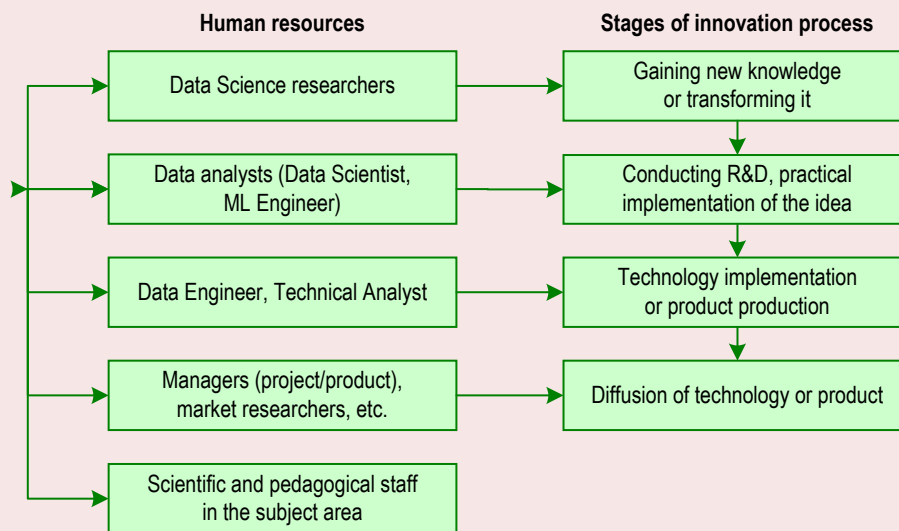
Also, the reproduction of human resources requires the availability of scientific personnel in the field of innovation, capable of training qualified employees in the field of innovation management (Rudskoy, Tukkell, 2015). A similar conclusion is true for the field of AI under consideration. D.V. Livanov, rector of MIPT, noted that there are not enough professors in Russia who teach students in AI programs⁹. Following this thesis, we can conclude that personnel reproduction requires the presence of scientific and pedagogical staff with competencies in the subject area. Accordingly, innovation processes staffing implies training of scientific and pedagogical staff.

Figure 3, using the example of the AI field, shows the correspondence between the categories of human resources and the stages of innovation processes.

We should note that the list of these professions is not exhaustive; they may not be linked to individual stages of innovation process. However, the model provides general ideas about the structure of human resources in the development of AI technologies, and is also a methodological example for allocating human resources to a particular stage of innovation process. The lack of ensuring the human resource needs of the economy for each of the groups of human resources will lead to a violation of the effectiveness of innovation processes. Given that the training of personnel

⁹ MIPT stated that there are not enough teachers in the Russian Federation who teach AI programs. Available at: <https://tass.ru/obschestvo/21698283> (accessed: 21.03.2025).

Figure 3. Correlation of the stages of the innovation process with the categories of human resources using the example of the field of AI



Source: own compilation.

by the higher professional education system is a long-term process, the development of appropriate educational programs in a particular field should begin long before its active development.

Conceptualization of innovation process staffing

Let us move on to understanding the staffing of innovation process from the point of view of NIS elements. In general, researchers note that it is difficult to judge whether Russia has an integrated human resources system for innovation activities (Ivanova et al., 2020). If we talk about the elements of NIS, the interaction of which affects innovation process staffing, first of all these are universities and the state, since the training of qualified personnel is one of the social functions of the state (Volchik et al., 2023). An example of the purposeful activity of the state in the field of human resources reproduction is the implementation in 2018–2024 of the federal project “Personnel for the digital economy”¹⁰.

¹⁰ Passport of the federal project “Personnel for the digital economy”. Available at: <https://legalacts.ru/doc/pasport-federalnogo-proekta-kadry-dlja-tsifrovoy-ekonomiki-utv-prezidiumom/> (accessed: 19.03.2025).

Speaking about the social responsibility of the state in terms of the development of science and education, L.I. Dmitrichenko and I.B. Avanesova note that investing in education and science ensures stable growth, innovative development and competitiveness of the country on a global scale (Dmitrichenko, Avanesova, 2024). Following the theses of the authors, we can conclude that against the background of international pressure and economic instability, state support and financing of Russian science are becoming one of the main conditions for preserving the technological sovereignty of the country.

Thus, we see that, despite the presence of various categories of human resources necessary to ensure innovation process at all its stages, the main element of NIS influencing their reproduction is the state. The state, as an institution, determines the admission targets for certain specialties, creates conditions for personnel training, allocates the necessary funding, and also controls the work of universities to train human resources. At the same time, universities provide the environment where

human resources are trained, since the university complex serves as the basis for ensuring the high scientific and technical potential of the state (Pligina, 2010). Accordingly, we can talk about the dual status of universities, since, on the one hand, universities are involved in R&D and scientific activities, and on the other, they are a tool that reproduces human resources.

The role of the institutes of the Academy of Sciences is equally important, since they are involved in the training of highly qualified personnel. V.M. Polterovich builds a chain of NIS elements: “universities – academic institutions – branch research institutes – research departments of large firms and development institutes”, where the function of reproducing human resources is assigned to universities (Polterovich, 2022). We note that this scheme correlates well with the stages of innovation process. A similar approach to staffing an innovative breakthrough is presented in the work of L.N. Svirina, which emphasizes that the basis of this process is the integration of universities, academic and industry institutes, design bureaus and innovatively active enterprises (Svirina, 2010).

In a market economy, in addition to the government and universities, business representatives who are interested in their innovative development should be directly involved in the training of human resources. It is also worth noting such an up-to-date modern source of personnel training as additional professional education (hereinafter APE) It is an important subsystem of the institute of education, as it allows retraining existing human resources (Chikileva, 2020). Russian practices of implementing APE in the field of AI show that, as a rule, it is the leading universities in this field (for example, MIPT) and large companies with expertise in the field of AI (for example, Yandex) that act as educational organizations; specialized educational organizations – less often¹¹.

¹¹ University 2035. Additional professional education in the field of artificial intelligence and related fields with financial support from the state. Available at: <https://ai.2035.university/> (accessed: 19.03.2025).

This makes it possible not to single out APE as a separate element of NIS in terms of personnel training.

An alternative example of the interaction of participants in the staffing of innovation development is proposed by I.V. Shatskaya. It provides a conceptual framework consisting of four elements: state, educational organization, innovative enterprise, and individual. In this scheme, the state is responsible for regulating relations between participants in the personnel provision of innovation development; an educational organization, interacting with enterprises, trains qualified personnel, an innovative enterprise shows social responsibility in terms of improving the quality of education of human resources; the individual (person) acts as a link between the participants in the staffing of innovation development (Shatskaya, 2021). Thus, the individual is assigned the role of a point of application of the efforts of the state, educational organizations and business. The inclusion of an individual in the process of staffing innovation processes is natural, since, on the one hand, it is a person who is the bearer of knowledge and the creative component necessary for generating new ideas, on the other hand, taking into account the interests of an individual in the modern world is a fundamental task for most states.

This approach is consistent with the model of the “quadruple spiral” of innovation development proposed in the work (Carayannis, Campbell, 2009). The model assumes the involvement of the public in the process of innovation development, in addition to the state, universities and business. According to this concept, the implementation of innovation process must meet the requirements and needs of individuals. Thus, individuals, being the object of interaction of NIS elements in the course of resource provision of innovation processes, should simultaneously be the subject of interaction. Based on these theses, it is proposed to consider society as a set of interests of individuals. The specifics of NIS’s interaction with society will be considered in subsequent studies.

Thus, innovation process staffing should be ensured by the interaction of society, the state, business, universities and academia, both in terms of personnel training, and in terms of their preservation and attraction – reproduction of the personnel component of innovation potential. *Figure 4* shows a scheme for staffing innovation process based on the considered elements of the Russian NIS.

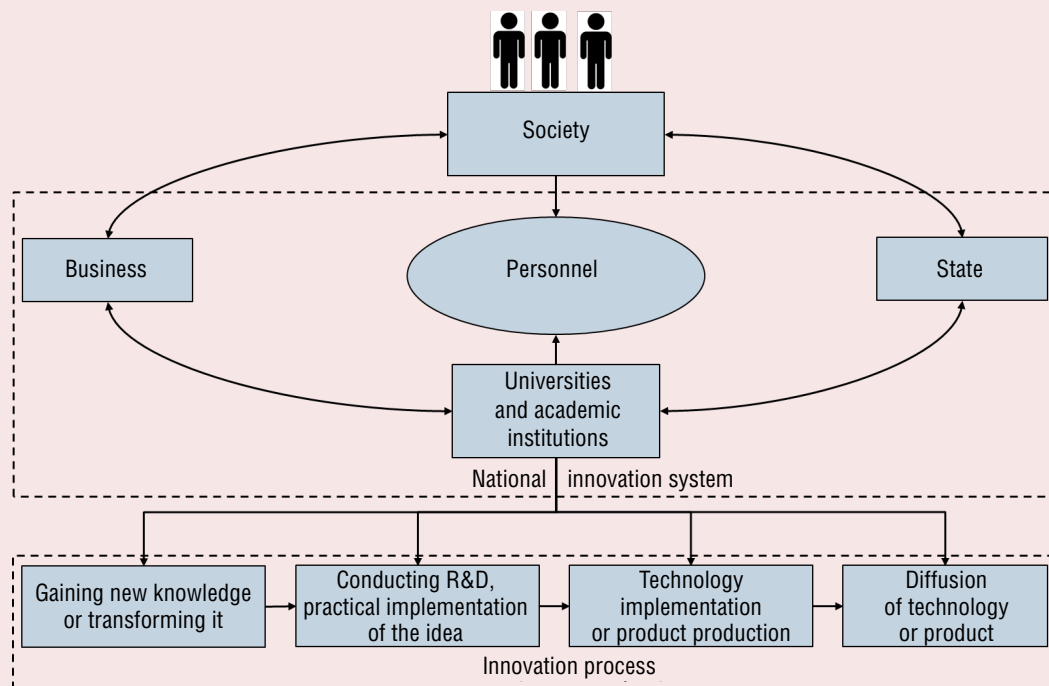
According to the above scheme, human resources for ensuring innovation processes are formed during the interaction of elements of innovation system and society aimed at professional training of individuals by universities and academic structures. The dominant role of universities is due to the fact that they are responsible for the direct training of human resources for various stages of innovation processes. The synergetic effect of the interaction between universities, the state, business and society makes it possible to preserve and accumulate the human component of the national innovation potential.

We should note that organizations of secondary vocational education (SVE) are excluded from the scheme. Although vocational education organizations also train the workers necessary to introduce innovations, for example, in the specialty 09.02.13 “Integration of solutions using artificial intelligence technology”, their graduates are less involved in science.

With such a system, the presence of an imbalance in interaction or the exclusion of one of the elements will lead to problems in staffing innovation processes and to the erosion of national innovation potential itself.

The authors believe that in the context of a constant shortage of personnel and the lack of alternatives to the innovative way of developing national economies, the preservation and enhancement of innovation potential is one of the key tasks of all elements of the national innovation system. Only through the coordinated interaction of all its elements is it possible to preserve the

Figure 4. Conceptual scheme of innovation process staffing



Source: own compilation.

technological sovereignty of the country. A unified strategy for Russia's innovation development serves as one of the tools that ensures, on the one hand, the coordination of all interests, and, on the other hand, proactive training of personnel. Thus, it can be assumed that the solution to the problems of disrupting the stability of NIS and reducing the effectiveness of interaction between its elements is in the plane of strategic documents of innovation development. The existence of a single long-term strategy would make it possible to build a smooth and system-wide work of all NIS elements and change the approach of "extinguishing fires" to strategic management.

Conclusion

The authors attempted to consider innovation processes staffing through the prism of the NIS concept. The results obtained contribute to the increase of scientific knowledge in the field of innovation theory. Based on the analysis of modern research in this field, a conceptual scheme of the relationship of its key categories was formed. It was determined that human resources form part of the

country's innovation potential. Based on this thesis, the content and main provisions of the category "innovation processes staffing" were formulated. Using the example of the field of AI, a methodology for identifying the structure of human resources for innovation processes was proposed. The necessity of training scientific and pedagogical personnel to maintain the process of reproduction of human resources was determined. Based on the analysis of the main elements of the NIS of Russia, a conceptual scheme for staffing innovation processes was drawn up. Together with the traditional elements of NIS, it is proposed to consider society as a direct source of human resources.

In conclusion, we note that the conceptual approach to innovation processes staffing presented in the framework of the study defines only the general outline of this scientific category and needs further specification and development.

The findings of the work can be used by scientists, teachers and students in the framework of studying modern innovation processes in Russia.

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Budget Parameters of Metropolises and Their Impact on the Economic Development of Regions



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Abstract. Currently, metropolises are making a great contribution to the development of regions. It is assumed that the development of urban finance is a prerequisite for accelerating regional development. The study focuses on such tasks as comparing the budget parameters of metropolises, assessing the interrelationships of transferring tax regulations beyond the mandatory minimum to city budgets, receiving large amounts of targeted transfers and the level of economic development of regions. The budget indicators of 14 Russian million-plus cities are analyzed. It is revealed that the level of development of the region, which was assessed based on the indicators of the gross regional product and ratings of scientific and technological development, has no stable relationship with the structure of tax revenues of the administrative center. At the same time, there were practically no significant changes in this area over the five-year period. The receipt of intergovernmental transfers is also largely determined by the established patterns of interaction between authorities at various levels, rather than economic expediency. In this case, the “rut effect” is clearly manifested, when the established practice is repeated throughout the period under consideration. As a result, it was concluded that large cities do not receive sufficient budgetary incentives to promote the economic, scientific and technological development of the regions, the potential for budgetary interaction with these cities is underutilized, and it is affected by the “rut effect”. It seems advisable in future studies to pay attention to the formation of recommendations to federal authorities and authorities of constituent entities of the Russian Federation on improving budgetary cooperation with local governments of cities that are drivers of innovative development of territories.

Key words: territorial development, city budget, tax revenues, incentives, administrative center of the region, regions.

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Introduction

Urban development is a prerequisite for the development of the regions as a whole. A large city, in fact, forms an innovative environment, has great opportunities for generating tax revenues, and is developing faster than other territories. At the same time, in Russian practice, there is a situation when large cities (with the exception of those with the status of cities of federal significance) are municipalities, namely urban okrugs or urban okrugs with intra-urban divisions. Consequently, budget revenues are generated in such a way that only a small part of the tax revenues generated by the urban economy goes directly to the city budget. As a result, the budgets of even the largest innovatively developing cities are characterized by low tax revenues and dependence on intergovernmental transfers, which reduces the interest of authorities in expanding the tax base as a result of more efficient and innovative use of the resources available in the territory.

Due to the instability of recent years, these problems have remained unresolved, and the potential for improving budget policy in large cities has not been fully realized.

The authorities of RF constituent entities have certain opportunities in redistributing tax revenues and providing intergovernmental transfers to municipalities, including large cities. In our opinion, the level of centralization of budget revenues in the region and the incentive system created for local governments within the framework of budget policy are important and influence the development of territories.

Theoretically, our research is based on two scientific directions: concepts of territorial development, in particular, studying the development processes of large cities and agglomerations, and the theoretical foundations of public finance.

In modern conditions, the role of large cities continues to grow, and the innovative development of territories is associated to a great extent with

socio-economic processes in large cities (Goffe, 2014). The heterogeneity of the development of territories is influenced by both migration processes and the more active formation of horizontal ties in them, the entrepreneurial community, and professional communities in the field of creative industries, which forms the basis for the innovative development of the respective cities (Mellander, Florida, 2008).

In the context of our study, the provisions of the center-peripheral paradigm (Friedmann, 1966) are relevant, based on which it is possible to achieve better results in the development of regions by concentrating resources in a large central city (Fujita et al., 2001; Fujita, Thisse, 2013), and then create conditions for the spread of innovations across the territory of a region as a whole, which happens in accordance with certain patterns. Studying these processes in the context of Russian realities indicates the predominant role of the two metropolitan agglomerations and the need to develop other regional centers, which, of course, requires efforts on the part of regional and federal authorities (Kuznetsova, 2019). Large cities have potential for development. As early as 2010, the share of people employed in large cities (Omsk, Samara, Novosibirsk, Volgograd) exceeded two-thirds of the total number of people employed in the region (Zubarevich, 2010), and the share of investments in large cities reached from 40 to 80%, and this indicator is constantly increasing (Leksin, Porfiryev, 2017). Thus, the importance of large cities for the development of regions as a whole has been considered in both Russian and foreign studies and is beyond doubt.

Scientific and technological development of the regions as one of the important and relevant areas of economic development in general has been widely studied by Russian scientists in recent years. In particular, much attention is paid to the issues of an adequate assessment of the level of development of territories, the choice of indicators for assessment,

and the methodology for compiling appropriate ratings (Kuznetsova, 2023). There is an opinion about the need for a differentiated approach to the implementation of scientific and technological policy, depending on the characteristics of the region. In particular, its success is related to the extent to which the events are adequate to the type of region and the degree of its development that has already been achieved (Byvshev et al., 2024).

However, the interrelationships between the budget parameters of the administrative center of the region and the prospects for its economic development have not yet received enough attention.

To a certain extent, the ideas of decentralization as a prerequisite for regional development follow from Oates' theorem, according to which decentralized decision-making on the provision of regional public services is more effective than centralized, provided government costs are reduced (Oates, 1999). A similar conclusion has been drawn in a number of Russian studies on the impact of decentralization on the effectiveness of fiscal and economic policy (Yushkov et al., 2017; Pechenskaya-Polishchuk, 2021). Nevertheless, the increasing complexity of intergovernmental relations and more active financing of the municipal level of government does not always lead to the formation of sustainable incentives for development (Wildavsky, Caiden, 2004).

The emphasis in modern budget policy on studying the finances of large cities and intergovernmental relations directly with them follows from the concept of "Hourglass Federalism" formulated by Courchene (Courchene, 2004). According to this theory, it is not the regions that become the "narrowed center" of the hourglass that are more important for territorial development, but large cities that are growth points in terms of the country's innovative development, due to the quality of human capital, the prerequisites created by the developed social sphere and education. A

similar position is held by T. Herrschel, who notes that the effective realization of the potential of large cities requires active participation of city authorities in spatial management (Herrschel, 2014). However, in Russian practice, more attention has traditionally been paid to budget interaction between federal and regional levels of government, and municipalities, regardless of their scale and innovative capabilities, are considered as a less significant level of the budget system. At the same time, the alignment of regional and municipal interests is an obvious prerequisite for territorial development (Levina, 2019).

The state's attention to large cities usually manifests itself as a desire "to increase its influence in the economy, in particular in the processes of urbanization; and the objects of its regulation are agglomerations as municipal clusters, losing their independence, hoping to receive certain preferences from the state in return" (Shvetsov, 2023), and budget relations with them are being built in such a way that the tasks of financial support for higher-level budgets are being solved to a greater extent, which manifests itself as an increase in the centralization of budget revenues (Pechenskaya-Polishchuk, 2021).

Russian scientists have studied regional and municipal finance, including the budget policy of large cities, in recent years in the context of the impact of crises on it and the possibility of an adequate response to external challenges using budget tools (Zhikharevich et al., 2020). Based on the study of the general features of mechanisms for maintaining shock resistance, studies were conducted on the ability of the budgets of large cities, in particular Moscow and Saint Petersburg, to function in conditions of turbulence and the implementation of new projects in the public sector. It is shown that the two largest megacities not only cope with the challenges, but also demonstrate active development of their own budget policy (Klimanov, Mikhailova, 2023). Obviously, in other cities, even with a population of about a million

people, there are clearly fewer such opportunities. Thus, the analysis of city budgets conducted by V.V. Klimanov and A.A. Mikhailova, made it possible to draw conclusions about the insufficiency of own budget revenues and the need to form recommendations for budgetary development based on resource availability and the quality of municipal financial management (Klimanov, Mikhailova, 2024). Studying the budget policy of cities, researchers point to the problem of redistribution of tax regulations (Timushev, Mikhailova, 2024). The authors have different approaches regarding the standards preferable for local budgets. In studies based on 2018 data, it was shown that “a wide range of taxes does not fully indicate the autonomy of urban okrugs, but a high standard of personal income tax deductions can” (Bukharsky, Lavrov, 2020). When considering the impact of regulations on the budget policy of municipalities, researchers also highlight income transfer according to uniform and differentiated tax standards; each approach has its advantages and disadvantages from the perspective of recipients (Arlashkin, 2020).

Along with assessing the impact of regulations on transferred tax revenues, much attention is paid in modern research to a comprehensive assessment of the impact of the level of budgetary and tax intraregional decentralization on incentives for economic development of territories (Bukharsky, 2021; Timushev, 2021).

Continuing the topic of evaluating the effectiveness of using various budget tools and incentives to promote territorial development, approaches to evaluating effectiveness should be considered. Changes do not always occur in one direction, in accordance with the original idea (Leonov, 2023). This may be due to insufficient stimulating effects, the presence of antistimuli, or other reasons. The formation of methodological approaches in this area is important for assessing the development of large cities under the conditions of regulation by regional and federal authorities.

Thus, the importance of urban budget policy and the need to improve it to ensure the development of territories is an important scientific problem.

Based on this, the objectives of our research are to identify the main trends and problems characterized by the budget parameters of large cities, compare million-plus cities in terms of tax revenues, their structure, and education expenditures; how the types of taxes whose revenues are transferred to the budgets of megacities, and the values of the standards used correlate with the pace of economic development; to identify the main features and problems of intergovernmental relations in the most economically developed regions of the Russian Federation in the context of coordinating the interests of regional and local levels of government, assessing the correlation of these relations with the level of economic development of the territory; to substantiate recommendations for improving approaches to the distribution of tax revenues and intergovernmental transfers between the budgets of regions and their administrative centers, which are million-plus cities.

The object of the study is megacities, namely the cities – administrative centers of RF constituent entities with a population of one million people or more, having the status of municipalities. Based on this, the two largest megacities, Moscow and Saint Petersburg, which are cities of federal significance and, accordingly, RF constituent entities, rather than municipalities, were not considered in our study due to the disparity in the budget parameters of cities – RF constituent entities and cities – municipalities.

The hypothesis of the study is that large cities, the administrative centers of RF constituent entities, do not receive sufficient budgetary incentives to promote the economic, scientific and technological development of the regions, and the potential for budget interaction between the regions and large cities is underutilized.

Methods

To assess the level of economic development of RF constituent entities, data on the gross regional product (GRP), population, average salary provided by the statistics service, as well as ratings of regions on innovative and scientific and technological development for 2021–2023 were used. These ratings were taken into account because the innovative development of the territory is part of its economic development and determines its future prospects. The research mainly considered national ratings of scientific and technological development, and innovative development ratings compiled using various methods¹.

As a result, the regions with the best characteristics in terms of economic development in general were identified. In most of them, the administrative centers are cities with a million-plus population. Thus, cities with a population of one million were chosen as the basis for comparing budget indicators. Cities that are more prosperous in terms of GRP as a basic criterion of economic development (Granberg et al., 1998) and the level of innovative development as one of the relevant characteristics of the economic development of territories were singled out separately. By aggregating data from various ratings, we can identify a list of leading regions. These are Moscow, Saint Petersburg, the Moscow Region, the Republic of Tatarstan, the Sverdlovsk Region, the Samara Region, and the Republic of Bashkortostan, followed by the remaining regions of the Russian Federation, whose administrative centers are million-plus cities. Based on their

status, Moscow and Saint Petersburg cannot be objects for comparing budget parameters with other cities (Kuznetsova, 2018). Another exception for our study was the Moscow Region, which is part of the Moscow agglomeration and is developing according to different principles in terms of implementing the center-peripheral development paradigm. The Khanty-Mansi and Yamal-Nenets autonomous areas, where the level of GRP is significantly higher than in many other regions, due to resource availability, became obvious exceptions in the analysis of the economic development of the regions. The population of their administrative centers is small, so the consideration of these constituent entities in our study is not entirely correct.

The Republic of Tatarstan, the Perm and Krasnoyarsk territories, the Sverdlovsk and Samara regions were considered as regions that are characterized by a higher level of economic development, based on GRP per capita indicators (*Tab. 1*).

In most of the RF constituent entities listed in Table 1, the GRP value both as a whole and per capita exceeds the average values, which is due, among other things, to the presence of a large, economically developed administrative center. This is evident throughout the period in question and can be considered as a steady trend. In particular, the Krasnoyarsk Territory, the Sverdlovsk Region, the Republic of Tatarstan, and the Krasnodar Territory should be highlighted, where the most significant level of GRP was observed.

Such regions as the Republic of Tatarstan, the Novosibirsk Region, the Nizhny Novgorod Region, the Republic of Bashkortostan, the Sverdlovsk and Samara regions, and the Perm Territory were considered as leaders in innovative development, in which the administrative centers are million-plus cities. These two sets of regions overlap, which is due to the obvious link between the scientific, technological and industrial development of the territories; nevertheless, they do not coincide.

¹ On approval of the list of indicators used to form the national rating of scientific and technological development of RF constituent entities and the list of additional analytical indicators characterizing the scientific and technological development of RF constituent entities: RF Government Resolution 3571-r, dated December 5, 2024; Rating of innovative development of RF constituent entities. Available at: <https://www.hse.ru/primarydata/rir>; Rating of regions according to scientific and technological development. Available at: <https://riarating.ru/infografika/20231023/630251402.html>

Table 1. GRP per capita in regions with administrative centers that are million-plus cities, 2010–2022, billion rubles

Region	2010	2020	2022	2022/2020	2022/2010
Omsk Region	193	407	514	1,262899	2,663212
Volgograd Region	166	388	491	1,265464	2,957831
Voronezh Region	148	457	601	1,315098	4,060811
Novosibirsk Region	181	484	694	1,433884	3,834254
Perm Territory	235	540	796	1,474074	3,387234
Republic of Bashkortostan	186	412	549	1,332524	2,951613
Nizhny Novgorod Region	197	507	739	1,457594	3,751269
Chelyabinsk Region	188	464	674	1,452586	3,585106
Rostov Region	154	406	556	1,369458	3,61039
Samara Region	216	508	754	1,484252	3,490741
Krasnoyarsk Territory	372	950	1164	1,225263	3,129032
Sverdlovsk Region	243	584	816	1,39726	3,358025
Republic of Tatarstan	264	658	1045	1,588146	3,958333
Krasnodar Territory	197	459	739	1,610022	3,751269
Average for the Russian Federation*	194	481	687	1,428274	3,541237
* Excluding the Khanty-Mansi Autonomous Area, Yamal-Nenets Autonomous Area, Moscow Region and Saint Petersburg. Compiled according to official statistics.					

Table 2. Basic indicators of city budget revenues

City	Population, thousand people	Tax revenues per inhabitant, thousand rubles	Income per inhabitant, thousand rubles
Volgograd	1019	6,61	42,22
Voronezh	1046	11	40,63
Yekaterinburg	1 536	17,95	47,9
Kazan	1318	14,89	33,26
Krasnodar	1138	23,14	67,85
Krasnoyarsk	1205	23,34	46,6
Nizhniy Novgorod	1213	15,69	52,01
Novosibirsk	1633	18,49	51,14
Omsk	1104	10,65	36,94
Perm	1028	20,05	55,4
Rostov-on-Don	1136	17,9	54,02
Samara	1164	16,68	35,53
Ufa	1129	13,22	41,48
Chelyabinsk	1177	15,46	47,94
Compiled according to official statistics and budget execution reports.			

The analysis of the budgets of 14 million-plus cities was carried out according to the approved budget performance reports for 2019–2023. The study assessed the structure of the revenue side of city budgets, including the detailed structure of tax revenues and intergovernmental transfers. When analyzing the structure of the expenditure side of budgets, attention was focused on education

expenditures, as the main ones for local budgets and directly related to the development of the territory's innovation potential.

The basic indicators and their values according to the results of budget execution for 2023 are presented in *Table 2*, compiled with the use of official statistics and reports on the execution of city budgets for 2023.

Thus, these cities are characterized by a 1.6-fold difference in population, which makes it possible to consider them as comparable and similar objects in terms of this parameter. Budget revenues per inhabitant in the cities under consideration also do not differ very significantly, namely 1.6-fold. At the same time, tax revenues are characterized by greater differentiation; when calculated per inhabitant, this indicator varies 3.5-fold, which confirms the importance of analyzing the formation of budget revenues as a source of financing.

Thus, the methods of descriptive statistics, system-structural and dynamic analysis were used in the course of the study. In addition, the institutional approach to the assessment of budget policy and territorial development was taken into account, which was reflected in the identification of formal and informal institutions significant for budget policy, and the assessment of the impact of the “rut effect” (Auzan et al., 2022). In particular, the importance of this effect and the influence of informal institutions in the budget policy of the territories was shown.

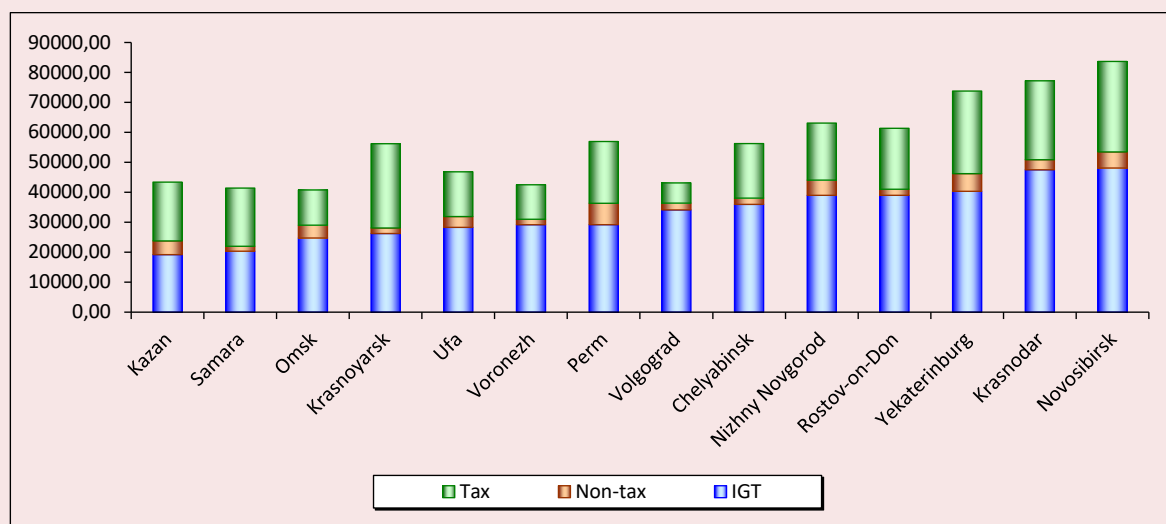
Results

The development of the region is concentrated in its administrative center, and this center determines the potential of the territory for development and the degree of use of this potential. To assess the resource capabilities of cities, we considered the revenues of their budgets (*Fig. 1*).

Intergovernmental transfers are the main source of budget revenue in million-plus cities. Only in the budgets of Kazan and Krasnoyarsk do tax revenues slightly exceed the amount of intergovernmental transfers. In other city budgets, the contribution of intergovernmental transfers is greater than tax revenues. Moreover, in the budgets of five cities, the amount of transfers exceeds the amount of tax revenues by two or more times. In Volgograd, this gap is maximum – five times. This indicates the impossibility of self-financing, due to the structure of the distribution of revenue sources between budgets of different levels.

It should be borne in mind that targeted transfers make up the main part of intergovernmental transfers in city budgets. The contribution

Figure 1. City budget revenues, 2023, million rubles



Compiled according to the data from reports on the execution of budgets of municipalities.

of subsidies and subventions is commensurate, and their importance for the development of territories is fundamentally different. Subsidies show how much the territory is “embedded” in the implementation of various projects and programs at the regional and federal levels, which usually has a positive effect on the development indicators of the territories. Subventions characterize the amount of powers transferred to the municipal level and are not directly related to the development of territories, reflecting to a greater extent the prevailing practice of distributing powers between levels of government in the RF constituent entity.

Analyzing the distribution of specific types of intergovernmental transfers, we can note that their ratio is quite different. It is possible to identify regions where subsidies and subventions are allocated in significantly smaller amounts compared to the average values. For example, in Tatarstan, the budget of Kazan is formed in this way. This suggests that Tatarstan’s budget system is characterized by a higher level of centralization, with resources concentrated in the regional budget.

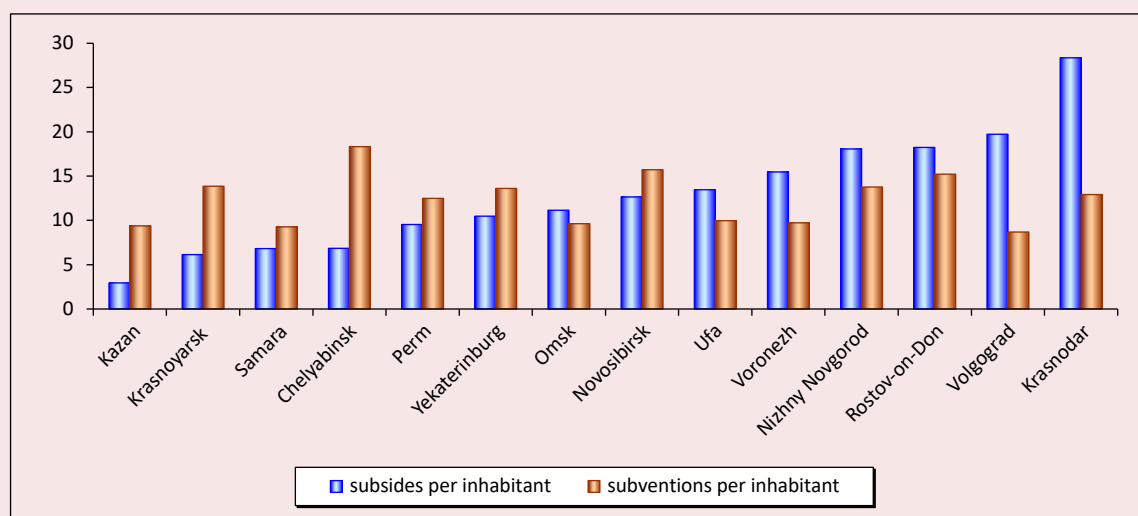
The regions where co-financing of municipal budget expenditures is more active, that is, local

governments are more actively involved in various national, federal and regional projects and programs, include the Nizhny Novgorod, Rostov and Volgograd regions, as well as the Krasnodar Territory. The local governments of Kazan, Krasnoyarsk, Samara and Chelyabinsk are the least actively involved in such co-financing (*Fig. 2*).

The regions where powers are most actively transferred to the city level are the Chelyabinsk, Novosibirsk and Rostov regions.

Thus, the budgets of all the cities under consideration receive significant amounts of subsidies and subventions. Moreover, the total amounts of subsidies and subventions per inhabitant in the budgets do not differ as significantly (with the exception of Kazan and Samara) as the ratio of these two types of transfers among budget revenues. Subsidies are significantly less represented in the budgets of Kazan, Samara, Krasnoyarsk and Chelyabinsk, which may be due to the high level of centralization of management and the predominance of financing expenditures directly from the regional budget. The opposite situation characterizes the budget policy of Krasnodar, Volgograd, Rostov-on-Don, Nizhny Novgorod, and

Figure 2. The volume of subsidies and subventions per inhabitant in 2023, thousand rubles



Compiled according to the data from budget execution reports.

Table 3. Groups of cities based on the receipt of targeted intergovernmental transfers

Level	Low level of subventions	High level of subventions
High level of subsidies	Ufa, Voronezh, Volgograd, Omsk	Novosibirsk, Nizhny Novgorod, Rostov-on-Don, Krasnodar
Low level of subsidies	Kazan, Samara	Krasnoyarsk, Chelyabinsk, Perm, Yekaterinburg

Source: own compilation.

significant amounts of funds are transferred from higher budgets to the budgets of these cities to co-finance expenditures. The specifics of the budgets of Chelyabinsk, Krasnoyarsk and Novosibirsk are that large amounts of government authority have been transferred to the city level, and, consequently, large amounts of subventions.

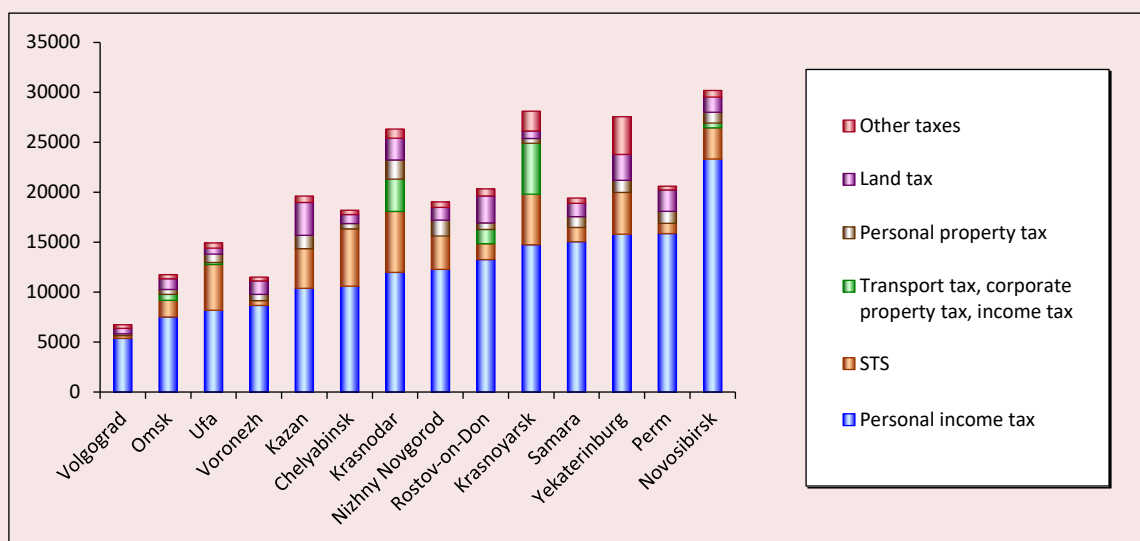
Based on this, all cities can be divided into groups depending on the structure of intergovernmental transfers in the local budget (*Tab. 3*).

Interestingly, the regions in which administrative centers receive relatively low levels of subsidies and subventions from the budget of the RF constituent entity are characterized by the highest rates of innovative and scientific and technological development. These are the Republic of Tatarstan and the Samara Region. We can assume that the high level of centralization is due to the fact that the development of these territories

is carried out mainly through the organizational and financial efforts of regional authorities. However, given the concentration of human capital and other resources in the administrative center, we can assume that the potential of local government participation in territorial development is not fully utilized.

When considering city budgets, the structure of budget tax revenues is of particular importance. Tax revenues are more closely related to the parameters of the economic development of the territory. Personal income tax is the main tax source for Russian local budgets. The amount of this tax revenue is related to the level of economic development of the territories, since the tax base is compiled mainly by the income received by residents in the form of wages. *Figure 3* shows the structure of city budgets depending on the amount of personal income tax receipts.

Figure 3. The structure of tax revenues of city budgets, 2023, million rubles



Compiled according to: data from budget execution reports.

A certain diversity in the structure of tax revenues is related to which tax sources are additionally transferred to the city budget on the initiative of regional authorities. Most often, these are tax receipts under the simplified taxation system (STS), but there are examples when income tax, transport tax, and other sources are transferred.

The share of personal income tax varies from 0.52 to 0.8 of the total tax revenues of budgets. The minimum share of personal income tax is observed in Krasnodar, Kazan and Krasnoyarsk, and the maximum is in Volgograd. This is due not so much to differences in income levels, but rather to the transfer standards of the relevant source and the diversification of tax revenues in the local budget.

In Kazan, tax revenues are largely made up of the tax receipts under the STS and land tax receipts; Krasnodar and Krasnoyarsk experience the strong impact of the transfer of income tax regulations. Only these two million-plus cities have a similar practice of transferring tax revenues from regional budgets.

Samara, Perm, Novosibirsk, and Krasnoyarsk have the highest personal income tax rates in local budgets (30% or more). With the exception of Krasnoyarsk, the share of personal income tax in these three cities is 77–78%, which is significantly higher than the average for cities with a million-plus population. This indicates that it is the standards according to which tax revenues are transferred that are the main factor determining the amount of revenue from the tax source and their contribution to the formation of tax revenues of the city budget.

The most significant factor determining differences in personal income tax amounts is receipt

standards, but wage levels also have a significant impact. Obviously, the personal income tax rate is slightly higher in those million-plus cities that are developing faster in the innovation sector.

The largest amounts of personal income tax during 2019–2023 were observed in the budgets of Perm and Novosibirsk, the lowest levels were found in the budgets of Ufa, Omsk and Volgograd. All leading cities receive personal income tax at above-average rates, reaching and exceeding 30%.

The influence of wage levels as a factor that can ensure revenue growth even at low tax rates was observed in Kazan. Compared to other cities with comparably low standards (for example Omsk, Volgograd), the amount of personal income tax receipts in Kazan's budget was significantly higher.

The increase in personal income tax receipts in the five-year period under review was most noticeable in Kazan and Perm, with the total amount of receipts increasing 1.8 times. The reasons for the increase differ in Kazan, where it was associated with a constant increase in wages, in Perm – due to an increase in the standard and an increase in wages mainly in 2022–2023. In addition, in terms of the dynamics of budget receipts of personal income tax, Chelyabinsk can be singled out, where there was a significant increase in revenues in 2022–2023: due to the increase in wages, the revenues of this tax source in the local budget also increased.

Based on whether the city budget has relatively high personal income tax receipts and taxes transferred under additional regulations, all cities can be divided into the following groups (*Tab. 4*).

Table 4. Groups of cities based on their tax revenues

Level	Low level of transferred taxes (STS, corporate property tax, etc.)	High level of transferred taxes (STS, corporate property tax, etc.)
High level of personal income tax	Perm, Samara, Rostov-on-Don, Novosibirsk	Krasnoyarsk, Yekaterinburg, Nizhny Novgorod, Krasnodar
Low level of personal income tax	Volgograd, Voronezh, Omsk	Ufa, Kazan, Chelyabinsk
Source: own compilation.		

The high level of transferred taxes and personal income tax is more typical for economically developed regions, which are among the leaders in terms of GRP per capita (the administrative centers – Krasnoyarsk, Yekaterinburg, Krasnodar and Nizhny Novgorod). On the contrary, the low level of receipts is generally more typical for the regions located in less economically developed territories. However, it cannot be said that this rule has no exceptions; Kazan has become the most striking one. Thus, even if we are guided by GRP per capita as the most universal criterion characterizing the economic development of regions, we can note significant differences in the structure of tax revenues of their administrative centers.

Based on the results presented in the matrix, it can be argued that the volume of personal income tax receipts and taxes transferred according to the standards is most significantly influenced by two factors: the standard established by the authorities of the RF constituent entity, and the tax base. The first factor for local governments is external and uncontrollable, the second one, on the contrary, is internal and manageable.

Tax revenues were transferred most massively in Krasnodar, where additional income was transferred for profit tax, corporate property tax, STS. As for personal income tax, the highest percentages of deductions (30% or more) are established in Krasnoyarsk, Novosibirsk, Perm and Samara. The lowest personal income tax standards were used throughout the period under consideration in Yekaterinburg (16%) and Kazan (16.9%). In both of these cities, the STS was used as an additional tax source, the standard was average compared to other cities (30 and 22.3%, respectively). The maximum level for this tax was applied in Chelyabinsk and was 60%, the minimum in Voronezh and Volgograd – 5%. In Yekaterinburg, additional excise tax deductions for beer (50%) were transferred. This is an atypical practice for the cities in question.

Thus, it can be argued that the regional budget system is quite centralized in the Republic of Tatarstan and the Sverdlovsk Region. However, due to the high level of economic development, even small standards of tax revenues, which are established for city budgets, give such a significant return that the level of budget revenues exceeds the average. This is especially noticeable in relation to personal income tax receipts in Yekaterinburg and receipts under the STS in Kazan.

We should note the experience of the Krasnodar and Krasnoyarsk territories, where additional profit tax standards are transferred to local budgets. For the cities – administrative centers of RF constituent entities, this provides a significant return to the municipal budget. These revenues reach 10–15% of the total tax revenues of city budgets.

Analyzing the standards for the transfer of tax revenues, we should note their stability. In most budgets, there have been no significant changes in the composition of transferred tax revenues and the size of the standards over the five-year period. In cases where regulations have changed, they have increased, which indicates that the regional authorities perceive this tool of budget regulation and incentives as effective. For example, in Krasnoyarsk, the STS began to flow into the local budget only in 2021, in Voronezh – in 2022, and in Samara, the standard for this tax was increased from 2% to 15%. The only example of a reduction in tax regulations is the experience of the Perm Region, where the transport tax was transferred in full until 2023, and since 2023 this practice has been suspended, but at the same time the amount of personal income tax transferred has increased slightly.

A special type of revenue for city budgets is revenue from local taxes. Land tax and personal property tax are introduced by local regulations, and the conditions for them may differ in different regions. Given the large degree of freedom of local

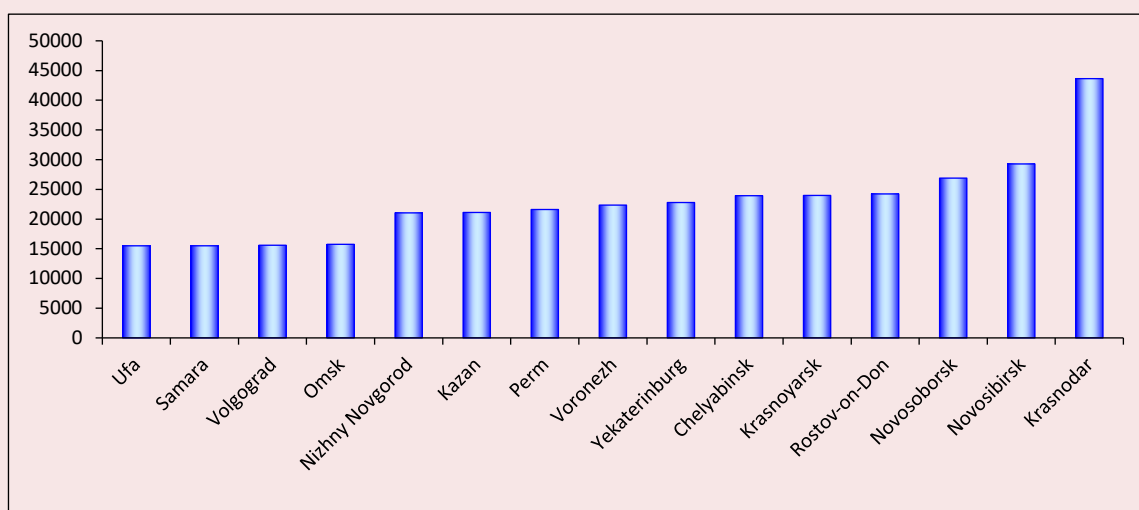
governments, the analysis of budget returns for these types of revenues is important in terms of studying the impact of budget policy on territorial development. The amounts of personal property tax and land tax receipts in large cities vary quite a lot.

In general, there was a direct correlation between the level of economic development of the region and the influx of local taxes to the budget of its administrative center. The exceptions are the budgets of Krasnoyarsk and Ufa, where low local tax rates are set. In particular, in Krasnoyarsk, a land tax rate of 0.1% is used for a number of objects with a possible maximum of 0.3%, and in Ufa – in a similar case it is 0.18%. In other cases, it is possible to trace the relationship between the amount of local taxes per inhabitant and the level of economic development of the territory. Krasnodar and Kazan have become leaders in local tax revenues. A lower level of tax revenues was observed in Volgograd, Chelyabinsk and Omsk, which corresponds to the comparative level of economic and innovative development of the regions.

It is important to note that Samara and Chelyabinsk differ organizationally in that they are urban okrugs with intra-urban divisions, that is, inner-city districts have the status of municipalities on their territory, which means they have their own budget and corresponding revenue sources. Based on this, the revenue sources of the budgets of these cities are slightly smaller, since part of the funds is allocated to the district level. In particular, in Samara, local taxes are divided into 50:50 personal property tax and 90:10 land tax. Therefore, local tax revenues in the territory as a whole are slightly higher than it is shown based on the analysis of the city budget. Consequently, Samara can also be considered as one of the leaders in this budget parameter among million-plus cities.

Thus, the analysis of budget revenues showed that the tax provision of the city – administrative center of the RF constituent entity is not directly related to the budget provision of the regional budget. In this case, we can talk about the influence of the degree of centralization and the principles of organization of regional budget systems.

Figure 4. Education expenses per inhabitant in large cities, rubles



Compiled according to: data from budget execution reports.

The analysis of city budget expenditures has confirmed that education costs are the main ones. The costs of preschool, school, and additional education differ by less than two times per inhabitant in the cities under consideration. This is significantly less than the differentiation by other types of expenses, including housing and communal services. Differences in the financing of education are mainly related to the allocation of appropriate targeted transfers from regional budgets (*Fig. 4*). The exception is the budget of Krasnodar, where significant expenditures on education are due to a different demographic structure and a larger relative number of children. In Krasnodar, in 2023, spending on education increased more than 1.5-fold. According to the budget execution reports for 2021–2022, the amount of education expenses per inhabitant in Krasnodar did not fundamentally differ from their value in other million-plus cities.

There is no correlation between the amount of education expenditures carried out from local budgets and indicators of scientific and technological development of territories. This is due to the nature of educational expenses assigned to the municipal level of government. Based on this, it can be recommended to integrate expenses focused on scientific, technological and innovative development into educational programs of additional education for high school students.

Thus, the parameters of city budgets are largely determined by the established practices of implementing budget policy and interacting with the authorities of RF constituent entities. It is possible to highlight the influence of formal institutions, laws on the budget process and intergovernmental relations adopted in a constituent entity of the Russian Federation, decisions on the allocation of intergovernmental transfers of a specific type, on delegation of powers and informal institutions related to established practices of interaction between authorities of RF constituent entities and local governments, their interaction with large businesses, small and medium enterprises.

The general conclusion for the analyzed cities is that the practices of budget interaction are rather inert and repeatable in successive budget cycles. To increase the effectiveness of interaction, it is necessary to evaluate the effectiveness of the use of various budget tools and adjust their use based on the results obtained.

Conclusion

The analysis of the budget parameters of large cities for 2019–2023 led to the conclusion that the parameters of city budgets, unlike regional ones, are not directly related to the level of economic and innovative development of RF constituent entities. This suggests that the budget potential of cities is not being fully utilized and it is necessary to focus on the formation of a system of incentives for local governments of large cities, which is aimed at their more active involvement in the processes of territorial development.

The main factors determining the amount of tax revenues of budgets have been identified. These include the list of transferred tax revenues from the regional budget; the amount of the standard used for revenue transfer; wage level, average for a particular city; extent of development of small business in the city.

The influence of factors related to tax regulations is manifested in the fact that the best results in terms of tax revenue generation are observed in the budgets of Krasnodar, Krasnoyarsk, Yekaterinburg and Novosibirsk. In these cities, the influence of these factors is most pronounced. It is important to keep in mind that only in Krasnoyarsk and Krasnodar is an additional income tax standard transferred to the local budget, and this leads to tangible positive results. In Yekaterinburg, excise taxes on beer and beer-based beverages are additionally increased according to regulations, which increases the level of tax revenues by 10% or more. Novosibirsk is characterized by a high level of personal income tax transfer, which also makes an obvious positive contribution to the revenue structure of the city budget.

At the same time, all the listed cities are characterized by a high level of wages. Thus, the tax revenues of the budget are simultaneously influenced by the factors such as a high tax base and high standards.

Of particular note is the experience of Kazan, where, despite the low standards for the transfer of tax revenues, large-scale returns from their application are achieved. When transferring 30% of the STS to the city budget, this makes it possible to raise its revenues by 20% or more throughout the period under review. This is more than in other cities where this revenue source is being transferred. In our opinion, the experience of Kazan demonstrates the manifestation of “rut effect”, since the historically highly centralized budget system in the region does not allow realizing the possible benefits of transferring additional standards to the local budget and increasing the corresponding receipts not only to the budget of the city itself, but also to the consolidated budget of the region. Based on the high tax base and high rates of economic development, this area seems promising for a more detailed theoretical study, and then the formation of methodological recommendations for improving the distribution of tax revenues and their increase by stimulating and coordinating the interests of participants in the budget process.

In terms of future research, it seems promising to analyze the optimal proportions of increasing personal income tax standards as the most stable type of income and other tax sources, taking into account the potential for the development of small and medium businesses, as well as large industrial enterprises and industries. Based on such studies, it is possible to recommend the formation of methodological recommendations on the selection of specific sources of taxes that should be transferred to large cities based on forecasting the growth of tax revenues from urban and consolidated regional budgets.

A relationship has been established between the amount of local taxes and the level of economic development of territories. It is in large cities that an increase in local tax rates gives a noticeable return to the city budget. In those cities where local tax revenues are higher, in most cases the pace of economic development is higher. The exceptions to the general pattern are Krasnoyarsk and Ufa, where relatively lower land tax rates are used, but, nevertheless, positive trends in economic development are observed. This is due to the fact that local taxes are not the only and not the most significant factor in the area under consideration.

The general trend substantiates the importance of local taxes and the positive impact of these sources as budget incentives for the authorities of large cities. Expanding the list of local taxes and assigning additional tax sources to local authorities are important areas for further improving the budget policy of large cities.

It is concluded that the impact of regulation by handing intergovernmental transfers over to the municipal level has no direct connection with the level of economic development of the territory and its innovative potential. Moreover, among the regions leading in terms of GRP per capita, some are characterized by relatively low levels of transferred subsidies and subventions (the budgets of Kazan and Samara), one is characterized by a high level of both types of transfers (the budget of Krasnodar), two are characterized by a high level of subventions with a relatively low level of subsidies (Krasnoyarsk and Yekaterinburg). In this case, the contradictory results for Krasnoyarsk and Kazan are most indicative, since the two corresponding regions have particularly high values of GRP per capita.

Similarly, the regions that are leaders in innovation, scientific and technological development do not have obvious similarities in terms of distribution of intergovernmental transfers and their volumes in city budgets. The predominance of subsidies or

subventions among targeted intergovernmental transfers, a higher or lower total level of these revenues do not have a direct and unambiguous impact on the level of economic development of the city.

In our opinion, the intraregional distribution of intergovernmental transfers is more determined by the established patterns of interaction between authorities at various levels, rather than by economic expediency. In this case, the “rut effect” is clearly manifested, when the established practice is repeated throughout the period under review, and changing the rules of interaction requires efforts greater than the effects expected by the participants in the interaction. Nevertheless, when the external environment changes, it is possible that the benefits of changes in intergovernmental fiscal regulation schemes will exceed the costs, and then it will be possible to optimize the use of this tool, which has obvious prospects in terms of influencing the economic development of territories.

When analyzing the level of scientific and technological development, much attention is paid to expenses not only in the field of research, but also in the field of education. However, no relationship has been established between the level of budget expenditures of large cities on education and the level of scientific and technological development of the regions, and these expenditures differ insignificantly in the reviewed city budgets per inhabitant. This is mainly due to the nature of the distribution of education costs between budgets of different levels. At the local level, pre-school, school, and continuing education costs prevail. As further areas of research and practical recommendations, we can propose the formation

of mechanisms for municipal budgetary support for additional education for high school students, aimed at involving them in the development of innovative products and technologies, and the popularization of scientific activities.

In general, the most promising practices for budget regulation of interaction between regional authorities and local governments in million-plus cities can be identified as those practices where a larger number of tax sources are transferred, higher personal income tax transfer rates are applied, and the transfer of the STS and income tax is implemented as sources with potential as incentives for the development of large cities.

Thus, it can be argued that the influence of budget relations between the authorities of RF constituent entities and local governments of million-plus cities on the economic development of territories is currently not strong enough. Some progress has been achieved only in using tax regulations as incentives, but even here, further improvement and development of appropriate budgetary mechanisms are required. The influence of institutional factors is strongly evident when budget interaction is implemented inertially, based on the repetition of past experience without sufficient critical reflection, the search for more effective schemes of intergovernmental fiscal interaction and budget policy in general. However, budget tools are quite effective for regulating territorial development; therefore, it can be recommended to use them more actively in the future in stimulating economic development centers, which is aimed at increasing the effectiveness of socio-economic policy at the regional level.

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Reflection of Expenditure Priorities in Regions' Budget Planning



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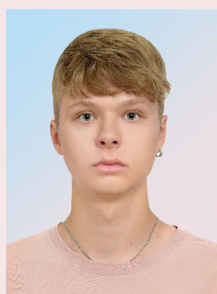
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Abstract. The paper investigates the extent to which the strategic and budgetary documents of constituent entities of the Russian Federation reflect a multi-scenario approach to forecasting budget parameters and identify spending priorities. The analysis is based on the example of the regions included in the Northwestern Federal District. The relevance of the study is due to the fact that budget policy as a whole has a multi-scenario nature. Therefore, in order to increase the effectiveness of public administration on the part of the authorities, it is important to assess the risks of budget execution and develop a response plan to minimize their negative consequences, which requires, among other things, prioritization of expenditures. The paper uses methods of structural and substantive analysis of regulatory and program documents of strategic and budgetary planning at the level of constituent entities of the Russian Federation, the method of rating regional budget planning documents according to the authors' criteria and the method of grouping budget expenditures within regional projects, which are a decomposition of federal projects. The scientific significance of the study lies in formulating the problem of using a multi-scenario approach in the development of budget planning documents and reflecting spending priorities in them, assessing the severity of this problem at the regional level and offering ways to address it. The novelty of the work lies in the fact that for the first time all the main documents of budget forecasting and planning in the regions of the Northwestern Federal District have been studied. It has been established that the vast majority of budget forecasts and the main directions of budget policy are presented only in the basic version. Strategic and budget planning documents virtually do not offer a multivariate forecast of regional budget revenue and expenditure items. Consequently, spending priorities are not set properly. It is shown that a significant proportion of actual regional expenditures coincide with federal priorities and they reflect the list of expenditure obligations stipulated in federal legislation. The theoretical significance of the study lies in substantiating the need to apply a multi-scenario approach to the disclosure of budget policy priorities at the regional level, the practical significance consists in underscoring the importance of detailing the documents for medium- and long-term strategic and budgetary planning – preparing a separate section with disclosure of information on a multi-scenario approach to forecasting and on priority areas of spending.

Key words: strategy, budget forecast, prioritization, socio-economic development strategy, budget forecast for the region, main directions of budget policy, national project, multi-scenario approach.

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Introduction

In practice, regional budget execution often deviates from the originally approved parameters. In some cases, the ratio of fact and plan is rather significant for both budget surpluses and deficits, although this value is often absent in the financial statements due to current changes to the approved budget or the consolidated budget statement.

The dynamics of the main revenue items of the constituent entities of the Russian Federation, especially taxes, is difficult to predict and depends on factors that are often not manageable at the regional level. Budgetary policy as a whole has a “multi-scenario” nature, as it is determined by the economic and the socio-political situation, which are developing non-linearly and difficult to predict.

Consequently, strategic and budgetary planning documents, including at the regional level, should specify the risks associated with budget execution and management responses by public authorities based on the unpredictability and uncertainty of external factors. At the stage of budget planning, the variability of its execution should be provided, which determines the scenarios for generating revenues and spending. The priorities set in the context of government programs and functional expenditure areas should increase the transparency of public administration and become a clearer guide for the financial authority in terms of budget execution.

In general, it is very difficult to identify the priority areas of budget expenditures of the RF constituent entities on the basis of existing documents. At the same time, to ensure the effectiveness of public finance management, it is necessary that regional-level documents clearly define those areas of public policy that are of strategic importance to the region.

The aim of our work is to establish the extent to which the strategic and budgetary documents of the constituent entities of the Russian Federation reflect a multi-scenario approach to forecasting budget parameters and identify spending priorities. The empirical analysis is based on the materials of the constituent entities of the Russian Federation, which are part of the Northwestern Federal District (NWFD). At the same time, an analysis of similar documents in other territories of the Russian Federation shows that the regions as a whole differ insignificantly from each other in terms of the degree of completeness and detail of disclosure of budget spending priorities in the documents. Consequently, the results obtained and the conclusions drawn on their basis can be extended to most of the RF constituent entities.

We have set the following tasks to achieve the goal, according to which the study is divided into three parts:

- 1) analysis of strategic and budget planning documents for the NWFD;
- 2) assessment of the completeness of disclosure of budget spending priorities in the materials directly accompanying the budget preparation – the “Main directions of budget and tax policy” of the RF constituent entities;
- 3) identification of current priorities and expenditure items that coincide with federal priorities based on the actual materials of the laws on regional budgets for 2025–2027.

The conceptual basis of our research is the provisions of the theory of financial management, according to which, in conditions of uncertainty, the most effective way to manage financial resources involves the working out of several development scenarios, assessing the likelihood of implementation and drawing up a program of actions depending on the goals set. In this context, the main scientific interest was to determine to what extent the provisions of the theory – the need for a scenario approach for more effective management of financial resources – are respected in the practice of budgetary policy at the level of the RF constituent entities. The motivation for our study was to pose the problem of using a multi-scenario approach in the development of budget planning documents and reflecting spending priorities in them, as well as to assess the severity of this problem in practice.

Literature review

The key documents of long-term strategic planning at the regional level are the socio-economic development strategy of the RF constituent entities and the budget forecast of the RF consti-

tuent entities for the long term. The latter is often attached to the budget law at the stage of its drafting and submission to the legislature. In addition, the main documents on the basis of which the draft budget is drawn up annually include the main directions of budgetary and tax policy of the constituent entities of the Russian Federation.

The regions are developing their own government programs, including regional projects aimed at achieving national goals at the federal level. In this case, the budget planning quality depends on the possibility of a competent combination of both federal tasks, but solved at the level of a particular region, and purely regional priorities. However, the problem of planning quality is felt even more strongly at the municipal level, where there are fewer powers than at the regional level, due to the continuing shortcomings in their separation (Levina, 2023). At the intra-regional level, the quality of budget planning depends on both the solution of region-wide and purely local problems. The problem of limited capacity of municipalities to independently determine budget spending priorities remains relevant (Pechenskaya, 2015), which is associated with the high centralization of budget resources. Despite the severity of this problem, our research focuses on the specifics of planning and prioritizing expenditures at the regional level.

The quality of budget planning in the region largely depends on the level of forecasting, the role of which is often underestimated in practice. Meanwhile, it affects the financial stability of public authorities at different levels of government. G. Kaplanoglou and V. Rapanos cite institutional problems of fiscal policy, including errors in budget forecasting, among the causes of the Greek financial and economic crisis of the 2010s (Kaplanoglou, Rapanos, 2013). Although in practice, it is carried out by the financial department of the relevant

territory, in scientific research with a practical bias, various options for assessing future events are possible, including considering the complex of intergovernmental relations in the budgetary system as a whole. This is a more complex, but also promising approach, as it involves a comprehensive view of the problem. For example, a group of international researchers examined scenario options for the allocation of federal intergovernmental transfers in Mexico to address the challenges of sustainable development at the regional level (Guerrero et al., 2022). In our work, we do not separately consider the issue of uncertainty in the distribution of intergovernmental transfers, focusing on the more general problem of accounting for different scenarios in the dynamics of revenues and expenditures of regional budgets as a whole, and priority expenditure items.

The literature review shows how important forecasting and planning are for the sustainability of the budget process. Negative internal factors: unrealistic forecasting, complexity of methodology, and unreliability of forecasts (Foster, Miller, 2000), as well as opportunistic behavior (Benito et al., 2015), sometimes affect the severity of the budget crisis more than external factors, such as falling tax revenues or federal intergovernmental transfers (Mitchell, Stansel, 2016). There are many works in the literature on public choice (Hoang, Maher, 2022) that demonstrate the priority in practice of current expenditures over long-term commitments in conditions of limited funds and low budget sustainability. Thus, high-quality forecasting and planning increase the level of trust in the state and reduce the uncertainty of fiscal policy.

The uncertainty of socio-economic development implies the working out of different budget execution options. But, oddly enough, the category of priority of budget expenditures as such is rarely mentioned in the literature on public finance.

Usually, a much more general topic is touched upon – the factors influencing the composition of expenses. A variant of their typology is given in (Facchini, 2018), where the structure of budget expenditures is generally explained in terms of the paradigms of demand for public goods (demand factors), intentions and opportunities for their provision by public authorities (a group of supply factors) and in terms of institutional conditions. Nevertheless, the priority of certain expenditure items comes to the fore during periods of economic or social upheaval. For example, at the stage of recovery from the 2008–2009 crisis, forecasts for the consolidation of government spending were made and discussed to maintain financial stability, which was shaken as a result of anti-crisis injections into the economy (Ortiz et al., 2010). Similarly, during the period of coronavirus infection, a large number of papers appeared with an operational analysis of budgetary responses to the crisis and recommendations on the ways out of it (Andrew et al., 2020; Klimanov et al., 2021). Thus, in the current macroeconomic situation, which is characterized by external uncertainty and sanctions pressure, it is especially important to implement a multi-scenario approach to forecasting and planning the parameters of the budgets of the RF constituent entities and determining spending priorities.

As for long-term planning documents at the regional level in Russia, there are relatively few studies that provide a comprehensive analysis of socio-economic development strategies for all regions. One of them is a study by K.V. Budaeva, which is a comprehensive comparative analysis of strategizing practices at the regional level (Budaeva, 2017). It is notable for the fact that it was carried out at the dawn of the modern stage of federal regulation of strategic planning and documents the ways in which the regions approached the creation

and implementation of laws on strategic planning and socio-economic development strategies. In most works, as a rule, the documents of a limited number of regions are the object of analysis and one or another aspect of the problem is considered. For example, there are studies examining regional strategies from the perspective of industry analysis, in particular when looking for an answer to the question of how the regional strategy highlights problems in the field of education and outlines ways to solve them (Belyakov, 2017). A number of works pays attention to the quality of the creation of individual sections of strategies, for example, devoted to issues of spatial development in the region – theoretical and methodological foundations and practice of compilation using the example of the subjects of the Ural Federal District (Antipin et al., 2023). A.G. Ataeva's research is aimed at improving the methodological support for strategy development (Ataeva, 2019). The cited work is also interesting because it addresses the problem of the applicability of forecasting methods at the stage of scenario development according to a number of criteria, such as accuracy, objectivity and, which is important, applicability to achieve the goals of the region.

Strategic documents and supporting program documents show the importance to correctly solve methodological problems, in particular, such as the adequacy of goals and objectives on the one hand and targets on the other hand. Otherwise, there is a high risk of failure to achieve the planned goals. N.Yu. Oding and coauthors draw attention to this using the example of federal programs for reforming the system of intergovernmental relations (Oding et al., 2016). The works of B.S. Zhikharevich focus on various issues of developing strategies for the socio-economic development of regions, as well as cities. The characteristics of the text of the regional strategy were determined by the methods

of expert discussion and survey: what should be in it to consider a high-quality strategy (Zhikharevich, 2024). Let us single out the qualities of the strategy that have been noted by experts and are of particular interest from the point of view of this work: clarity of priorities and compliance of the strategy's provisions with presidential decrees and national development goals. As we can see, the criterion of multiscenarity (variability) as such, is not specified here, although it could have been taken into account by experts by default based on the predictive nature of the strategy itself as a goal-setting document.

Thus, the scientific literature rarely study the development strategies of the constituent entities of the Russian Federation precisely from the point of view of completeness of reflecting the priority areas of budget expenditures, increasing financial stability and reducing the level of uncertainty. Our research is aimed at filling this gap. The problem of financial support for achieving the goals reflected in regional strategies is one of the main obstacles to improving programmatic and targeted management of public finances in Russia and strategic planning in general. Moreover, we are not talking about the availability or lack of financial resources, but rather about the methodological issues of their accounting and distribution in the context of the multi-scenario nature of the budget process. In previous studies, we have found that regional government programs, the main tool for program-oriented management, do not rely sufficiently on budget forecasting, which makes them less realistic, and therefore carries a high risk of not achieving the goals of the socio-economic development strategy (Klimanov et al., 2017). In the field of forecasting, there is an almost universal use of an exclusively one-scenario approach to long-term budget forecasting, even in the case of working out several scenarios of socio-economic development in a regional strategy. According to A.B. Zolotareva and I.A. Sokolov,

strategies for the socio-economic development of regions in practice serve as a declaration of intent rather than a tool to improve the effectiveness of public administration, because they usually do not contain an estimate of the funds needed to achieve the stated goals, nor a forecast of their receipt in the medium and long term (Zolotareva, Sokolov, 2018). These shortcomings can be eliminated through the development and implementation of the budget forecast of the RF constituent entities for a long-term period.

In contrast to socio-economic development strategies, a much smaller amount of scientific research is devoted to budget forecasts of the subjects of the Russian Federation. Experts cite the formality of development¹, descriptive nature, lack of transparency of forecast calculations, absence or lack of elaboration of a multi-scenario approach among the main disadvantages of the current regional budget forecasts (Mikhailova, Eremina, 2018). N. Barbashova notes the weakness of the methodology for their development and, in terms of costs, suggests an original way of calculating the future value of expenditure obligations, taking into account the number of consumers of the relevant public goods (Barbashova, 2022). Earlier, I.Yu. Arlashkin, A.N. Deryugin, and K.A. Proka proposed a less formalized approach to forecasting the same main items of expenditure, taking into account the number of different population groups, factors concerning the amount of insurance premiums paid for the unemployed population and obligations assumed at the federal level, but which are expenditure obligations of regions (Arlashkin et al., 2015).

¹ Klimanov V.V., Budaeva K.V., Safina A.I., Yagovkina V.A. (2019). Regional Strategizing, Forecasting and Programming in the Russian Federation 2018: Annual Report. Moscow: IROF. 100 p.

The main directions of budget and tax policy, developed for three years, unlike the strategies of socio-economic development and budget forecast, belong to the documents of medium- rather than long-term budget planning. As far as we know, they have not yet been a separate object of scientific research, especially based on materials from a large number of regions. Nevertheless, in our opinion, it is in the “Main Directions ...” that the medium-term revenue prospects and spending priorities should necessarily be reflected. This will allow them to become documents on which not only the budget for the next year is based, but also its execution, including necessary adjustments, in the current year.

Thus, each of the reviewed documents fulfills its task within the framework of public administration. The literature review shows that they still have certain disadvantages at the level of the constituent entities of the Russian Federation. At the same time, in terms of reflecting different scenarios and prioritizing budget expenditures, these documents are characterized by a low degree of study. This represents a significant gap in scientific knowledge. Meanwhile, the implementation of a multi-scenario approach to budget forecasting and planning is important to ensure financial stability and reduce uncertainty.

Methodology of the research

As part of the first task, we have collected and analyzed the current strategies of socio-economic development, budget forecasts for the long term, and the main directions of budget and tax policy for 2025–2027 for the RF constituent entities that are part of the Northwestern Federal District. The subject of the analysis is to identify the availability of funding to solve the tasks of socio-economic development, reflect the multi-scenario approach to forecasting budget revenue receipts and prioritize expenditures in the event of a pessimistic forecast scenario. We applied the methods of regulatory legal

acts analysis, structural, and substantive analysis.

As part of the solution of the second task, we identified and examined documents regulating the main directions of budget and tax policy of the constituent entities of the Russian Federation (“Main directions ...”) in all regions of the Northwestern Federal District, with the exception of the Pskov and Novgorod regions. We carried out the analysis of the “Main directions ...” by an expert method based on the consensus of our team, based on the accumulated experience in analyzing budget planning documents at the federal level and at the level of other Russia's regions. We revealed the compliance of the provisions of the document with three criteria: 1) the clarity of priority spending areas; 2) the completeness of the disclosure of priorities; 3) the originality of the identified areas.

In the latter case, we assessed how much the priority spending areas reflect regional specifics and do not copy federal priorities. The rating scale varies from 0 to 10: the clearer and more detailed the spending priorities are and the more they differ from the federal priorities, the higher the score we assign to the document. We prioritized one or another area of expenditure based on the wording of the document. The corresponding direction may reflect both federal priorities and purely regional ones (the latter is much less common). The document itself does not provide for such differentiation in any way. The methodology we use is definitely subjective, which affects results, but this is justified by the task at hand (a qualitative assessment of the completeness of disclosure of spending priorities). At the same time, the task we are solving is quite simple and, therefore, intuitive. The “Main Directions...” themselves are easy to construct, and the allocated spending priorities, if they are outlined, are in most cases clear and easy to read.

The paper also estimates the volume of expenditures of the regional budgets of the constituent entities of the Russian Federation,

which are part of the Northwestern Federal District, which are carried out within the framework of regional projects developed for the implementation of federal projects, which in turn are part of national projects. This is the solution to the third task. The appendices to the regional laws on the budget for 2025–2027 have been analyzed in terms of disclosing the volume of budget allocations by target items (state programs and non-program areas of activity), groups and subgroups of types of expenditures. The affiliation of an expenditure item to federal projects is estimated using the target expenditure item code according to the current list of budget classification codes². The data are collected and organized for all regions of the Northwestern

Federal District, except for Saint Petersburg, whose budget for 2025–2027 presents the required information in a slightly different format.

Results

The priorities of budget expenditures in Russia are currently determined by the national development goals, which are set out in Presidential Decree 309, dated May 7, 2024 “On the national development goals of the Russian Federation for the period up to 2030 and for the future up to 2036”. The share of federal budget expenditures on financing national projects is 13.8–14.3% of total expenditures in 2025–2027 (*Tab. 1*). For comparison, this indicator was slightly lower – 9.4–10.0% in 2020–2024.

Table 1. Federal budget expenditures on national projects

National project	Billion rubles			%		
	2025	2026	2027	2025	2026	2027
Ja “Family”	2832.9	2 883.4	2 843.7	49.1	45.7	44.7
I “Infrastructure for life”	1168.4	1 359.1	1 413.1	20.3	21.6	22.2
Yu “Youth and children”	458.1	547.4	550.3	7.9	8.7	8.7
D “Long and active life”	369.8	284.2	284.7	6.4	4.5	4.5
T “Efficient transport system”	131.4	165.5	202.2	2.3	2.6	3.2
C “Data economy and digital transformation of the state”	129.1	161.8	167.0	2.2	2.6	2.6
Ch “Environmental well-being”	48.6	109.3	124.2	0.8	1.7	2.0
E “Efficient and competitive economy”	206.8	162.0	99.2	3.6	2.6	1.6
P “Tourism and hospitality”	44.0	70.8	81.9	0.8	1.1	1.3
M “International cooperation and export”	45.3	49.4	52.5	0.8	0.8	0.8
L “Personnel”	17.9	15.6	17.3	0.3	0.2	0.3
Expenses for the block of national projects to ensure technological leadership	313.2	494.4	520.2	5.4	7.8	8.2
Total expenses within the framework of national projects	5 765.50	6 302.90	6 356.40	100.0	100.0	100.0
<i>For reference:</i>						
Federal budget expenditures according to the Federal Budget Act	41 469.50	44 022.20	45 915.60	-	-	-
Share of expenditures under national projects in total federal budget expenditures	13.9%	14.3%	13.8%	-	-	-

Source: Main directions of budget, tax, and customs tariff policy for 2025 and for the planning period of 2026 and 2027. Ministry of Finance of the Russian Federation.

² On the procedure for the formation and application of budget classification codes of the Russian Federation, their structure and principles of appointment: Order of the Ministry of Finance of the Russian Federation 82n, dated 24 May, 2022 (as amended on November 13, 2024).

Analysis of strategic and budget planning documents

Strategies for the socio-economic development of the constituent entities of the Russian Federation are long-term strategic planning documents at the regional level, developed within the framework of goal setting. They usually set general priorities for the development of regions. Despite their wide coverage, they often contain redundant information, making it difficult to identify the truly most important, often unique priorities for a particular region.

The strategies for the socio-economic development of the NWFD regions set out priority areas that often repeat the priorities reflected in the decrees of the President of the Russian Federation. Tasks and main activities are defined for each of them. A list of regional government programs and priority projects can be presented separately (Arkhangelsk Region), federal projects in which the region can participate (Republic of Karelia) are highlighted, and the need for the region to participate in national and federal projects to achieve the goals of the strategy (Republic of Karelia) is noted. The frequent reference to federal priorities in the strategies of all regions is due to the institutional foundations of intergovernmental relations in Russia, primarily the low level of spending powers of the regions.

The assessment of budget resources in the strategy – the total cost of implementation – is not presented in detail. It either does not exist at all (Kaliningrad Region, Pskov Region), or is given in general and/or in aggregated areas for achieving the goal of socio-economic development (Komi Republic, Nenets Autonomous Area, Vologda Region, Arkhangelsk Region, Leningrad Region, Saint Petersburg), or only for some proposed development projects (Murmansk Region). The amount of funding for individual priorities and tasks is usually not specified. Only in rare cases

(the Republic of Karelia), the amount of financial resources is determined for each priority area and program.

Despite the common features, the strategies meet the unique conditions of a particular region: competitive advantages are spelled out (Vologda Region), regional specifics are emphasized – international and interregional cooperation and the development of export activities (Kaliningrad Region). There may be an excessive number of the development areas – the creation of a tourism brand, food security (Novgorod and Pskov regions), which makes it difficult to identify truly priority areas. Nevertheless, due to their complex nature, socio-economic development strategies are not (and hardly can be) a full-fledged document of long-term, let alone medium-term budget planning. This task should be solved by the budget forecast of the region.

The budget forecast of the constituent entities of the Russian Federation for a long-term period is a strategic planning document containing the following information: a forecast of the main characteristics of the budget, indicators of financial support for national projects and state programs, basic approaches to shaping budget policy for a long-term period, as well as other indicators characterizing the budget. In accordance with paragraph 2 of Article 170.1 of the Budget Code of the Russian Federation, such a forecast is projected for a period of up to 12 years.

Budget forecasts have been publicly released in all subjects of the Northwestern Federal District, with the exception of the Nenets Autonomous Area. In contrast to the strategies, the budget forecasts of all regions in one format or another show the volume of financial support for government programs and non-programmatic areas of activity, highlight the largest expenditure items for the coming years, determine the financing of government programs, as well as national projects. In all regions, the demand

for increased cost efficiency is emphasized, which is ensured by spending in the format of government programs. In all regions of the Northwestern Federal District, the budget forecast is presented in the baseline scenario in accordance with the forecast of the socio-economic development of the region, with the exception of the Vologda and Murmansk regions. However, even in the documents of those regions, only the total amount of expenditures is shown in a two-way representation, including the total amount of expenditures in the form of government programs. The amount of proposed funding in terms of programs is reflected only in the baseline scenario. It is noteworthy that the Vologda Region budget forecast details the volume of intergovernmental transfers to municipalities, which increases the overall variability of the forecast, but obviously does not disclose the complete and necessary information in the program presentation.

The importance of prioritizing costs is also mentioned, but in general terms and in the context of ensuring the implementation of the RF Presidential decrees. Less frequently (for example, in the Pskov Region and Saint Petersburg), the relationship between the budget forecast and the regional development strategy is emphasized. However, spending priorities are usually not disclosed in detail. Only in a number of cases (Republic of Karelia, Komi Republic, Arkhangelsk Region) is the funding of government programs that are priority for the region provided separately. More often, information is provided that is of particular interest, but does not reveal the real priorities: financial support for national projects implemented in the region (Komi Republic, Murmansk Region), retrospective values of the region's credit ratings and the main directions of budget spending, but not in a programmatic format, but aggregated in the context of functional areas of expenditure (Murmansk Region) and others.

A number of explanations can be offered for the regions' rejection of the multi-scenario budget forecast and the allocation of priority expenditures in them. First of all, reflecting several scenarios for the development of events (conservative, basic, targeted), which also presupposes a choice of priorities, is excluded in the minimum federal requirements for a budget forecast³. We believe that the desire of the regions to simplify the development of such documents plays an important role in the absence of both regulatory and practical necessity: most entities have a low level of financial independence. Financial authorities do not see the need to develop a detailed version of the budget forecast. The differentiation of documents found in terms of other elements: regional financing of national projects, credit ratings values can be explained by managerial competencies and the initiative of specialists from the financial department of the respective region.

Thus, the budget forecasts of the constituent entities of the Russian Federation are a simple statement of future events without their cost estimation in various versions of the forecast. As a rule, they do not have a clear list of priority areas with appropriate amounts of funding.

When drawing up the "Main directions of budget and tax policy" (hereinafter referred to as the MDBTP), the provisions of the goal-setting documents are disclosed, the results of the implementation of budget policy in the current year are taken into account, as well as the approaches of the financial authority to the preparation of the draft budget and its main characteristics,

³ Currently, there are federal methodological recommendations on long-term budget planning addressed to the financial authorities of the constituent entities of the Russian Federation and dated 2015: Methodological recommendations to the state authorities of the constituent entities of the Russian Federation on long-term budget planning. The Ministry of Finance of Russia. The text of the document as of 04.12.2015.

including the projected parameters. Consequently, the MDBTP should reflect the priorities of the regional budget policy. In practice, they define only the general principles on which the region's tax and budget policy is based, but not the vision of various financing scenarios for clearly identified government priorities.

In all the reviewed documents of the Northwestern Federal District regions, budget policy is guided by the priority of goals and objectives set by the President of the Russian Federation and the provisions of national and federal projects. Such priorities are usually characterized as unconditional. Special attention is paid to priority financing of the implementation of national goals in accordance with presidential decrees, the implementation of measures stipulated in the President's messages to the Federal Assembly, full

financial support for the implementation of priority tasks for the regions (the list of which, however, is not always clearly defined) and the achievement of planned results of regional projects. Although the need to implement budget expenditures based on the principle of prioritization is emphasized, there is usually no specification of priority areas.

Assessing the completeness of disclosure of budget spending priorities in the materials directly accompanying the budget preparation – the “Main directions of budget and tax policy” of the constituent entity of the Russian Federation

A common problem for the regions is the limited disclosure of the MDBTP priorities. Even if the priorities themselves are clearly identified, the average expert assessment by the criterion of completeness, set by us, was only 6.1, with a maximum of 10.0 (*Tab. 2*).

Table 2. Expert assessment of the MDBTP of the Northwestern Federal District regions

Region	Clarity of priority spending areas	Completeness of priority disclosure	Originality of the selected areas; reflection of regional specifics	Overall average score
Republic of Karelia	7	6	7	6.7
Komi Republic	7	5	8	6.7
Arkhangelsk Region	7	7	8	7.3
Vologda Region	8	6	7	7.0
Kaliningrad Region	8	7	6	7.0
Leningrad Region	6	6	8	6.7
Murmansk Region	8	7	9	8.0
Novgorod Region
Pskov Region
Saint Petersburg	6	6	8	6.7
Nenets Autonomous Area	8	5	8	7.0
The average for all regions considered	7.2	6.1	7.7	-
Source: own compilation.				

In some regions, the priorities of fiscal policy are not only very clearly but also quite fully outlined. For example, the priorities of the Kaliningrad Region include supporting the region's economy, including the implementation of infrastructure projects, stimulating investment and entrepreneurship. In the Vologda Region, the main priority belongs to the governor's initiatives in addition to national development goals, while budget policy in each of the areas (security and law enforcement, national economy, housing and communal services, social sphere) is relatively highly detailed.

In other regions of the Northwestern Federal District, although the priority spending areas are clearly identified, they are done so in relatively little detail. In addition to increasing wages and maintaining the achieved wage levels for certain categories of employees, specific priorities are outlined such as the development of infrastructure in closed administrative-territorial formations, the implementation of master plans for key settlements in the Arctic zone, cost recovery for utilities (Murmansk Region), the formation of a comfortable urban environment, the entrepreneurship development, and the formation of a motivation system for healthy lifestyle, reduction of unsuitable housing stock (Nenets Autonomous Area), ensuring wages not lower than the minimum wage, annual wage indexation; maintaining established social support measures (Komi Republic).

For comparison, the regional priorities of budget expenditures in Saint Petersburg and the Leningrad Region are noticeably less clearly and fully disclosed, where only the strategic prioritization of expenditures and the development of project management principles are mentioned. There is no detailed description of those and other areas.

It is quite difficult to explain the revealed interregional differentiation according to the criteria

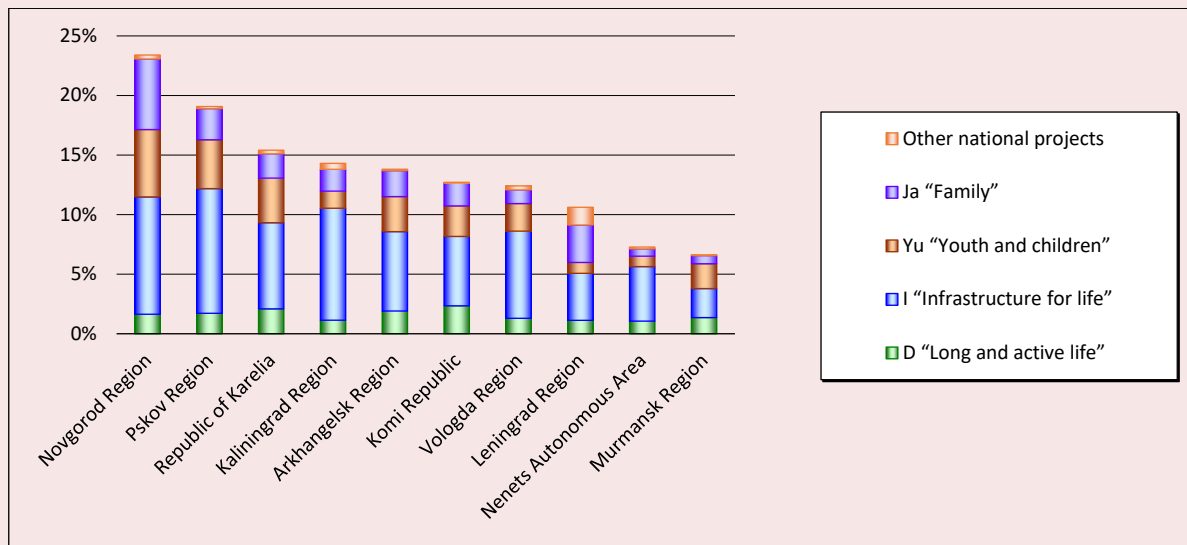
for disclosure of spending priorities in the MDBTP. Nevertheless, we can note that the priorities are most clearly reflected in the regions that pay great attention to the specifics of their development in spatial and sectoral aspects (Kaliningrad, Vologda, Murmansk regions). In addition, the most original spending priorities are observed in the northern regions of Russia (Murmansk Region, Nenets Autonomous Area, Komi Republic), which is largely related to certain areas of budget provision within the framework of the state policy for the development of the Arctic zone of the Russian Federation. It is noteworthy that the high-income regions of the city of Saint Petersburg and the Leningrad Region do not pay much attention to prioritization of expenses, although more fiscally independent regions could be expected to reflect priorities more fully.

It is difficult to assess the originality of the identified spending areas, given that in all regions they largely mirror federal priorities. Nevertheless, for some regions, as we have shown, a number of identified spending areas are quite specific. We also note that the regions are trying to find a balance between federal and regional goals. For example, the Arkhangelsk Region emphasizes the priority of financing regional goals aimed at ensuring the implementation of national projects and decrees of the President of the Russian Federation.

Identifying priority areas and volumes of regional expenditures that coincide with federal priorities based on the actual materials of the laws on the regional budget for 2025–2027

The Novgorod and Pskov regions have the largest share of expenditures carried out within the framework of national projects (about 20–25%; *Figure*). The share of such funds in the expenditures of the other regions is much lower. In all regions, the largest amount of spending is directed within the

Share of expenditures under national projects in the total expenditures of budgets of the subjects of the Northwestern Federal District of the Russian Federation in 2025, %



According to: data from the laws on the regions' budget for 2025–2027.

framework of the national project “Infrastructure for Life” (an average of 6.8% for all regions), significantly less – for the projects “Youth and children”, “Family” and “Long and active life” (2.7, 2.2, and 1.6%, respectively).

The revealed structure of expenditures of regional budgets within the framework of national projects repeats the list of their spending powers (obligations) provided for in federal legislation⁴. Interregional differentiation exists, but it is not so widespread (*Tab. 3*).

The high share of expenditures within the framework of the national project “Infrastructure for life” is due to the fact that through it expenses for the construction and repair of highways are

carried out (the federal project “Regional and local road network”). It is one of the main expenditure obligations at the regional level. Expenditures in the field of education within the framework of the national project “Youth and children” are also quite voluminous. Funds are allocated for the repair and modernization of schools, upgrading their technical facilities (the federal project “All the best for children”), additional costs are incurred for individual, “advanced” schools (federal project “Leading schools”), professional development and additional education for teachers (federal project “Teachers and mentors”). Measures similar to maternity capital at the regional level (federal project “Family support”) and state support programs for large families (federal project “Family with many children”) are funded at approximately the same level as part of the national project “Family”.

⁴ On the general principles of the organization of public Authority in the constituent entities of the Russian Federation: Federal Law 414-FZ, dated December 21, 2021 (as amended on December 13, 2024).

Table 3. Share of expenditures under national and federal projects in the total expenditures of the budgets of the RF constituent entities in 2025, %

National (federal) project	Republic of Karelia	Komi Republic	Arkhangelsk Region	Vologda Region	Kaliningrad Region	Leningrad Region	Murmansk Region	Novgorod Region	Pskov Region	Nenets Autonomous Area	Saint Petersburg
D "Long and active life"	2.1	2.3	1.9	1.3	1.1	1.1	1.4	1.6	1.7	1.1	...
I "Infrastructure for Life"	7.2	5.8	6.7	7.3	9.4	3.9	2.4	9.9	10.5	4.6	...
I8 "Regional and local road network"	6.0	5.2	5.8	5.7	8.0	3.0	1.5	8.2	8.6	4.0	...
U "Youth and children"	3.7	2.6	2.9	2.3	1.4	0.9	2.1	5.7	4.1	0.9	...
U4 "All the best for children"	2.0	1.0	1.0	1.4	0.7	0.3	0.9	2.2	1.4	0.2	...
U5 "Leading schools"	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.5	0.0	...
U6 "Teachers and mentors"	1.2	1.3	1.2	0.7	0.5	0.6	1.0	0.8	1.0	0.7	...
Ja "Family"	2.0	1.9	2.2	1.1	1.8	3.1	0.7	5.9	2.6	0.6	...
Ja1 "Family support"	0.5	0.9	1.0	0.1	0.2	2.6	0.1	2.3	0.2	0.2	...
Ja2 "Large family"	0.4	0.3	0.8	0.4	1.1	0.3	0.2	1.6	1.8	0.0	...
Other national projects	0.3	0.1	0.1	0.3	0.5	1.5	0.1	0.3	0.2	0.2	...
Total expenditures under national projects	15.4	12.7	13.8	12.4	14.3	10.6	6.6	23.4	19.1	7.3	...
Total expenses, billion rubles	73.5	124.5	151.7	166.4	149.3	268.6	142.1	65.2	58.1	29.5	1491.5
Source: own compilation.											

Conclusions

The scientific significance of the study is to assess the importance of a multi-scenario approach in budget planning at the level of the RF constituent entities and the reflection of budget spending priorities in various documents. We have studied all the main documents of budget forecasting and planning at the regional level – strategies of socio-economic development, budget forecasts and the main directions of budget policy of the RF constituent entities from the Northwestern Federal District. This is the first time this has been done. The analysis of those documents allowed obtaining the following results.

We have established that prioritizing the goals and objectives of the state policy of the RF constituent entities only within the framework of socio-economic development strategies is insufficient. The vast majority of the budget forecasts are

presented in the baseline scenario in accordance with the forecast of socio-economic development. Even in the Vologda and Murmansk regions, where a multi-scenario approach to budget forecasting is applied, only the total amount of expenditures is shown, including the total amount of expenditures in the form of government programs. The MDBTP of all the regions considered also use only a baseline scenario of the forecast of budget parameters.

We revealed the low clarity of priority spending areas and the incompleteness of the disclosure of priorities in the MDBTP. Even if some areas of expenditure differ in comparative detail and are designated as priorities, there is no projected amount of funding for them. This diminishes the substantive value of such documents. Consequently, the priorities of budget expenditures at the regional level are not always explicitly indicated.

For the first time, we identified the actual priority areas of regional expenditures that coincide with federal priorities, and gave an estimate of their volumes by region based on the materials of the law on the regional budget of each region, that is, based on current empirical data. The paper establishes that the structure of expenditures of regional budgets within the framework of national projects repeats the list of their expenditure obligations stipulated in the federal legislation. Nevertheless, the revealed differentiation among regions in terms of spending areas requires additional research.

A variable approach to budget planning and clear priorities of regional public policy increase transparency and predictability of government actions, reduce uncertainty, strengthen financial stability and generally have a beneficial effect on the effectiveness of public administration. However, we have found that the RF constituent entities have poorly implemented a multi-variant approach to forecasting and planning budget revenue and expenditure items, and spending

priorities remain vaguely defined. This situation is probably due to the same factors that we proposed in terms of analyzing the budget forecasts of the regions, namely the lack of direct requirements from the federal level and the lack of interest from the regions in complicating the development of the relevant documents unnecessarily. Apparently, the dependence of the financial stability of the region on the recommendations of the theory of budget planning is not confirmed by the practice of budget policy. This may be due to the low administrative (in terms of separation of powers) and financial independence of the regions.

The answer to the question of what exactly prevents the introduction of a multi-scenario approach and allocation of expenditure priorities in the framework of budget planning at the regional level may be the subject of further research. From a practical point of view, it is relevant to develop possible methodological recommendations for regions on information disclosure in terms of the multi-scenario approach and the use of certain forecasting methods.

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Problems of Assessing Intangible Resources in the Implementation of Rural Development Policy



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Abstract. The relevance of the research is due to the increasing importance of intangible resources, which today are considered as fundamental, strategic resources of territorial development policy. This problem is of particular importance for rural areas of the Russian Federation, which are facing a structural crisis and, as a result, difficulties in fulfilling national functions. The aim of this article is to present the results of methodological work on the creation of a system of subjective social indicators that make it possible to assess the current state of intangible resources for territorial development policy and their testing using the example of rural settlements in the Krasnodar Territory. The article shows how, based on the allocated intangible resources for the development of territories and their substantive characteristics, a system of subjective indicators has been formed to assess the state of these resources at the level of local communities. The results of the approbation of the methodology on the example of rural settlements of

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the Krasnodar Territory are presented. The study covered 12 rural settlements from six municipal districts. The results showed that the current state of intangible resources depends not so much on the level of development of individual settlements as on the level of development of the municipal areas in which they are included. It has been established that the first-order resources – the basic activators of the territorial development process – human potential, local identity and leadership have a higher development level. The assessment of second- and third-order resources indicates the need to strengthen efforts to activate them. The proposed methodology can be used as a tool for diagnosing the state of intangible resources in the implementation of territorial development policies at the “entrance” and “exit”, as well as a tool for regular monitoring.

Key words: intangible resources, development policy, rural areas, social indicators.

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Introduction

Achieving sustainable development as one of the goals for the world and individual communities requires the development and use of appropriate social technologies. The global shortage of tangible resources inevitably raises the question of maximizing the use of intangible assets, which can compensate for the lack of tangible resources and ensure a sustainable society in the future. In these conditions, intangible assets, which characterize the quality of social actors and institutions in terms of their ability to effectively develop themselves and compete successfully, are increasingly being considered as the fundamental, strategic, ultimate resource of territorial development policies at various levels. The issue of developing and using intangible resources effectively is of particular relevance for Russian rural areas, which, as noted in the Strategy for the Sustainable Development of Rural Areas of the Russian Federation for the period up to 2030¹, are experiencing difficulties in performing their main national functions due to the

structural crisis². The rural areas of the Krasnodar Territory, one of the leading agricultural regions of Russia (Rakachev, 2023), are no exception and are characterized by acute “systemic problems in the development of human capital, which becomes the top priority among the long-term development factors in modern society”³.

At the same time, insufficient attention has been paid to the study on intangible resources and their social development potential, since their parameters are not easily recorded in statistics, are often subjective and situational, and depend on a specific socio-cultural, economic, and political context. As a result, interpretations, measurement methods, and evaluation of intangible resources vary significantly and may not always be comparable. In addition, the very nature of resources is characterized by instability and variability, which requires constant review of the available tools for their analysis.

¹ On the approval of the Strategy for the Sustainable Development of Rural Areas of the Russian Federation for the period up to 2030: RF Government Resolution 151-r, dated February 02, 2015 (amended on January 13, 2017).

² Strategy for the Sustainable Development of Rural Areas of the Russian Federation for the period up to 2030. Official website of the Russian Government. Available at: <http://government.ru/docs/16757> (accessed: May 15, 2023).

³ On the Strategy for the Socio-Economic Development of the Krasnodar Territory until 2030: Krasnodar Territory Law 3930-KZ, dated December 21, 2018. Available at: <https://docs.cntd.ru/document/550301926> (accessed: May 15, 2023).

The aim of the study is to present the findings of methodological work on the development of a system of subjective social indicators for assessing intangible resources for territorial development policies and the results of their use for rural settlements in the Krasnodar Territory⁴.

Data and methods

The theoretical and methodological basis of the work consists of studies devoted to the analysis of intangible resources (Kapelyushnikov, Luk'yanova, 2010; Hall, 2009; Teece, 2018), including human and social capital (Putnam, 2001; Bourdieu, 2005; Abraham, Mallatt, 2022), and social indicators that allow their comprehensive assessment⁵ (Kislitsyna, 2017; Leont'eva, Smirnova, 2020; Voukelatou et al., 2021; Bartram et al., 2024).

An array of empirical data for testing the methodology was collected during a sociological survey in rural settlements of the Krasnodar Territory in June – August 2023. The selection and classification of rural settlements were previously carried out on the basis of data from an expert survey and indicators of the level of socio-economic development (SED)⁶. As a result, settlements were selected from 6 municipal districts of the region: three more developed (Belorechensky, Krymsky, Temryuksky) and three less developed

(Absheronsky, Kanevskoi, Tikhoretsky). Settlements were selected based on the two extreme values of the SED index. The total number of selected settlements was 12, including 6 more developed (Tamanskoe, Pervomaiskoe, Chelbasskoe, Prigorodnoe, Fastovetskoe and Nizhegorodskoe) and six less developed (Staroderevyankovskoe, Novopolyanskoe, Ryazanskoe, Moldavanskoe, Fontalovskoe and Khoperskoe).

A questionnaire (street survey) was conducted in the selected rural settlements (RS). The sample is simple, random, and representative at the rural settlement level by gender and age ($N = 762$)⁷. Accordingly, data were collected on 6 settlements-leaders (375 questionnaires) and 6 settlements-outsiders (387 questionnaires). The distribution of questionnaires by district development is also approximately equal: 382 questionnaires in more developed districts (MD), 380 in less developed districts (LD).

Intangible resources and their structure

Resources in the broadest sense are something that is valuable for the process, useful and necessary to achieve a goal, and ensures development. Among other types of resources – financial, natural, and labor – intangible resources are of particular importance in modern society.

⁴ The developed methodology is one of the tools for analyzing rural development models based on intangible resources and socio-economic development.

⁵ Zubarevich N.V. (2009). Indeks razvitiya chelovecheskogo potentsiala regionov Rossii v 2005–2006 gg.: doklad o razviti chelovecheskogo potentsiala v Rossiiskoi Federatsii za 2008 g. [Index of Human Potential Development of Russian Regions in 2005–2006: Report on Human Potential Development in the Russian Federation for 2008]. Moscow: Siti-Print.

⁶ To assess the level of development of rural settlements and municipal districts, an integral indicator was developed based on a statistical dataset. The following key indicators were used in the study: population; commissioning of new single-family houses; proportion of profit-making organizations; municipal investments in fixed assets; investments in fixed assets by organizations located on the territory of the municipality; surplus/deficit of the municipal budget (local budget); natural increase (decrease); net migration; number of settlements without gas infrastructure. The development of the SED (socio-economic development) integral indicator is a multi-criteria task that requires the determination of weight coefficients for each of the parameters being considered. The method of Saaty's analytic hierarchy process (AHP) was used in the study. The evaluation included a series of paired comparisons between different criteria; an expert assessment of the significance of the indicators; and the use of the Kemeny method to rank them. This approach allowed objectively assessing the level of socio-economic development of the studied territories, taking into account the relative importance of various development factors. As a result, each rural settlement under study is characterized by two indicators: the metric rank of the settlement and the metric rank of the area in which it is located.

For more information on the procedure for selecting municipal districts and rural settlements using an expert survey and calculating the SED index, see (Miroshnichenko et al., 2024).

⁷ Sampled population – 75,043, sample error – 3.5%, confidence probability – 95%.

Since this type of resources was initially analyzed within the framework of economics, researchers defined them primarily through various characteristics of business and organizations. Intangible resources (intangible assets) were understood in this context as non-physical sources of values created by innovations, unique organizational projects or HR management methods, “stocks of strategic information and intangible assets that the organization can employ as needed in pursuit of its goals” (Teece, 2018).

With all the variety of interpretations of intangible resources, a number of features are essential. Firstly, intangible resources, despite their intangible nature, have a certain value, utility and price. Secondly, the effectiveness of their use is an indicator of the degree of modernization of the subject that works with them. In addition, the value of intangible resources has a cognitive or socially constructed nature, it is attributed to them by stakeholders, so it is not inherent in the subject itself, but rather depends on the observer’s assessment of its utility or desirability. Such resources are “idiosyncratic in nature” (Teece, 2018), and their creation takes time, which prevents their simulation and makes them a potential source of strong competitive advantage (Van Criekingen et al., 2022).

Currently, the concept of intangible resources as strategic assets goes beyond their importance in the development of business and organizations. Scientists argue that intangible resources are also essential for the output and competitiveness of countries, regions and territories (Manuelli, Ananth, 2014). At the same time, the assessment of intangible resources at these levels is a more difficult task which hinders the use of micromodels (Van Criekingen et al., 2022). By now, there has been a steady increase in awareness of the strategic value of intangible resources in other areas of social life besides economics (Kim, Go, 2020; Velez et al., 2024).

Social indicators as a tool to measure and assess intangible resources

By defining resources as the basis for development, we inevitably encounter the question of its indicators, especially due to the fact that recently there has been a growing need for a more comprehensive measurement of development. This is due to the constantly changing landscape of the social system itself, as well as its development policies, while most estimates give insufficient information about development. It is suggested that the concept of development should go beyond wealth accumulation, GDP growth and other income-related measurements. Without ignoring the importance of economic growth, other components should also be considered. Therefore, indicators used for assessing development should take into account various aspects of people’s lives, including cultural, social, environmental, political aspects, etc. (Jansen et al., 2024).

The implementation of development policies requires actors (primarily authorities) to take actions aimed at preserving or improving the well-being of individuals, social groups, or society in general. But, since well-being cannot be measured directly, special tools are needed. Such a tool is social indicators – quantitative or qualitative parameters that capture the observed characteristics of social phenomena and allow assessing their unobservable aspects, therefore they serve as indirect measures for complex social categories, providing an opportunity for their analysis and comparison (Borodkin, Aivazy, 2017).

Social indicators are a measure of the level, dynamics, and distribution of aspects of living conditions crucial to well-being (Maggino, 2024). As a rule, they are represented by statistical data, but this does not mean that non-quantifiable information, for example, about cultural habits and traditions, is ignored (Bartram et al., 2024). However, such characteristics cannot always be assessed using formal, objective statistical data

(Borodkin, Aivazyán, 2017). Accordingly, two conditional approaches to the evaluation of social phenomena and processes can be distinguished – quantitative and qualitative – and the corresponding types of indicators – objective and subjective (Voukelatou, 2021).

While objective characteristics can be recorded and measured from the outside, using tools that are set and the same for any particular case, subjective characteristics are evaluated and measured by individuals themselves, subjects of well-being (Noll, 2013; Borodkin, Aivazyán, 2017). Therefore, subjective social indicators are “statistics that have some significance for measuring the quality of life from the point of view of some particular subject(s)” (Michalos, 2023), the degree of their satisfaction with living conditions (Sushko, 2023).

At the same time, the gap between subjective and objective characteristics is not so significant, since subjective characteristics are also fixed objectively and can be represented in the form of scales, where the domains are benefits and/or troubles (Borodkin, Aivazyán, 2017). Both objective and subjective indicators are multidimensional, which allows using index systems to compare parameters of various dimensions and directions, calculating a composite/integral index to get the idea of the overall well-being, facilitate the assessment of the final result and make comparisons between territories (Notman, 2021).

Composite indices, which allow aggregating large amounts of both objective and subjective data on individual aspects of social well-being, are now widely used (Land, 2021; Chakrabartty, 2021). The advantages of such indicators are the ability to combine a large amount of data, differing in quantitative measures, into a single indicator and get a holistic view of the quality of life of the population of a certain territory, as well as to conduct cross-country, interregional or inter-settlement comparisons (Leont'eva, Smirnova, 2020; Notman, 2021). They allow us to analyze a

social phenomenon in two directions: in the form of a composite indicator and a set of indicators characterizing its individual aspects, which is important when determining the contribution of each parameter to the overall picture of quality of life and identifying on this basis the most problematic areas requiring targeted regulation. The advantage of composite indicators is also their simple and accessible form, which makes it possible to concisely present information about the state of social processes and use them in the development of social policy measures (Notman, 2021).

To date, several dozen indices have been developed and are widely used, making it possible to conduct a comparative analysis of various aspects of well-being. A number of these indicators take into account exclusively statistical data (GDP, HDI). At the same time, subjective characteristics are increasingly considered when creating indices, which allows moving away from a strictly economic approach when assessing the quality of life and well-being (social progress index, world happiness index). National approaches to assessing the quality of life are also being developed in this direction. To measure the socio-economic development of Russian regions, the HSE Institute for Social Policy has developed two composite indices – the crisis index of quality of life and the “full” index of quality of life⁸. An integrated approach combining objective statistical data and subjective assessments into a common indicator was developed by specialists from the department for quality of life measurement at the Institute of Economics of RAS (Kislitsyna, 2017).

Thus, among the many social indicators, those that are aimed at a comprehensive measurement of well-being are becoming increasingly popular.

⁸ Zubarevich N.V. (2009). Indeks razvitiya chelovecheskogo potentsiala regionov Rossii v 2005–2006 gg.: doklad o razviti chelovecheskogo potentsiala v Rossiiskoi Federatsii za 2008 g. [Index of Human Potential Development of Russian Regions in 2005–2006: Report on Human Potential Development in the Russian Federation for 2008]. Moscow: Siti-Print.

However, these techniques, along with their advantages, have their drawbacks. These include the problem of accessibility and comparability of data at the national, regional and municipal levels (Bartram et al., 2024).

In general, the analysis of existing works shows that the evaluation of intangible resources is primarily limited to assessing the quality of human potential, is carried out mainly using a set of objective indicators and is focused on the national or regional level⁹ (Zubarevich, 2020; Leont'eva, Smirnova, 2020; Ataeva, Oreshnikov, 2023), whereas at the municipal level, including rural settlements, these tasks are solved much less frequently (Voroshilov, 2021). A number of studies addressing the problem of the development and evaluation of intangible rural resources, human capital for instance (Belkina et al., 2018; Koloskova, Bordachenko, 2018; Podgorskaya, Bakhmatova, 2020; Voroshilov, 2021; Trotsuk, 2023), nevertheless rely solely on objective indicators, which allows us to determine the presented study as relevant, having scientific and practical significance and novelty.

Development of a methodology for assessing the potential of intangible resources for territorial development policy

The creation and test of the methodology, which includes a system of subjective social indicators, was preceded by a theoretical interpretation of the key intangible resources for territorial development. Previously, the team of authors conceptualized the very term “intangible resources for development policy”, which is understood as a set of multi-level, multi-component and multifunctional elements with different genesis that form a system of social relations and ensure the stability of local communities. Also, key intangible resources for the development of territories were determined:

- human potential as an integral assessment of the characteristics of the population, reflecting the level and possibilities of human development under certain environmental, socio-economic, political and legal conditions;

- local identity as the identification of residents with the place of residence/birth, a sense of attachment to the local community and involvement in its life;

- leadership, the configuration of which depends on its subject, origin, way of action, degree of institutionalization and interaction with the local community;

- social capital, which is determined depending on the types of social ties prevailing in the local community (as a private/public good), and institutionalization;

- development institutions, the configuration of which is determined by the institutionalization type, management level and the area of institutional development);

- socio-psychological resources characterized by the social solidarity level, confidence in the current local government, and subjective well-being (Miroshnichenko et al., 2024).

The determined resources were classified into three groups, depending on the stage at which they are involved in the development process and which they activate. The group of first-order resources (basic activators) included human potential, local identity, and leadership. They create the foundation and determine the basic potential for the development of the territory. Development institutions and social capital were included in the group of second-order resources (strategic activators). The resources of this group determine the key goals, forms, and directions of territorial development. Socio-psychological resources were classified as third-order resources, which represent the final markers and allow determining the success of integrating intangible resources of the first and second order into territorial development policy.

⁹ Serebryakova N.A., Volkova S.A., Volkova T.A. Human integral assessment methodology capital of the region. Vestnik VGUIT=Proceedings of VSUET, 3(81). Available at: <https://cyberleninka.ru/article/n/metodika-integralnoy-otsenki-chelovecheskogo-kapitala-regiona> (accessed: August 16, 2025; in Russian).

Table 1. Indicators of intangible resources for territorial development

Resource		Contents of the resource	Indicator
First-order resources	Human potential	Prospects for the youth The impact of migration on territorial development	Index of prospects for the youth Index of the impact of migration on territorial development
	Local identity	Social cohesion	Index of social cohesion
	Leadership	Formal and informal leadership	Index of formal and informal leadership
Second-order resources	Development institutions	Development strategies Territorial branding	Index of development strategies Index of territorial branding
	Social capital	Personal contribution to territorial development Network resources	Index of personal contribution to territorial development Index of network resources
Third-order resources	Socio-psychological resources	Confidence in municipal government Solidarity Subjective well-being	Index of confidence in municipal government Index of solidarity Index of subjective well-being
Source: own compilation.			

The theoretical interpretation of key intangible resources allowed defining an analytical framework for their further empirical research as a multi-component element in territorial development policy.

Accordingly, our immediate task was to develop a set of subjective social indicators to assess the intangible resources for territorial development. A set of characteristics reflecting the content of the main intangible resources for territorial development and their corresponding empirical indicators was analytically identified (*Tab. 1*).

The integral index¹⁰ was determined as the final indicator for assessing the intangible resources for territorial development, and its components are

¹⁰ We use the integral index due to its obvious advantages. Firstly, the simple and intelligible form of this indicator allows us to concisely present information about the state of complex multi-component social objects and make comparisons between similar objects. Secondly, it is possible to analyze a social phenomenon in two directions: in the form of a composite indicator and a set of indicators characterizing its individual aspects. This is important because it allows us to determine the specific contribution of each component to the overall situation and, accordingly, to focus on a specific parameter when developing and implementing social policy measures.

Thus, the integral index will allow us to give a generalized assessment of the whole range of key intangible resources for territorial development of the particular rural settlement, and individual and sub-indices will show the state of specific characteristics and indicate weak points to work on and resources needed to improve them.

individual indices and sub-indices of resources of the first, second and third order.

At the next stage, a sociological tool (questionnaire) was developed, where for each indicator (individual index) highlighted in Table 1, a pool of questions (from 2 to 5) with options (Likert scale) was provided, which significantly enhanced the meaningfulness and sensitivity of each index.

The distribution of responses to a question was calculated as a proportion to the total number of respondents. Due to the fact that groups of questions in the questionnaire corresponded to each particular index, they are subsequently averaged. The result is the following calculation formula:

$$\eta = \frac{1}{k} \sum_{i=1}^k \zeta_i, \quad \zeta_i = s_i^+ - s_i^-, \quad (1)$$

where:

s_i^+ – percentage of positive answers;

s_i^- – percentage of negative answers to the i -question.

On the basis of individual indices characterizing specific intangible resources, the sub-indices of resources of the first, second and third order are calculated as the unweighted arithmetic mean of individual indices. Finally, the integral index of intangible resources for territorial development is

also calculated as the unweighted arithmetic mean of the sub-indices of resources of the first, second and third order. When developing the methodology, we encountered the issue of choosing weights for various components of the integral index, and since currently the most common approach is to assign the same weights to all components (Decancq, Lugo, 2013), it was decided to do the same. As a result, each indicator (individual, integral, and sub-index) can take values from -100 to 100, which shows a positive or negative state of the resource.

Findings and discussion

First-order resource assessment. The resource “Human potential” was assessed using two indicators: the index of prospects for the youth and the index of the impact of migration on territorial development.

According to the calculations carried out, values of the index of prospects for the youth¹¹ are generally higher in the settlements-leaders, which means that residents of more developed settlements better assess the prospects of their rural settlement and district for the youth. Also, in settlements located in more developed districts, regardless of their own level, the mean value of the indicator is higher than in settlements of less developed districts. In other words, residents of both settlements-leaders and settlements-outsiders from developed districts are more optimistic about the prospects for the youth than residents of less developed areas. The index values for all rural settlements are positive, but relatively low, which may indicate underdevelopment of this resource, with the exception of three rural settlements where the

index is above 50 p.p. — Moldavanskoe, Tamanskoe, Prigorodnoe (*Tab. 2*).

Values of the impact of migration on territorial development¹² are usually higher in settlements-outsiders. According to this indicator, rural settlements of more developed districts also have high values, therefore, in these districts, residents of rural settlements of all levels consider the migration potential and the contribution of migrants to the development of territories as more significant. The index values are positive, but low: only in four settlements it exceeds 50 p.p. (Moldavanskoe, Tamanskoe, Prigorodnoe and Nizhegorodskoe).

The resource “Local identity” was assessed using the index of social cohesion¹³. It has been found that local identity is more pronounced at the district level than at the level of rural settlements, and that it is higher among residents of settlements-outsiders, regardless of the level of their district. They often note that their population represent a single community and it is important to them to belong to it. The index values are positive in all rural settlements and are quite high: in 9 out of 12 rural settlements they are above 50 p.p., which indicates the high development of this resource.

The resource “Leadership”¹⁴ was evaluated using the index of leadership. It was found that the index values of all rural settlements are positive and, as a rule, high, with the maximum values in settlements-outsiders, which means that their residents believe that positive changes were driven by activists, business actors or the head of the settlement. However, in terms of districts, the mean values of indicators are higher in more developed municipalities.

¹¹ The questions for this indicator are: “How do you assess the prospects for the youth in your settlement?”; “Would you like your children to stay in this settlement?”.

¹² The questions for this indicator are: “Are there many newcomers in your settlement (migrants, people who moved here recently, in the last 5 years)?”; “How have migrants influenced the development of your settlement?”.

¹³ The questions for this indicator are: “Is it possible to say that the residents of your settlement have something in common?”; “Which of the following coheres the residents of your settlement?”; “How important is cohesion within the residents of your settlement for you personally?”.

¹⁴ The questions for this indicator are: “Who has made the greatest contribution to positive changes in your rural settlement over the past 5 years: the head of the settlement, local activists, those within local business?”; “To what extent can the head of the settlement and local government count on support from the residents of your settlement?”.

Table 2. Calculated indicators of the first-, second- and third-order resources, %

District	Belorechensky (MD)		Krymsky (MD)		Temryuksky (MD)		Tikhoretsky (LD)		Apsheronsky (LD)		Kanevskoi (LD)	
Rural settlements	Pervomaiskoe (MD)	Ryazanskoe (LD)	Prigorodnoe (MD)	Moldavanskoe (LD)	Tamanskoe (MD)	Fontalovskoe (LD)	Fastovetskoe (MD)	Khoperskoe (LD)	Nizhegorodskoe (MD)	Novopolyanskoe (LD)	Chelbasskoe (MD)	Staroderevyankovskoe (LD)
Indicators of first-order resources												
Index of prospects for the youth	36.8	31.0	56.1	76.0	62.2	31.0	54.5	25.1	9.3	30.0	40.6	16.7
Index of migration impact	37.1	40.7	43.2	57.5	52.0	65.1	43.2	44.8	74.0	48.3	43.8	34.5
Index of social cohesion	47.3	67.0	75.9	74.2	65.7	68.0	77.1	74.6	40.7	43.1	58.9	56.7
Index of leadership	50.0	32.2	64.4	79.6	61.6	81.4	64.4	45.6	44.0	61.7	50.0	44.7
Sub-index of first-order resources	42.8	42.7	59.9	71.8	60.4	61.4	59.8	47.5	42.0	45.8	48.3	38.1
Indicators of second-order resources												
Index of development strategies	30.1	24.0	66.8	64.3	57.0	48.8	54.8	30.0	11.8	35.2	7.3	7.0
Index of territorial branding	-17.3	-5.8	-10.6	30.7	61.6	27.9	3.0	-37.7	36.0	10.9	8.6	33.9
Index of personal contribution to territorial development	10.7	-14.6	31.6	26.1	24.4	6.0	5.1	11.5	-10.2	-8.1	-16.2	-11.3
Index of network resources	-8.9	6.0	30.0	41.5	15.2	25.9	27.6	7.5	-8.4	12.7	-8.5	-8.6
Sub-index of second-order resources	3.7	2.4	29.5	40.6	39.5	27.2	22.6	2.8	7.3	12.7	-2.2	5.3
Indicators of third-order resources												
Index of confidence in government	31.1	2.9	54.6	62.4	28.8	39.5	63.2	46.5	26.0	28.4	32.1	18.8
Index of solidarity	31.1	21.4	65.2	75.3	46.1	41.8	50.0	42.1	20.0	10.0	42.2	26.8
Index of subjective well-being	10.9	24.5	19.7	35.5	22.7	-27.9	16.9	1.2	-13.3	-0.3	12.9	4.6
Sub-index of third-order resources	24.3	16.3	46.5	57.7	32.6	17.8	43.4	29.9	10.9	12.7	29.0	16.7

In general, the values of the sub-index of first-order resources are positive among settlements of all levels, but they are concentrated around mean values, which indicates a low level of their development. They are also slightly higher in the rural settlements of more developed districts.

Second-order resource assessment. The resource “Development Institutions” was evaluated using two indicators: the index of development strategies and the index of territorial branding.

The values of the index of development strategies¹⁵ are higher in the settlements-leaders, and mean values are also higher in the settlements of more developed districts. The index is positive in all settlements, but it has a wide range: min = 7.0; max = 66.8, which indicates the uneven development of this resource.

Territorial branding turned out to be one of the least developed resources. The values of the index of territorial branding¹⁶ in a number of settlements was negative, such examples were found both in settlements-outsiders of less developed districts and in settlements-leaders of more developed districts. Only one settlement-leader of a more developed district was distinguished by a high positive value of this index – Tamanskoe rural settlement. In general, we note low values of this resource, it needs to be more actively involved in rural development policy.

The resource “Social capital” was assessed using two indicators: the index of personal contribution to territorial development and the index of network resources.

The values of the index of personal contribution to territorial development¹⁷ range from negative to positive. Negative values are mainly found in settlements of less developed districts, which means that residents of these settlements are less involved in activities related to the development of their territories: beautification, event management, local self-government, etc.

The values of the index of network resource¹⁸ are low and sometimes negative. Its indicators are slightly higher in settlements of more developed districts, though even there one settlement has a negative value. Thus, the network resource is underdeveloped, and its potential is underutilized.

In general, the sub-index of second-order resources in all rural settlements is noticeably lower than the sub-index of first-order resources. It is higher in the settlements of more developed districts.

“Socio-psychological resources” as third-order resources were assessed using three indicators: the index of confidence in municipal government, the index of solidarity and the index of subjective well-being.

Residents of settlements-outsiders show a higher level of confidence in municipal government¹⁹. There are no fundamental differences in the mean values between more and less developed districts. The index values for all settlements are positive but low, which indicates poor development of this resource.

¹⁵ The questions for this indicator are: “Do you know about the strategy (plan) for the development of your settlement?”; “What do you know about plans for developing particular areas in your rural settlement?”; “How do you assess the participation of local government, community activists, and local business in the development of your rural settlement?”.

¹⁶ The questions for this indicator are: “Today, there is a lot of talk about the “calling card” (brand) of the territory. In your opinion, does your settlement have a calling card?”; “How well is this calling card known outside your settlement?”.

¹⁷ The questions for this indicator are: “Are you personally involved in the development of your settlement?”; “What particular acute problems of your rural settlement are you personally involved in?”.

¹⁸ The questions for this indicator are: “How often do you use social networks and messengers?”; “Which communities and channels on social networks have you joined?”; “How well do social networks help solve acute problems in your settlement?”.

¹⁹ The questions for this indicator are: “What is the general level of social confidence in local authorities in your rural settlement?”; “What is the level of your confidence in the head of your settlement?”.

The index of solidarity²⁰, on the contrary, is higher in the settlements-leaders of both more developed and less developed districts. The index values are positive but have a significant variation: min = 10.0; max = 65.2, which indicates uneven resource development.

The values of the index of subjective well-being²¹ show that residents of the settlements-leaders are more satisfied with their living conditions and their own achievements. This indicator is also higher in general among settlements of more developed districts. However, the values of this indicator are low in all settlements, which indicates a low level of satisfaction of residents with living conditions and their own well-being and, in general, a low level of the development of this resource.

In general, the values of the sub-index of third-order resources are quite low, which indicates poor development of these resources. At the same time, they are higher in settlements of more developed districts.

After that, integral indices were calculated for each rural settlement. As can be seen from *Table*

3, the potential of intangible resources is more evident at the level of municipal districts: top-ranked settlements are both leaders and outsiders but located in more developed districts of the region. At the same time, a number of settlements of less developed districts were among the settlements with higher index values. In such cases, intangible resources can be effectively activated and included in their development policy.

Assessing the contribution of each sub-index to the integral indicator, it can be noted that in all rural settlements, regardless of the level of development of municipal districts, first-order resources as basic activators of territorial development have higher values. The least developed second-order resources are strategic activators of development, which clearly indicates a crisis in determining the key goals, forms and directions of development of these territories. Third-order resources are also poorly developed, which indicates a low level of satisfaction with living conditions and quality of life among the population.

Table 3. Values of the integral index of intangible resources for territorial development by rural settlement

Rural settlement	District	Index value (%)
Moldavanskoe (LD)	Krymsky (MD)	56.6
Prigorodnoe (MD)	Krymsky (MD)	45.2
Tamanskoe (MD)	Temryuksky (MD)	45.2
Fastovetskoe (MD)	Tikhoretsky (LD)	41.8
Fontalovskoe (LD)	Temryuksky (MD)	37.1
Khoperskoe (LD)	Tikhoretsky (LD)	26.5
Ryazanskoe (LD)	Belorechensky (MD)	20.8
Pervomaiskoe (MD)	Belorechensky (MD)	23.5
Novopolyanskoe (LD)	Apsheronsky (LD)	24.7
Chelbasskoe (MD)	Kanevskoi (LD)	24.7
Nizhegorodskoe (MD)	Apsheronsky (LD)	20.9
Staroderevyankovskoe (LD)	Kanevskoi (LD)	20.3

²⁰ The questions for this indicator are: “How do you assess the level of social solidarity (joint cooperation in solving problems, the level of cohesion, confidence in support from others, etc.) in your settlement?”; “How has the level of social solidarity among the residents of your rural settlement changed over the past year?”.

²¹ The questions for this indicator are: “What is the level of your satisfaction with the living conditions in your rural settlement?”; “Answer a few questions about your satisfaction with your life at the moment” (“Satisfaction with Life Scale” by E. Diener).

Conclusion

New methodology allowed assessing the intangible resources of rural settlements needed for their development and we conclude that these resources depend not so much on the level of development of particular settlements, but rather on the level of development of the municipal districts in which they are located. We think that, in general, this methodology allows solving the tasks set, namely assessing intangible resources of particular rural settlements for their use in territorial development policy based on a set of subjective indicators. This tool can be used to identify the state of intangible resources during the implementation of territorial development policies at “input” and “output”, as well as for regular monitoring. In addition, the advantage of the proposed methodology for assessing the intangible resources of a territory is the use of the index method and, in particular, the composite index, which is unique and not found in the studies available.

The methodology allows us to consider special local conditions and development models. This is

both its advantage and significant limitation. It should undoubtedly undergo further verification, as some parameters and indicators need to be clarified. It may be necessary to find more sensitive tools and scales for assessing the potential of intangible resources at the level of particular settlements, since those developed and tested work successfully at the level of municipal districts, but are not always effective at the settlement level. Those indicators that have higher values in less developed settlements (index of migration impact, index of leadership, etc.) also require additional verification and interpretation.

Modern research and real-world practice confirm that the accumulation of knowledge, skills and abilities, high-tech technologies, investments in human capital allows achieving innovative development. In this context, research on the role and place of intangible resources is significant due to the importance of considering their potential in making managerial decisions and creating sustainable development programs at local and regional levels.

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Structure of the Mass Strata of the Russian Population by Level of Subjective Well-Being



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Abstract. The article analyses the peculiarities of differentiation of Russians by the level of their subjective well-being. Based on the data of all-Russian representative surveys obtained by the Institute of Sociology of the FCTAS RAS, the subjective well-being index is calculated and a model is proposed, including five groups that differ significantly from each other in terms of the feeling of well-being of the situation in key aspects of life – from basic needs and microcosm to assessments of the parameters of the place of residence and the relationship between the individual and the state. The first group unites Russians with predominantly negative assessments of the situation in most of the proposed areas of life, but its number is small and such assessments are not typical for Russian society (4.3%). The second group includes 46.7% of Russians with satisfactory assessments in most spheres of life, but in which the share of negative assessments dominates over positive ones. This large group forms a zone of unstable subjective well-being. The next three groups unite Russians with satisfactory and/or positive assessments of the situation in different spheres of life. At the same time, these three groups also differ significantly among themselves. In terms of socio-demographic characteristics of the individual, the income level, professional affiliation and age of the respondent have the greatest differentiating power in the context of assessments of subjective well-being. However, the correlation of the level of subjective well-being with income and occupation has increased over the last two decades, while with age it has significantly decreased. From the point of view of differences in lifestyle, the key factors that can increase or decrease the level of own well-being are

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both a set of property characteristics and a list of achieved life goals, as well as the specifics of experienced problems, perception of the dynamics of the situation in society as a whole and the ability to plan one's own life.

Key words: social well-being, subjective well-being, well-being index, social stratification, quality of life, social inequality, social policy, Russian society.

Introduction

The agenda concerning social well-being is one of the key and at the same time quite controversial in the social sciences (Leontiev, 2020; Sociological Approaches ..., 2021; Anikin et al., 2024). The growing interest of researchers in this topic in recent years is due both to the desire of scientists, against the background of socio-economic and political transformations taking place in the country and the world, to assess the depth and scale of social changes, and to an attempt to concretize public demands, which are often based not only on objective criteria, but also on a fairly wide range of subjective assessments and feelings, the fullness of which can hardly be reflected in a single study (Kuchenkova, 2016). At the same time, the researchers' increased attention toward the subjective measurement of well-being and the search for relevant indicators of its assessment was largely caused by noticeable discrepancies between the declared statistical data and people's self-assessments of their situation and life in general (Stiglitz et al., 2016).

It was not always the case that any objective improvements in the life of society were positively assessed by the population at the individual level and vice versa. This was due to the fact that official statistics and, for example, generalized indicators of GDP, GNP or average income indicators of the population did not fully reflect the real internal differentiation of the population, contradicting the general growth of social inequalities caused, among other things, by the intensified processes of globalization and informatization. Against this background, scientists have attempted to develop

a universal set of objective characteristics that could comprehensively characterize the actual situation regarding the well-being of the population; however, researchers have encountered a number of methodological problems that make it impossible, due to the different significance of the indicators, to properly record both the specifics of intergroup differences, including on social and cultural grounds, and the role of individual characteristics related to socio-demographic parameters, life cycle stages, etc. (Kuchenkova, 2020).

Researchers, primarily economists, drew attention to such discrepancies between growing economic indicators, which should have indicated a corresponding increase in the well-being and overall quality of life, and individuals' self-assessments of their actual level of social well-being, which did not always show the same positive dynamics, back in the mid-1970s. By this time, a sufficient amount of empirical data had accumulated, proving that the increase in the level of material well-being of nations affects the increase in life satisfaction and happiness less than expected, and sometimes does not have any effect at all (Argyle, 2003). Therefore, the level of material achievements of a person and a nation cannot be considered as the only indicator of the quality of life. According to A. Peccei, although the policy of abundance is able to solve some problems and alleviate others, the sources of human dissatisfaction do not cease to exist even against this background (Peccei, 1985, p. 151).

The discrepancies between material well-being and its perception indicate the limitations of using

only an economic approach in analyzing such a complex and multidimensional phenomenon as social well-being. The academic community is well aware of this and it served as an impetus for the development of a subjective direction in the social sciences, including in psychological and sociological studies of social well-being. But while in psychology the main focus is on the problem of people's perception of their position in various spheres of life under the influence of emotional factors and the general psychological state of the individual, in sociology well-being is analyzed primarily at the level of society as an integral system at a certain stage of its development, and in the context of the current social situation. The stage of development and the social situation largely determine the subjective perception of social reality at the individual level, in some cases coming into conflict with the expectations and ideals of each individual (Salnikova, 2017).

In general, the trend toward studying subjective indicators of well-being originates from the works of R. Easterlin, which later sparked a serious scientific debate by revealing a discrepancy between subjective assessments of social well-being and its objective indicators, primarily in terms of financial status (Easterlin, 1976). This was followed by numerous publications both in Russia (Mareeva, 2018; Shirokanova, 2020; Sushko, 2023) and abroad (Fleche et al., 2011; Binder, 2014; Kwarciński et al., 2024), in which the concept of subjective well-being and its possible empirically fixed indicators were studied from different theoretical and methodological approaches. Many works were based on a one-dimensional approach involving the study of individual components of subjective well-being and the factors influencing it, most often in the context of various social groups (Kislitsina, 2016). However, attempts have also been made at comprehensive operationalization, suggesting that subjective well-being cannot be reduced to just one specific indicator (and even the sum of the

estimates of indicators), but represents a certain sense of "inner satisfaction" with certain aspects of one's own life, which largely determine not only the model of consumption of vital goods, but ultimately affecting the social position and life of the individual as a whole (Sushko, 2024).

At the same time, in foreign studies, subjective well-being is traditionally considered as a multidimensional construct, which, as a rule, includes cognitive assessments (overall satisfaction with life and its individual spheres), as well as affective components reflecting emotional balance and happiness (Ryff, 1989; Diener et al., 1999). Some works emphasize the importance of both objective living conditions and their individual perception (Cummins, 2000; Veenhoven, 2008). At the same time, approaches focusing on the assessment of various spheres of life are widely used within the framework of the concept of quality of life, where an individual's well-being is determined through satisfaction with key areas of life (Nussbaum, 2011).

In this regard, subjective well-being is understood as a kind of comprehensive assessment reflecting people's satisfaction with the activities of various social institutions, including taking into account the current economic and socio-political situation in the country (Shirokanova, 2020), that is, the social context that mediates individuals' perception of various aspects of their own lives. This has prompted a number of large research centers to monitor changes in Russians' assessments of individual components of subjective well-being under the influence of specific social events and to use various sociological tools to measure well-being, which is called "in the moment"¹. This is

¹ Social well-being: Monitoring. VCIOM. Available at: <https://wciom.ru/analytical-reviews/analiticheskii-obzor/socialnoe-samochuvstvie-monitoring?ysclid=matmssa2t4482546828> (accessed: 10.05.2025); Gallup 2023 Global Emotions Report. GALLUP. Available at: <https://www.gallup.com/file/analytics/507719/Gallup%202023%20Global%20Emotions%20Report.pdf> (accessed: 10.05.2025).

the basis for various cross-country studies of the subjective component of social well-being, which are also aimed at analyzing and comparing its status, material, cultural and other characteristics (for example, separate thematic blocks in the ISSP, LiTS, EVS, ESS and other international projects are devoted to this issue).

We should note that according to many international indices measuring happiness, well-being and life satisfaction, Russia is not among the leaders, although it is not an absolute outsider. For example, according to the recent World Happiness Report, Russia's score was 5.79 out of 10, which gave it 67th place (in the middle of the ranking) out of 147 countries. While in previous years Russia's place has fluctuated significantly (from 49 in 2017 to 68 in 2019)², which underlines the dynamic nature of subjective well-being (at least its affective aspect) in the country. If we talk about cognitive and subjective well-being, then Russia's place on the global background is still somewhat shifted downward. According to the OECD Better Life Index study, the level of life satisfaction in Russia (5.5 points out of 10) is noticeably lower than the average in comparison with other countries³. Thus, Russia is a society with a moderate level of subjective well-being, but its fluctuations may indicate significant internal differentiation, which especially highlights the need for an in-depth study of its internal structure.

In addition, against the background of the still relatively high level of social inequality in Russian society (the Gini coefficient in Russia in 2024 was 0.408⁴) and the growing demands of the population

for its leveling (Mareeva, 2024), the issue of subjective well-being remains relevant. At the same time, for Russians, taking into account the very limited resource of social networks, which is especially strongly differentiating the country's population (Society of Unequal ..., 2022), the request to smooth out inequalities turns out to be closely linked to the concept of social justice, which is interpreted not only and not so much in the context of equalizing the material standard of living, but rather in achieving equality of opportunities in the implementation of own life aspirations (Kolennikova, 2024a). In this regard, the issue of Russians' self-assessments of their well-being in key areas of life, and not just in terms of financial status or overall life satisfaction, becomes a cornerstone. The answer to it reflects the level of social stability and, in general, speaks about the legitimacy of the entire socio-economic and socio-political system, as well as reveals key public demands that manifest themselves precisely from the standpoint of social well-being and are not always reflected only in terms of socio-demographic or socio-economic criteria.

The aim of our work is to attempt to comprehensively analyze such self-assessments and build a model of subjective well-being that differentiates the Russian population from the pole of subjective disadvantage to a complete sense of well-being in key areas of life. In our opinion, this will make it possible to clarify the understanding of the term "subjective well-being" and consider it not as a minor aspect, but as a phenomenon – a complex phenomenon related or conditioned by various factors. At the same time, the results of the study make it possible to expand the list of possible needs and problems of various groups of the Russian population, which can contribute to improving the effectiveness of measures aimed at improving the quality of life and social well-being of citizens, taking into account the real feelings and priorities of various segments of society.

² World Happiness Report 2025. Available at: <https://happiness-report.s3.us-east-1.amazonaws.com/2025/WHR+25.pdf> (accessed: 10.05.2025).

³ Russian Federation. How's Life? Available at: <https://www.oecdbetterlifeindex.org/countries/russian-federation/> (accessed: 10.05.2025).

⁴ Gini coefficient (income concentration index). FSSS RF. Available at: http://ssl.rosstat.gov.ru/storage/mediabank/Nb_Rd_1-2-5.xlsx (accessed: 10.05.2025).

The empirical basis for the analysis included data obtained in different years by the Institute of Sociology FCTAS RAS⁵. The model of subjective well-being was based on respondents' answers to the question "How do you assess the following aspects of your life?", which included 16 closures with the following meaningful answers: "good", "satisfactory" and "bad"⁶. Taking into account the theoretical framework outlined above and the specifics of the empirical data analyzed, subjective well-being is conceptualized primarily as an individual's cognitive assessment of various aspects of their life and general satisfaction with it, but does not affect their affective components of subjective well-being and other integrative experiences, which is beyond the scope of the subject of the article.

Zones of subjective well-being: What did the empirical data show?

As noted above, for a comprehensive analysis of subjective well-being, a special Subjective Well-Being Index (hereinafter referred to as SWB Index) was constructed based on assessments of 16 spheres of life that relate to both the basic needs of a person and their microcosm, as well as to the parameters of an individual's place of residence in the broadest sense of the word, and its interrelationships with

the state⁷. At the same time, the choice of certain spheres of life for assessing subjective well-being is not arbitrary.

First, it is based on a synthesis of well-established theoretical concepts of quality of life and well-being, which identify key areas of an individual's life that affect the overall sense of satisfaction. These areas cover both basic material and living conditions (income, housing, food) and more complex social aspects (health, work, family, friends, security, education, leisure, place of residence, relations with the state, etc.), which allows obtaining a comprehensive picture of the cognitive component of subjective well-being.

Second, the choice of these areas is due to the long-term experience of monitoring studies at the Institute of Sociology FCTAS RAS, during which the importance of the influence of these aspects of life on Russians' sense of well-being was empirically confirmed. The 16 indicators presented in the article make it possible not only to assess the current situation, but also to trace the dynamics of changes in various spheres of life, which is especially important for understanding the transformational processes taking place in Russian society.

So, for the respondent's choice of one of the proposed answers for each of the variables included in the SWB Index, an appropriate score was assigned (1 point – "good", 0.5 points – "satisfactory", 0 points – "bad"). At the same time, the legality of combining various indicators into a single index and assigning them equal weights is justified by the high Cronbach's alpha coefficient (0.905), which indicates significant internal consistency of all elements of the SWB Index. This confirms that the selected 16 spheres of life (despite the existing differences in their semantic content) are perceived by the respondents as interrelated components of a common sense of well-being and therefore can be combined into a single measuring instrument.

⁵ To study the specifics of the subjective well-being of Russians and track its dynamics, the article uses various rounds of monitoring studies conducted by the Institute of Sociology FCTAS RAS, including data arrays for March 2003 ("The rich and the poor in modern Russia", N = 2,000), February 2014 ("The middle class in modern Russia: 10 years later", N = 1,600) and May 2024 (15th round of the monitoring, N = 2,000), conducted for each of these surveys based on an all-Russian zoned quota sample representing the adult (18 years and older) population of the Russian Federation by gender, socio-professional status, education, and type of settlement. The comparability of the data used is ensured by a consistent sample model, its representativeness according to the same parameters, the permanent contractor, face-to-face data collection method, and the preservation of formulations and closures of the analyzed questions. More detailed information about the methodological features of these surveys can be found in the series of monographs "Russian Society and the Challenges of the Time", the latest of which was published in 2025 (Russian Society ..., 2025).

⁶ Respondents could choose the option "I find it difficult to answer".

⁷ For more information about which of the studied areas of life Russians evaluate in a similar way, see the article (Sushko, 2024).

The SWB Index was calculated in relation to three sets of data collected based on the results of monitoring studies by the Institute of Sociology (IS) FCTAS RAS. The values of the SWB Index ranged from 0 to 16 points, and the average and median values did not differ significantly in all years (Tab. 1). This is an indirect evidence of the quality of the available data and the lack of asymmetry (mass statistical outliers) in them, as well as the relatively high homogeneity of the obtained estimates of subjective well-being. However, it is possible to assess the degree of this homogeneity only after resolving the issue of the values of the conditional

boundaries of groups that differ in their sense of well-being in a number of designated aspects.

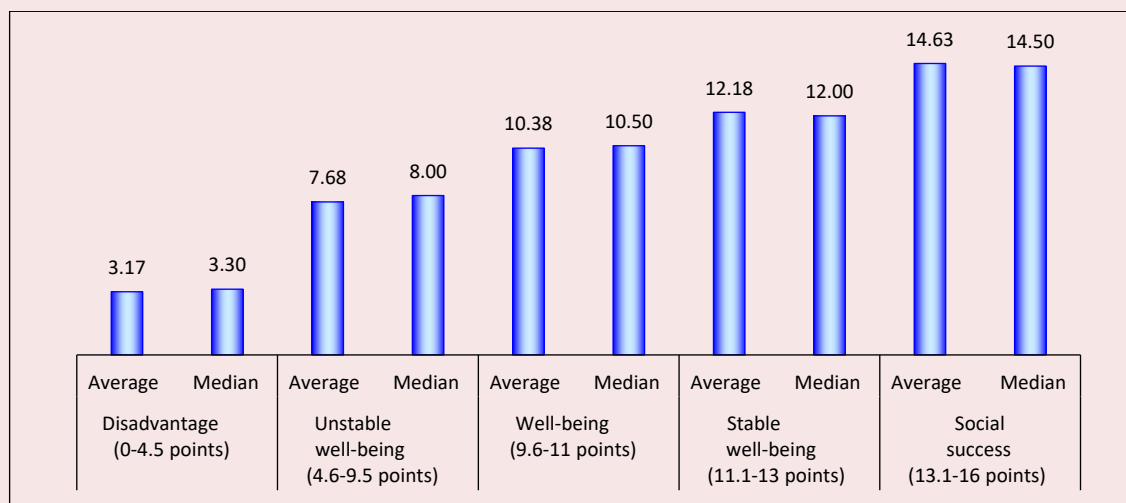
When defining these boundaries, we focused on minimizing differences in scores within groups and maximizing them between enlarged groups. Based on the results of this analysis, five groups were identified ranging from subjective disadvantage to social success (Fig. 1). The average and median values of the SWB Index within the groups were also very close, but they differed significantly between the enlarged groups, especially the polar ones. Checking the significance of statistical differences confirmed them⁸.

Table 1. Dynamics of average and median values of the SWB Index, 2003–2024, points

Survey year	Average value	Median value
2024	9.8	9.5
2014	9.8	9.5
2003	7.9	7.5

Source: own calculations based on IS FCTAS RAS data.

Figure 1. Average and median values of the SWB Index in groups with different levels of subjective well-being, 2024, %



Source: own calculations based on IS FCTAS RAS data.

⁸ The significance of statistical differences was verified by one-factor analysis of variance. The Livigne criterion, based on both the average and the median, exceeded the significance level by 0.05, which made it possible to verify the correctness of the variance analysis. The Anova test showed that, first, there are significant differences between the groups ($p < 0.01$), and second, they exceed the differences within the group ($F = 4582.9$). Thus, the selected groups are quite homogeneous, but they differ significantly in relation to each other.

Based on the above criteria for the validity of the constructed SWB Index, we proceed to a meaningful interpretation of the most typical assessments of the subjective well-being of representatives of each of the selected groups⁹ (*Tab. 2*).

Thus, the first group brought together Russians who more often consider their position a disadvantaged one according to various criteria. Thus, the main composition of this group described the situation in most of the considered spheres of life as bad. And even in those areas where bad assessments did not dominate, they significantly exceeded the similar shares in the other four groups and the average across the array. In this sense, the subjective disadvantage for Russians is associated with an absolutely outsider position, which, however, is the exception rather than the rule for Russian society (4.3%).

The second group unites Russians, who already have satisfactory ratings in all areas, but the proportion of those who assess the situation as bad in most areas exceeds the number of those who see it as good, including when assessing the basic components – material security, food and clothing. That is, even with regard to the availability of the minimum necessary material base, this group cannot be called stable, despite the dominant feeling of satisfaction with various aspects of life. Numerically, this is the largest group, and its subjective position largely correlates with studies of income stratification, which characterize Russian society as not a society of poverty, but a society of mass low-income (*The model of income ...*, 2018).

The third group includes 15.4% of Russians with dominant satisfactory assessments of the situation in most areas of life; but in this group the proportion of good assessments already exceeded the proportion of bad in various areas, and in three of the areas related to housing, as well as important components of social capital (family relationships

and opportunities to communicate with friends) good assessments dominated.

In the fourth group (14.2%) of Russians, good assessments dominated in 11 of the 16 areas of life under consideration, while bad grades in most aspects did not exceed the statistical margin of error of 3–5%. Nevertheless, the situation in areas related to material security, health status, vacation opportunities and obtaining the necessary education and knowledge, as well as the position in society and the level of personal security, was assessed by representatives of this group more as “satisfactory” than “good”. In this sense, the fifth group, which unites 19.5% of Russians, is characterized by the dominance of good grades in all considered areas of life and acts as a polar in relation to the group forming the pole of subjective disadvantage. Thus, in Russian society, subjective well-being is a stable norm, and disadvantage is a rather rare phenomenon. However, subjective well-being, as can be seen from the data presented, is highly differentiated, and Russian society is heterogeneous in this sense. This thesis corresponds to the data of Russian studies that the differentiation in terms of positive privilege (or in our case, subjective well-being) in Russian society is much deeper than in terms of negative privilege (or subjective disadvantage) (*Society of Unequal ...*, 2022).

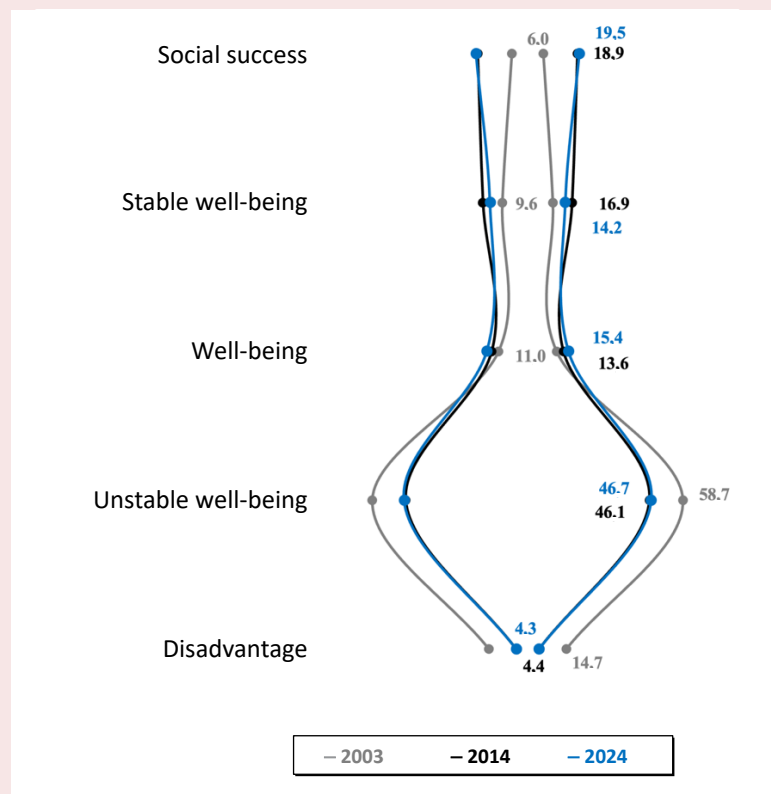
This partly reflects the dynamics of the number of groups with different levels of subjective well-being, indicating that after 2003 there was a noticeable transformation in the minds of Russians in terms of their own well-being for the better (*Fig. 2*). However, since then, the dynamics of the assessments under consideration have remained stable, and the zone of relatively stable subjective well-being in relation to the group of unstable subjective well-being and the adjacent group of subjective disadvantage have been numerically leveled. The visual model of subjective well-being shows that the zone of stable well-being is more heterogeneous than a group whose subjective well-being is rather unstable.

⁹ The names of the groups are conditional and are interpreted solely from the perspective of the empirical data under consideration.

Table 2. Assessments of various aspects of life by Russians from different groups with different levels of subjective well-being*, 2024, %

Assessments of various aspects of life		Disadvantage	Unstable well-being	Well-being	Stable well-being	Social success
Financial security	Good	-	2.7	13.4	31.9	76.7
	Satisfactory	6.0	71.3	83.1	66.3	23.3
	Bad	94.0	26.0	3.6	1.8	-
Nutrition	Good	-	11.0	45.0	71.9	95.9
	Satisfactory	40.5	83.7	55.0	28.1	4.1
	Bad	59.5	5.3	-	-	-
Clothing	Good	-	6.8	33.9	62.3	92.3
	Satisfactory	34.5	85.8	66.1	37.7	7.7
	Bad	65.5	7.4	-	-	-
Health status	Good	2.4	9.2	27.0	46.3	80.0
	Satisfactory	32.1	73.8	70.0	51.2	19.5
	Bad	65.5	16.9	2.9	2.5	0.5
Housing conditions	Good	2.4	19.0	52.3	65.6	90.5
	Satisfactory	53.6	72.6	44.1	30.9	9.2
	Bad	44.0	8.4	3.6	3.5	0.3
Family relationships	Good	8.6	38.5	70.3	84.9	95.4
	Satisfactory	59.3	56.7	28.4	14.7	4.6
	Bad	32.1	4.8	1.3	0.4	-
Leisure activities	Good	-	8.9	36.3	56.8	84.4
	Satisfactory	23.8	69.7	60.5	41.1	15.4
	Bad	76.2	21.4	3.3	2.1	0.3
Situation at work	Good	-	8.8	32.9	57.1	80.4
	Satisfactory	40.0	78.5	65.3	40.8	19.6
	Bad	60.0	12.7	1.8	2.1	-
Opportunity to relax during the vacation period	Good	-	4.1	18.9	36.4	75.5
	Satisfactory	8.3	60.0	72.6	56.4	24.2
	Bad	91.7	35.8	8.4	7.1	0.3
Opportunity to communicate with friends	Good	4.8	28.2	66.8	76.1	93.3
	Satisfactory	61.4	66.0	31.9	22.9	6.7
	Bad	33.7	5.8	1.3	1.1	-
Opportunity to realize your potential in the profession	Good	1.4	8.8	32.3	62.2	89.1
	Satisfactory	15.9	72	57.8	35.6	10.7
	Bad	82.6	19.2	9.9	2.2	0.3
Opportunity to receive the necessary education and knowledge	Good	1.4	7.4	23.2	44.1	75.1
	Satisfactory	29.2	71.9	71.7	52.3	24.4
	Bad	69.4	20.6	5.1	3.6	0.5
Place where you live (city, town, village)	Good	4.8	23.3	44.0	64.2	85.4
	Satisfactory	57.1	69.0	51.8	35.1	14.6
	Bad	38.1	7.6	4.2	0.7	-
Your position and status in society	Good	2.4	6.8	28.3	49.5	81.0
	Satisfactory	35.7	85.0	67.8	49.8	18.7
	Bad	61.9	8.2	3.9	0.7	0.3
Personal security level	Good	1.2	8.3	24.2	32.3	66.9
	Satisfactory	39.3	73.7	69.0	62.5	31.0
	Bad	59.5	18.0	6.9	5.3	2.1
Life in general	Good	-	4.9	25.4	56.8	93.1
	Satisfactory	29.8	88.7	73.6	41.8	6.9
	Bad	70.2	6.3	1.0	1.4	-
Total for the array		4.3	46.7	15.4	14.2	19.5
*Maximum values in the column are highlighted in gray. Source: own calculations based on IS FCTAS RAS data.						

Figure 2. Dynamics of the number of groups of Russians differing in the level of subjective well-being, 2003–2024, %



Source: own calculations based on IS FCTAS RAS data.

Thus, as a hypothesis, we can note that along with the rather extensive zone of unstable subjective well-being that persists in Russian society, its stable forms cover a significant number of Russians, but they are very differentiated from each other. In this regard, it is important to clarify the questions of whether we can relate these enlarged zones to each other (or whether they are not just visually or numerically differentiated from each other, but also significantly differentiated from the point of view of socio-demographic portraits of representatives of the selected groups) and, if so, how legitimate is the thesis that the Russian is society at a bifurcation point, judging by the SWB? In this sense, it is important not only to assess the dynamics of the number of different SWB zones, but also to consider the most typical characteristics of their representatives.

Features of socio-demographic portraits of groups with different levels of subjective well-being

An analysis of the dynamics of the interrelationships of individual socio-demographic characteristics with belonging to groups with different levels of subjective well-being reveals several important trends for Russian society related to the changing role of certain aspects of life that contribute to the formation of a comprehensive sense of well-being. Thus, there is an increase in the interrelationships of subjective well-being and material security. The individual's income level throughout the period under review has not only maintained its leading position among other objective characteristics, but has also significantly strengthened its close relationship with the SWB Index over the past decade (*Tab. 3*).

Table 3. Dynamics of Spearman correlation coefficients between individual socio-demographic characteristics and belonging to groups with different levels of subjective well-being*, 2003–2024, %, ranked in descending order of indicators in 2024

Criterion	2003	2014	2024
Average per capita income for each family member relative to the settlement median	0.328	0.335	0.379
Professional affiliation	0.257	0.261	0.286
Age	0.317	0.280	0.234
Marital status	0.209	0.184	0.150
Education	0.193	0.171	0.122
* Coefficients that have been increasing from year to year are highlighted in light gray; coefficients that have been decreasing – in dark gray. Source: own calculations based on IS FCTAS RAS data.			

This indicates that material prosperity in modern conditions is still the most important element for Russians, although not the only one, for both objective and subjective well-being, since it largely determines the life chances and opportunities that an individual can focus on when assessing their own position and possible prospects in other areas of life. At the same time, it is important to make a reservation that we are mainly talking about the cognitive component of subjective well-being, associated precisely with assessments of the situation in key areas of life. For example, although the size of average per capita income has a close relationship with estimates of financial status and, as we see, it even increases over time, the sense of the dynamics of material wealth relative to the past or expectations of the future from the perspective of the present is much less associated with belonging to the income group, which we showed earlier in part (Sushko, 2023).

In addition, data from Russian studies confirm that the cognitive assessment of subjective well-being is more closely related to the level of material well-being than, for example, its affective aspect, associated with assessments of various feelings and emotions experienced by the respondent (Skachkova et al., 2024). Consequently, subjective well-being, assessed in terms of statics and dynamics, as well as from the perspective of cognitive or affective assessments, is differently related to objective and

subjective factors, as well as material and non-material properties¹⁰. In this regard, it is critically important to take into account the high dynamism and plasticity of subjective assessments, considering existing relationships, including from the point of view of verifying their stability in dynamics.

The criterion of professional affiliation turned out to be no less significant from the standpoint of forming a comprehensive sense of one's own well-being. In many ways, this is expected and consistent, given the above indicators of the relationship between security and income, since self-realization in the professional field is closely linked to financial stability and, consequently, confidence in the future. For these reasons, the profession plays a key role not only in determining a person's place in the system of public relations, but also becomes one of the key factors determining an individual's ideas about their own social well-being. The strength of the relationship between this criterion and well-being assessments remains stable throughout the period in question. Accordingly, the status of unemployed

¹⁰ One of the indirect arguments in favor of this thesis can be, for example, the Spearman coefficients between the respondent's subjective social status at the present time, his/her estimates a decade ago at the beginning of 2014, measured on a 10-step scale, and the size of per capita income relative to the settlement median. In the first case, this coefficient was 0.272, in the second – 0.126. Approximately the same trends are found when checking the interrelationships of these variables with professional affiliation, one's own and parental level of education, and age.

will significantly reduce the level of subjective well-being of an individual, and vice versa – a higher professional status and qualification level will significantly increase the corresponding assessments of one's own well-being.

Against this background, since 2003, another trend has been recorded, associated with a noticeable decrease in the relationship between education and self-assessments of well-being. This indicates the transformation of attitudes toward education in the public consciousness as one of the key channels of social mobility in post-Soviet Russia. Moreover, as it has been repeatedly shown in research, although this channel continues to operate, it is already under completely different conditions and requirements for those who wish to improve their status in this way (Human Capital ..., 2023). As higher education, including commercial education, has become more widespread, its stratification role has decreased, and it has ceased to guarantee a successful professional trajectory and corresponding material returns, but it is certainly a necessary norm for this. The trend has already been noted in the works of Russian sociologists (Konstantinovskiy, Popova, 2020), but it is again found in the context of the study of subjective well-being. Despite the relatively weak correlation between education and the SWB Index, for Russians this factor remains rather secondary even at the subjective level in assessing well-being.

Over the past decade, the role of age in the context of its relationship with assessments of subjective well-being has also significantly decreased, although it still remains quite important. Nevertheless, a decrease in the closeness of the relationship between age and SWB scores may indicate a gradual smoothing of age differences in this regard and reflect trends toward the lengthening of the life cycle, within which goals that are significant for an individual can be realized. In this regard, youth is no longer considered as a key condition for feeling well-off, and a more pragmatic

approach to age is being implemented, focused on its "acceptance" with all the possibilities and limitations. First of all, this is happening against the background of the expansion of the age boundaries of youth under the complex influence of the growth in the total life expectancy in a number of countries, expanding medical capabilities to maintain health, humanizing working conditions, developing educational institutions and strengthening ideas about the continuity of the educational process in the public consciousness, etc.¹¹ However, these trends have not yet fundamentally changed the existing nature of the relationship between age and assessments of subjective well-being, when being young significantly increases the chances of feeling well in a whole range of vital areas.

At the same time, the results of the study indicate that Russian society develops models of subjective well-being that are more independent from the social environment (including the neighbor); there is a trend toward individualization and focus primarily on one's own achievements and success. This is evidenced, among other things, by the consistent decline in the role of an individual's family status in assessing one's own well-being. Despite the fact that the family traditionally tops the rating of key life values and goals of Russians, the fact of its presence or absence is not a predictor of the corresponding assessments of well-being and refers rather to secondary factors among other socio-demographic characteristics of an individual. The exception is Russians who are divorced or widowed, and they are relatively more likely to feel disadvantaged. Thus, family status has some differentiating power, but rather according to the proximity of the individual to the pole of disadvantage. Family status does not affect subjective well-being in a key way (*Tab. 4*).

¹¹ On the expansion of the age limit of youth. Available at: <https://www.elib.hse.ru/weekly/2025/01073/gazeta013.php> (accessed: 20.05.2025).

Table 4. Specifics of subjective well-being in various socio-demographic groups of Russians*, 2024, %

Group	Disadvantage	Unstable well-being	Well-being	Stable well-being	Social success	Average for the array
<i>INCOME GROUPS</i>						
Under 0.75 medians	74.4	39.9	29.1	19.9	15.0	32.0
From 0.76 to 1.25 medians	16.7	36.7	38.8	39.9	29.0	35.2
From 1.26 to 2 medians	6.4	19.3	29.8	26.6	36.2	24.6
From 2.1 medians and higher	2.6	4.1	2.4	13.7	19.8	8.1
<i>PROFESSIONAL GROUPS</i>						
Entrepreneurs and the self-employed	–	2.4	2.9	1.8	7.9	3.4
Managers of different levels	–	2.8	2.9	3.9	6.7	3.6
Specialists in positions requiring higher education certificate	2.4	11.4	20.8	24.2	25.9	17.1
Employees in positions that do not require higher education certificate	1.2	13.0	6.5	9.8	11.5	10.8
Trade sector or consumer services employees	5.9	10.7	9.4	11.6	11.3	10.6
Grade 5 workers	8.2	7.1	14.7	13.7	10.8	10
Grade 1–4 workers and workers with no grade	12.9	16.5	14.0	16.8	12.1	15.2
Currently unemployed	69.4	36.2	28.7	18.2	13.8	29.6
<i>AGE GROUPS</i>						
18–30	10.4	18.4	37.2	49.3	54.8	24.4
31–40	20.1	22.4	19.0	21.2	20.6	21.5
41–50	22.7	23.0	22.5	18.7	20.6	22.3
51–60	22.0	16.7	10.8	6.4	2.4	15.0
61 and older	24.9	19.6	10.4	4.4	1.6	16.9
<i>MARITAL STATUS</i>						
Single / single and have never been married	10.6	14.5	15.0	19.3	20.5	16.3
Married	54.1	55.8	63.8	64.9	62.6	59.6
Living with a partner	4.7	5.1	4.2	3.5	5.1	4.8
Divorced	12.9	10.6	7.8	5.3	7.9	9.0
Widower / widow	16.5	13.4	9.1	6.7	3.6	10.0
<i>EDUCATION</i>						
Without professional education	27.1	16.7	16.3	16.5	13.6	16.5
Secondary vocational or incomplete secondary education	55.3	54.4	46.6	47.4	43.1	50.1
Higher education (including two university degrees and an academic degree)	17.6	28.8	37.1	36.1	43.3	33.5
<p>*Proportion of those who found it difficult to answer is not represented.</p> <p>Indicators exceeding the average for the array by more than 3–5% statistical error are highlighted, while the maximum values for the column are given in bold.</p> <p>Source: own calculations based on IS FCTAS RAS data.</p>						

Over the past two decades, the conventional portrait of a subjectively prosperous Russian in terms of his/her socio-demographic indicators has undergone some significant changes. So, if in 2003 the zone of absolute subjective disadvantage was formed mainly of elderly or retired citizens, divorced or widowed, unemployed or unskilled workers, with incomes below the settlement median and without professional education (secondary vocational or incomplete higher education significantly increased the self-esteem of respondents), then by 2024 the role of the material factor and professional status in this regard has increased significantly, while the education level and age, on the contrary, have decreased. And although currently citizens with an average per capita income of less than 0.75 median, unemployed, in pre-retirement and retirement age, and without higher education are more likely to fall into the zone of subjective disadvantage; among representatives of this zone one in ten is young, more than half have a family, and almost one in five has a higher education diploma.

The specifics of the zones of stable well-being and social success have also undergone certain transformations. Subjective well-being is more represented by Russians with incomes of two medians and above (in this regard, for Russians in 2003, it was enough to have an income of 1.25 of the settlement median to have a sense of well-being), by Russians who have leadership positions or the status of self-employed/entrepreneur, as well as by those with a high level of education (here it is more about the totality of available “soft” and “hard” skills in demand in the labor market rather than having a diploma) (Volgin, Gimpelson, 2022). The intermediate groups are more characterized by averaging positions and combining positive and negative assessments of various aspects of their own lives.

The results obtained make it possible not only to better understand the essence of the changes in social well-being taking place in the public

consciousness, but also to draw a number of generalizing conclusions about the specifics of Russian society and its current stage of development. The fact that Russians prioritize material criteria, the importance of which has not only increased over the past twenty years, but which has also become key to their sense of well-being, indicates that for the most part Russian society is still in the era of “survival” with its typical set of values and norms (Inglehart, Welzel, 2011).

Lifestyle features of groups with different levels of subjective well-being

The nature of assessments of one’s own level of social well-being is influenced by certain property characteristics of Russians and lifestyle features. Thus, the presence of durable goods in the household is relatively less common than the sample average among citizens with a low level of subjective well-being (with the exception of a refrigerator and a washing machine, which the vast majority of Russians have – 99.2 and 93.3%, respectively). While the presence of a dishwasher, air conditioner, computer, and motor vehicle is noticeably more common among Russians with a high level of subjective well-being (*Tab. 5*). These goods are not luxury items for the country’s population, although they have not yet become the “norm”, so their differentiating power remains quite high, which is confirmed by the data from other studies (Kolennikova, 2024b). This demonstrates that subjective well-being assessments are closely related to the specifics of an individual’s lifestyle and are in many ways markers of both the real and the desired social status.

It is not surprising that the sense of well-being is also associated with some of the life goals achieved by an individual. We should note that in the mass consciousness of Russians there are well-formed normative ideas about the criteria of social success and general well-being, which in Russian society remain quite stable over time and include, first of all, the implementation of plans for a good family

Table 5. Some property characteristics of Russians from different zones of subjective well-being*, 2024, %

Good	Disadvantage	Unstable well-being	Well-being	Stable well-being	Social success	On the whole
Fridge	100.0	99.0	100.0	98.9	98.7	99.2
Washing machine	81.2	92.7	93.5	93.7	96.9	93.3
Tablet, iPad, iPhone or smartphone	61.2	80.3	87.6	82.8	87.2	82.3
Computer or laptop	20.0	52.8	64.5	71.9	82.6	61.8
Motor vehicle	21.2	47.2	58.0	65.3	74.1	55.6
Air conditioner	7.1	25.8	33.2	39.6	54.1	33.7
Dishwasher	4.7	16.2	19.5	23.9	41.0	22.2

* The table does not show the proportions of those who found it difficult to answer. Indicators that exceed the national average by more than a statistical margin of error of 3–5% are highlighted in gray. Indicators covering the majority (over 50%) of the relevant groups are highlighted in bold.
Source: own calculations based on IS FCTAS RAS data.

and raising their own children, finding reliable friends, and material prosperity based on the principle of “living no worse than others”, purchase of an apartment or housing, etc. (Tikhonova, 2025). These goals are among the five key aspirations for Russian citizens and are traditionally realized one way or another at different stages of the life cycle by more than half of the representatives of the mass strata.

At the same time, the prevalence of the implementation of certain life plans among Russians with different levels of subjective well-being varies significantly (*Tab. 6*). Thus, the goals associated with financial and professional well-being, the desire to visit different countries, to be one’s own master, to feel informationally free and independent are among those that have the greatest impact on the formation of one’s sense of well-being. It was with an increase in the level of subjective well-being that the frequency of achieving these goals increased. In addition, subjectively prosperous Russians, unlike subjectively disadvantaged and precariously prosperous, manage to achieve a much larger number of goals on average. For example, in general, over 45–50% of Russians say that they have already achieved an average of nine goals from the proposed list. In other words, such an indicator can be considered a common norm for Russian society. Meanwhile, only representatives

of three subjectively well-off groups meet this norm or deviate from it for the better; and among the subjectively disadvantaged groups, the group whose subjective well-being is characterized as rather unstable was the most typical implementation of no more than four goals from the list, which are related to ensuring the basic components of the microcosm of a Russian: a roof over one’s head the inner circle (family and friends) and the inner desire to live an honest life.

The portrait of representatives of various groups with different levels of subjective well-being is complemented by data on the number of life problems that Russians had to face over the past year before the survey. Thus, Russians from the “stable well-being” and “social success” groups are relatively more likely to declare the absence of serious problems in their lives (*Tab. 7*). And those of them who did talk about any problems, more often mentioned the lack of time for everyday activities and for conditional hobbies, closed the “top three” in this group of health problems, which, however, were among the top three most common problems in each of the groups under consideration. Meanwhile, over half of the representatives of the “well-being” (51.5%) and “unstable well-being” (65.4%) groups noted that they had encountered at least two significant problems over the past year, while 57.6% of the

Table 6. Prevalence of some realized life goals among Russians with different levels of subjective well-being*, 2024, %

Life goal	Disadvantage	Unstable well-being	Well-being	Stable well-being	Social success	Average for the array (for reference)	Correlation with the Well-Being Index (Spearman)
Make good money	4.7	8.8	16.7	21.4	40.5	17.8	0.379
Get a prestigious job	14.1	18.9	27.1	34.0	50.5	28.3	0.332
Have an interesting job	23.8	35.5	54.8	59.6	66.1	47.5	0.316
Live no worse than others	23.5	40.1	62.6	59.6	68.2	51.1	0.297
Visit different countries	3.5	9.8	14.4	12.4	22.9	13.2	0.237
Being my own boss	20.2	42.1	50.2	55.1	66.2	49.0	0.233
Make a career (professional, political or public)	7.1	12.4	20.0	19.6	26.4	17.1	0.219
Have free access to information about what is happening in the country and the world	17.6	35.3	42.3	47.4	61.3	42.4	0.216
Get a good education	28.2	42.8	49.5	49.1	63.2	48.1	0.203
Have reliable friends	57.6	68.3	83.9	78.6	86.4	75.2	0.200
Become rich	1.2	1.7	2.3	5.3	8.2	3.6	0.200
Create a happy family	42.4	55.5	69.2	68.4	70.5	61.8	0.193
Become a professional in my field	31.0	42.9	55.3	49.8	55.6	47.8	0.182
Obtain a high position in society	1.2	3.2	2.3	4.2	10.3	4.5	0.167
Influence what happens in society or the place where I live	2.4	3.1	4.6	5.3	11.5	5.3	0.138
Have my own business	2.4	5.0	4.6	7.4	12.1	6.6	0.112
Live my life honestly	63.5	64.7	74.3	66.9	71.5	67.8	0.072
Have a lot of free time and spend it as I please	27.1	27.7	31.5	26.1	24.9	27.5	0.061
Have access to power	2.4	2.7	3.6	4.9	6.9	4.0	0.049
Have my own apartment/house	65.9	68.9	71.4	67.8	71.1	69.4	0.036
Become famous	1.2	1.8	0.7	0.7	3.9	1.9	0.013

* Wording of the question: "What have you been striving for in your life and in which areas have you already achieved what you want?". The proportions of those who found it difficult to answer are not shown in the table. Indicators covering over 50% of the composition of the respective groups are highlighted in gray.

Source: own calculations based on IS FCTAS RAS data.

Table 7. Specifics of subjective well-being in groups of Russians with various types of life problems*, 2024, %

Type of problem	Disadvantage	Unstable well-being	Well-being	Stable well-being	Social success	Total
Health-related problems	54.1	40.1	32.2	28.8	17.4	33.5
Lack of time to do what I want to do	7.1	24.3	26.1	23.9	21.3	23.2
Lack of time to do all the daily chores	9.4	21.3	21.2	19.3	22.1	20.7
Poor financial situation	57.6	29.8	13.4	8.4	4.4	20.5
Family problems	27.1	23.0	16.6	18.9	11.8	19.5
Work-related issues	35.3	20.5	16.9	14.0	9.5	17.5
Problems with the ability to receive the necessary medical care	29.4	19.5	17.3	13.0	7.4	16.3
Lack of social guarantees in case of old age	24.7	18.1	9.4	6.7	3.8	12.7
Problems with children	17.6	13.0	9.8	8.1	5.6	10.6
Housing problems	15.3	9.4	7.2	8.4	7.2	8.8
Bad habits	17.6	8.0	5.9	3.9	2.3	6.4
Poor nutrition	18.8	7.9	2.6	4.6	3.6	6.3
Loneliness and/or lack of communication opportunities	14.1	7.6	4.9	4.2	2.8	6.1
Consequences of terrorist attacks, shelling, etc. by the Ukrainian Armed Forces	5.9	6.0	4.9	6.7	3.8	5.5
Problems with clothing or footwear	14.1	5.9	2.6	1.8	1.0	4.2
Insecurity from violence	9.4	4.6	1.3	2.1	1.5	3.4
Problems with the opportunity to get an education	2.4	1.9	1.0	3.5	0.0	1.7
I believe that I live normally and have not encountered any problems	3.5	19.3	27.0	40.0	47.2	28.2

* Wording of the question: "Have you had to deal with the following problems over the past year?". The proportions of those who found it difficult to answer are not shown in the table. The indicators that exceed the average for the array by more than 3–5% of the statistical error are highlighted in gray, and the three maximum indicators in each column are highlighted in bold.
Source: own calculations based on IS FCTAS RAS data.

subjectively disadvantaged group reported three or more pressing problems. For the Russians from the group of conditional “well-being” the number of those who faced certain problems most often did not significantly exceed the national average, and almost a third even spoke about the absence of significant problems in their lives, while those from the “unstable well-being” and even more so from the “disadvantage” groups, relatively more often than on average for the array, mentioned a fairly wide range of problems. This partly allows us to answer the above question about the existing barriers and limitations on the way to achieving important life goals and gaining a sense of well-being. For Russians, these barriers are primarily related to the vulnerability of their microcosm (personal health, family relationships, work) and

lack of basic material components (income level, as well as food, clothing), lack of social guarantees and generally low level of social security.

For these reasons, for Russians with different levels of subjective well-being, the nature of the changes taking place in key areas of Russian society is significant. Thus, Russians who feel a decrease in the general standard of living, indicating a deterioration in the situation with social justice in society, feeling that the situation with earning opportunities, in healthcare, and in the economy as a whole has worsened, are significantly more likely to be represented in the group of disadvantaged and Russians characterized by unstable subjective well-being. On the contrary, subjectively well-off groups are characterized by more optimistic assessments of these areas (*Tab. 8*).

Table 8. Assessments of the dynamics of the situation in different spheres of society by representatives of groups with different levels of subjective well-being*, 2024, %

Assessments of the dynamics of the situation	Disadvantage	Unstable well-being	Well-being	Stable well-being	Social success	Total
<i>Situation regarding the standard of living</i>						
Improved	4.7	11.6	23.2	25.7	34.1	19.5
Didn't change	30.6	41.9	43.1	48.9	51.3	44.4
Deteriorated	64.7	46.5	33.7	25.4	14.6	36.1
<i>Situation regarding social justice</i>						
Improved	1.2	9.3	13.1	16.5	24.4	13.5
Didn't change	31.0	52.5	62.4	67.4	62.2	57.1
Deteriorated	67.9	38.1	24.5	16.1	13.4	29.3
<i>Situation regarding earning opportunities</i>						
Improved	12.9	29.0	35.0	43.8	57.9	37.0
Didn't change	43.5	45.2	45.1	44.9	35.4	43.2
Deteriorated	43.5	25.7	19.9	11.3	6.7	19.8
<i>Situation in healthcare</i>						
Improved	3.5	16.5	23.5	21.1	33.8	21.1
Didn't change	35.3	42.2	47.4	55.1	50.3	46.1
Deteriorated	61.2	41.3	29.1	23.9	15.9	32.8
<i>Situation in economy</i>						
Improved	7.1	18.2	29.1	31.6	42.3	26.0
Didn't change	44.0	44.4	39.9	43.5	40.3	42.8
Deteriorated	48.8	37.4	31.0	24.9	17.4	31.2
* Wording of the question: «How, in your opinion, has the situation changed in the following areas of Russian society over the past 10 years?». The proportions of those who found it difficult to answer are not shown in the table. The indicators that exceed the average for the array by more than 3–5% of the statistical error are highlighted in gray; the maximum indicator for the column is given in bold. Source: own calculations based on IS FCTAS RAS data.						

One of the key factors for high assessments of the situation in various areas of one's own life is the tendency to plan it in advance. Thus, over a third of the representatives of the socially successful group plan their life for at least 3–5 years or more (32.8%), while the number of those who plan their life among the subjectively disadvantaged and even in the group of Russians characterized by unstable subjective well-being is minor (3.6 and 10.6%, respectively), and in these groups, the majority of respondents think that that life cannot be planned even for a year ahead (77.6 and 56.7%, respectively).

Conclusion

As our research has shown, the sense of well-being in key areas of life for at least the last two decades has been typical for the majority of Russians and is in this regard a stable norm for Russian society. This also indicates the stability of the entire socio-economic and socio-political system, into which the majority of the Russian population subjectively "fits", and the positions of social outsiders are characteristic of its absolute minority. Nevertheless, Russian society is differentiated by the degree of subjective well-being, and five significantly different groups are distinguished by this criterion. The dynamics of their numbers since 2003 had a trend toward the spread of forms of stable subjective well-being, but by 2014 it had slowed down. Thus, the model of Russian subjective well-being that has developed by 2024 looks ambivalent, since one of the groups (the most widespread) unites Russians with mostly satisfactory assessments of different spheres of life and a relatively large bias toward negativism, and three more groups are characterized by a more optimistic perception of the situation in different spheres of life, although they are very differentiated from each other.

The peculiarities of differentiation in terms of subjective well-being are related not only to the socio-demographic characteristics of individuals and the specifics of their lifestyle, but also to

the changing role of some of these factors in the sense of their own well-being. If two decades ago a relatively high level of income and a young age significantly increased the sense of well-being in various spheres of life, then in 2024 the relationship between the level of subjective well-being and income increased, and with age it weakened, giving way to professional affiliation. Thus, subjective well-being in modern Russia is still very much dependent on the availability of material resources and sources of its origin (in this case, we are talking primarily about professional status and availability of work), which already says a lot about the stage of development of Russian society, which is still characterized to a great extent by the values of survival and in particular, economic security. At the same time, the increasing role of professional status in assessing one's own well-being indicates a gradual movement toward a new stage of development, in which the qualifications and unique skills of an individual not only provide him/her with appropriate material benefits, but also are the foundation for personal well-being. Taking into account the coexistence of these two trends, we can argue that Russian society is still at a late industrial stage of development with a continuing high role of income, but also gaining popularity trends toward professionalization, which, however, still affects a relatively small part of society.

This is also confirmed by the fact that Russians' assessments of their well-being reflect a trend related to the higher education becoming more available and widespread, which has led to a weakening of the relationship between one's own sense of well-being and an individual's level of education and, in fact, a revision of the role of education for one's own status and sense of one's position in society, which in the minds of Russians depend much less on having a higher education diploma than in the early 2000s and even the middle of the 2010s.

The trend toward a gradual revision of age boundaries in modern society, mainly caused by an increase in life expectancy and the expansion of the boundaries of youth, also affects subjective well-being. This leads to leveling age differences in Russians' perceptions of their own well-being. Most likely, this process will continue further. The same trend in many ways forms a different view of the family, its role for the subjective well-being of the individual. In particular, the relationship between family status and belonging to a group with a certain level of subjective well-being decreased during the observed period, although events leading to family breakdown (divorce or death of one of the spouses) have a high differentiating force based on signs of disadvantage.

The identified socio-demographic features of groups with different levels of subjective well-being are complemented by lifestyle characteristics that further demonstrate the heterogeneity of the "stable well-being" zone, which includes three groups of approximately equal size. Thus, subjective well-being and especially its stable forms are determined, first, through the multiplicity of realized life goals, and second, through the priority of goals related to providing high qualifications, building up relevant professional and social skills, and getting to know other countries (new experience). In the so-called heyday of artificial intelligence, almost half of the Russian population already understands and implements in practice what already determines and is likely to determine its well-being in the future, and in every sense of the word. In the other two groups ("disadvantage" and "unstable well-being"), these trends are relatively less widespread, but they are partly noticeable among their representatives. Nevertheless, the issue of

barriers to the implementation of significant life goals and the formation of a corresponding sense of subjective well-being remains relevant for almost half of the Russian population. In addition, "stable well-being" determines the presence of fewer significant problems for the individual that he had to face in the last year. As the level of subjective well-being increases, the nature of possible problems also changes – problems with the "base" are less relevant, and lack of time, including for self-expression, comes to the fore. With an increase in subjective well-being, its relationship with the tendency to plan life and, in general, to assess the structure of the whole society more optimistically, increases.

Taking into account the identified features of the analyzed groups, we are still inclined to answer the question about the possible bifurcation point traversed by Russian society in the negative, primarily due to the continuing close interrelationships of a sense of one's own well-being with ensuring economic security and stability of the microcosm, as well as the rather high heterogeneity of the zone of "stable well-being". However, this does not negate the trends in the movement of Russian society toward a qualitatively different state, which are fixed in it and affect, although not the majority, but a significant part of the Russian population. Moreover, on the one hand, the subjective well-being of this part is largely determined by the values of self-expression (profession, free time, life planning, etc.); on the other hand, Russians will have to define the boundaries of these values more clearly, taking into account current trends in age perception, the changing role of education, family and constantly developing technological innovations.

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Economic Behavior of the Region's Population: The Role of Socio-Cultural Factors in the Conditions of the Arctic



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Abstract. The transformations taking place in the socio-cultural space of Russia in the last three decades determine various aspects of human behavior, including economic behavior. The aim of the study is to assess the influence of the basic components of the socio-cultural space of the Arctic region on how the population develops economic behavior strategies, among which are values, norms, attitudes, social well-being, social capital, human capital, identity, and cultural consumption. The article provides a brief description of modern approaches to the study of economic behavior based on interdisciplinary links between economics, sociology and other sciences. Further, with the help of sociological research, we identify and describe trends in the economic behavior of the population of an Arctic region – the Arkhangelsk Region. With the help of G.S. Pospelov's decision matrices we assess the influence of the components of the socio-cultural space on the choice of an economic behavior strategy and determine the structural hierarchy of the components according to the degree of this influence. In particular, we show that the impact of the basic components on economic behavior demonstrates high stability, while the most significant structural contribution is made by social well-being and the values of “materialism” / “post-materialism”. Scientific novelty of the research lies both in the application of an interdisciplinary approach to the study of the economic behavior of the population of the Arctic region, and in assessing the impact of various structural elements of the socio-cultural space on the manifestation of a particular type of economic behavior of individuals and households (consumer, savings, and investment). Practical significance of the approach we propose is related to the possibility of its further use in order to design models and development programs for various Arctic territories and regions that differ in socio-economic, ethno-cultural and value characteristics and strategies of economic behavior of the population.

Key words: socio-economic development of the territory, socio-cultural space, transformation, economic behavior, method of decision matrices, regions of the Russian Arctic.

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Introduction

The economic behavior of the population is the subject of research by many Russian and foreign scientists who approach this phenomenon from different perspectives, using extensive tools from different disciplines. Without dwelling on this in detail, we will only refer to such works as (Kremlev, 2024; Orlov, Lugovoi, 2024; Kahneman, Tversky, 1979; Thaler, 2016). At the same time, the study of economic behavior can be carried out at various levels of aggregation, ranging from individual agents and households to entire social communities of various scales.

In this paper, we consider the behavioral processes of aggregates of individual agents and households located on the territory of a single Arctic region of Russia (Arkhangelsk Region), which has a number of pronounced features described in detail in studies (Podoplekin, 2016; Lukin, 2022; Lazhentsev, 2025), as well as in our monographs (Chizhova et al., 2022; Chizhova L.A. et al., 2023), namely: the peripheral location, the dispersion of the population, its low density and concentration in the agglomeration around the regional center; comparatively low (for the region of the European

part of the RF) transport accessibility, unfavorable climate and associated costs (in the field of energy, agriculture, etc.); a combination of the old-age population with a large share of newcomers from other regions against the background of mono-ethnicity; a combination of rental and service type features in the economy of the region; the status of the regional capital as scientific, educational and cultural Center of the European North of Russia and the European sector of the Arctic zone of the RF. These features, some of which are typical of the Arctic regions and some of which are unique, act not only as economic behavior factors, but also set the parameters of the socio-cultural space of the Arkhangelsk Region: a pronounced regional identity, the “fit” of the region in the public consciousness in the historical and geographical context of the Russian North, a high level of cultural and consumer demands, relatively high quality human capital, pragmatic value orientation and low level of social trust.

We should note that the population of the region involved in transformational changes is undergoing a process of sociocultural division into groups with different behavioral characteristics (Lastochkina, 2012). Currently, due to the digitalization of the economy and society, technologies (technological structures) are changing, new business lines and professions are emerging, labor productivity indicators are changing, people's lifestyles are changing, new forms of connection and communication are emerging, modern methods of collecting and processing information are being used, which together leads to natural and inevitable changes of economic behavior of the population (Tutygin, Chizhova, 2020).

For example, we consider the economic behavior of the population as a set of complex dynamic processes taking place within a certain framework of the socio-cultural space of the region (Chizhova et al., 2023) based on the systemic concept of the space-time approach proposed in the work (Kleiner,

Rybachuk, 2017). This view of the phenomenon of economic behavior in no way contradicts the other interpretations given below, but only complements its dynamic component.

The aim of the study is to assess the influence of the basic components of the socio-cultural space of the Arctic region on the formation of strategies for economic behavior by the population, while we distinguish two concepts related to economic behavior – “type” and “strategy”. The former is rather static in nature, while the latter characterizes the process associated with the choice. The choice of a behavior strategy, as a rule, depends on a large number of factors that are not always clearly expressed and fully understood by the person making this choice, and the type of economic behavior characterized by a set of relevant indicators is precisely correlated with the statement of observed practices.

The difficulty in achieving this goal lies in the fact that a direct assessment of such an impact is extremely difficult for a number of reasons and therefore practically impossible. First, this is caused by a large number of influencing factors that are not amenable to any orderly selection procedure, as well as acceptable quantitative assessment, which, in turn, calls into question the correctness of the application of generally accepted mathematical and statistical methods of analysis. Second, there is a high degree of uncertainty in the socio-cultural content, which is inextricably linked to the dynamically changing socio-economic situation in the territory of residence. Third, the first two difficulties are a serious obstacle in any attempt to directly formalize cause-and-effect relationships, and hence to build an appropriate conceptual model of behavior. Thus, the decision to follow a particular strategy of economic behavior by an agent (group of agents, household, etc.) is not accompanied by either an explicit hierarchy of formal choice of alternatives or effective tools for evaluating their usefulness (Tutygin et al., 2024).

In this regard, the research problem, in our opinion, is to overcome contradictions between such socio-cultural entities as values, social well-being, human and social capital, identity, cultural consumption, in terms of choosing a behavioral strategy. The authors propose to solve the problem by analyzing the manifestation of these entities through the prism of socio-cultural space (relational manifestations of entities). It is worth noting that it is an integral part of a more general scientific problem, which, in our opinion, consists in a critical mismatch of retrospective characteristics and the current cross-section of the situation in relation to the socio-cultural space of the Russian Arctic.

Based on the above, the research object should be considered the socio-cultural space of the region as a system construct consisting of basic components (entities), and the subject is the economic behavior of agents (population), formed under their direct and indirect influence. Thus, the hypothesis of the study is the assumption that economic behavior is a kind of integrity, the structure of which is largely determined by the basic components of the socio-cultural space (entities). We should say that according to the neoclassical concept, the economic behavior of the population is usually understood as "... a form of human activity, their conscious activity in the reproductive sphere, aimed at subjectively optimizing results (maximizing expected utility) due to the correlation of available preferences and limited resources with possible options for their use ..." (Belekhova, 2018), which fits perfectly into the logic of our research.

We will take the following as the main research tasks:

- 1) to gain a systematic understanding of modern scientific issues related to economic behavior;
- 2) by conducting a sociological study, to identify trends in the economic behavior of the population of a particular Arctic region (Arkhangelsk Region), taking into account its specifics;

- 3) to select and verify the appropriate tools for assessing the impact of the components of the socio-cultural space on the economic behavior of the population in relation to the aim of the study.

Methods

Based on the problem statement described above and the set of research tasks, we conclude that it is necessary to choose an additional tool that allows building a formal hierarchy of cause and effect along with using generally accepted sociological analysis procedures. For the aim of studying the influence of the basic components of the socio-cultural space on the choice of strategies of economic behavior (eventually leading to the formation of a particular type of economic behavior), we propose to use the idea of G.S. Pospelov's method of solving matrices (Pospelov et al., 1981). To implement it, a three-level hierarchy of "strategies – relational manifestations – entities" will be built below, with the help of which, based on the analysis of both quantitative and verbal data collected, estimates of the influence of the components of the socio-cultural space on the choice of economic behavior strategy, as well as the share of the "presence" of the basic components in the structure of each of its types will be obtained.

Results

Approaches to the study of economic behavior problems

Modern approaches to the study of economic behavior are based on interdisciplinary links between economics, sociology, philosophy, cultural studies, and psychology.

Economic behavior, being a certain form of socio-cultural process, has a number of socio-philosophical (value) and cultural (mental) characteristics, which are considered in detail in the works (Zolotukhin, 2018; Zolotukhin et al., 2020). The analysis of changing practices of economic behavior in specific territories allows regional authorities to competently choose priorities for strategic management, in the future not only

to clarify ideas about the causes of the current socio-economic state of regional communities, but also to predict ways of their further development (Yakovleva, 2019).

In modern research, it is customary to distinguish several types of economic behavior: consumer, credit, savings, and investment. We should note that economic behavior in all its manifestations is extremely important for the functioning of the Russian banking system. For example, the savings of the population are an important source of financial resources, and the pattern of economic behavior is well known: “the volume of deposits of the population increases in December, and in January the population almost always withdraws their funds from banks” (Gamukin, 2020).

Structural shifts in consumption and the transformation of economic behavior at the regional level cannot be explained solely by changes in household income, but require consideration of demographic, settlement and institutional factors (Zubarevich, Safronov, 2019). The population of “rich” regions prefers to spend money on recreation and entertainment, but these expenses are being squeezed in the face of a crisis decline in income. Savings behavior is most developed in the largest federal cities. Overdue loans are higher in the regions of the Russian Federation with low incomes and resource-producing regions, where the population strives to maintain the achieved level of consumption through loans.

The regional specifics of the economic behavior of the population, taking into account economic differentiation, consumer attitudes and behavioral characteristics during the current crisis, are reflected in the work of scientists from the EU countries. Using the example of the Polish voivodeships (regions), it is shown that at their level there is a significant differentiation in the socio-economic development of territories, including household incomes, and the current crisis caused by the consequences of military operations in Ukraine

does not help to reduce differences. At the same time, the processes of forming pessimistic consumer attitudes are actively underway, including their economic behavior, leading to a drop in demand and a decrease in the level of satisfaction of needs (Murawska, 2024).

The adaptation of consumer behavior to crisis conditions usually occurs in the following directions: there is an increase in the share of food costs in the structure of consumer spending, there is a decrease in the quantity (volume) of consumption of goods and services, and the quality of purchased goods is noticeably decreasing. Such adaptation mechanisms of residents of Russian regions in the long term lead to a violation of the reproduction of human potential (Dement'eva, 2018).

From the point of view of psychology, economic behavior largely depends on the socially determined aspirations and social environment of an individual, which should be taken into account in the study of economic inequality, social conflict, decision-making about childbearing, risk-taking, and goal setting (Genicot, Ray, 2020). Research on gender differences in economic behavior is quite popular. The work of scientists from Ecuador, based on surveys of respondents from 16 Latin American countries, shows that women's economic behavior is more related to innovation (men are more conservative), and economic realities are described by women most often through reflective assessment and emotional intelligence (Lascano Corrales, 2024).

The work of Chinese scientists analyzes how demographic shifts and state social security affect household investment strategies. The results of panel studies demonstrate a significant negative relationship between the burden of caring for the elderly and household investment behavior. The observed trend toward more conservative investment behavior among households with a higher burden of caring for the elderly is consistent with life cycle theories and prudent savings (Wang et al., 2025).

The results of numerous foreign studies devoted to various aspects of economic behavior in the context of the influence of socio-cultural factors are quite interesting.

For example, the joint work of scientists from the UK and France has shown that not only social, but also personal norms shape human economic behavior. The authors experimentally prove that personal norms, along with social norms and monetary rewards, highly predict the behavior of individuals, being one of the key factors concerning economic behavior (Bašić, Verrina, 2024).

The role of religion as components of the socio-cultural space and its impact on the behavior of economic agents and the dynamics of economic systems in general are considered in the work (Al Fozaie, 2023), which proposes an approach that allows religion itself to be operationalized and analyzed, to check whether it embodies any principles that may hinder socio-economic development, facilitating the construction of a quantitative metric that seeks to distinguish between religion and the economic behavior of its representatives.

The study of the relationship between economic and religious behavior in the context of social changes in society is devoted to the collective work of Indonesian scientists (Syauta et al., 2022). The research shows values (honesty, kindness, sincerity, etc.) and attitudes (to work, to exchange, to organizing everyday life, etc.) that influence the economic behavior of a believer using the example of an analysis of the texts of the Bible and Christian teaching.

Features of the economic behavior of the population of the Arctic region (based on survey materials in the Arkhangelsk Region)

The Arctic regions of Russia are characterized by historical and cultural features and marginal economic and geographical location, which contributes to a more pronounced manifestation of the transformations of the socio-cultural sphere. Life in the Russian Arctic in modern

conditions is caused by a whole range of economic, environmental and socio-cultural factors and conditions, which in turn lead to changes in the expectations of the population, social well-being and behavioral patterns. All this fully applies to the Arkhangelsk Region, the population of the Arctic municipalities of which accounts for almost a quarter of the total population of the Arctic zone of the Russian Federation (AZRF)¹. The empirical basis of the study was the data from two mass sample surveys conducted by us in the Arkhangelsk Region in May 2023 (378 respondents) and in May 2024 (505 respondents). The type of sample is streaming, quota (by gender, age, and settlement type – city or rural area), its detailed description is contained in the database developed by the team of the Laboratory of Problems of Territorial Development of N. Laverov Federal Center for Integrated Arctic Research (FCIARctic)².

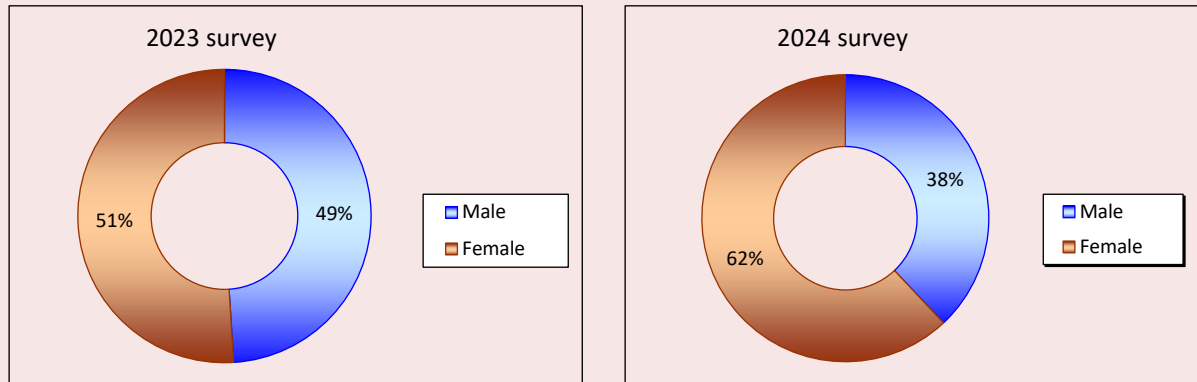
Figure 1 shows the sample structure of both surveys by gender. In 2023, the gender ratio in the sample roughly corresponded to it in the general population; in 2024, there was a bias in favor of women in our sample. To eliminate this disparity between the genders, the data was reweighed to bring the share of men and women in the sample to the target values.

The diagram in *Figure 2* shows the distribution of respondents by age cohort. For all cohorts of the working-age population, the share in the samples correspond to the share in the general population (deviations in one direction or another are within the limits of random error). A significant deviation is observed for older people (60+), which is due to the consistently low availability of respondents of this age when using the chosen method of data

¹ Official statistical information on the socio-economic development of the Arctic zone of the Russian Federation in 2025. Available at: https://rosstat.gov.ru/storage/mediabank/calendar1_2025.htm (accessed: 10.05.2025).

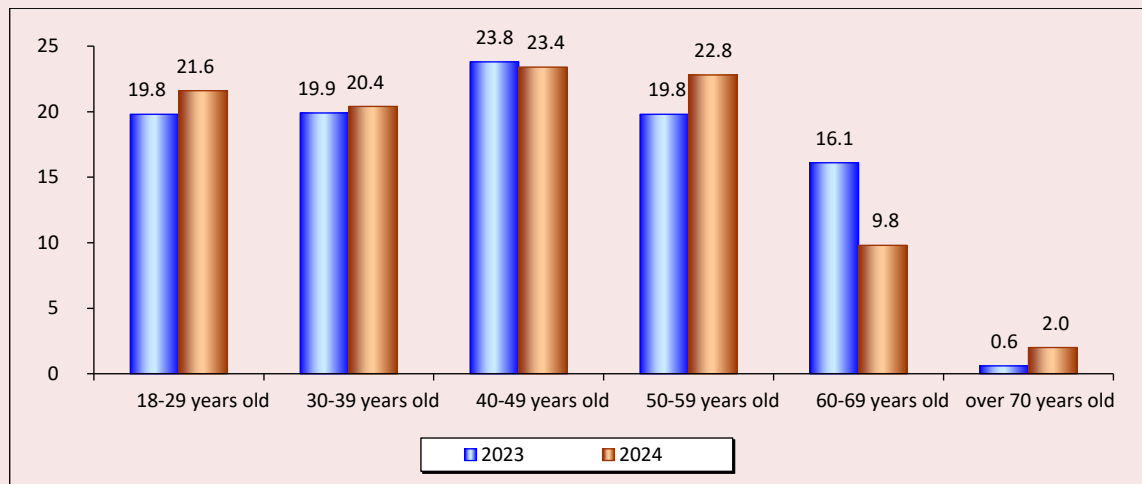
² System of indicators of social well-being, economic behavior, identity and values of the population of the Arkhangelsk Region: Database for 2023–2024. Certificate of registration of the database RU 2024625362, 11/20/2024. Application 2024624884, dated 11/01/2024.

Figure 1. Distribution of respondents by gender, %



Source: own compilation.

Figure 2. Distribution of respondents by age, %



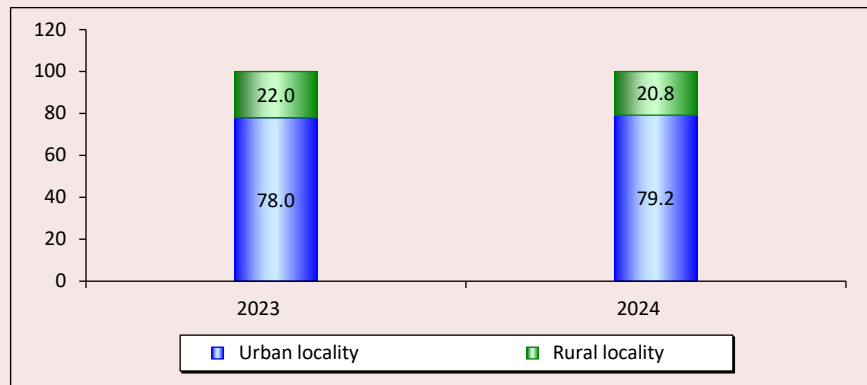
Source: own compilation.

collection (in our case, an online questionnaire). Overweighing of data for these groups was not carried out due to the risk of increasing the impact of statistical outliers on the final distribution of responses. At the same time, the authors consider it justified to focus on the working-age groups as the most economically active, characterized by more diverse economic behavior.

The distribution between rural and urban populations shown in *Figure 3* is stable from year to year and reflects the actual settlement structure in the Arkhangelsk Region.

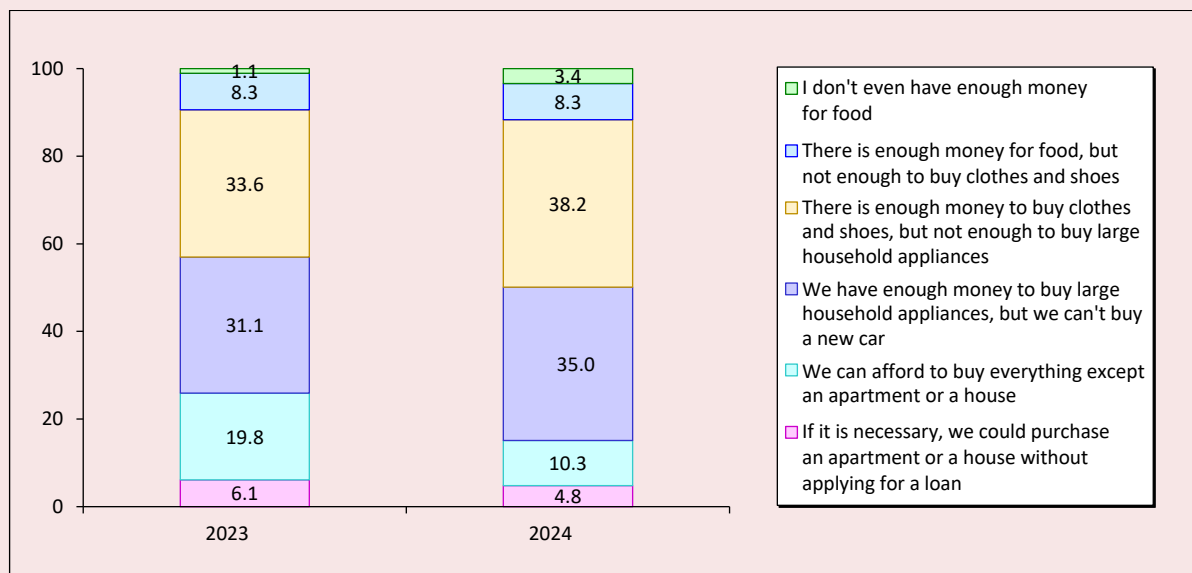
The diagram in *Figure 4* shows the distribution of respondents by self-assessment of the purchasing power of their households. We can see that the sample structure for this indicator has changed insignificantly from year to year. At the same time, the polar groups (with the lowest and highest incomes) make up a smaller part of the samples, and the majority of respondents consider themselves to be those groups that cover their needs for everyday goods and have the opportunity to both accumulate savings and (hypothetically) make investments.

Figure 3. Distribution of respondents by settlement type, %



Source: own compilation.

Figure 4. Respondents' assessment of the purchasing power of their income, %



Source: own compilation.

In the course of the analysis, we proceeded from the idea that three meaningfully different types of economic behavior can be distinguished – consumer, savings, and investment (Tutugin, Chizhova, 2020). To measure each type of behavior during operationalization, two main indicators and one additional indicator (risk tolerance) were constructed, which was designed for investment behavior. The indicators were obtained as a

result of a logical analysis of concepts describing types of economic behavior: for each type of behavior, one indicator recorded the relative propensity to a particular behavior through the ratio of consumer spending, potential savings and potential investments, another indicator was the respondent's availability of a tool for implementing a certain type of behavior (credit, deposit, securities).

Table 1. Indicators of economic behavior types

Type of economic behavior	Operationalization (indicators)
Consumer	– share of monthly consumer spending in total income, %; – availability/absence of a mortgage or consumer loan*
Saving	– propensity to save**; – availability of a savings instrument (deposit, deposit, etc.)*
Investment	– investment propensity**; – tolerance to investment risk**; – availability of an investment instrument (stocks, bonds, shares in mutual funds, etc.)*
* Assessment on a dichotomous scale. ** The rating is based on a five-point ordinal scale. Source: own compilation.	

Gender and age, settlement type (place of residence), number of minor children and household members, average per capita income, respondent's assessment of household purchasing power, level of generalized trust, religiosity were considered as social and socio-cultural characteristics of respondents who were tested to determine whether they were any significant factors concerning various types of economic behavior, education and the index of post-materialistic values (Inglehart, 1997), the index of social well-being (calculated on the basis of seven variables – from self-assessment of physical health to subjective well-being), ethnic identity³.

We present brief characteristics of the economic behavior of the respondents who participated in the survey.

Consumer behavior has generally remained stable over the previous two years. About half of households spend 60% or more of their monthly income on current consumption, of which about a quarter spend more than 80% of their income. The average share of monthly income allocated to the purchase of consumer goods and services was 50.8% in 2023 and 49.8% in 2024. The share of persons with credit obligations to banks did not actually change during the specified period (49.8% and 47.1%, respectively). At the same time, the share of people who spend all their disposable income on current consumption decreased from 50.8%

in 2023 to 35.4% in 2024. This may indicate the adaptation of the region's population to changes in the economic situation caused by the 2022 external shocks.

The share of respondents who are willing to spend 60% or more of their available funds on savings was 68.5% in 2023. About half (49.2%) of them indicated that they were ready to use all available funds for savings. These figures were 80.4% and 39.0%, respectively in 2024. At the same time, the index value of the propensity to save decreased slightly (from 3.9 to 3.7), but remained above average, which is associated with a significant decrease among individuals demonstrating savings behavior.

The share of those who actually invest through market instruments has increased more than 1.5 times over the period under review (from 4.5 to 7.9%). At the same time, the share of people who have free funds and are ready to invest them increased from 50.8% (26.4% of the sample) to 61% (39.4% of the sample). At the same time, the share of those who plan to invest more than half of their funds increased from 13.3% (8.5% of the sample as a whole) to 19.6% (12.6% of the sample) of those who have such an opportunity. The index value of the level of potential investments increased slightly (from 1.1 to 1.3) and remained within the minimum values. In terms of subjective willingness to invest (tolerance to investment risk), there has been a slight increase (from 2.8 to 3.1).

³ The relevant question was asked only during the 2024 survey.

Table 2. Spearman's ρ rank correlation coefficients

Social and socio-cultural characteristics of the respondents	Year	Share of monthly income allocated to consumption	Propensity to save	Investment propensity	Investment risk tolerance
Gender	2023	0.128 [*]	0.172 [*]	-0.172 [*]	-0.086
	2024	0.113 [*]	0.153 ^{**}	-0.153 ^{**}	-0.182 ^{**}
Age	2023	0.012	0.322 ^{**}	-0.322 ^{**}	-0.441 ^{**}
	2024	0.096 [*]	0.163 ^{**}	-0.163 ^{**}	-0.365 ^{**}
Settlement type	2023	0.095	0.000	0.000	-0.034
	2024	0.042	0.127 [*]	-0.127 [*]	-0.100 [*]
Number of minor children	2023	0.125 [*]	0.258 ^{**}	-0.258 ^{**}	-0.290 ^{**}
	2024	0.029	-0.020	0.020	-0.037
Number of household members	2023	0.084	0.100	-0.100	0.053
	2024	0.036	-0.023	0.023	0.025
Average monthly income of a family	2023	-0.199 ^{**}	-0.175 [*]	0.175 [*]	0.011
	2024	-0.190 ^{**}	-0.273 ^{**}	0.273 ^{**}	0.210 ^{**}
Assessment of income purchasing power	2023	-0.315 ^{**}	-0.185 [*]	0.185 [*]	-0.097
	2024	-0.231 ^{**}	-0.195 ^{**}	0.195 ^{**}	0.202 ^{**}
Level of generalized trust	2023	-0.015	0.113	-0.113	0.051
	2024	0.023	0.021	-0.021	0.134 ^{**}
Level of religiosity	2023	0.088	0.151 [*]	-0.151 [*]	-0.142 ^{**}
	2024	0.072	0.072	-0.072	-0.147 ^{**}
Level of education	2023	-0.070	-0.176 [*]	0.176 [*]	0.145 ^{**}
	2024	0.045	-0.037	0.037	0.084
Index of post-materialistic values	2023	-0.159 ^{**}	-0.289 ^{**}	0.289 ^{**}	0.162 ^{**}
	2024	-0.146 ^{**}	-0.181 ^{**}	0.181 ^{**}	0.160 ^{**}
Index of social well-being	2023	-0.265 ^{**}	-0.056	0.056	0.047
	2024	-0.174 ^{**}	-0.124 [*]	0.124 [*]	0.216 ^{**}
Ethnic identity	2024	0.022	0.073	-0.073	0.044
* The level of statistical significance is < 0.05 .					
** The level of statistical significance is less than 0.01.					
Source: own compilation.					

Table 2 shows the results of the correlation analysis (Spearman's ρ) between the respondents' social characteristics and some indicators of economic behavior.

We should note that most of the statistically significant correlations in Table 2 are weak. An exception in the 2023 survey is the relationship between the assessment of the purchasing power of income and the share of monthly income that goes to consumption, as well as the relationship between age and propensity to save, invest and willingness to invest. According to the 2024 survey, only one moderate (negative) correlation was found – between age and subjective willingness to invest.

We identified the following general patterns of surveys: significant correlations with indicators of all types of economic behavior are found for gender, average monthly household income, and the respondent's assessment of the purchasing power of their income, in particular, women are more likely to save and men are more likely to invest; the higher the respondent's income, the more pronounced his investment behavior and less other types of economic behavior; the higher the age, the less willingness to invest and the slightly higher propensity to save.

The results of the correlation analysis of two waves of surveys show the stability of the relationship

between the index of post-materialistic values and indicators of consumer, savings and investment behavior. Although all the identified links are weak, the effect of adherence to the values of “post-materialism” is clearly visible: individuals who are more liberal (in the broadest sense of the term) and feel relatively economically and physically secure spend less of their income on current consumption, and their free cash is more likely to invest rather than save.; Accordingly, more conservative, cautious, and pragmatic (“materialists” according to R. Inglehart) citizens demonstrate preferences in favor of consumption and savings, a lower propensity to invest, and a low tolerance for the risks associated with them.

The remaining socio-cultural indicators such as: ethno-cultural identity (variables of the level of religiosity and ethnic identity), education (indicator of human capital), generalized trust (indicator of social capital), social well-being – either do not show correlation with indicators of economic behavior, or, if statistically significant relationships are identified, are not stable year by year and their identification in a one-year survey would be more correctly explained by the effects of bias in the sample. We should note, however, that a stable relationship between the parameters of socio-cultural components and economic behavior is found in some cases: the level of religiosity negatively correlates with willingness to invest, and social well-being negatively correlates with the level of consumer spending.

Thus, after deducting the socio-demographic and socio-economic (household income and purchasing power) characteristics of the respondents, their economic behavior is significantly related primarily to value orientations.

The influence of socio-cultural space parameters on economic behavior

As we have noted, one of the “stumbling blocks” in our study is the need for an adequate indirect

assessment of the impact of the basic components of the socio-cultural space on the choice of an appropriate behavioral alternative. In principle, this formulation of the question implies the construction of some kind of multi-stage hierarchical structure. Initially, we attempted to use T. Saati's hierarchy analysis method, which has already proven itself quite well in a variety of applied tasks (Saati, 1989). However, due to the manifestation of a number of fundamental points described in detail, for example, in the work (Korobov, 2010), we had to abandon it in this particular case. At the same time, the method of decision matrices, somewhat modified for our task, proposed at the time by G.S. Pospelov for evaluating R&D, is quite suitable as another candidate for the role of such a toolkit for conceptual reasons.

Using the idea of this method for the purpose of studying the influence of the basic components of the socio-cultural space (entities) on the choice of strategies for economic behavior, we will build a three-level hierarchy of “strategies – relational manifestations – entities”. The hierarchy construction procedure will be as follows.

1) Let A_1, A_2, \dots, A_n be possible strategies of economic behavior (alternatives), $\alpha_1, \alpha_2, \dots, \alpha_n$, where $\sum_{j=1}^n \alpha_j = 1$ and all $\alpha_j > 0$ are their weighting coefficients determined by experts.

2) Let us define a list of B_1, B_2, \dots, B_m relational manifestations of entities and make a matrix $P = (p_{ij})_{m \times n}$ estimates of p_{ij} contributions of ($i = \overline{1, m}$) to the formation of alternatives to A_j ($j = \overline{1, n}$), calculate (taking into account normalization) the corresponding weight coefficients $\hat{\beta}_i$:

$$\beta_i = \sum_{j=1}^n p_{ij} \cdot \alpha_j; \hat{\beta}_i = \frac{\beta_i}{\sum_{i=1}^m \beta_i}; i = \overline{1, m} \quad (1)$$

or in matrix form:

$$B = \frac{1}{\sum_{i=1}^m \beta_i} \cdot P \cdot A, \text{ where } A = (\alpha_1, \alpha_2, \dots, \alpha_n)^T.$$

3) For entities C_1, C_2, \dots, C_l we will make a matrix of estimates $Q = (q_{ki})_{l \times m}$ and calculate the weighting coefficients $\widehat{\gamma}_k$:

$$\gamma_k = \sum_{i=1}^m q_{ki} \cdot \beta_i; \widehat{\gamma}_k = \frac{\gamma_k}{\sum_{k=1}^l \gamma_k}; k = \overline{1, l} \quad (2)$$

or in matrix form:

$$\Gamma = \frac{1}{\sum_{k=1}^l \gamma_k} \cdot Q \cdot B = \frac{1}{\sum_{i=1}^m \beta_i} \cdot \frac{1}{\sum_{k=1}^l \gamma_k} \cdot Q \cdot P \cdot A,$$

where $\Gamma = (\widehat{\gamma}_1, \widehat{\gamma}_2, \dots, \widehat{\gamma}_l)^T$.

Thus, the weighting coefficients $\widehat{\gamma}_k$ ($k = \overline{1, l}$) are estimates of the influence of each of the basic components on the agent's choice of their economic strategy. Moreover, this method allows determining the structure of the influence of the basic components in the context of each type of economic behavior v_{kj} :

Using an approach based on the use of decision matrices, we will evaluate the contribution (influence) of the basic components of the socio-cultural space on economic behavior. The corresponding hierarchy presented in *Table 3* will contain three levels (from top to bottom) unlike the

classical hierarchy of G.S. Pospelov: "strategies – relationships – entities".

The basic components of the socio-cultural space (in our model, it is "entities") were explicitly defined in the works of academician N.I. Lapin within the framework of the research project "Socio-cultural portrait of the region" primarily as components of the structure of what he calls the anthropic-cultural sphere⁴. Some conceptual modification of the description of this sphere (in the direction of greater detail and concretization) allowed identifying six such components.

The relational manifestations of each such component represent its relationship (relation – observed / not observed, and if observed, to what extent) to a certain attribute of it, which, in turn, mediates the influence of this component on a certain type of economic behavior. These relational manifestations were logically deduced from the content of concepts describing the components of the socio-cultural space. Values (in terms of R. Inglehart's concept of post-materialistic values) mean a greater or lesser priority for ensuring basic needs for security and material well-being: high level

Table 3. Hierarchy levels

No.	Hierarchy level	Level elements
1	Types (strategies) of economic behavior (alternatives)	A_1 – consumer A_2 – saving A_3 – investment
2	Relational manifestations of entities	B_1 – attitude toward risk B_2 – attitude toward public institutions B_3 – attitude toward carrier growth B_4 – attitude toward institution of family B_5 – attitude toward the future (toward long-term planning) B_6 – attitude toward leisure
3	Basic components of the socio-cultural space (essences)	C_1 – values C_2 – social well-being C_3 – human capital C_4 – social capital C_5 – identities C_6 – cultural consumption
Source: own compilation.		

⁴ Lapin N.I., Belyaeva L.A. (2010). The program and standard tools "Socio-cultural portrait of the Russian region" (Modification – 2010). Moscow: MFRAN. Pp. 15–16.

of commitment to the values of post-materialism indicates satisfaction of these needs, greater confidence in institutions, trust in interpersonal relationships, and hence a high tolerance for risk, which creates the prerequisites for a more active investment behavior. In turn, high rates, for example, in the cultural consumption component, are manifested in the high priority of cultural leisure in a broad sense compared to career, household management, and utilitarian types of consumption. This in itself affects the scale of consumer behavior, but it also significantly modifies the structure of consumption. The rest of the logical relationships between components (entities) and their relational manifestations follow a similar pattern. At the same time, the relational manifestations of some entities may be influenced by the parameters of other entities to a greater or lesser extent.

We should say that based on the sociological survey results conducted by us in 2023–2024, the weighting coefficients of alternatives for economic behavior types were calculated (*Tab. 4*).

Experts consistently assessed the impact of hierarchy levels “from bottom to top”. They were asked to assess the degree of influence of entities on

the severity of relational manifestations, and the latter on the economic behavior of each of the three types. We used a five-point scale for evaluation: 5 – “very strong”, 4 – “strong”, 3 – “moderate”, 2 – “weak”, 1 – “very weak”.

Seven experts participated in the assessment (E1 – E7), which we consider optimal. This has already been proved by the authors in a number of works (Korobov, 2010; Tutygin et al., 2024). Representatives of academic and university institutions of the Arkhangelsk Region specializing in the study of socio-cultural phenomena, as well as representatives of regional cultural institutions, were involved as experts. The expert survey was conducted in the 2024 fall. The estimates obtained were used to calculate the weighting coefficients of the influence of indicators of socio-cultural space on indicators of economic behavior, which were applied to survey data for both years.

We compiled a matrix R based on the results of expert assessments of the effects of relational relationships on the choice of alternatives (*Tab. 5*).

Tables 6, 7 show the correlation analysis results of the array of expert assessments of the impact of relational relationships on the choice of alternatives.

Table 4. Alternative weights to economic behavior

Alternatives	A_1	A_2	A_3
Alternative weights (2023 survey)	0.77	0.18	0.05
Alternative weights (2024 survey)	0.75	0.19	0.06
Source: own compilation.			

Table 5. Matrix R of average ratings

Relational manifestations of entities	Economic behavior type		
	A_1	A_2	A_3
B_1	3.71	4.14	4.86
B_2	3.29	4.43	4.43
B_3	3.29	3.43	4.00
B_4	4.14	3.86	3.71
B_5	4.86	3.71	2.71
B_6	4.14	4.57	4.57
Source: own compilation.			

Table 6. Correlation coefficients r_{ab} of expert estimates p_{ij}

r_{ab}	E1	E2	E3	E4	E5	E6	E7
E1	1.0000						
E2	0.5840	1.0000					
E3	-0.1181	0.2971	1.0000				
E4	-0.3154	0.1543	0.8024	1.0000			
E5	0.4347	0.2831	-0.1407	-0.1835	1.0000		
E6	0.0489	0.0673	0.3576	0.2907	0.2015	1.0000	
E7	0.6469	0.7576	0.0700	0.0000	0.1735	0.0159	1.0000

Source: own compilation.

Table 7. Student's t-statistic values for r_{ab}

t -calc.	E1	E2	E3	E4	E5	E6	E7
E1							
E2	2.8776						
E3	-0.4757	1.2448					
E4	-1.3294	0.6247	5.3773				
E5	1.9305	1.1808	-0.5684	-0.7466			
E6	0.1958	0.2697	1.5319	1.2153	0.8229		
E7	3.3936	4.6429	0.2808	0.0000	0.7047	0.0634	

Source: own compilation.

The paired correlation coefficients $r_{12}=0.584$, $r_{17}=0.647$, $r_{27}=0.758$ and $r_{34}=0.802$ are statistically significant ($\alpha=0.05$; $t_{kp}=2.12$), while there are no significant negative relationships.

The coefficients of variation for distributing expert estimates of the elements of matrix R are in the range of $7.78\% \leq R_p \leq 40.99\%$.

Table 8 presents the weighting coefficients for 2023–2024, calculated according to formula (1) based on the data in Tables 4 and 5.

We compiled matrix Q based on the results of expert assessments of the influence of entities on relational relationships (Tab. 9).

Table 8. Weight coefficients $\hat{\beta}_i$

B_i	B_1	B_2	B_3	B_4	B_5	B_6
$\hat{\beta}_i$ (2023)	0.1631	0.1504	0.1418	0.1725	0.1926	0.1797
$\hat{\beta}_i$ (2024)	0.1636	0.1512	0.1421	0.1720	0.1910	0.1800

Source: own compilation.

Table 9. Matrix Q of average ratings

Basic component of socio-cultural space	Relational manifestations of entities					
	B_1	B_2	B_3	B_4	B_5	B_6
C_1	3.71	3.43	3.71	5.00	4.29	3.86
C_2	3.71	4.14	4.14	3.86	4.00	4.43
C_3	2.86	3.71	4.14	4.00	3.71	4.29
C_4	3.43	3.86	4.14	3.57	3.29	3.71
C_5	2.57	3.71	2.57	3.57	2.43	2.86
C_6	1.86	2.71	2.71	3.29	4.71	3.14

Source: own compilation.

Tables 10, 11 demonstrate the correlation analysis results of the array of expert assessments of the influence of entities on relational relationships.

Statistically significant ($\alpha=0.05$; $t_{kp}=2.03$) are the paired correlation coefficients $r_{12}=0.584$, $r_{15}=0.336$, $r_{16}=0.374$, $r_{17}=0.443$, $r_{23}=0.504$, $r_{24}=0.897$, $r_{25}=0.331$, $r_{27}=0.400$, $r_{34}=0.897$, $r_{46}=0.330$, $r_{56}=0.388$, $r_{57}=0.365$ and $r_{67}=0.589$, with no negative associations.

The coefficients of variation for the distribution of expert estimates of the elements of matrix Q are in the range $0\% \leq R_0 \leq 57.56\%$.

Table 12 presents the weighting coefficients for 2023–2024, calculated according to formula (2).

Figure 5 shows the assessment of the influence of the components of the socio-cultural space on the choice of an economic behavior strategy based on 2023–2024 survey results.

The coefficients for assessing the contribution (influence) of the basic components of the socio-cultural space on the choice of an economic behavior strategy demonstrate high stability over time. At the same time, the influence of the various components is not the same. The most significant contribution is made by social well-being and the values of “materialism”/“post-materialism”. The high role of the first of these components is easily explained: A high level of social well-being is organically linked to a higher assessment of one's

Table 10. Correlation coefficients r_{cd} of expert estimates q_{ki}

r_{cd}	E1	E2	E3	E4	E5	E6	E7
E1	1.0000						
E2	0.5480	1.0000					
E3	0.2368	0.5039	1.0000				
E4	0.2567	0.4994	0.8974	1.0000			
E5	0.3361	0.3307	0.1824	0.1367	1.0000		
E6	0.3740	0.2415	0.2707	0.3302	0.3881	1.0000	
E7	0.4432	0.3999	0.2270	0.2972	0.3650	0.5892	1.0000

Source: own compilation.

Table 11. Student's t -statistic values for r_{cd}

t -calc.	E1	E2	E3	E4	E5	E6	E7
E1							
E2	3.8198						
E3	1.4213	3.4017					
E4	1.5487	3.3609	11.8579				
E5	2.0812	2.0429	1.0817	0.8046			
E6	2.3517	1.4512	1.6397	2.0399	2.4556		
E7	2.8828	2.5438	1.3593	1.8149	2.2859	4.2523	

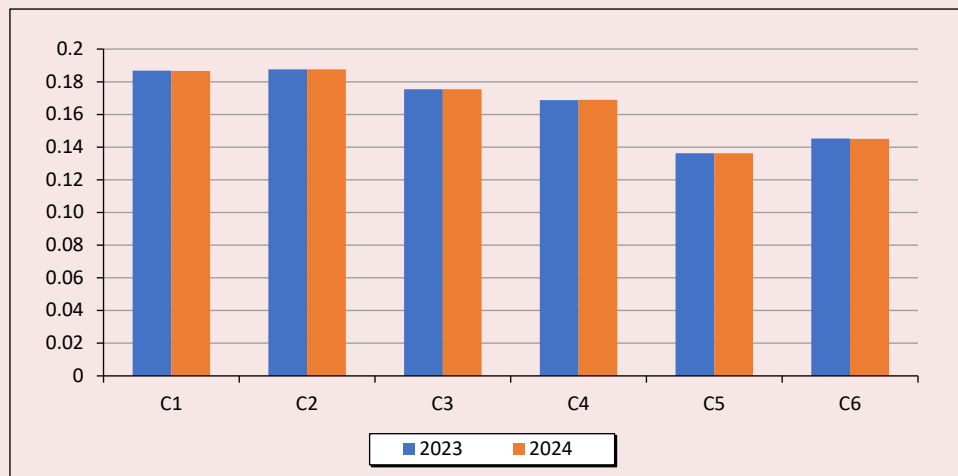
Source: own compilation.

Table 12. Weight coefficients \widehat{Y}_k

C_k	C_1	C_2	C_3	C_4	C_5	C_6
\widehat{Y}_k (2023)	0.1867	0.1875	0.1755	0.1688	0.1362	0.1453
\widehat{Y}_k (2024)	0.1866	0.1876	0.1755	0.1689	0.1363	0.1451

Source: own compilation.

Figure 5. Assessment of the influence of socio-cultural space components on the choice of economic behavior strategy



Source: own compilation.

material well-being, health, and legal protection, which, in turn, creates prerequisites for choosing an investment strategy for economic behavior. As for the values of that specific type, which we, following R. Inglehart, identify as an economic behavior factor, they presuppose a choice of two alternatives:

1) materialistic values are ensuring economic security in the medium term; hence the choice in favor of expanding current consumption in conditions of high inflation, combined with the creation of some kind of “safety cushion”;

2) post-materialistic values are concern for well-being in the future (as a result, preference for a long-term investor’s strategy, not only in stock market instruments, but also in their own human capital, the environment, their community, etc.).

In turn, the reduced influence on the choice of a certain strategy of economic behavior, which is characteristic of such components as the hierarchy of identities and cultural consumption, is due to the following:

1) none of the key identities that are widespread in the socio-cultural space of the Arkhangelsk Region (as well as in the Arctic zone of the Russian Federation as a whole) prescribes any normative model of economic behavior to its bearers;

2) cultural consumption has an impact on the structure of consumer spending, supplementing it with specific items and thereby affecting the savings rate and investment opportunities of the household; however, for the vast majority of people, such an impact is very limited, since in their case, acts of cultural consumption are episodic.

As we have noted, the influence of the basic components of the socio-cultural space in the structure of each type of economic behavior is described by matrix V, the elements of which are calculated according to formula (3) (Tab. 13).

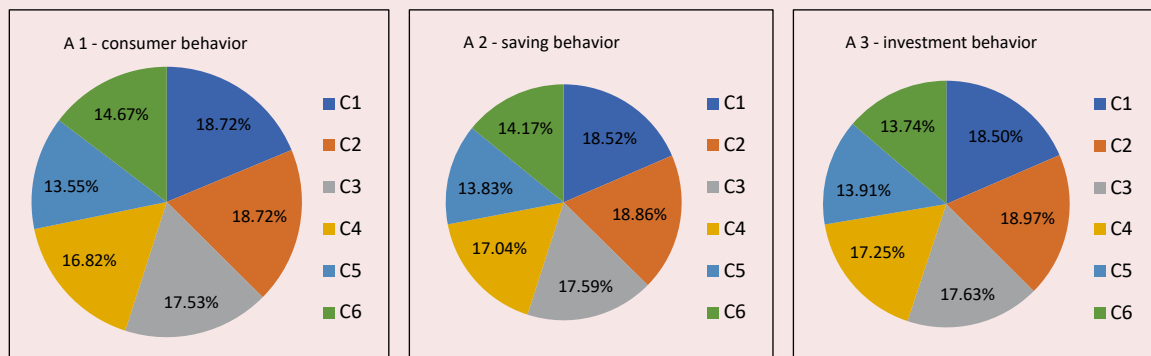
Figure 6 presents the assessment of the economic behavior structure in terms of the basic components of the socio-cultural space.

Table 13. Matrix V of the influence of the basic components in the structure of each type of economic behavior

Basic component of socio-cultural space	Economic behavior type		
	A_1	A_2	A_3
C_1	0.1872	0.1852	0.1850
C_2	0.1872	0.1886	0.1897
C_3	0.1753	0.1759	0.1763
C_4	0.1682	0.1704	0.1725
C_5	0.1355	0.1383	0.1391
C_6	0.1467	0.1417	0.1374

Source: own compilation.

Figure 6. Economic behavior structure in the context of the influence of the socio-cultural space components



Source: own compilation.

The structures shown in *Figure 6*, in terms of the influence of the components of the socio-cultural space, are essentially identical, as evidenced by the values of the V.M. Ryabtsev index of structural differences, which do not exceed the threshold value of 0.03, which means the identity of structures⁵:

$$I_{12} = 0.008; I_{13} = 0.014; I_{23} = 0.006.$$

As a comment on the estimates based on empirical material, we note the following. Economic behavior is a kind of integrity, the structure of which is largely determined by the basic components of the socio-cultural space (entities).

⁵ Ryabtsev V.M., Chudilin G.I. (Eds). (2001). Regional statistics: Textbook. Moscow: Moscow Publishing House LLC. 380 p.

At the same time, it is worth noting that the greatest contribution to the formation of all three types of economic behavior belongs to the components C_2 (social well-being) and C_1 (values). The group of entities with the least influence consists of entities C_5 (identity) and C_6 (cultural consumption). Entities C_3 (human capital) and C_4 (social capital) occupy an intermediate position.

The logical basis for combining C_1 with C_2 is as follows. Individuals' propensity to materialistic or, conversely, post-materialistic values is largely determined by the parameters of social well-being. Theoretically, people with a "rich" experience of economic deprivation, violations of civil rights, who have no access to quality medicine and do not pay due attention to recreation are more likely to adhere

to materialistic values. Those who rate their social well-being highly on most parameters are more committed to post-materialistic values.

There is a similar close relationship between C_5 and C_6 . The identity largely determines the preferences of both cultural consumption formats and the content itself produced by the spiritual culture industry: those who identify with youth subcultures prefer appropriate cultural products; people with a pronounced religiosity in their cultural and consumer preferences will follow the prescriptions of religious tradition; people who are aware of their belonging to an ethnic minority are more likely to be interested in works of literature or pop music in their native language, etc.

Conclusions

In the course of our research, we have considered in sufficient detail the current issues related to various aspects of economic behavior of the population. We pay special attention to the structural dynamics of the socio-cultural space, which in modern conditions forms a system of factors concerning both direct and indirect influence on the choice of the prevailing type of economic behavior carried out by agents (groups of agents, households, etc.).

Using the tools selected and verified relative to the aim of the study (G.S. Pospelov's decision matrices), we assessed the impact of the components of the socio-cultural space on the formation of economic behavior and their relationship. In particular, the paper shows that the influence of the basic components of the socio-cultural space

on the economic behavior of the inhabitants of the surveyed region is hierarchically structured: the most significant contribution is made by social well-being and the values of "materialism" / "post-materialism", the least – identity and cultural consumption.

The methodological approach to assessing the indirect influence of socio-cultural factors on economic behavior, tested on the materials of the Arkhangelsk Region, is our adaptation of well-known methodological solutions for analyzing the relationship between socio-cultural and economic processes. This is the novelty of the research results. We do not see any fundamental limitations for applying their methodology to data obtained for constituent entities of the Russian Federation with a qualitatively different socio-cultural "profile". Thus, another working tool has appeared in the methodological arsenal of researchers studying the impact of culture on the behavior of economic agents. This is the scientific significance of the article.

The approach we propose can be further used to identify and systematize the verbal and numerical characteristics of the transformational processes of the socio-cultural space of other Russia's regions, as well as to develop models and development programs for various territories and regions that differ in their socio-economic and ethnocultural characteristics, dominant values of the population, levels of human and social capital, and a pool of collective agents with specific identities.

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Substantiating the Choice of Regional Healthcare Effectiveness Indicators



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Abstract. In the context of modern demographic trends related to population aging, as well as due to the ongoing pro-natalist policy, new challenges arise for healthcare, coupled with an increasing contradiction between the growing demand for medical services from the population and the limited available human, material and financial resources. Consequently, the choice of criteria for evaluating the effectiveness of healthcare becomes crucially important from the practical perspective. Russian and foreign researchers propose various approaches to the development of such criteria and to the way in which the assessment procedure itself is carried out. However, so far, there is no well-established list of criteria for evaluating healthcare effectiveness. The aim of this work is to substantiate the indicators for assessing the effectiveness of the regional healthcare system, applicable to solving optimization problems. The information base of the study includes Russian and foreign research on the topic in question, and statistical data characterizing the functioning of regional healthcare and the state of public health. We consider approaches to determining the effectiveness of healthcare at the levels of individual medical technology, medical organization, and the industry as a whole and reveal strengths and weaknesses of existing approaches to measuring healthcare effectiveness. Special attention is paid to the analysis of current approaches to assessing the effectiveness of management decisions in the healthcare sector. It is proved that the correlation of “input” and “output” is the most relevant method for solving optimization problems simulating variants of management decisions in the healthcare sector. Theoretical novelty

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of our research lies in substantiating a number of indicators for assessing the effectiveness of regional healthcare. Based on the analysis of data from Russian and foreign studies, as well as taking into account the correlation analysis, we propose to consider life expectancy at birth, mortality of the population over the working age, mortality from diseases of the circulatory system and one-year mortality of patients with malignant neoplasms as the resulting indicators of the functioning of regional healthcare. In the future, these indicators will be used as target parameters for solving optimization problems in the field of regional healthcare using its agent-based model. The proposed approach to assessing the effectiveness of regional healthcare can serve as a theoretical basis for an automated management decision support system in this area, which determines the practical significance of the research findings.

Key words: regional healthcare, effectiveness criteria, public health, healthcare resources.

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Introduction

The most acute modern challenges facing the healthcare system at the regional level are demographic aging; high levels of premature mortality; a significant gap between life expectancy and healthy life expectancy; the fact that people have to use paid medical services due to lack of resources to provide free medical care in the public healthcare system (Morozova et al., 2022); lack of funding for territorial programs of state guarantees for providing free medical care to the population (Grishin et al., 2021). These challenges bring to the fore the issue of improving the efficiency of the healthcare system. Addressing this issue largely determines the prospects for maintaining public health. Since there is a growing demand for the development of automated management decision support systems, research in this area is particularly in demand.

Materials and methods

The aim of the study is to substantiate indicators for evaluating the effectiveness of the regional healthcare system, applicable to solving optimization problems.

To achieve this goal, a critical analysis of existing approaches to assessing the effectiveness of healthcare at various levels was carried out, with an emphasis on the macro level. Since the quality of management and the competence of decision makers is of particular importance in the current socio-economic conditions, a review of the available methods for evaluating the effectiveness of management decisions in the healthcare sector was conducted.

At the next stage of the work, based on the analysis of the results of Russian and foreign studies, a number of principles for selecting indicators that can reflect the effectiveness of the functioning of regional healthcare were proposed and substantiated. When formulating the selection principles, the initial judgment was the thesis about the need to search for such indicators, the levels of which mainly depend on the work of the health system, but at the same time directly characterize the state of public health. Next, a correlation analysis was conducted for the direct selection of performance indicators. The final list of indicators

for assessing the effectiveness of the functioning of regional healthcare, therefore, was formed on the basis of logical selection conditions, as well as taking into account the assessment of their correlation with the indicators of resource availability of the industry.

The resulting set of performance indicators at subsequent stages of the study will be used to assess the effectiveness of the regional healthcare system using the cost–effectiveness method using an agent-based model. In particular, when solving optimization tasks, a comparison of the target and actually achieved levels of each of the selected performance indicators and the cost of resources to achieve them will be carried out.

Results

There is often an equal sign between the concepts of “effectiveness” and “performance efficiency”, but this is not entirely correct. We rely on the approach proposed in (Uiba et al., 2012). Performance efficiency is considered as the achievement of planned results, regardless of how much resources were used for this purpose, effectiveness is a broader concept, a comprehensive description of the potential and actual results of the functioning of the system, taking into account the degree to which these results correspond to the main goals. In other words, effectiveness is considered as “the property of the system to achieve the ultimate goal”. The applicability of this approach in assessing the effectiveness of the healthcare system is explained by the fact that it belongs to the ergatic system, that is, it has a given target function (Uiba et al., 2012).

In the work mentioned above, it is also proposed to decompose the concept of “effectiveness” into a number of narrower categories, highlighting external functional (target) effectiveness, internal functional effectiveness, economic effectiveness and resource conservation, management effectiveness and social effectiveness. Denoting the logical

relationship of the proposed categories, the authors point out that the quality and reliability of the functioning of the economic system are its procedural properties, and effectiveness is the resulting property. The authors also talk about the fundamental difference between the meanings of the categories “result” and “effect”: “effect” is a manifestation of the effect of a result obtained in a given system on a neighboring system (Uiba et al., 2012).

We should note that the categories “effect” and “result” are not always distinguished. Thus, in the work of A.Yu. Sokolov and co-authors (Sokolov et al., 2018), the concept of “effect” is considered as a synonym for a specific result of actions, and effectiveness is assessed as the degree to which planned end results are achieved based on the “end results model”, which includes a set of indicators of planned effects (in absolute numbers) or a set of criteria (relative values) of effectiveness.

Effectiveness can be determined at various levels: individual medical technology, medical organization, and the sector as a whole. At the same time, each level has its own effectiveness criterion (*Tab. 1*).

To assess the effectiveness of testing individual medical technologies, one is guided by the requirements of the “Clinical and economic research. General provisions”¹ standard. The effectiveness criteria for any of the methods recommended in the Standard for conducting clinical and economic analysis are based on the ratio of the results of medical care and the costs of their implementation. The approved methods include: “cost–effectiveness” analysis, “cost minimization” analysis, “cost–benefit” analysis, and “cost–profit” analysis.

¹ Clinical and economic research. General provisions: Industry standard. Standardization system in healthcare of the Russian Federation. Available at: <https://docs.cntd.ru/document/1200123394?ysclid=m7u7dqmkp9861869310>

Table 1. Criteria for evaluating effectiveness at different levels

Type of effectiveness in healthcare	Effectiveness criterion	Level of effectiveness assessment
Performance efficiency	Probability of achieving a given result	Separate nosology, doctor, prevention program, etc.
Medical effectiveness	Probability of achieving a certain effect from achieving the goal	Healthcare sector as a whole
Medical and economic effectiveness	Probability of achieving the optimal “cost–effect” ratio	Healthcare sector as a whole
Socio-economic effectiveness	Probability of achieving a certain “cost–socio-economic effect” ratio	Social systems
Note. The single criterion for all levels is the probability of achieving the set goal. Compiled according to: (Uiba et al., 2012).		

The concepts of “risk” and “security” are widely used in assessing the effectiveness of anti-epidemic preventive measures. The main criterion for effectiveness is a reduction in the incidence rate in the context of the implementation of the measure compared to the previous period when it was not used².

Foreign studies devoted to assessing the effectiveness of the healthcare system consider this concept as a ratio of resource expenditure to the result obtained. In the work of T.H. Wagner and co-authors, it is noted that healthcare effectiveness can be divided into two types: allocative effectiveness, i.e. related to the search at the macro level for the best way to allocate limited resources to achieve public goals, such as public health or social security, and production effectiveness, which is considered as the ability of a medical organization to maximize the production of results using available limited resources and technologies (Wagner et al., 2025). In the first case, the most common method of evaluating effectiveness is cost-effectiveness analysis (CEA), and in the second case, budget impact analysis (BIA). At the same time, the need to combine both approaches in practice when

solving managerial tasks in the field of healthcare is emphasized. According to the authors of the systematic review of healthcare effectiveness research at the national and subnational levels (Mbaw et al., 2023), this area is still less developed compared to research on the effectiveness of individual medical institutions. The health system performance indicators used in the literature are classified by the authors of the mentioned review into three blocks: intermediate outputs of health services (for example, the number of visits to medical institutions), individual health outcomes (for example, infant mortality rate) or composite indices of any intermediate health outcomes (for example, healthy life expectancy). In macro-level studies, parametric and nonparametric methods are used to assess cost effectiveness, which make it possible to identify the “effectiveness boundary” of healthcare functioning (Joo, 2025). Discussion and comparative analysis of the advantages and limitations of various parametric and nonparametric methods is a developing area of research (Hollingsworth, Wildman, 2003; Şenel, Cengiz, 2016).

In the works of Russian authors devoted to the assessment of the effectiveness of healthcare, we are talking about medical, economic and socio-economic efficiency. The “cost–effect” method is more often used to evaluate effectiveness. In particular, industry resources can be compared

² Slobodenyuk A.V., Kosova A.A., An R.N. (2015). Epidemiological analysis: Textbook. Yekaterinburg: Publishing house of GBOU VPO UGMU of the Ministry of Health of Russia. 36 p.

with the results obtained. Demographic indicators (mortality, life expectancy) and their derivatives are considered as the resulting indicators, reflecting the cost assessment of the population's health capital (GDP losses due to negative processes in public health).

A study by specialists from Vologda Research Center of the Russian Academy of Sciences (Ilyin et al., 2006) summarized the methods of complete economic analysis used to assess the effectiveness of healthcare at the regional and municipal levels. These include the cost minimization method, the "cost–effectiveness" method, the "cost–profit" method, and the "cost–benefit" method. At the level of assessing the effectiveness of regional healthcare, the "cost–effectiveness" and "cost–benefit" methods can bring the best results. In the first method, it is proposed to use general and primary morbidity, morbidity with temporary disability, primary disability, mortality, as well as the number of complaints from the population about the quality of medical services provided, as effective indicators of regional healthcare. For the second method, the resulting indicator will be quality-adjusted life years (QALY). However, its practical application is difficult due to a number of methodological constraints (Ilyin et al., 2006).

The conceptual basis for defining the target functions of the regional healthcare system in the work of A.V. Pepelyaeva and E.A. Tretyakova is the synthesis of institutional, evolutionary and functional approaches. When building their own methodology for assessing the effectiveness of regional healthcare, the authors carry out a multi-stage procedure for calculating integral indicators (Pepelyaeva, Tretyakova, 2018).

One of the options for assessing the effectiveness of regional healthcare is the correlation and regression analysis of statistical data. Thus, in the work of G.G. Rapakov and co-authors, methods

of correlation regression and cluster analysis were applied and it was proved that the territories of the Vologda Region differ in healthcare effectiveness, estimated through a comparison of the capacity of institutions and mortality rates (Rapakov et al., 2019).

The creation of integrated indicators of various design and content is one of the most common approaches to assessing the effectiveness of regional health systems. As a rule, the final value of such indicators is obtained by averaging the estimates of their individual components. Note that this approach is very easy to apply, but it has a limitation: in this case, the importance of each of the criteria used relative to the others is not evaluated, and when calculating the final rank, all of them are recognized as having equal significance.

An example of a study with such a design can be the work of V.I. Starodubov and co-authors, in which the assessment of regional health systems was carried out in two stages. At the first stage, average ranking estimates were obtained for individual thematic blocks of statistical indicators, and at the second stage, an average integral effectiveness estimate for each region was calculated. According to the results of the calculations, the lowest effectiveness ratings were observed in the northern and eastern regions of Russia (Starodubov et al., 2010).

Stability is an aspect that is relatively rarely given attention in the study of the effectiveness of regional healthcare systems. Methodological developments aimed at its assessment are presented in the work of V.A. Chereshev and co-authors. The design of this study included, among other things, a procedure for assessing stability criteria using the criteria importance theory (CIT). The regional healthcare effectiveness coefficient itself was calculated as the ratio of the integral coefficient of medical and social effectiveness and the coefficient of financing of the

territorial program of state guarantees. The novelty of the approach proposed by the authors is that its implementation produces a quantitative assessment of the dynamics of the effectiveness and stability of regional healthcare, as well as a conclusion about the mode of functioning of regional healthcare: whether it is located in a safe zone, a risk zone, or a disaster zone (Chereshnev et al., 2021).

N.P. Starykh and A.V. Egorova propose a list of indicators for assessing the effectiveness of regional healthcare, taking into account the objectives of the national project “Healthcare”. At the same time, such types of effectiveness as economic, medical and social are considered as criteria for the effectiveness of regional healthcare, and the targets contained in the national project are aligned with each of these criteria. Thus, to assess economic effectiveness, it is proposed to use an indicator of industry financing, to assess medical effectiveness – indicators of mortality and life expectancy, and to assess social effectiveness based on information about the staffing of outpatient clinics with paramedical personnel, the number of people who have undergone professional examinations, as well as the number of substantiated patient complaints. The final assessment of the effectiveness of regional healthcare is based on calculating the sum of their ranks according to the achieved levels of target indicators (a point score in accordance with the number of criteria used) (Starykh, Egorova, 2020).

A number of principles for building a system of criteria and indicators for assessing the quality and effectiveness of medical activities are substantiated by A.L. Lindenbraten et al. They note that the effectiveness of medical activity at the territorial level can be assessed by comparing indicators of its results with the amount of costs over a certain period of time. Indicators of the results of medical activity include the degree to which the target values of public health indicators are achieved, the

outcome of treatment, medical care satisfaction, coverage of the population with regular healthcare check-ups, preventive and rehabilitative measures (Lindenbraten et al., 2020).

Methodological limitations typical for traditional methods of assessing the effectiveness of healthcare, based on a comparison of achieved and regulatory levels of medical statistics, were identified in the study by A.V. Danilov. These restrictions include the following:

- 1) unreasonableness of the set of indicators used for the integrated effectiveness assessment;
- 2) redundancy of the set of indicators used;
- 3) lack of substantiation within the framework of the scaling theory for the correlation of qualitative indicators and their scores;
- 4) interpretation of arithmetic mean normalized values or scores of a set of indicators as an integral indicator³.

Russian experts draw attention to the fact that the healthcare system is stochastic in the sense that all external influences on it, as well as the interactions of the system’s elements with each other, are random; therefore, probabilistic statistical models, the theory of mathematical modeling of stochastic systems, the theory of probability and mathematical statistics, and the theory of operations research should be used to study them. A special role is assigned to the construction of mathematical models based on procedures for analyzing optimization problems using a “decision tree”, the mathematical Markov model, as well as simulation models (Uiba et al., 2012).

The development of agent-based models is one of the promising approaches in the field of studying the behavior of complex socio-economic systems.

³ Danilov A.V. (2021). Scientific substantiation of the use of innovative organizational technologies to improve the management efficiency of medical organizations at the regional level: Doctor of Sciences (Medicine) dissertation. Voronezh. 224 p.

In world practice, this method is widely used in modeling the work of medical services at various levels (Tracy et al., 2018; Aspland et al., 2019; England et al., 2021). The problems that can be solved using agent-based models include not only optimization tasks at the level of individual healthcare institutions, but also complex projects related to improving the functioning of the healthcare system as a whole.

Agent-based models simulating the regional healthcare system created earlier are focused on solving problems of optimizing the spatial location of medical infrastructure facilities (Dianov et al., 2021; Shvetsov et al., 2023). However, the potential for using models of this kind is much broader and may also include solving problems related to modeling patient queues and routing, optimizing the burden on medical personnel, and improving the work of emergency medical services.

In recent years, data envelopment analysis (DEA) has been widely used in healthcare effectiveness studies in Russia and other countries. The method is based on linear programming and is designed to assess the relative effectiveness of decision making units (DMUs) as the ratio of the goods and services produced (output parameters) to the resources used (input parameters). The comparative ease of using this method and the availability of specialized software products that automate calculations largely explain its popularity (Hollingsworth, 2003; Su et al., 2023; González-de-Julián et al., 2024).

The problem of determining the magnitude of lags in the development of mathematical models of regional healthcare systems effectiveness deserves special attention. A solution may be the use of the DEA method to assess the relative effectiveness of regional healthcare systems. Yu.V. Neradovskaya's work provides an algorithm for evaluating the effectiveness of healthcare in the regions of Russia

(Neradovskaya, 2022). The indicators of life expectancy at birth for a number of years preceding the reporting year are used as input parameters of the model, and the value of life expectancy at birth in a given year is used as the resulting indicator of the effectiveness of healthcare systems. The author explains the chosen design of the model by the fact that the indicator of life expectancy, although it reflects the result of the functioning of not only the healthcare system, but also a number of other factors, still remains the most comprehensive measure of public health in the territories; whereas it is the protection of public health that is the target function of the systems under consideration. The inclusion of the levels of life expectancy at birth for a number of previous years as factor variables in the model was explained by the fact that these values result from the impact of the entire set of factors that influenced the health of the population of the regions during the period under consideration. In this paper, the problem of determining the magnitude of the lag with which factor variables should be included in the model was solved by sequentially correlating the correlation coefficients of the ranks of performance indicators calculated with a complete and reduced set of factor variables. This approach allowed us to establish that with the relative stability of external (relative to the healthcare system) "shocks", a lag of one is sufficient.

Methods for assessing the quality of management decisions in healthcare

One of the subtasks in assessing the effectiveness of regional healthcare is to assess the effectiveness of management decisions. This procedure helps, among other things, to identify ineffective solutions that impede the work of medical organizations and negatively affect the industry as a whole. Also, using this procedure, it is possible to determine the reasons for non-fulfillment or improper

implementation of management decisions. At the same time, various methods can be used to directly assess the quality of management decisions. One of the most common is the expert assessment method.

A methodological problem when working with opinions of experts (including in the field of healthcare) is to identify the key criteria they use in practice to evaluate management decisions. Russian researchers have proposed to apply the criteria importance theory (CIT) to formalize the solution of multi-criteria problems. This is a branch of mathematical theory developed as an alternative to T. Saaty's analytic hierarchy process, the practical application of which is to support managerial decisions in various fields (Nekhoroshev et al., 2008; Podinovskaya, Podinovsky, 2014). The most significant difference between this theoretical direction and other methods of analyzing multi-criteria tasks is that it does not create a single generalizing indicator for evaluating managerial decision; instead, it develops formal definitions of the concepts of "relative significance of criteria" and their "significance coefficients". In the process of solving multi-criteria problems using CIT, a mathematical model of the problem situation and its solutions is compiled, a set of criteria for their assessment is set, and the preferences of decision makers are also included in the model in a formalized form (Podinovsky, 2019).

In the context of studying management decisions effectiveness, a number of diverse criteria are identified that describe the results of healthcare functioning after a particular management impact. A classification of the criteria used for evaluating solutions is proposed in the work of N. Tanios and co-authors. They grouped the criteria used at different levels of the healthcare system into 10 descriptive areas, and it was found that the most important criteria in making managerial decisions are clinical effectiveness/performance efficiency, safety, quality of evidence, severity of disease, and

impact on healthcare costs (Tanios et al., 2013). A systematic review of research on healthcare effectiveness assessment (Cromwell et al., 2015) identified 72 unique criteria that are used to evaluate management decisions in this area. A distinctive feature of this review is its focus on articles that described not only the procedure for assessing the solutions, but also contained information about their practical implementation. This suggests that the identified criteria do serve as guidelines for decision makers in the healthcare sector. The most common criteria were "economic impact and outcomes/benefits of intervention", "general context", "disease impact (burden)", and "priorities (equity)" (Cromwell et al., 2015).

The issue of evaluating the effectiveness of management decisions in the healthcare sector certainly includes studying the causes of "management failures". In the work of N.G. Korshever and S. N. Pomoshnikov, based on the data from a survey of experts from among healthcare organizers, a list of the main reasons for non-compliance with management decisions in medical organizations was obtained. It was found that the main contribution to the non-fulfillment of decisions was made by unforeseen phenomena, low performance discipline and flaws in managerial decisions themselves. The experts identified (in descending order of importance) the following flaws in the decisions taken and subsequently not implemented: the necessary conditions for completing the task were ignored; the task was ill-conceived from an industrial, economic, technological point of view; the tasks did not take into account the type of activity of the performers, their capabilities and professional skills; the tasks were given to an already overloaded performer; the tasks were vague and their result could not be verified ("take action", "strengthen", "pay attention"); the tasks had unrealistic deadlines, which later still have to be postponed (Korshever, Pomoshnikov, 2019).

These examples bring to the fore the need to design automated decision support systems in the healthcare sector, which can reduce the incidence of managerial errors.

At the same time, assessing the effectiveness of only recent or key management decisions, it is impossible to judge to what extent they have contributed to the achievement of the sector's objectives. The functioning of healthcare has certain inertia, since it is carried out according to the rules established in the past. In addition, it is difficult to single out and selectively assess the impact of narrowly focused solutions on the work of the entire industry as a whole. Assessment of the quality of management decisions in the healthcare system remains an important stage in the study of its functioning. Choosing the most correct method for assessing the quality of management decisions is also fundamentally important when creating mathematical models of the regional healthcare system. Only if there is a procedure for such an assessment, the developed model can be used as a full-fledged tool to support management decisions.

Substantiating the choice of effectiveness assessment criteria for building an agent-based model of the regional healthcare system

Based on the analysis of available methods and approaches, several general rules for selecting indicators for evaluating the effectiveness of regional healthcare can be identified. When performing an assessment using the "cost–effectiveness" method it is necessary to use such result indicators that: 1) characterize the fulfillment of the objective function of the healthcare system – to promote public health; 2) are not internal characteristics of the regional healthcare system itself; 3) correlate with indicators characterizing the resource provision and functioning of the regional healthcare system.

The first two characteristics correspond most closely to death rate indicators and mortality due to diseases, life expectancy, and medical care satisfaction.

Mortality is a traditional indicator based on which one can judge the health of the population of a given territory. The advantage of mortality indicator in comparison with morbidity rates is the reliability of statistical accounting of deaths and their causes, the availability of statistical data, and the unambiguous interpretation of the level and dynamics of the indicator. The main problem when using morbidity indicators is the difficulty of interpretation: the increase in the indicator may be due to both improved detection of diseases among the population and poor-quality prevention (including insufficient coverage of the population with preventive measures).

The indicator of medical care satisfaction reflects the quality of the results of obtaining medical care. The higher its level, the more services provided by medical organizations in the region correspond to the needs of the population in terms of quality and access. This indicator is also relatively easy to interpret. However, there are some limitations in its use related to the availability of the necessary sociological data. To obtain representative and comparable results, it is necessary to conduct sample surveys of the population in all regions of the country using a single methodology.

The indicator of life expectancy can be used to assess the effectiveness of healthcare in the region, taking into account certain limitations. First, life expectancy is largely determined not only by medical factors, but also by people's lifestyle factors. In this regard, the dynamics of this indicator only partially correlates with the situation in the healthcare system.

To check whether mortality rates and life expectancy correspond to the third indicated selection condition, a correlation analysis was performed. The values of mortality, death rate, and life expectancy were compared with indicators characterizing the resources of the Vologda Region healthcare system for the period from 2018 to 2023. The choice of this period was due to the availability of a continuous range of regional statistical data. EMISS data served as the source of the information⁴.

The calculation of Spearman's correlation coefficient showed that the strongest positive relationship is demonstrated by the indicators of life expectancy at birth and the proportion of patients with detected malignant neoplasms at stages I–II. At the same time, the latter indicator has a strong negative correlation with the mortality rate of the population over the working age, which indicates the importance of timely diagnosis of

oncological diseases for prolonging life in old age. The mortality rate of the working-age population did not show a significant correlation with any of the indicators of resource provision of regional healthcare (*Tab. 2*).

Discussion

The problem of choosing the resulting indicators in assessing the effectiveness of healthcare is widely discussed in the research of Russian and foreign authors. There exist two opposing points of view on its solution. The first involves analyzing the effectiveness of the healthcare industry by comparing its interim performance results with cost indicators. In this case, such interim results usually include indicators that directly characterize the functioning of medical institutions and the process of providing medical care to the population: the number of days spent in hospital, the number of examinations, consultations, etc. The second point of view is based on the fact that the resulting

Table 2. Coefficients of mutual correlation of variables

Indicator	1	2	3	4	5	6
Proportion of patients with detected malignant neoplasms at stages I–II	0.657	-0.371	-0.771	-0.200	-0.200	-0.029
Provision of hospital beds per 10,000 people	0.086	-0.371	0.200	0.543	-0.543	-0.600
Provision of doctors working in state and municipal medical organizations (people per 10,000 people)	0.030	-0.152	0.152	0.759	-0.273	-0.516
Provision of paramedical personnel working in state and municipal medical organizations (people per 10,000 people)	-0.086	-0.257	0.314	0.371	-0.486	-0.543
Funds spent during the reporting period by the regional compulsory insurance fund (thousand rubles), per 10,000 people	0.086	0.257	-0.314	-0.371	0.486	0.543

Notes: 1 – Life expectancy at birth, years; 2 – Mortality of the working-age population per 100 thousand people (people, the value of the indicator for the year); 3 – Mortality of the population over the working age (women aged 55 years and older, men aged 60 years and older) per 100,000 people; 4 – Mortality from neoplasms, including malignant ones, per 100,000 people (people, the value of the indicator for the year); 5 – Mortality from diseases of the circulatory system, per 100,000 people (people, the value of the indicator for the year); 6 – One-year mortality of patients with malignant neoplasms (percent).
Source: own calculation in SPSS Statistics.

⁴ EMISS State Statistics. Available at: <https://fedstat.ru/>

indicators directly characterize public health. Depending on the purpose of the research, it is possible to choose in favor of any of the approaches, taking into account the associated methodological limitations.

Expert survey is a common method for choosing indicators to assess the effectiveness of healthcare (both factors and outcomes). Thus, M. Dlouh and P. Havlik, based on an expert survey, selected healthcare costs as a percentage of GDP, the number of doctors and nurses per 1,000 people, and the number of hospital beds per 1,000 people as the most significant healthcare effectiveness factors in OECD countries; while life expectancy at birth, life expectancy, and infant mortality rate were chosen as the most significant resulting indicators. The authors of the cited work used these criteria when performing a comparative analysis of the effectiveness of healthcare systems in 27 OECD countries and Russia, using data envelopment analysis (DEA) and multi-criteria decision analysis (MCDA) (Dlouhý, Havlik, 2024).

Population mortality is often used as a result indicator in assessing (including comparative) effectiveness of regional healthcare systems. At the same time, S.A. Boytsov and I.V. Samorodskaya proved that non-standardized mortality rates cannot serve as criteria for evaluating the results of measures aimed at reducing mortality in regions, nor are they suitable for interregional comparisons and ratings, since differences in the gender and age structures of the population of regions and in mortality rates in individual age groups affect the actual recorded mortality. As an alternative, it is proposed to rely on mortality rates in certain age groups of the population (Boytsov, Samorodskaya, 2014).

Taking into account the experience of Russian and foreign studies, as well as the results of the

correlation analysis, such indicators as life expectancy at birth, mortality of the population over the working age, mortality of the population from diseases of the circulatory system and one-year mortality of patients with malignant neoplasms were selected as the resulting indicators of regional healthcare functioning. We did not include such a widely used indicator as infant mortality in the final list of resultant indicators, due to the fact that it had poorly correlated with the resource availability of healthcare and, on the contrary, strongly correlated with the region's GDP (Natsun, 2023). Nevertheless, when solving optimization problems related to the functioning of the obstetric service, including using simulation models, the infant mortality rate must be taken into account when evaluating healthcare effectiveness.

The resulting set of performance indicators at subsequent stages of the study will be used to assess the effectiveness of the regional healthcare system using the “cost–effectiveness” method and designing an agent-based model for the system. When performing computational experiments in an agent-based modeling environment using optimization tasks, the goal will be to minimize mortality or maximize life expectancy at birth with a given level of healthcare funding. To assess the effectiveness of the regional healthcare system, the resulting solutions will be compared not only by the level of target variables, but also by the magnitude of other output parameters of the model. Depending on the design of the optimization task and taking into account the priorities of regional policy in the field of healthcare management, indicators of medical care satisfaction, medical care access, burden on doctors, number of visits to medical organizations, and provision of material and technical resources to medical organizations can be taken into account as additional controlled

parameters. Various options for the spatial placement of medical organizations will also be analyzed as a variable parameter of the regional healthcare system.

The proposed approach will allow comparing the results of management decisions and choosing optimal scenarios (routing patients, optimizing the burden on doctors, choosing the spatial layout of medical infrastructure facilities, adjusting the resource provision of medical organizations).

Conclusion

The conducted research allowed us to summarize the existing approaches to assessing the effectiveness of the healthcare system. It is shown that the “cost–effectiveness” method is the most relevant in solving optimization problems, since it helps to establish a direct relationship between the cost of industry resources and the results achieved using them. Based on a critical analysis of data from Russian and foreign studies, as well as the performed correlation analysis, a number of resulting indicators were proposed that can be used to assess the effectiveness of regional healthcare using the “cost–effectiveness” method. When selecting indicators, preference was given to those that directly characterize the health of the population, and, accordingly, reflect the fulfillment of the target function of the healthcare system. The final list of indicators includes life expectancy at birth, mortality of the population over the working age, mortality of the population from diseases of the circulatory system, and one-year mortality of patients with malignant neoplasms.

As the current socio-economic conditions increase the “price” of possible management errors in the healthcare sector, the importance of quality management in this area comes to the fore. Accordingly, automated management decision support systems are becoming increasingly in demand, making it possible to assess the feasibility of various scenarios of impact on the resource availability of regional healthcare, as well as on existing functional interactions within it.

In modern research on healthcare effectiveness, the DEA method has become widespread, which is considered as the basis for creating a management decision support system. However, a significant disadvantage of this method is that it works like a “black box”, that is, it does not allow determining exactly how resources are converted into final results in the system. Since multiple interactions between elements in the healthcare system, as well as between the system and the external environment, are often random, simulation modeling is a suitable method for studying it. Management decision support systems that use agent-based modeling can be promising in terms of identifying and detailing potential areas of management impact.

The list of resultant indicators formed in this paper to assess the effectiveness of regional healthcare at subsequent stages of the study will be used to solve optimization problems with the help of agent-based modeling. These circumstances determine the prospects and practical significance of the conducted research.

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Integrative Model of Socio-Economic Development of Human Potential: Adaptation to the Challenges of Modern Russia

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Abstract. The relevance of the research is related to the need to rethink approaches to human development in Russia in the context of global technological transformations, geopolitical instability and sanctions pressure. Despite the formally high rates of education and scientific activity, their real contribution to economic growth remains limited, which requires designing a comprehensive model of human development. The aim of the work is to review scientific publications and develop our own model of socio-economic development of Russia's human potential. Scientific novelty lies in the development of a comprehensive model of socio-economic development of human potential, integrating modern technological, economic and social aspects, taking into account Russian institutional environment specifics. Unlike the works of other researchers who also applied a systems approach, our study suggests adaptation to the conditions of the sixth technological paradigm, a hybrid development model combining government regulation of key industries with market mechanisms in the innovation sphere, as well as public control over the allocation of resources. The methodology is based on political economic and institutional approaches, which allows taking into account macroeconomic processes and the specifics of the Russian institutional environment. As a result, we reveal the following problems: technological lag, professional and qualification imbalance, poor quality of education, insufficient funding for science, high social and regional inequality. Based on the identified issues and threats, we design a human potential development model, including social and institutional spheres, as well as education, healthcare, and the labor market. The limitations of the study

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are related to the need for further elaboration on specific mechanisms for the implementation of the proposed model, including a system of indicators and economic policy measures. The research prospects include an in-depth analysis of regional specifics, as well as the adaptation of international experience to Russian conditions. Practical significance of the work lies in the possibility of using its findings to shape public policy in the field of education, science and social development.

Key words: human potential, economic growth, education, science and innovation, labor productivity, economic policy, technological sovereignty, socio-economic development model.

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Introduction

Current challenges of the global economy, exacerbated by technological transformations and geopolitical volatility, have set for Russia the task of radically revising approaches to human development as a key factor in national competitiveness. The research is relevant due to the growing gap between formal indicators of human development (such as the level of education or the number of scientific publications) and their real contribution to economic growth. In conditions when the traditional raw material model has exhausted its possibilities, and sanctions pressure has increased the need for technological sovereignty, the creation of an effective model of human potential reproduction is becoming not just an academic task, but an imperative of national security.

An analysis of existing studies shows that the requirements for human potential are currently being transformed due to the transition to the knowledge economy. There is a growing complexity in the structure of human potential, a change in its qualitative characteristics and the development of new models of its reproduction. At the same time, systemic issues persist: technological multiparadigmatic nature of the economy, professional and qualification imbalance, outflow of highly skilled specialists and a number of demographic challenges (Soboleva, 2022).

The issue of designing an effective model of human potential development in the context of

modern external challenges, including geopolitical contradictions and sanctions pressure, is of particular relevance. The existing educational system requires transformation, it is necessary to shift the focus from narrow professional training to personal development, ensuring accessible lifelong learning, democratizing management and overcoming bureaucratization (Yakovleva, 2022). Other researchers have also noted this (Rimashevskaya, Dobrokhleb, 2017): the Russian educational system suffers from commercialization and bureaucratization, which reduces its effectiveness. This is consistent with the conclusions of N.G. Yakovleva about the need to move to a socially oriented model.

The aim of the study is to review scientific publications and develop our initial model of socio-economic development of Russia's human potential, adapted to the challenges of the sixth technological paradigm, institutional constraints and current global trends. Unlike existing works that focus on specific aspects: education, demography, or the labor market, this study offers a systems approach that integrates technological, economic, and social factors into a single theoretical and methodological framework. The presented work is the first of the planned publications and it focuses on the theoretical basis (in subsequent publications we intend to develop a system of target indicators and specific economic policy measures).

The scientific novelty of the study lies in designing a comprehensive model of socio-economic development of human potential, which combines such aspects as education, healthcare, labor market, institutions and the social sphere into a single system of measures. Unlike the works of N.M. Rimashevskaya and other researchers who also applied a systems approach, this study suggests adaptation to the conditions of the sixth technological paradigm, including digitalization and sanctions challenges, which had not previously been considered in the context of Russian reality, as well as a hybrid development model combining government regulation of key industries (education, healthcare) with market mechanisms in the innovation sphere and public control over the allocation of resources.

The practical significance of the research lies in the possibility of using this model for formulating government policy in the field of human development, regional development programs, and educational programs.

The issues under consideration are elaborated fragmentarily and in specific areas: each author, as a rule, analyzes some particular side of human potential, and there are very few comprehensive studies. Moreover, the same is relevant to international and Russian annual human development reports, since they are limited to the indicators that were chosen to reflect the state of human potential

and hardly consider Russia-specific systemic factors that directly or indirectly slow down or hinder development. There are several key areas in the scientific literature.

1. Human potential as a driver of technological and economic development. A group of researchers, including S. Glazyev (Glazyev, 2020; Glazyev, 2022), N. Rimashevskaya and V. Dobrokhleb (Rimashevskaya, Dobrokhleb, 2017), as well as N. Yakovleva (Yakovleva, 2022), considers human potential as a central element of the national economy, especially in the context of the transition to the sixth technological paradigm. Their studies highlight the need for a shift to lifelong learning, the development of creative abilities, and the integration of the “human capital”¹ assessment system into strategic planning.

N.G. Yakovleva (Yakovleva, 2022) deepens the analysis by tracing the historical transformation of the educational system and its connection with changing technological paradigms. She criticizes the commercialization of education, which hinders the development of creative potential, and suggests a transition from a market-oriented to a socially oriented model. However, these studies lack specific mechanisms for implementing the proposed models in the Russian context.

2. Issues of professional and qualification imbalance and practical solutions. I.V. Soboleva, T.V. Chubarova analyze structural issues of the

¹ We deliberately put the term “human capital” in quotation marks as an incorrect form and use it only in cases of reference to original works by other authors. In the Marxist school, the concepts of “human capital” and “human potential” differ in their essence, methodology, and ideology.

1. Human capital is a bourgeois economic category developed within the framework of neoclassical theory (G. Becker, T. Schultz, etc.). In this concept:

- 1) a person is considered as an economic resource, whose knowledge, skills and health increase his or her market value;
- 2) labor is reduced to investments (education, healthcare), which should make profit;
- 3) the concept ignores exploitation, alienating a person from his or her own abilities, turning them into assets.

2. Human potential is a Marxist and left-wing radical category that emphasizes the comprehensive development of personality beyond the logic of capital:

- 1) the emphasis is on free self-actualization, rather than on the market value of person's abilities;
- 2) human potential is realized through the elimination of exclusion, shorter working hours, access to education, culture, and creative work for all.

Thus, human capital is a tool of bourgeois ideology that justifies investing in an employee to increase profit. Human potential is a Marxist alternative that demands the freedom of labor and human development outside of market relationships.

For more evidence that the term “human capital” is incorrect, see (Buzgalin, Kolganov, 2024, pp. 496–511).

Russian labor market: professional and qualification imbalance, low level of retraining and digital skills (Soboleva, 2022; Soboleva, Chubarova, 2023). In addition, the situation in the labor market is considered in the context of current socio-economic challenges: low life expectancy, gender imbalance in mortality, preservation of the raw material economic model, deepening social inequality and reducing government funding for the social sector. The authors propose a comprehensive human development system, including the modernization of lifelong learning, focused on the needs of employers, increased funding for retraining programs, and support for socially vulnerable categories of workers.

T. Tumarov complements this analysis by noting the negative impact of the outflow of highly qualified specialists and suggesting measures to monitor the labor market and corporate training (Tumarov, 2023).

3. Government policy and institutional aspects.

E. Sleptsova and T. Ryndina draw the same conclusions as the previously mentioned authors, and also provide a number of targets for economic policy: creation of mechanisms to increase the effectiveness of “human capital” (government funding, educational loans, grants for gifted children, lower loan rates and other measures); provision of information to the public about the measures and results of the policies (Sleptsova, Ryndina, 2020). A.N. Pruzhinin suggests a more precise strategic approach, including the creation of an expert community under the government and increased investment in science and education, especially in the regions of Siberia and the Far East (Pruzhinin, 2020).

M.A. Akindinova (Akindinova, 2023), K.A. Ustinova, A.N. Gordievskaya (Ustinova, Gordievskaya, 2019) emphasize the need for cooperation between science, business and government to achieve technological sovereignty. Empirically, it turns out that the formalization of labor relations and the

availability of corporate professional development systems significantly increase the quality of labor potential: for example, workers employed in state-owned enterprises or with indefinite term employment contracts demonstrate higher rates. This provides guidance for the institutional and legal aspects of human potential policy.

4. Regional aspects and development disparity.

N.M. Rimashevskaya and co-authors identify significant interregional dissimilarities in the level of human potential, linking them with different incomes and the state of social infrastructure (Rimashevskaya et al., 2013; Rimashevskaya, Dobrokhleb, 2017). T.V. Uskova and L.V. Babich propose an index method for assessing the effectiveness of the use of “human capital” in the regions, noting low patent activity and insufficient integration of science and production (Uskova, Babich, 2021).

5. International context.

Foreign studies mathematically confirm the key role of investments in education, digital skills, and public health for economic growth (Kousar et al., 2023; Brodny, Tutak, 2024). Indrawati and Kuncoro emphasize the importance of integrating formal and informal learning, as well as cooperation between government, business and academic institutions (Indrawati, Kuncoro, 2021), which can be adapted for Russia.

The analysis of scientific developments allows us to identify several aspects of human potential development in Russia: technological (discrepancy between skills and the requirements of digital economy); demographic (population aging, outflow of qualified employees); institutional (insufficient funding for science and education); regional (development disparity).

In general, though most authors agree on the need to move from a market-oriented to a socially oriented model of human development, there are a number of notable lacunae in research on Russia that require scientific study.

First of all, there is no comprehensive model that would integrate economic, social and technological factors into a single system in the context of current trends. Most of the works are limited to analyzing individual aspects, without offering a holistic approach that takes into account changes in the interaction between human potential growth and economic development, and also without considering various scenarios.

The development of practical mechanisms for implementing the proposed measures is particularly poor. Although researchers such as I. Soboleva and S. Glazyev criticize the current situation, they do not provide specific solutions to key issues: how to fund lifelong learning under budget limitations, what incentives will help business to retrain employees, how to overcome institutional inertia and bureaucratic constraints. At the same time, new forms of employment and modern educational trends are practically ignored – the impact of the gig economy and freelance on human potential, the role of digital platforms in replacing traditional education, the transformation of professional skills under the influence of artificial intelligence, precarious employment and new forms of exploitation.

Methods

This work is based on a political-economic approach that allows us to analyze human potential as a key factor in socio-economic development, taking into account its relationship with technological paradigms, the institutional environment and global economic processes. This choice is conditioned by the need for a comprehensive consideration of the issue, including not only economic, but also social, demographic and technological aspects. The political-economic view focuses on the role of government, the disparity of resources distribution and social justice, which is especially important for Russia, where human potential is formed in a multiparadigm economy

with significant regional inequality. In some cases, a synthesis of a political-economic approach and an institutional analysis is used: this choice of methodology is due to the need to take into account the specifics of the Russian economy, where formal institutions (laws, government programs) often conflict with informal practices (corruption, informal employment schemes, etc.).

Special attention is paid to the processes of technological development and social change. Unlike Western studies, where “human capital” is often viewed as an individual asset (which is why we put the term “human capital” in quotation marks and consider it as an incorrect form of the concept of human potential), we emphasize its collective nature.

The theoretical framework includes scientific articles on various aspects of human “capital” and potential in Russia. The main focus is on the following areas: human potential development in the context of technological paradigms, the role of education in human potential development, professional and qualification imbalance, challenges to human potential reproduction, socially oriented education models, the quality of human potential, current trends and government policy for human development, and the basic income paradigm. The analysis uses statistical data from these papers, as well as additional sources such as reports from the Federal State Statistics Service, HSE University, and the World Bank.

The choice of indicative areas for the development of a future model of thresholds for economic policy (*Tab. 1*) is conceptually based on a holistic approach that combines key determinants of human potential: direct factors (education, health, employment) measure the current state of human capital; contextual factors (social sphere, institutions) create the environment for its development.

Table 1. Basic model indicators

Element	Indicator	Source
Education	<ul style="list-style-type: none"> • PISA findings • Education spending-to-GDP ratio • Access to higher education 	Rosstat, OECD, PISA
Healthcare	<ul style="list-style-type: none"> • Life expectancy • Preventable mortality • Health spending 	WHO, Rosstat, HSE University
Labor market	<ul style="list-style-type: none"> • Unemployment rate • Output per worker • Informal employment rate 	ILO, Rosstat, HSE University
Social sphere	<ul style="list-style-type: none"> • Level of poverty • Gini index • Social spending 	World Bank, Rosstat
Institutions	<ul style="list-style-type: none"> • Rule of law index • Level of corruption • Trust in institutions 	WJP, VCIOM, Transparency International
Source: own compilation.		

The theoretical basis is the UN Model (HDI), expanded by adding institutions and using accumulated developments by Russian and foreign researchers listed in the literature review.

The empirical study of various socio-economic indicators of Russia became the basis for the selection of specific elements of the model. Those with unsatisfactory (in our opinion) values which helped to determine particular areas of human development are the following.

Human potential as the basis of the labor market and technological development

The modern Russian economy is characterized by its multiparadigmatic nature, and elements of the fourth, fifth, and sixth technological paradigms coexist in it. At the same time, formally proclaiming the transition to the sixth technological paradigm, the economy remains dependent on the raw material model. According to Rosstat data for 2023², the high-tech exports' share of the total volume is only 2.3%, while in South Korea this parameter reaches 30%. In addition to this, investments in R&D do not exceed 1.1% of GDP, which is three times lower than the average for OECD countries.

² Statistical data on high-tech exports and investments in R&D for 2023. Federal State Statistics Service. Available at: <https://rosstat.gov.ru> (accessed: May 02, 2025).

It should also be noted that even with a high level of education, the efficiency of using “human capital” in Russia does not exceed 50%, which indicates structural issues in the integration of knowledge and skills into the real sector of the economy (Uskova, Babich, 2021).

In addition, the Russian labor market is facing professional and qualification imbalance. More than half of the economically active population do not work within their specialty (more than 70% of employees in some regions of Russia) (Leonidova, 2020), and the figure is even higher among workers in older age groups (Soboleva, 2022). This is due to low incomes, imperfection of the retraining system and the lack of motivation among employers to invest in employee development. For example, in 2022, only 40% of workers who changed their profession completed appropriate retraining courses (Soboleva, 2022). At the same time, as shown by the Vologda Region data, the availability of corporate retraining and advanced training systems leads to a 2.28-fold increase in the quality of labor potential (Ustinova, Gordievskaya, 2019). This situation causes a devaluation of “human capital” and a decrease in output per worker, which is 50% lower in Russia than in OECD countries (Glazyev et al., 2020).

However, labor market imbalance is caused not only by the factors listed above, but also by the discrepancy between the enrollment numbers of universities and the demand for these specialties in economics. For example, boosted economic and legal enrollment leads to a shortage of engineers (Yakovleva, 2022).

All this creates an institutional trap: the educational system continues to train specialists for outdated or unpopular industries, while business is not interested in retraining employees. According to calculations based on HeadHunter data, only 18% of vacancies in high-tech sectors actually require new competencies, such as the ability to work with artificial intelligence or big data. The remaining 82% of offers duplicate the five-year-old requirements.

The “human capital” assets of innovative organizations are a key factor in achieving technological sovereignty. Despite significant funding for innovation activities in Russia, qualitative changes in this area remain limited due to the science sector reduction and insufficient involvement of business in the development of innovations (Akindinova, 2023). This substantiates the need to reform the education and science systems in order to overcome technological dependence.

It turns out that technological development is hindered in several ways at once: the insufficient business interest in improving the skills and competencies of employees to progress (the lack of motivation for innovative development in business deserves a separate analysis); the insufficient government involvement in adapting the educational system to modern economic development goals.

Education, science, income – the triad of human potential

The Russian educational system is facing a fundamental contradiction. On the one hand, according to formal indicators (42% of the population have a college degree), Russia looks prosperous. On the other hand, for example,

according to PISA (Programme for International Student Assessment – a study of 15-year-old students)³, the level of reading literacy and mathematical competences of the adult population of Russia is below the OECD average. The situation with digital literacy, according to our analysis of Rosstat data⁴ and HSE University research⁵, also does not allow moving to the sixth paradigm:

- only 37% of Russians can confidently work with office applications;
- only 12% have basic skills in programming;
- 43% experience difficulties when using government digital services.

Moreover, education spending in Russia amounts to 3.5% of GDP compared to 5–6% in developed countries. The main sources of funding for innovation activities in Russia are budgetary and institutional funds, while the venture capital funding system is poorly developed (Akindinova, 2023). This creates a vicious circle: low funding contributes to the continuation of educational process formalization, which generates and exacerbates the discrepancy between graduates’ competencies and market requirements, which leads to the maintenance of low output characteristic of Russia for many years, limiting opportunities for increased funding.

Nevertheless, there have been some positive trends in recent years. The percentage of students qualified for free tuition in 2022–2023 increased compared to 2010–2011, although it was still a bit less than 50%⁶. Also, the number of graduates increased by 0.4% in 2023, mainly in

³ PISA 2018 results (Volume I): What students know and can do. OECD iLibrary. Available at: https://www.oecd-ilibrary.org/education/pisa-2018-results-volume-i_5f07c754-en (accessed: May 02, 2025).

⁴ Digital economy: The official Rosstat website. Available at: <https://rosstat.gov.ru/folder/12787> (accessed: May 02, 2025).

⁵ Digital literacy of the Russian population: Findings. HSE University. Moscow: HSE University. 2024.

⁶ Digital economy indicators: 2023: Statistical book. Ministry of Science and Higher Education of the Russian Federation. Moscow: HSE University. 2023.

mathematics, natural science (by 5.6%), healthcare and medicine (by 5.4%).

In addition, after a period of stagnation, the number of postgraduates increased by 22% in 2022 compared to the previous year⁷. However, the system of continuing professional education remains insufficiently developed to ensure the necessary level of staff retraining.

At the same time, considering the issue of workforce reproduction within the household, it would be adequate to mention the well-known problems of low median income and high inequality. In 2020, the 10% of the richest citizens accounted for 29.9% of the total population income, while the 10% of the poorest accounted for only 2.1%⁸. According to other sources⁹, in 2023, the top 10% had 50.8% of pre-tax national income¹⁰. More than half of Russians had a monthly income below 27 thousand rubles, 5.9% were paid less than 10 thousand rubles, and 3.9% – less than 7 thousand rubles. The average per capita income was about 14 thousand rubles.

The third pillar of human potential, in our opinion, is science. The motivation of the state in this matter can be measured with several indicators of funding for the industry. The analysis revealed that domestic research and development spending in Russia remains stable at about 1% of GDP, while in technologically advanced countries this figure is 3–3.5%¹¹. Moreover, there is a tendency in Russia to reduce actual spending on scientific research, taking into account inflation.

⁷ Digital economy indicators: 2023: Statistical book. Ministry of Science and Higher Education of the Russian Federation. Moscow: HSE University. 2023.

⁸ Labor and employment in Russia. 2023: Statistical book. Rosstat. Moscow. 2023.

⁹ World Inequality Database (WID) official website. World Inequality Lab. Available at: <https://wid.world/> (accessed: February 05, 2025).

¹⁰ Pre-tax national income is the sum of all pre-tax personal income flows of owners of production factors, labor and capital before income taxes and public cash transfers but after social security contributions.

¹¹ Digital economy indicators: 2023: Statistical book. Ministry of Science and Higher Education of the Russian Federation. Moscow: HSE University. 2023.

The Russian system of education and science is facing a deep structural crisis, despite some positive changes. Insufficient funding, education formalization and little attention to the real needs of the economy lead to a shortage of qualified employees and a decrease in output. The situation is aggravated by high social inequality, which limits access to quality education and professional development for some of the population. Without a significant increase in investments in education, science and a reduction in the income gap, the lag in human development will persist, which in the long term will restrain growth and competitiveness of the Russian economy.

“Additional” challenges of human development: demography, regions

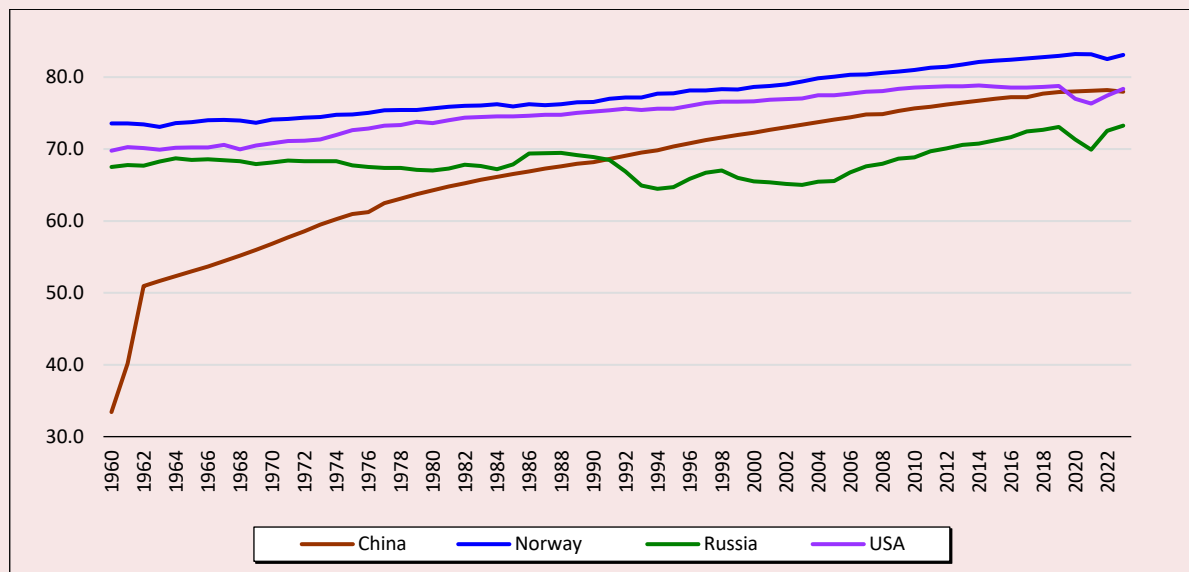
The demographic situation is of serious concern. According to Rosstat¹², life expectancy in Russia is 73.3 years, which is significantly lower than in developed countries (*Fig. 1*). Also, there is a gender imbalance in mortality and high morbidity.

In addition to low life expectancy, the proportion of the working-age population is decreasing. For example, in 2022, life expectancy in some regions, such as the Pskov and Kurgan regions, did not exceed 67 years, which is 10 years lower than the OECD average (Glazyev et al., 2022). This brings us to another Russian long-standing issue – regional inequality.

For example, in Moscow and Saint Petersburg, the income differentiation coefficient (R/P 10% ratio) reaches 15.9 and 14.8, respectively, while in the Murmansk Region it is 9.4 (Glazyev et al., 2022). The unemployment rate in depressed regions, such as the Ingushetia and Tyva republics, exceeds 30%, and in the Kurgan Region it is approaching 20% (Glazyev et al., 2022). This situation leads to an outflow of qualified workers to the under-staffed central regions, which increases the imbalance even more.

¹² Russian statistical yearbook 2023: Statistical book. Rosstat. Moscow, 2023.

Figure 1. Life expectancy at birth



Source: World Bank. Life expectancy at birth, total (years). World Bank Open Data. Available at: <https://data.worldbank.org/indicator/SP.DYN.LE00.IN> (accessed: May 02, 2025).

It is not just about the risks of the labor market, but also about threats to human potential in the general sense of the word. We have identified¹³ an increasing gap between the regions:

- in 2010, the difference in per capita GRP between the richest (Yamal-Nenets Autonomous Area) and the poorest (Republic of Tyva) regions was 12-fold, in 2023 it reached 18-fold;
- 73% of high-tech jobs, 68% of R&D investments, 85% of venture capital funding are concentrated in 15 “donor” regions;
- in the remaining 70 regions, the share of employees in traditional sectors exceeds 80%, the average age of equipment is 22 years (compared to 8 years in the “donor” regions), the outflow of young specialists reaches 30% of college graduates;

¹³ Regions of Russia. Socio-economic indicators: Yearbook. Moscow: Rosstat, 2024. Available at: <https://rosstat.gov.ru/folder/210/document/13204>; Indicators of innovation activity: Yearbook. Moscow: HSE University, Rosstat, 2024; Monitoring of the socio-economic development of the constituent entities of the Russian Federation. Moscow: Ministry of Economic Development, 2023; Monitoring of the employment of university graduates. Moscow: HSE University, 2023.

– in Russia, there is a shift of “human capital” from the scientific sector to more applied areas such as education and entrepreneurship, which exacerbates regional inequality (Akudinova, 2023).

We can also add the negative impact of unstable labor relations (unpaid vacations, wage delays, etc.) on the social well-being of employees and the quality of working life (Leonidova, 2020). Such conditions limit opportunities for professional growth and self-actualization, especially in depressed regions. It is worth noting that the formalization of labor relations (indefinite and fixed term employment contracts) increases the chances of employees to have “human capital” above the average by 1.36-fold, using the example of the Vologda Region (Ustinova, Gordievskaya, 2019).

Thus, a cursory analysis shows that human potential development in Russia is facing systemic challenges: technological lag, labor market imbalance, low education quality, insufficient funding for science, high social inequality and increasing regional differentiation. These factors

are interrelated and create a background for low output and little innovation activity, which hinders long-term economic growth. Further in the paper, we will propose a socio-economic model of human development aimed at overcoming these issues through a set of measures in the field of education, science, labor market and regional policy.

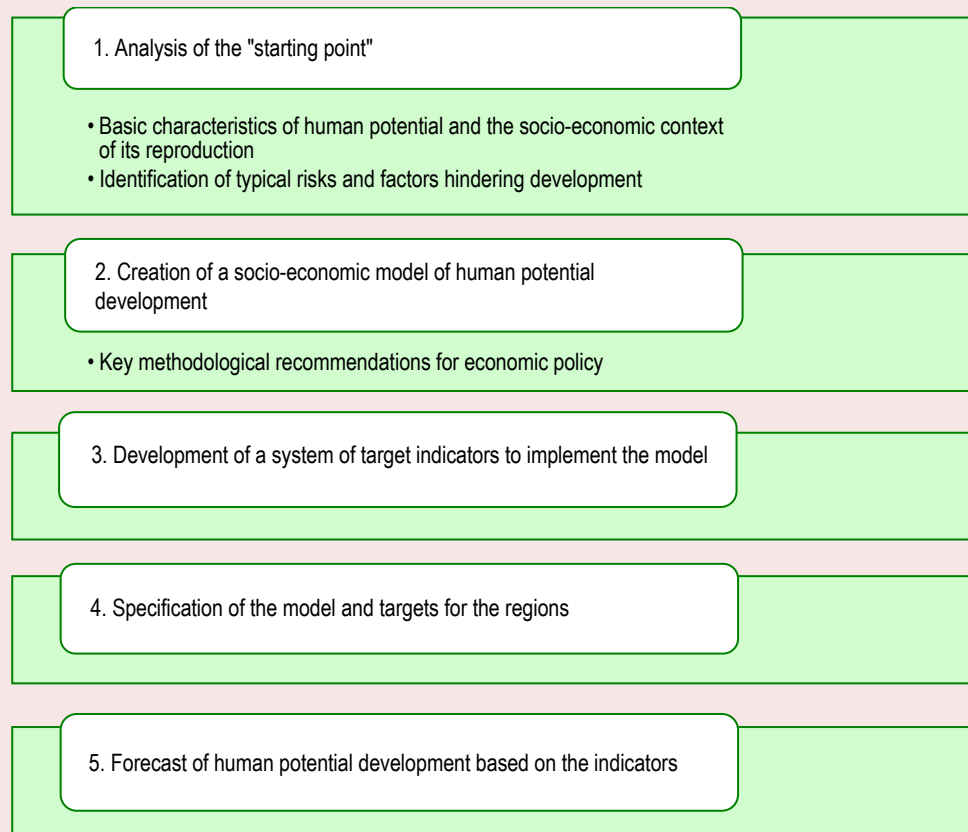
Socio-economic model of human potential development

Human potential development in Russia should be based on an integrated approach that takes into account both macroeconomic and some microeconomic aspects. First of all, it is necessary to create a macroeconomic management system, where people remain the main element, and education becomes a key branch of the economy and acquires

a new quality. In our vision, such a system can be developed in five stages (*Fig. 2*). The first and second are the subject of this work, the third and fifth will be the aim of the second publication on the topic. The regional aspect (the fourth stage) is beyond the scope of our analysis, but it will be sometimes indirectly discussed. In this and subsequent articles, there will be enough basic information to continue this research by our colleagues from the regions. We now proceed to the basic requirements for the human development model.

To sum up the findings previously presented in the paper, we can identify the basic elements of human development (in the socio-economic area) and classify the key challenges and threats within these elements (*Tab. 2*).

Figure 2. Plan for the development of a socio-economic model of systemic human potential development



Source: own compilation.

Table 2. Elements of the human development system with current values

Element	Value based on the previously analyzed data	Current issues, challenges and threats
Education	Education is a basic element of the model, as it develops the cognitive and professional competencies necessary to adapt to the sixth technological paradigm. Its quality directly affects output and innovation activity. The crisis of education related to commercialization and formalization requires a transition to a socially oriented model (Yakovleva, 2022; Glazyev, 2023)	<ul style="list-style-type: none"> • Education quality: despite the formally high level of education (42% of the population have a college degree), real skills are below the OECD average • Digital literacy: only 12% of Russians have basic programming skills, 43% have difficulties with digital services • Inconsistency with the labor market: boosted economic and legal enrollment and a shortage of engineers and technical personnel • Underfunding: education spending – 3.5% of GDP versus 5–6% in developed countries • Commercialization and bureaucratization: reduced accessibility and efficiency due to the formalization of processes
Healthcare	Public health is a key factor in human potential stability. Low life expectancy and regional disparities reduce the economic return on investments in education and science	<ul style="list-style-type: none"> • Low life expectancy: 73.3 years (67 years in Pskov and Kurgan regions), which is 10 years lower than the OECD average • Gender imbalance in mortality • Regional inequality • Underfunding
Labor market	Professional and qualification imbalance and low staff mobility reduce the efficiency of using human potential. The requirements include a competence monitoring system and tax incentives for employers investing in retraining (Soboleva, 2022)	<ul style="list-style-type: none"> • Low output per worker: 50% of the OECD average • Professional and qualification imbalance: in some regions 70% of employees do not work within their specialty • Lack of retraining: only 40% of those who changed their profession had completed retraining courses • Brain drain • Inconsistency with the digital economy requirements: 82% of vacancies in high-tech sectors require outdated competencies
Social sphere	High inequality limits access to education and healthcare. Progressive taxation and programs to support vulnerable groups can narrow the gap and increase social stability (Rimashevskaya, 2017)	<ul style="list-style-type: none"> • High inequality: top 10% account for 50.8% of the national income • Poverty: 50% of Russians have incomes below 27 thousand rubles per month, 5.9% have incomes below 10 thousand rubles • Regional gap: the difference in per capita GRP between rich and poor regions increased from 12 to 18-fold (2010–2023) • Waning trust in institutions • Cultural gap: insufficient consideration of cultural and moral values in politics
Institutional environment	Corruption and insufficient integration of science with business hinder innovation. Public management digitalization and creation of technology clusters can be a solution (Akindinova, 2023)	<ul style="list-style-type: none"> • Poor integration of science with business: low patent activity, poor business participation in funding for science • Insufficient government funding for science: 1% of GDP versus 3–3.5% in developed countries • Inefficient government programs: implementation of Western models without adaptation • Corruption and informal employment: contradiction between formal and informal practices • Regional policy: lack of mechanisms for reducing disparities
Source: own compilation.		

The proposed model includes five interrelated elements: education, healthcare, labor market, social sphere and institutional environment. Each of these components is crucial in generating human capital, and their integrated development can ensure the long-term progress of Russian society. Education is fundamental for the creation of a skilled workforce and innovative potential. According to a study by E. Hanushek and L. Woessmann, an increase in the education quality by one standard deviation correlates with a 2% annual increase in GDP in the long term (Hanushek, Woessmann, 2020). However, the current state of Russian education is of concern, and the situation with the human development index is controversial: Russia remains its position in the top group of countries, but after 2019 there has been a deterioration, and Russia has not yet returned to its previous maximum¹⁴.

Healthcare directly affects output and life expectancy, and these indicators are among the weaknesses of the Russian economy. In addition, WHO data (2023) show that an increase in life expectancy correlates with GDP growth.

The labor market determines employment opportunities and income levels. Although official unemployment rate in Russia is low (according to various estimates, it is around 3.5%), about 18% of workers are employed in the informal sector – 18.3% in 2023 (Kiselev et al., 2024), which poses risks to their social security. Output per worker remains significantly lower than in developed countries (27.5 dollars per hour versus 77 dollars per hour in the USA¹⁵), which indicates the need to modernize educational and retraining systems.

¹⁴ Human Development Index (HDI). Available at: <https://hdr.undp.org/data-center/human-development-index#/indicies/HDI> (accessed: July 04, 2025).

¹⁵ SDG indicator 8.2.1 – Annual growth rate of output per worker (GDP constant 2021 international \$ at PPP) (%). ILOSTAT. Available at: https://rplumber.ilo.org/dataexplorer/?lang=en&segment=indicator&id=SDG_0821_NOC_RT_A (accessed: July 04, 2025).

The social sphere is essential in reducing inequality and maintaining the quality of life. The Gini index in Russia (0.408 in 2024¹⁶) indicates a persistently high level of social stratification. At the same time, social spending (13.5% of GDP) is noticeably lower than in the EU (20%+)¹⁷.

The institutional environment creates conditions for economic activity and social development. According to the 2024 WJP Rule of Law Index¹⁸, Russia ranks only 113th among 142 countries, while it ranks 137th in terms of the Corruption Perceptions Index¹⁹. The level of trust in government institutions, according to VCIOM surveys (2025)²⁰, does not exceed 49%, which is lower than the Europe average (60%+).

So, the proposed model covers all the key aspects that determine the quality of human potential in Russia. Its implementation requires coordinated measures to modernize education and healthcare, reform the labor market, increase social support and improve institutional conditions. The successful solution of these tasks will ensure the sustainable development of human potential as the basis for the long-term economic progress of Russia.

The next stage after the theoretical and methodological analysis is the development of indicators for each of the identified elements of the develop-

¹⁶ The Gini index (income concentration index) in Russia and its constituent entities. Federal State Statistics Service (Rosstat). Available at: https://rosstat.gov.ru/storage/mediabank/Nb_Rd_1-2-5.xlsx (accessed: July 04, 2025).

¹⁷ World Development Indicators. World Bank. Available at: <https://databank.worldbank.org/source/world-development-indicators> (accessed: July 04, 2025).

¹⁸ WJP Rule of Law Index. World Justice Project. Available at: <https://worldjusticeproject.org/rule-of-law-index/global/2024/Russian%20Federation/> (accessed: July 04, 2025).

¹⁹ Corruption Perceptions Index. Transparency International. Available at: <https://www.transparency.org/en/cpi/2024> (accessed: 04.07.2025).

²⁰ Government institutions activity. VCIOM. Available at: <https://wciom.ru/ratings/dejatelnost-gosudarstvennykh-institutov/page> (accessed: July 04, 2025).

ment model. The main principle for methodological and applied stages of the model creation is the integration of the following components:

1) government regulation of key industries (education, healthcare, basic science), considering the positive historical experience of the Russian economy in the 20th century, as well as the modern experience of Scandinavian economies;

2) market mechanisms in the field of innovations and applied research (with areas of these innovations prescribed by the government and with its financial assistance);

3) public control over the allocation of resources.

Conclusion

The conducted research provides a comprehensive analysis of the key issues of human development in Russia and offers a socio-economic model for overcoming them. In the context of global technological transformations, geopolitical volatility and the exhausted traditional raw material model of the economy, the relevance of such developments is increasing. The study highlights systemic challenges, including technological lag, professional and qualification imbalance, poor quality of education, demographic risks and regional inequality, which are interrelated and create a trap of low output and limited innovation activity.

The scientific novelty of the research lies in the development of a hybrid model that integrates economic, social and technological factors into a

single system adapted to the conditions of the sixth technological paradigm. Unlike existing studies that focus on individual aspects, this model offers a holistic approach that combines government regulation of key industries (education, healthcare) with market mechanisms in the innovation sphere and public control over the allocation of resources. This will allow overcoming the fragmentary nature of previous research and propose practical mechanisms that consider the specifics of the Russian economy.

The practical significance of the findings lies in the possibility of using the developed model for formulating government policy, creating regional development programs and educational initiatives. The model can serve as a basis for developing target indicators and specific measures aimed at improving the quality of human potential, which is crucial for ensuring long-term economic growth and national security.

We plan to work on a system of indicators to elaborate on the mechanisms of model implementation and to evaluate the effectiveness of the proposed model. This will allow us to move from theoretical analysis to practical recommendations that ensure the sustainable development of human potential in Russia. Thus, the completed work lays the foundation for further research and practical actions aimed at overcoming systemic challenges and creating a competitive knowledge economy.

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Volunteerism in Russia: Trends, Regional Differences and the Impact of Socio-Demographic Factors



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Abstract. The article presents the results of a study of volunteering in the Russian Federation from a regional perspective for the period 2022–2024 according to the following indicators: level of volunteerism, median age of volunteers, number of female volunteers per 1,000 male volunteers, number of rural volunteers per 1,000 urban volunteers, proportion of working-age volunteers in the total number of volunteers. The analysis is based on official data from Rosstat – a sample survey of volunteering workforce for 2022–2024. The study shows that the median age of Russians engaged in volunteering is increasing. As a rule, there are more women than men among the volunteers. The ratio of rural to urban volunteers is growing. The share of working-age volunteers in the total number of volunteers in Russia as a whole is quite stable and ranges from 73–74%. In the course of the study, we calculate the following labor market indicators: volunteers' labor force participation rate, volunteers' employment rate, volunteers' unemployment rate (or the proportion of volunteers who are currently unemployed), ratio of the number of volunteers who are unemployed to the number of volunteers who are employed (per 1,000 employed volunteers). The relationship between the level of volunteerism and other indicators was determined based on the use of paired (linear) Pearson correlation coefficients and paired Spearman's rank correlation coefficients. In addition, we conduct a statistical analysis of individual regional quintile groups formed on the basis of the values of the level of volunteerism in the regions. The article will be of interest to economists, sociologists, political scientists, and others interested in research on volunteerism in Russia.

Key words: volunteerism, volunteering, level of volunteerism, analysis of volunteer activity.

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Introduction

Volunteering is a type of socio-economic activity of the population, as a result of which some kind of service or help is provided without being paid for it, aimed at supporting individuals, organizations or institutions in need, as well as unpaid activities of individuals or organizations to eliminate the consequences of natural disasters, catastrophes, etc. It is often indispensable in organizing assistance to refugees and internally displaced persons¹. It can be regular or occasional, related to certain events. An example of occasional volunteering is the dissemination of information and merch during public events (for example, services provided by volunteers during the 2013 Summer Universiade in Kazan, the 2014 Olympic Games in Sochi, etc.). Volunteer organizations are often established spontaneously, as soon as there is a problem that requires expeditious solutions. In this regard, we can note humanitarian aid collected in cathedrals, in other specially designated places. In the future, a volunteer organization can grow, develop and turn into an independent unit aimed at regularly giving support to the population. Also, volunteers can work as monitors and their activity can even have an unofficial character (relic hunters of various interests engaged in the search and illegal appropriation of historical artifacts, weapons, treasures, etc.).

The aim of the study is to analyze volunteering in Russian regions in 2022–2024. Accordingly, the following tasks were set and solved:

- to analyze the specifics of volunteering in Russian regions using descriptive statistics such as average, median values, coefficients of variation of the level of volunteering, median age of volunteers, the ratio of female volunteers to male volunteers, the ratio of rural volunteers to urban volunteers;

- to identify the correlations between the considered indicators and, if there are any, create regression models describing them;

- to calculate and analyze labor market indicators for the population group engaged in volunteering;

- to provide an analysis of volunteering by Russian regions' quintile groups, ranked by the level of volunteering, to identify the presence of correlations between indicators within these quintile groups;

- to test the hypothesis of the correlation between the level of volunteering in the region and median age of volunteers, the proportion of women and rural population engaged in volunteering, the unemployment and employment rates of volunteers.

The scientific and practical significance of the conducted research primarily lies in the lack of such works in domestic statistical and economic practices, since the topic of volunteering is quite new to Russia and does not have a fixed research methodology. Meanwhile, the analysis of volunteering is very important for formulating the government socio-economic policy (both generally for Russia and for the regions).

The scientific novelty of the work is determined, in addition to the identified lacuna in domestic statistical research, by the possibility of using the findings in the process of developing socio-economic policy by regional authorities.

Literature review

The issues of the formation and development of volunteering in Russia and across the globe are mainly addressed by sociologists and psychologists, to a lesser extent by economists and statisticians. For example, an article by American scientists examines the quality of life of both retired and working volunteers (Kim et al., 2025). Scientists from the UK have recently noted a decline in formal volunteering due to the trend

¹ On charity work and volunteering: Federal Law 135-FZ, dated August 11, 1995 (amended). Available at: <https://base.garant.ru/104232>

away from collective to individual social activity (Nichols, 2024). English experts have identified the positive impact of volunteering on social engagement and health (Matthews, Nazroo, 2021). The assessment of age and cohort trends in volunteering is provided in the joint work of demographers from the USA and Taiwan (Peng et al., 2023). In 2017, a collaborative work by scholars from institutes of India and Canada was published, which revealed a positive relationship between engagement in volunteering and such socio-psychological characteristics as social responsibility, developed leadership skills, reduced engagement in corruption, etc. (Desai et al., 2017). A study by scientists from the USA (Cruz, Meisenbach, 2018) is devoted to assessing the communicative management of combining volunteering with work and home demands. Based on a survey, Chinese scientists have identified a close relationship between the will of the youth to engage in volunteering and supply of voluntary service, depending on the bureaucratization of the community committee (Zhang et al., 2018).

The joint work of scientists from Serbia and Russia (Tolvaišis, Filipova, 2020) is devoted to the analysis of personal development and the promotion of active citizenship among adolescents and youth as a result of participation in volunteering. C. Vallejo Rubinstein (Vallejo Rubinstein, 2020), C. Dawson (Dawson et al., 2019), and others wrote that cultural and social skills developed in childhood affect a person's engagement in volunteering.

The satisfaction of volunteers with the results of their activities was investigated in the work by M. Fysentzidis and co-authors (Fysentzidis et al., 2024), who identified factors influencing satisfaction with the volunteer experience of respondents and noted the necessity of regular comprehensive analyses. The impact of volunteering on the development of a social educator was considered by scientists from Kazakhstan (Azimbek, Slambekova,

2024). The state of the world's volunteerism has been consistently highlighted in UN reports since 2011².

Russian researchers are also dealing with this question. The stages of the formation of volunteering in Russia in comparison with foreign experience are considered in the works (Kudrinskaya, 2006; Khvorostianov, 2017; Nevskii, 2020; Zadorozhnaya et al., 2021). The socio-cultural portrait of a Russian volunteer in the context of the constitutional and legal provisions is described by S.V. Petrova and colleagues (Petrova et al., 2020), R.R. Shayakhmetova (Shayakhmetova, 2022), A.M. Kushkhova, A.A. Kubova (Kushkhova, Kubova, 2023). The ways of improving the volunteering system in Russia are highlighted in the article by V.V. Grushina (Grushina, 2024). The issue of students' readiness to volunteer and actual engagement, as the future intellectual basis of Russian human capital, was studied by A.S. Zemlyanskaya (Zemlyanskaya, 2022), O.I. Ilyina and co-authors (Ilyina et al., 2023). A historical overview of the development and formation of volunteering in Russia and, most importantly, the evidence of existing potential and methods of its achievement in modern conditions, are presented in the works by N.I. Gorlova (Gorlova, 2019) and M.A. Bochanov (Bochanov, 2024).

The analysis of Russian volunteering based on statistical methods was first conducted in 2020 using data for 2016–2019. The findings included the trend in the number of volunteers, their age and gender structure, place of residence and types of activities³. Despite this, there are practically no papers using multidimensional statistical analysis methods.

² 2022 State of the World's Volunteerism Report: Building Equal and Inclusive Societies. Bonn. Available at: <https://swvr2022.unv.org/> (accessed: July 31, 2025).

³ Development of volunteering in Russia: Statistical analysis. Moscow: Analytical Center under the Government of the Russian Federation, Data Analytics, December, 2020.

Scientists mainly rely on sociological surveys (sample surveys, interviews, etc.), which provides only a general picture of volunteering, from the narrow perspective of certain aspects. A similar situation is observed when using content analysis methods, as well as findings based on regulatory data (for example, the State of the World's Volunteerism Report is based on this kind of data⁴). Thus, there is a certain scientific gap in statistical research on volunteerism in Russia.

Data and methods

The information base consisted of data from a sample survey of labor force for 2022–2024⁵ (with no data on the Donetsk and Lugansk people's republics, Zaporozhye and Kherson regions), which were analyzed using the following statistical methods: descriptive statistics (average, median values, coefficients of variation), correlation analysis (paired (linear) Pearson correlation coefficients; paired Spearman's rank correlation coefficients; regression analysis – one-factor and two-factor linear regression models; time series indicators – growth and accession rates, absolute accession).

Based on the methodological base of the labor market and relative indicators, developed and recommended for implementation into statistical practice by the 19th International Conference of Labour Statisticians, including volunteers' labor force participation rate and the proportion of working-age volunteers to the total number of volunteers, we developed formulas for calculating the key indicators of volunteering:

– proportion of volunteers to the population (C_{YES}^{vol} , %):

$$C_{YES}^{vol} = \frac{YES_i^{vol}}{YES_i^{vol} + NO_i^{vol}} 100, \quad (1)$$

⁴ 2018 State of the World's Volunteerism Report. "The thread that binds. Volunteerism and community resilience". Available at: <https://knowledge.unv.org/node/1665> (accessed: July 31, 2025).

⁵ Results of the sample survey of labor force. Available at: <https://rosstat.gov.ru/folder/11110/document/13265>

where:

YES_i^{vol} is the number of volunteers in the subsample i (considering gender, place of residence, or age);

NO_i^{vol} is the number of non-volunteers in the subsample i (considering gender, place of residence, or age);

– volunteers' employment rate (C_E^{vol} , %):

$$C_E^{vol} = \frac{E_i^{vol}}{YES_i^{vol} + NO_i^{vol}} 100, \quad (2)$$

where:

E_i^{vol} is the number of the employed among volunteers in the subsample i (considering gender, place of residence, or age);

– volunteers' unemployment rate (or the proportion of the unemployed to volunteers; C_{UE}^{vol} , %):

$$C_{UE}^{vol} = \frac{UE_i^{vol}}{YES_i^{vol}} 100, \quad (3)$$

where:

UE_i^{vol} is the number of the unemployed among volunteers in the subsample i (considering gender, place of residence, or age);

– coefficient of the economic activity of volunteers (C_{act}^{vol} , %):

$$C_{act}^{vol} = \frac{UE_i^{vol}}{E_i^{vol}} 100. \quad (4)$$

The analysis was carried out using the Excel and STATISTICA software packages.

Findings

The key statistical indicator characterizing engagement in volunteering is the proportion of volunteers to the population, or the level of volunteering. Basing on the ILO methodology, we consider the population aged 15 and older.

When conducting a primary analysis of all Russian regions (85 constituent entities) for 2022–2024, the following results were obtained. In 2022,

the national average level of volunteering (C_{vol} , %) was 2.64%, with significant variation among regions: from the Chukotka Autonomous Area, where volunteering was not recorded at all, to the Republic of Tyva with a value of 13.5%. A high level of volunteering was also observed in the Kurgan Region (11.5%)⁶. In the next two years (2023 and 2024), the level of volunteering increased by 0.78% and 1.25%, respectively (Tab. 1). While in 2022 it did not exceed 2.15% in 50% of Russian regions, in 2023 it increased to almost 3%, and in 2024 – to 3.3%.

The calculated coefficients of variation of the level of volunteering revealed significant heterogeneity of Russian regions in this indicator. In 2022, the coefficient of variation was 85%, which is

much higher than the threshold of 33%, at which the population is considered heterogeneous, in 2023 it was 75%, in 2024 – 74%. This means that when forecasting the level of volunteering, as well as when making recommendations for managing volunteering, all the regions should be divided into homogeneous groups and each group should be considered separately.

In the course of the study, additional indicators were calculated that characterize volunteering in the regions: the median age of a volunteer ($Me_{vol, age}$), the number of female volunteers per 1000 male volunteers ($\frac{F^{vol}}{M^{vol}}, \%$); the number of rural volunteers per 1000 urban volunteers ($\frac{R^{vol}}{U^{vol}}, \%$) and the proportion of working-age volunteers to the total number of volunteers ($d_{wa}^{vol}, \%$; see Tab. 1).

Table 1. The main statistical characteristics of the indicators of volunteering in Russia for 2022–2024

Indicator	Average value	Median value	Variation range	Coefficient of variation, %
2022				
$C_{vol}, \%$	2.64	2.15	13.52	85.36
$Me_{vol, age}$	41.42	40.81	59.10	21.50
$\frac{F^{vol}}{M^{vol}}, \%$	2040	1883	5771	45.01
$\frac{R^{vol}}{U^{vol}}, \%$	818	490	12858	179.41
$d_{wa}^{vol}, \%$	73.48	75.36	100.00	20.29
2023				
$C_{vol}, \%$	3.42	2.99	12.70	75.13
$Me_{vol, age}$	42.84	43.61	45.56	17.27
$\frac{F^{vol}}{M^{vol}}, \%$	1975	1815	5865	45.66
$\frac{R^{vol}}{U^{vol}}, \%$	801	585	4255	101.01
$d_{wa}^{vol}, \%$	74.47	75.44	100.00	17.02
2024				
$C_{vol}, \%$	3.89	3.34	18.60	74.07
$Me_{vol, age}$	43.72	43.83	40.60	14.49
$\frac{F^{vol}}{M^{vol}}, \%$	2182	1930	11313	65.09
$\frac{R^{vol}}{U^{vol}}, \%$	1057	467	23724	257.79
$d_{wa}^{vol}, \%$	74.25	74.84	64.10	13.62
Calculated based on: Results of the sample survey of labor force. Available at: https://rosstat.gov.ru/folder/11110/document/13265				

⁶ For comparison: at the same period, for example, in the United States, the level of volunteering was about 30%. Available at: <https://www.statista.com/statistics/189295/percentage-of-population-volunteering-in-the-united-states-since-2003> (accessed: July 31, 2025).

The study showed that the median age of Russians engaged in volunteering is increasing (in 2022 it was 42.8 years, in 2024 – 43.7 years). The regions are homogeneous in this indicator for the entire period from 2022 to 2024 (the variation coefficient in 2022 was 21.5% (which is below 33%), then it decreased to 14.5% in 2024).

Women predominate among volunteers. In 2022, there were 2,040 women per 1,000 men, in 2023 their number dropped slightly to 1975 and increased again to 2,182 in 2024. There are regions in Russia where women make up more than 80% of all volunteers. For instance, in 2022, in the Kirov Region their proportion was 82.8%, in the city of Sevastopol – 84.7%, in the Ivanovo Region – 85.2%. In 2023, in the city of Saint Petersburg their share was 85.1%, in the Kirov Region – 85.4%. In 2024, in the city of Saint Petersburg their proportion was 84.7%, in the Vologda Region – 84.4%, in the Kirov Region – 86.9%, in the Kaliningrad Region – 92.2%.

The calculated coefficients of variation showed that Russian regions are heterogeneous in gender of volunteers. Management bodies should take it into account when regulating volunteer work.

The calculated ratios of rural volunteers to urban volunteers show the predominance of city dwellers in 2022–2023. However, in 2024, there were 1,057 rural volunteers per 1,000 urban volunteers (in Russia in total). Moreover, there

are regions where the majority of the population lives in rural areas, and there has traditionally been a predominance of rural volunteers over urban volunteers throughout the period under review. These include the Lipetsk Region (in three years the indicator increased from 2257 to 4178‰), the Republic of Altai (from 3133 to 7038‰, respectively), as well as the Chechen Republic, but its values fluctuated (2022 – 3069‰, 2023 – 1019‰, and 2024 – 3855‰).

The coefficients of variation of the ratio of rural volunteers to urban volunteers are higher than 33%. Therefore, according to this indicator, Russian regions are generally not homogeneous.

The proportion of working-age volunteers to the total number of volunteers in Russia is quite stable within 73–74%. The coefficients of variation are below 33%, which indicates the general homogeneity of Russian regions in this parameter. At the same time, from 2022 to 2024, in the Republic of Ingushetia the proportion of working-age volunteers was consistently 100%. In 2022 and 2023 the minimum value of the indicator was 0% (respectively, the Chukotka Autonomous Area and the Ivanovo Region), in 2024 the minimum value of the indicator was observed in the Kirov Region (35.9%).

Table 2 shows how the median values of the considered indicators changed.

Table 2. Changes in the median values of volunteering in Russia in 2022–2024

Indicator	Increase (decrease), %		
	in 2023 compared to 2022	in 2024 compared to 2023	in 2024 compared to 2022
Proportion of volunteers to the population for 12 months	39.1	11.7	55.3
Median age of volunteers	6.9	0.5	7.4
Number of female volunteers per 1000 male volunteers	-3.6	6.3	2.5
Number of rural volunteers per 1000 urban volunteers	19.4	-20.2	-4.7
Proportion of working-age volunteers to the total number of volunteers	0.1	-0.8	-0.7
Calculated based on: Results of the sample survey of labor force. Available at: https://rosstat.gov.ru/folder/11110/document/13265			

According to calculations, the proportion of volunteers to the population rose by 55.3% from 2022 to 2024, with the most rapid increase being observed in 2023 compared to 2022 – by more than 39%. The median age of volunteers in 2022–2024 rose by 7.4%, the largest increase was in 2023 – by 6.9%. Also, in 2023, the ratio of women to men engaged in volunteering changed most intensively (increased by 6.3%), as well as the ratio of rural volunteers to urban volunteers (decreased by more than 20%). The proportion of working-age volunteers remained stable (changes within 1%).

Labor market indicators of volunteering in Russia

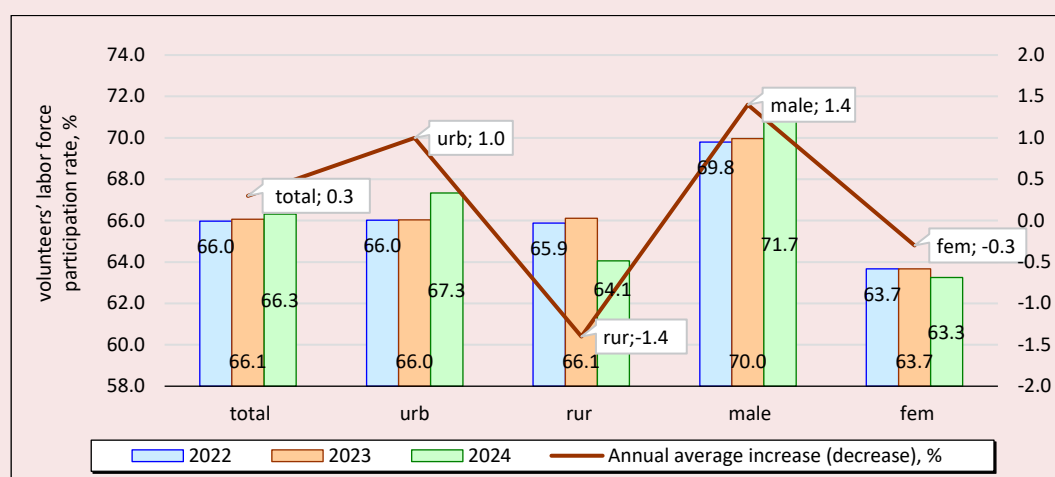
For an in-depth analysis of the volunteer work, the main indicators of the labor market were additionally calculated: volunteers' labor force participation rate (the level of volunteering), volunteers' employment rate, volunteers' unemployment rate (or the proportion of currently unemployed volunteers), the proportion of the number of unemployed volunteers to the number of employed volunteers (per 1000 employed volunteers). The calculations are based on the primary data from Rosstat⁷ (see formulae 1–4).

Thus, from 2022 to 2024, there was a growth in the volunteers' labor force participation rate among the male population and urban residents, while the average participation of rural residents and the female population, on the contrary, declined. According to the calculated volunteers' employment rate, an increase was observed among the urban and male population. Similar indicators for rural and female volunteers showed a negative trend, with a decrease by 1.4% and 0.3%, respectively (*Fig. 1a, 1b*).

In addition, there has been an active decrease in unemployment among all the volunteers aged 15 and older. Particularly, the most significant decrease is among urban residents – by 34% annually (*Fig. 1c*). The dynamics of the economic activity coefficient is similar (*Fig. 1d*).

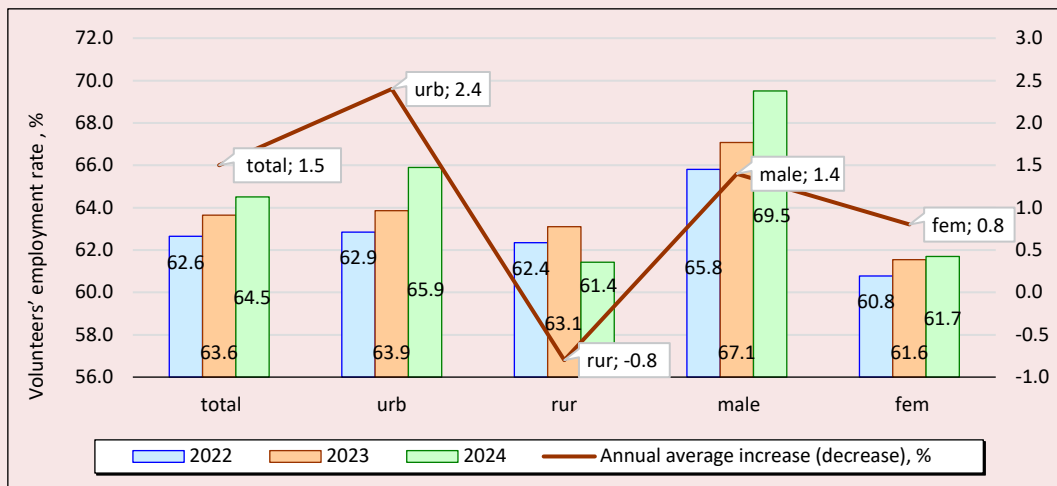
An analysis of changes in the volunteers' labor force participation rate, employment and unemployment rates for the population aged 15 and older (considering the place of residence and gender) showed that it is similar to the calculations presented above for volunteers. This fact indicates the similarity of the processes in the labor market,

Figure 1. Dynamics of the main labor market indicators among volunteers in Russia in 2022–2024

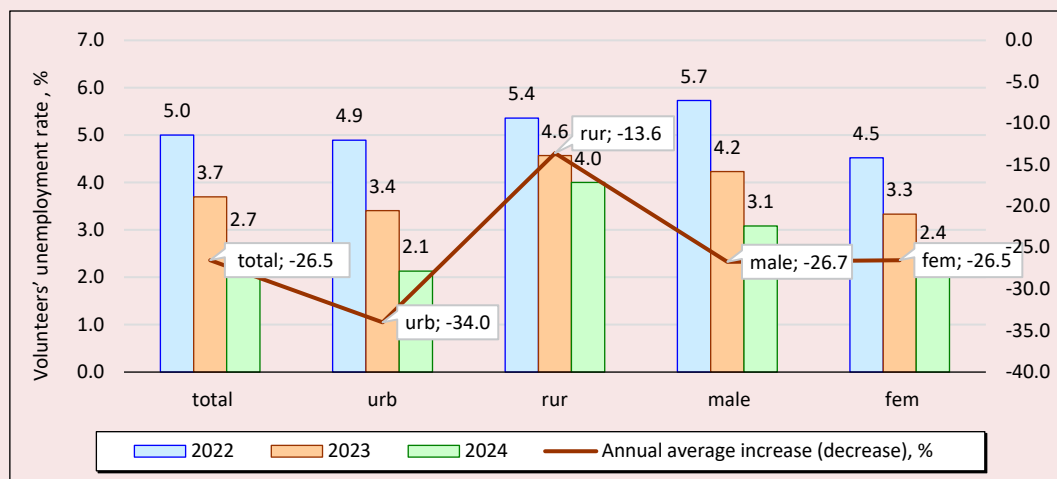


a) The volunteers' labor force participation rate and its dynamics in total, by gender and place of residence

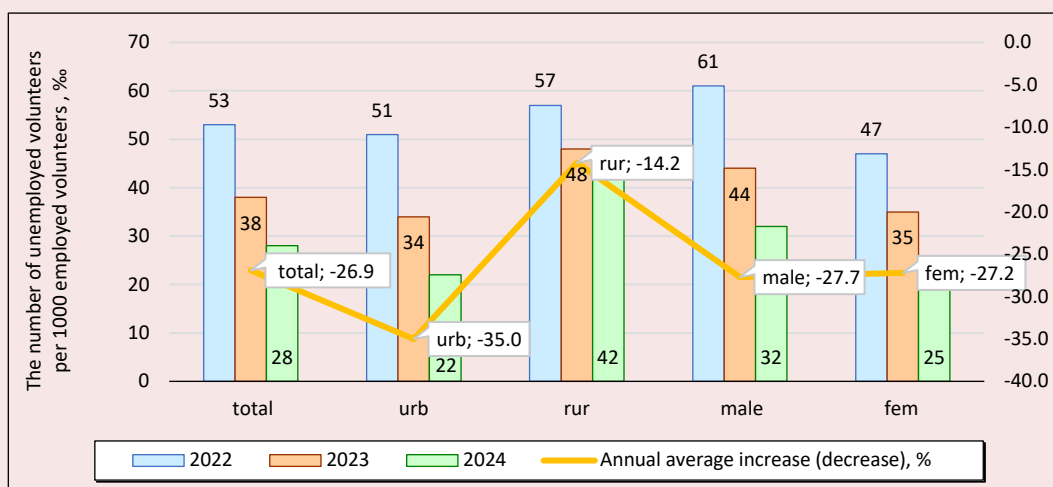
7 Results of the sample survey of labor force. Available at: <https://rosstat.gov.ru/folder/11110/document/13265>



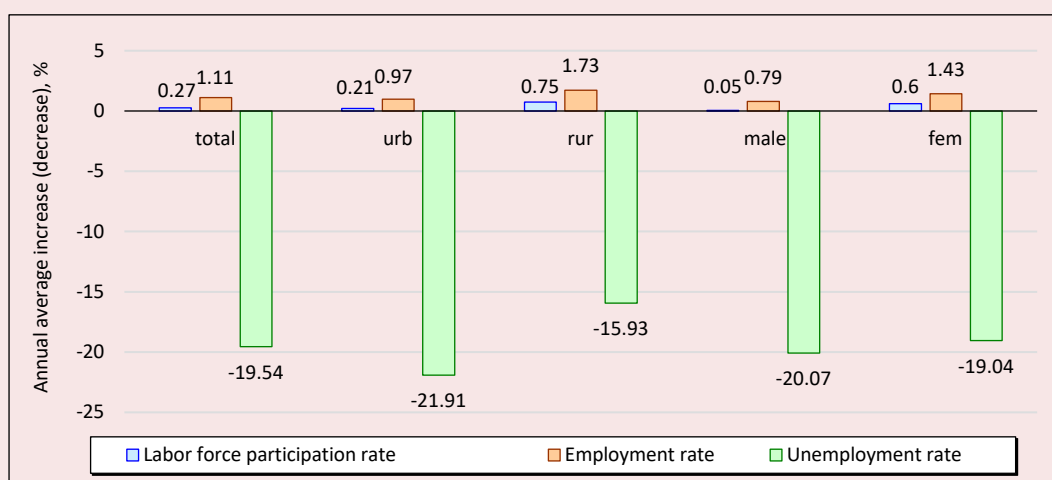
b) Volunteers' employment rate and its dynamics in total, by gender and place of residence



c) Volunteers' unemployment rate and its dynamics in total, by gender and place of residence



d) Economic activity of volunteers and its dynamics in total, by gender and place of residence



e) Dynamics of the main labor market indicators among the population aged 15 and older in Russia in 2022–2024

Calculated based on: Results of the sample survey of labor force. Available at: <https://rosstat.gov.ru/folder/11110/document/13265>

both among volunteers and the population in general (Fig. 1e).

To identify the relationship between the level of volunteering and other indicators (median age of volunteers, the ratio of female volunteers to male volunteers, the ratio of rural volunteers to urban volunteers, the proportion of working-age volunteers), paired (linear) Pearson correlation coefficients and paired Spearman's rank correlation coefficients were calculated. The Pearson coefficients show only the degree of linear correlation. Therefore, in addition to them, the Spearman's coefficients were determined, which characterize the degree of both linear and nonlinear correlations, but in terms of linear correlation they are less sensitive than the Pearson coefficients (*Tab. 3*).

For 2022 and 2023, the correlation coefficients indicated the presence of a positive linear relationship (moderate degree) between the median age and the ratio of female volunteers to male volunteers, which means that with an increase in the median age of volunteers, the number of female volunteers per 1000 male volunteers also grows. Since the previously discussed dynamics of these

indicators has been positive over time, we should expect a general increase in the number of female volunteers in Russia and all its regions.

A negative relationship for the entire period of 2022–2024 is observed between the median age of volunteers and the proportion of working-age volunteers: with increasing age, the proportion of working-age volunteers decreases (in 2022–2023 the relationship was non-linear, in 2023 it was linear). The revealed dependence allows forecasting a decrease in the proportion of working-age volunteers, since the median age of volunteers increases over time.

For 2023–2024, a moderate negative nonlinear relationship was found between the proportion of working-age volunteers and the ratio of rural volunteers to urban volunteers. Thus, an increase in the percentage of rural volunteers in total leads to a decrease in the proportion of working-age volunteers.

Due to the fact that Russia is regionally heterogeneous in most socio-demographic indicators, we conducted a statistical analysis of individual regional groups. To do this, Russian

Table 3. Pearson and Spearman correlation coefficients*

Variable	$C_{vol}, \%$	Me_{vol}, age	$\frac{F^{vol}}{M^{vol}}, \text{‰}$	$\frac{R^{vol}}{U^{vol}}, \text{‰}$	$d_{wa}^{vol}, \%$
2022					
$C_{vol}, \%$	1.000	0.221	-0.184	0.178	0.105
Me_{vol}, age	0.328	1.000	0.428	0.040	-0.293
$\frac{F^{vol}}{M^{vol}}, \text{‰}$	-0.122	0.341	1.000	-0.267	-0.283
$\frac{R^{vol}}{U^{vol}}, \text{‰}$	0.261	-0.029	-0.377	1.000	0.084
$d_{wa}^{vol}, \%$	-0.038	-0.689	-0.305	0.114	1.000
2023					
$C_{vol}, \%$	1.000	0.020	-0.127	0.086	0.174
Me_{vol}, age	-0.022	1.000	0.511	0.049	-0.299
$\frac{F^{vol}}{M^{vol}}, \text{‰}$	-0.065	0.498	1.000	-0.297	-0.311
$\frac{R^{vol}}{U^{vol}}, \text{‰}$	0.044	0.036	-0.302	1.000	0.165
$d_{wa}^{vol}, \%$	0.071	-0.740	-0.512	0.119	1.000
2024					
$C_{vol}, \%$	1.000	0.034	-0.143	-0.026	0.045
Me_{vol}, age	-0.001	1.000	0.464	-0.032	-0.817
$\frac{F^{vol}}{M^{vol}}, \text{‰}$	-0.201	0.456	1.000	-0.138	-0.601
$\frac{R^{vol}}{U^{vol}}, \text{‰}$	0.101	-0.104	-0.292	1.000	0.161
$d_{wa}^{vol}, \%$	-0.017	-0.792	-0.615	0.167	1.000
*According to Student's t-test, significant coefficients below the threshold of 0.05 are highlighted in red; paired (linear) Pearson correlation coefficients are above the main diagonal of the matrix, paired Spearman's rank correlation coefficients are below it. Calculated based on: Results of the sample survey of labor force. Available at: https://rosstat.gov.ru/folder/11110/document/13265					

regions were ranked by the growth of volunteering, and then divided into quintile groups (20% of the total). Further analysis was carried out in groups (Tab. 4).

The first quintile group included 17 regions (city of Saint Petersburg, Republic of Ingushetia, Astrakhan, Ivanovo, Penza regions, republics of Kalmykia, Crimea, Bashkortostan, Ulyanovsk Region, Republic of Mordovia, Smolensk Region, Perm Territory, Khanty-Mansi Autonomous Area, Chechen Republic, Vladimir Region, city of Sevastopol, Volgograd Region), their population was practically not engaged in volunteering ($C_{vol}, \%$) varied from 0.28 to 1.89%). However, the study showed that even there volunteering is

becoming more and more popular. Thus, in 2024, compared with 2022, there was a 1.7-fold increase in the average level of volunteering in the group. At the same time, the median age of volunteers is growing. In half of the group's regions, it was less than 36.4 years in 2022, 43.9 years in 2023, and 44.2 years in 2024. So, volunteers in the first quintile group tend to age. Also, in this group of regions, the number of female volunteers is twice or more as much as the number of male volunteers. At the same time, while in 2022 city dwellers were more engaged in volunteering, in 2023–2024, according to this indicator, the rural population prevails. In the first quintile group, in 2022, the minimum (zero) level of volunteering was recorded in the

Table 4. Dynamics of the main descriptive statistics for indicators of volunteering in Russia in 2022–2024

Indicator	Characteristics of descriptive statistics								
	Average value			Median value			Coefficient of variation, %		
	2022	2023	2024	2022	2023	2024	2022	2023	2024
First group									
$C_{vol}, \%$	0.54	0.64	0.94	0.59	0.73	0.80	64.7	58.7	50.3
Me_{vol}, age	36.96	41.02	43.29	36.37	43.86	44.20	38.4	28.5	22.6
$\frac{F^{vol}}{M^{vol}}, \text{‰}$	2316	1959	2108	1983	1583	1669	61.9	68.8	52.6
$\frac{R^{vol}}{U^{vol}}, \text{‰}$	566	1041	2082	417	737	397	95.3	86.2	271.6
$d_{wa}^{vol}, \%$	68.57	70.92	75.53	72.10	74.74	77.35	36.8	31.4	17.4
Second group									
$C_{vol}, \%$	1.45	1.87	2.25	1.40	1.63	2.26	16.5	24.4	10.4
Me_{vol}, age	39.58	43.80	45.37	39.49	44.38	43.72	20.1	15.0	13.0
$\frac{F^{vol}}{M^{vol}}, \text{‰}$	2166	2194	2913	1871	2078	2066	45.6	49.7	88.7
$\frac{R^{vol}}{U^{vol}}, \text{‰}$	587	636	697	511	431	434	84.4	95.9	132.8
$d_{wa}^{vol}, \%$	77.23	75.00	71.09	78.97	75.72	72.70	14.0	12.9	17.4
Third group									
$C_{vol}, \%$	2.15	2.95	3.31	2.15	2.99	3.34	9.4	8.3	11.8
Me_{vol}, age	42.21	42.67	42.44	40.70	42.01	42.42	9.8	10.1	8.2
$\frac{F^{vol}}{M^{vol}}, \text{‰}$	1863	2042	2104	1852	1867	2063	25.6	27.0	23.2
$\frac{R^{vol}}{U^{vol}}, \text{‰}$	611	545	379	363	405	305	122.3	99.3	81.5
$d_{wa}^{vol}, \%$	76.73	76.40	74.58	77.80	75.50	74.35	10.1	10.7	6.0
Fourth group									
$C_{vol}, \%$	3.02	4.11	4.76	2.80	4.12	4.84	13.6	13.8	9.9
Me_{vol}, age	43.16	44.28	42.67	41.12	45.34	43.84	13.9	13.4	16.2
$\frac{F^{vol}}{M^{vol}}, \text{‰}$	1980	1904	1795	1910	1850	1850	27.6	29.4	37.0
$\frac{R^{vol}}{U^{vol}}, \text{‰}$	644	778	925	425	471	755	92.8	134.8	104.1
$d_{wa}^{vol}, \%$	72.21	72.53	75.32	74.16	74.71	73.59	14.7	11.6	13.4
Fifth group									
$C_{vol}, \%$	6.04	7.54	8.18	4.65	7.51	7.39	45.0	27.8	38.8
Me_{vol}, age	45.17	42.43	44.80	44.39	41.55	43.97	16.4	16.0	8.3
$\frac{F^{vol}}{M^{vol}}, \text{‰}$	1874	1778	1989	1572	1557	1614	44.8	41.5	55.7
$\frac{R^{vol}}{U^{vol}}, \text{‰}$	1681	1005	1200	748	665	489	177.1	80.9	152.2
$d_{wa}^{vol}, \%$	72.64	77.50	74.74	75.36	76.94	76.48	18.8	12.0	11.4
Calculated based on: Results of the sample survey of labor force. Available at: https://rosstat.gov.ru/folder/11110/document/13265									

Chukotka Autonomous Area, the maximum level was in the Ulyanovsk Region (0.96%); in 2023, the minimum was in the Ivanovo Region (0.00%), the maximum was in the Orel Region (0.22%); in 2024, respectively, in the city of Saint Petersburg (0.28%) and the Volgograd Region (1.89%).

The composition of the second, third and fourth quintile groups changed every year, sometimes significantly, so the interpretation of the average values is quite difficult and we can only analyze the permanent members of the groups. For example, the Nizhny Novgorod Region was constantly present in the second group, and its level of volunteering was growing steadily (from 1.19% in 2022 to 2.26% in 2024). The third group's permanent members were the Sverdlovsk Region (the indicator rose steadily from 1.94 to 3.56%), the Rostov Region (from 2.15 to 3.62%), the Chelyabinsk Region (from 2.15 to 3.42%) and the Republic of Sakha (from 2.22 to 3.51%). For the entire period from 2022 to 2024 the fourth quintile group included the Amur Region with a level of volunteering of 2.78–4.01%, the Republic of Mari El (3.17–5.04%) and the Samara Region (3.72–4.88%). They have a steady upward trend in the level of volunteering.

The fifth quintile group included 17 Russian regions with the highest level of volunteering (Primorye Territory, Komi Republic, Bryansk Region, Karachayevo-Circassian Republic, Pskov Region, Republic of Buryatia, Vologda Region, Republic of Khakassia, Altai Territory, Belgorod, Voronezh, Tver regions, Kabardino-Balkarian Republic, Kostroma Region, Kamchatka Territory, Republic of Altai, Kurgan Region). The average level of volunteering in this group was 6.04% in 2022, 7.5% in 2023 and reached 8.2% in 2024 (in 2024, it ranged from 5.71% in the Primorye Territory to 18.88% in the Kurgan Region). The median age of the volunteers for the period of 2022–2024 was 42–45 years. There is a significant predominance of female volunteers over male volunteers in this group: 1.9-fold in 2022, 1.8-fold in 2023, and almost 2-fold in 2024. At the same time, the average number of rural volunteers per 1000 urban volunteers decreased from 1681 to 1200, with a drop to 1005 in 2023. The average proportion of working-age volunteers was in the range of 72–77%. From 2022 to 2024, in nine of

the seventeen regions volunteers were consistently active — Kostroma, Pskov, Bryansk, Tver, Vologda and Kurgan regions, republics of Buryatia, Altai and Kabardino-Balkarian Republic.

To assess the relationships for each quintile group using the 2024 data, paired (linear) Pearson correlation coefficients and Spearman's rank correlation coefficients were calculated (*Tab. 5*). According to calculations, in these groups, as well as in general, there is no relationship between the level of volunteering and age, gender, or place of residence, except for the third group with a noticeable negative relationship with the gender ratio of volunteers (the Pearson and Spearman coefficients were approximately -0.7).

In the groups, there is a linear correlation between the proportion of working-age volunteers and the median age of volunteers (in all the groups, the negative linear relationship is very high (0.8), except for the third group with a moderate degree of correlation). Also, in some of the groups, a negative relationship was found between the proportion of working-age volunteers and the ratio of female volunteers to male volunteers: in the first group, there was a moderate degree of linear relationship, in the second and fourth — a high degree of linear relationship, in the fifth group — a very high nonlinear relationship. In the fourth group, a moderate degree of negative linear correlation was recorded between the number of women per 1000 men and the ratio of rural volunteers to urban volunteers, which means that an increase in the proportion of women in the total number of volunteers occurs mainly in regions with a high proportion of urban volunteers. There is also a positive correlation between the median age of volunteers and the ratio of women to men (linear in the second and fourth groups and nonlinear in the fifth group). Thus, an increase in the proportion of women among volunteers leads to an increase in the median age.

Table 5. Pearson and Spearman correlation coefficients based on 2024 data*

Variable	$C_{vol}, \%$	Me_{vol}, age	$\frac{F^{vol}}{M^{vol}}, \%$	$\frac{R^{vol}}{U^{vol}}, \%$	$d_{wa}^{vol}, \%$
First group					
$C_{vol}, \%$	1.000	0.215	-0.156	-0.119	-0.323
Me_{vol}, age	-0.039	1.000	0.460	-0.009	-0.806
$\frac{F^{vol}}{M^{vol}}, \%$	0.074	0.475	1.000	-0.177	-0.557
$\frac{R^{vol}}{U^{vol}}, \%$	-0.244	-0.273	-0.419	1.000	0.187
$d_{wa}^{vol}, \%$	-0.115	-0.701	-0.728	0.408	1.000
Second group					
$C_{vol}, \%$	1.000	-0.239	-0.120	-0.258	0.338
Me_{vol}, age	-0.142	1.000	0.761	-0.125	-0.923
$\frac{F^{vol}}{M^{vol}}, \%$	-0.108	0.529	1.000	-0.230	-0.767
$\frac{R^{vol}}{U^{vol}}, \%$	0.005	-0.044	-0.319	1.000	0.073
$d_{wa}^{vol}, \%$	0.282	-0.713	-0.583	0.213	1.000
Third group					
$C_{vol}, \%$	1.000	-0.233	-0.674	-0.256	0.149
Me_{vol}, age	-0.292	1.000	0.141	-0.022	-0.485
$\frac{F^{vol}}{M^{vol}}, \%$	-0.679	0.174	1.000	0.238	-0.330
$\frac{R^{vol}}{U^{vol}}, \%$	-0.147	-0.005	0.147	1.000	-0.203
$d_{wa}^{vol}, \%$	0.147	-0.500	-0.240	-0.238	1.000
Fourth group					
$C_{vol}, \%$	1.000	0.280	-0.030	0.150	-0.146
Me_{vol}, age	0.159	1.000	0.549	-0.038	-0.851
$\frac{F^{vol}}{M^{vol}}, \%$	-0.022	0.645	1.000	-0.487	-0.724
$\frac{R^{vol}}{U^{vol}}, \%$	-0.015	0.022	-0.267	1.000	0.258
$d_{wa}^{vol}, \%$	-0.069	-0.919	-0.743	0.115	1.000
Fifth group					
$C_{vol}, \%$	1.000	-0.104	-0.157	0.153	0.141
Me_{vol}, age	-0.336	1.000	0.240	-0.238	-0.930
$\frac{F^{vol}}{M^{vol}}, \%$	-0.343	0.488	1.000	-0.289	-0.415
$\frac{R^{vol}}{U^{vol}}, \%$	0.145	-0.331	-0.265	1.000	0.256
$d_{wa}^{vol}, \%$	0.289	-0.919	-0.669	0.211	1.000
<p>*Paired (linear) Pearson correlation coefficients are above the main diagonal of the matrix, paired Spearman's rank correlation coefficients are below it. According to Student's t-test, significant coefficients below the threshold of 0.05 are highlighted in red.</p> <p>Calculated based on: Results of the sample survey of labor force. Available at: https://rosstat.gov.ru/folder/11110/document/13265</p>					

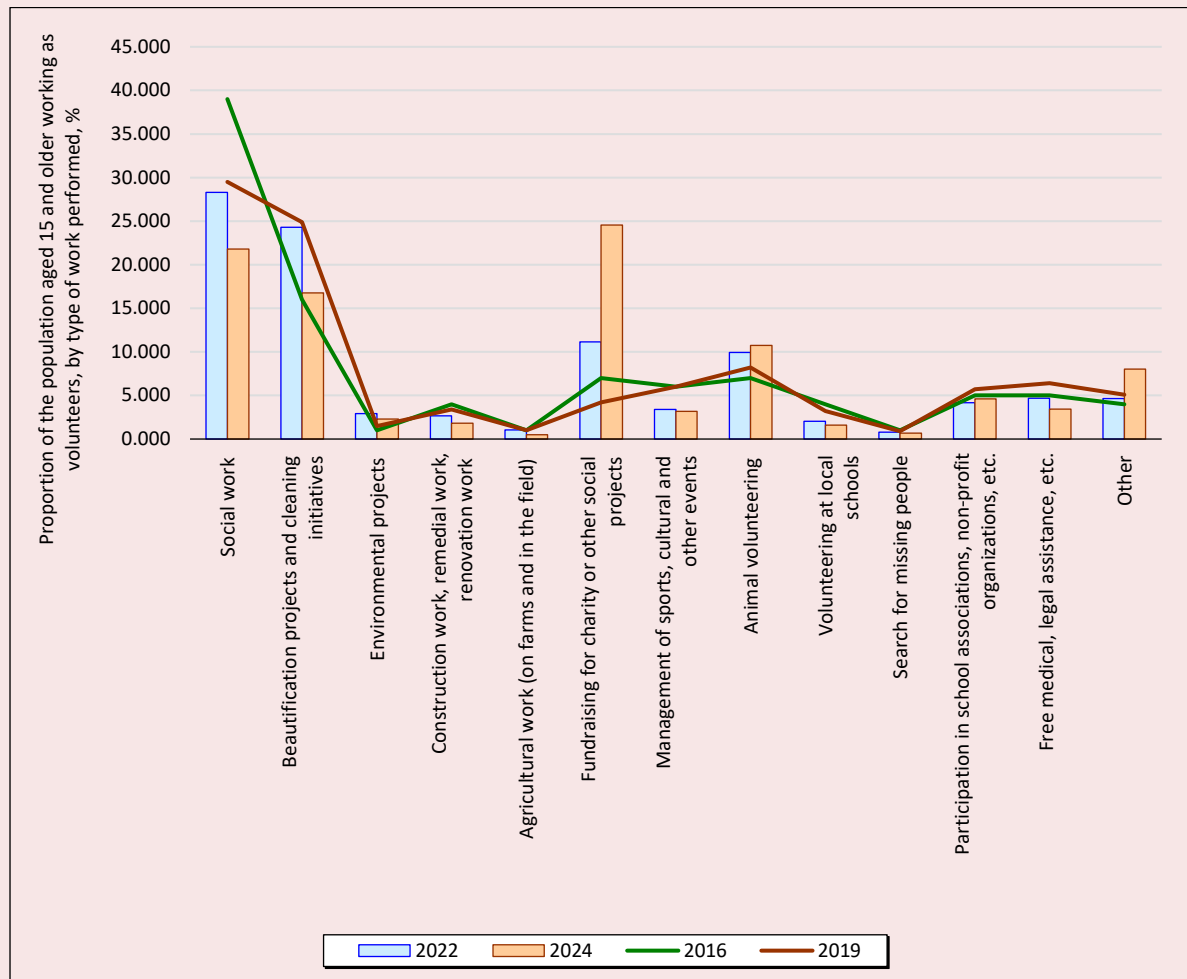
Table 6. The results of regression analysis by quintile groups

Regression model	Statistical characteristics of the model and the result
First group	
$\hat{d}_{wa}^{vol} = 122.62 - 1.09Me_{age_i}$ $R^2=0.650$ $R_{adj}^2 = 0.627$	$F(1, 15) = 27.9; t_0 = 13.44; t_1 = -5.28$ with 15 degrees of freedom With an increase in the median age of volunteers by 1 year, the proportion of working-age volunteers will decrease by 1.09%
Second group	
$\hat{d}_{wa}^{vol} = 159.32 - 1.94Me_{age_i}$ $R^2=0.853$ $R_{adj}^2 = 0.843$	$F(1, 15) = 86.8; t_0 = 9.55; t_1 = 0.21$ with 15 degrees of freedom With an increase in the median age of volunteers by 1 year, the proportion of working-age volunteers will decrease by 1.94%
Fourth group	
$\hat{d}_{wa}^{vol} = 126.02 - 0.95Me_{age_i} - 0.01 \frac{F^{vol}}{M^{vol}_i}$ $R^2=0.819$ $R_{adj}^2 = 0.794$	$F(2, 14) = 31.8; t_0 = 7.256; t_1 = 0.199; t_2 = 0.002$ with 14 degrees of freedom With an increase in the median age of volunteers by 1 year, the proportion of working-age volunteers will decrease by 0.95%, and with an increase in the number of female volunteers per 1000 male volunteers, the proportion of working-age volunteers will decrease by 0.01%
Fifth group	
$\hat{d}_{wa}^{vol} = 170.83 - 2.15Me_{age_i}$ $R^2=0.864$ $R_{adj}^2 = 0.855$	$F(1, 15) = 95.5; t_0 = 17.31; t_1 = -9.77$ with 15 degrees of freedom With an increase in the median age of volunteers by 1 year, the proportion of working-age volunteers will decrease by 2.15%
Notes: R^2 – coefficient of determination; R_{adj}^2 – adjusted coefficient of determination; F – Fisher’s test (at the significance level of 0.05); t_0, t_1, t_2 – regression coefficients based on Student’s t-test (at the significance level of 0.05). The analysis of regression residuals in each group showed their normality (based on the Shapiro – Wilk test) and homoscedasticity (Goldfeld – Quandt test). Calculated based on: Results of the sample survey of labor force. Available at: https://rosstat.gov.ru/folder/11110/document/13265	

Regression analysis allowed us to quantify the relationship between the indicators. *Table 6* shows significant regression models of the correlation between the proportion of working-age volunteers and the median age of volunteers for the first, second, and fifth quintile groups (one-factor models), as well as a model of the correlation between the proportion of working-age volunteers and both the median age of volunteers and the number of female volunteers per 1,000 male volunteers for the fourth group (two-factor model).

A review of the volunteering structure by type of work showed the following. In 2022, the top priority was social work, its share was 28.3%, while in 2024 it accounted for only 21.8% of the total performance, and the direction “Fundraising for charity or other social projects” was given priority (in three years its share increased almost 2.2-fold and reached 24.5%). Such types of activity as “Beautification projects and cleaning initiatives” (2022 – 24.3%, 2024 – 16.8%) and “Animal volunteering” (2022 – 9.9%, 2024 – 10.7%)

Figure 2. The structure of Russian volunteering by type of work for 2016, 2019, 2022, 2024



Calculated based on: Results of the sample survey of labor force. Available at: <https://rosstat.gov.ru/folder/11110/document/13265>

were also dominant in 2022–2024. To determine the statistical significance of these structural differences, the V.M. Ryabtsev index was calculated. Its value was 0.216 and it is within the range of 0.151–0.300 which indicates a “significant level of structural differences”. So, over the past three years, the types of volunteer work have changed

dramatically. Similar calculations were carried out by statisticians in 2020⁸. The composition of the top-priority and dominant groups have not changed much, but their proportions differ significantly. The Ryabtsev coefficient (2019/2016) was 0.159, which also indicated significant structural differences (Fig. 2).

⁸ Development of volunteering in Russia: Statistical analysis. Moscow: Analytical Center under the Government of the Russian Federation, Data Analytics, December, 2020.

Conclusion

Based on the conducted research on volunteering in Russia and its regions in 2022–2024, the following conclusions can be drawn:

- as a rule, people of working age (41–44 years old) who have a full-time job, i.e. are employed in the economy, are engaged in volunteering in Russia;
- there is a positive trend in the number of unemployed volunteers, especially among unemployed men living in cities and small towns;
- both in Russia in general and in the regions, the proportion of female volunteers is increasing;
- volunteers' labor force participation and employment rates are increasing during the period of 2022–2024;
- in Russia in general, there is no correlation between the level of volunteering and volunteer's gender, place of residence, or age;
- in 2024, the influence of the median age of volunteers on the ratio of women to men among volunteers becomes noticeable;
- in 2024, there is a negative relationship between the number of working-age volunteers (relative) and their median age in the first, second and fifth quintile groups, and there is a negative relationship between the proportion of working-age

volunteers and both the median age of volunteers and the ratio of women to men in the fourth quintile group.

Thus, the hypothesis put forward at the beginning of the study that there is a relationship between the level of volunteering in Russia and a number of demographic indicators (the median age of volunteers, the ratio of female volunteers to male volunteers, the ratio of rural volunteers to urban volunteers, the proportion of working-age volunteers) is rejected.

The volunteer work is undoubtedly very important for Russia, and it is going from strength to strength. In this regard, the surveys conducted by Rosstat on the activities of volunteers should be appreciated. However, the data provided by the state statistical authorities are clearly insufficient for a thorough and comprehensive analysis of volunteering. The program of sampling inquiries about volunteering requires development in many aspects of volunteer work, so we can recommend that Rosstat include the following criteria in the inquiries: education, marital status, primary employment, income of the volunteer; reasons for choosing this type of volunteer work; person's motivation to engage in volunteering.

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The Importance of Corporate Social Services for the Sustainable Development of the Company

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Abstract. In the context of modern global challenges such as social inequality, environmental degradation and limited availability of social services, the importance of corporate social policy is increasing. Companies strive not only to enhance financial stability, but also to create favorable conditions for their employees and society as a whole. In this context, corporate social responsibility (CSR) plays a special role, including corporate philanthropy, social initiatives, and infrastructure development to improve the quality of life. The article analyzes key aspects of CSR, in particular corporate philanthropy, clarifies the content of this concept, and focuses on the experience of its implementation by PJSC Tatneft in the framework of CSR, on the basis of which a sociological research program has been formed. To identify the factors determining the success of social policy in the provision of corporate charitable services, calculations were performed in the R environment through command queries. We propose a model that helps not only to quantify the current level of social policy, but also identify key areas for its improvement in order to increase employee satisfaction. The paper examines the impact of digitalization on the effectiveness of corporate philanthropy: in the context of the digital transformation of the corporate environment, new management approaches are being formed, which contributes to scalability and integration into long-term sustainable development strategies. The methodological basis of the research includes analysis of scientific literature, regulatory documents and practical cases. We also use economic and statistical methods, correlation and regression analysis, scenario forecasting to assess the prospects for the development of corporate charitable services. Findings of the research confirm the positive impact

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of social policy on the long-term development of enterprises and the formation of a sustainable business model. The recommendations we propose can be useful for companies seeking to improve their corporate social responsibility system and implement effective corporate philanthropic initiatives.

Key words: corporate social responsibility, corporate philanthropy, sustainable development, charity, social policy, volunteerism, PJSC Tatneft, digitalization, corporate social services.

Acknowledgment

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Introduction

In the modern world, society faces numerous global challenges, such as environmental issues, lack of fresh water, and access to quality education and healthcare. In this regard, the 17 Sustainable Development Goals (SDGs)¹ formulated by the United Nations (UN), which are designed to solve key social and economic problems of humanity, are of particular importance. Companies are increasingly realizing the need to focus not only on achieving financial results, but also on developing social policies aimed at improving the well-being of employees and society as a whole (Lu, 2021).

In April 2006, the United Nations developed the Principles for Responsible Investment which recommend that investors voluntarily abandon investments in those companies that do not meet environmental, social, and managerial requirements, as well as the standards of socially responsible business (Kuzina, Chernysheva, 2015).

Business invests heavily in the development of social and corporate philanthropy programs, support for territories and local communities, guided by the international standard ISO 26000:2010 on social responsibility and its Russian counterpart GOST R ISO 26000-2012². Many large companies

issue reports on their achievements in this field (Tokarev et al., 2025).

In the framework of research by A. Boldyreva and S. Sarkisova³, corporate social responsibility (CSR) is implemented, among other things, through the provision of corporate philanthropy services. Accordingly, the economic development of many companies is characterized by the processes of formation and diverse use of corporate charitable services, the main directions of which are corporate charitable programs, comprehensive measures for the development of the organization's personnel, environmental initiatives, volunteering, participation of firms in political processes with socially significant goals and other similar initiatives (Schmidt, 2025).

Russian researchers, for example O.B. Vakhrusheva and N.N. Khakhonova emphasize that the successful implementation of corporate philanthropy initiatives contributes to the sustainable development of regions (Vakhrusheva, Khakhonova, 2022).

The introduction of digital technologies allows enterprises to effectively coordinate charitable initiatives, increase their transparency and

¹ The United Nations. Peace, dignity and equality on a healthy planet. Available at: <https://www.un.org/ru/>

² GOST R ISO 26000-2012. Guide to social responsibility. Available at: <http://protect.gost.ru/v.aspx?control=7&id=181382> (accessed: 25.07.2025).

³ Boldyreva A., Sarkisova S. All about the leaders of 2021: Based on the materials of the project "Leaders of Corporate Charity – 2021". Available at: https://rspp.ru/upload/content/e00/4j0scs61axbysstxw12ttt244zeu3pqj/Vse_o_liderakh_2021.pdf (accessed: 25.07.2025).

accessibility (Belina, 2023). E. Shergova⁴ points out that Charity Choice, the leading British aggregator platform for non-profit organizations, unites over 160,000 charitable foundations. According to N. Zazaeva and S. Fedyunina, databases of all participants in charitable activities are being formed in the digital environment, which greatly simplifies their search and interaction with each other (Zazaeva, Fedyunina, 2021).

This is especially relevant in the context of the concept of sustainable development, discussed by many authors (Ashurov et al., 2024; De Almeida Barbosa Franco, 2024; Quaye et al., 2024; Obeng et al., 2025, etc.), who point out the need to integrate social and philanthropy programs into corporate strategies to achieve global sustainable development goals.

Modern research on corporate philanthropy is based on the analysis of the relationship between corporate social responsibility, digital technology and sustainable development. The experience of the social policy of PJSC Tatneft's enterprises in this context can contribute not only to the promotion of corporate philanthropy, but also to the creation of favorable conditions for the region as a whole.

Literature review

Philanthropy is developing most actively in the countries that are members of the G7 political and economic alliance (Demyanova, Schmidt, 2025), but we should note that in Russia organizations more and more often consider social investments aimed at creating public value as a type of corporate charitable services (Yaromenko, Ostrovskaya, 2024): an increasing number of companies associate corporate social responsibility not with forced expenses, which serve as a kind of "permission to operate", but with voluntary charitable initiatives,

aimed at creating value for both business and society. For comparison, according to the Report on Social Investment in Russia⁵, in 2014, 60.3% of the surveyed companies (the survey was conducted among the leaders of corporate social responsibility) perceive their social costs as a partial replacement for government spending, in 2019 the number of such companies decreased to 58%⁶.

We should note that there is no consensus in the specialized literature on the essence and content of corporate philanthropy. T.V. Chubarova understands such services as "any services of non-governmental business entities resulting from the implementation of corporate social responsibility concept" (Chubarova, 2011, p. 27). In our opinion, this definition is rather general and does not fully reflect the specific features of corporate philanthropy as an economic concept. In addition, the concept of "corporate social responsibility" requires specification, which is also quite controversial.

I.D. Babakov considers the company's charitable services as "a factor in maximizing the company's market value by increasing its reputational capital as a result of implementing social programs" (Babakov, 2023). In our opinion, this definition is also quite general: in particular, the growth of the reputational capital of modern companies can occur not only as a result of the provision of corporate charitable services, but also due to many other factors such as advertising, PR, targeted increase in transparency of the corporate governance system of the organization, etc.

I.V. Malofeev, in fact, identifies the content of charitable services provided by companies with the latest charitable programs and volunteer initiatives (Malofeev, 2023). R. Nelson and S. Winter share a

⁴ Shergova E. How Coca-Cola, Netflix and other giants are engaged in charity: Major trends in CSR in the world and Russia. Available at: <https://www.forbes.ru/forbeslife/413169-kak-coca-cola-netflix-i-drugie-giganty-zanimayutsya-blagotvoritelnostyu-glavnye?ysclid=mdhq03i22t642096091> (accessed: 25.07.2025).

⁵ Report on social investments in Russia 2014: Toward creating value for business and society. Available at: <https://edu.dobro.ru/upload/iblock/bc6/na63odyo1vdpsulj320aqydx2ic10t5r.pdf> (accessed: 25.07.2025).

⁶ Report on social investments in Russia – 2019. Available at: https://gsom.spbu.ru/images/A_BANNERS/doklad_o_social_nyh_investiciyah_v_rossii_-_2019.pdf?ysclid=mdh92q2k5p879293708 (accessed: 25.07.2025).

similar understanding of the essence of corporate philanthropy of modern companies. These researchers do not exclude that the company's corporate charitable services may be partially reimbursable for the recipients.

L.A. Polishchuk understands corporate philanthropy as “activities for the development and improvement of the human capital of employees of organizations and their family members, carried out on the basis of the implementation of special public programs and initiatives of private structures” (Polishchuk, 2014). In the definition above, the circle of recipients of company services is limited only to employees of enterprises and their family members, which does not seem entirely correct.

Based on a critical analysis of the most typical definitions presented in the specialized literature, we have clarified the content of “corporate philanthropy” as an economic concept.

In our opinion, corporate charitable services are formed and provided by companies, including in whole or in part on a gratuitous basis (in some cases co-financed by recipients), aimed at developing the main factor of the company's production – its staff (investments in a social package: financial support for staff, benefits for education, medical care, mortgage, etc. comprehensive measures for the development of the organization's personnel, charity programs, volunteer activities), as well as focused on improving the company's social infrastructure and ultimately aimed at achieving meaningful congruence of financial, economic, environmental and social activities of the business entity.

The distinctive features of the definition of corporate philanthropy specified by the author are as follows:

- unlike some of the approaches discussed above, it is proposed to consider not only employees of the organization, but also third-party actors as recipients of corporate philanthropy services;

- the focus is on corporate philanthropy services as a factor in ensuring meaningful congruence of financial, economic, environmental and, in fact, social activities of the company, which, accordingly, helps to reduce ESG risks and increase the reputation of the organization on this basis.

It is noted that the company's corporate charitable services may be partially reimbursed for the recipients.

Depending on the recipient groups, corporate charitable services are differentiated into those provided to third-party recipients and company personnel as part of corporate social package.

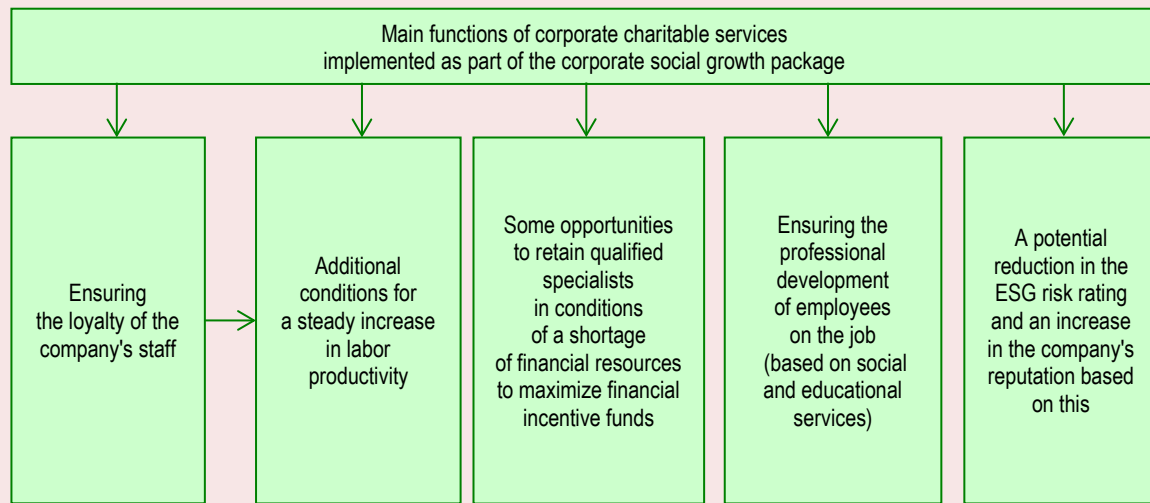
The theory and methodological tools for the formation and use of corporate social package have been developing since the 1970s. In particular, these issues are considered in the research of I. Ansoff, I. Adizes, E. Denison and a number of other scientists. The main functions of this type of corporate charitable services are shown in *Figure 1*.

Thus, corporate charitable services provided as part of the company's social package, by ensuring the growth of employee loyalty and improving their skills, provide additional opportunities for productivity growth and, as a result, in case of a relatively transparent capital market, for the capitalization of the company as a whole. The latter task can also be achieved by providing effective and comprehensive corporate charitable services aimed at recipients external to the company.

The whole variety of corporate charitable services provided within the framework of the corporate social package, depending on the subjects of their provision, in turn, can be differentiated into the following groups:

- corporate charitable services for employees provided by the company's own efforts or its subsidiaries, for example, departmental clinics, resorts, health centers;
- corporate charitable services provided by the company in cooperation with external actors (for

Figure 1. Main functions of corporate charitable services for company personnel (implemented as part of corporate social package)



Compiled according to: (Mueller, 2007; Soldatova, 2024; Aldrich, 2020).

example, by attracting external organizations of the additional professional education system for the implementation of social and pedagogical services within the corporate university);

- by paying the company for services within the framework of corporate social package provided by third-party organizations (VHI system services funded by corporate structures for employees).

Materials and methods

The aim of the study is to form a sociological research program focused on a systematic analysis of corporate charitable services provided by the company as part of the implementation of the CSR policy.

Main tasks:

- approbation of the developed sociological research based on the materials of the Tatneft Group with a sample size of 10 thousand respondents;
- comprehensive assessment of the nature of corporate philanthropy and the development of proposals for its improvement at the enterprises of the Tatneft Group, taking into account modern

challenges, the needs of employees and the principles of sustainable development.

Today, Tatneft is one of the largest Russian public companies with a market capitalization of 1.65 trillion rubles in 2023. It is one of the vertically integrated and socially oriented companies, which dynamically develops oil and gas production, oil refining, petrochemical, tire business, network of gas stations, composite cluster, electric power industry, development and production of equipment for the oil and gas industry and a block of service structures⁷.

To achieve the goals and solve research tasks, a comprehensive methodological approach is used, including both quantitative and qualitative methods of analysis.

1. Analysis of scientific literature and regulatory legal acts. The research begins with a study of the theoretical foundations of social policy, corporate social responsibility and corporate social services. The works of Russian and foreign authors

⁷ Official website of PJSC Tatneft. Available at: <https://www.tatneft.ru/o-kompanii> (accessed: 25.07.2025).

are considered, as well as legal acts regulating the social policy of enterprises in Russia. This method allows us to identify the main trends and directions of social policy development.

2. A sociological survey that includes questions aimed at identifying the level of awareness, engagement and satisfaction of employees with corporate charitable services provided by the company.

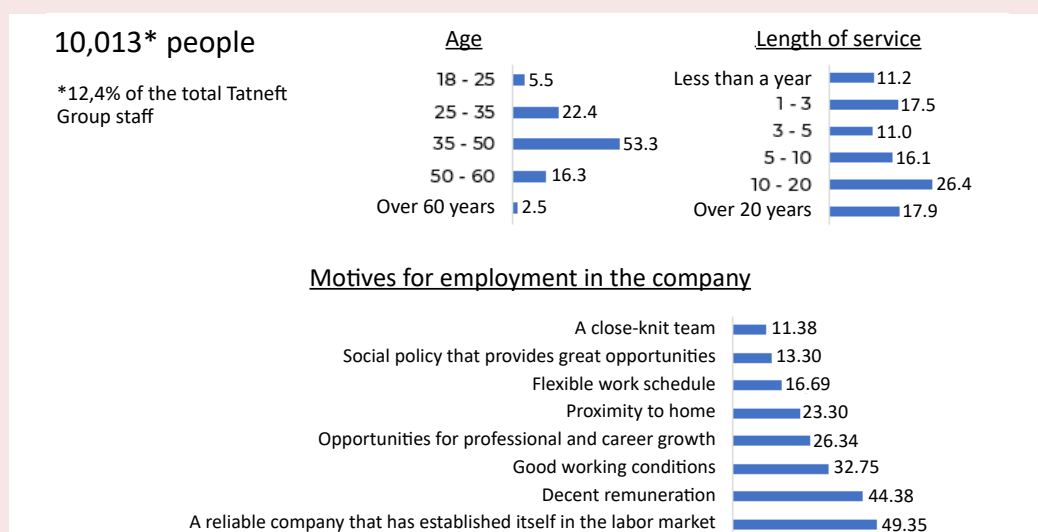
3. Statistical data analysis. To assess the significance of the identified factors, quantitative methods were used, including the calculation of p-value values using Pearson's chi-squared test and Cram r's V, which makes it possible to establish the strength of the relationship between variables. In addition, a mathematical model of dependence was built, and calculations were performed based on the "confusion matrix", which ensures the objectivity and validity of the conclusions.

The research is aimed at creating scientifically substantiated recommendations that contribute to the development of corporate social responsibility of an enterprise through its corporate charitable services.

Results

In November 2024, a questionnaire survey was conducted, in which 10,000 employees (from 15 structural divisions of PJSC Tatneft and more than 100 enterprises of the Tatneft Group located in the Russian Federation) participated on condition of anonymity, which is 12.4% of the total number of employees (*Fig. 2*). This volume of the sample provides a high degree of representativeness of the results, and its socio-demographic structure corresponds to the characteristics of the general population, which confirms the reliability of the data obtained. The high level of membership in the trade union organization (87.5%), the predominance of employees with higher education (68.3%), as well as a significant proportion of specialists who confirm the strategic importance of corporate social policy aimed at meeting the needs of staff through the implementation of corporate charitable services. This data allows the company to adjust the relevant activities, focusing on the real request of employees, as well as take into account their motivational expectations when forming a further development strategy.

Figure 2. Portrait of the survey respondent, % of the total amount of respondents



Source: own compilation.

Volunteering is a significant area of corporate philanthropy. Data analysis demonstrates an impressive potential for the development of volunteer initiatives among the company's employees (Dempsey-Brench, Shantz, 2022).

At the moment, 40.5% of the staff are actively involved in volunteer activities, and with increasing length of service, engagement increases: among employees with more than 20 years of experience, this figure reaches 47% (*Fig. 3*). There is also a positive correlation with the level of education: the most active are employees with basic secondary education (46.3%), and the share of participants among specialists with higher education is 39–43%.

Participation in volunteer activities depends on the age, gender, and professional category of employees. Employees aged 35–50 are, on average, the least actively involved in the implementation of the organization's volunteer programs: apparently, this is caused by a lack of time and other resources due to active work in terms of career development, the need to provide for the family, etc. The greatest

activity in volunteer initiatives is noted among employees over 50 years old, especially in the groups aged 50–60 years (44.8%) and over 60 years of age (45.5%). This may be due to the availability of more free time and the desire of this age group to be socially useful. M.A. Okun suggests that some older people often use volunteering as a strategy to maintain their self-esteem (Okun, 1994). The high level of involvement of employees of pre-retirement and retirement age also indicates a good level of their awareness of the corporate volunteer programs of PJSC Tatneft and their awareness of their own social responsibility. Representatives of this age group actively participate in volunteer activities, which underlines their willingness to support corporate initiatives and make a significant contribution to the development of the company's social projects.

Volunteering allows professionals to develop competencies, gain experience, and establish connections that can lead to higher positions in the company (Pound, Moore, 2004).

Figure 3. Participation in volunteering in the company's corporate philanthropy system, % of respondents

Type of volunteering	18-25	25-35	35-50	50-60	Over 60	Woman	Man	Manager	Specialist	Employee	Worker
Environmental volunteering	18.2	22.6	21.8	26.9	29.0	24.0	21.6	29.4	25.4	28.2	17.7
Social volunteering	12.0	10.9	11.2	13.7	14.5	12.8	10.6	15.7	12.6	10.9	9.7
Sports volunteering	14.6	14.6	7.8	7.1	3.9	7.2	11.9	13.3	9.9	6.5	8.3
Event volunteering	3.3	4.3	3.6	4.3	5.9	3.3	4.5	6.0	2.5	2.4	3.3
Patriotic volunteering	4.2	2.5	2.8	4.0	7.5	2.2	4.1	4.7	4.6	3.4	5.2
Donorship	6.2	7.2	4.1	3.8	2.4	2.8	2.4	5.3	4.8	4.1	4.3
Cultural volunteering	7.7	6.6	3.9	3.8	2.4	4.8	4.4	8.0	4.4	3.7	2.3
Educational volunteering	3.6	2.6	2.4	3.0	2.4	3.9	5.7	4.6	2.7	2.0	2.1
Volunteering in medicine	3.3	0.8	0.8	0.5	0.8	0.7	1.1	0.8	0.6	1.0	1.3

Source: own compilation.

Environmental volunteering is the most popular area among all analyzed groups of Tatneft employees. This is due to the implementation of large-scale environmental programs, such as clean-up days, tree planting, clearing the banks of rivers and lakes, as well as the transfer of materials for recycling.

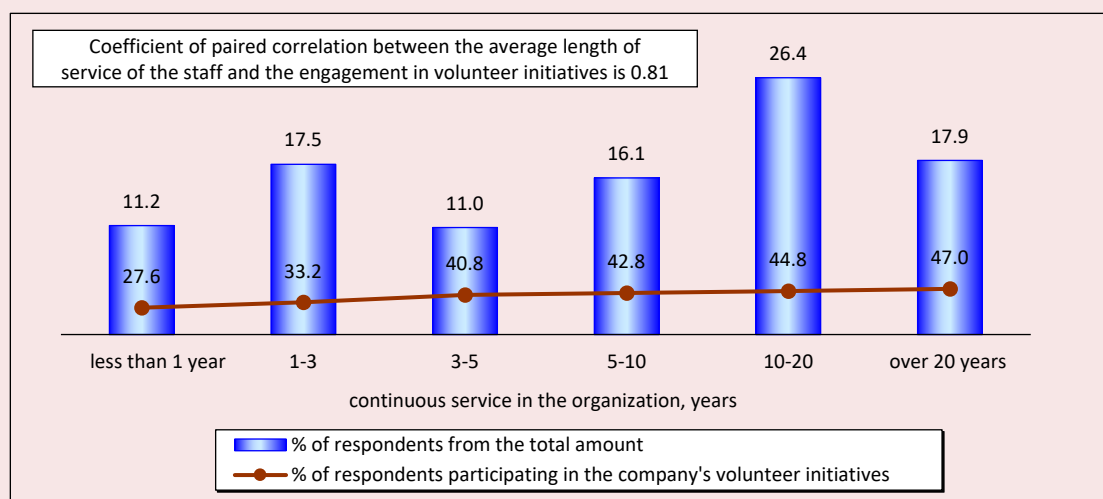
The results of a study by S. Puiu and M.T. Udriștioiu on the example of Romania show a direct positive relationship between leadership support and environmental volunteering, as well as between the latter and the well-being and productivity of workers (Puiu, Udriștioiu, 2024). Environmental volunteering is also of great importance among Russian residents (Kagirova, 2024). According to a TASS study, environmental volunteering turned out to be well known to Russians: a total of eight out of ten are aware of it (82%), and 33% of respondents have already participated in such activities⁸.

We should note that, on average, the level of volunteer activity in the field of corporate charitable

services of PJSC Tatneft significantly exceeds the average figures for the Russian industrial sector. In 2023, only 11.7% of the country's industrial workers participated in volunteer initiatives⁹.

In addition, we have identified a significant direct correlation between the length of service in the company and the engagement of employees in volunteer programs (*Fig. 4*). In our opinion, this trend is explained by a steady increase in the social responsibility of employees as they accumulate work experience, which reflects an increase in their social identification with the company's values and priorities, including its social policy. However, according to a research by H.P.Y. Qvist and M.D. Munk, the economic benefits of volunteer work experience decrease depending on professional experience in the labor market. For people with more than six years of professional experience in the labor market, the economic benefits of volunteer work experience are negligible (Qvist, Munk, 2018).

Figure 4. Differentiation of the proportion of employees of PJSC Tatneft involved in volunteer activities, depending on the length of continuous work in the organization, % of respondents



Source: own compilation.

⁸ VCIOM: 80% of surveyed Russians consider the help of environmental volunteers relevant to them. Available at: <https://tass.ru/obschestvo/20633565> (accessed: 25.07.2025).

⁹ Basov N.F. (2025) Fundamentals of social work: Textbook for universities. Moscow: Yurait.

The main factors limiting the participation of Tatneft employees in volunteer initiatives within the framework of the corporate philanthropy system are the lack of time and resources to participate in such activities, as well as a low level of awareness about the characteristics and specifics of the company's volunteer programs in general.

Charity as a social service is a systematic activity aimed at helping people in need through voluntary contributions and initiatives. This process is an important element of social policy that contributes to improving the quality of life and social integration of vulnerable groups.

An analysis of the data presented in *Figure 5* shows that 50.8% of Tatneft's employees participate in charitable activities.

According to N. Zazaeva and S. Fedyunina, digital technologies have significantly transformed the system of corporate charitable services, creating an open space for mass communications (Zazaeva, Fedyunina, 2021).

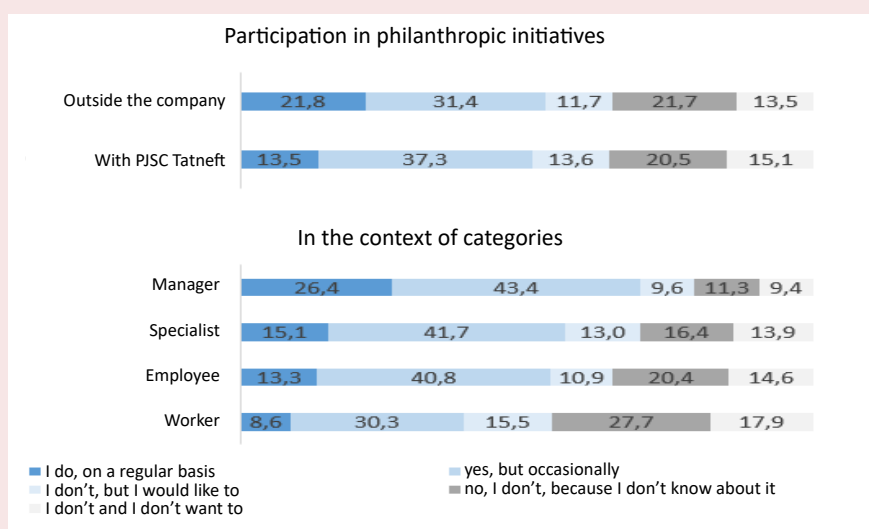
Respondents recognized corporate information systems, the website and the mobile application of

PJSC Tatneft as the most effective sources of information about philanthropy, as well as the transmission of information by executive staff at briefings and meetings.

Figure 6 shows that the majority of respondents are most satisfied with the activities of Tatneft's trade union structure in terms of the latter's co-management of the provision of corporate charitable services, as well as the corporate organization of VHI programs. The level of satisfaction with various areas of social policy of PJSC Tatneft demonstrates a generally positive assessment on the part of the respondents. At the same time, according to the majority of respondents, the organization of grant support in the Tatneft's social policy system, as well as activities on the formation of preschool education systems for the children of employees of the enterprise (departmental kindergartens) and support for veterans of the corporate structure are not entirely satisfactory, which may indicate a lack of awareness of employees about these initiatives.

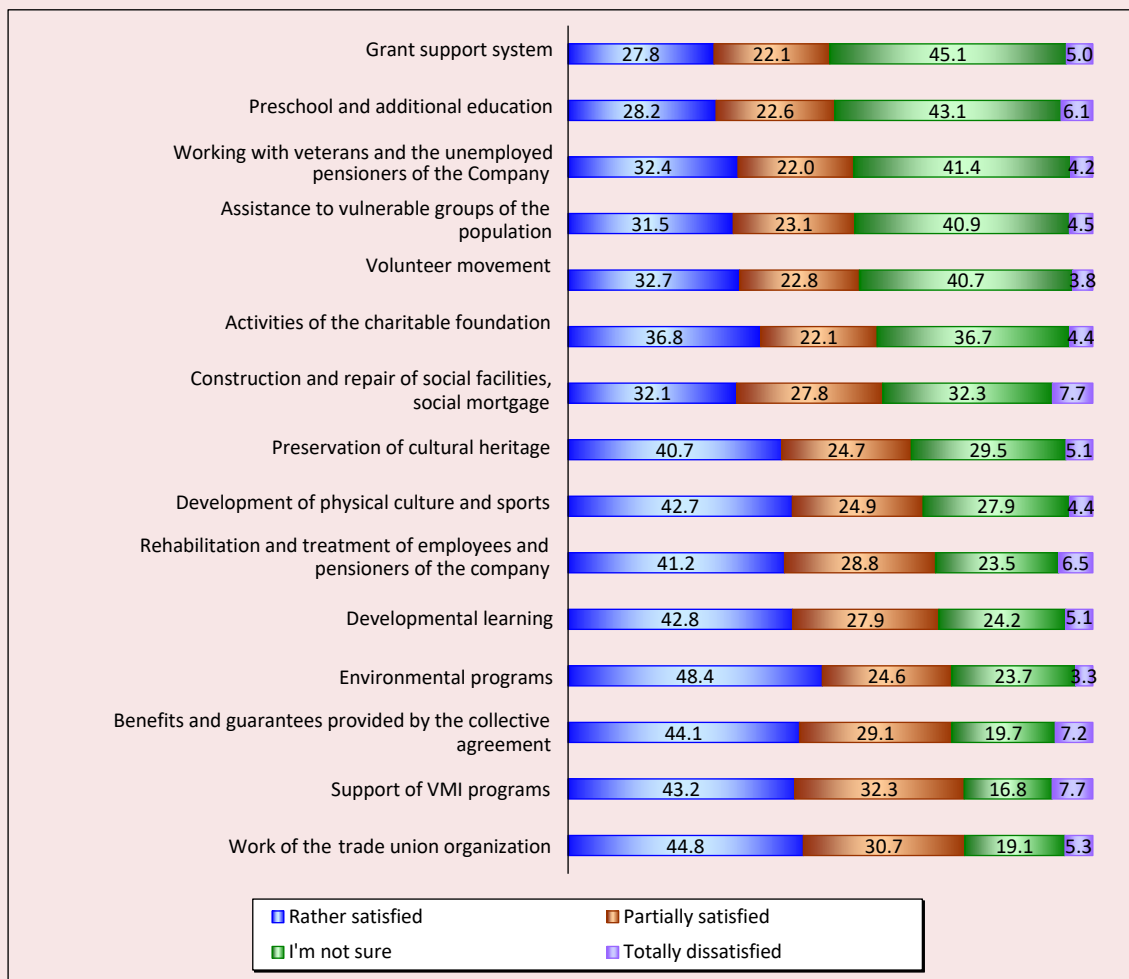
As shown in *Figure 7*, from the point of view of further improving the provision of corporate

Figure 5. Participation in charitable activities, within the framework of the general system of providing corporate charitable services by the company, % of respondents



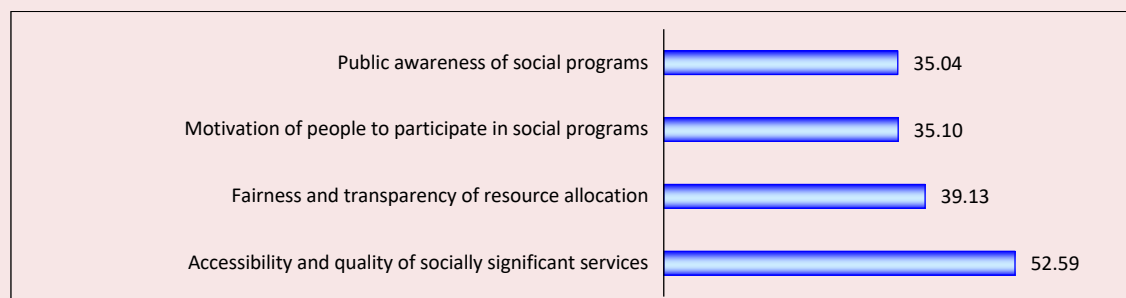
Source: own compilation.

Figure 6. Satisfaction of respondents with certain types of corporate charitable services of PJSC Tatneft, % of respondents



Source: own compilation.

Figure 7. Respondents' opinion on the main factors of ensuring the effectiveness of the provision of corporate charitable services by PJSC Tatneft, % of respondents



Source: own compilation.

charitable services by PJSC Tatneft, the most significant factors, in the opinion of respondents, are improving the quality of such services, ensuring their accessibility to the widest possible categories of staff, as well as increasing transparency in the provision of this type of services. The introduction of new communication strategies and more active involvement of employees in the process of developing philanthropy programs contribute to improving their effectiveness and perception by the staff.

The respondents also highlighted the digitalization of the process of providing corporate charitable services. In addition, when answering this question in the questionnaire we designed, some respondents identified such growth factors for the potential effectiveness of providing corporate charitable services to PJSC as the need to increase the customer orientation of this type of service, as well as the need to geographically expand the range of corporate charitable services that are not provided to a sufficient extent in Tatneft's divisions, areas remote from the center of the company's headquarters, located outside the Republic of Tatarstan.

To identify the success of social policy in the provision of corporate charitable services, we performed calculations in the R environment through command queries.

The key indicator that helps to make an objective assessment of the effectiveness of the company's social policy is the question "How do you assess the social policy pursued by PJSC Tatneft as a whole?". This indicator is a metric of the success of the company's social policy.

In order to identify the factors determining the success of social policy in the provision of corporate charitable services, responses to the question "In your opinion, which of the following has a greater impact on the effectiveness of social policy (involvement of company employees in the social

policy system)?" were analyzed, which allowed us to identify significant aspects that shape the perception of social policy among staff; we also analyzed responses to the question "Are you satisfied with the financial assistance system provided under the collective agreement?", assessing the degree of employee satisfaction with financial support, which can also affect the perception of the effectiveness of corporate charitable services provided. The statistical analysis conducted to identify the significance of these factors is presented in *Table 1*.

The results of the analysis confirm that the effectiveness of the company's social policy is indeed determined by the selected factors. To identify the direction of the relationships, a matrix diagram was used (*Fig. 8*), in which the size of the rectangles reflects the frequency of the observed combinations of values, and their color scheme indicates the statistical significance of the relationships.

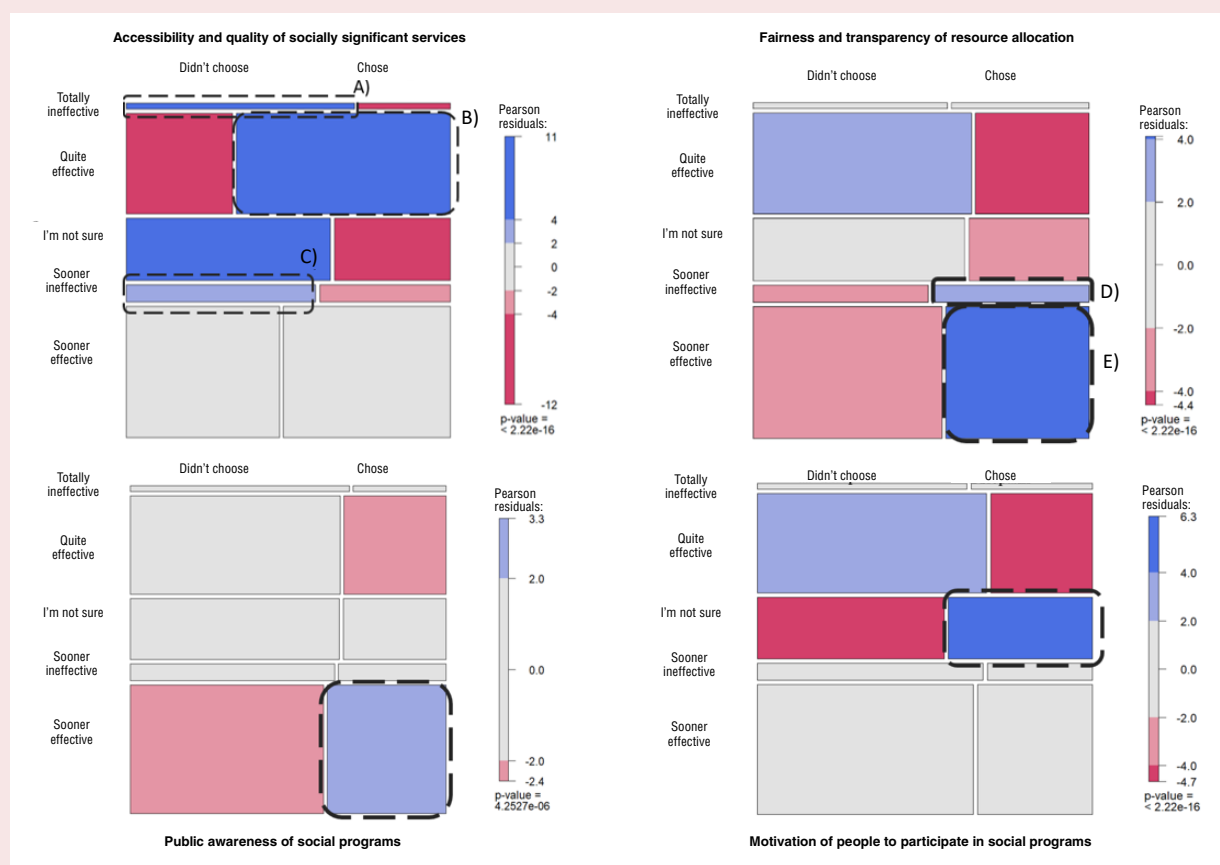
The results of the diagram analysis help to identify certain patterns in the perception of social policy among the company's employees. In particular, workers for whom the key criterion for the effectiveness of social policy is "accessibility and quality of philanthropic services", in most cases rate it as "quite effective" (zone B in *Fig. 8*). This indicates the high effectiveness of the implemented programs in this area. At the same time, employees who consider social policy ineffective do not consider this factor as a determining one, which may indicate shortcomings in other aspects of the company's social policy (zones A and C in *Fig. 8*).

A study of the impact of the "fairness and transparency of resource allocation" factor demonstrates the lack of consensus among employees regarding the significance of this indicator (zones D and E in *Fig. 8*). The diversity of opinions may be due to the varying degrees of awareness of workers about the mechanisms of distribution of social benefits and resources.

Table 1. Statistical analysis to identify the importance of factors determining the success of social policy in the provision of corporate charitable services

Factor	p-value for Pearson's chi-squared test	Cramér's V	Note
Accessibility and quality of philanthropic services	<2.2e-16	0.233	Relationship is weak
Fairness and transparency of resource allocation	<2.2e-16	0.091	Relationship is very weak
Public awareness of social programs	4.253e-106	0.055	Relationship is very weak
Motivation of people to participate in social programs	<2.2e-16	0.095	Relationship is very weak
Financial assistance system	<2.2e-16	0.32	Relationship is weak
Source: own compilation.			

Figure 8. Matrix diagram of the factors



Note. The shades of blue in the diagram indicate combinations of values that occur more frequently than would be expected if the factors were independent, while the shades of red indicate combinations that occur less frequently than the hypothesis of variable independence would suggest.

Source: own compilation.

One of the possible reasons for the revealed ambiguity is the limited access of staff to information about the principles and criteria on the basis of which social support is distributed. Insufficient transparency of these processes can contribute to the formation of a subjective sense of injustice or create doubts about the objectivity of the system, which, in turn, affects the overall perception of the effectiveness of social policy.

An analysis of the significance of the factor “public awareness of social programs” revealed a steady trend: employees who consider this criterion as a key one more often characterize the company’s social policy as “rather effective”.

This result confirms the sufficient level of awareness of employees about the company’s existing social initiatives, as well as the accessibility and clarity of the information provided. A high degree of awareness can not only contribute to the formation of a positive attitude toward social policy, but also strengthen the trust of employees in the company, as well as increase their interest in participating in ongoing programs.

When studying the influence of the factor “motivation of people to participate in social programs”, it was revealed that employees who consider this indicator significant have difficulties with an unambiguous assessment of social policy.

This result may indicate that, despite the awareness of the importance of motivation as a key element of the success of social initiatives, employees lack a clear understanding of the mechanisms for its implementation in the framework of corporate strategy. Among the possible reasons for this uncertainty, there is a lack of development of the incentive system, low transparency of engagement mechanisms, as well as insufficient information support for relevant programs.

The study of the influence of the “financial assistance system” factor demonstrated a statistically significant relationship between the level of

satisfaction with this system and the overall assessment of the effectiveness of the company’s social policy. This conclusion is confirmed by the analysis of the mosaic plot (Fig. 9), where standardized residuals exceeding the threshold value of 3 are recorded, which indicates a significant deviation from the model of variable independence.

The revealed patterns demonstrate the following:

- employees who are generally satisfied with the financial assistance system (“rather satisfied”) tend to rate the company’s social policy as “rather effective”;

- on the contrary, respondents who are completely dissatisfied with the financial assistance system (“totally dissatisfied”), nevertheless, rate the social policy as “totally effective”.

The latter result may indicate the presence of additional factors influencing the perception of the effectiveness of social policy, or the complex individual attitudes of employees who, despite dissatisfaction with a particular aspect, assess the social policy of the enterprise as a whole as successful.

The effectiveness of social policy is a complex multicomponent system formed under the influence of various factors.

To quantify the relationship between the effectiveness of social policy and its determining factors, it is advisable to use a mathematical model of dependence (formula 1):

$$Y = \log\left(\frac{p}{1-p}\right) = \text{Intercept} + B_1 * X_1 + B_2 * X_2 + B_3 * X_3 + B_4 * X_4 + B_5 * X_5, \quad (1)$$

where:

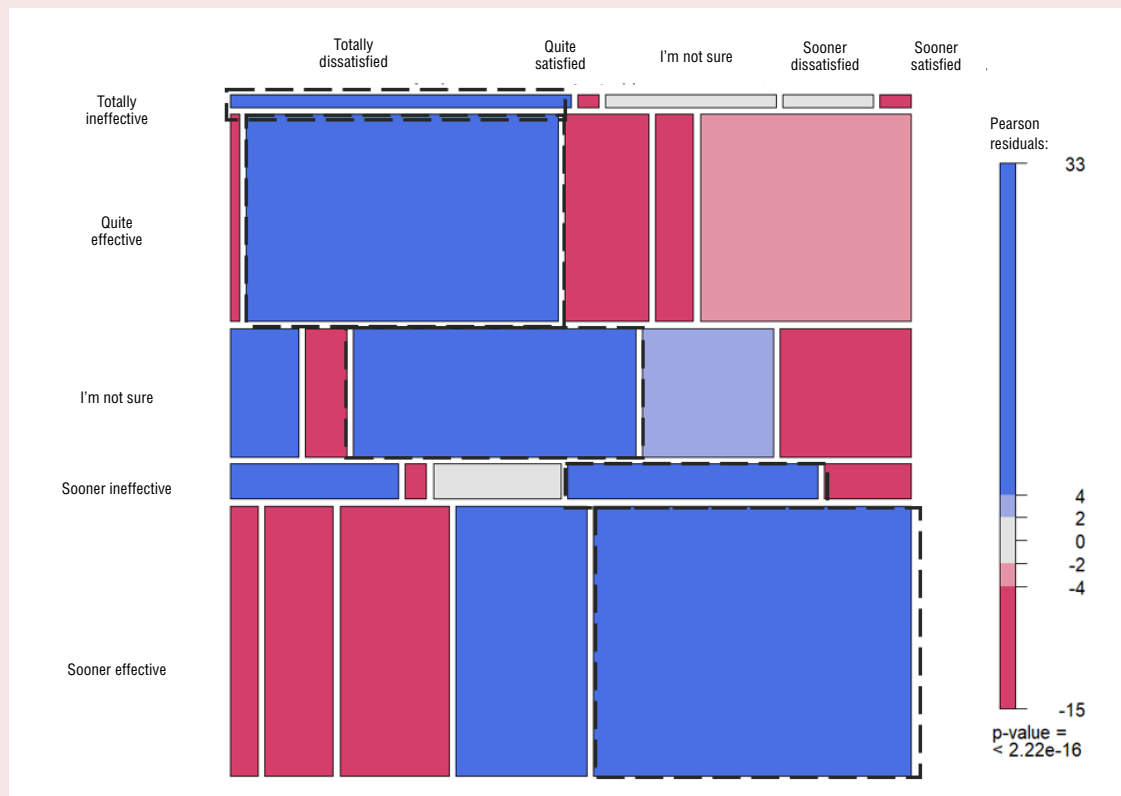
Y – effectiveness of social policy;

X₁ – accessibility and quality of philanthropic services;

X₂ – fairness and transparency of resource allocation;

X₃ – public awareness of social programs;

Figure 9. Mosaic plot of the “financial assistance system” factor



Source: own compilation.

X_4 – motivation of people to participate in social programs;

X_5 – financial assistance system.

The characteristics of the obtained predictive model are presented in *Table 2*.

The presence of a “very weak” relationship between the factors in *Table 1* does not mean that these factors are not important; rather, it may indicate the complexity of the social context and the

variety of factors influencing employee evaluations.

Consequently, the contribution of each factor “individually” has a small effect, but when considering the influence of combinations of factors through the predictive model, we see that the assessment of the quality of the predictive model based on the analysis of the AUC value, which is 0.845, indicates the high accuracy of the model and its suitability for practical application.

Table 2. Characteristics of the forecast model

Factor, X_n	Values of indicators, B_n	Rank
Financial assistance system	4.42	1
Accessibility and quality of philanthropic services	0.91	2
Motivation of people to participate in social programs	0.78	3
Public awareness of social programs	0.59	4
Fairness and transparency of resource allocation	0.36	5
Intercept	-1.11	-

Source: own compilation.

For a more detailed analysis of the effectiveness of the model, calculations were performed based on the “confusion matrix”, which includes the following metrics:

1) Baseline Accuracy = $(TP + FP) / (TN + TP + FP + FN) = ((6727 + 588) / 8045 = 0.909$.

This means that in the current state of social policy, employee satisfaction is 90.9%;

2) Precision = $TP / (TP + FP) = 6727 / (6727 + 588) = 0.958$.

This indicator reflects the probability that if a social policy is assessed as effective, then this assessment is indeed justified.

3) Return on Investment (ROI) = Precision – Baseline Accuracy = $0.919 - 0.909 = 0.049$.

Thus, the potential improvement in the effectiveness of social policy as one of the key elements of CSR due to the corporate charitable services provided by the company is 4.9%.

The analysis of the results allows us to draw the following conclusions:

- while maintaining the current social policy, the employee satisfaction level will remain at 90.9%;
- however, when taking into account the rating of significant factors (for example, the improvement of the financial assistance system), the satisfaction level may increase to 95.8%, which will lead to an increase in the overall effectiveness of social policy;
- increasing employee satisfaction will lead to an improvement in the quality of working life, reduction in staff turnover, strengthening of corporate culture and, as a result, increase in overall labor productivity.

Conclusion

The conducted research confirmed the impact of corporate charitable services provided by the company on the social policy of PJSC Tatneft as one of the key elements of CSR.

The testing of the research program on a sample of 10,000 respondents revealed significant trends in the evaluation of corporate philanthropy. There has

been a steady increase in employee engagement in the provision of services in proportion to the continuous length of service in the company. The role of corporate digital technology, primarily the “*Sotrudnik*” [Employee] mobile application, is assessed positively; however, the need for more active use of digitalization in the management of these services has been identified. The company’s trade union organization continues to play an important role in the development and improvement of corporate charitable services.

The developed employee satisfaction analysis model showed high accuracy (AUC = 0.845) and made it possible to predict an increase in satisfaction from 90.9% to 95.8% with the improvement of the financial assistance system. Environmental programs (48.4%) and projects aimed at the development of physical culture (42.7%) are the most popular among corporate philanthropic initiatives. The analysis also shows that the level of engagement largely depends on work experience: employees with longer work experience are more likely to participate in company initiatives. Special attention is paid to pensioners who are actively involved in social projects. More than half of the respondents noted their participation in charity events, reflecting the high level of employee social responsibility.

Despite the general level of satisfaction with the corporate charity policy and the services provided, the main challenges have been identified: insufficient transparency in the allocation of resources, limited availability of some services, and insufficient awareness of the employees.

Based on the results of the aggregation of the results of the sociological research, we have formulated recommendations in the field of improving corporate philanthropy:

- expediency of further expanding the diversification of types of corporate charitable services;

- focus on increasing the active participation of employees in the grant support programs of PJSC Tatneft and the implementation of charitable services;

- focus on the provision of corporate social services through voluntary health insurance and social mortgages;

- ensuring the growth of employee awareness regarding corporate social services, including through the improvement of the digital platform.

To increase employee engagement, the company should develop programs that take into account employee workload and provide convenient access to information about philanthropy opportunities. To increase the effectiveness of information, it is advisable to strengthen digital channels, expand access to information for all categories of staff and introduce interactive feedback mechanisms, which in turn will increase employee engagement and transparency of the company's social policy.

The most effective solution in the field of providing corporate charitable services will be to introduce a digital platform that makes it possible to increase the effectiveness of the latter's development by expanding the possibilities of using smart contracting, forming and commercializing a bank of ideas and start-ups of a socially patriotic nature, including in the national and global venture virtual markets, the creation and effective functioning of own crowdfunding and crowdsourcing digital sub-platforms, and system-wide integration with Russian state-owned digital resources of a socio-

patriotic orientation.

In general, the formation of a rational structure of a digital platform for the provision of social services by companies, the identification of the most potentially effective strategy for digitalization of the company's activities in the financial, economic and social aspects, effective integration with subjects of the virtual segment of the digital economy at the current stage of the evolution of post-industrial economic communications are the basic prerequisites for ensuring long-term, sustainable growth in the quality of corporate charitable services of the company itself, as well as some actors from the external socio-economic environment.

In our opinion, for modern companies, at least those belonging to the segment of large or midsize enterprises, such a digital platform should be more complex, diversified and at the same time integrated with the external resources of the digital economy.

The scientific novelty of the work consists in clarifying the concept of "corporate philanthropy"; our sociological research conducted on the materials of the Tatneft Group is unique in its focus.

The research addresses important socio-economic issues and focuses on the micro level, which allows us to study practical experience directly on site. The results obtained can be used by government authorities in designing regulatory documents, by a wide range of researchers in industry and regional economics, as well as by students, graduate students, teachers and companies providing corporate charitable services.

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Restorative Transitions at the Crossroads: Multi-Actor Experiences of Leveraging Living Labs



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Abstract. The research deepens on the notion of transformative governance as a means to enhance individual and collective responsibility towards positive climate change. It is rooted on two main frameworks: a) the triple transition – green, digital and social – with its multidimensional perspective to address the intricacies of evolving environmental and socio-economic and geopolitical challenges; b) the Anthropocene epoch that reflects and triggers the capacity of humans to imprint a deep impact on the planet. More holistic, multi-player and cross-level co-design strategies are proving to ease the upheaval of new forms of living labs and the readiness of regional innovation ecosystems for addressing triple transition interconnected challenges. The study examines solutions that generate negotiated visions and more proactive participatory multi-actor engagement. It argues that climate neutrality and regeneration require active quadruple helix community involvement and citizen-led action. This study uniquely positions individual and collective responsibility as the central drivers of sustainable change. The research deepens on more synergetic strategies for aligning transformative governance around ecosystem-based visions and layered, interactive and multi-helix participatory participation. The research reveals that harnessing and maximizing a systemic triple transition approach – (digital, social and green and) and multi-actor collaborative approaches, novel forms of living labs can be developed for achieving higher levels of sustainability, positive and even regenerative impacts able to shift towards more resilient future urban, peri-urban and rural settings.

Key words: triple transition, peri-urban transition, synergetic collaboration, co-creation, adaptive transformative governance, common good.

“Maximizing synergies and managing trade-offs depend on specific practices, scale of implementation, governance, capacity building, integration with existing land use and the involvement of local communities and Indigenous peoples and through benefit-sharing, supported by frameworks such as Land Degradation Neutrality within the UNCCD”

(Shukla et al., 2022)

Despite the proliferation of living labs in research and policy (Schuurman et al., 2016; Leminen et al., 2017), existing approaches often address digital, green and social transitions in silos. This paper responds to that gap by proposing an integrated composition of living lab tools that enables a more systemic, impact-oriented transition strategy (Voytenko et al., 2016; McCormick, Hartmann, 2017).

The question is how we position ourselves to work together to create more aligned collective efforts to reverse the effect of our Anthropocene damage.

Regardless of human inherent reactance to change, we are incessantly confronted with change at all levels from individual to community to global level. Current events such as the COVID-19 pandemic, severe droughts, drastic floods, wildfires and social inequities exemplify the “heavy storms”

Introduction

Humanity is in a state of transition, driven by anthropogenic changes, which reflects the deep changes affecting our planet in an epoch known as the Anthropocene era. This is featured by the vast impact imposed by humans on the planet. All living beings in the different ecosystems in the world are and will be affected by climate transition.

that disrupt our socio-economic, political and environmental status quo. Among the most pressing of these global challenges are the need to mitigate and adapt to climate change (Smith et al., 2020).

These disruptions highlight the need for a courageous acknowledgment of our role as predators or exploiters without measure or control, or as positive agents of change with the Anthropocene epoch presenting unique governance challenges and opportunities. Humanity has reached this critical juncture by prioritizing individual interests, leaving only a few to shoulder the responsibility for the common good. To address this imbalance, we must promote a global and personal awakening that inspires transformative positive changes across societies, artificial systems and natural ecosystems. This requires embracing our collective role as agents of change and committing to a shared vision of the common good.

This study aims to explore how collaborative transformative governance can drive systemic environmental transitions by fostering climate responsibility and equipping emerging innovators through co-creation and novel tools. Objectives of the research are as follows:

- 1) to define collaborative transformative governance in the context of environmental and climate transitions;
- 2) to assess the role of co-creation methodologies in fostering climate responsibility;
- 3) to examine how novel tools and services support new generations of environmental and social innovators;
- 4) to evaluate the impact of multi-actor governance approaches on systemic sustainability outcomes.

Therefore, the following hypotheses are formulated and tested:

H1: Collaborative transformative governance fosters individual and collective responsibility for climate and environmental action, enabling broader and deeper sustainability transitions. This can be achieved through systemic, forward-looking thinking combined with multi-actor and multi-level co-creation methodologies (e.g., community-based environmental initiatives, participatory planning for climate resilience).

H2: Transformative governance grounded in collaborative principles and supported by novel methodologies, tools and services (Caro-González, 2023) can be effectively established by nurturing new generations of change-makers and enabling the emergence of innovators across environmental, digital and social domains—thus accelerating the shift toward climate-neutral, inclusive and sustainable futures.

Literature review

Urban areas play a critical role in mitigating climate change due to their significant greenhouse gas (GHG) emissions, growing urban populations, expanding urban land and infrastructure and the long lifespans of buildings and transport systems (Seto et al., 2021). Systemic approaches to governance are crucial for a) promoting and accelerating regenerative climate change in urban, peri-urban and urban-rural settlements; b) ensuring long-term stability; and c) supporting transformative actions that drive more rapid positive environmental changes in these communities.

The Triple Transition framework (Caro-González et al., 2023) envisions a comprehensive transformation – social, green and digital – under the motto “One for All, All for One.” It advocates just, human-centered and environmentally-friendly transitions guided by negotiated win-win approaches, addressing global challenges such as warfare, environmental

degradation and social alienation. The framework emphasizes regenerative practices like the circular economy and sustainable, equitable growth¹. It promotes transformative governance, multi-agent collaboration for climate targets and a systemic approach integrating digital, energy and environmental concerns.

Cities and peri-urban areas are envisioned as vast “co-laboratories” (new generation of LLs and ecosystems) with capacity to drive radical changes through experimentation, learning and multi-actor engagement, promoting systemic innovation and collaboration across various dimensions (Scholl et al., 2022; Bhatta et al., 2023; Serra et al. 2024).

To effectively address climate change in urban and peri-urban areas, it is essential to involve multiple levels of governance, including government and non-state entities and secure substantial funding beyond sector-specific strategies (Costero Bolaños, 2024). Concurrently, multi-level governance, as discussed by various authors (Fuhr et al., 2018, Di Gregorio et al., 2019; Gonzales-Iwanciw et al., 2020;), has evolved into a complex polycentric system spanning global, national and sub-national levels, relying on formal and informal networks. It coordinates policies across these levels to ensure coherent responses to climate challenges. While climate change mitigation is global in scope, its local impacts and adaptation needs create challenges for policy integration. Cross-level interactions between mitigation and adaptation remain underexplored, but social learning – convergent changes in stakeholders’ perspectives – plays a crucial role by fostering integrated solutions through collective action.

¹ <https://eohforgood.com/eoh-lution-podcast/>

As (Heinen et al., 2022) affirm, polycentric climate governance and multi-level governance operate across five dimensions: governance issues, decision-makers, interactions, rules-in-use and dependency degrees. Polycentric governance emphasizes local self-regulation, while multi-level governance focuses on formally interdependent actors collaborating across government levels.

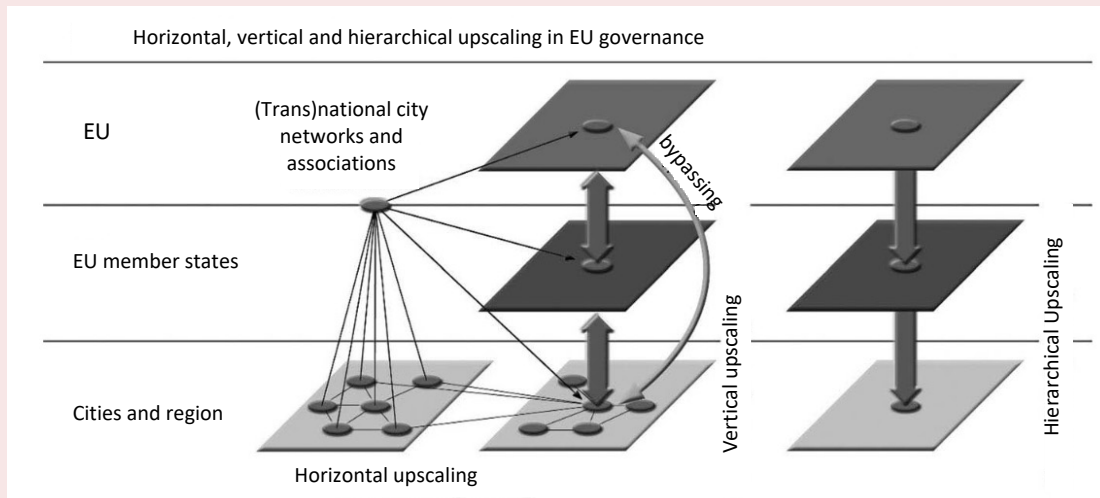
In transnational municipal networks, cities operate under different rules based on national legal frameworks. Some cities engage in self-regulated climate actions, while others integrate efforts across government levels with substantial funding.

These differences lead researchers to varying conclusions on factors like leadership, trust and self-regulation. Many small to medium-sized ones lack appropriate strategies (although cities like Copenhagen and Sydney take effective climate actions), highlighting the urgent need for proactive sub-national policies to limit global temperature rise to 1.5°C.

(Kern, 2019) explored EU multilevel climate governance, highlighting dynamics among leaders, followers and laggards (Fig. 1). She noted that local climate action has gained prominence, with authority shifting both upwards to the EU and downwards to subnational authorities. Many Europeans now live in cities with ambitious climate goals, such as Girona, Limerick, Reggio Emilia or Fyli Municipality, among others². However, Kern cautioned that local action alone is not a complete solution.

² Network of ambitious cities on climate neutrality grows to 184 on EU Cities Mission peer-learning programme. NetZeroCities. Available at: <https://netzerocities.eu/2025/01/22/network-of-ambitious-cities-on-climate-neutrality-grows-to-184-on-eu-cities-mission-peer-learning-programme/> (accessed: January 28, 2025).

Figure 1. Horizontal, vertical and hierarchical upscaling in EU governance



Source: (Kern, 2019).

(Fuhr et al., 2018) emphasized the benefits of bottom-up climate approaches, highlighting urban experimentation within polycentric governance. They introduced “embedded upscaling”, a governance model integrating horizontal, vertical and hierarchical arrangements while addressing multi-actor dynamics.

Transformative governance refers to the process of how societies are managed to achieve sustainable and equitable outcomes. It involves moving beyond traditional governance models to embrace more holistic, inclusive and adaptive approaches for the common good (Caro-González, 2023). Key elements of transformative governance include:

- a) eco-systemic thinking to understand and manage urban contexts in an integrated, holistic and planet friendly manner;
- b) community-based and citizen engagement to actively involve local communities and individuals in decision-making processes and have the responsibility to “add our drop in the ocean”;

c) multi-actor engagement to ensure that diverse perspectives and interests are represented and considered;

d) systems transformation to promote comprehensive changes across social, economic and environmental systems with a long-term common good vision.

Transformative governance offers a pathway to navigate complex transitions and build a just, sustainable and inclusive future. The primary challenge lies in effectively implementing regenerative policies and practices and this requires social innovators to design frameworks involving political and religious leaders, entrepreneurs and purpose-driven community members. These social infrastructures sustain, refine and evolve the process to ensure long-term success.

Environmental challenges in urban, peri-urban and rural settlements progress slowly without coordinated, multi-faceted action, risking insufficient pace, impact and efficiency. This study

highlights the potential of the T-Shaped concept (Shabnam et al., 2016) as a framework for enhancing multi-level transformative governance. This model, characterized by the ability to collaborate across disciplines (the horizontal bar) and the deep navigation in specific areas (the vertical bar of the “T”), is particularly effective in accelerating positive climate transitions. This model fosters comprehensive and coordinated efforts essential for addressing complex climate challenges by integrating cross-sectoral collaboration with specialized knowledge.

Research methodology

In the theoretical component of the study, we conducted a comprehensive literature review to synthesize existing frameworks on co-creation, innovation ecosystems and climate adaptation. This informed the conceptual foundation of the proposed T-Shaped Living Labs. Furthermore, the development of the Living Labs involved a mixed-methods approach that integrated stakeholder mapping, system dynamics modeling and iterative design workshops. These methods supported the translation of theoretical insights into practical design elements, ensuring that the proposed labs are both evidence-based and context-sensitive.

A rigorous qualitative methodology has been employed to examine opportunities and challenges in accelerating climate-positive change across urban, peri-urban and rural-urban settlements in different world contexts. Through qualitative methods, the research captures nuanced perspectives and contextual factors shaping transformative governance.

The sample design prioritizes diversity and representativeness, drawing on initiatives from Europe, America, Asia and Africa (via expert

cooperation). Purposeful and snowball sampling identified participants aligned with research objectives, focusing on governance innovation, societal co-responsibility and climate-positive transitions within the “triple transition” framework.

This strategy enabled the collection of insights from initiatives at varying stages of maturity, across multiple geographic regions, thematic areas, and levels of stakeholder involvement. As a result, the analysis encompasses a spectrum of DSI initiatives – from emerging projects to established ventures – providing a nuanced understanding of how DSI manifests in different contexts and sectors.

This study is part of a broader ongoing research project where 17 semi-structured interviews were conducted with diverse stakeholders of various sectors (*Fig. 2*). The sample balanced geography, themes, maturity levels of initiatives and gender (55.6% male, 44.4% female), highlighting regenerative practices and co-responsibility. Desk research complemented the interviews and thematic analysis using Atlas.ti identified key patterns and insights into transformative governance.

For this research, representatives from 14 countries were selected to examine context-driven urban and peri-urban climate change initiatives. These initiatives vary in scope:

- LLs on circular economy (e.g. Tokoro Lab, Japan);
- long-term institutional transformative plans (e.g. Danish Institute for Fire and Security Technologies; Estonian National Museum; i2Cat Foundation; Norwegian University of Science and Technology);
- community-based projects (Equipo Europa; Global Shapers to promote the engagement of young people);

- European education, research and innovation projects (FORTH in Philippines; INTEGER in three European regions);
- social movements (e.g. Xquenda_Lab in Mexico for Zapoteca indigenous people; Mujeres Conectadas in Perú to enhance women participation in Trujillo);
- local, regional or national development strategies (e.g. Alliance of Municipalities Alto Tajo, Spain; Catalan regional strategy; Chilean national strategy for Social Sustainability);
- European networks and Associations (e.g. ENoLL - Working Group Energy & Environment; European Network of Cultural Centres; Education for an Interdependent World).

The *Table* entitled “List of semi-structured in-depth interviews conducted with key stakeholders” presents information regarding the country of origin for each primary initiative. It should be noted, however, that the interviews also encompass additional initiatives – both past and ongoing – situated in various other locations.

Research results

To strengthen the credibility of the findings, feedback and evaluations were solicited from peers and external experts. This process of external validation helped identify potential blind spots and biases, thereby enhancing the study’s overall rigor. Experts consulted included professionals from innovation ecosystems beyond those directly examined in the chapter, such as Denmark, Norway, the Netherlands and Canada.

This section spells out the results of the analysis, stressing the role of co-creation as a key driver of innovation and sustainability. The findings reveal that co-creation fosters both individual and collective responsibility, enabling more inclusive and adaptive approaches to climate action. In particular,

it emerges as a critical mechanism for advancing urban and peri-urban transformations, supporting the development of locally grounded, collaborative solutions to complex environmental challenges.

Agenda 2030 highlights multi-level adaptation governance, promoting mitigation practices with co-benefits that do not compete for land. These practices reduce land conversion, aiding climate mitigation, land restoration, food security and SDG achievement (Smith et al., 2020). Inclusive, multi-sectoral planning with flexible, low-regret pathways ensures cross-sectoral benefits, preserves future options and defines the solution space for long-term climate adaptation (Shukla et al., 2022).

Several experts, in line with the ideas of the Anthropocene, suggest that innovation processes have the potential to transform individuals and societies:

“Subjects in one form can transform, or we can transform ourselves through these innovation processes” (I8-ES, 2024; 00:08:48).

One interviewee (I8-ES, 2024; 00:26:11) underscores cultural innovation as a human-driven process, highlighting the active role of humans in shaping the world. The expert notes a lack of awareness about this role and its impact on natural evolution, cultural innovation theories are needed to hold us accountable and responsible for changes instigated in natural systems.

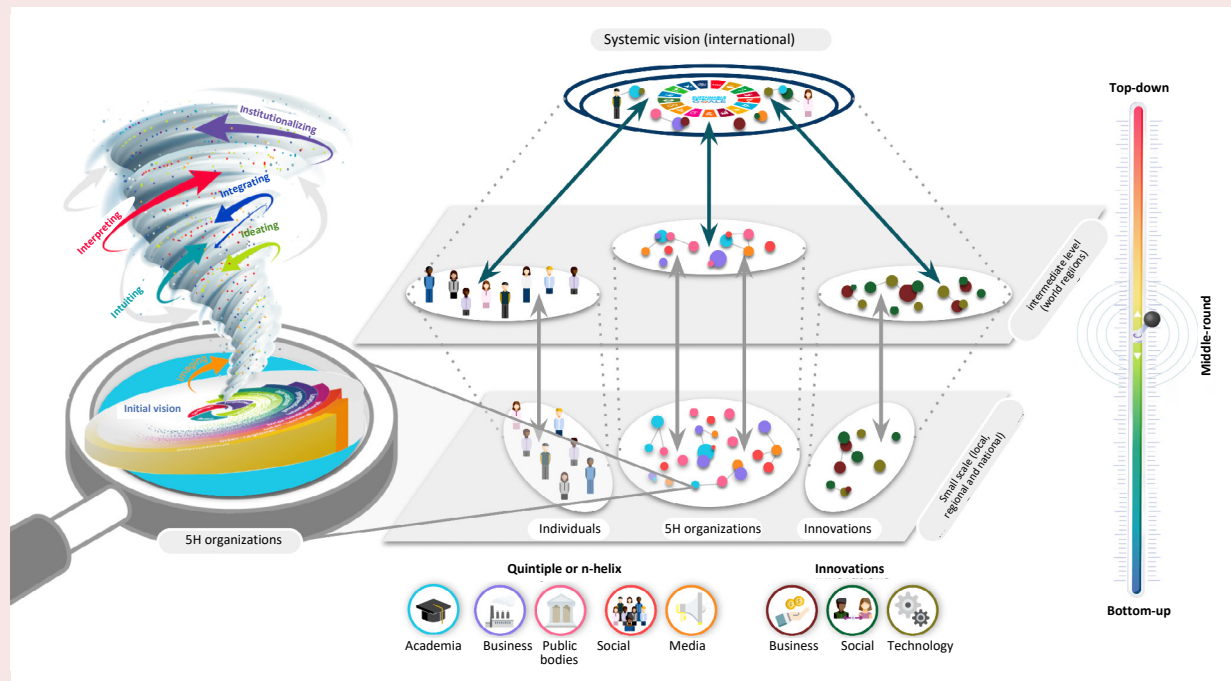
Figure 2 presents a holistic multi-level and multi-i model approach where bottom-up, top-down and middle-round perspectives converge. (Busquets, 2010) proposed the concept of Orchestrating Smart Business Networks (SBN), which complements the idea of the Eoh-for-Good tornado (on the left of the figure) (Caro-González, 2023). This model results from a longitudinal research in action, experimentation and learning

List of semi-structured in-depth interviews conducted with key stakeholders

Location (country/ region)	Code	Gender	Scope	Fields	Target groups
Belgium (Europe)	I4-BE	F	International	Education, inclusion, integrity, common language, social movements	Youth, academia
Chile (Latin America)	I2-CL	M	National	Technology education, social sustainability	Society, academia, public policy makers
Denmark (Europe)	I11-DK	M	National	Techno-anthropology, fire and security technologies, information and communication technologies (ICT), policy development	Society, public administration
Estonia (Europe)	I3-EE	F	National	Cultural and creative industries (CCI), museums, development, intergenerational use of media, digitalization	Society, public administration and local culture preservation
Hamburg, Germany (Europe)	I6-GER	M	Regional European	Economy, innovation, startups, advanced technology, health, civic engagement	Public administration, ministry, civil society
Japan (Asia)	I17-JPN	F	National	Economy cooperation, public administration	Public administration, OECD, academia
Mexico (America)	I5-MX	M	National	Digitalization, AI, technology, culture, language inclusion, innovation and indigenous practices	Indigenous communities, civil society
Netherlands (Europe)	I10-NL	M	International	Ecosystem redesign, blockchain technology	Business, academia, technology
Norway (Europe)	I9-NO	F	International	Sustainable innovation, engineering, education, tech transfer, gender, health technology	Academia, women, society
Peru (Latin America)	I1-PE	F	National	Gender intersectional approach, entrustment of women	Women, society
Philippines (Asia)	I16-PHL	F	National	Education, youth engagement and volunteer work: Society Helix	Non-profit organizations, education
Poland (Europe)	I7-PL	M	European	Territorial development-rural/urban, civic participation and participatory practices, CCIs	Culture institution, civil society
Spain, Catalonia (Europe)	I8-ES	M	Regional International	Helix participation, innovation universal systems, research and innovators, governance	Innovation ecosystems, connection and elaboration helixes
Spain (Europe)	I12-ES	F	Regional	Integration, diversity, education	Civil society, territory balance, public administration
Spain (Europe)	I13-ES	M	National	Politics, re-urbanization of rural areas, territorial and social innovation	Civil society, public sector, government, policy makers
Spain (Europe)	I15-ES	M	International	Youth, civic and non-political organizations dedicated to improving society: society helix	Young activists and civic organizations
Switzerland (Europe)	I14-CH	M	International	Sustainable energy, electrification of transport, energy policy, urban regeneration, knowledge & technology transfer	Researchers, policymakers, energy sector, sustainable technology experts

Source: <https://eehforgood.com/>

Figure 2. Eoh-for-Good Multi-level vertical and horizontal interconnected perspectives



Source: <https://eohforgood.com/>

process in different settings to systematically analyze and frame a new cultural innovation theory to accelerate innovation processes by absorbing the innovation from the edges.

The lower level comprises individuals, disconnected helices and organizations, often functioning as isolated nodes without integration. The top-down level refers to policies and strategies that support the implementation of plans, programs and tools across different levels of governance by ensuring vertical coordination. According to the 2022 IPCC report, integrated, cross-sectoral, inclusive and systems-based approaches – when combined with supportive public policies – enhance long-term resilience with high confidence (Shukla et al., 2022, p. 90). EU-level climate policy frameworks (e.g. soil mission) increasingly promotes LLs as spaces for enhancing multi-level

collaboration, linking people, innovations and helices to support transformative governance neutral or regenerative climate transitions.

The multi-i model unfolds combinations of collaborative dynamics with a number of dimensions that start with ‘i’: interpersonal, intersectional, interdisciplinary, interhelix, intersectoral, inter-generational, intercultural, inter-institutional, inter-regional and international (Caro-González, 2023, pp. 59–73). These interactions promote innovative co-creation and collaboration processes within and across institutions, sectors and contexts, ensuring that solutions are context-specific, socially inclusive and can become more broadly supported.

The multi-i transformative governance for innovation, involves active engagement and alignment of relevant parties, including internal and external partners, securing collaboration and

shared ownership of the change process. These operate alongside interdisciplinary action-research collaboration, rooted in a human-centered approach (Vrontis et al., 2020; Iandolo et al., 2024) and prioritizes experimentation over mechanistic processes.

The transboundary nature of many climate risks and species responses requires multi-national or regional governance solutions for land (Shukla et al., 2022, p. 111). By bringing together diverse actors and stakeholders, co-creative multi-i tornado (as portrayed in the left-hand side of Figure 2) have the potential to boost hubs of innovation, generating transformative solutions to complex problems faced by entrepreneurs, teams, organizations and ecosystems (Caro-González, 2023, p. 73). The interview results analyzed the contexts network's centripetal and centrifugal collaborative forces shaping the structural dynamics of innovation. This approach shows promise in creating an efficient pathway to innovation by successfully coordinating interactions across multiple actors and levels, managing network boundaries and integrating digital platforms.

Living Labs are positioning as spaces at base of the vortex for the inception of ideas, intra- and entrepreneurial activities, stakeholder engagement and continuous learning and adaptation. They are becoming the rotating bezel accelerating the needed process of change, fostering knowledge exchange, experimentation and the collective development of innovative solutions.

This rotation ensures alignment, collaboration, shared ownership, continuous improvement and resilience amidst change. The funnel expands rapidly by drawing in innovation from its edges, including interdisciplinary collaborations, local or international intersectoral projects and community-based urban and peri-urban environmentally friendly initiatives.

Transnational organizations, networks, LLs and other initiatives act as intermediaries to connect different spaces and levels. Therefore, interdisciplinary and intersectoral collaboration is crucial, as integrating diverse knowledge and involving citizens in decision-making enhances governance's responsiveness and effectiveness in addressing climate change challenges (Degroot et al., 2021). As highlighted by the expert operating in Denmark:

"And when do we understand? What is the knot for? Well, suddenly, the one who has more experience in a subject can contribute and we all come to that agreement and we build in an interdisciplinary way [...] when we talk about transdisciplinary it is no longer the discipline. For example, it is one thing to have engineers and sociologists and another thing to have a discussion with a citizen as the citizen will bring a completely different approach" (I11-DK, 2024, 00:07:35).

New disciplines like techno-anthropology and techno-sociology merge social sciences and design (Matus et al., 2018) to create inclusive solutions, crossing traditional disciplinary boundaries. Having change agents trained in this hybrid subdiscipline of engineering and social sciences facilitates processes that provide mediators who do not belong to a single discipline but can cross their boundaries.

Environmental changes in cities and peri-urban settlements are moving typically slowly. One of the urgent needs is to accelerate regenerative urban and peri-urban climate action to enhance both individual and collective responsibility. For this, different experts and practitioners are advocating and implementing novel flexible, adaptable, collaborative and co-creative methodologies with capacity to promote resilient and regenerative urban environments (e.g. use of blockchain for transformative change, with the aim to create inclusive ecosystems; I10-NL 2024; development of artificial intelligence tool capable of recognizing

patterns of Zapotec culture, fostering the democratization of innovation of the indigenous culture; I5-MX 2024). As stated by one of the experts:

“The type of acceleration that climate change mitigation and adaptation will require from cities, requires as a jump in the capacity of cities of moving fast and transform around the few sectoral issues like rooftops, electric mobility and urban forest and the quality of mobility” (I14-CH, 2024, 01:16:28).

Employing co-creation is crucial for fostering innovation and sustainability, as it facilitates discussions and decision-making processes and also broadens collaboration, engagement and entrustment of society. This approach helps in reaching strategic goals and making citizen engagement a goal in itself. The critical point here, which makes companies like Eoh-for-Good and professionals such as techno-anthropologists and well-trained change agents imperative, is that poorly guided co-creation does not work, is not sustainable or leads to short-lived agreements.

The flexible, formal and informal configurations of co-creation within urban, peri-urban and urban-rural living labs (LLs) enable diverse participation, fostering dynamic environments where both long-term and short-term objectives can be addressed concurrently. This approach promotes an inclusive and innovative culture of urban development (Puerari et al., 2018). One of the experts interviewed recognizes the importance of these interrelatedness:

“Here, you have an ally in anyone who wishes to contribute to the common good, particularly in the context of the numerous rural communities across Spain. These villages are the foundation upon which our cities have been built, reflecting the hard work and dedication of previous generations [...]. Just as these rural areas once served as vital engines of development, they now have the potential to benefit

us all. The key takeaway is that by focusing on and supporting rural areas, we can address many of the pressing issues currently faced by urban centers, such as housing affordability, transportation challenges and pollution” (I13-ES, 2024, 00:43:00).

As many problems are intrinsically linked, addressing rural depopulation is crucial for managing urban overpopulation.

Collaborative methodologies and co-creation engage diverse actors in the design, implementation and evaluation of initiatives, enabling motivated individuals, as what we have identified as “early adopters”. They become change agents with the support of proper capacity programs, which aligns the needs and innovations of individuals and institutions within co-creative transformative governance networks. Socio-digital innovation designs transform challenges into solutions via collaboration with two-way feedback mechanisms for social-digital innovators finding effective solutions and integrating all participants through collaboration into the ecosystem:

“The next step is how can you, when you are a community working together, collective action, you create value for somebody and it is offered to the whole community” (I10-NL, 2024, 0:27:00) and “everybody who is participating, whether as a developer, or as a user, or as a founder... they can all become part of the whole ecosystem” (I10-NL, 2024; 00:16:50).

Such inclusivity ensures solutions that are both technologically sound, socially acceptable and environmentally neutral or regenerative, fostering a community-centric approach and adaptable collective action. This is connected to the principle of “no one left behind” and is particularly important for women, indigenous people and minorities. Integrated, multi-sectoral solutions that address social inequities, tailor responses to climate risks and working across systems can enhance the

feasibility and effectiveness of adaptation in various sectors (Shukla et al., 2022, p. 21).

While structure and specific requirements are necessary, templates should remain flexible to foster creativity and innovation, creating a balance that encourages diverse, pioneering proposals aligned with the triple transition's goals (Rodríguez Müller et al., 2024):

"It is, in some way, excluding people who have not been privileged within this system due to social structures that have been imposed for centuries" (I5-MX, 00:08:40).

The design and implementation of innovative spaces, tools and dynamics adapted to context is central to creating purpose-driven, future-ready resilient and regenerative urban and peri-urban settlements.

"In connecting the dots, it's crucial to understand what works but more important is what didn't work across different contexts" (I9-NO, 2024; 00:07:24).

Accelerating climate change mitigation and adaptation in cities requires strengthening their capacity to transform key sectors such as rooftop photovoltaics, energy supply, urban forestry and mobility. The challenge of using space for renewable energy deployment is often approached quantitatively, neglecting its urban and territorial context (Delgado-Jiménez, 2024). Energy policies frequently overlook local dynamics and community-driven actions, while bottom-up initiatives play a key role in ensuring a fair and environmentally responsible transition. To enable individuals to work together effectively, it is essential to implement spaces, mechanisms and dynamics such as LLs, community platforms and collaborative initiatives that exchange knowledge, raise awareness and influence policies by engaging a coalition of like-minded individuals (I17- PHL, 2024).

The last decades have witnessed the proliferation of living labs (LLs), fab labs, collaboratories, superlabs, policy labs and more that are trying to change the innovation ecosystems as an important part of our social fabric. The "Lab" could symbolize all these dispersed and unconnected pieces of a new social structure, which can be classified by:

a) focus area with Urban LLs addressing urban mobility and sustainable development; Rural LLs for agricultural innovation and rural development; Health and Wellbeing LLs focused on digital health and elderly care; Environmental LLs working on climate change mitigation and water management; Energy LLs for renewable energy and efficiency; ICT and Digital Innovation LLs advancing technologies like IoT and cybersecurity; Social Innovation LLs for inclusion and community development; Cultural and Creative LLs supporting digital culture; Educational LLs to foster EdTech and lifelong learning; Transport LLs for innovate smart transportation; Manufacturing LLs advancing Industry 4.0; and Food and Agriculture LLs to ensure food security and sustainable farming;

b) geographic scope with Local LLs focusing on city or community levels; Regional LLs covering multiple localities; National LLs to engage actors at the country level; and International LLs operating across borders, involving multiple nations;

c) operational models which vary from University-based LLs, Corporate LLs, Government-led LLs, Community LLs to Public-private partnerships.

In addition to those identified in (Kern, 2019), various instruments and dynamics support collaboration in polycentric and multi-level climate governance. Urban LLs, for instance, promote collaboration among diverse actors and contribute to long-term sustainability transitions through

experimental co-creation processes involving multiple stakeholders. These labs, along with test beds, adopt experimental approaches to innovation policy, testing and advancing new sociotechnical arrangements and governance modes under real-world conditions (Puerari et al., 2018; Engels et al., 2019). Public-private partnerships also play a critical role by enhancing the efficiency and scope of public investment through integrated project phases (Prats, 2019). Additionally, multi-stakeholder platforms and networks connect agents to facilitate dialogue and implement joint climate initiatives (Betsill, Bulkeley, 2021), such as energy sustainability interventions within urban buildings (e.g. Sunthalpy efficiency solutions).

The multi-helix model (e.g., quadruple or n-helix) fosters innovation and systemic transformation by integrating government, industry, academia and civil society into governance processes. LLs, operating within these models, enable real-time co-creation, experimentation and scaling of urban and peri-urban environmental solutions.

Most interviews highlight inadequate collaborative spaces as a major barrier to problem identification, shared responsibility and coordinated solution development (I9-NO, I6-GER, I7-PL, I8-ES). As one interviewee pointed out:

“In the realm of environmental sustainability, it’s evident that many initiatives struggle to engage the right audience because the necessary platforms or venues for effective outreach are lacking. The issue isn’t that the message doesn’t reach anyone, but rather that it fails to reach the specific audience that needs to make impactful decisions” (I2-CL, 2024; 00:05:16).

Organizations like LLs facilitate multi-level, multi-helix collaboration by fostering knowledge exchange and partnerships and promoting shared

responsibility, innovative climate solutions and societal engagement.

Transnational networks and alliances are also crucial for the success of climate initiatives, offering opportunities for international cooperation and open, disruptive or user-driven innovation:

“So this vision of forming transnational alliances and networks is crucial for the success of these kinds of initiatives. We hope that we can effectively manage these opportunities in a positive way” (I5-MX, 2024; 00:16:34).

“Let’s say to innovate as a society by creating spaces that democratize innovation and creativity, allowing everyone to redesign their own lives and their cities” (I5-MX, 2024; 00:08:36).

Similarly, LLs provide multi-sectoral, multipurpose platforms that underline altruism and the common good, building value for cities, the environment and the achievement of SDGs.

“Multi sectoral, multipurpose tools like the LLs allow to select people doing the right things and be a crucial aspect for the common good, not immediate being a stakeholder with stake specifically for their own existence and self-interest. Is the altruistic aspect of LLs that need to be emphasized in order to build value for the city, environment and SDGs” (I14-CH, 2024, 01:16:06).

These collaborative spaces engage diverse stakeholders (e.g., vocational training, social services, small businesses, public sports centers) to identify challenges and co-develop strategies. A notable case illustrates this by aligning vocational training for individuals with intellectual disabilities with their empowerment, workforce integration, sustainable urban mobility, healthy lifestyles and environmental care. This holistic approach addresses interconnected needs, highlighting a novel initiative often overlooked by municipalities.

A good example is inclusive bicycles for children and youth with special needs:

“Something that no one had thought of was making inclusive bicycles for kids who can’t get on regular bikes due to special needs; they need more stability and hence a tricycle. While municipalities have implemented electric bicycles to decongest traffic and promote healthy transportation, they haven’t considered those who can’t use them” (I7-ES, 2024, 01:06:34).

Engaging diverse perspectives enhances understanding, fosters collective ownership and improves solution quality. These spaces also address ecological disasters and promote social innovation through private initiatives, as highlighted by an interviewee:

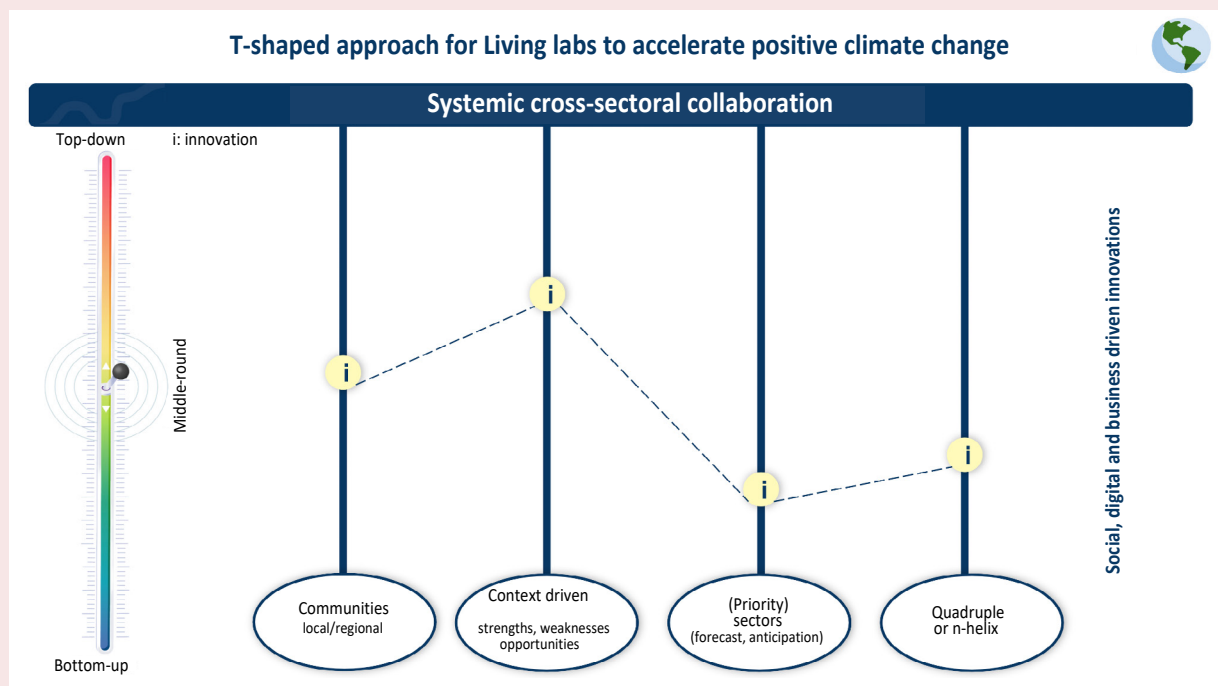
“Specifically here, for example, near Riverside, there are cases of terrible ecological disasters that have affected many indigenous populations, so we need to decide who to work with and why and how, without

participating in any form of greenwashing. However, there are many companies, like Microsoft, that are trying to generate programs promoting social innovation within their companies, enabling ecosystems for business. Microsoft, for instance, is enabling its labs and courses like TEALS or TechSpark and a variety of programs that facilitate access to technologies” (I12-MX, 2024, 00:28:40).

These initiatives stress the important role of the private sector in advancing regenerative climate solutions and catalyzing social and environmental innovation.

To enhance responsiveness, accountability and adaptability in climate governance, this study proposes the development of a new generation of T-Shaped living labs (LLs) (Fig. 3), which are neutral and inclusive environments for co-creation and experimentation, encompassing quadruple, quintuple or n-helix models. T-shaped LLs are

Figure 3. New generation of T-Shaped living labs



Source: <https://eohforgood.com/>

collaborative spaces designed to integrate systemic, interdisciplinary collaboration (the horizontal axis) with deep expertise in specific areas (the vertical axis). These labs foster innovation (i) by bringing together diverse stakeholders to co-create solutions for complex challenges through a balanced approach combining specialized knowledge with cross-sectoral engagement. Addressing and mitigating the impacts of climate change requires collaboration across multiple disciplines, including climate science, environmental engineering, urban planning, public health, economics, sociology, political science, agriculture, energy systems and information technology.

T-Shaped LLs ensure that solutions are contextually relevant and meet real-world needs by offering mechanisms for evaluating the impacts of policies and initiatives, ensuring that governance structures remain adaptable and impactful. These labs, as cooperative instruments, underscores a peer-to-peer approach between business, social and technology-driven innovations (Caro-González, 2023).

The systemic perspective represented by the horizontal line of the T is crucial for analyzing and understanding contextual factors within these settings through a holistic approach. This approach considers long-term visions, identified needs, immediate responses and shared or negotiated agendas, leading to inclusive, win-win collaborative dynamics that yield mutually beneficial outcomes.

The sample ensures a comprehensive perspective on strategies and practices across urban and rural contexts, with the T-Model deepening vertically along several climate change lines of actions, such as:

1) communities engaging diverse individuals and organizations to respond to identified climate challenges;

2) local and global connected agendas in a hyper-globalized world, paying special attention to the strengths, opportunities and weaknesses of each context;

3) fields or related sectors addressing the acceleration of climate transition focusing on priority areas;

4) helices integrating multiple stakeholders in the innovation process.

Conclusions

The emergence of T-Shaped LLs represents a new generation of transformative governance models that could serve as critical bridging spaces for co-creating negotiated solutions. These models enhance multi-level and multi-actor engagement by integrating quadruple/multi-helix dynamics to promote initiatives for the common good, shifting from destructive patterns towards regenerative ones.

There is a need for more coordinated co-creation efforts and international exchange of radical actions. Developing policies with broader political acceptance is essential, along with active citizen and actor engagement for transformative governance. Policymakers should prioritize inclusive participation mechanisms like public consultations and collaborative platforms to foster ownership and drive collective action. Each city or location's unique conditions must be considered when implementing initiatives. Local context, culture and challenges vary, making tailored decision-making essential, as strategies effective in one area may not work in another. Involving all relevant stakeholders ensures co-responsibility and practical outcomes, aligning with the quintuple helix model that engages diverse actors, from citizens to businesses, in planning and implementation.

In conclusion, addressing and accelerating regenerative climate change in urban, peri-urban and rural areas needs a multifaceted strategy that

integrates innovative transformative governance, individual and collective responsibility among societal actors and the design and implementation of new frameworks for innovation, such as the new generation of T-Shaped LLs.

This study highlights the importance of integrating expert perspectives to validate the benefits of this new generation of LLs that must

promote principles of interdisciplinarity and rigor to specialize knowledge and develop effective, inclusive and sustainable solutions. We can create impactful strategies to mitigate the anthropogenic effects of climate change and drive positive environmental outcomes by fostering well-trained agents of change, interdisciplinary collaboration, engaging all stakeholders and leveraging these advanced LLs.

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Corporate Citizenship: An Overview of Scientific Publications



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Abstract. The negative demographic dynamic observed in Russia, despite the government's efforts to handle it, requires the development and implementation of new, more effective tools that can change the situation. One of these tools is to promote business participation in addressing the country's demographic problems based on the development of ideas and principles of corporate citizenship. The aim of the study is to review and analyze the scientific and research discourse on corporate citizenship with an emphasis on the demographic segment of this discourse. The research methodology includes scientific review of publications on corporate citizenship based on quantitative (scientometric analysis) and qualitative (content-semantic analysis of documents) methods. We reveal that the scientific and research discourse on corporate citizenship, while maintaining a stable scientific significance for a number of years, has been shrinking over recent years. At the same time, it is more widespread in foreign studies. Corporate citizenship is an insufficiently developed concept, it lacks a clear definition, understanding of its essence

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and determinants. In the demographic sphere, corporate citizenship is not conceptualized. In the course of the analysis, we identify trends in the development of the discourse, and compile a scientometric portrait of Russian publications on this topic. The inability to gain full access to the international citation databases Web of Science and Scopus due to the sanctions imposes certain restrictions on our research regarding the scientific review of the foreign segment of the discourse. From a scientific and theoretical perspective, the significance of the work lies in filling in the lack of scientific reviews in the field of corporate citizenship, raising the issue of conceptualizing this phenomenon and intensifying its research. Practical significance is determined by the possibility of using the findings by other authors dealing with issues of corporate citizenship and related topics. The systematization and conceptualization of this subject area will contribute to a more active promotion of the ideas and principles of corporate citizenship in Russian enterprises, as well as a more active involvement of Russian business in solving Russia's national strategic tasks.

Key words: corporate citizenship, corporate demographic policy, entrepreneurship, scientometric analysis, scientific review.

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Introduction

Negative demographic trends and the threat to demographic security are key challenges for modern Russia. Since 2020, the country has been experiencing depopulation: on January 1, 2020 the population was 147.9 million, and in 2024 it became 146.1 million¹. The issue of decreasing fertility is particularly acute. The fertility rate in Russia has been significantly lower for many years than the level of simple reproduction (≈ 2.14 children per woman)².

It is obvious that the negative demographic trends, which are observed against the background of the ongoing efforts of the state to overcome it, will only increase the already existing labor shortage

at Russian enterprises in the future³. This state of affairs requires the government and the expert community to develop and implement new, more effective tools that can change the situation. One of these tools is to increase the participation of Russian business in solving the country's demographic problems.

The inclusion of business in the demographic agenda is currently being actively discussed in the Russian media and authorities at various levels⁴, as

¹ Population (data from Rosstat; data are given without taking into account statistical information on the Donetsk People's Republic, Lugansk People's Republic, Zaporozhye and Kherson regions). Available at: https://rosstat.gov.ru/storage/mediabank/Chisl_RF_01-01-2022-01-01-2024.xls

² Total fertility rate (data from the Unified Interdepartmental Statistical Information System). Available at: <https://fedstat.ru/indicator/31517>

³ The labor market in mid-2023: No one is to blame, but what to do? Data analysis, trends and forecasts (Research by hh.ru). Available at: <https://ekaterinburg.hh.ru/article/31716?ysclid=lna0njcv2u623470466>

⁴ The Federation Council discussed the urgent tasks of solving the demographic problem in Russia. RG.RU. Available at: <https://rg.ru/2023/11/10/v-sovfe-de-obsudili-aktualnye-zadachi-resheniia-demograficheskoy-problemy-v-strane.html>; The State Duma proposed that business take part in solving demographic problems. URA.RU. Available at: <https://ura.news/news/1052675316>; Experts: the growth in fertility in the Russian Federation can be provided by large families, but they need support. Available at: <https://tass.ru/obschestvo/14757305>

well as in the business community itself⁵. Leading Russian sociological centers are also investigating this issue⁶. In recent years, the pool of publications has been actively increasing, substantiating the need and possibility of business participation in solving the issues of low fertility in the country (Rostovskaya et al., 2021; Shubat et al., 2022). Such participation is associated with the development of a special area of corporate social responsibility – corporate demographic policy, which is an integrated system of principles, norms and measures to support employees with family responsibilities (Rostovskaya et al., 2021; Bagirova et al., 2024; Tobysheva, Shubat, 2024). The scholars substantiate the need, opportunity, as well as efficiency, economic benefits for business from the implementation of corporate demographic policy, and present the most effective corporate practices in this area (Ivanitskii, Shishkarev, 2024).

The activation of business involvement in solving Russian demographic problems may be influenced by a number of factors. Theoretically, here we can talk about direct pressure and coercion from the state, about stimulating business through all kinds of subsidies, tax incentives and other preferences. An incentive factor may be the opportunity for business to gain economic advantages and benefits from the implementation of corporate demographic programs. Scholars

point to a number of such advantages – lower costs, increased productivity, reduced staff turnover, and a number of others (Breaugh, Frye, 2007; Bourhis, Mekkaoui, 2010; Kim, Yeo, 2019).

In our opinion, the dissemination and rooting in the business environment of ideas and principles of corporate citizenship as an element of the value system of entrepreneurship, the entrepreneurs' attitude toward participation in solving socially significant tasks, motivation for it, and manifestation of social solidarity can be considered as the most important factor of active involvement of business in solving demographic problems in Russia. Studies show that perceptions of such social solidarity in business evolve over time and develop as social expectations regarding corporate behavior change (Latapí Agudelo et al., 2019). Russian scholars note that under the influence of a number of external threats, the need for the development of a new responsible business strategy is increasing – a cumulative rational-social one, and the highest level of the value system of modern entrepreneurship consists of ethical and social values – a sense of duty, humanity, patriotism, social activity and responsibility (Asaul, Vétkina, 2022, p. 10). At the current stage of the evolution of the value paradigm of Russian entrepreneurship, its traditional values are reviving (Sazanova, 2016), which include, among other things, a sense of the interconnectedness and interdependence of increasing personal well-being with the development and prosperity of one's land, city, and country (Vetoshkin et al., 2008). This trend in entrepreneurship value orientations fully correlates with the guidelines of Presidential Decree 809, dated September 11, 2022 “On approving the fundamentals of state policy for the preservation and strengthening of traditional Russian spiritual and moral values”. The manifestation of citizenship by business structures (corporate citizenship) is especially in demand today in the field of

⁵ The Russian Union of Industrialists and Entrepreneurs discussed support for family, motherhood, childhood, and employees with family responsibilities. Available at: <https://no-qrator.rsp.ru/events/news/v-rspp-obsudili-podderzhku-semi-materinstva-detstva-rabotnikov-s-semeynymi-obyazannostyami-660a6b6ee8665/>; SPIEF talks about how business can affect fertility. Available at: <https://www.pnp.ru/economics/na-pmef-obsudili-kak-biznes-mozhet-povliyat-na-demografiyu.html>

⁶ Employers as subjects of demographic policy implementation: Best practices of corporate family policy in Russian business. 2024. VCIOM (Russian Public Opinion Research Center). Available at: <https://expert.wciom.ru/release/rabotodateli-kak-subekty-realizacii-demograficheskoi-politiki-politiki-luchshie-praktiki-korporativnoi-semeinoi-politiki-rossiiskogo-biznesa>

demography. The first Russian studies on corporate citizenship in the demographic area appear (Bagirova, 2025).

The aim of our study is to review and analyze the research discourse on corporate citizenship with an emphasis on the demographic segment of this discourse. As it was noted, the discussion of corporate citizenship issues in the context of demography is currently only developing, the corresponding discourse has not been fully formed. However, the exceptional importance of this topic for modern Russia determines the need for special attention to studies on demography-oriented corporate citizenship. Such an analysis will contribute to the activation of both research and socio-political discourse, which meets the needs of modern Russian society. Such discourses are capable of building an appropriate information field (information context) for the functioning of Russian business, which in the future will form the necessary and currently demanded moral attitudes and value orientations of entrepreneurship.

Research methodology

Achieving this aim requires, first of all, the development of certainty about the object of analysis. It is important to note that in Russian science, the discourse on corporate citizenship has a terminological feature. Obviously, due to the use of the borrowed, translated term (corporate citizenship) in publications, the authors use the terms *korporativnoe grazhdanstvo* and *korporativnaya grazhdanstvennost'*. In our opinion, there is an inappropriate confusion of the concepts of *grazhdanstvo* and *grazhdanstvennost'* (we consider the latter as the most correct). At the same time, the interpretation of the term *grazhdanstvennost'* in Russian scientific discourse is diverse, this concept does not have a strict scientific definition, unlike the term *grazhdanstvo*. The study of *grazhdanstvennost'* as a scientific category in Russia began in the second half of the 19th century

(Zautorova, Makeeva, 2016). When defining *grazhdanstvennost'*, representatives of various sciences identify different significant features of it. Even within the framework of one scientific field it can be understood in different ways. Thus, *grazhdanstvennost'* can be interpreted as a feeling of being a citizen of a particular country, responsible for what is happening there (Baev, 2023); as a person's ability to get involved in issues related to life in society and act throughout his or her life as an active and responsible citizen who respects the rights of others (Lubskii, Mamina, 2019); as a set of beliefs and views, which presuppose, on the one hand, a high degree of independence of individual judgments about society, on the other – an inviolable social solidarity, manifested in participation in the life of society (Nikiforov, Skalina, 2007, p. 189). We think that the latter definition is the most complete, since it best expresses the idea of *grazhdanstvennost'*, therefore it will be used in this study as a basis for understanding corporate citizenship.

The analysis of the discourse on corporate citizenship was carried out on the basis of both quantitative and qualitative methods.

Quantitative methods of analysis. This analysis was based on the study of publication activity in the field of corporate citizenship using two services.

1. Google Books Ngram Viewer. In conditions of limited access to international scientometric resources (due to the sanctions imposed on Russia, even in the field of science), a primary understanding of the dynamics of research interest in corporate citizenship issues can be obtained based on data from the Google Books Ngram Viewer search service. This open online service allows visualizing the frequency of occurrence of words and phrases in a corpus of books in different languages over different time periods. To obtain such visualization in our study, we used the terms *corporate citizenship*, *korporativnoe grazhdanstvo*

and korporativnaya grazhdanstvennost' by searching in English-language and Russian-language book corpora (archive is available up to 2019). As noted earlier, there is a confusion between the concepts of grazhdanstvo and grazhdanstvennost' in Russian-language studies. That is why we used both translations of the term in our search queries.

2. Russian index of academic citations (RINTS) on the Elibrary. Based on this online resource, which is actively developing in Russia and constantly updates and expands research opportunities, a scientometric analysis of Russian publication activity on corporate citizenship was conducted.

At the first stage of the analysis, a search query was formulated, at the second stage, a sample of corresponding publications was analyzed. The phrases "corporate citizenship", "korporativnoe grazhdanstvo" and "korporativnaya grazhdanstvennost'" were used to formulate the search query. We selected articles where these phrases (considering morphology) are found in the title, key words or abstract. Further, a kind of scientometric portrait of such articles was compiled based on the metrics and analysis tools available at RINTS. For this purpose, an analysis of the total number of publications on corporate citizenship and its dynamics, an analysis of the number of citations of such publications, as well as an analysis of the various structures of the generated sample of publications was carried out. Such structures were distinguished based on the following criteria:

- publication activity on the topic under research at RINTS;
- number of citations of works on corporate citizenship;
- representation of publications in indexing databases – core of RINTS, RSCI, Web of Science, Scopus;
- distribution of publications by authors and organizations these authors are affiliated with;

– distribution of publications by subject areas and key words.

To visualize the data, typical methods of reflecting dynamics (line graphs), heat maps were used to track trends in publication activity using a color scale (darker colors indicate more articles, and lighter colors indicate fewer), as well as semantic word clouds that visualize the frequency of certain words or phrases.

Qualitative methods of analysis. The analysis based on qualitative methods, in fact, was a critical review of the subject area; the research method was the analysis of documents. We used the traditional (classical) method – content-semantic analysis, focusing on describing the interpretations and semantic context of the use of the term corporate citizenship by Russian and foreign scholars.

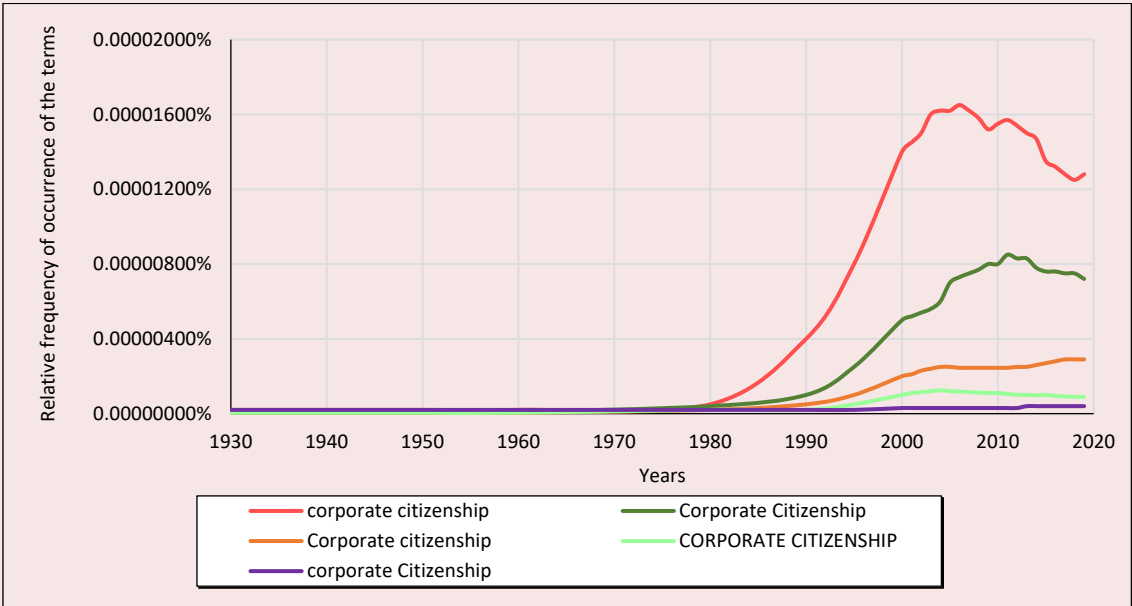
Findings

The findings based on quantitative methods of analysis

The results of search queries in Google Books Ngram Viewer showed that the concept of corporate citizenship appeared in English-language literature in the 1930s. This term was the most common in articles in 2000–2010 (*Fig. 1*). In the Russian-language corpus of Google Ngram Viewer, the term korporativnoe grazhdanstvo is found later – in the late 1960s. Since 1998, the number of books in Russian in which this term appears has been growing rapidly, reaching a peak by 2006. Then, obviously, research interest in this concept began to fade (*Fig. 2*).

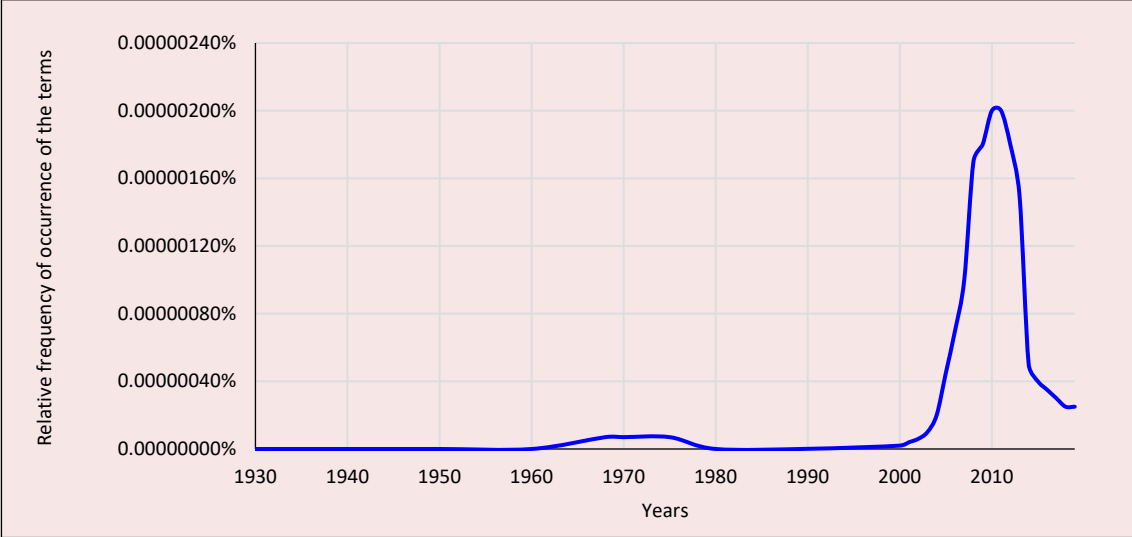
It should be noted that in the English-language corpus of books, the occurrence of the term has not decreased so rapidly in the last decade, demonstrating the stability of research interest in general (in all variants). The analysis also showed that the term korporativnaya grazhdanstvennost' does not occur at all in the Russian-language corpus of books of Google Ngram Viewer.

Figure 1. The occurrence of the term *corporate citizenship* in English-language literature



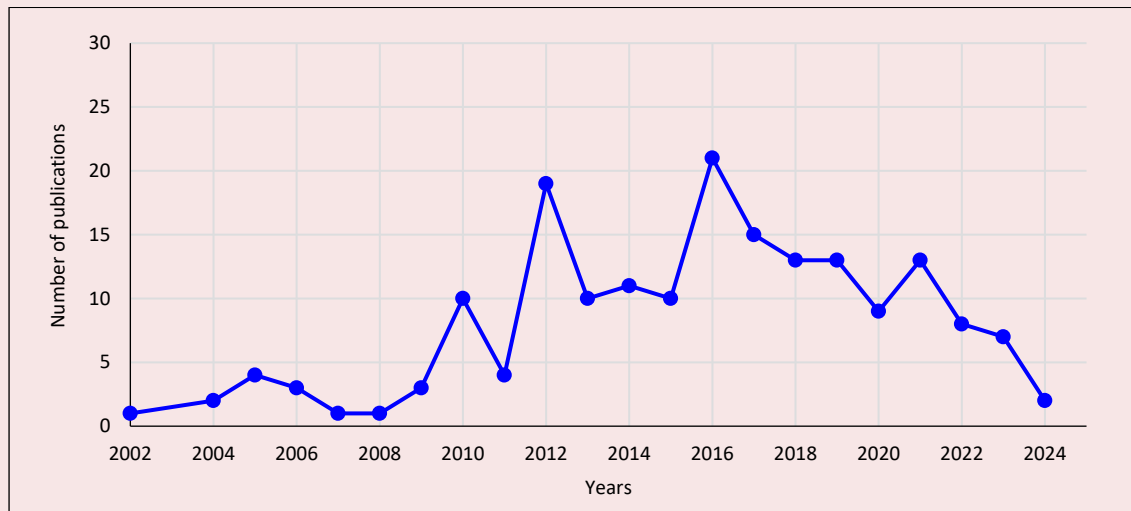
Source: Google Ngram Viewer.

Figure 2. The occurrence of the term *korporativnoe grazhdanstvo* in Russian-language literature



Source: Google Ngram Viewer.

Figure 3. Publications on corporate citizenship indexed in RINTS in different years



Compiled based on: RINTS data.

Further scientometric analysis based on the Russian index of academic citations (RINTS) showed that articles on corporate citizenship have been a phenomenon for the last two decades, and the dynamics of the number of such articles does not allow us to talk about the growth of research interest in this topic. Thus, the total number of publications was 180; the first article was indexed in 2002. The publication activity on the subject of corporate citizenship peaked in 2012 and 2016, and then it decreased (*Fig. 3*).

Over the five-year period (from 2020 to 2024), 39 papers on corporate citizenship were published; publication activity is noticeably lower than in the previous 5 years (from 2015 to 2019), when 72 such papers were published. Even taking into account the indexation lag and the potential increase in the number of publications indexed in RINTS in 2023–2024, such a significant difference indicates a decrease in research interest in corporate citizenship in Russian research discourse.

At the same time, the scientific significance of such articles remains stable. As a criterion of significance, we have adopted the scientometric

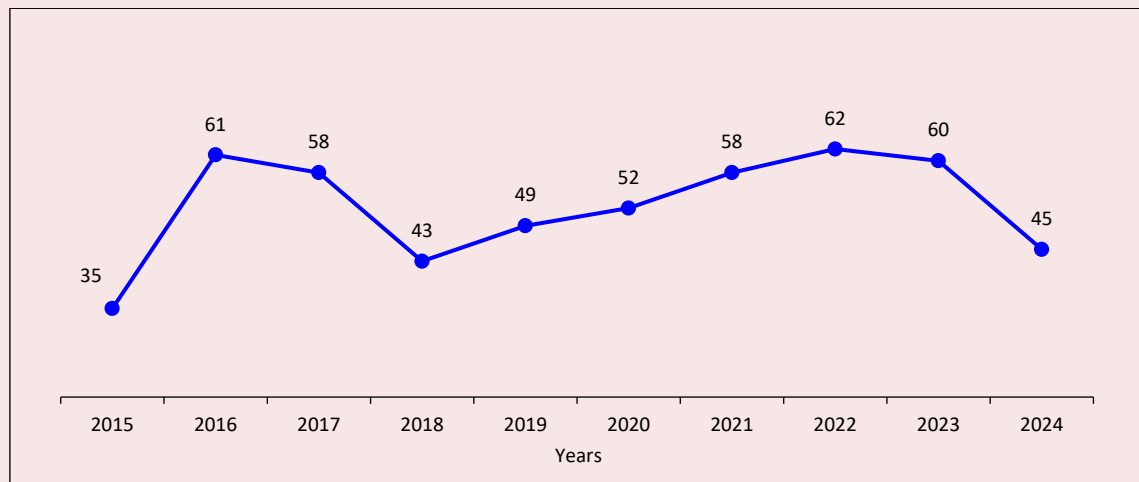
indicator available at RINTS – the number of citations (note that we are aware of its incomplete validity and fair criticism of it). However, since 2015, 52 articles on average annually cite works on corporate citizenship (*Fig. 4*).

More than half of all these citations are from works published before 2013. The total average age of the cited papers is 11.1 years. Thus, the most significant, fundamental developments of the concept of corporate citizenship were most likely made in earlier articles – more than 10 years ago.

In the course of further research, a map of scientific work on corporate citizenship was compiled and analyzed. The representation of such papers in scientific discourse was studied based on a number of criteria: the title and subject of journals, authors of articles, organizations the authors are affiliated with, indexing databases.

The study showed that high-impact (most cited) scientific papers on corporate citizenship were published in the journals “Economy and Entrepreneurship”, “Tomsk State University Journal of Economics”, “World Economy and International Relations”.

Figure 4. The number of publications indexed in RINTS citing works on corporate citizenship



Compiled based on: RINTS data.

The analysis of the structure of the cited publications allowed us to identify key researchers in the field of corporate citizenship – the works of the following authors are most often cited: S.P. Peregudov (12% of the total number of citations), E.B. Zavyalova (8%), I.S. Semenenko (5%), R.N. Abramov (5%).

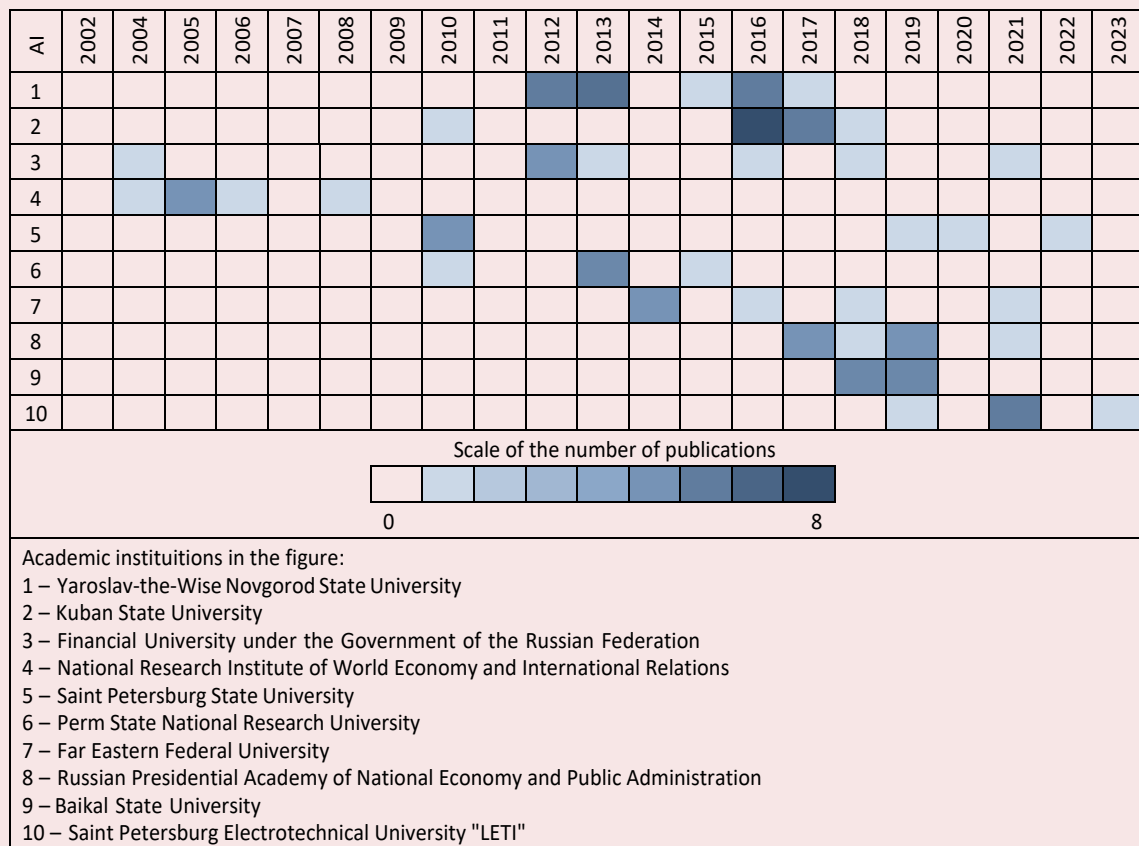
The analysis allowed identifying Russian scientific centers where relevant research is being conducted. Most of the papers on the topic have been published by researchers from the following universities:

- 1) Yaroslav-the-Wise Novgorod State University (8% of the total number of publications);
- 2) Kuban State University (8%);
- 3) Financial University under the Government of the Russian Federation (4%).

At the same time, over the past 5 years, researchers from Saint Petersburg Electrotechnical University “LETI” have been most actively engaged in the topic – 13% of publications indexed in RINTS in 2020–2024.

At the next stage of analysis, a so-called heat map showing the distribution of the number of publications over time was compiled, for which 10 academic institutions with the largest number of publications over the entire study period were selected (*Fig. 5*). As follows from the data presented on the map, as time moved on, the leading role in the study of corporate citizenship belonged to different research and academic centers. For example, from 2004 to 2008, the Primakov National Research Institute of World Economy and International Relations of the Russian Academy of Sciences (IMEMO RAS) was leading. Then other universities took the lead in the number of publications. It should be noted that the Financial University under the Government of the Russian Federation has been engaged in research on corporate citizenship for the longest time: the earliest works date back to 2004, and from 2012 to 2021, university scientists continued to publish articles on this topic.

Figure 5. Heat map of publications on corporate citizenship indexed in RINTS in 2002–2024 grouped by academic institutions (AI)



Compiled based on: RINTS data.

Further scientometric analysis was conducted to see the distribution of publications by source. It showed that the majority of works on corporate citizenship (79%) are articles in scientific journals. Moreover, a very small part of them was published in journals designated by the expert community as high-impact. Thus, only 10% of the total number of articles were published in journals included in the core of RINTS, 9% – in journals included in RSCI, 6% – in journals indexed in Web of Science or Scopus. At the same time, over the past 5 years, there have been noticeable changes in this structure – more articles began to be published in high-impact scientific journals (*Tab. 1*).

Table 1. RINTS articles on corporate citizenship in various indexing databases

Indexing database	Share of the total number of articles, %	
	2002–2024	2020–2024
RINTS core	10	14
RSCI	9	8
Web of Science, Scopus	6	11
Compiled based on: RINTS data.		

Then, key words in publications on corporate citizenship were analyzed using scientometrics. The total number of key words in the considered publications was 985 (479 of them were unique),

УСТОЙЧИВОЕ РАЗВИТИЕ

ГОСУДАРСТВО

СОЦИАЛЬНАЯ ОТВЕТСТВЕННОСТЬ

ТРАНСНАЦИОНАЛЬНЫЕ КОМПАНИИ

КОРПОРАЦИЯ

УПРАВЛЕНИЕ

ГРАЖДАНСКОЕ ОБЩЕСТВО

КРУПНЫЕ ПРОМЫШЛЕННЫЕ СТРУКТУРЫ

СОЦИАЛЬНАЯ ОТВЕТСТВЕННОСТЬ БИЗНЕСА

КОРПОРАТИВНОЕ ГРАЖДАНСТВО

КОРПОРАТИВНАЯ СОЦИАЛЬНАЯ ДЕЯТЕЛЬНОСТЬ

ВЛАСТЬ

КОРПОРАТИВНАЯ СОЦИАЛЬНАЯ ОТВЕТСТВЕННОСТЬ

СОЦИАЛЬНЫЕ ИНВЕСТИЦИИ

CORPORATE SOCIAL RESPONSIBILITY

ОБЩЕСТВО

ГЛОБАЛИЗАЦИЯ

БЛАГОТВОРИТЕЛЬНОСТЬ

СТЕЙКХОЛДЕРЫ

СОЦИАЛЬНАЯ ПОЛИТИКА

ГОСУДАРСТВЕННО-ЧАСТНОЕ ПАРТНЕРСТВО

ЭКОНОМИЧЕСКИЙ РОСТ

КОРПОРАТИВНАЯ СОЦИАЛЬНАЯ ОТВЕТСТВЕННОСТЬ (КСО)

КОРПОРАТИВНАЯ УСТОЙЧИВОСТЬ

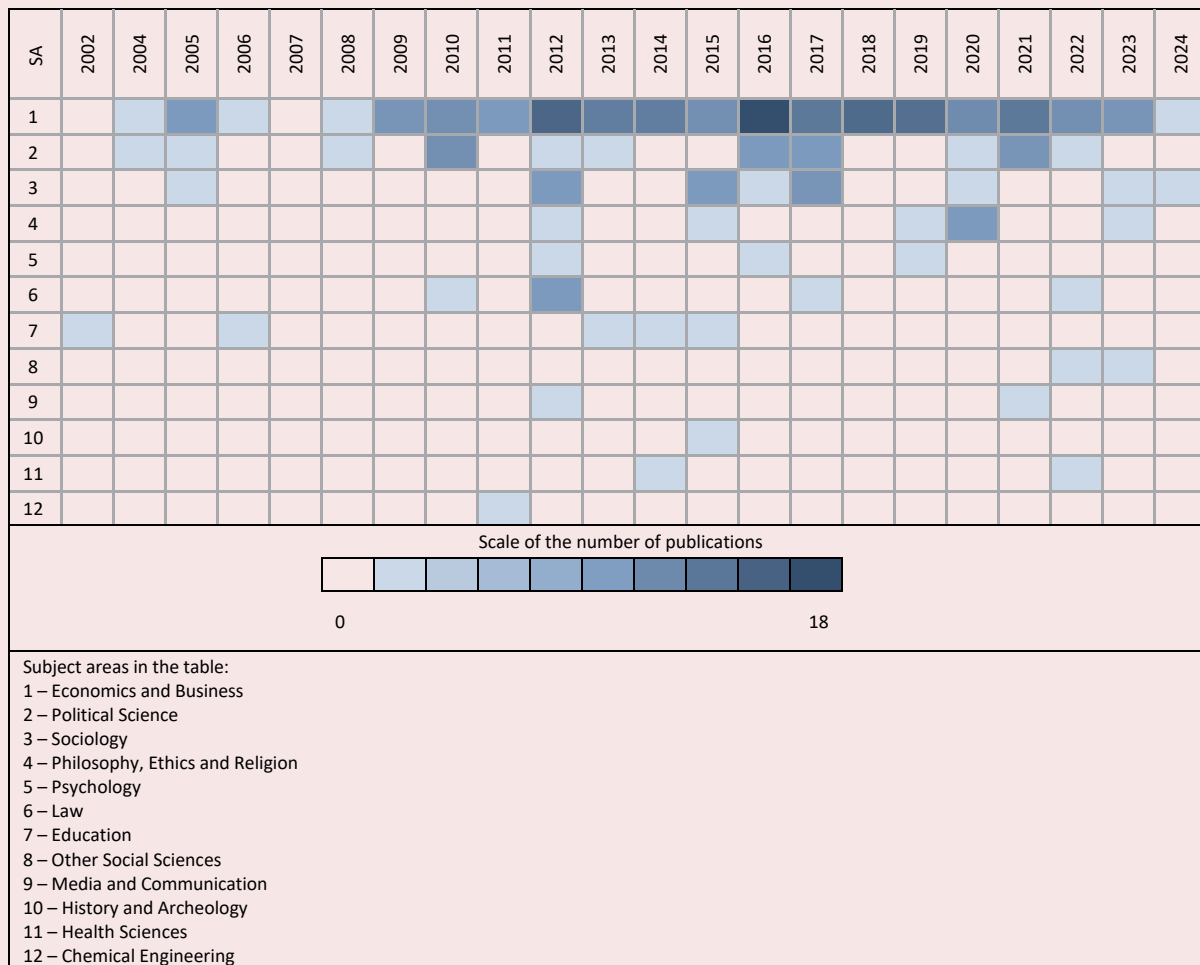
БИЗНЕС

СОЦИАЛЬНОЕ ПАРТНЕРСТВО

CORPORATE CITIZENSHIP

СОЦИАЛЬНЫЙ КАПИТАЛ

Figure 7. Heat map of subject areas (SA) of publications on corporate citizenship indexed in RINTS in 2002–2024



Compiled based on: RINTS data.

The findings based on qualitative methods of analysis

The analysis of publications on the topic has shown that neither in the scientific field nor in the corporate sector has there been a single, universal opinion on what constitutes corporate citizenship. Thus, in foreign studies, corporate citizenship can be understood as the fulfillment by a corporation of four types of commitments/engagements to stakeholders: economic, legal, ethical and philanthropic (Carroll, 1998); the degree to which the company meets these commitments/engagements (Maignan et al., 1999); a special

type of company management that minimizes the negative and maximizes the positive influences on society (Marsden, Andriof, 1998); connection between business activity and social accountability for mutual benefit (Waddell, 2000); portfolio of socioeconomic activities that companies often undertake to fulfill perceived duties as members of society (Gardberg, Fombrun, 2006).

In scientific and applied research, the concept of corporate citizenship can be identified with other concepts reflecting the company's value orientations, such as corporate social responsibility (CSR) and ESG (Okoye, 2009). The terms

corporate social responsibility and corporate citizenship are most often used interchangeably (sometimes completely equivalently) in applied research (Matten, Crane, 2005; Mirvis, Googins, 2006; Waddock, 2008; Rego et al., 2011). However, in some studies, corporate citizenship can be understood more broadly as a wide range of stakeholders and go beyond the concepts of sustainable development, CSR, and ESG (Waddock, 2008). At the same time, there are attempts to analyze the similarities and differences between CSR and corporate citizenship, as well as between CSR and ESG (Valor, 2005; Rendtorff, 2019).

Modern foreign scholars note that the concept of corporate citizenship is still insufficiently developed from an academic point of view and does not have a clear definition to differentiate it from other similar concepts and practices implemented by companies (Park et al., 2023). It is also important that the contexts and key words used to characterize corporate citizenship may differ significantly in each research field – scholars in various fields conceptualize corporate citizenship in various ways (Okoye, 2009).

This concept is being developed in several areas of Russian science (in general, they repeat those identified for foreign publications). Thus, a number of authors consider corporate citizenship in conjunction with the social responsibility of business (Abramov, 2005; Petukhov, 2010; Cherepanova, 2015). Corporate citizenship, in accordance with this direction, may be based on CSR or be the highest level of its implementation. Corporate citizenship can be considered as a way of doing business, characterized by initiatives in social investment and independence in finding solutions to public/socially significant issues (Kivarina, 2016), giving a competitive advantage (Hristova, 2020). The concept of corporate citizenship can be associated with the concept of sustainable

development (Peregudov, Semenenko, 2008; Egorova, 2013).

Papers indicate the versatility and diversity of interaction between private enterprise and various stakeholders as a fundamental principle of corporate citizenship, within which business is identified as a corporate citizen who has four roles – an employer, a manufacturer, an economic entity and a member of society. As an employer, a corporate citizen creates favorable working conditions and staff development, as a manufacturer – provides safe and useful goods and services, as an economic entity – adheres to ethical standards of competition, as a member of society – supports social projects and solves social issues.

In some studies, corporate citizenship is considered as a special form of social partnership between business and the state characterized by their mutual responsibility to society (Kosorukov, 2017; Teteryuk, 2017); between business and society, when the degree of company's involvement in civil society reflects the level of development of this interaction (Peregudov, Semenenko, 2008; Kivarina, 2016).

A number of Russian studies are devoted to the genesis of corporate citizenship ideas and the stages of its development (Grekova, Kuzmin, 2012; Kuzmin, 2013; Matveeva, 2014). At the same time, the duration and main points of such stages differ significantly among scholars.

Another feature of the research discourse on corporate citizenship is that it mainly concerns big business. However, some works note the need to spread its ideas and principles among representatives of small business (Peregudov, Semenenko, 2008).

The article by I.B. Adova and G.N. Ibragimov (Adova, Ibragimov, 2021) deserves special attention as the authors conducted a review (textual analysis) of Russian studies on corporate citizenship (the authors used the term *korporativnoe grazhdanstvo*), presenting a classification of definitions of the term.

Recognizing the undoubted importance of this study, we note its limitations. We question both the classification itself and principles for choosing such lines of research, as well as methods used to create a sample of publications for analysis.

Controversial research issues

The findings of the analysis raise a number of controversial issues. First of all, we note that currently we can talk about certain limitations in the development of the discourse on corporate citizenship, the most important of which is the predominance of descriptive, non-applied works on this phenomenon.

It has been revealed that scientific and applied research has not developed a single concept of corporate citizenship, and a place of corporate citizenship in the business value system and its practices has not been identified. At this stage, in our opinion, it is necessary to conceptualize corporate citizenship and carry out a more thorough theoretical research on it, especially in the demographical context. Obviously, insufficient conceptualization makes it difficult for business to perceive its ideas and principles and, consequently, to implement it into real business strategies and practices (Park et al., 2023). The need for a thorough conceptualization is important not only for the development of a system of scientific knowledge and research methodology, but also for the development of the stable corporate sector; even the use of the term corporate citizenship was mainly initiated by business practitioners (Valor, 2005).

Another important debatable issue revealed after the analysis is the question of the prospects and opportunities for Russian business to adopt ideas, principles of corporate citizenship in general and particularly in the demographic area. This question probably refers us to the theoretical and philosophical discussion about business/corporation as a moral agent. The answer to the question of the moral status of a corporation is actually required to

substantiate the ontological consistency of ideas, postulates of corporate citizenship and the essence of entrepreneurship. Today, apparently, the return to this topic is in demand. It should be noted that the discussion about the moral status of a corporation is not new, it originates in the 1970s and is associated with the works of J. Ladd and P. French. While J. Ladd (Ladd, 1970) denied the possibility of moral responsibility of the corporation as a whole and its individual managers, P. French (French, 1979), on the contrary, justified the postulate that corporations are moral agents and have certain rights and duties. No consensus has been reached on the understanding of the moral status of a corporation, and although interest in this topic has somewhat decreased, it has not completely disappeared (Mansell et al., 2019).

To conclude, the discourse of corporate citizenship today is not an isolated research phenomenon, but can be actualized in parallel with other related and important business discourses, such as the moral status of a corporation.

Conclusion

The conducted research allowed us to draw a number of significant conclusions. First of all, it showed that, despite the rather impressive catalogue of accumulated ideas about corporate citizenship, neither the scientific community nor the business community has developed a single, universal understanding of it. The criteria differentiating corporate citizenship from other similar concepts and practices implemented by companies have not been identified. The possibilities, conditions for the dissemination of its ideas and principles in the business environment, as well as the determining factors for the adoption of ideas of corporate citizenship by business are practically not explored in research discourse.

Such a discourse, while maintaining a stable scientific significance for a number of years, has nevertheless been losing its volume in recent years —

the number of publications on this topic has been decreasing. However, it is more widespread in foreign studies. Of course, the sanctions against Russia and the inability to gain full access to the largest and most significant international citation databases, Web of Science and Scopus, impose certain restrictions on our research in terms of scientific review of the foreign segment of discourse. In further studies, provided that the sanctions imposed on the Russian science are lifted, this limitation can be overcome.

Characterized by its representation in a number of subject areas, the discourse of corporate citizenship practically does not include the subject area "Demography". The lack of conceptualization of corporate citizenship in the context of demography hinders business in its perception and does not contribute to its active involvement in solving Russian demographic problems.

The findings, in our opinion, have both scientific and practical significance. From a scientific and theoretical point of view, the study is significant as it meets the lack of scientific reviews in the field of corporate citizenship, develops scientific

knowledge on strategic enterprise management and raises the question of conceptualizing the research area of corporate citizenship that is currently in demand (especially in the field of demography).

The practical significance of the work is determined by the possibility of using the results by other authors dealing with issues of corporate citizenship and related topics. The findings provide guidance on possible research collaborations (based on the identified development centers and leading researchers), journals for publishing research results (considering the identified journals with the best topic representation), directions for further development of the topic (based on the identified issues and shortcomings of the scientific discourse on corporate citizenship).

The practical significance of the research also lies in the fact that the systematization and conceptualization of this subject area will contribute to a more successful promotion of ideas and principles of corporate citizenship among Russian enterprises, and a more active involvement of Russian business in solving Russian national strategic tasks.

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An Overview of Closed-Loop Economy Assessment Methods



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Abstract. The goals related to the transition to a closed-loop economy remain relevant due to the fact that this concept expands the boundaries of environmental sustainability through the ideas of transforming products and waste in the context of effective interaction between the safety of ecological systems and the stability of economic growth. Alongside the possibilities of the closed-loop economy, theoretical and methodological issues regarding the evaluation of the effectiveness of its practices are expanding. At present, there is no generally accepted way to measure a closed-loop economy as a whole, at individual levels (macro, meso, micro), or within the framework of various principles (“R”-strategies). The aim of the work is to systematize existing scientific research on the subject of closed-loop economy assessment, and to conduct their overview analysis. The article uses general theoretical methods of analysis, synthesis, comparison and classification, which meets the objectives of a descriptive review. Secondary data analysis is chosen as the main method. The study made it possible to trace trends, systematize approaches to assessing the closed-loop economy and gain an up-to-date understanding of the dynamics of scientific knowledge regarding methods of its assessment. We define reference points for categorization and structuring of indicators of the closed-loop economy and classify approaches to its assessment. The review identified a number of methodological problems: assessment methods should be based on generally accepted definitions and principles of the closed-loop economy, its established strategies and business models, as well as comply with national objectives and national strategies in the field of sustainable development and take into account industry and regional specifics. The assessment methods studied in the work are systematized and classified relative to the level of application of closed-loop economics practices (at the

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micro, meso, and macro levels), which can help strengthen the effective subjectivity of multi-level actors in the implementation of closed-loop economy projects.

Key words: closed-loop economy, circular economy, methodology for assessing circular economy, circular economy indicators.

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Introduction

The ideas of the transition from a linear type of production to new cyclical models remain relevant, despite the geopolitical turbulence, due to the need to solve existential problems to reduce the negative impact on the environment. The closed-loop economy (CLE), which is also referred to in foreign sources as the circular economy (CE), generally assumes two development vectors within the framework of the logical model “resources – products – renewable resources”: 1) minimizing resource usage and recycling; 2) greening of production facilities and reducing the negative impact on the environment. From these positions, CLE expands the boundaries of environmental sustainability through the ideas of transforming products, waste and production chains, so that an effective interaction between the safety of ecological systems and the stability of economic development is found and implemented. However, in parallel with the possibilities of implementing CLE, theoretical and methodological issues regarding the evaluation of the effectiveness of practices within the framework of this concept are expanding.

Barriers to developing a unified approach to assessing CLE currently include:

- 1) dualism in approaches to CLE (minimizing resource consumption / minimizing negative environmental impact);
- 2) applicability of CLE practices at various levels:

- micro level (products, companies, consumers);

- meso level (industrial symbiosis, eco-industrial parks, industries);

- macro level (global, national, regional, urban economic systems);

- 3) essential content and list of the “R” principles in CLE, the most well-known of which are as follows: refuse, rethink, reduce, reuse, repair, refurbish, remanufacture, repurpose, recycle, recover;

- 4) differences in methodological approaches to the assessment of the “R” principles;

- 5) complexity of determining the object of measurement and the differences in the systems considered and measured within the framework of CLE;

- 6) significant differences in biological and artificial cycles of materials and resources, where biological cycles are associated with the safe and efficient movement of renewable biotic resources to and from the biosphere, while artificial (anthropogenic) cycles involve the use of artificial materials and their compounds that are dangerous to the environment.

These barriers determine the main debatable issue: to what extent existing methodologies are suitable for assessing the environmental and economic effectiveness of CLE strategies in the measured systems. We should note that the generally

accepted approach of attributing regional economic systems to the meso-level when considering CLE in foreign sources is changing to the macro level. This makes it possible to emphasize the level of subjectivity of the governing bodies responsible for the implementation of this direction in the economic system of a given facility.

The level of subjectivity for the implementation of CLE practices is an essential parameter, which is associated with the need to take into account specific territorial features (geographical, environmental, economic, social, institutional). CLE is particularly relevant for industrial regions (with a high proportion of the mining and manufacturing sectors in the structure of gross regional product). Industrial regions, being the basis for the development of the national economy, are top contributors to the degradation of ecological systems. A number of such regions are characterized by extensive industrial development, accompanied by the introduction of metal leaching technology, development of deep horizons and deposits with lower mineral content, which contributes to the aggravation of ecological and economic contradictions. These problems can be overcome only from the perspective of reflection of subjectivity, which must be taken into account at the stage of CLE assessment. This review paper aims to combine and systematize the accumulated knowledge in the field of closed-loop economics assessment, classifying existing methods according to the levels of CLE implementation.

Methods

The aim of the paper – to synthesize and systematize previous research on the subject of closed-loop economics assessment – involves using general theoretical methods of analysis, synthesis, comparison and classification, which meets the objectives of a descriptive review. Secondary data analysis is chosen as the main

research method, the main purpose of which is to search for patterns, and also to systematize and classify the studied objects, methods or parameters. The research method allows us to solve a number of methodological tasks: to compare the results of previous studies on the assessment of CLE; to get an idea of the time dynamics of research; to conduct a comparative analysis of existing approaches to the assessment of CLE and propose their classification. The search for sources on circular economy (closed-loop economy) was carried out in the databases and information resources of Web of Science, Google Scholar, ResearchGate, ScienceDirect using various combinations of search queries, such as “circular economy assessment”, “circular economy index”, “circular economy measurement”, “circular economy indicators” by category “review article” and “research article”. The “open access” filter was used during the selection. The subject area was limited to economics, management, environmental sciences, and social sciences. A total of 43 indicators were obtained as a result of the analysis, which were included in the scientific review and systematized depending on the level of assessment for micro, meso, and macro indicators. The search results are selected manually based on the titles and abstracts. Significant selection criteria were concepts such as “analysis”, “evaluation” and similar expressions that indicated the potential measurement of one aspect or a subset of aspects within the circular economy.

Results

The studied methods of CLE assessment were systematized with respect to the level of application of these practices (micro, meso, and macro level), which can contribute to strengthening the effective subjectivity of multi-level actors in the development of practices and the implementation of CLE projects.

The macro level is currently represented by the fewest number of research papers, since the practices of CLE are at an early stage of development, which, accordingly, presupposes their approbation primarily at the micro and meso levels. The parameters of the CLE assessment at the macro level are proposed in the collection “Green Growth Indicators” of the Organization for Economic Cooperation and Development¹, which emphasizes the role of production and consumption in the economy, as well as the relationship between economy, natural resources and environmental policy. It is emphasized that increasing resource productivity and ensuring sustainable materials management require a comprehensive policy on waste, materials and products based on a 3R closed-loop economy. The ecological and resource-saving efficiency of the economy is assessed through indicators of carbon and energy productivity, which characterizes the interaction with the climate system and the global carbon cycle, as well as the ecological and economic efficiency of using energy resources in production and consumption; productivity of natural resources, which characterizes the environmental and economic efficiency of their use in production and consumption; multifactor productivity, which takes into account environmental parameters through the costs associated with environmental pollution.

Y. Qing and co-authors proposed an index system used to assess the development of a closed-loop economy in Shaanxi Province, including five parameters (Qing et al., 2011).

The article by M. Haupt, C. Vadenbo, and S. Hellweg presents an analysis of the material flows of the Swiss waste management system, with special attention paid to the physical composition of waste. Half of the solid household waste is recycled,

and half is thermally treated with energy recovery. It is proposed to use the recycling rates (RRs), an indicator for circulating behavior of materials, as measure for the degree of circularity of an economy. The study provides an analysis of the recycling of solid household waste (paper, cardboard, aluminum, tinplate, glass, and polyethylene terephthalate) by splitting the RRs into closed- and open-loop collection rate and RRs. According to the proposed methodology, the coefficient measures the available secondary resources obtained as a result of recycling processes (Haupt et al., 2016).

(Smol et al., 2017) proposed indicators characterizing the closed-loop economy in regional politics. The authors draw attention to the relationship of CLE with eco-innovation, which implies that this aspect is reflected in the assessment methodology. The paper presents five group indicators based on eco-innovation factors, which can be identified from statistical data from Eurostat. This measurement method makes it possible to create a systematic and integrated approach to the concept at the regional level through the prism of the effectiveness of eco-innovations, taking into account the statistical specifics of national economic systems.

N. Kiani Mavi and R. Kiani Mavi evaluate the closed-loop economy at the macro level using the Malmquist index (Kiani Mavi, Kiani Mavi, 2019).

A. Pires and G. Martinho developed the Waste Hierarchy Index (WHI) to measure the hierarchy of municipal solid waste in the context of a closed-loop economy. Recycling and preparation for reuse, in the context of Eurostat’s regulatory sources, are considered as positive factors of a closed-loop economy, while incineration and disposal of waste are considered as negative factors. The authors are testing WHI at the local and national levels. The index allows calculating the hierarchy of waste, taking into account different types of recycling and incineration, these processes are

¹ Green Growth Indicators 2014. OECD. Available at: https://www.oecd.org/en/publications/green-growth-indicators-2013_9789264202030-en.html

assigned different weights depending on how waste operations correspond to a closed-loop economy (Pires, Martinho, 2019). The use of WHI is possible for specific materials and waste streams. However, WHI only considers operations that occur after the formation of waste, and does not include measures to prevent its formation. The possibility of applying the proposed methodology for assessing CLE directly depends on the national regulatory framework that defines the essence of these processes.

The work of I.-M. Garcia-Sanchez and co-authors describes a multivariate index, which is a two-stage composite business index of a closed-loop economy. Using a sample of 26,783 companies from 49 countries and 10 sectors for the period from 2014 to 2019, the authors summarized initiatives at

the country and industry levels. The index is based on an analysis of data from the Thompson Reuters EIKON² database, and therefore its calculation and reliability of the estimate directly depend on the degree of disclosure of non-financial information (Garcia-Sanchez et al., 2021).

The tools of statistical analysis, the index method, and the analysis of relative indicators are used to evaluate CLE at the macro level (*Tab. 1*). This is due to the simplicity of calculations and the ability to select the studied parameters, which, in turn, makes it possible to adapt the methods to use any available set of official statistical data. The Malmquist index adds the ability to evaluate dynamic performance indicators, making it possible to differentiate performance change parameters related to cyclical processes. The need to apply

Table 1. Methodology for assessing a closed-loop economy at the macro level

Author(s)	Year	Methodological toolkit	Estimated indicators / parameters / description
Qing Y., Qiongqiong G., Mingyue Ch.	2011	Index method	<ul style="list-style-type: none"> – Social and economic development, – resource efficiency, – recycling and reuse of resources, – environmental protection, – pollution reduction
Haupt M., Vadenbo C., Hellweg S.	2016	Material flows analysis	Recycling rates (RRs)
Smol M., Kulczycka J., Avdiushchenko A.	2017	Relative statistical indicators	<ul style="list-style-type: none"> – Eco-innovation costs, – eco-innovation activity, – eco-innovative results, – resource efficiency results, – socio-economic results
Kiani Mavi N., Kiani Mavi R.	2019	Malmquist index	<ul style="list-style-type: none"> – Resource performance level, energy consumption, – greenhouse gas emissions, – waste volume, – renewable energy sources, – GDP
Pires A., Martinho G.	2019	Relative statistical indicators	The Waste Hierarchy Index (WHI) for solid household waste uses the following parameters: «PR» – preparing for reuse; «UpR» – up-cycling; «DR» – down-cycling; «CAD» – composting and anaerobic digestion; «BT» – biological treatment of mixed/residual municipal solid waste; «WtE» – incineration with energy recovery; «I» – incineration without energy recovery; «L» – landfill
Garcia-Sanchez I.-M., Somohano-Rodriguez F.-M., Amor-Esteban V., Frias-Aceituno J.-V.	2021	Statistical methods	CEBIX (Circular Economy Business Index at the national level) – consolidated business index of the closed-loop economy based on 17 environmental practices
Source: own compilation.			

² Available at: <https://eikon.thomsonreuters.com/index.html>

material flow analysis depends on the nature of the cyclic process in question, its parameters and its economic feasibility. The analysis of material flows makes it possible to optimize production processes, which, accordingly, leads to lower costs, but requires significant resources and involves difficulties in integrating with existing systems.

The methodological tools for assessing CLE at the meso level are more diverse. For example, N.B. Jacobsen's work is devoted to quantifying the effectiveness of industrial symbiosis, considered as a sub-branch of industrial ecology. It was established that industrial symbiosis can provide both significant and minor environmental benefits (Jacobsen, 2006).

The methodology presented by Z. Wen and X. Meng is based on the assumption that increased material exchange between combined enterprises in leading industrial production chains in eco-industrial parks leads to the creation of an industrial symbiosis system that is effective in strengthening the closed-loop economy (Wen, Meng, 2015).

The wastewater circonomics index was proposed in the work of B. Kayal and co-authors to measure cyclicity in the wastewater treatment industry. The index reflects the efficiency of reuse and recycling of the wastewater treatment process, taking into account its specific parameters. In this model, wastewater is transformed from waste into a resource. The novelty of the proposed index lies in the use of objectively substantiated weights reflecting the environmental benefits of the purification process (Kayal et al., 2019).

L.-L. Ding and colleagues proposed an approach based on the following hypothesis: industrial CLE seeks to maximize economic benefits while minimizing negative environmental impacts by restoring production, recycling, efficient waste management and the use of renewable sources. Using the analysis of the operating environment, the authors determine the

effectiveness of the industrial circular economy. The extended Malmquist index is used for further analysis of dynamic changes. The economic result is represented by the industrial added value by sector (IAVS), which reflects the final product of industrial production activities in monetary form. Based on the availability of statistical data, the authors make assessments taking into account industrial labor and fixed assets as economic costs. An undesirable result in the model is industrial pollution, which is estimated based on the volume of industrial wastewater and solid industrial waste. Environmental management costs mainly consist of the costs of industrial wastewater treatment, wastewater treatment plants, and investments in environmental management due to industrial pollution. The indicators of environmental cleaning results were the volumes of treated industrial wastewater and solid industrial waste disposal (Ding et al., 2020).

S.V. Ratner, V.V. Iosifov, and P.D. Ratner (Ratner et al., 2020) proposed an approach to assessing the level of CE development at the regional and federal levels. The first subsystem of the circular economy (SS1) includes the production subsystem, the optimization of which consists in reducing resource intensity. The volume of GRP Y1 is taken as a positive result of the activity of the regional economic system, and the number of people in the region whose living is provided by this infrastructure Y2 is taken as a positive result of the activity of the communal infrastructure. The physical resources that it consumes – the amount of energy consumed by the region X1 and the amount of water consumed X2 – are considered as inputs to the production subsystem. The volume of emissions into the atmosphere from stationary sources Z1, the volume of untreated or insufficiently treated wastewater Z2, the volume of production and consumption waste Z3, and the area of disturbed land Z4 are selected as undesirable outputs.

The work of S.S. Gutman and M.S. Manakhova puts forward three groups of goals for the implementation of CE at the regional level (Tab. 2).

The article by C.-H. Wang and colleagues assesses suppliers for the implementation of a closed-loop economy. The index takes into account the economic, environmental and social losses associated with poor product quality. In the context of a closed-loop economy, poor quality leads to an increased number of defects, a shorter product life, and a reduced reuse of components (Wang et al., 2021).

Another industry-specific assessment methodology (for the construction industry) of CLE elements is proposed in the work of T. O'Grady and co-authors. The proposed index is evaluated through the design parameters of demolition, dismantling, and sustainability in construction. According to the authors, the indexation of the circularity of buildings should facilitate the transition from

traditional demolition to a closed-loop economy and reduce the environmental impact at the stages of reconstruction. The researchers note that the possibility of using the technique varies depending on the regulatory framework governing the processes of waste disposal and reuse. The index ranges from 0 to 1, where a higher value indicates that the building has a high degree of disassembly and is built using sustainable components that can be disassembled several times (O'Grady et al., 2021).

N.Y. Titova proposed a circular economy system in accordance with the Sustainable Development Goals, based on a bibliometric analysis of 679 publications. The indicators used in these studies are divided into groups (economic, environmental, social), as a result of which a correspondence has been established between them according to the criteria of belonging to the assessment of the achievement of the UN Sustainable Development Goals and the principles of circular economy (Titova, 2022).

Table 2. Objectives of the circular economy at the regional level

Sector	Goals
Social sector	<p>Creating new jobs and increasing the number of interns from universities in enterprises adhering to the principles of CE, due to support from the regional administrations (as an indicator of the employment prospects for the population).</p> <p>Creation of eco-parks, nature reserves, and eco-paths.</p> <p>Support for research and development (R&D) in the region.</p> <p>Development of landscaping of residential areas, taking into account environmental standards and garbage collection points.</p> <p>Encouraging people to engage in the separate sorting of garbage and organizing public events on this topic.</p>
Environmental sector	<p>Ensuring control over pollution of air, water bodies and soils by industrial facilities.</p> <p>Establishing the infrastructure for separate waste sorting in residential complexes and industrial facilities.</p> <p>Increased control over the organization of illegal landfills.</p> <p>Increasing the share of waste processed in the region.</p> <p>Introducing stricter environmental regulations.</p> <p>Reducing the share of primary resource usage.</p> <p>Reducing illegal deforestation in the region.</p>
Economic sector	<p>Support for the development and creation of industrial clusters.</p> <p>Funding from the R&D administration.</p> <p>Creating a secondary resource market.</p> <p>Raising tariffs for primary natural resources.</p> <p>Raising fines for environmental violations.</p> <p>Improving the economic sustainability of enterprises in the region.</p>
Compiled according to (Gutman, Manakhova, 2021).	

T.T. Huyen Do and coauthors considered an integrated cyclic index to assess the potential effectiveness of using CLE in the wood production chain, taking into account carbon neutrality. The proposed index reflects five parameters of CLE and zero carbon emissions. The best-worst method was used to calculate the optimal weighting coefficients of the index components, and linear target programming was used to identify the maximum value in order to determine the preferred alternatives to CLE (Huyen Do et al., 2023).

F. Holly, S. Schild, and S. Schlund propose a C-METRIC evaluation model for measuring the work cycle of engineering companies, which includes 66 questions from 33 different fields of activity (Holly et al., 2023).

The work of A.G. de Andrade Monteiro and colleagues describes an indicator of the CE assessment for the chemical industry. The scope of the indicators in combination with technical cycles was based on the 3R principles in combination with measurements of waste generation, gas emissions and energy consumption (Monteiro et al., 2024).

The assessment of CLE at the meso level is more diverse in terms of methodological tools (*Tab. 3*). This is probably due to the greater availability of initial statistical data for this level, which are required for the use of most of these methodological tools. In addition, unlike macro-level tools, the possibility of using qualitative analysis (questionnaires, surveys) is obvious at the meso level. From our point of view, qualitative analysis tools are more appropriate at the meso level than at the macro and micro levels, due to the fact that at the meso level it is possible to form a sample or focus group that meets the necessary requirements to ensure the validity of the study: on the one hand, due to the qualitative selection of participants and the application of the requirements of homogeneity

of social and professional characteristics of the respondents; on the other hand, the meso level retains the possibility of preserving the principle of the law of large numbers.

The most widespread group currently includes methods for assessing the parameters of a closed-loop economy at the micro level. For example, S.K. Das and co-authors proposed a multifactorial model for calculating the labor intensity of disassembly, reflecting the total operating costs of disassembling a product (Das et al., 2000).

P. Zwolinski and colleagues proposed taking into account constraints based on the profiles of recoverable products throughout the design process. Eight categories of criteria were proposed to determine the product profile (Zwolinski et al., 2006).

The research by J.Y. Park and M.R. Chertow develops tools for waste management as resources. The authors propose a quantitative tool that determines how resource-intensive specific materials are. The indicator of reuse potential describes how resource-intensive a material is due to its quality (Park, Chertow, 2014).

The end-of-life index allows developers to make informed decisions about design alternatives to ensure optimal end-of-life product performance (Lee et al., 2014).

The work of S. Huysman and colleagues puts forward a coefficient for calculating the environmental effect in terms of resource use. The approach of cumulative exergy extraction from the natural environment is applied. The indicator is based on estimated environmental impact values obtained using life cycle assessment methods (Huysman et al., 2015).

A. Van Schaik and M.A. Reuter have developed a recycling index based on simulation models, which includes waste disposal indicators (Van Schaik, Reuter, 2016).

Table 3. Methodology for assessing the closed-loop economy at the meso level

Author(s)	Year	Methodological toolkit	Estimated indicator / parameter / description
Jacobsen N.	2006	Statistical methods	Evaluating the effectiveness of industrial symbiosis
Wen Z., Meng X.	2015	Substance flow analysis (SFA). Resource performance indicators (RP). Questionnaires and field research	Assessing the impact of industrial symbiosis on the growth of CLE
Kayal B., Abu-Ghunmi D., Abu-Ghunmi L., Archenti A., Nicolescu M., Larkin C., Corbet S.	2019	Statistical methods, weighting factors	Wastewater Circonomics Index. Indicators that make up the index are based on the principles of reduction, reuse and recycling (3R)
Ding L.-I., Lei L., Wanga L., Zhang L.-F.	2020	Malmquist index. Data Envelopment Analysis (DEA). Cobb – Douglas Production Function	industrial added value by sector (IAVS (IAVS)
Ratner S.V., Iosifov V.V., Ratner P.D.	2020	Data Envelopment Analysis (DEA)	Comprehensive indicator of the level of development of the circular economy, calculated as the arithmetic average of four indicators of various types of efficiency
Gutman S.S., Manakhova M.S.	2021	Balanced scorecard (BSC)	Objectives for the implementation of CE at the regional level
Wang C.-H.	2021	Taguchi index	Supplier assessment: takes into account the economic, environmental and social losses associated with poor product quality
O'Grady T., Minunno R., Chong H.-Y., Morrison G.M.	2021	Statistical methods	The index includes parameters for the design for disassembly, deconstruction, and resilience (3DR) for the built environment. The index is based on the definition of the sub-indices of disassembly (DI), deconstruction (DE) and resilience (R) of the structure.
Titova N.Yu.	2022	Bibliometric analysis	A circular economy system in line with the Sustainable Development Goals
Huyen Do T.T., Ly T.B.T., Hoang N.T., Tran V.T.	2023	Best-worst method (BWM) and linear goal programming (LGP) techniques	Integrated circular economy index (ICEI). Its component indicators include: C1 – carbon emission reduction rate (Rc); C2 – internal renewable fuel substitution rate (RF); C3 – internal renewable electricity substitution rate (RE); C4 – thermal energy recovery rate (RH); C5 – economic efficiency rate
F. Holly, C. Schild, S. Schlund	2023	Survey	C-METRIC (Circular Manufacturing Evaluation and Rating for Industrial Circularity)
de Andrade Monteiro A.G. et al	2024	Life cycle concept, statistical methods	Indicators included in the model: emissions into the atmosphere, reduction of waste, % of waste used for recycling, % of waste used for electricity generation
Source: own compilation.			

The article by A.E. Scheepens and co-authors suggests an environmentally efficient value creation coefficient. To assess the potential negative environmental impact of business operations, an LCA-based eco-cost coefficient is applied (Scheepens et al., 2016).

E. Franklin-Johnson and co-authors use the longevity index to evaluate CLE. This method involves estimating the initial service life, the service life after repair, and the service life after recycling to assess the contribution of the resource to the durability of the material. The assessment is based on the assumption that the central element of a closed-loop economy is the creation of value through the conservation of materials. Thus, by measuring the contribution to the preservation of a material based on the amount of time during which the resource is used, it is possible to obtain an assessment of efficiency in a closed-loop economy (Franklin-Johnson et al., 2016).

The recycling index proposed by M.A. Reuter, A.V. Schaik takes into account new recycled material. The assessment methodology is based on the postulate that recycling is the basis of a closed-loop economy (Reuter, Schaik, 2016).

In the work of N. Adibi and co-authors, a resource indicator is proposed that includes the impact on the lifecycle through “critical parameters” such as waste recycling. The recyclability and criticality of resources are part of a multi-criteria indicator. The Global Resource Indicator evaluates all types of resources, including renewable and non-renewable, by the rate of regeneration (Adibi et al., 2017).

The circularity indicator is used at the product level to estimate costs in the value chain. The indicator of the cyclical ratio of the recycled economic value to the total cost of the product is used. The work is based on the hypothesis that the economic value of the product components is the basis for aggregation (Linder et al., 2017).

The assessment of end-of-life indicators, together with an analysis of preferred disassembly routes, allows developers to monitor product sustainability in terms of economic performance and environmental impact (Favi et al., 2017). The reuse index takes into account the possibility of a component being recycled in the same product or in similar products. The recovery index evaluates the ability of a component to be regenerated based on the various types of costs and revenues involved in the recovery cycle. The recycling index compares the difference between the cost of producing primary materials and the revenue generated by the recycling process. In particular, it takes into account the energy savings resulting from the material recycling process and the income from recycled materials. The Energy Recycling Index (with energy recovery) determines whether specific combinations of materials can be directly burned to produce energy.

S. Cayzer and co-authors have developed a prototype of the CLE indicators (CEIP). The approach has advantages such as speed, simplicity, and ease of use (Cayzer et al., 2017).

F. Di Maio and colleagues propose an indicator to assess the effectiveness of supply chain participants in terms of resource efficiency and compliance with a closed-loop economy, measuring both resource efficiency and CLE in terms of the market value of “scarce” resources. Circularity is defined as the percentage of the value of stressed resources incorporated in a service or product that is returned after its end-of-life (Di Maio et al., 2017).

The work of A.A. Mohamed Sultan and co-authors is also devoted to determining the priority of recycling expired products in a closed-cycle economy based on the Recycling Desirability Index (Mohamed Sultan et al., 2017).

V. Veleva, G. Bodkin, S. Todorova proposed a model that includes indicators for measuring the

results of cyclical business strategies where employee engagement is considered as the most important strategy for identifying and implementing innovative approaches and initiatives in the field of sustainable development (Veleva et al., 2017).

The work of M.D. Bovea and V. Perez-Belis defines the guiding principles of design in accordance with the principles of a closed-loop economy (Bovea, Perez-Belis, 2018).

M. Ameli and co-authors present a multi-criteria mathematical model, which combines two tasks – choosing a design alternative and determining the end-of-life cycle option. To address the three main objectives of sustainable development (economic, environmental, and social), three goals are considered: maximizing producer profits, minimizing environmental impact, and maximizing social impact. Two restrictions are considered for the control of recovery and recycling coefficients, which are imposed by legislative acts. A simulation and optimization model is developed to formulate and solve the model (Ameli et al., 2019).

M. Niero and P.P. Kalbar proposed a methodology for assessing the circular economy at the product level, combining various types of indicators based on the circularity of the material, namely the assessment of material reuse and the indicator of circularity of the material, and characterizing the life cycle (climate change, depletion of abiotic resources, oxidation, solid impurities and water consumption). The choice of indicators is determined by the industry specifics of the product in question (Niero, Kalbar, 2019).

The multi-criteria decision-making tool was proposed by Y.A. Alamerew, D. Brissaud. The method is a circular economy assessment (PR-MCDT) tool for end-of-life product disposal strategies. The level designated by the authors for the application of the methodology is senior/middle management for strategic decision-making.

The methodology takes into account technical, economic, environmental, business and social parameters (Alamerew, Brissaud, 2018).

M. Marconi, M. Germani, M. Mandolini, and C. Favi estimate the effective disassembly time of industrial products. It is determined based on the actual condition of the product and its components (deformation, rust, wear) using correction factors (Marconi et al., 2019).

EDiM is an indicator of the ease of disassembly to determine the time required based on the Maynard operation sequence (Vanegas et al., 2018). EDiM uses a checklist based on the sequence of actions and basic information about the product and the specifics of disassembly, classified into six groups.

The work of E. Lacovidou and co-authors is dedicated to evaluating the quality of materials, components, and products at various stages of the life cycle. The researchers have proposed a typology that makes it possible to distinguish between properties that promote or hinder their restoration, conversion, repair and recycling, which provides industry with a tool to improve the quality of waste streams and, consequently, increase the value of the secondary resources produced in order to achieve higher recycling rates (Lacovidou et al., 2019).

L. Cong and colleagues proposed a design method for end-of-use product value recovery. The hypothesis of the methodology is that the economic feasibility of recycling a product at the end of its life cycle largely depends on the design (Cong et al., 2019).

Sustainability indicators in CLE are presented in the work of E. Rossi and co-authors. They propose groups of indicators focused on three sustainability parameters – environmental, economic, and social – used in cyclical business models to account for innovations introduced by a circular economy (Rossi et al., 2020).

Table 4. Methods for assessing a closed-loop economy at the micro level

Author(s)	Year	Methodological toolkit	Estimated indicator / parameter / description
Das S.K., Yedlarajiah P., Narendra R.	2000	Multifactorial mathematical model	Disassembly Effort Index (DEI)
Zwolinski P., Lopez-Ontiveros M.-A., Brissaud D.	2006	Statistical methods	Remanufacturing Product Profiles (REPRO)
Park J.Y., Chertow M.R.	2014	Statistical methods	Reuse Potential Indicator (RPI)
Lee H.M., Lu W.F., Song B.	2014	Mathematical methods	End-of-Life Index
Huysman S., Debaveye S., Schaubroeck T., De Meester S., Ardente F., Mathieux F., Dewulf J.	2015	Life cycle assessment (LCA)	Recyclability benefit rate indicator
Van Schaik A., Reuter M.A.	2016	Simulation modeling	Recycling Indices (RI)
Scheepens A.E., Vogtlander J.G., Brezet J.C.	2016	LCA-based eco-costs value ratio	Eco-efficient Value Creation (EVR)
Franklin-Johnson E., Figge F., Canning L.	2016	Statistical methods	Longevity Index
Reuter M.A., Schaik A.V.	2016	Statistical methods	Recycling Index (RI). Recycling potential and efficiency should be quantified for products, collection systems, waste separation and recovery technologies, and supplies of materials
Adibi N., Lafhaj Z., Yehya M., Payet J.	2017	Life cycle assessment (LCA)	Global Resource Indicator
Linder M., Sarasini S., Van Loon P.	2017	Statistical methods	Product-level circularity metric
Di Maio F., Rem P.C., Balde K., Polder M.	2017	Assessment of the market value of “stressed” resources	Single Value-based Resource Efficiency Indicator (VRE)
Mohamed Sultan A.A., Lou E., Mativenga P.T.	2017	Statistical methods	Recycling Desirability Index
Veleva V., Bodkin G., Todorova S.	2017	Statistical methods	“Expanded Zero Waste” practice
Favi C., Germani M., Luzi A., Mandolini M., Marconi M.	2017	Index analysis	End-of-Life Index evaluation (EoL)
Cayzer S., Griffiths P., Beghetto V.	2017	A multidimensional approach with a single aggregated metric for each stage of the life cycle	CEIP metrics
Ameli M., Mansour S., Ahmadi-Javid A.	2018	Mathematical modeling	An optimization model for assessing sustainability at the design stage and identifying end-of-life alternatives
Niero M., Kalbar P.P.	2018	Multi-criteria Decision Analysis (MCDA)	Material circularity indicators and life cycle based indicators at the product level
Alamerew Y.A., Brissaud D.	2018	Multi-criteria decision-making method	Assessment of a closed-loop economy (PR-MCDT) for end-of-life product recycling strategies. CO2 emissions, SO2 emissions, energy consumption, net recovered value, logistical costs (cost of collection and transportation), cost of product disposal (incineration, recycling, landfill, etc.), number of employees, exposure of hazardous substances to employees during disposal, disassembly cost.
Marconi M., Germani M., Mandolini M., Favi C.	2018	Mathematical methods	Evaluation of the effective disassembly time of industrial products

End of Table 4

Author(s)	Year	Methodological toolkit	Estimated indicator / parameter / description
Vanegas P., Peeters J.R., Cattrysse D., Tecchio P., Ardente F., Mathieux F., Dewulf W., Duflou J.R.	2018	Maynard operation sequence technique (MOST)	Ease of Disassembly Metric (eDiM)
Bovea M.D., Perez-Belis V.	2018	Grouping of statistical indicators	A methodology that allows analyzing how much product development and design corresponds to the parameters of a closed-loop economy and what design principles would need to be included in order for the product to correspond to a closed-loop economy.
Lacovidou E., Velenturf A.P.M., Purnell P.	2019	Life cycle assessment (LCA)	Quality assessment at various stages of the life cycle of materials, components and products (MCP)
Cong L., Zhao F., Sutherland J.W.	2019	Scenario analysis, evaluation, Pareto efficiency analysis, Analytical Hierarchical process (AHP)	A cost-based recycling indicator to measure recyclability and evaluate constructive suggestions for material selection.
Rossi E., Bertassini A.C., Dos Santos Ferreira C., Do Amaral W.A.N., Ometto A.R.	2020	Grouping of statistical indicators	Material (reduction of raw material use, renewability, recyclability, reduction of toxic substances, reuse, restoration of production, number of recovered parts or components of the product, durability of the product, structure and diversity of stakeholders); economic (financial results, taxation, investment innovations); social (job creation, number of jobs created within the cyclical business model, income generated by jobs, employee participation in the cyclical model, customer mindset)
Source: own compilation.			

Micro-level techniques (Tab. 4) mainly focus on evaluating the effectiveness of design, taking into account the service life, life cycle and detailed disassembly processes, which implies that they are not universal and can only be used for specific industries for which they were originally developed.

Micro-level techniques in comparison with macro- and meso-level methods are characterized by more complex mathematical models, which is associated with greater availability of source data on the research object. Along with the potential for complicating the toolkit, more factors are needed to take into account all the circumstances of the system's functioning as a single object. However, not all relationships between system components can be quantified due to the lack of the required amount of information, especially for the use of predictive and simulation modeling.

In addition, more sophisticated qualitative analysis tools can be used at the micro level. In particular, the hierarchy analysis method is a procedure for finding the weighting coefficients of factors in the analysis of systems by the expert method. Separately, attention should be paid to the active use of life cycle assessment (LCA) in the CLE assessment toolkit. The method considers all stages of the product's life cycle, which makes it possible to identify the most critical stages in terms of environmental impact and ensures greater validity of decisions in product design, selection of materials, production technologies and disposal methods. LCA requires collecting a large amount of data on various stages of the life cycle. Some stages of LCA are related to subjectivity and depend on the criteria applied. From the point of view of human resource management efficiency, the

Maynard operation sequence technique (MOST) is of interest. There are 18 basic elements in MOST, which are designated by letters, for example: A (Action distance) – movement over a distance; B (Body motion) – movement of the body; G (Gain control) – gaining control over an object, capturing; P (Placement) – laying an object. The use of this technique to assess the disassembly of an object allows optimizing production processes in relation to actions within the framework of CLE. In our opinion, it is the MOST method that particularly emphasizes the specificity and non-universality of the currently used tools for estimating CLE parameters.

The multi-criteria nature of the presented tools is both an advantage and a disadvantage. On the one hand, the methods allow taking into account several criteria, involving the “human factor” in decision-making (hierarchy analysis method), and involving the use of mathematical tools and software. Along with this, the complexity of choosing the optimal solution is obvious, the potential conflict of criteria used to evaluate and compare alternative solutions, the complexity of the process of forming the model structure, the possible inconsistency of the results, and limitations on the number of criteria and objects.

Obviously, combinations of methodological tools will become promising in the future. Nevertheless, reaching consensus in this area is possible only after the final formation of the scientific doctrine of CLE (its essential concepts and principles).

Discussion

Attempts to systematize methodological approaches to CLE assessment and the assessment parameters have been carried out before. For example, J. Mesa and co-authors propose a classification of approaches to assessing CE in the context of sustainable development parameters,

as well as approaches structured depending on the specifics of design, which allows adapting production processes to meet the goals of CLE – cycle deceleration processes and cycle closure processes (Mesa et al., 2018). A Parchomenko and co-authors applied multiple compliance analysis to evaluate 63 metrics and 24 features relevant to CE, such as recycling efficiency, longevity, and stock availability. The analysis revealed three main clusters of indicators: resource-efficiency cluster; materials stocks and flows cluster; and product-centric cluster. The authors also developed a visualization system for CE indicators that allows comparing individual indicators and integrating them into the most appropriate combinations (Parchomenko et al., 2019). In the study by H.S. Kristensen and M.A. Mosgaard considers 30 CLE indicators at the micro level. They are categorized into academic and practical ones and are categorized into three groups: individual quantitative indicators; analytical tools; and composite ones. The authors have identified nine categories of CE indicators: recycling, restoration, reuse, disassembly, lifetime extension, resource efficiency, waste management, end-of-life management, multidimensional indicators that are not included in other categories (Kristensen, Mosgaard, 2020). A set of indicators for assessing CLE for the microlevel, proposed by E. Rossi and co-authors, made it possible to see the need for an integrated approach and the development of multidimensional indicators for measuring CLE in the context of sustainability, since most CE assessment indicators focus on material flows and lifecycle completion strategies (Rossi et al., 2020). In the work of V. Elia and colleagues, the methods adopted for measuring environmental impact were analyzed and classified in order to identify the possibility of their use for quantifying compliance with the CE paradigm (Elia et al., 2017). A taxonomy of methods for assessing CLE

is proposed, based on two parameters: indices (a synthetic indicator or a set of indicators) and measurement of material and energy flows, resource use, consumption, and life cycle-based parameters.

Thus, the classification proposed in our work complements scientific knowledge in the field of systematization of methodological approaches to the assessment of CLE.

Conclusion

The paper defines reference points for categorizing and structuring indicators of the closed-loop economy, classifies approaches to its measurement. We should note that the measurement of circularity is fraught with significant difficulties, requiring the development, application and validation of evaluation methods. At the moment, there is no generally accepted way to measure a closed-loop economy either as a whole, or at individual levels (macro, meso, micro), or within the framework of various CLE principles ("R" principles).

The aim of the work did not include identifying the advantages or disadvantages of existing methods,

as such an attempt would be subjective. The methodological tools for assessing CLE are determined by regional and industry specifics, the geopolitical background of the study, and the goals and objectives set. Along with this, the presented methodological review made it possible to identify a number of methodological problems: the methodology for assessing CLE should include generally accepted definitions and principles of closed-loop economy and well-established closed-loop strategies and business models (currently these issues are debatable); the practical implementation of methodological tools should include the possibility of assessing compliance with common national objectives and national strategies in areas of sustainable development, as well as take into account industry and regional specifics. Despite this, the conducted research will make it possible to trace trends and systematize methodological approaches to assessing the closed-loop economy and gain an up-to-date understanding of the dynamics of scientific knowledge in this field.

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Public Opinion Monitoring of the State of the Russian Society

As in the previous issues, we publish the results of the monitoring of public opinion concerning the state of the Russian society. The monitoring is conducted by VoIRC RAS in the Vologda Region ¹.

The following tables and graphs show the dynamics of several parameters of social well-being and socio-political sentiment of the region's population according to the results of the latest round of the monitoring (August 2025) and for the period from August 2024 to August 2025 (the last seven surveys, that is, almost a year).

We compare the results of the surveys with the average annual data for 2000 (the first year of Vladimir Putin's first presidential term), 2007 (the last year of Vladimir Putin's second presidential term, when the assessment of the President's work was the highest), 2012 (the first year of Vladimir Putin's third presidential term) and 2018 (the first year of Vladimir Putin's fourth presidential term).

The annual dynamics of the data are presented for 2000–2024².

¹ The surveys are held six times a year in the cities of Vologda and Cherepovets, in Babayevsky, Velikoustyugsky, Vozhegodsky, Gryazovetsky, Tarnogsky Kirillovsky, Nikolsky municipal okrugs, and in Sheksninsky Municipal District. The method of the survey is a questionnaire poll by place of residence of respondents. The volume of a sample population is 1,500 people 18 years of age and older. The sample is purposeful and quoted. The representativeness of the sample is ensured by the observance of the proportions between the urban and rural population, the proportions between the inhabitants of settlements of various types (rural communities, small and medium-sized cities), age and sex structure of the Region's adult population. Sampling error does not exceed 3%.

More information on the results of VoIRC RAS surveys is available at <http://www.vscs.ac.ru/>.

² In 2020, four rounds of the monitoring were conducted. Surveys in April and June 2020 were not conducted due to quarantine restrictions during the spread of COVID-19.

In August 2025, the President's approval rating remained as it had been in June and amounted to 66–67%, the share of negative judgments remains consistently low (19–21%).

During the period from August 2024 to August 2025, the share of positive assessments of the activity of the President of the Russian Federation did not change and amounted to 67%. The share of negative ones is 19%³.

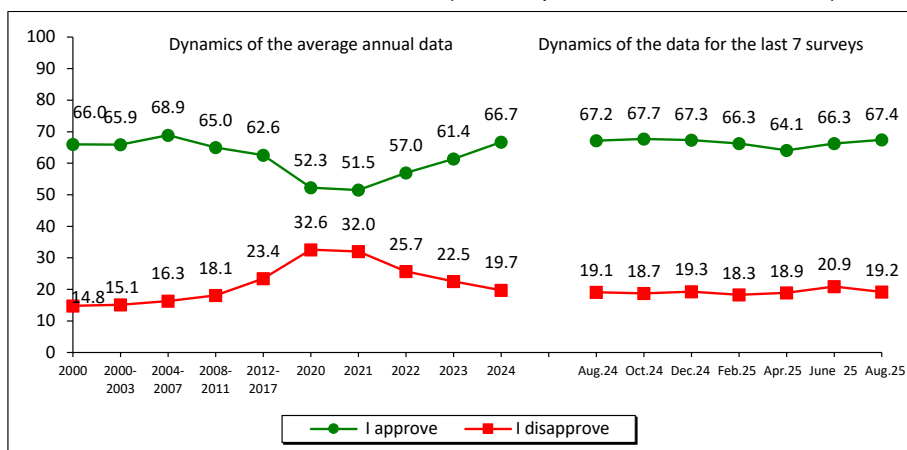
How would you assess the current work of...? (% of respondents)

Response	Dynamics of the average annual data										Dynamics of the data for the last 7 surveys							Dynamics (+/-), Aug. 2025 to	
	2000	2007	2012	2018	2020	2021	2022	2023	2024		Aug. 2024	Oct. 2024	Dec. 2024	Feb. 2025	Apr. 2025	June 2025	Aug. 2025	Aug. 2024	June 2025
RF President																			
I approve	66.0	75.3	51.7	66.4	52.3	51.5	57.0	61.4	66.7		67.2	67.7	67.3	66.3	64.1	66.3	67.4	0	+1
I disapprove	14.8	11.5	32.6	21.7	32.6	32.0	25.7	22.5	19.7		19.1	18.7	19.3	18.3	18.9	20.9	19.2	0	-2
Chairman of the RF Government																			
I approve	–	–	49.6	48.0	38.7	39.9	45.4	50.1	54.1		55.3	53.7	55.6	54.7	53.9	53.0	55.1	0	+2
I disapprove	–	–	33.3	31.6	40.4	37.6	32.0	27.6	24.8		24.1	25.5	25.3	23.8	22.3	22.9	20.6	-4	-2
Governor																			
I approve	56.1	55.8	41.9	38.4	35.0	36.7	40.9	48.1	51.7		53.4	51.9	50.8	46.8	42.9	39.9	41.0	-12	+1
I disapprove	19.3	22.2	33.3	37.6	42.5	40.5	35.8	30.9	28.4		26.7	28.0	29.8	31.4	34.6	37.2	39.1	+12	+2

Wording of the question: "How would you assess the current work of ...?"

*Here and elsewhere, in all tables and in the text, **positive changes are highlighted in green**, **negative changes are highlighted in red**, and **no changes – in blue**. Due to the fact that the changes of +/- 3 p.p. fall within the limits of sampling error, they are considered insignificant and are marked in blue.

How would you assess the way that the RF President is handling his job? (% of respondents, VoIRC RAS data)



Response	Dynamics (+/-), Aug. 2025 to	
	Aug. 2024	June 2025
I approve	0	+1
I disapprove	0	-2

Here and elsewhere, all graphs show the average annual data for 2000, 2020, 2021, 2022, 2023, 2024, as well as the average annual data for the periods 2000–2003, 2004–2007, 2008–2011, 2012–2017 that correspond to presidential terms.

³ Here and further in the text, the results of a comparative analysis of the data from the survey conducted in August 2025 with the results of the monitoring carried out in August 2024 are given in the frame.

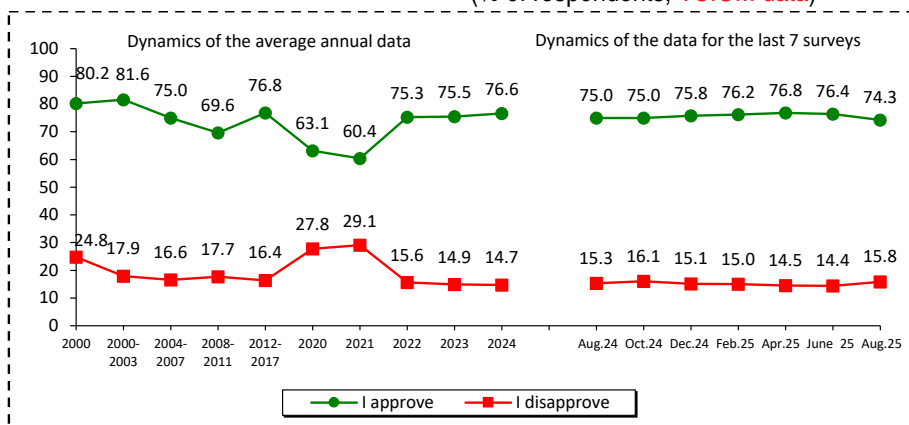
For reference:

According to VCIOM, the President's approval rating in June – first half of August 2025 decreased by 2 percentage points (from 76 to 74%). The proportion of negative assessments did not change significantly.

From August 2024 to the first half of August 2025, the share of positive assessments of the activities of the head of state remained at the level of 74–75%. The share of negative characteristics is 15–16%.

Do you approve or disapprove of the way that the RF President is handling his job?

(% of respondents; VCIOM data)



Response	Dynamics (+/-), Aug. 2025 to	
	Aug. 2024	June 2025
I approve	-1	-2
I disapprove	+1	+1

Wording of the question: "In general, do you approve or disapprove of the way that the Russian President is handling his job?"

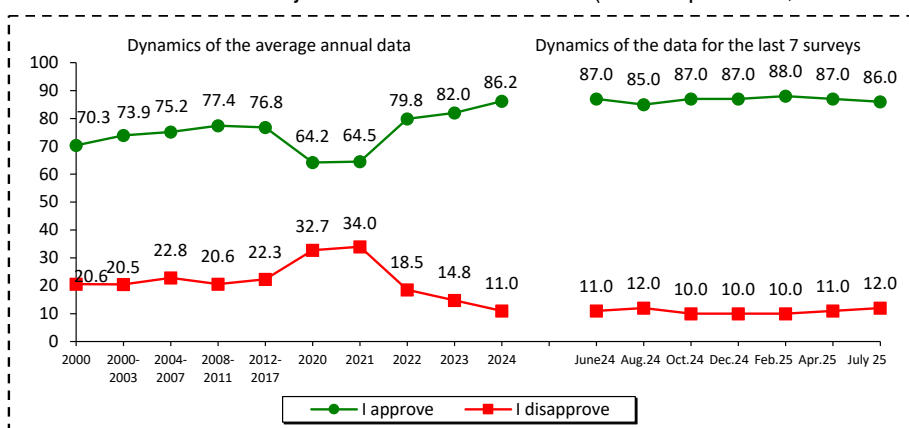
Data as of August 2025 – for one survey as of August 3, 2025.

Source: VCIOM. Available at: <https://wciom.ru/>

According to Levada-Center*, the share of positive assessments of the activities of the President of the Russian Federation in April – July 2025 was 86–87%; the share of negative characteristics was 11–12%.

There have also been no significant changes over the past 12 months: the share of positive characteristics is 86–87%, the proportion of negative ones is 11–12%.

In general, do you approve or disapprove of the way that Vladimir Putin is handling his job as President of Russia? (% of respondents; Levada-Center* data)



Response	Dynamics (+/-), July 2025 to	
	June 2024	Apr. 2025
I approve	-1	-1
I disapprove	+1	+1

Wording of the question: "In general, do you approve or disapprove of the way that Vladimir Putin is handling his job as President of Russia?"

Source: Levada-Center*. Available at: <https://www.levada.ru/>

* Included in the register of foreign agents.

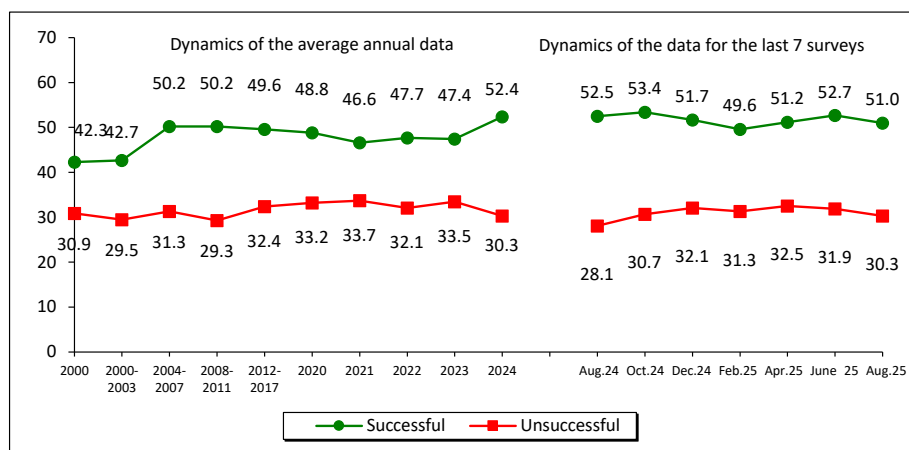
*Included in the register of foreign agents.

Over the past two months, the proportion of people who consider the actions of the President of the Russian Federation to strengthen Russia's international position to be successful did not change and amounted to 51–53%. The share of those who adhere to the opposite point of view also remained at the level of June 2025 (30–32%).

Over the past 12 months (from August 2024 to August 2025), the share of positive assessments of the president's work to strengthen Russia's international position has decreased slightly (by 2 percentage points, from 53 to 51%).

In your opinion, how successful is the RF President in handling challenging issues?
(% of respondents; VoIRC RAS data)

Strengthening Russia's international position

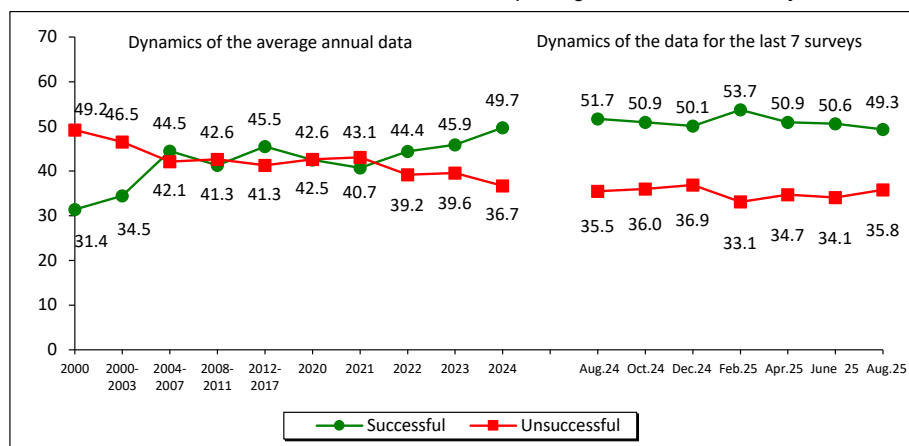


Response	Dynamics (+/-), Aug. 2025 to	
	Aug. 2024	June 2025
Successful	-2	-2
Unsuccessful	+2	-2

In June – August 2025, the share of residents of the region who positively assessed the work of the head of state to restore order in the country was 49–51%.

From August 2024 to August 2025, the share of positive ratings decreased slightly (from 52 to 49%).

Imposing order in the country

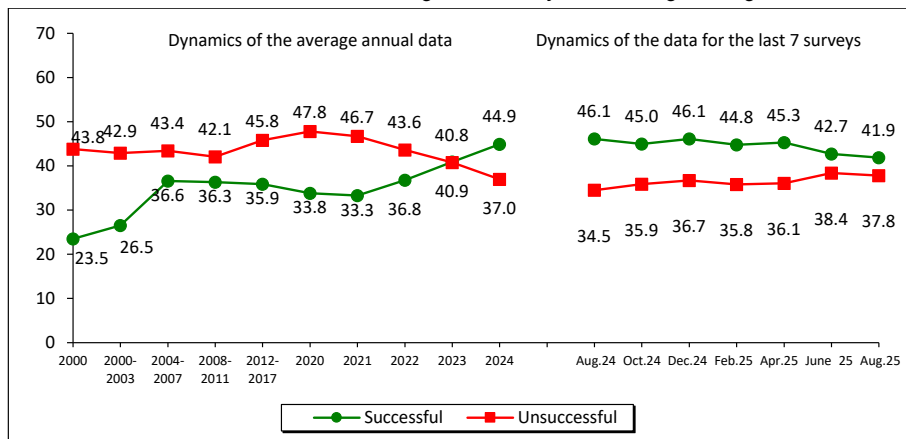


Response	Dynamics (+/-), Aug. 2025 to	
	Aug. 2024	June 2025
Successful	-2	-1
Unsuccessful	0	+2

In June – August 2025, the share of positive assessments of the activities of the President of the Russian Federation to protect democracy and strengthen the freedoms of citizens amounted to 42–43%, the proportion of negative ones was 38%.

Over the past 12 months, the proportion of positive characteristics decreased (by 4 percentage points, from 46 to 42%) and the proportion of negative assessments increased (from 35 to 38%).

Protecting democracy and strengthening citizens' freedoms

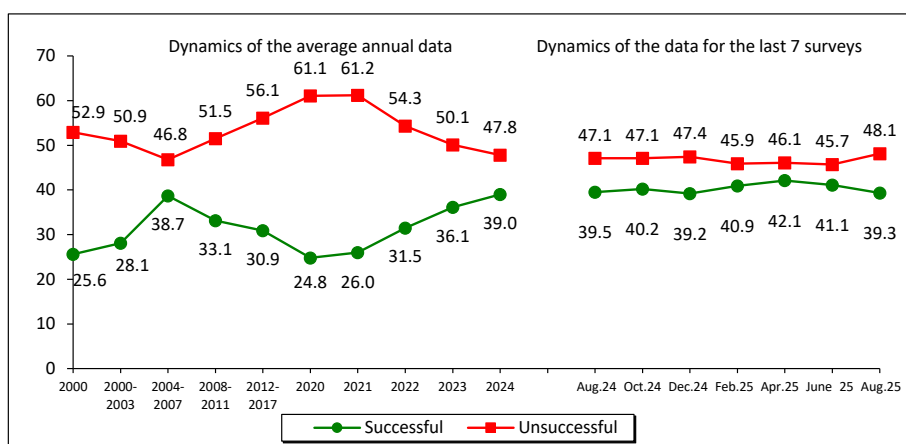


Response	Dynamics (+/-), Aug. 2025 to	
	Aug. 2024	June 2025
Successful	-4	-1
Unsuccessful	+3	-1

The share of positive opinions about the activities of the head of state to boost the economy and increase the welfare of citizens did not change significantly over the past two months (decreased by 2 percentage points from 41 to 39%). The share of negative characteristics increased from 46 to 48%.

Over the past 12 months, assessments of the work of the President of the Russian Federation on economic issues remained stable: the share of positive ones is 39%; negative – 47–48%.

Economic recovery, increase in citizens' welfare



Response	Dynamics (+/-), Aug. 2025 to	
	Aug. 2024	June 2025
Successful	0	-2
Unsuccessful	+1	+2

In June – August 2025, the structure of political preferences of the residents of the region has not changed. According to residents, United Russia expresses the interests of 41%, the Communist Party of the Russian Federation – 9–11%, the Liberal Democratic Party – 9%, Just Russia – 4%, New People – 2%. The proportion of those who answered that there was no party expressing their interests is 23–25%.

From August 2024 to August 2025, the level of support for the represented political parties did not change significantly. The largest change is recorded in the estimates of the Liberal Democratic Party: an increase in positive judgments by 3 percentage points (from 6 to 9%)

Which party expresses your interests? (% of respondents; VoIRC RAS data)

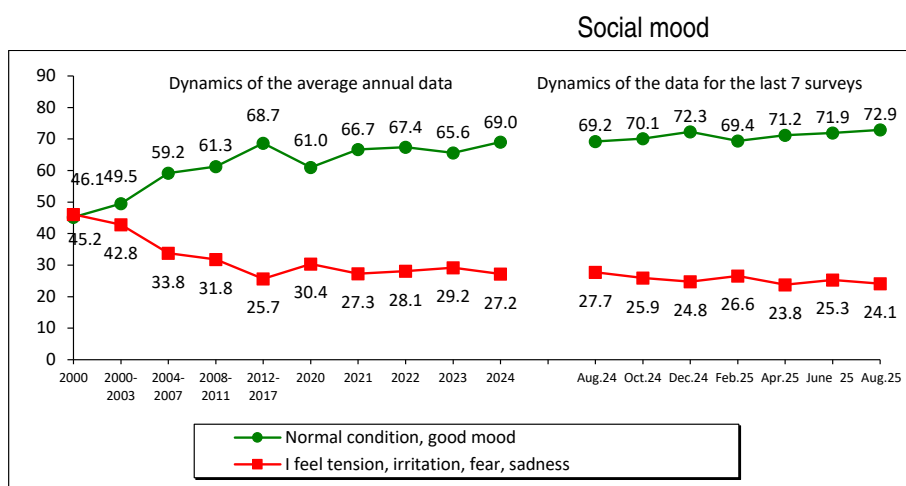
Party	Dynamics of the average annual data													Dynamics of the data for the last 7 surveys							Dynamics (+/-), Aug. 2025 to	
	2000	2011	Election to the RF State Duma 2011, fact	2012	2016	Election to the RF State Duma 2016, fact	2018	2020	Election to the RF State Duma 2020, fact	2021	2022	2023	2024	Aug. 2024	Oct. 2024	Dec. 2024	Feb. 2025	Apr. 2025	June 2025	Aug. 2025	Aug. 2024	June 2025
United Russia	18.5	31.1	33.4	29.1	35.4	38.0	37.9	31.5	49.8	31.7	35.2	39.5	42.9	42.5	41.8	42.3	39.9	40.5	41.6	41.2	-1	0
KPRF	11.5	10.3	16.8	10.6	8.3	14.2	9.2	8.4	18.9	9.3	10.1	9.6	8.9	9.7	8.7	9.1	8.8	8.0	9.1	11.5	+2	+2
LDPR	4.8	7.8	15.4	7.8	10.4	21.9	9.6	9.5	7.6	9.9	7.3	7.0	7.1	6.1	7.5	8.8	7.5	7.1	9.4	8.7	+3	-1
Just Russia – Patriots for the Truth	-	5.6	27.2	6.6	4.2	10.8	2.9	4.7	7.5	4.7	4.9	4.4	3.5	3.5	4.2	4.4	2.3	2.9	3.9	4.2	+1	0
New People*	-	-	-	-	-	-	-	-	5.3	2.3	1.5	1.9	2.0	1.6	2.3	2.3	3.1	3.0	2.5	1.8	0	-1
Other	0.9	1.9	-	2.1	0.3	-	0.7	0.5	-	0.2	0.3	0.1	0.2	0.0	0.3	0.3	0.3	0.0	0.1	0.1	0	0
None	29.6	29.4	-	31.3	29.4	-	28.5	34.2	-	33.9	30.6	26.5	25.2	25.1	24.1	26.3	28.4	27.7	24.9	23.3	-2	-2
Difficult to answer	20.3	13.2	-	11.7	12.0	-	11.2	11.1	-	10.0	10.1	11.1	10.3	11.5	11.0	6.5	9.7	10.8	8.5	9.2	-2	+1

* The New People party was elected to the State Duma of the Russian Federation for the first time following the results of the election held on September 17–19, 2021.

Estimation of social condition (% of respondents; VolRC RAS data)

From June to August 2025, the share of positive assessments of social mood remained at the level of 72–73%. The proportion of people experiencing predominantly negative emotions also remained unchanged at 24–25%.

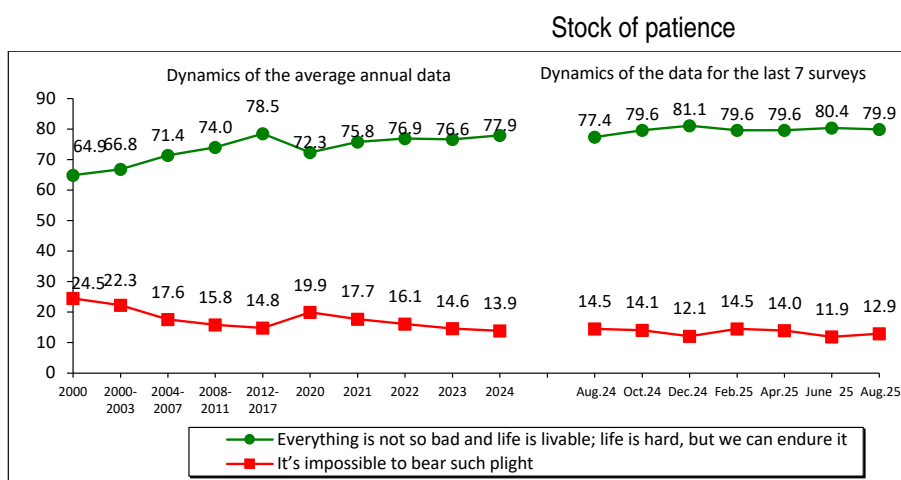
Over the past 12 months, the proportion of people describing their mood as «normal, fine» increased by 4 percentage points (from 69 to 73%). The proportion of those who more often experience «tension, irritation, fear, sadness» decreased by 4 percentage points, as well (from 28 to 24%).



Response	Dynamics (+/-), Aug. 2025 to	
	Aug. 2024	June 2025
Normal condition, good mood	+4	+1
I feel tension, irritation, fear, sadness	-4	-1

In June – August 2025, the proportion of people who believe that “everything is not so bad and life is livable” remains stable (80%), as well as the share of those who believe that their plight is “no longer possible to bear” (12–13%).

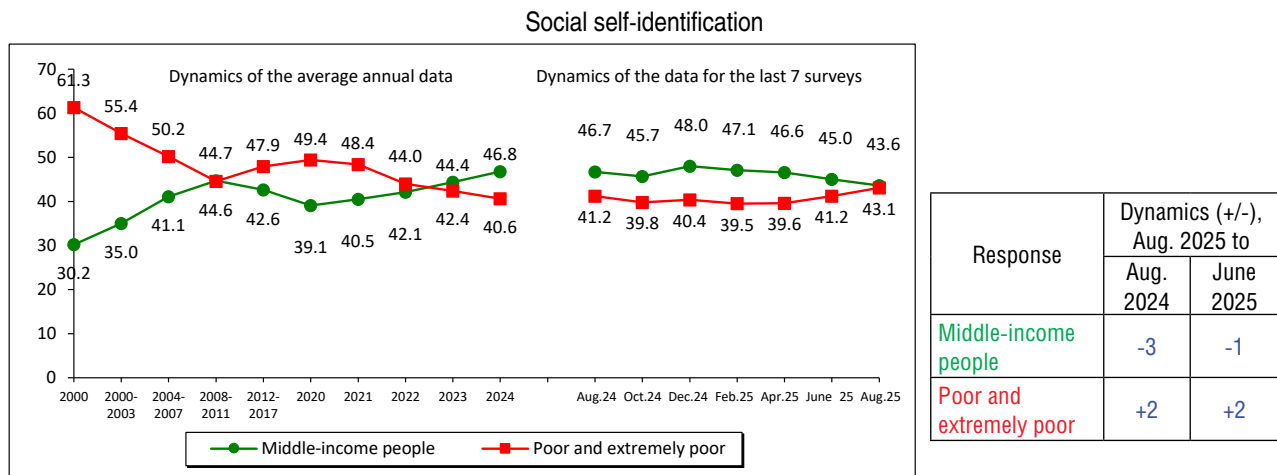
During the period from August 2024 to August 2025, the proportion of positive assessments of the stock of patience increased from 77 to 80%, while the proportion of negative judgments is significantly lower.



Response	Dynamics (+/-), Aug. 2025 to	
	Aug. 2024	June 2025
Everything is not so bad and life is livable; life is hard, but we can endure it	+3	-1
It's impossible to bear such plight	-2	+1

The proportion of residents of the region subjectively classifying themselves as “poor and extremely poor” in June – August 2025 amounted to 41–43%. The proportion of those who subjectively classify themselves as “middle-income people” is 44–45%.

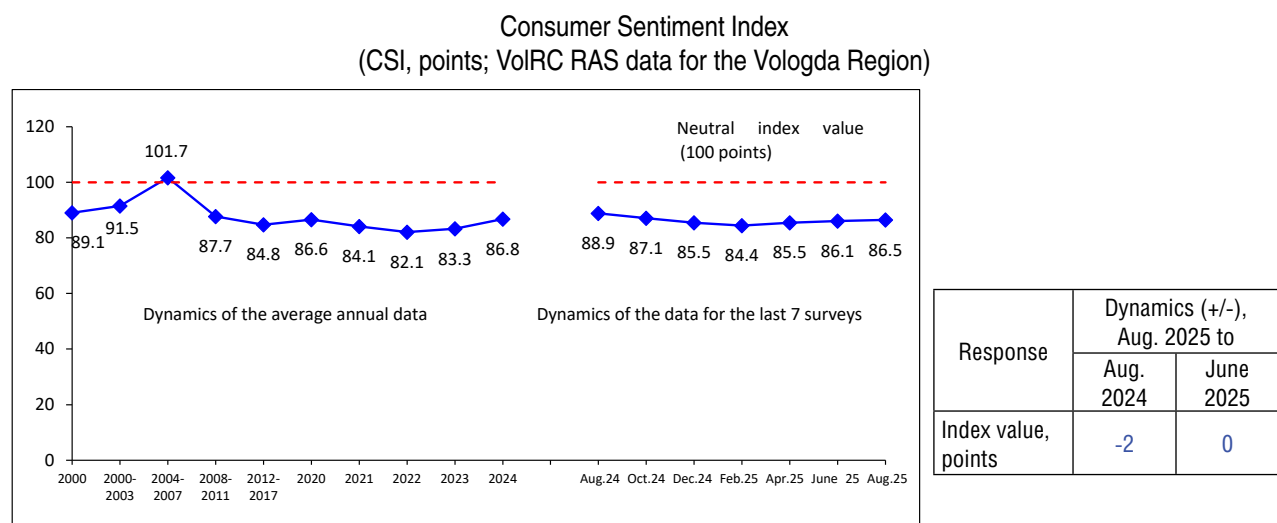
There are also no noticeable changes in the annual dynamics. However, the share of residents of the region who consider themselves middle-income people decreased by 3 percentage points (from 47 to 44%).



Wording of the question: “What category do you belong to, in your opinion?”

Over the past two months, the Consumer Sentiment Index (CSI) has not changed and amounted to 86 points.

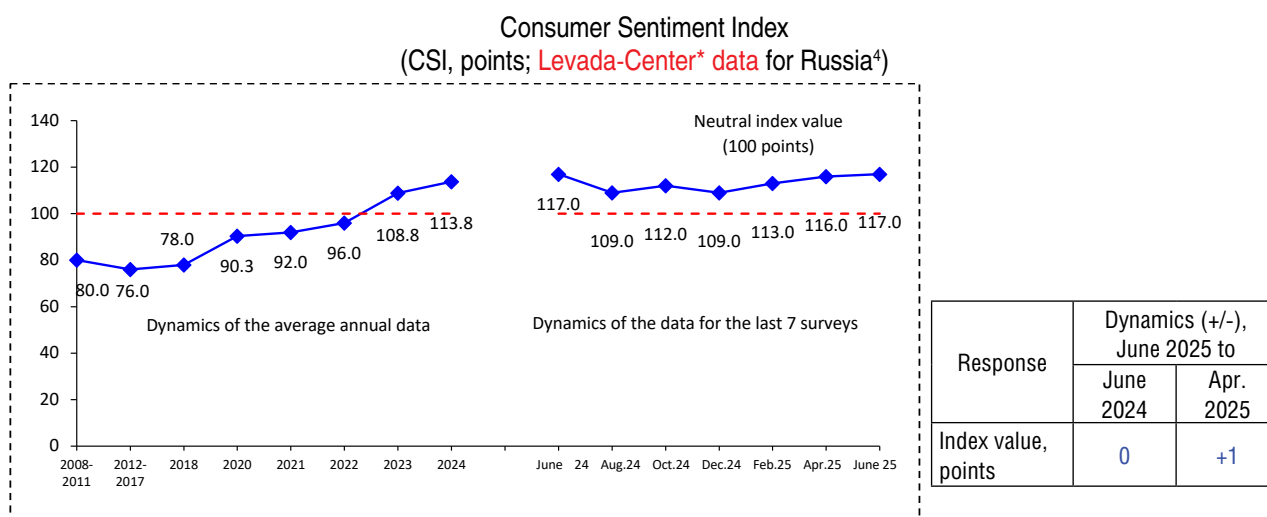
Over the past year, the CSI changed slightly in the negative direction: it decreased by 2 percentage points, from 89 to 87 points.



For reference:

According to the latest data from the all-Russian Levada-Center surveys (for the period from April to June 2025), the Consumer Sentiment Index amounted to 116–117 points.*

According to the all-Russian data, the CSI remains stable at 117 points over the year.



The index is calculated since 2008.

The latest data – as of June 2025.

Source: Levada-Center*. Available at: <https://www.levada.ru/indikatory/sotsialno-ekonomicheskie-indikatory/>

From June to August 2025, social mood assessments did not change significantly in all major socio-demographic groups.

In the social mood over the past 12 months (from August 2024 to August 2025), there has been a positive trend in the assessments in 7 out of 14 socio-demographic groups. At the same time, the most pronounced positive changes are recorded among the 20% of the most affluent (by 8 percentage points); residents of Vologda (by 7 percentage points); persons over 55 (by 6 percentage points). There are also no significant changes in estimates for 7 out of 14 socio-demographic groups.

⁴ Since March 2025, Levada-Center* has updated data on the CSI. The CSI in Russia has been calculated since 1993 on the basis of five questions, similar to the index developed in the 1940s by the Institute for Social Research at the University of Michigan. The individual indices for each question are calculated as the difference between the proportions of positive and negative responses plus 100. The cumulative CSI is the arithmetic mean of individual indices (range 0–200, where >100 is the predominance of positive ratings). In 2009, the CSI was linked to the values of March 2008 (100% base), which was associated with a change in the methodology of surveys and the economic crisis. However, this led to the fact that the index began to reflect changes only relative to 2008. Since March 2025, it was decided to return to the original method of calculating the CSI, abandoning the link to 2008, because in 2023, many indicators exceeded the peaks of 2008 and the old version of the index ceased to adequately reflect the current situation. A return to the original methodology is intended to solve this problem. Source: Updated Consumer Sentiment Index: February 2025 Figures. Available at: <https://www.levada.ru/2025/03/26/obnovlennyj-indeks-potrebitelskih-nastroenij-pokazateli-fevralya-2025-goda/>

*Included in the register of foreign agents.

Social mood in different social groups (response: "Wonderful mood, normal, stable condition", % of respondents; VolRC RAS data)

Population group	Dynamics of the average annual data										Dynamics of the data for the last 7 surveys							Dynamics (+/-), Aug. 2025 to	
	2000	2007	2012	2018	2020	2021	2022	2023	2024	Aug. 2024	Oct. 2024	Dec. 2024	Feb. 2025	Apr. 2025	June 2025	Aug. 2025	Aug. 2024	June 2025	
Gender																			
Men	50.1	65.9	69.1	72.8	60.8	65.7	66.8	65.5	66.5	67.1	65.2	69.2	70.1	68.8	71.6	72.1	+5	+1	
Women	43.3	61.7	65.8	69.8	61.2	67.4	67.9	65.7	70.9	70.9	74.0	74.7	68.8	73.1	72.2	73.5	+3	+1	
Age																			
Under 30	59.1	71.3	72.3	79.9	67.6	73.5	77.6	75.0	76.6	76.1	78.0	81.3	79.9	76.7	76.7	78.1	+2	+1	
30–55	44.2	64.8	67.9	72.6	61.8	69.5	69.4	68.8	71.3	72.8	69.8	73.2	70.2	74.1	74.1	74.9	+2	+1	
Over 55	37.4	54.8	62.1	65.2	57.4	60.5	61.1	58.2	63.3	62.1	67.4	67.8	64.6	65.8	67.6	68.6	+6	+1	
Education																			
Secondary and incomplete secondary	41.7	58.4	57.2	64.8	56.1	62.1	64.6	62.0	64.6	65.3	62.5	65.5	64.6	65.6	68.4	70.3	+5	+2	
Secondary vocational	46.4	64.6	66.7	72.1	63.5	66.7	68.3	66.1	70.3	70.7	75.2	76.5	71.8	74.8	74.1	73.6	+3	–1	
Higher and incomplete higher	53.3	68.6	77.0	76.7	63.3	71.5	69.5	68.8	72.3	72.1	72.3	74.2	71.4	73.4	73.0	74.7	+3	+2	
Income group																			
Bottom 20%	28.4	51.6	51.5	57.2	43.4	54.6	57.0	50.1	53.5	53.7	54.8	55.7	55.9	56.9	56.1	58.3	+5	+2	
Middle 60%	45.5	62.9	68.7	72.1	62.6	67.3	68.1	67.4	70.7	71.0	73.6	74.2	70.5	72.6	74.4	73.1	+2	–1	
Top 20%	64.6	74.9	81.1	82.4	75.6	79.9	78.3	73.9	77.6	75.9	78.4	80.6	77.9	81.3	84.1	83.8	+8	0	
Territory																			
Vologda	49.2	63.1	73.6	71.0	60.9	60.3	59.8	59.6	66.0	66.4	67.9	69.6	66.7	68.6	69.5	72.9	+7	+3	
Cherepovets	50.8	68.1	76.2	75.7	60.4	71.0	71.2	68.1	69.8	70.2	70.7	73.0	69.9	71.5	72.5	75.0	+5	+3	
Districts	42.2	61.6	59.8	68.6	61.4	67.8	69.5	67.7	70.2	70.3	71.0	73.4	70.7	72.7	73.1	71.6	+1	–2	
Region	46.2	63.6	67.3	71.2	61.0	66.6	67.4	65.6	69.0	69.2	70.1	72.3	69.4	71.2	71.9	72.9	+4	+1	
Total number of groups: positive changes / no changes / negative changes																	14: 7 / 7 / 0	14: 0 / 14 / 0	

RESUME

The results of the latest round of the public opinion monitoring conducted in August 2025 showed that there were no significant changes in the dynamics of population estimates in the Vologda Region compared to the first summer months.

From August 2024 to August 2025, support for the President of the Russian Federation remains at a fairly high level (67%), despite a slight decrease in approval of his activities aimed to protect democratic freedoms (by 4 percentage points, from 46 to 42%). The party preferences of the residents of the region have also not undergone significant changes, which indicates the stability of political preferences. United Russia continues to hold the leading positions (41–43%), although a significant part of the population still does not see any political parties represented in the State Duma that express their interests (23–25%).

The social mood of the population remains positive with positive changes in the annual dynamics: the proportion of people noting “a great mood, a normal, even state” increased by 4 percentage points (from 69 to 73%). First of all, positive changes in social mood are observed among the most affluent segments of the population, the elderly and residents of Vologda. In addition, the population of the region invariably has a high stock of patience (80%). We should note that the improvement of social mood in many population groups is a very typical phenomenon for the summer months, especially when it comes to periods of adaptation of society to certain “force majeure” circumstances. The same situation, for example, was observed in the process of gradual adaptation of the population to living conditions during the COVID-19 pandemic.

Nevertheless, the proportion of people who classify themselves as “poor and extremely poor” remains significant at 43%. At the same time, over the past year, there has been a weakly pronounced negative trend: the proportion of low-income citizens (according to self-assessments) has increased from 41 to 43%, and the proportion of those who consider themselves middle class has decreased from 47 to 44%. This trend is confirmed by the Consumer Sentiment Index (CSI), which decreased by 2 points over the same period, from 89 to 87 points, indicating a slight deterioration in estimates of the financial situation of the population and their economic expectations.

The revealed negative trend of deterioration in self-assessments of the financial situation and prospects for the development of the economic situation may well be due to the fact that society is getting used to life in the context of the special military operation and, as a result, is increasingly beginning to worry about its daily life problems (although, of course, the range of issues related to the SMO and events in the foreign policy arena, does not leave the focus of citizens’ attention).

This, in particular, is evidenced by the conclusions obtained by VCIOM experts: “... *there is a process of routinization. People have already integrated the special operation and everything related to it into their image of the world. It occupies a central place in it, but it is already more or less familiar, understandable and predictable. Therefore, there are fewer emotions associated with the SMO, and rational perception prevails*”⁵. We believe that the negotiation processes that have been taking place regularly at various levels since the beginning of 2025 (including the meeting of the presidents of the United States and Russia on August 15, 2025) also contribute to the transformation of the agenda of the social mood of Russian society.

Prepared by K.E. Kosygina and I.M. Bakhvalova

⁵ The head of VCIOM on the attitude of Russians toward the topic of the special military operation: “People are getting used to living in its context”. Available at: <https://m.business-gazeta.ru/news/619763>

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