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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.

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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).

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- 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.

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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).

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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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Special Military Operation and the Internal Mobilization of Society and Elites



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Abstract. The article presents our view of the current state of Russian society after almost three years since the start of the special military operation. The objectivity of the results and the scientific novelty of the study are determined by a methodological approach that includes an analysis of federal, regional and municipal elections (according to official data from the Central Election Commission of the Russian Federation), all-Russian and regional sociological surveys, and expert assessments; management decisions made by the President and the Government of the Russian Federation, as well as specific facts reflecting the moral state of a significant part of the elite strata of the population. Based on the above factual basis, a conclusion is drawn about the continuing split of society (primarily elite groups) in relation to the special military operation and to those historical processes that it has triggered. This duality (largely conditioned by the specifics of public administration) can become a serious threat to national security in terms of

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implementing Russia's strategic goals in a civilizational conflict with NATO. We conclude that there is a need for internal mobilization of elites in order to bring the system of public administration and key areas of the country's life in line with the high level of threats to national security and the nature of the historical period of time in which the future of Russia is determined.

Key words: society, elites, elections, Single Voting Day, social processes, special military operation.

Two years and eight months have passed since Russian President Vladimir Putin announced the start of a special military operation on the territory of Ukraine. Throughout this period, the government and the President personally faced the most difficult task, which was to maintain a balance in the process of public administration between, on the one hand, the highest level of external threats to national security emanating from NATO countries and requiring internal mobilization of all segments of Russian society, and on the other hand, maintaining social stability in the country, taking into account the understanding of the objective fact that modern Russian society, after 30 years of being in the paradigm of Western "consumer society" with its liberal capitalist ideology focused on the priority of material values, is a completely different entity than Soviet society before the outbreak of the Great Patriotic War. There is a "colossal distance" between them, as noted by political scientist S. Kurginyan¹.

The way that the state has solved and continues to solve this truly difficult dilemma has left a certain imprint on the condition of Russian society, and we should note that this "imprint" has its own strengths and weaknesses that pose a certain threat to national security.

To analyze these "strengths" and "weaknesses" of Russian society, which were formed as a result of a certain strategy of internal state policy, we used

three approaches, consisting in analyzing the results of federal, regional and municipal elections held during the period of the SMO; data from all-Russian and regional sociological surveys; and (traditionally) facts and expert assessments, which, in our opinion, most adequately reflect the current situation in the country. These three approaches make it possible to create an objective "picture" of modern Russia, which continues to go through one of the most difficult and most fateful stages of its history.

On September 8, 2024, another Single Voting Day (SVD) took place in Russia; election campaigns of various levels were carried out in 83 regions of the country². We recall that this was the third Single Voting Day, which took place in the context of the special military operation. Each of them had its own characteristics, each marked an increase in voter turnout, and there was also strong support for representatives of the party in power.

The regional elections on September 11, 2022, were the first elections in the conditions of the SMO. They took place at an extremely difficult and dangerous time for Russia: an economic "blitzkrieg" on the part of NATO countries, a difficult situation for the Russian armed forces in the zone of the special military operation, a split within society in relation to the special military operation, the emergence of relocants...

¹ Kurginyan S. There is a huge distance between modern Russia and the USSR of the war period. Available at: <https://rossaprimavera.ru/news/9d79f9e3>

² The elections were held in the period from September 6 to 8, 2024. In 21 regions of the country, direct elections of the highest official of constituent entity of the Russian Federation were held (in 4 more regions – indirect elections, that is, deputies of local legislative bodies voted). Elections of deputies of regional legislative bodies were held in 13 regions. Deputies of the local legislative bodies of the capitals were elected in 21 regions (elections to the Moscow City Duma were held in a special order). There were by-elections to the State Duma in 3 regions..

It is not surprising that the expert community showed no disagreement concerning the key drivers and results of the vote held in 2022: “in all 14 regions, the current governors and acting representatives of United Russia or self-nominated candidates supported by United Russia were re-elected”³, and this (as many experts noted) was “the result of a consensus around the president”⁴.

For the first time the new regions that became part of the Russian Federation took part in the election campaign on September 10, 2023⁵. Their voters demonstrated the highest turnout and support for the President’s representatives in the regions (Tab. 1).

K. Kostin, Chair of the Board of the Foundation for the Development of Civil Society, on the 2022 regional elections: **“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. It influenced the course of the campaign itself, and will have a decisive impact on the election results...** The main recipients of such an electoral bonus are governors who were either appointed as acting governors by the president or were supported by him when nominated for a new term, and the United Russia party – Putin’s party”⁶.

Table 1. Comparison of the results of the elections on September 10, 2023 in the context of new regions and other constituent entities of the Russian Federation

Elections results	New RF constituent entities	Rest of the RF constituent entities	Dynamics (+/-), new RF constituent entities compared to the rest of the regions
Legislative elections			
Turnout, % of voters	71.14	38.31	+33
Share of votes cast for the United Russia party, % of turnout	77.52	56.52	+21
Elections to representative bodies of municipalities of regional centers of RF constituent entities			
Turnout, % of voters	63.54	33.14	+30
Share of votes cast for the United Russia party, % of turnout	77.46	50.68	+27
Source: calculated according to the official data from the Central Election Commission of the Russian Federation (http://www.vybory.izbirkom.ru).			

³ Skorobogaty P. (2022). New consolidation: Results of a Single Voting Day. *Ekspert*, no 38, p. 50.

⁴ Experts on the election results: The political system has successfully passed the SVD. Available at: <https://rg.ru/2022/09/12/eksperty-ob-itogah-vyborov-politicheskaia-sistema-ushpeshno-sdala-edg.html> (opinion of E. Sokolova, head of the Department of Strategic Research and Forecasting at the Expert Institute for Social Research).

⁵ September 30, 2022, the President of the Russian Federation signed agreements on the admission of the DPR, LPR, the Zaporozhye and Kherson regions to Russia. October 4, 2022, the relevant federal laws were signed: Federal Law 5 “On the admission of the Donetsk People’s Republic to the Russian Federation and the formation of a new constituent entity in the Russian Federation – the Donetsk People’s Republic”, Federal Law 6 “On the admission of the Lugansk People’s Republic to the Russian Federation and the formation of a new constituent entity in the Russian Federation – the Lugansk People’s Republic”, Federal Law 7 “On the admission of the Zaporozhye Region of Ukraine to the Russian Federation and the formation of a new constituent entity in the Russian Federation – the Zaporozhye Region”, Federal Law 8 “On the admission of the Kherson Region of Ukraine to the Russian Federation and the formation of a new constituent entity in the Russian Federation – the Kherson Region”.

⁶ Round table “Single Voting Day – 2022: Specifics, trends and forecast of results”. Official website of the Foundation for the Development of Civil Society. August 31, 2022. Available at: <http://civilfund.ru/event/146>

At the same time, besides current external threats, there emerged some internal threats to national security: terrorist attacks and sabotage on the territory of Russian regions, an attempt at an armed coup carried out by the Wagner PMC on June 24, 2023. And, as a result, the trend of “unprecedented consolidation of society, unification around the president and the flag”⁷ continued: “All the current governors, as well as the acting governors, have retained their posts. Of these, only two heads of regions were elected from the Communist Party, all the others were from United Russia”⁸.

✓ On September 8, 2024, a Single Voting Day took place against the background of the invasion of the Armed Forces of Ukraine into the Kursk Region (August 6, 2024) and the increasing likelihood of long-range missile strikes by NATO-made weapons deep into Russian territories, which was followed by a corresponding reaction from the RF President in the form of an initiative to amend the nuclear doctrine of the Russian Federation, which has been expected by experts for a long time.

“In the updated version of the document [Fundamentals of State Policy in the field of nuclear deterrence], **aggression against Russia by any non-nuclear state, but with the participation or support of a nuclear state, is proposed to be considered as their joint attack on the Russian Federation.**

The conditions for Russia’s transition to the use of nuclear weapons are also clearly fixed. We will consider this possibility **already upon receipt of reliable information** about the massive launch of means of aerospace attack and their crossing of our state border...

We reserve the right to use nuclear weapons in case of aggression against **Russia and Belarus** as a member of the Union State”⁹.

S. Karaganov (political scientist, Honorary Chair of the Presidium of the Council on Foreign and Defense Policy, scientific director of the Faculty of World Economics and World Politics at the Higher School of Economics): **“The main goal of the doctrine should be that all current and future opponents are confident that Russia is ready to use nuclear weapons. This is not only our duty to our country and our citizens, who are now dying on the fronts and even now in peaceful cities, it is our duty to the world.**

If we do not reactivate nuclear deterrence, the world will fall into a series of wars that will inevitably become nuclear and end in World War III. It is a matter of a few years. Russia’s duty is to dramatically activate the nuclear factor in world politics and convince our opponents that we are ready to use nuclear weapons in case of any encroachments on our territory and our citizens. Our opponents should know that our president will make this decision [to launch a nuclear strike]... Being ready for this is his duty to the country, the world and God. If the enemy understands this readiness, then there will almost certainly be no drone strikes against the Kremlin.

We must understand that a war of annihilation is being waged against us. Many people do not fully realize this. Until we are demolished, our Western “partners” will not calm down. Or they will calm down when they realize that it is impossible to demolish us without huge damage to themselves”¹⁰.

⁷ Analysts at the Expert Institute for Social Research called the 2023 elections consolidating Russian society. Available at: <https://lenta.ru/news/2023/09/12/analitiks/>

⁸ Pamfilova called the 46% turnout record-breaking. Available at: <https://www.rbc.ru/politics/13/09/2023/6501c3fe9a7947ea85beaf37>

⁹ Speech by the President of the Russian Federation at the meeting of the Permanent Session of the Security Council on Nuclear Deterrence on September 25, 2024. Available at: <http://kremlin.ru/events/president/news/75182>

¹⁰ Chernenko E. “The current nuclear doctrine does not fulfill the function of deterrence” (interview with S. Karaganov). Available at: <https://www.kommersant.ru/doc/7059257?ysclid=m2a7iitaxh735976424>

In other words, threats to Russia’s national security continue to grow; there are more and more signs that NATO is preparing to enter into direct conflict with Russia (as Russian Foreign Minister Sergey Lavrov said at a meeting of the UN General Assembly held from September 24 to 30, 2024); and the world is “sliding” into a “funnel” of escalation uncontrollably, which may ultimately lead to the Third World Nuclear War...

“With regard to Russia, the goal of inflicting a “strategic defeat” on it has been announced... **the current Anglo-Saxon strategists do not hide their plans.** True, they still expect to defeat Russia with the hands of the illegitimate neo-Nazi Kiev regime, **but they are already preparing Europe to throw itself into a suicidal and reckless scheme**”¹¹.

Naturally, preserving the general conditions for aggravation of the external political situation in the world and around Russia has influenced the continuation of the trends noted by the results of the Single Voting Day in 2024. On average, in 21 regions where direct elections of the heads

of RF constituent entities took place, turnout increased by 3.72% (from 46.8 to 50.5% of the total number of voters; *Tab. 2, Insert 1*), and support for representatives of the party in power or acting ones appointed by the President increased by 3.64% (from 73.36 to 77.0%; *Tab. 2, Insert 2*). At the same time, an increase in turnout and support for acting governors was noted in most of the RF constituent entities where the voting took place (*Insert 1*)¹².

We should also note that in general, over the past 10 years (from 2014 to 2024), the average number of voters in the regions where the elections of the heads of RF constituent entities took place decreased by almost 1 million people (by 957.4 thousand people; from 28.9 to 28 million people), and voter turnout increased by 674.5 thousand people (from 14.0 to 14.6 million people).

Thus, an analysis of the official data of the RF Central Election Commission shows that in all constituent entities where the elections of regional leaders were held, either the acting governors appointed by the RF President or the current governors won; and, as some experts noted, the chairman of the Central Election Commission E. Pamfilova “estimated the results of SVD-2024 as high as possible”¹³.

Table 2. Dynamics of the main results of voting in the elections of senior officials of RF constituent entities in 2019 and 2024

Indicator	2019	2024	Dynamics (+/-), 2024 to 2019
Number of voters	28351909	28005425	-346484
Abs. turnout	13904891	14632056	+727165
Turnout, %	46.82	50.54	+3.72
Abs. support	10592454	11201409	+608955
Support, %	73.36	77.00	+3.64

Source: own compilation according to the data from the Central Election Commission of the Russian Federation. More detailed information is provided in Insert 1.

¹¹ Speech by Russian Foreign Minister Sergey Lavrov at the general debate of the 79th session of the UN General Assembly, New York, September 28, 2024. Available at: https://www.mid.ru/ru/press_service/video/posledniye_dobavlnenniye/1972774/

¹² Approximately the same picture was observed in the regional centers: compared to the previous elections, voter turnout and support for acting officials, although insignificant, increased (from 41 to 42% and from 70 to 74%, respectively). Voter turnout increased in 9 out of 21 regional centers, and support for acting officials – in 13.

¹³ Rodin I. Pamfilova rejected anti-popular criticism of the elections. Available at: https://www.ng.ru/politics/2024-09-11/3_9091_campaign.html?ysclid=m1q4r67ynj13324465

Insert 1

Dynamics of voter turnout for the elections of senior officials of RF constituent entities in 2014–2024

Territory	2014						2019						2024						Dynamics (+/-)					
	2014		2019		2024		2014		2019		2024		2014 to 2019		2024 to 2019		2024 to 2014							
	number of voters	abs. turnout	turnout. %	number of voters	abs. turnout	turnout. %	number of voters	abs. turnout	turnout. %	number of voters	abs. turnout	turnout. %	number of voters	abs. turnout	turnout. %	number of voters	abs. turnout	turnout. %						
Altai Republic	155946	87507	56.11	162239	80920	49.88	164122	75063	45.74	162239	80920	49.88	164122	75063	45.74	+1883	-5857	-4.14	+8176	-12444	-10.37			
Republic of Bashkortostan	3027300	2267070	74.89	3049196	2189229	71.80	2977026	2153513	72.34	3049196	2189229	71.80	2977026	2153513	72.34	-72170	-35716	+0.54	-50274	-113557	-2.55			
Republic of Kalmykia	211003	129612	61.43	205823	113537	55.16	203704	124976	61.35	205823	113537	55.16	203704	124976	61.35	-2119	+11439	+6.19	-7299	-4636	-0.08			
Trans-Baikal Territory	814732	304582	37.38	791865	277721	35.07	759657	334158	43.99	791865	277721	35.07	759657	334158	43.99	-32208	+56437	+8.92	-55075	+29576	+6.61			
Stavropol Territory	1958397	937724	47.88	1878050	1256287	66.89	1903514	1093697	57.46	1878050	1256287	66.89	1903514	1093697	57.46	+25464	-162590	-9.43	-54883	+155973	+9.58			
Khabarovsk Territory	986341	444636	45.08	958412	419941	43.82	955360	314110	32.88	958412	419941	43.82	955360	314110	32.88	-3052	-105831	-10.94	-30981	-130526	-12.20			
Astrakhan Region	755345	306676	40.60	732517	245571	33.52	709760	309438	43.60	732517	245571	33.52	709760	309438	43.60	-22757	+63867	+10.08	-45585	+2762	+3.00			
Vologograd Region	1953217	715375	36.63	1843833	760070	41.22	1773458	1094698	61.73	1843833	760070	41.22	1773458	1094698	61.73	-70375	+334628	+20.51	-179759	+379323	+25.10			
Vologda Region	968226	287742	29.72	935466	379037	40.52	892898	439137	49.18	935466	379037	40.52	892898	439137	49.18	-42568	+60100	+8.66	-75328	+151395	+19.46			
Kaliningrad Region	786650	311441	39.59	839700	323347	38.51	839206	354176	42.20	839700	323347	38.51	839206	354176	42.20	-494	+30829	+3.69	+52556	+42735	+2.61			
Kemerovo Region – Kuzbass	2012208	1337419	66.47	1912342	1549241	81.01	1896365	1224551	64.57	1912342	1549241	81.01	1896365	1224551	64.57	-15977	-324690	-16.44	-115843	-112868	-1.90			
Kurgan Region	736261	292845	39.77	696763	296863	42.61	874183	538117	61.56	696763	296863	42.61	874183	538117	61.56	-55576	-24386	-0.11	-95074	-20368	+2.73			
Kursk Region	947084	369073	38.97	922506	383427	41.56	874183	538117	61.56	922506	383427	41.56	874183	538117	61.56	-48323	+154690	+20.00	-72901	+169044	+22.59			
Lipetsk Region	952189	452917	47.57	930421	438260	47.10	892480	511229	57.28	930421	438260	47.10	892480	511229	57.28	-37941	+72969	+10.18	-59709	+58312	+9.71			
Murmansk Region	637201	197658	31.02	578752	207339	35.83	545267	226787	41.59	578752	207339	35.83	545267	226787	41.59	-33485	+19448	+5.76	-91934	+29129	+10.57			
Orenburg Region	1590721	702314	44.15	1557425	616059	39.56	1501118	789382	52.59	1557425	616059	39.56	1501118	789382	52.59	-56307	+173323	+13.03	-89603	+87068	+8.44			
Samara Region	2429343	1495989	61.58	2411123	1296989	53.79	2397155	1314708	54.84	2411123	1296989	53.79	2397155	1314708	54.84	-13968	+17719	+1.05	-32188	-181281	-6.74			
Sakhalin Region	384549	144550	37.59	376850	140828	37.37	375835	157666	41.95	376850	140828	37.37	375835	157666	41.95	-1015	+16838	+4.58	-8714	+13116	+4.36			
Tula Region	1205455	548459	45.50	1150957	608247	52.85	1136990	536561	47.19	1150957	608247	52.85	1136990	536561	47.19	-13967	-71686	-5.66	-68465	-11898	+1.69			
Chelyabinsk Region	2720414	1155681	42.48	2602792	1174933	45.14	2574070	1260299	48.96	2602792	1174933	45.14	2574070	1260299	48.96	-28722	+85366	+3.82	-146344	+104618	+6.48			
Saint Petersburg	3730334	1468292	39.36	3814877	1147045	30.07	3992070	1507313	37.76	3814877	1147045	30.07	3992070	1507313	37.76	+177193	+360268	+7.69	+261736	+39021	-1.60			
TOTAL	28952916	13957562	45.89	28351909	13904891	46.82	28005425	14632056	50.54	28351909	13904891	46.82	28005425	14632056	50.54	-346484	+727165	+3.72	-957491	+674494	+4.64			
	Total number of regions in which the turnout and the number of voters increased / decreased																							
	3 / 18																							
	14 / 7																							
	15 / 6																							
	13 / 8																							
	14 / 7																							

Source: own compilation according to the data from the Central Election Commission of the Russian Federation.

Compared with the previous elections (for the period from 2019 to 2024), the number of voters in 18 RF constituent entities decreased (by almost 347 thousand people in the whole country). Nevertheless, turnout increased by 4 percentage points (from 47 to 51%), especially in Volgograd (by 21 percentage points) and Kursk (by 20 percentage points) regions. A noticeable decrease in turnout is noted in the Kemerovo Region (by 16 percentage points) and the Khabarovsk Territory (by 11 percentage points).

Insert 2

Dynamics of support for candidates who won the elections of senior officials of RF constituent entities in 2014–2024

Territory	2014			2019			2024			Dynamics (+/-)					
	abs.	% of turnout	% of voters	abs.	% of turnout	% of voters	abs.	% of turnout	% of voters	2024 to 2019		2024 to 2014		% of voters	
										abs.	% of turnout	abs.	% of turnout		
Altai Republic	42746	50.63	27.41	47588	58.82	29.33	55507	74.09	33.82	+7919	+15.27	+4.49	+12761	+23.46	+6.41
Republic of Bashkortostan	1851625	81.71	61.16	1794176	82.02	58.84	1724962	80.21	57.94	-69214	-1.81	-0.90	-126663	-1.50	-3.22
Republic of Kalmykia	107368	82.89	50.88	93704	82.54	45.53	99864	79.95	49.02	+6160	-2.59	+3.49	-7504	-2.94	-1.86
Trans-Baikal Territory	165472	54.39	20.31	248580	89.61	31.39	274444	82.27	36.13	+25864	-7.34	+4.74	+108972	+27.88	+15.82
Stavropol Territory	789502	84.22	40.31	1000074	79.64	53.25	869599	79.61	45.68	-130475	-0.03	-7.57	+80097	-4.61	+5.37
Khabarovsk Territory	325566	69.57	33.01	237818	56.77	24.81	254245	81.03	26.61	+16427	+24.26	+1.80	-71321	+11.46	-6.40
Astrakhan Region	230375	75.28	30.50	185543	75.63	25.33	241585	78.17	34.04	+56042	+2.54	+8.71	+11210	+2.89	+3.54
Volograd Region	632707	88.49	32.39	582848	76.80	31.61	872010	79.68	49.17	+289162	+2.88	+17.56	+239303	-8.81	+16.78
Vologda Region	181047	62.98	18.70	230316	60.79	24.62	273380	63.30	30.62	+43064	+2.51	+6.00	+92333	+0.32	+11.92
Kaliningrad Region	218652	70.41	27.80	259220	80.21	30.87	270919	76.55	32.28	+11699	-3.66	+1.41	+52267	+6.14	+4.48
Kemerovo Region – Kuzbass	1084392	81.29	53.89	1315922	85.23	68.81	949185	78.38	50.05	-366737	-6.85	-18.76	-135207	-2.91	-3.84
Kurgan Region	248323	84.87	33.73	239902	80.86	34.43	231940	85.17	36.17	-7962	+4.31	+1.74	-16383	+0.30	+2.44
Kursk Region	246506	66.81	26.03	310648	81.07	33.67	351040	65.28	40.16	+40392	-15.79	+6.49	+104534	-1.53	+14.13
Lipetsk Region	369997	81.83	38.86	294820	67.28	31.69	414840	81.16	46.48	+120020	+13.88	+14.79	+44843	-0.67	+7.62
Murmansk Region	127539	64.69	20.02	124429	60.07	21.50	167647	73.99	30.75	+43218	+13.92	+9.25	+40108	+9.30	+10.73
Orenburg Region	563451	80.28	35.42	406153	65.94	26.08	616565	78.14	41.07	+210412	+12.20	+14.99	+53114	-2.14	+5.65
Samara Region	1362676	91.35	56.09	1086187	83.83	45.05	1045504	79.56	43.61	-40683	-4.27	-1.44	-317172	-11.79	-12.48
Sakhalin Region	97859	67.8	25.45	78954	56.14	20.95	127336	80.79	33.88	+48382	+24.65	+12.93	+29477	+12.99	+8.43
Tula Region	461411	84.17	38.28	506816	83.58	44.03	441763	78.53	38.85	-65053	-5.05	-5.18	-19648	-5.64	+0.57
Chelyabinsk Region	996347	86.37	36.62	813853	69.30	31.27	1023767	81.28	39.77	+209914	+11.98	+8.50	+27420	-5.09	+3.15
Saint Petersburg	1130199	79.3	30.30	734903	64.43	19.26	895307	59.80	22.43	+160404	-4.63	+3.17	-234892	-19.50	-7.87
TOTAL	11233760	75.68	35.10	10592454	73.36	34.87	11201409	77.00	38.98	+608955	+3.64	+4.11	-32351	+1.31	+3.87
Total number of regions in which the support for the governor has increased / decreased										15 / 6	11 / 10	16 / 5	13 / 8	9 / 12	15 / 6

Source: own compilation according to the data from the Central Election Commission of the Russian Federation.

* Compared with the previous elections, in 2024, the level of support for leaders on average in the constituent entities of the Russian Federation in which voting took place increased by 1.31 percentage points (from 75.7 to 77%). In absolute terms, this is 32 thousand fewer people, which is due to a decrease in the number of people of voting age (by 364 thousand people; from 28.4 million people in 2019 to 28 million people in 2024).

Table 3. Dynamics of support for Vladimir Putin and dynamics of voter turnout at the presidential elections (nationwide)*

Indicator	Date of presidential elections			Dynamics (+/-), 2024 to...	
	March 26, 2000	March 18, 2018	March 17, 2024	2018	2000
Turnout					
abs.million people	75.18	73.63	87.58	+13.95	+12.4
%	68.70	67.54	77.49	+9.95	+8.79
Support for Vladimir Putin					
abs.million people	39.74	56.43	76.28	+19.85	+36.54
%	52.94	76.69	87.28	+10.59	+34.34
* Data on the results of the first presidential election in which Vladimir Putin participated and the elections preceding the vote on March 17, 2024 are presented. Source: Central Election Commission of the Russian Federation.					

At the same time, external threats to national security, which have sharply escalated after the start of the SMO, have a significant impact on the results of both regional and federal elections, as evidenced, for example, by the convincing support of Vladimir Putin in the presidential election on March 17, 2024: in the 24 years since he was first elected head of state, his nationwide approval rating has actually doubled (by almost 37 million people): from 39.74 to 76.28 million voters (*Tab. 3*).

We should emphasize that the growing support of the Russian society for the course of national development implemented by the President,

expressed, among other things, in the support of the party in power, is a phenomenon that was noted before the start of the SMO. The special military operation has only intensified this process. We recall that United Russia has had a constitutional majority in parliament since 2016. And, although, according to the results of the latest election to the State Duma (September 19, 2021), the level of support for United Russia decreased slightly, the share of votes cast for the party in power still prevails over the share of votes cast for all other parliamentary parties combined (50% vs 39%; *Tab. 4*).

Table 4. Dynamics of support for United Russia and dynamics of voter turnout at the parliamentary elections (nationwide)*

Indicator	Date of the elections to the State Duma of the Russian Federation					Dynamics (+/-), 2021 to...	
	December 7, 2003	December 2, 2007	December 4, 2011	September 18, 2016	September 19, 2021	2016	2003
Turnout							
abs.million people	60.70	69.61	65.77	52.70	56.49	+3.79	-4.21
%	55.67	63.78	60.21	7.88	51.72	+3.84	-3.95
Support for the United Russia party							
abs.million people	22.78	44.71	32.37	28.53	28.06	-0.47	+5.28
%	37.56	64.30	49.31	54.20	49.82	-4.38	+12.26
* For reference: according to the results of the latest election to the State Duma of the Russian Federation (September 19, 2021), the Communist Party of the Russian Federation received 18.93% of the vote, LDPR – 7.55%, Just Russia – 7.46%, New People – 5.32%. Source: Central Election Commission of the Russian Federation.							

Due to such consolidated and obvious support for the course of national development shown by Russian society, some experts argue that in force majeure conditions, when the country is actually waging a full-fledged war with the Collective West and is shifting toward the principle of “everything

for the front, everything for Victory”, regional elections are not needed at all. According to experts, one of the reasons why a Single Voting Day is still being held is that this is a definite signal to society from the state that “everything is going according to plan; the situation is under control and no extraordinary measures are required to complete the special military operation victoriously”.

M. Delyagin (RF State Duma deputy): “In the context of the special military operation, there should be a regime not “Live as usual, and don’t pay attention”, but a regime “Everything for the front, everything for victory”. And in this case, holding such elections looks a little strange”¹⁴.

I. Grashchenkov (political scientist): “The idea of abandoning the election of heads of regions is not new. Rumors about their cancellation have been circulating throughout the spring of this [2022] year. At that time, it was said that in the conditions of the SMO it would be reasonable to demonstrate internal political unity, and at the same time save budget funds”¹⁵.

S. Mironov: “Why spend all the time and money on this [gubernatorial elections], when it is already clear that the absolute majority supports the special military operation and, in particular, the decisions of the President of Russia”¹⁶.

A. Gallyamov (political scientist): “People don’t like to give up their right to choose their superiors. It turns out that with one hand the authorities calm the population – they say everything is fine with us – and with the other they introduce force majeure. This will strengthen the feeling that something is going wrong in the country”¹⁷.

However, the important role of annual regional and municipal elections lies in the fact that they allow us to see trends in the changes in the country’s political system and in the dynamics of public sentiment in the periods between elections at the federal level. And this is especially important in the tense situation that is developing in Russia

K. Kostin (President of the Foundation for Civil Society Development): “Two years are left before the elections to the State Duma. Every day for parliamentary parties... is the stage of preparation for these elections. Accordingly, it is worth looking at the ongoing elections from this angle”¹⁸.

A. Chesnakov (Head of the Scientific Council of the Center for Political Conjuncture): “The SVD-2024 should be perceived not only as the beginning of a new electoral cycle, but also as the end of the previous one. In general, we are talking about preparing a longer-term reality that the State Duma, elected in 2026 will work for another five years. The upcoming elections are a prologue to the Duma campaign and the five-year plan, which will take place from 2026 to 2031”¹⁹.

¹⁴ Yentsov Yu. Instead of the call “Everything for the front!”, fellow citizens hear “Everything is fine, beautiful Marchioness” (interview with M. Delyagin). Available at: <https://kprf-saratov.ru/2024/09/mihail-delyagin-vmesto-prizyva-vsyo-dlya-fronta-sograzhdane-slyshat-vsyo-horosho-prekrasnaya-markiza/>

¹⁵ To elect or appoint. Why Russia may cancel the gubernatorial elections in 2023. Available at: <https://www.amic.ru/news/politika/izbirat-ili-naznachat-pochemu-v-rossii-v-2023-godu-mogut-otmenit-vybory-gubernatorov-510924?ysclid=m22xj5t wjh750436221>

¹⁶ The discussion about the possible rejection of direct elections in 2022 has generated intrigue. Available at: <https://mskgazeta.ru/politika/diskussiya-o-vozmozhnom-otkaze-ot-pryamyh-vyborov-v-2022-godu-porodila-intrigu-10172.html?ysclid=m22xrnw0h9238697419>

¹⁷ Ibidem.

¹⁸ Experts consider the SVD-2024 an important stage in the preparation for the State Duma election in 2026. Available at: <https://www.interfax-russia.ru/index.php/moscow/news/eksperty-schitayut-edg-2024-vazhnym-etapom-podgotovki-k-vyboram-v-gosdumu-v-2026-godu>

¹⁹ EISI experts called SVD-2024 a prologue to the 2026 State Duma election. Available at: <https://life.ru/p/1653782?ysclid=m200w8xxg5810090003>

in the context of the SMO. It is no coincidence that a Single Voting Day on September 8, 2024 was considered by some experts exclusively as a “rehearsal” before the election to the State Duma of the Russian Federation, which will be held in 2026.

In this sense, regional elections, fulfilling their “diagnostic” function, are an important element in the process of “adjusting the country to achieve Victory”²⁰, which (as the Russian philosopher A. Dugin rightly notes) is currently more important than discussions about the future structure of Russia, its ideology, public administration, etc., that is, first we need to achieve Victory, and then the Victory becomes the “foundation of a new Russian statehood”.

More specifically, the diagnostic function of regional elections is that, using their example, one can see the same trends that are typical for society as a whole and for the public administration system.

“Winning the war with the West in Ukraine is an end and a means. **The exclusivity of the meaning (of this very) Victory in Russian history make us consider the current Russian statehood as a tool, as a method. That is, the modern Russian Federation is a part of Victory, its condition...**

Victory is greater than the entire Russian Federation, because Victory is the essence of Russia in its entirety. **The Russian Federation is only part of the Victory.** Victory is the whole. This is fate and the finale, a triumph...

To achieve Victory, it is necessary to adjust the Russian Federation to it... But then a new hermeneutic turn will come. Victory will be the foundation of a new Russian statehood”²¹.

And these trends are not only about the continued consolidation of society around the President in the face of external threats.

In particular, analyzing the results of a Single Voting Day in 2024, many experts came to the conclusion that a significant part of the population perceives elections as a “political ritual”; their “actual political content does not relate to the will of the masses”, and the political structure in Russia itself is “degrading to the archaic times”, since there is a “compression of political competition”, opposition parties “turn into an object of the political process” and thus there is a “freeze of political and public activity”.

“Against the background of the progress of electoral technologies, **the political structure is degrading to the archaic... they [opposition parties] have finally become the object of the political process.** And its subject is the regional authorities, connected in a single network through political vice-governors, which closes in the relevant departments of the presidential administration”²².

“**It is impossible to expect from the elections a process of collective search for solutions to the most pressing problems of regions/cities/districts/countries if the query is made in such a way.** Because a demand of metaphysical/existential importance is being put forward – the preservation of Russian statehood itself. And people’s current problems seem petty, insignificant, selfish, petty-bourgeois...”²³

“**Elections are perceived rather as a political ritual in which it is customary to participate... That may be enough here and now. But this is hardly enough to effectively govern a large country in the long term, to feel people’s sentiment”²⁴.**

²⁰ Dugin A. Hermeneutical Victory circle. Available at: https://zavtra.ru/blogs/germenevticheskij_krug?ysclid=m2012fzi3q255531738

²¹ Ibidem.

²² On the options for the emerging one-party system. Available at: https://www.ng.ru/editorial/2024-09-11/2_9091_red.html?ysclid=m1ov943beg112335220

²³ Remchukov K. Does our society want change? Available at: https://www.ng.ru/politics/2024-09-09/2_9088_1427.html?ysclid=m1ouwv0945994401035

²⁴ On elections as a communication channel. Available at: https://www.ng.ru/editorial/2024-09-10/2_9090_red.html?ysclid=m1ov3swigc738886871

“The ‘freeze’ of political and public activity will continue. It can be assumed that the party in power in such conditions will continue its course of profanation of elections and purely formal maintenance of legitimacy. As experts are already saying, the real political content of the elections does not relate to the will of the masses...”²⁵

The SVD-2024, according to formal signs, turned out to be a copy of last year’s elections with the compression of the main competition to five parliamentary parties²⁶.

In addition, given the unprecedentedly high level of threats to national security posed by NATO countries in relation to Russia, the domestic political system “requires an alliance of the right and the left against the liberals... both inside and outside Russia”²⁷.

At the same time, the United Russia party is trying to consolidate different strata of Russian society, positioning itself as the “party of Russian civilization”, the “majority party” and the “party of those who work”²⁹; but some experts doubt that the “union of officials and businesspeople, often

“... We need an alliance of the right and the left against the liberals. That’s what we need both inside and outside of Russia. The real right and left represent the people. And the liberals represent the comprador elite. There are no good liberals... And do not try to prove that liberals are not all the same. They are indeed. The right and the left are different. The liberals are all on the same side”²⁸.

ashamed of their past”, is capable of developing or even representing such an “ideology that would be generally understandable and recognized by the majority”.

Thus, analyzing the trends taking place in the country’s political system, experts draw attention to the fact that **against the background of the process of “uniting around the flag”, the institution of elections themselves is being turned into a “routine”, in fact, it is “withering away”;** and in a party that has not had serious competition in the political field for a long time, an ideological component that would turn out to be capable of consolidating all strata of Russian society and ensuring the very “alliance of the right and left against the liberals” is still under discussion.

A. Isaev, deputy head of the United Russia faction in the State Duma: “All other parties are class parties, and the United Russia alone represents the nation as a whole. Meanwhile, class contradictions are receding into the background today because of external challenges and existential contradictions”³⁰.

“If there were a generally understood and recognized ideology in the country, and it were consolidated by the corresponding ruling party, the issue of treason and sabotage would be resolved quickly and everywhere. **But United Russia is not suitable for such purposes, to put it mildly. The Union of officials and businesspeople, often ashamed of their past, is not capable of creative activity”³¹.**

²⁵ Garmonenko D. Party lists for the 2026 State Duma will be retained in the politically necessary volume. Available at: https://www.ng.ru/politics/2024-09-17/1_9095_elections.html?ysclid=m1ow0bnrrnr730662997 (мнение руководителя аналитического управления КППФ С. Обухова).

²⁶ Kynev A. LDPR, New People and Socialist Revolutionaries claim the same electorate. Available at: <http://club-rf.ru/detail/7425?ysclid=m1uf0lhmgga649045765>

²⁷ Dugin A. We need an alliance of the right and the left against the liberals. Available at: <https://izborsk-club.ru/26065?ysclid=m28pgyevek554015521>

²⁸ Ibidem.

²⁹ Isaev V. Primary branches and ideological work of the party. September 22, 2024.

³⁰ Ibidem.

³¹ Sorokin N. Mobilization of the spirit. Available at: https://zavtra.ru/blogs/o_radikalizatsii_vojni_i_soprovozhdayushej_eyo_ideologicheskoy_sferi

And we see about the same situation in Russian society, where, also against the background of sustained support for the President, the governor, the party in power and the state as a whole, people are becoming somewhat “accustomed” to life in the context of the SMO; the understanding of the essence of the historical moment is being lost; the degree of awareness of what is at stake for Russia in this conflict is decreasing.

Thus, according to sociological research, in three years (2022–2024), the level of trust in all major state and non-governmental institutions has increased (which in itself indicates an increase in popular support for the development course implemented by the government; *Insert 3*). Compared with 2021 (the year before the start of the SMO), by 2024, the level of trust in the President increased by 11 percentage points (from 49 to 60%), in the Government – by 13 percentage points (from 40 to 53%), in regional authorities – by 9 percentage points (from 36 to 45%), in municipal authorities – by 12 percentage points (from 32 to 44%). And, last but not least, throughout the entire measurement period (that is, over the past 24 years), the President and the Government of the Russian Federation have always been the institutions that enjoyed the highest trust among the population.

Thus, sociological research data do not allow us to doubt that the course of national development, implemented by the state (and the President personally), finds support in society. And this only confirms the official results of election campaigns (federal, regional, municipal) that took place over the past 24 years.

However, despite the fact that the level of citizens’ trust in state and non-governmental institutions is strong and growing with the increasing threats to national security, many experts now talk about “the decreasing sensitivity” of the society: that “no one seriously believes that Ukraine can invade Russia, as Germany tried to do in the Great Patriotic War; neither do they believe in the fact that NATO or the United States will shift from a half-hearted assistance to Ukraine to seizing the territories of the Russian Federation... people tend to think about the SMO as little as possible and take it as a reality and not a threat to their existence”³².

“More than 2.5 years have passed since the beginning of the open phase of confrontation between Russia and the West, **temporary structures and supports have become permanent**. The consequences of drastic changes and shocks **have become commonplace, sensitivity has dropped, people have learned to live with all this, taking what is happening for granted, doing their usual things. The increased level of uncertainty has been reduced due to routine and adaptation...**”³³

“**People are used to it, they have adapted, they have no desire to dramatically change their lives...** The paradigm “rise up, huge country” could still be carried out in the spring of 2022, now it’s too late. There are no such vivid emotions anymore”³⁴.

“The paradigm “life goes on as usual” is likely to continue unless something extraordinary or crucial happens. Individual patriotic speakers, as well as military commanders, like to talk about a huge country, **but they do not make up the majority... People react to what has already happened, not to what might happen**”³⁵.

³² Garmonenko D. Sociologists of the Russian Academy of Sciences calculate the “SMO coefficient”. Available at: https://www.ng.ru/politics/2024-09-29/1_3_9103_sociology.html?ysclid=m28po0qyxc81413058 (opinion of K. Kalachev, head of the Political Expert Group).

³³ Shkolnikov A. Crisis of the genre in information policy. Available at: https://zavtra.ru/blogs/v_paradigme_oko_za_oko?ysclid=m20an03sng103241729

³⁴ Garmonenko D. Sociologists of the Russian Academy of Sciences calculate the “SMO coefficient”. Available at: https://www.ng.ru/politics/2024-09-29/1_3_9103_sociology.html?ysclid=m28po0qyxc81413058 (opinion of A. Makarkin, first vice-president of the Center for Political Technologies).

³⁵ Ibidem. Opinion of K. Kalachev, head of the Political Expert Group.

Dynamics of trust in state and non-governmental institutions for the period from 1996 to 2024*
(VoIRC RAS data for the Vologda Region; % of respondents)

State and non-governmental institutions	For reference	Average annual data for presidential cycles										Dynamics (+/-), p.p.		Average annual data					Dynamics (+/-), p.p.	
		2000–2003		2004–2007		2008–2011		2012–2017		2018–2023		1996	2000–2003	3 years before the start of the SMO			3 years after the start of the SMO		2024 to 2022	2022–2024 to 2019–2021
		2000–2003	2004–2007	2008–2011	2012–2017	2018–2023	2019	2020	2021	2022	2023			2024						
RF President	26.5	58.2	58.6	56.0	55.3	54.3	+28	-4	52.4	51.6	49.1	55.7	56.2	60.4	+5	+6				
RF Government	18.5	39.3	39.3	51.7	45.5	43.8	+25	+5	41.0	41.0	40.1	45.6	47.5	52.9	+7	+8				
Police	14.1	26.0	27.0	33.6	37.2	43.4	+29	+17	40.7	41.6	43.9	44.1	45.7	50.5	+6	+5				
Prosecutor's Office	18.2	28.9	31.9	36.8	39.5	45.4	+27	+17	43.6	43.1	44.6	46.7	47.0	50.5	+4	+4				
Church	37.9	42.6	44.3	47.8	44.7	46.8	+9	+4	46.5	45.5	46.6	46.7	45.5	49.4	+3	+1				
FSB	12.6	32.6	33.4	37.5	38.5	43.7	+31	+11	41.0	42.7	43.9	44.4	45.1	48.7	+4	+4				
Court	19.8	30.9	33.9	37.4	39.1	42.2	+22	+11	39.4	38.1	42.1	44.5	43.9	47.7	+3	+6				
Army	34.2	33.8	27.8	35.0	39.6	42.6	+8	+9	40.8	38.5	43.0	42.5	43.7	47.3	+5	+4				
Regional leadership	14.2	28.6	35.3	40.3	36.6	36.5	+22	+8	33.5	34.2	35.6	38.5	41.5	45.3	+7	+7				
Federation Council	13.4	27.9	31.7	39.3	37.4	34.2	+21	+6	32.2	31.9	30.3	34.9	38.7	45.2	+10	+8				
Local government bodies	no data	no data	29.5	35.9	32.9	34.3	no data	no data	31.6	30.3	32.3	36.7	40.5	44.3	+8	+9				
State Duma	14.8	22.5	27.6	35.3	33.1	31.1	+16	+9	28.6	27.7	29.0	32.7	34.6	40.2	+8	+7				
Mass media	15.4	29.1	29.1	30.5	28.0	29.7	+14	+1	26.7	26.9	29.5	31.6	33.7	38.4	+7	+7				
Trade unions	20.2	26.0	27.6	31.0	27.4	31.2	+11	+5	29.7	28.4	31.8	30.6	33.3	38.3	+8	+4				
Non-governmental organizations	no data	no data	22.2	27.5	25.5	28.0	no data	no data	24.9	24.7	28.5	29.4	32.5	37.3	+8	+7				
Directors, heads of enterprises	5.2	20.1	23.8	24.5	23.0	24.1	+19	+4	20.5	21.2	24.4	24.7	28.5	33.4	+9	+7				
Political parties, movements	6.8	12.9	17.2	23.1	19.5	21.6	+15	+9	19.7	18.7	20.0	21.7	26.9	31.6	+10	+7				
Banking, business circles	8.5	13.9	20.5	22.2	19.4	21.8	+13	+8	17.6	18.9	22.8	23.9	26.8	30.7	+7	+7				

* The wording of the question: "Please determine your attitude toward the non-governmental structures and institutions of power operating in the country" (response option is "I fully and mostly trust"). The question has been asked since 1996. In 1997–1999 the question was not asked. The answer options "local self-government" and "non-governmental organizations" have been included in the question since 2006.

The table provides data on the dynamics of trust in state and non-governmental institutions for the period since 1996 (the year of Boris Yeltsin's first presidential term) and for presidential cycles from 2000 to 2024. Ranked according to data for 2024.

The main data are for the three years before and after the start of the SMO, which indicate that during all three years of the special military operation, citizens' trust in the main state and non-governmental institutions in the country grew annually. In particular, this applies to authorities at all levels – federal, regional, and municipal (they are highlighted in bold). From 2022 to 2024 (the period of SMO implementation), the level of trust in the President of the Russian Federation increased by 5 percentage points (from 55 to 60%), the Government of the Russian Federation – by 7 percentage points (from 46 to 53%), the Federation Council – by 10 percentage points (from 35 to 45%), the State Duma of the Russian Federation – by 8 percentage points (from 32 to 40%), the leadership of the region – by 7 percentage points (from 38 to 45%), local self-government bodies – by 8 percentage points (from 36 to 44%).

This is evidenced, for example, by data from sociological surveys of the Russian Public Opinion Research Center (VCIOM), according to which, during the period of the special military operation, the proportion of people purposefully interested in information about the SMO decreased, and annually (in general, for the period from 2022 to 2024 – by 13 percentage points, from 41 to 28% *Tab. 5*). In turn, the share of Russians who are completely uninterested in information about the SMO or pay attention to it only randomly has increased by 12 percentage points over the past three years (from 58 to 70%). Approximately the same ratio of public opinion assessments was shown by the results of a sociological survey by Vologda Research Center of the Russian Academy of Sciences (VoIRC RAS), conducted in September – October 2024 in the Vologda Region³⁶.

In addition, at the same time as this “drop in sensitivity” (noted by experts), just as there is no single consolidating ideology either inside the party

in power or, by and large, in the President³⁷, the future life trajectories of Russians, according to sociologists, have a mixture of traditional Russian and liberal pro-Western values, or, in other words, **there have been no changes compared to the situation before the beginning of the SMO.**

In support of this thesis, we present two quotes from a recent study conducted by a team of scientists from the Center for Social Forecasting and Marketing (CSFM) and the Institute of Sociology of the Federal Research Sociological Center of the Russian Academy of Sciences (IS FCTAS RAS) in May 2024. In their forecast for the period up to 2045, dealing with the “trends in changes in mass consciousness in terms of life attitudes, **i.e. those values according to which people try to build their lives**”³⁸, sociologists note that, on the one hand, “*the value system of the absolute majority of the population will definitely be dominated by adherence to the traditional form of the family as a marriage union of man and woman, rejection of*

Table 5. Distribution of responses to the question “To what extent are you interested in information about Russia’s special military operation in Ukraine?”, % of respondents

Response	2022	2023	2024	Dynamics (+/-), 2024 to 2022, p.p.
I purposefully search for, read, watch, listen to information about the current situation	41	35	28	-13
I don’t specifically search for information, but if I come across it, I read, watch, listen	47	51	53	+6
I don’t search for, read, or watch information about the special military operation	11	13	17	+6
I’m not sure	1	1	2	+1

Sources: VCIOM, VoIRC RAS.

³⁶ According to VoIRC RAS, 19% of residents of the Vologda Region are specifically interested in information about the SMO; 44% do not specifically look for it, but pay attention to it; 20% do not look for, read or watch information of this kind.

The survey was conducted from September 19 to October 9, 2024 in 8 municipal districts and okrugs of the Vologda Region, as well as in the cities of Vologda and Cherepovets. The survey method is a questionnaire at the place of residence of respondents. Sample size is 1,500 people aged 18 and older. Sampling error does not exceed 3%.

Some difference with VCIOM data is most likely due to a higher proportion of those who “found it difficult to answer” (18% according to VoIRC RAS, 1–2% according to VCIOM). This may be due to the specifics of the survey methodology (VCIOM – telephone interview; VoIRC RAS – questionnaire survey at the respondents’ place of residence).

³⁷ For more information, see the article: Ilyin V.A., Morev M.V. (2024). The fifth political cycle of Russian President Vladimir Putin: “Cosmetic repairs” for crony capitalism or a transition to “social capitalism”? *Economic and Social Changes: Facts, Trends, Forecast*, 17(3), 9–35.

³⁸ Sheregi F.E., Privedentseva O.S. (2024). Medium-term forecast of the dynamics of Russians’ life attitudes. *Vestnik Instituta sotsiologii*, 15(3), p. 13.

family models of a sexual minority, rejection of LGBT propaganda and ‘woke’ ideology³⁹ in general”; on the other hand, **“it is likely that the moral character of a relatively large part of the population will be burdened by the priority of material values, the source of which will not always be legitimate, especially in the business environment, as well as a liberal attitude toward corrupt methods of solving personal problems”¹⁸.**

This forecast is given by the experts of CSFM and IS FCTAS RAS for the next 20 years, and, in fact, the grounds for these (very alarming, in our opinion) expectations have been traced for a long time. “Ultra-high earnings” (as a moral category, that is, regardless of what amount is behind them), “the desire to work less and earn more”, “arrogance”, “bribes” – society has become more

relaxed about all this (according to the results of the monitoring conducted by VoIRC RAS) than before the beginning of the SMO and even than in the 1990s (Tab. 6).

In particular, according to the latest data (for 2023), “the desire to work less and earn more” and “ultra-high earnings” are “acceptable and quite normal” for more than half of respondents (51 and 56%, respectively). For comparison: in 1996, 36 and 53% thought so, in 2018 (the last round of polls before the start of the SMO) – 49 and 54%.

As for the values associated with the form of family relations, gender tolerance, etc., it is worth noting that in Russia, **even before the SMO**, there was the lowest and at the same time decreasing (unlike most European countries) level of tolerance

Table 6. Proportion of people for whom the listed moral and ethical phenomena and actions are “acceptable, quite normal”, % of respondents

Phenomena / actions	Year					Dynamics (+/-), 2023 to..., p.p.		
	1996	2000	2018	2022	2023	1996	2000	2018
Smoking	64.9	65.6	59.4	63.3	63.7	-1	-2	+4
Passion for things	56.8	60.9	53.8	60.9	61.4	+5	+1	+8
Ultra-high earnings	53.4	62.6	54.4	56.0	55.9	+3	-7	+2
The desire to work less and earn more	36.1	46.1	48.5	52.2	51.3	+15	+5	+3
Refusal to undergo military service	40.2	47.4	43.9	45.1	45.0	+5	-2	+1
Life by the principle of “roll my log and I’ll roll yours”	46.4	48.9	40.4	45.1	44.8	-2	-4	+4
Laziness	22.3	27.4	34.7	42.6	39.8	+18	+12	+5
Alcohol addiction	19.6	13.3	18.6	20.9	22.2	+3	+9	+4
Arrogance	10.9	13.9	19.6	22.0	21.9	+11	+8	+2
Toadyism, sycophancy	9.0	10.4	15.6	19.0	17.0	+8	+7	+1
Bribes	10.7	9.3	13.4	15.5	13.8	+3	+5	0
Disrespectful attitude toward women	5.6	6.7	9.6	12.1	11.5	+6	+5	+2
Theft	7.8	6.0	4.8	9.7	9.7	+2	+4	+5
Drug addiction	2.0	2.0	5.1	6.6	7.1	+5	+5	+2

Ranked according to data for 2023.
Source: VoIRC RAS public opinion monitoring.

³⁹ Woke, Wokeism (English: woke culture, woke), or the culture of engagement is a modern ideological movement that emerged in the United States in the 2010s on the wave of the rise of the Black Lives Matter movement. Its supporters are characterized by heightened attention to racial prejudice, any form of discrimination, socio-economic inequality, sexism, infringement of the rights of minorities, and demand active, sharp condemnation and persecution of such manifestations (Source: The Great Russian Encyclopedia. Available at: <https://bigenc.ru/c/kul-tura-vovlechnosti-df058f>).

⁴⁰ Sheregi F.E., Privedentseva O.S. (2024). Medium-term forecast of the dynamics of Russians’ life attitudes. *Vestnik Instituta sotsiologii*, 15(3), p. 34.

toward non-traditional pro-Western orientations⁴¹. Back in 2021, Vladimir Putin called it the “internal moral protection” of Russian society, the “deep immune system” that will protect us “from this obscurantism”.

Excerpt from Vladimir Putin’s press conference on December 23, 2021:

M. Gadziyev (“Russia Today” reporter): “...the culture of cancellation, the rejection of familiar concepts like ‘mom’, ‘dad’, ‘family’ or even ‘gender’.. What is your attitude toward the new ethics? Will this ‘carriage of values’ come to Russia?”

Vladimir Putin: “This carriage will move toward us, inevitably ... I hope that our society has internal moral protection dictated by the traditional confessions of the Russian Federation... All the peoples of the Russian Federation – I want to emphasize, all of them – have a certain internal moral protection against such obscurantism... Yes, let them do what they want there. We must take everything progressive and the best that helps to develop... but I hope that our peoples, the peoples of Russia, will have enough internal deep immune systems to protect against this, as I said, obscurantism”⁴².

Thus, the meaning of the internal changes in the country expected from the SMO, the essence of the changes, which consist in ridding Russia of liberal dogmas and a semi-colonial state in relation to the Collective West, is not only to preserve traditional values in the face of the “surge” of non-traditional values of gender equality and tolerance coming from the West, **but above all in that thing which expresses the meaning of capitalism as the ideology of the Western “consumer society”.**

And it expresses exactly what sociologists at IS RAS say in the second part of their forecast for Russian society for the next 20 years – “*a moral image burdened with the priority of material values, the source of which will not always be legitimate ..., as well as a liberal attitude toward corrupt methods of solving personal problems*”.

“Capitalism is exactly **the same historical socio-economic formation, that is, the political state system in which we live and prosper, although with a caveat, not everyone prospers in it, but only those who are lucky, that is, who managed to grab a fat piece and now will not give it to anyone, if anyone by force or cunning, will not take this fat piece away from him... The ideology of capitalism in a simple and understandable expression for everyone – this is to capture, appropriate, suppress, subjugate, dominate, endlessly satiate oneself, this is permissiveness under the brand of freedom, but only for the elect, the rich and successful, the rest eat crumbs from the master’s table; in short, it is injustice in all its unsightly ugly beauty**”⁴³.

“Modern capitalist ideology is a complex multi-level structure. It is based on a common ethics for all, based **on commodity-money relations, individualism, on the principle of ‘purchasability’ of everything** and the desire for total digitization, i.e. putting a price tag on everything that is done by a person. And at the top there are various variations of ideologies for every taste, even outwardly opposite, **but fundamentally and essentially not leading anywhere beyond them**”⁴⁴.

⁴¹ Between 2006 and 2018, the proportion of people who believe that “gays and lesbians should have the right to lead a lifestyle that corresponds to their views” in Russia decreased from 26 to 17%. For comparison: in Germany, over the same period, it increased from 71 to 87%, in the UK – from 78 to 88%, in France – from 77 to 89%, etc. (Source: European Social Survey data. Available at: <http://www.ess-ru.ru>).

⁴² Vladimir Putin’s big press conference. Available at: <http://www.kremlin.ru/events/president/news/67438>

⁴³ Popov V. (2021). Ideology of capitalism. Available at: <https://proza.ru/2021/12/29/769>

⁴⁴ Ibidem.

V. Katasonov: “The main goal of life, according to the ideology of capitalism, is **material prosperity, profit, acquiring money and capital by any possible means, and above all through deception and exploitation of weaker peoples and members of society...** Wealth is an expression of being chosen. A rich man is blessed by God, and all who have no money must serve the ‘chosen ones’. **The disintegration of Western Christianity at the end of the Middle Ages became the starting point for the creation of capitalist ideology and economic means of enslaving humanity**”⁴⁵.

Thus, the disturbing moments observed by experts in Russian society, associated with getting used to life in conditions of the SMO and in some ways even the loss of fear, which is quite natural and very useful for understanding the essence of the historical moment and, as a result, for an adequate response to possible “unpopular”, but forced and necessary decisions of the President, correlate with the tendency toward routinization of local (regional and municipal) elections and are largely a consequence of a “paradigm” that the authorities

“The public administration system is consistently adapting to the existing realities. **Thus, it cannot be excluded that at some point the fundamental paradigm that the government had previously dictated to society will also be changed. They say that most people should stay somewhat away from the event that military professionals will brilliantly conduct on their own**”⁴⁶.

adhere to from the very beginning of the SMO, the paradigm according to which “life goes on as usual”.

Similar processes can be observed in the effectiveness of the public administration system itself, where the role of “positive trends” is played by the ongoing active measures of the President and the Government of the Russian Federation to bring living conditions in the country in line with the essence of the historical period of time that Russia is passing through (including the increase in external threats, and the forced need for complex internal changes in the country). And the role of “disturbing moments” is played by numerous evidence that some of the elite still have not shifted toward the military “rails”, continuing to live as if there were no SMO.

Some of the management decisions made by the head of state and the Government of the Russian Federation are presented in *Insert 4*. We would like to pay special attention to a number of personnel appointments made by Vladimir Putin in order to ensure real (and not “on paper”) work of the personnel program “Time of Heroes”.

In December 2022 experts at Nezavisimaya gazeta newspaper noted that the Kremlin “in every possible way distances itself from any emergency situation, emphasizing that civil and political life inside the country, despite the SMO, goes on as usual”⁴⁷.

In September 2024 K. Kalachev, head of the Political Expert Group, said that “the ‘life goes on as usual’ paradigm is likely to continue unless something extraordinary or crucial happens”⁴⁸.

⁴⁵ Katasonov V.Yu. (2013). *Kapitalizm. Istoriya i ideologiya “denezhnoi tsivilizatsii”* [Capitalism. The History and Ideology of the “Monetary Civilization”]. Moscow: Institut russkoi tsivilizatsii. Pp. 144, 522.

⁴⁶ Rodin I. Public administration adapts to the realities of the SMO. Available at: https://www.ng.ru/politics/2024-09-19/1_3_9097_veterans.html

⁴⁷ Garmonenko D. The Socialist Revolutionaries will prepare for the elections just in case. Available at: https://www.ng.ru/politics/2022-12-15/3_8617_candidates.html

⁴⁸ Garmonenko D. Sociologists of the Russian Academy of Sciences calculate the “SMO coefficient”. Available at: https://www.ng.ru/politics/2024-09-29/1_3_9103_sociology.html?ysclid=m28po0qyxc81413058

“By now, **10 participants** of the educational program “Time of Heroes” initiated by the President have received new appointments to responsible positions. According to the decree of the head of state:

- ✓ Hero of the DPR Artyom Zhoga has been appointed plenipotentiary representative of the President of the Russian Federation in the Ural Federal District.

- ✓ Hero of Russia Artur Orlov was appointed head of the “Movement of the First” by Decree of the President of the Russian Federation.

- ✓ Alexey Kondratiev became a senator of the Russian Federation.

- ✓ Hero of Russia Igor Yurgin headed the Ministry of Youth Affairs and Social Communications of the Republic of Sakha (Yakutia).

- ✓ Alexander Surazov headed the Committee on Physical Culture and Sports of the Altai Republic.

- ✓ Evgeny Chintsov headed the Nizhny Novgorod City Duma.

- ✓ Zaur Gurtsiev became first deputy head of the city of Stavropol.

- ✓ Hero of Russia Roman Kulakov became a deputy of the Legislative Assembly of Sevastopol.

- ✓ Konstantin Yashin headed the Samara Research and Production Center for Unmanned Aircraft Systems.

- ✓ Hero of Russia Vladimir Saibel became Deputy Head of the Social Development Department of Russian Railways JSC.

Another 10 participants of the “Time of Heroes” program received personnel offers to move to new jobs in the Presidential Administration of the Russian Federation, federal and regional authorities, and state-owned companies”⁴⁹.

According to experts, the “Time of Heroes” program “sets a powerful trend for the formation of a qualitatively new class of managerial elite”⁵⁰, and in this sense, one can only express the hope that the passion, moral qualities and qualifications of its graduates will be enough for them to avoid becoming “victims” of “representatives of liberal circles who are still in power”⁵¹.

“The state system is a single organism in order to reject everything alien that gets into it. Once in power, a representative of the counter-elite must **either assimilate into the system, or it will reject him**, and even not without losses for himself, because an intelligent idealistic passionary is dangerous for a stupid, lazy, money-hungry official”⁵².

However, despite all these measures, which are taken on a daily basis by the head of state and the government virtually throughout the entire period of SMO implementation, specific facts and episodes are still noted in Russia, which indicate either an inadequate perception (underestimation) by a significant part of the elites of the essence of the historical moment, or their deliberate sabotage of those transformational processes inside Russia, which were launched together with the beginning of the SMO (*Insert 5A*).

Such facts, on the one hand, are criteria for the effectiveness of public administration, since they are a consequence of the general (organizational, administrative, political, economic, ideological) conditions created in the country; on the other hand, they do not fit into the process of “adjusting Russia to achieve Victory”.

⁴⁹ 20 participants of the “Time of Heroes” program have taken up new positions and are preparing to move to more responsible areas of work. Available at: <http://www.kremlin.ru/supplement/6195>

⁵⁰ Isaichenko O. The Time of Heroes has come in Russian Government. Available at: <https://vz.ru/society/2024/10/3/1290528.html?ysclid=m28q6ov8q7136017831>

⁵¹ The time of liberals is over. The new elite will consist of those who did not engage in betrayal. Available at: https://tsargrad.tv/news/vremja-liberalov-proshlo-novaja-jelita-budet-sostojat-iz-teh-kto-ne-predal_967197?ysclid=m2a716tt1y880320580

⁵² Korovin V. Where are you, Putin’s commissars? Available at: https://zavtra.ru/blogs/gde_vi_komissari_putina

Insert 4

**The monitoring of regulatory legal acts (laws, decrees) signed by the President of the Russian Federation
in the period from August 15 to October 19, 2024⁵³**

**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**

September 16 – Decree 792 “On establishing the regular strength of the Armed Forces of the Russian Federation”. The staffing of the Armed Forces of the Russian Federation has been established in the amount of 2,389,130 units, including 1,500,000 military personnel.

September 20 – Decree “On the Interdepartmental Commission of the Security Council of the Russian Federation on the recruitment of the Armed Forces of the Russian Federation with military personnel undergoing military service under contract”. The Provisions and composition of the Commission have been approved. The Commission will, among other things, coordinate the activities of government agencies and organizations for the selection of candidates for military service under a contract; analyze the recruitment process of the Armed Forces of the Russian Federation by contractors; evaluate measures implemented to attract citizens to volunteer formations that assist the Armed Forces of the Russian Federation during mobilization, martial law, wartime, in the event of armed conflicts, the conduct of military operations and the use of the Armed Forces of the Russian Federation outside the country; consider proposals on measures of material remuneration for contractors and social protection of their families. The commission’s meetings will be held at least once a month.

September 30 – Federal Law 336 “On amendments to Article 6 of the Federal Law, on amendments to Articles 966 and 2201 of the Budget Code of the Russian Federation and certain legislative acts of the Russian Federation, suspension of certain provisions of the Budget Code of the Russian Federation and on establishing the specifics of budget execution of the budgetary system of the Russian Federation in 2024”. It provides for the possibility of providing intergovernmental transfers to the budgets of the constituent entities of the Russian Federation to co-finance expenditure obligations for the provision of medical care to military personnel by medical organizations of the constituent entities of the Russian Federation during the period of SMO implementation; the specifics of performing state (municipal) tasks in certain territories (facilities) with an increased level of terrorist danger are established.

October 2 – Federal Law 340 “On amendments to Article 781 of the Criminal Code of the Russian Federation and the Code of Criminal Procedure of the Russian Federation”. It provides for the possibility of suspension by the court of proceedings in a criminal case, cancellation of a preventive measure and subsequent release from criminal liability of defendants, release from punishment of convicted persons in case of their conscription during mobilization or during wartime into the Armed Forces of the Russian Federation or their conclusion during mobilization, during martial law or during wartime of a contract on military service in the Armed Forces of the Russian Federation, as well as persons suspected or accused of committing crimes, during military service in the Armed Forces of the Russian Federation during mobilization, during martial law or during wartime.

⁵³ This 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. Thus, this monitoring has been ongoing for 19 months, its results have been published in 10 articles (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).

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

August 22 – Decree 716 “On the Council under the President of the Russian Federation for the Implementation of State Policy in the field of support for the Russian language and the languages of the peoples of the Russian Federation”. According to the Provision, the Council is an advisory and coordinating body established in order to preserve, develop, support the Russian language and the languages of the peoples of the Russian Federation, promote and strengthen the position of the Russian language in the world, ensure the rights of citizens of the Russian Federation to use Russian as the official language of the Russian Federation and the languages of the peoples of the Russian Federation, as well as to coordinate the activities of federal state bodies authorities, public authorities, of the subjects of the Russian Federation, local governments, public associations, cultural and art organizations, scientific, educational and other organizations, including non-profit organizations that carry out activities in the field of international humanitarian cooperation, on issues related to the preservation, development, support of the Russian language and the languages of the peoples of the Russian Federation, promotion and strengthening of the position of the Russian language in the world.

MEASURES TO PROVIDE SOCIO-ECONOMIC SUPPORT TO THE GENERAL POPULATION, STRENGTHEN THE COUNTRY'S ECONOMY, INCLUDING IN THE INTERNATIONAL ARENA

September 6 – Decree 755 “On approval of the composition of the Commission under the President of the Russian Federation on the strategy for development of the fuel and energy complex and environmental safety”. The power bloc has become much more widely represented in the Commission. The new composition includes the head of the Ministry of Defense A. Belousov, Director of the FSB A. Bortnikov, head of the Rosgvardiya V. Zolotov, head of the Ministry of Emergency Situations A. Kurenkov, Secretary of the Security Council S. Shoigu (previously, only Director of the SVR S. Naryshkin and Interior Minister V. Kolokol'tsev were in the commission, they retained their posts). From the civilian part of the government, the new members of the commission were Deputy Prime Ministers D. Grigorenko and V. Saveliev, Head of the Ministry of Energy S. Tsviliev, Minister of Health M. Murashko and head of the Federal Customs Service V. Pikalov.

September 18 – Decree 807 “On the extension of certain special economic measures in order to ensure the security of the Russian Federation”. Counter-sanctions related to the ban on the import of certain types of agricultural products, raw materials and food from states that have imposed economic sanctions against our country have been extended until the end of 2026.

Elites “getting high”⁵⁴

April 22, V. Potanin, president of Norilsk Nickel, announced plans to transfer the plant’s facilities to China by 2027. The billionaire stressed that this “will allow us to avoid large losses caused by the current difficulties”, and also linked the transfer of production to China with the President’s order to improve the environment in Norilsk.

A. Drozdov (State Duma deputy from the Krasnoyarsk Territory): “We are talking not only about possible negative consequences of a financial nature, but also about the curtailment of strategically important processing plants that were built by the whole country in its most difficult years...A dangerous precedent is being created when irreversible decisions can be made under a plausible pretext (overcoming sanctions pressure, improving the environment), instead of following the course outlined by the President to deepen high-tech development; the decisions which lead to the loss of existing competitive advantages in the use of natural resources”⁵⁵.

V.A. Kryukov (Academician, director of the Institute of Economics and Industrial Engineering within the Siberian Branch of the Russian Academy of Sciences): “The Russian Federation does not impose any conditions and obligations on scientific and technical policy upon obtaining licenses (for the right to use the subsoil) on Norilsk Nickel, as well as on all other domestic subsoil users. This is nonsense. There are such encumbrances from the owner of the subsoil in every country with a powerful mining sector... The market itself does not initiate, regulate or launch such issues. This is the task and responsibility of the state – the owner of the subsoil”⁵⁶.

April 28, the newspaper *Zavtra* published an article by I. Shishkin, Russian historian, political scientist, head of the Working Group of the Institute of CIS Countries on Countering the Distortion of History, which notes that the information resource “Legacy of the Empire” supervised by General L.P. Reshetnikov accused Stalin of forcing Hitler to attack the USSR in 1941 for the sake of the triumph of his aggressive plans, and then – of a “treacherous” attack on Japan. According to the editorial board of the newspaper *Zavtra*, “it is quite obvious that the “Legacy of the Empire” broadcasts the basic postulate of Western propaganda, adopted by the Kiev regime and the Baltic ethnocracies. We are talking about the formula according to which the Soviet Union and the Third Reich bear equal responsibility for the outbreak of World War II”⁵⁷.

⁵⁴ Kurginyan S. Ukraine expects to collapse the doctrine of a Russia getting high and a fighting Russia. Available at: [https://rossaprimavera.ru/news/caa70312?ysclid=m204snstfk186009988](https://rossaprimavera.ru/news/caa70312https://rossaprimavera.ru/news/caa70312?ysclid=m204snstfk186009988)

⁵⁵ The State Duma has demanded public hearings on the relocation of the Norilsk Nickel plant to China. Available at: https://zavtra.ru/blogs/problemi_nornikelya

⁵⁶ Getmanov V. Problems of Norilsk Nickel. Available at: https://zavtra.ru/blogs/ataka_na_pobedu?ysclid=m24fp006po210446049

⁵⁷ Shishkin I. Attack on Victory. Available at: https://zavtra.ru/blogs/ataka_na_pobedu?ysclid=m24fp006po210446049

August 21, A. Korobeynikov, deputy of the Sverdlovsk Region announced that he had signed a contract with the Ministry of Defense and left as a volunteer for the zone of his military training. September 5, it was discovered that the people's deputy was "serving" in the federal state institution "66th Financial and Economic Service" of the Ministry of Defense of the Russian Federation, which is stationed in Yekaterinburg and is engaged in public procurement. As noted by N. Mikhalkov in the Besogon program, "the purpose of the deputy's public activity is to obtain the status of a SMO participant in order to receive a 25% discount on participation in the primaries of United Russia and then get into the State Duma in this way... in wartime it is a crime".

August 29, former Deputy Defense Minister P. Popov was sent to jail for a particularly large-scale fraud; "he was one of the people closest to S. Shoigu in the military department. According to the investigation, he organized the execution of construction and repair work, and the supply of material assets to his suburban plot at the expense of the Patriot Park. In addition, through his subordinates, he forced the heads of commercial organizations that have contractual relations with the Patriot Park to carry out construction and installation works in his suburb apartments without paying for them. After the construction of the house and landscaping of the site, Popov continued to provide technical and economic maintenance of his plot of about 3 hectares at the expense of the park. In 2021–2024, Popov, responsible for the development, maintenance and operation of the Patriot Park, enriched himself at the expense of this institution, acting jointly with the Park's director V. Akhmedov and deputy head of the Main Department of Innovative Development of the Ministry of Defense of the Russian Federation V. Shesterov ..."⁵⁸ "There is an opinion that the charges against Popov are only the tip of the iceberg. They say that it was he, as the curator of the innovative development of the Ministry of Defense, who was supposed to lead and promote the introduction of drones"⁵⁹.

September 12, A. Doroshenko, student of the Faculty of Computer Science at the Higher School of Economics, posted a video online where she spits (literally) on a poster about contract service in the Armed Forces of the Russian Federation. In court, the girl stated that she was intoxicated at the time of the spit and allegedly did not give an account of her actions. The court imposed a fine of 40 thousand rubles on her. Soon, the HSE student "recorded a new video in which she continued her mockery; she made it clear that she did not take the incident seriously, insulted Russia and the President".

A. Ivanov (expert of the newspaper *Zavtra*): **"Why such a cheekiness? It is because Doroshenko turned out to be a typical representative of the 'golden youth', accustomed to permissiveness.** The daughter of a major businessman in the capital, media manager Roman Doroshenko, whose company previously distributed the magazine *Burda*. M. Akhmedova (editor-in-chief of IA Regnum, member of the Presidential Council for the Development of Civil Society and Human Rights): **"...40 thousand rubles is nothing to her. She will even welcome this kind of advertising herself"**⁶⁰.

⁵⁷ Former Army General Pavel Popov sentenced to pretrial detention. Available at: https://www.ng.ru/politics/2024-08-29/2_9082_news1.html

⁵⁸ Did "Prigozhin's portfolio" work again? Arrest of General Popov. Unknown facts about Shoigu's former deputy. Available at: https://tsargrad.tv/news/snova-srabortal-papochka-prigozhina-arrest-general-popova-neizvestnye-fakty-o-byvshem-zame-shoigu_1047416

⁵⁹ Ivanov A. The HSE student who spat on a poster depicting Russian military is the daughter of a major businessman. Available at: https://zavtra.ru/events/plyunuvshaya_na_plakat_s_izobrazheniem_rossijskih_voennih_studentska_vshe_doch_krupnogo_biznesmena

End of Insert 5A

September 18, shooting was opened at the head office of Wildberries, which is located in the Romanov Dvor business center opposite the Kremlin (2 people were killed, 7 injured). Everything happened in the style of the showdown of the 1990s, which caused a wide public outcry.

K. Kabanov (Head of the National Anti-Corruption Committee, member of the HRC): “The battle for Wildberries has revealed a serious problem. **Businesspeople again felt impunity and reached lawlessness. In the very center of Moscow, literally near the Kremlin, organized and armed groups of people staged a gang shootout in the spirit of the 1990s.**” “I understand intellectually that a multibillion-dollar business is being divided (the marketplace ended last year with revenue of 539 billion rubles), **powerful parties have converged, which do not care about the law at all and nothing matters to them.** But I cannot and do not want to accept this, because **this is a complete mess, more outrageous than in the 1990s.** This is a lawlessness in which random people in the center of the capital become hostages of these greedy gang fights”⁶¹.

September 21 – the son of D. Pasler, governor of the Orenburg Region (who sharply criticizes the West, stating that “all my personal assets – family, home, friends, work – are in Russia” and has access to state secrets), flew to the United States to play hockey for the American team (previously, another son of Governor Pasler studied at London.). According to experts, “Denis is only 16, and, of course, he could not make such a decision himself without the permission of his parents”.

Ya. Poplavskaya (actress): “How do officials of the Orenburg Region instill patriotism in their children? The son of Kozupica, former mayor of Orsk, is buying an apartment in Dubai. The son of Governor Pasler plays for the American team. Are things really so bad in Orenburg that children are leaving not only the region, but also the country? **Then how did Pasler get re-elected as governor with a 70 percent result?** It is somewhat suspicious!”

October 18, Ye. Startsev, deputy chief of Police for operational work of the regional Ministry of Internal Affairs, and A. Lebedev, head of the Drug Control Department of the Ministry of Internal Affairs of Russia for the Tula Region were arrested. Both were detained on suspicion of organizing illegal migration⁶².

October 24 – Deputy Minister of Energy of the Russian Federation S. Mochalnikov and his predecessor A. Mochalnikov were detained in a criminal case of fraud in the liquidation of unprofitable mines and open-cut mines in Kuzbass. Yanovsky served as Deputy Minister of Energy for almost two decades... The direct damage in the case so far amounts to 500 million rubles, the indirect damage is more than 12 billion rubles. As noted by political scientist M. Bashirov, “this is only the first step and there will be more events shaking the industry”¹⁰.

⁶¹ 1990s-style showdown. The battle for Wildberries has revealed a serious problem. There are two solutions. Available at: https://tsargrad.tv/news/razborki-v-stile-90-h-bitva-za-wildberries-pokazala-sejzoznuju-problemu-est-dva-resheniya_1056443

⁶² Migration scandal in the Tula Police: Another colonel was arrested. Available at: <https://myslo.ru/news/tula/2024-10-18-migracionnyj-skandal-v-tul-skoj-policii-eshe-odin-polkovnik-arestovan>

⁶³ Ivanov A. On Thursday, FSB officers arrested the former and current deputy heads of the Russian Ministry of Energy. Available at: https://zavtra.ru/events/v_chetverg_sotrudniki_fsb_skrutiti_bivshego_i_dejstvuyushhego_zamov_glavi_minenergo_rf

By and large, the facts presented in *Insert 5A* are clear evidence of the attitude of a significant part of the “getting high” elite (as political scientist S. Kurginyan calls it) toward the SMO and toward the country as a whole; toward its present and future. And it is this attitude that in many ways forms the basis of deeper, systemic problems of public administration (some of them are presented in *Insert 5B*).

As a result, we get a direct proof and disclosure of the essence of the thesis of one of the experts of the newspaper *Zavtra* N. Sorokin who said that most of the representatives of the elites who did not flee the country after the start of the SMO “remained in their places and continue to undermine the state and society from the inside”⁶⁴. And this is exactly what A. Dugin is talking about, pointing out the urgent need to “adjust the country to achieve Victory”.

The above facts showing the behavior of elites and systemic problems of public administration, which experts pay attention to, quite logically explain the reason for the growth of Joseph Stalin’s popularity in Russian society.

Against the background of the special military operation, more and more attention is focused on this historical figure: monuments are being erected, museums are being opened⁶⁵, etc. As we noted in one of the previous articles⁶⁶, this is largely due to the fact that “the current situation in Russia turned out to be similar to the situation in the mid-1930s in the USSR”⁶⁷, and then only a “strong hand”, strict measures and discipline in all spheres of life, starting with the public administration system, allowed the Soviet Union to prepare and eventually preserve the state in the event of an attack by Nazi Germany (by the way, actively funded by large corporations of Western countries such as the United States, the UK, etc.⁶⁸).

⁶⁴ Sorokin N. Mobilization of the spirit. Available at: https://zavtra.ru/blogs/o_radikalizacii_vojni_i_soprovozhdayushej_eyo_ideologicheskoy_sferi?ysclid=m24gthpfc362121921

⁶⁵ Cities and localities where monuments to Joseph Stalin were erected after the start of the special military operation:
September 15, 2022 – rural settlement of Ashukino, Moscow Region;
December 6, 2022 – Naberezhnye Chelny, Republic of Tatarstan;
February 1, 2023 – Volgograd, Volgograd Region;
May 9, 2023 – Krasnodar Territory, Sochi;
June 23, 2023 – Zvenigorod, Moscow Region;
June 28, 2023 – construction of the Stalin Center began in Nizhny Novgorod Region;
August 15, 2023 – Velikiye Luki, Pskov Region;
October 6, 2023 – Pervomaysk, Republic of Mordovia;
October 24, 2023 – Orlov, Kirov Region;
December 16, 2023 – Stalin Center was opened in Barnaul (Altai Territory);
August 20, 2024 – rural settlement of Kureika, Krasnoyarsk Territory;
October 11, 2024 – Vologda Region Governor announced the upcoming installation of monuments to Joseph Stalin and Ivan the Terrible in Vologda.

²⁴ Ilyin V.A., Morev M.V. (2023). The system of oligarchic capitalism in Russia is inconsistent with the achievement of the goals of the special military operation. *Economic and Social Changes: Facts, Trends, Forecast*, 16(4), 9–37.

²⁵ Gaponenko A. Stalin’s revolution. Available at: https://zavtra.ru/blogs/voprosi_stalinizma_8

²⁶ Many experts, relying on specific historical facts and evidence, have long been saying that “Hitler was taken into the care by the Americans” (commentary by writer and public figure N. Starikov) and “he was an obvious protégé of the Anglo-Saxon elite and world capital” (commentary by Colonel General and President of the Academy of Geopolitical Problems L. Ivashov). Source: comments to the article by R. Gorevoy “The Hitler Project. How London and Washington created the Third Reich”. Available at: <https://nstarikov.ru/proekt-gitler-kak-london-i-vashington-sozdali-tretij-rejh-112122>

Some systemic problems of public administration

1. “Migrants-related lobby”. K. Kabanov, chair of the National Anti-Corruption Committee, member of the HRC, pointed out that as soon as Russia started talking about a tightened migration regulation regime, business circles immediately started exerting pressure: “The opposition of lobbyists went strong. We have literally adopted a number of laws with great difficulty, with great effort ... ‘the golden billion’, those of its representatives who live in Russia, are in favor of migrants. The elite in Russia have already, in fact, revealed their cards... They believe that it doesn’t matter who Russia will be populated by. We have such people in power who de facto say the following: “We are the top, part, of the golden billion”, and who is at the bottom doesn’t matter. Whether there will be more Russians or someone else, it doesn’t matter”⁶⁹. According to the Investigative Committee of the Russian Federation, “in 8 months of 2024, foreigners committed more than 26 thousand crimes (for all law enforcement agencies), while compared to the same period last year, there was an increase of 12% in the number of grave crimes by visitors. The number of crimes committed by illegal immigrants has almost tripled: from 2,880 to 8,059. The number of criminal assaults by migrant workers also increased from 5868 to 9708. In addition, the number of crimes of visitors who received Russian citizenship less than ten years ago increased from 7 to 11 thousand. This year, 73 extremist acts were committed by migrants, while a year earlier their number was 59 crimes”⁷⁰.

2. “Confusion in the formation of educational policy”. Since September 1, 2024, golf, cheerleading, roller sports and gorodki have been added to the school physical education curriculum by the decision of the Ministry of Education of the Russian Federation ... a number of innovations did not even have time to take root, as an order was issued to cancel them... The Ministry of Education of Russia is going to remove golf and cheer sports from school physical education lessons from the next academic year, as they do not correspond to the national historical experience and traditions.” All this unwittingly gives rise to suspicions about the confusion in the affairs and thoughts of those who are responsible for shaping educational policy in the country today... we have to state that the hemming and hawing of the Ministry of Education, – to include golf and cheer sports in the curricula – then to exclude them; to exclude astronomy – then to include it again; to abandon drawing – then to return it again; to remove labor education from the schedule – to include it again... – all this indicates that our educational policy cannot yet boast of a clear vision of the goal”⁷¹.

3. “The growth of civil engineering in wartime”. “People are asking questions about where the concrete structures for storing ammunition that withstand a nuclear explosion are. The answer is: they are in the same place as concrete caponiers to protect aircraft and concrete fortifications of defense lines are. And it’s not just about corruption, but the fact that the country has not yet transferred the structure of the economy to a military track. For the mass construction of concrete structures for military purposes, the same concrete is needed, but where can it come from if it is almost completely used by the abnormally growing civil construction industry. The growth of the civil construction sector in wartime is a deviation. This has never happened in any country waging a large-scale war. Because in wartime, the civilian sector is frozen in favor of the front. It’s like the law of conservation of energy – the amount of concrete is limited and the question is in the distribution of priorities”⁷².

⁶⁹ “Golden Billion” favors migrants. The elite in Russia has revealed its cards: “We are the top, and don’t care who is at the bottom”. Available at: https://tsargrad.tv/articles/zolotoj-milliard-za-migrantov-jelita-v-rossii-raskryla-karty-my-verhushka-ko-vnizu-bez-raznicy_1046577

⁷⁰ Ivanov A. The Investigative Committee of the Russian Federation reported an almost threefold increase in the number of crimes committed by illegal migrants. Available at: https://zavtra.ru/events/skr_soobshil_o_pochti_tryohkratnom_roste_chisla_prestuplenij_nelegal_nih_migrantov?ysclid=m24lopr9d9277636059

⁷¹ Savitskaya N. Cheer-sports, bullying, gender – these words are no longer in the school curriculum. Available at: https://www.ng.ru/vision/2024-09-25/8_9101_program.html?ysclid=m1owchuh9j879626704

⁷² Ivanov A. The growth of the civil construction sector in wartime is a deviation. Available at: https://zavtra.ru/events/rost_grazhdanskogo_stroitel_nogo_sektora_v_voennoe_vremya_eto_deviatciya?ysclid=m24lyxcbt0252785921

4. “The problems of the Russian economy are the result of the ambiguous activities of the financial block of our own government”. Economist A. Podoinitsyn drew attention to two multidirectional vectors in the intra-economic space: “The strategies signed by Russian President Vladimir Putin set such tasks as outpacing economic growth, eliminating the technological gap with the developed part of the Western and Eastern world, 33 square meters per person by 2030 and 38 by 2036. And so on... But, on the other hand, there is a large block of documents authored by our liberal economists, primarily from the Central Bank. They talk about the need to achieve balanced growth rates — from 0.5 to 1.5%. De facto, they talk about the alleged epic overheating of the economy, the most serious in the last 16 years. About excessive wage growth, about the lack of everything: labor resources, production capacity... If we look at these two blocks of documents, we will see that they are in planes perpendicular to each other... As a result, we have a situation where the Central Bank, in fact, blocks the implementation of the Kremlin’s policy”⁷³. Economist A. Lezhava: “After the increase in the key rate, people carried savings to banks ... For banks, this is an ideal scheme: to take money from the population and get a guaranteed profit without effort and risks. It turns out that the real sector of the economy is being cut down, because it is extremely difficult, if not pointless, for enterprises to lend at new rates”⁷⁴.

5. “Closing of the Great Russian Encyclopedia”.

“The Government of the Russian Federation has decided to close the Great Russian Encyclopedia (GRE), which has been created for almost two decades ... the database of accumulated materials will be transferred to the Internet encyclopedia Ruwiki. It is the Russian-language equivalent of the global Wikipedia system. Hundreds of thousands of GRE publications, becoming part of Ruwiki, will dissolve into a million other texts. It is simply impossible to imagine that the academicians of the Russian Academy of Sciences will be able to keep up with the pace of Internet enthusiasts replenishing the womb of Ruwiki: any scientific verification takes time... It is wrong to assume that Ruwiki can compensate for GRE: they have different tasks. One resource accumulates a lot of knowledge, the other systematizes and verifies... To imagine that the British will close Britannica, because there is Wikipedia, is naive and even ridiculous”⁷⁵.

6. “The share of the domestic electronic component base (ECB) is measured by only a few percent. Russian telecommunications are based almost exclusively on imports”. According to the Ministry of Industry and Trade, “from 2026, at least 10% of the domestic electronic component base should be in Russian telecommunications equipment (TCE) (MSW), in 2028 — already 30%, and from 2030 — 60%. It can be assumed that today the share of domestic ECB is measured by only a few percent. All our telecommunications today are based almost exclusively on imports! Domestic experts have been warning for many years that purchases of imported electronics are extremely dangerous for our security... they can give the command to block the operation of equipment, stop the operation of an entire enterprise, disable compressors on pipelines. And even disrupt the management of our military equipment and weapons. And not only to disrupt or stop it, but simply to blow it up, to tear it to shreds” (just as TCE exploded in Lebanon on September 17–18, 2024)⁷⁶.

⁷³ Malofeev K. Not again! Available at: https://tsargrad.tv/slovo/nu-skolko-mozhno_1037701

⁷⁴ Banishevskaya Yu. Robbing the people with the help of inflation: People brought money to banks, which will be taken away by monetary reform? Available at: https://tsargrad.tv/articles/ograblenie-naroda-s-pomoshhju-infljacii-ljudi-ponesli-dengi-v-banki-kotorye-otnimet-denezhnaja-reforma_1042508

⁷⁵ Internet enthusiasts are push doctors of sciences away from the Russian encyclopedia. Available at: https://nvo.ng.ru/editorial/2024-10-09/2_9111_red.html?ysclid=m28lafsv7266760168

⁷⁶ Katasonov V. “Digital demining” of Russia is necessary. Available at: https://zavtra.ru/blogs/neobhodimo_srochnoe_tcifrovoe_razminirovanie_rossii_iii_budet_kuda_strashnee_chem_v_bejruete?ysclid=m28qa998ay369795740

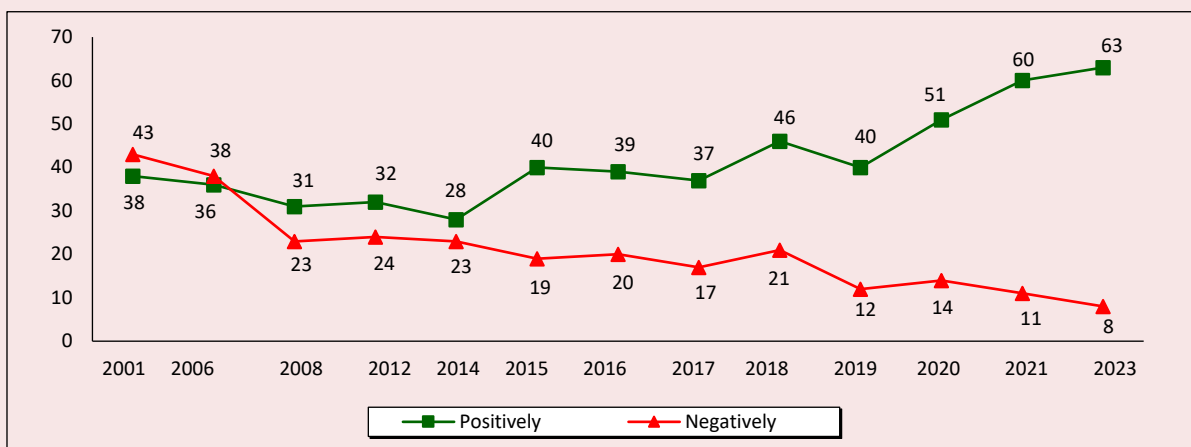
But we should note that the growth of Stalin’s popularity in modern Russian society began long before February 2022. According to all-Russian sociological research, over the period from 2001 to 2021 (that is, before the start of the SMO), the share of Russians who have a positive attitude toward Stalin increased by 22 percentage points (from 38 to 60%); the proportion of those whose attitude toward him is negative decreased by 32 percentage points (from 43 to 11%; *Figure*).

In other words, people’s growing need for a “strong hand” and an “iron fist”, which is (as experts note) “not for everyone, but for the top; for the oligarchs and ministers who steal”, reflects people’s opinion **about the effectiveness of public administration in general, and not only about how it should be in the face of unprecedented external threats from the Collective West**. External circumstances (pandemic, SMO) have only strengthened this assessment of society.

“Russia currently has **110 monuments dedicated to Joseph Stalin**, installed in public places, with the exception of museums. At the same time, only nine of them have survived from Soviet times, five were installed in the 1990s, and **96 of them appeared already in the 21st century**”⁷⁷.

“People say: there was no such corruption under Stalin, the top officials did not spend their vacation in the Maldives, they did not have these houses, rooms full of money. **This idea is also about a strong hand, an iron fist**. People say: a strong hand is not for everyone, it’s for the top. **Today, a strong hand is needed, again, not for everyone, repression is needed against those who steal: oligarchs, ministers**”⁷⁸.

The attitude of Russian society toward the figure of Joseph Stalin, % of respondents



The wording of the question is: “How do you personally feel about Stalin in general?”. There are nine possible responses to the question. This graph shows the combined options (excluding those who noted “indifferently”, “I’m not sure” and “I don’t know who Stalin is”):

positively – responses “with respect”, “with sympathy”, “with admiration”;

negatively – “with rejection, irritation”, “with fear”, “with disgust, hatred”.

Source: Levada-Center* (press release of August 15, 2023 “Attitude toward Stalin”. Available at: <https://www.levada.ru/2023/08/15/otnoshenie-k-stalinu/>).

⁷⁷ “Stalin Center” and 96 more monuments to the leader. Why do people need so much Stalin? Available at: <https://newizv.ru/news/2023-12-20/drugoy-stalin-chto-na-samom-dele-kroetsya-za-volnoy-populyarnosti-otssa-naroda-425354>

⁷⁸ Commentary on the results of the study by Levada-Center* director D. Volkov (Source: The Return of the Generalissimo. Press release of Levada-Center*. September 13, 2021. Available at: <https://www.levada.ru/2021/09/13/vozvrashhenie-generalissimusa/>).

* Listed in the register of foreign agents.

Thus, there is a close connection between the processes that experts note following the results of regional elections, between what sociologists record in the dynamics of changes in the social mood of Russian society, and between specific facts reflecting the processes that characterize the effectiveness of the public administration system.

This makes regional elections a kind of model of public relations and assessment of the effectiveness of public administration. But the main question, of course, is not how necessary or unnecessary regional elections with their diagnostic function are in the current conditions, but **what exactly they show, what processes are taking place in our country against the background of the ongoing special military operation and the gradual increase in the threat of direct conflict with NATO.**

All three analyzed “planes” (or “spheres”) indicate that in Russia the division of the country into two parts – a “fighting” Russia and a Russia that is “getting high” (as Russian political scientist, active public figure S. Kurginyan says) – still remains (and maybe even grows stronger). And this is its most vulnerable side, since it is precisely on the use of this duality, the inconsistency of our country that the Collective West is “betting” in its proxy war using the “Kiev regime”.

The fact that a significant part of Russian society, and above all its elite circles, has not yet “woken up” has good reason: **“The sharpness of awakening is conditioned by the depth of sleep... and for too long we have lived in a distorted view of the world, of ourselves, of the West and its universality. For too long we have been lulled to sleep by false fables about world peace and careless and purely material development”**⁷⁹.

Under these conditions, the key responsibility falls on the legislative power, which has real tools,

S. Kurginyan: “The Ukrainian enemy and the Collective West supporting it are working hard to destroy the existing concept of “two Russias” – “a Russia that is getting high” and “a Russia that is fighting”... The country’s current “tactical program”, according to which some are fighting, and in Russian regions people live as before – “has its advantages”. If the tactics change, then the “highly capricious part of the population”, accustomed to living in very good conditions, “may kick over the traces”...

And they [Ukrainians] are working on this, they say it bluntly that their task in the end is not military successes, that they will burn down a lot more people in the Kursk direction, that they understand its local nature, that they have not achieved a damn thing there in a big way, and that it will all be erased. But they believe that at this moment they will change this concept of a high-strung and belligerent Russia, showing the high-strung Russia that it is bad for it, and create internal political instability. And they will compromise, on the one hand, the radical forces, on the other hand, the liberal ones.

Our response to this can only be one thing – our transformation of our country into a “unified and popularly supported concept of a warring Russia”, which is intensively preparing for future, even bigger troubles”⁸⁰.

on the one hand, **to tighten discipline and increase personal responsibility** in all major spheres of life (primarily in those that can potentially create the most significant threats to national security), and on the other hand, **to reduce the possibilities of influence and lobbying its own interests of the most diverse elite groups** in these areas.

⁷⁹ Dugin A. Russia needs total militarization. Available at: <https://izborsk-club.ru/25427>

⁸⁰ Kurginyan S. Ukraine expects to collapse the doctrine of a Russia getting high and a fighting Russia. Available at: <https://rossaprimavera.ru/news/caa70312https://rossaprimavera.ru/news/caa70312?ysclid=m204snstfk186009988>

A striking example is the tightening of migration legislation. Back in 2022, Interior Minister V. Kolokoltsev said that “there are 16 departments that are interested in migrant labor”⁸¹. In 2024, K. Kabanov, member of the Presidential Council for Human Rights (HRC), head of the National Anti-Corruption Committee, stated that the “subversive” activities of migration lobbyists, who mainly include construction oligarchs, ethno-oligarchs – owners of the largest markets, various services, marketplaces, housing and communal services dealers and some heads of regions, go on quite successfully”⁸².

Since the beginning of 2024, the State Duma of the Russian Federation has adopted seven laws in the field of migration control⁸³. October 16, 2024, two draft laws from the “migration package” were unanimously adopted in the first reading, according to which criminal liability for organizing illegal migration will increase, and illegal stay in Russia will become an aggravating circumstance in the commission of any crimes. In addition, Chair of the State Duma of the Russian Federation V. Volodin proposed to exclude healthcare and education from the list of areas, working in which gives a person the right to obtain a simplified residence permit⁸⁴.

State Duma deputy S. Obukhov noted that the legislator acts “exclusively in the interests of our voters, protecting them from crooks and rascals”⁸⁵, and this becomes a clear example of how the state, at

*S. Obukhov (RF State Duma deputy): “...until recently, there was a legal ‘vacuum’ in Russia, numerous gaps in legislation. And illegal migration must definitely be stopped – and the sooner the better. She needs to put barriers on all floors of government... **And first of all, due to tougher penalties – both for illegal migrants themselves and for the organizers of their legitimization**”⁸⁶.*

the expense of its existing mechanisms and tools, is able to take control of those areas that are systemically important for protecting the national interests of the country. However, we must not forget that many of these areas are extremely “sensitive” for society, and therefore (which the President regularly focuses on⁸⁷) in legislative initiatives on the part of the state, it is very important “not to overdo it”.

Thus, at present (since the beginning of the SMO), the course of national development that Russia has been following since Vladimir Putin’s first presidential term is undergoing its, perhaps, most serious “strength test”. Our country has already proved the inconsistency of the ideas of the Collective West that only in alliance with Ukraine it can be an empire⁸⁸, or a “civilization-state” (as noted in the updated Foreign Policy Strategy of the Russian Federation⁸⁹). According to experts, “today it is obvious that Russia exists in the world regardless of the degree

⁸¹ Gorevoy R. Gaster-roof. Available at: <https://versia.ru/rabochej-sile-iz-srednej-azii-pokrovitelstvuyut-16-vedomstv?ysclid=m2efacjvfq302434325>

⁸² “The subversive activities of migration lobbyists in Russia are quite successful”. Available at: <https://newdaynews.ru/authors/831404.html?ysclid=m2ef6nua79393811603>

⁸³ Veretennikova K. And let no one go unpunished. Available at: <https://www.kommersant.ru/doc/7232760?ysclid=m2egb6pr13295480662>

⁸⁴ Ibidem.

⁸⁵ Obukhov S. The systemic crisis in migration policy is obvious, it cannot be dealt with by just “patching holes”. Available at: <https://kprf.ru/dep/gosduma/activities/229535.html?ysclid=m2efhns8g47870165>

⁸⁶ Ibidem.

⁸⁷ See, for example: meeting on the development of the transport industry, May 1, 2020; annual press conference, December 17, 2020; meeting of the Council for the Development of Civil Society and Human Rights, December 9, 2021; Address to the Federal Assembly of the Russian Federation, February 21, 2023; meeting on the development of the defense-industrial complex, May 15, 2024; meeting with laureates of all-Russian competitions in the field of education, October 3, 2024.

⁸⁸ “Russia can be either an empire or a democracy, but it cannot be both... **Without Ukraine, Russia ceases to be an empire, but with Ukraine suborned and then subordinated, Russia automatically becomes an empire**”. (Source: Brzezinsky Z. (1994). The premature partnership. *Foreign Affairs*, 73(2), p. 71).

⁸⁹ On approval of the Concept of Foreign Policy of the Russian Federation: Presidential Decree 229, dated March 31, 2023.

of proximity to any country or group of countries ... this is a powerful factor in normalizing the development process and assessing fundamental risks and opportunities. **Russia can be a great and important power regardless of the degree of integration with other countries**⁹⁰.

S.Yu. Glazyev: **“The front should not be perceived as something far away, not happening to us. The front must pass through every enterprise, every government agency, and through the heart of every Russian. Soldiers do their duty on the front line, officers do everything to win at headquarters, and every citizen should bring victory closer by hard work at their workplace. Citizens who do not want to work should be equated with deserters at the front and receive no pity. The director of an enterprise that has not fulfilled the plan approved by the government should be punished. Moreover, the penalties should be tightened at times. Liberalism must be ended, it has no place in the conditions of the total war that the West is waging against Russian civilization”**⁹¹.

N.S. Mikhalkov: **“The most important thing is that if there is no internal mobilization, then universal mobilization cannot be avoided”**⁹².

However, the “test of strength” has not yet been completely passed, and much of its successful passage depends on the internal situation in the country, on the ability of the state to bring all key areas of life in line with the challenges of this “turning point” in history.

In fact, this means overcoming the contradiction that still persists in our country between, on the one hand, a completely unambiguous and obvious threat to its existence, and, on the other hand, the duality

“The main enemy of Russia is the “desire to maintain its own welfare” on the part of the elite. The neurosis of well-being among the Russian elite is expressed in the desire to cling to any circumstances that give hope for the restoration of relations with the West... one can cling to ‘prosperity’, expressed by the idea that, despite the fighting, ‘everything is good’, only if one is in a neurotic state. And in a neurotic state, one does not survive or win, but dies”⁹³.

of the division into the part of society (especially its elite circles) which is “getting high” and the part of society which is “fighting”.

The state has mechanisms and tools for this, and has practical experience as well. The main difficulty (or rather, even art) is to timely diagnose “sore spots” and in the process of “treatment” to maintain a balance between the intensity of managerial decision-making sufficient to limit the private interests of elite groups in favor of national security interests, and the caution necessary to preserve social stability in the country.

And as for society, it has repeatedly proved and continues to prove (as evidenced by the election results and the results of sociological research) its support for the course of national development, as well as decisions taken by the head of state, including in difficult times for the country, and in the context of the SMO. And this support, of course, will be even more tangible if the broad strata of the population can actually feel and see in practical changes in their daily lives, the results of the effectiveness of public administration in bringing the part of the elites that is “getting high” to their senses, so to speak.

⁹⁰ Remchukov K. About Putin and Russia today. What Western countries need to keep in mind. Available at: https://www.ng.ru/politics/2024-10-16/1_9116_ed.html?ysclid=m2eesrvb7693691085

⁹¹ Glazyev S. Restoration of the empire – salvation for Russia. Available at: <https://glazyev.ru/articles/11-analitika-i-prognozy/112466-vosstanovlenie-imperii-spasenie-dlja-rossii?ysclid=m1ovswgvzn635766457>

⁹² Mikhalkov N. Besogon “It is not allowed to lie, but what is allowed?” Available at: <https://besogontv.ru/videos/vrat-nelzya-a-chto-mozhno/>

⁹³ Kurginyan S. Interview with BelTA TV channel. July 13, 2024. Available at: https://vk.com/wall-29411306_601947

References

- Brzezinsky Z. (1994). The Premature Partnership. *Foreign Affairs*, 73(2), 67–82.
- Katasonov V.Yu. (2013). *Kapitalizm. Istoriya i ideologiya “denezhnoi tsivilizatsii”* [Capitalism. The History and Ideology of the “Monetary Civilization”]. Moscow: Institut russkoi tsivilizatsii.
- Sheregi F.E., Privedentseva O.S. (2024). Medium-term forecast of the dynamics of Russians’ life attitudes. *Vestnik Instituta sotsiologii*, 15(3), 13–36 (in Russian).
- Skorobogaty P. (2022). New consolidation: Results of the Single Voting Day. *Ekspert*, 38(1267), 50–52 (in Russian).

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Socio-Economic Indicators of Russia's National Development Goals: Trends and Forecast



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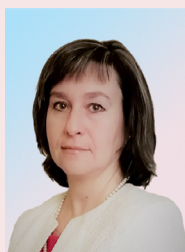
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Abstract. The article presents the findings of a research on the achievability of a number of socio-economic indicators that are stated in the national development goals of Russia for the period up to 2030. The aim of the work is to analyze the possibility of achieving the indicators reflected in Russia's national development goals by individual federal districts based on forecasting and creating an appropriate rating. The study includes three stages: first, to analyze available statistical data and select indicators for analysis; second, to build three forecast scenarios (pessimistic, neutral, optimistic); third, to visualize the results obtained and design a rating of federal districts according to the achievability of the declared parameters of development goals. Information base includes Rosstat data (statistical collections "Regions of Russia. Socio-economic indicators" for 2020–2023), as well as monitoring indicators of the minimum wage for the period from 2013 to 2024. We arrange federal districts in three groups: with a high level of achievability of indicators of national development goals (Central Federal District, North Caucasus Federal District), with a medium level (Northwestern Federal District, Southern Federal District, Ural Federal District, Volga Federal District) and with a low level (Siberian Federal District, Far Eastern Federal District). According to the forecast and the generalized rating, by 2030 none of the federal districts will be able to fully achieve the required level of the indicators under consideration. The uniqueness and novelty of the results we have obtained are due to the possibility of comparing the achievability of indicators in different time intervals and the declared values of Russia's national development goals. The proposed rating can be vertically and horizontally scaled by expanding the number of analyzed indicators. The technique we propose and the results we have obtained can be used by representatives of all levels of legislative and executive authorities when assessing the declared socio-economic parameters of national development goals, including the implementation of other national projects, as well as by a wide range of scientists and researchers engaged in forecasting and modeling at the macro, meso and micro levels.

Key words: RF national development goals, quality of life, socio-economic indicators, rating of regions, forecasting, econometric modeling.

Introduction

The tasks of Russia's strategic development and successful socio-economic functioning of its regions are directly related to the achievement of national goals outlined in state policy documents (Ilyin, Morev, 2024). At present, scientific research in the field of identifying trends in ensuring high living standards and decent quality of life is of particular importance (Dockery, 2022), including in the context of analyzing the causes and extent (Belekhova, 2023) of inequality (Becker et al., 2005), poverty (Morris, 1982) as a threat to demographic development of territories (Ilyin, Morev, 2022). Scientists use various theoretical and methodological approaches to forecasting the achievability of national development goals.

Analytical and predictive research methods (Kroshilin et al., 2023) are in demand in the study of such important components of human well-being as provision of decent housing, increase in the minimum wage (Leng et al., 2023), including significant indicators (with dynamics in different periods) of fertility (Bird, 2021) and life expectancy.

Regional aspects of housing provision (Mamleeva et al., 2021) and satisfaction with housing conditions are studied on the example of individual territories of Russia (Yarasheva, Makar, 2022). Attention is paid to both the objective situation (Lozovskaya, 2021) – the number of square meters of available housing, and subjective estimates – the intention to improve housing conditions.

The difference in the rate of decrease/increase in fertility (including total fertility rate) in foreign countries (Thomasson, 2021) and Russian regions (Tuktamysheva et al., 2023) is considered from the point of view of the influence of all external (environment) and internal (individual attitudes) factors (Begunova, 2024). Not only fertility indicators, but also medical and demographic indicators in general (Ilyin et al., 2021), as well as population health indicators, are analyzed in a regional context (Polikarpov et al., 2023). Topical issues of reproductive behavior are studied at the level of individual territories (Arkhangelskii et al., 2023).

Russian scientists identify significant factors influencing the decrease (Shulgin et al., 2022) in life expectancy in RF constituent entities (Astaniin et al., 2022) and analyze the conditions for ensuring a “prosperous old age” (Belekhova et al., 2024). Attention is paid to the relationship between economic factors (in particular, dynamics of GDP per capita) and Russians' life expectancy (Bedanokov et al., 2022). Of particular interest is the issue of delineating the sphere of responsibility for health preservation between the state and the individual (Shabunova et al., 2021). An important component of theoretical approaches to studying life expectancy (Chekmeneva, Balina, 2019; Ongel, Yilmaz, 2020) and its increase, including through attitudes toward self-preservation behavior, is to develop effective methodological tools and possibilities of using them (Dubrovskaya, 2023).

People's financial security, including the changing minimum wage (Leng et al., 2023; Plutalova, 2023), plays a significant role in maintaining an individual's standard of living (Rumyantseva, Shutov, 2021) and improving its quality (Volgin, 2019; Dockery, 2022; Tyrell, Yates, 2017). The study of these problems is closely related to identifying trends in practice and in the development of modern concepts of social well-being in Russia (Maksimov et al., 2022). Not only

the level of wages, but also satisfaction (Sabbagha et al., 2018) with work and its conditions (Gayathiri, Ramakrishnan, 2013) have a significant impact on a person's desire to increase their “comfort” and welfare. It is the increase in people's welfare that meets the objectives of achieving the national development goals.

The article presents calculations carried out within the framework of our own research and the results of forecasting the achievability of a number of socio-economic indicators outlined in Russia's national development goals¹ for the period up to 2030 (hereinafter – NDGs). The main goal of our work is to identify the compliance and possibilities of achieving the declared socio-economic indicators of the NDGs by federal districts. Based on this goal, the following tasks were formulated and solved: available statistical data were analyzed and necessary indicators of the NDGs were selected; statistical methods were chosen to predict the analyzed indicators, forecast scenarios were constructed; the rating of federal districts was calculated according to the achievability of the socio-economic indicators selected. The uniqueness and novelty of the data obtained are due to the need to compare the achievability of NDGs indicators by federal districts of the Russian Federation based on the construction of our own forecast and the proposed rating methodology (by visualizing the data obtained according to the declared socio-economic indicators).

Research methodology

Our approach to studying the achievability of the declared socio-economic indicators of the NDGs in the Russian Federation as a whole and in the context of federal districts was implemented by designing three forecast scenarios for selected variables. The work involved the implementation

¹ Decree on the national development goals of the Russian Federation for the period up to 2030 and for the future up to 2036. Available at: <http://www.kremlin.ru/events/president/news/73986> (accessed: June 1, 2024).

of successive stages. The first stage was to analyze the available statistical data and select indicators to be analyzed. The second stage consisted in constructing several forecast scenarios (pessimistic, neutral, optimistic)². At the third stage a rating of federal districts was obtained according to the achievability of selected socio-economic indicators of the NDGs, using visualization of the data calculated. The proposed methodology (based on forecasting and visualization of NDGs indicators) can be scaled, because it provides for the inclusion of any necessary number of socio-economic parameters (indicators) required for research tasks, from the point of view of analyzing the achievability of indicators defined in the NDGs or other national projects.

The information base of the study included Rosstat data, analytical materials, statistics collections “Regions of Russia. Socio-economic indicators” (2020–2023)³, findings of a monitoring of minimum wage indicators (for the period from 2013 to 2024), including data from the following information resources: KonsultantPlus⁴, RBK Life⁵, Nalog-nalog.ru⁶.

To obtain the *first version of the forecast* (let us call it “*pessimistic scenario*”), econometric

approaches were used to construct a linear regression with one explanatory variable (paired regression) (formula 1)⁷:

$$M(Y_t | Q_t = q_t) = \beta_0 + \beta_1 \cdot q_t, \quad (1)$$

where M – conditional mathematical expectation of a random variable Y_t as a function of a non-random explanatory variable Q_t (at time t), β_0 and β_1 – parameters of the linear regression model that need to be assessed.

To obtain statistical estimates ($\hat{\beta}_0$ and $\hat{\beta}_1$) and build a model of the form $Y_t = \beta_0 + \beta_1 \cdot q_t + \varepsilon_t$ (where ε_t – random variable), the capabilities of MS Excel software were used⁸. Based on this model, the forecast values of the designated socio-economic indicators of the NDGs for Russia’s federal districts for 2025 and 2030 are obtained.

The *second version of the forecast* of the determined indicators of the NDGs for Russia’s federal district (let us call it “*neutral scenario*”) was based on an exponential trend. For each of the analyzed indicators, a function was calculated using the exponential smoothing method by extrapolating trends that were identified at previous points of observation (previous periods) (formula 2)⁹:

$$Q_t = k \cdot Y_t + (1 - k) \cdot Q_{t-1}, \quad (2)$$

where Q_t – forecast value at time t (smoothed value of the level of the series based on the exponential average); k – weighting factor (smoothing parameter), taking into account the characteristics of the current moment in time t , Y_t – value of NDGs indicator for Russia’s federal district in the current period; Q_{t-1} – forecast value of NDGs indicator at the previous moment in time.

² We name forecast scenarios “pessimistic”, “neutral”, “optimistic”, which explains the influence of factors and their consideration in making a forecast and shows an assessment of a possible development trend.

³ Regions of Russia. Socio-economic indicators. 2023: Statistics collection. Rosstat. Moscow, 2023; Regions of Russia. Socio-economic indicators. 2021: Statistics collection. Rosstat. Moscow, 2021; Regions of Russia. Socio-economic indicators. 2020: Statistics collection. Rosstat. Moscow, 2020.

⁴ Minimum wage in constituent entities of the Russian Federation (as of July 1, 2024). Available at: https://nalog-nalog.ru/posobiya/posobie_po_vremennoj_netrudosposobnosti_bolnichnyj/velichina-mrot-v-rossii-tablica/ (accessed: July 1, 2024).

⁵ Minimum wage will be raised in 2024. What the minimum wage will be. Available at: <https://www.rbc.ru/life/news/643d440b9a7947b22e15f7f6#15f7f6-contents-p3> (accessed: June 25, 2024).

⁶ Grigorieva E. Minimum wage in 2013–2024 in Russia. Available at: https://nalog-nalog.ru/posobiya/posobie_po_vremennoj_netrudosposobnosti_bolnichnyj/velichina-mrot-v-rossii-tablica/ (accessed: June 20, 2024).

⁷ Mashunin Y.K. (2021). Forecasting and planning of socio-economic systems. Moscow: Yurait.

⁸ Models and forecasts were built, and statistics were processed with the help of add-ins “Data Analysis” and “Solution Search” in Microsoft Excel software.

⁹ Asaul A.N., Asaul M.A., Starinsky V.N., Shcherbina G.F. (2022). Market analysis and forecasting. Moscow: Yurait.

Applying this trend method, which is based on calculations of the trend equation, taking into account the values of the coefficients characterizing the current observation (time point), taking into account previous (past time points), the exponential mean Q_t function is constructed and a forecast is made.

The *third variant of the forecast* of NDGs indicators for Russia's federal district (let us call it "optimistic scenario") was based on the method of moving averages with the "selection" of functional dependence taking into account the maximum value of parameter R^2 . With this method of forecasting, the actual indicators in the dynamic series are replaced by the values calculated based on the selection of a functional dependence that is more consistent with observations (dependencies can be power-law, exponential and other) (formula 3)¹⁰:

$$Y_t = \mu + \xi_t - Q_1 \cdot \xi_{t-1} - Q_2 \cdot \xi_{t-2} - \dots - Q_t \cdot \xi_{t-q}, \quad (3)$$

where μ – constant; $\xi_t, \xi_{t-1}, \dots, \xi_{t-q}$ – white noise at certain points in time ($\xi_t = Y_t - \hat{Y}$).

In this case, the average value of the forecast parameter is calculated in a certain time interval ($n = 3$ years for our forecast), each subsequent calculation is formed with a shift for the selected period. This allows us to build a trend in the development of the indicator in the form of a smooth line. It is also possible to apply the ARMA and ARIMA models. In our case, a polynomial of the second, third and fourth degree was used for calculations. The function of an n -degree polynomial is given in formula 4:

$$f(Q_t) = \sum_{i=1}^n (a_i \cdot t^i), \quad (4)$$

where a_i – coefficient of parameter estimation at current time t .

¹⁰ Eliseeva I.I. et al. (2012). Econometrics. Moscow: Yurait.

This made it possible to more accurately describe the upward and downward trends in the analyzed parameters and obtain the necessary forecast for Russia's federal districts for 2025 and 2030.

At the final stage of the study, a rating is built for federal districts of the Russian Federation for each of the selected socio-economic indicators of the NDGs ($R_i, i = 1, 2, 3, \dots, n$, where n – number of options selected for analysis). Based on the obtained values, the generalized rating at time t ($R_{gen}(t)$) is calculated according to the selected indicators of the achievability of the NDGs for Russia's federal district (formula 5):

$$R_{gen}(t) = \frac{1}{n} \sum_{i=1}^n (r_i \cdot R_i(t)), \quad (5)$$

where $R_i(t)$ – rating value according to the parameter indicator at time t ,

r_i – coefficient of significance of rating R_i in the generalized rating (it is determined by experts or set declaratively, it can have a value from 0 to 1, by default it is assumed to be 1).

Based on the visualization of the obtained forecasting results and the constructed generalized rating ($R_{gen}(t)$) of the selected indicators of the NDGs, we can conclude that it is possible/impossible to achieve the indicated parameters (specified at time t of the forecast).

The uniqueness and novelty of the proposed methodology are due to the possibility of comparing the achievability of socio-economic indicators of the NDGs based on forecasting and rating of federal districts by visualizing the selected indicators. This allows for the vertical scaling ("in depth" due to the use of new approaches to analysis and forecasting methods) and horizontal scaling ("in width" due to the inclusion of new parameters for analysis) of our methodology and extending this approach to other national projects of the Russian Federation.

Forecast results

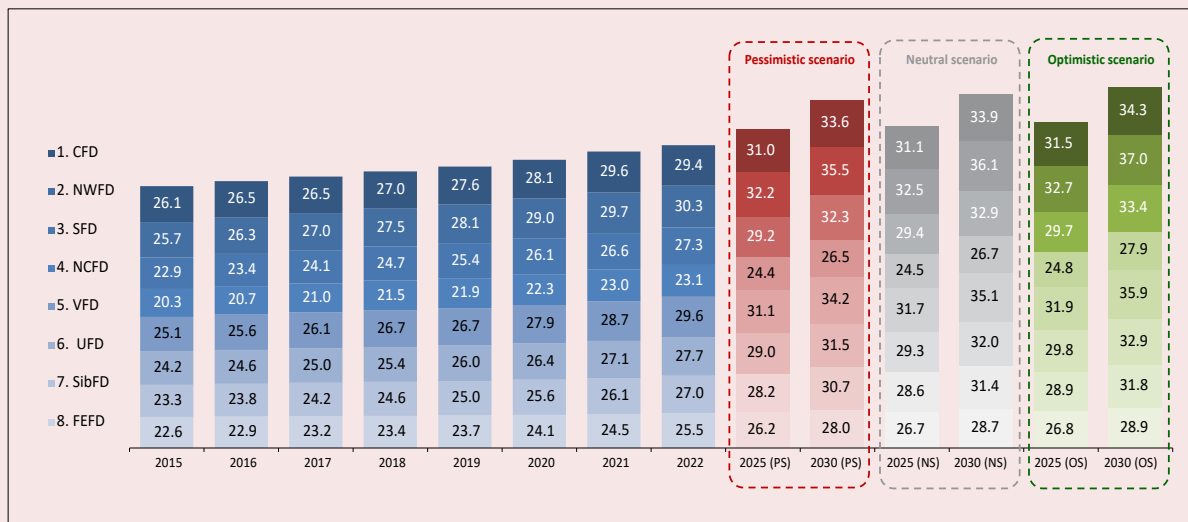
At this stage of the study, in order to test the approach we propose, it was decided to identify four main socio-economic indicators of the NDGs:

- 1) housing provision (total area of residential premises at the end of the year per inhabitant, m²);
- 2) life expectancy at birth (number of years);
- 3) total fertility rate (number of children per woman);
- 4) minimum wage in the Russian Federation (rubles).

To build a forecast based on Rosstat data, an array of values for the indicated indicators for the period from 2015 to 2022 was formed. In order to forecast the minimum wage in the Russian Federation, data for 2023 and 2024 were also included (available at the time of building the forecast). Consistent application of the forecast options described above allowed us to obtain the following results (Fig. 1–4).

According to the Presidential Decree “On the national development goals of the Russian Federation for the period up to 2030 and for the future up to 2036”¹¹, housing provision should reach at least 33 m² per person by 2030 and at least 38 m² by 2036. It follows from the obtained forecast options that this indicator will grow steadily. In a pessimistic scenario, by 2025 the Northwestern Federal District (NWFDF) will be able to reach the level of 32.2 m² per person, by 2030 three regions will “step over” the established indicator level (Central Federal District (CFD) – 33.6; Northwestern Federal District – 35.5; Volga Federal District (VFD) – 34.2). According to the neutral forecast scenario, the options are comparable to the pessimistic one, and with an optimistic option, by 2030, the Southern Federal District (SFD) with an indicator of 33.4 m² will join the leading federal districts (Fig. 1).

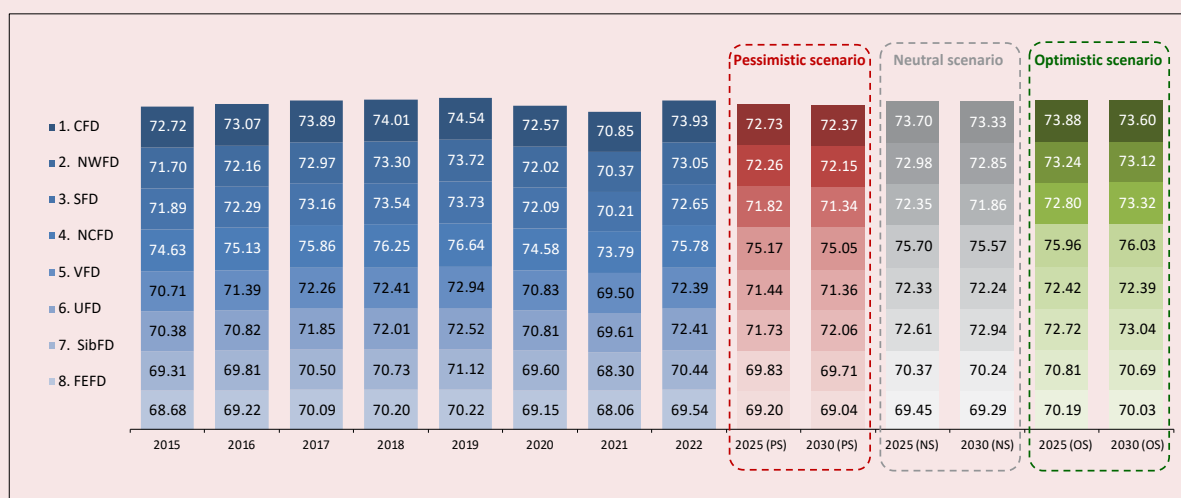
Figure 1. Forecast for the indicator “Housing provision (total area of residential premises at the end of the year per inhabitant, m²)” in the context of RF federal districts



Source: own compilation based on Rosstat data.

¹¹ Decree on the national development goals of the Russian Federation for the period up to 2030 and for the future up to 2036. Available at: <http://www.kremlin.ru/events/president/news/73986> (accessed: June 1, 2024).

Figure 2. Forecast for the indicator “Life expectancy at birth (number of years)” in the context of RF federal districts



Source: own compilation based on Rosstat data.

The socio-economic indicator “Life expectancy at birth (number of years)” according to the NDGs should be 78 years by 2030. The obtained data of the pessimistic forecast demonstrate the inability of all Russian regions to achieve the indicators declared in the Presidential Decree by the designated period. The North Caucasus Federal District (NCFD) will be closest to this value (75.6 years by 2030). Four federal districts will be able to overcome the 73-year mark (CFD – 73.60; NWFD – 73.12; SFD – 73.32 and Ural Federal District (UFD) – 73.04) – according to the optimal forecast scenario, and in NCFD the analyzed indicator will be 76.03 years (Fig. 2).

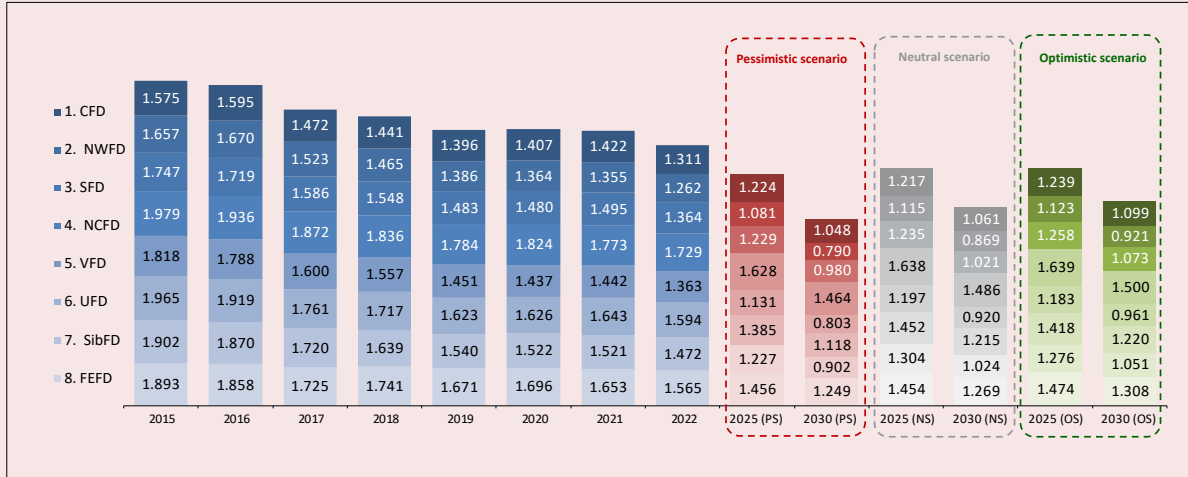
The most difficult situation concerns the indicator “Total fertility rate (number of children per woman)”. According to the NDGs, it should be at least 1.6 by 2030. Calculated statistical data indicate a systematic decrease in this indicator in all RF federal districts. Under the neutral forecast scenario, only NCFD shows a value of 1.49 in 2030, which is “closer” to the required level designated by the RF Government. Two federal districts will be able to overcome the 1.2 mark (UFD – 1.21;

Far Eastern Federal District (FEFD) – 1.27), three federal districts show a value slightly above 1 (CFD – 1.06; SFD – 1.02; Siberian Federal District (SibFD) – 1.02; Fig. 3).

According to the Presidential Decree, “... it is necessary to ensure an increase in the minimum wage at a faster pace, including its growth by 2030 by more than two times compared with the amount set for 2023, with its value reaching at least 35 thousand rubles per month”¹². Over the past 10 years, according to available statistical data, there has been a steady upward trend regarding the minimum wage in Russia. However, according to the three forecast scenarios by 2030, the level of 35 thousand rubles per month indicated in the Decree cannot be achieved. Under the optimistic scenario, the minimum wage in Russia by 2025 may be equal to 21.9 thousand rubles, in 2030 – 28.8 thousand rubles per month (Fig. 4).

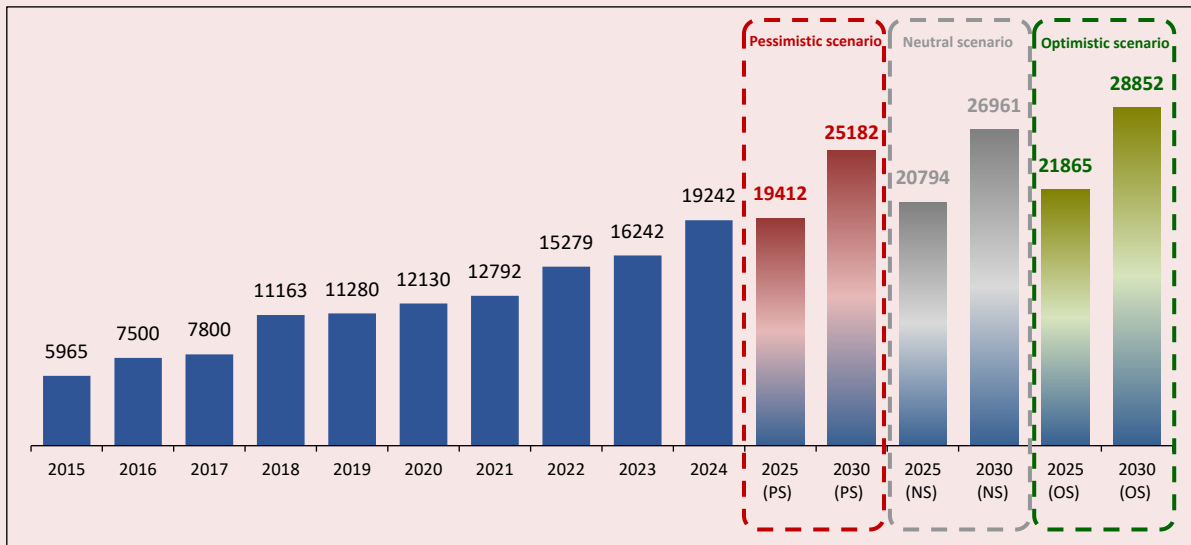
¹² Decree on the national development goals of the Russian Federation for the period up to 2030 and for the future up to 2036. Available at: <http://www.kremlin.ru/events/president/news/73986> (accessed: June 1, 2024).

Figure 3. Forecast for the indicator “Total fertility rate (number of children per woman)”, in the context of RF federal districts



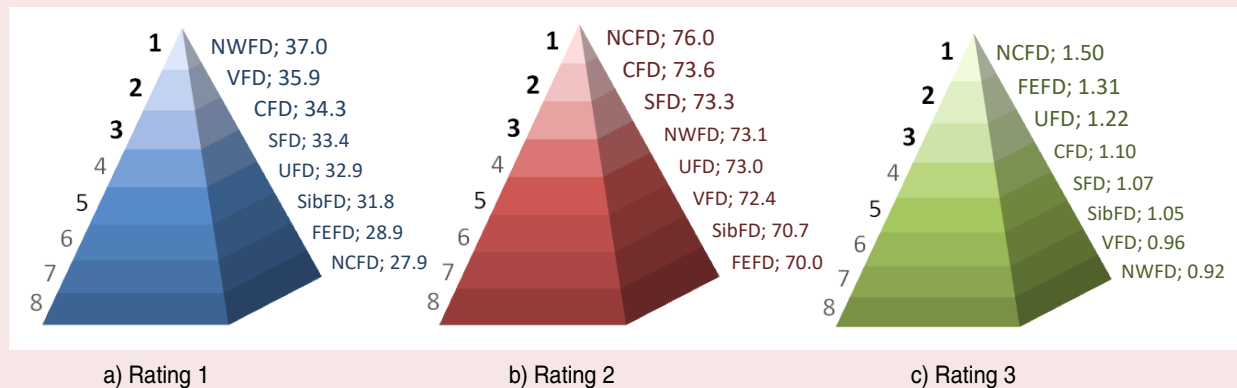
Source: own compilation based on Rosstat data.

Figure 4. Forecast for the indicator “Minimum wage in the Russian Federation (rubles)”



Source: own compilation based on data from information resources KonsultantPlus, Nalog-nalog.ru RBK Life.

Figure 5. Rating of NDGs targets by federal districts
(visualization of achievability of the indicators)



Source: own calculations.

Analysis of the results obtained

To analyze the results of forecasting and building a rating¹³ of achievability of NDGs indicators (“Housing provision” (at least 33 m² per person by 2030) – “Rating 1”; “Life expectancy at birth” (78 years by 2030) – “Rating 2” and “Total fertility rate” (1.6 by 2030) – “Rating 3”, data for RF federal districts were visualized on the basis of the optimistic forecast scenario (Fig. 5).

In the ranking of the achievability of the indicator “Housing provision” by 2030 (“Rating 1”; see Fig. 5a) the first place is occupied by NWFD (indicator 37.0), the second place – by VFD (35.9), the third place – by CFD (34.3). We should note that, according to the forecast we obtained, these regions have overcome the level set in the NDGs of at least 33 m² per person. In fourth and fifth place are SFD (33.4) and UFD (32.9), respectively, which will also be able to show the required value. Two regions are lagging behind in housing provision –

NCFD (27.9) and FEFD (28.9). SibFD (31.8) is closer to the required mark of 33 m², but only under the optimistic scenario. This is not enough to achieve the NDGs.

The achievability rating of the indicator “Life expectancy at birth” by federal districts by 2030 (“Rating 2”; see Fig. 5b) reflects that none of RF federal districts will be able to reach the desired level (78 years) (under any forecast scenario). NCFD is closest to this indicator (76.0), CFD ranks second (73.6), and SFD ranks third (73.3). NWFD (73.1) and UFD (73.0) are very close in terms of values, ranking 4th and 5th in the rating, respectively. The indicators of SibFD (70.7) and FEFD (70.0), which occupy the last places in the rating, differ from the appropriate required level most of all (by almost 8 years). VFD ranks 6th with a value of 72.4 years in terms of “life expectancy at birth”.

The third rating is based on an optimistic forecast of achievability of the indicator “Total fertility rate” (“Rating 3”; see Fig. 5b). It has the lowest degree of possible achievability of the set value of 1.6. The closest to this level is the indicator of NCFD (1.5) which ranks 1st, the second place belongs to FEFD (1.31), third – to UFD (1.22). Three federal districts were able to overcome only

¹³ Position of the federal district in the rating is determined based on the calculated level in comparison with the indicators for other federal districts (sorting is performed in descending order of the value of the analyzed parameter, where “1st place” corresponds to the highest indicator, and “8th place” to the lowest indicator among the achieved levels for all federal districts).

Generalized rating on selected indicators with visualization of achievability of the NDGs in the context of RF federal districts (according to the forecast for 2030)

RF federal district	“Rating 1”	“Rating 1” indicator (no less than 33)	“Rating 2”	“Rating 2” indicator (no less than 78)	“Rating 3”	“Rating 3” indicator (no less than 1.6)	Generalized rating
Central Federal District	3	34.3	2	73.6	4	1.10	3
Northwestern Federal District	1	37.0	4	73.1	8	0.92	4
Southern Federal District	4	33.4	3	73.3	5	1.07	4
North Caucasus Federal District	8	27.9	1	76.0	1	1.50	3
Volga Federal District	2	35.9	6	72.4	7	0.96	5
Ural Federal District	5	32.9	5	73.0	3	1.22	4
Siberian Federal District	6	31.8	7	70.7	6	1.05	6
Far Eastern Federal District	7	28.9	8	70.0	2	1.31	6

Notes:
 “Rating 1” – rating of RF federal districts according to the indicator “Housing provision (total area of residential premises at the end of the year per resident, m²)” by 2030;
 “Rating 2” – rating of RF federal districts according to the indicator “Life expectancy at birth (years)” by 2030;
 “Rating 3” – rating of RF federal districts according to the indicator “Total fertility rate (number of children per woman)” by 2030.
 Source: own calculations.

a value of 1: CFD (1.10), SFD (1.07), and SibFD (1.05) and occupy 4th, 5th and 6th place in the rating. According to the forecast results, VFD (0.96) ranks 7th, NWFD (0.92) ranks 8th. They will not be able to achieve total fertility rate indicators that would be equal even to 1.

At the final stage, a generalized rating of the selected indicators of the NDGs was built according to the forecast values of 2030 (at the stage of testing the methodology, the value of coefficient $r_i = 1$). The obtained calculation results are shown in the *Table*.

According to the calculations, the Central and North Caucasian federal districts have the highest rank according to the generalized rating, compared to other federal districts (value 3). The Siberian and Far Eastern federal districts are on the lowest positions (value 6). As a result of the calculations, the average value compared to other federal districts was obtained by the Northwestern, Southern and Ural federal districts (value 4). The position of the Volga Federal District is slightly lower (value 5).

Discussion

The four indicators of the NDGs selected for research and forecast characterize the level of national socio-economic welfare and are mutually conditioned, on the one hand, by an increase in the minimum wage (as well as in general incomes of the population), on the other – by housing satisfaction. They have a direct impact on childbirth intentions in families; the improving quality of life affects the overall life expectancy of an individual. Despite the fact that scientists approach the classification of quality of life indicators in different ways, have differentiated ideas about the significance of a particular indicator and about the ways (methods) of making forecasts regarding changes in these indicators, there is a common target vector – the search for possible directions to achieve national development goals. In Russia, studying the specifics and differences regarding the development of individual territories comes to the fore. It is for this purpose that methods of forecasting the achievability of the most significant socio-economic

indicators with differentiation by region or federal district can and should be used.

The analysis of the achievability of several socio-economic indicators declared in Russia's national development goals for the period up to 2030 made it possible, based on three forecast scenarios (pessimistic, neutral, optimistic), to obtain the values of indicators for 2025 and 2030. The forecast for 2025 reflects the current trend in the changes in the indicators declared for analysis. Ratings were built, based on which a generalized rating of forecast indicators of the NDGs for RF federal districts was calculated. Based on the data obtained, the results were visualized, allowing us to draw conclusions about the possibility of federal districts achieving the necessary levels specified in the NDGs. We should note that, according to our approach, no federal district of the Russian Federation will be able to fully implement the goals set by the president and achieve the required level of all indicators of the NDGs by 2030.

The leading position is occupied by the Central Federal District, which ranks 3rd in the generalized rating (high level of NDGs achievability). However, the value of the "Rating 3" indicator ("Total fertility rate" by 2030) in the Central Federal District reaches only 1.1, while the required value is 1.6. This significantly worsens the district's position in the overall rating. The "Rating 2" indicator ("Life expectancy at birth" by 2030) is also not high enough and is equal to 73.6 years at the required level of 78 years. However, this indicator allows the Central Federal District to take second place among the other federal districts. The second leader is the North Caucasus Federal District that ranks 3rd in the generalized rating. According to the "Rating 2" and "Rating 3" indicators, NCFD ranks 1st; however, according to "Rating 1" ("Housing provision" by 2030), it can only claim 4th place among the federal districts (with an indicator value of 33.4 m² – this is higher than it needs to be achieved according to the NDGs (33 m²)).

The average level of NDGs achievability in the framework of the generalized rating is observed in the Northwestern Federal District – position 4, Southern Federal District – 4, Ural Federal District – 4, Volga Federal District – 5. Moreover, NWFD has the value in "Rating 1" equal to 1, and in "Rating 3" – 8. The position of the Southern Federal District "worsens" the value in "Rating 3", equal to 5, since total fertility rate by 2030 will reach only 1.07 with the required value of 1.6, according to the NDGs. UFD ranks 3rd according to "Rating 3" with a value of 1.22, and 5th according to ratings 1 and 2. The Volga Federal District is the leader in terms of "Rating 1" (2nd place), but occupies 6th place in terms of "Life expectancy at birth" and 7th place in terms of total fertility rate.

According to the obtained version of the forecast, the Siberian and Far Eastern federal districts have a low level of NDGs achievability. They received a score of 6 in the generalized rating. Moreover, we should emphasize that the Far Eastern Federal District has a fairly high level of "Rating 3" – the value of 2, but according to "Rating 1" it ranks 7th, and according to "Rating 2" it ranks 8th and is below SibFO. SibFO has a very low total fertility rate, equal to 1.05, while the required value is 1.6.

Conclusion

As part of the conducted research on the achievability of the declared socio-economic indicators of the NDGs in the Russian Federation by 2030, an assessment toolkit was developed and tested for selected indicators, which included a variant of forecasting and designing a generalized rating of the country's federal districts. The uniqueness and novelty of solving this task lies in the possibility of comparing the achievability of NDGs indicators (planned normative values reflected in the Presidential Decree) with the obtained forecast values and constructing visualized ratings. The technique we propose is unique and provides for vertical scaling (by applying new approaches

to analysis) and horizontal scaling (by including new parameters for analysis). At the present stage, our approach already allows visualizing the results obtained by highlighting the rating levels in color (see Table). In the table, the positions are represented by a three-level color rating: green – the rating has a value from 1 to 3, yellow – a value from 4 to 5, red – from 6 to 8, which is aimed at optimizing the analysis of trends in the indicators/positions of the region and makes it possible to see the integral rating indicator with the necessary level of detail.

The approbation of the methodology proved its viability. According to the results obtained in assessing the achievability of the selected indicators for the NDGs, the federal districts of the Russian Federation can be divided into three groups:

1) a group with a **high level** of achievement of the NDGs: Central and North Caucasus federal districts with position 3 in the generalized rating;

2) a group with an **average level** of achievement of the NDGs: Northwestern, Southern and Ural federal districts with position 4, as well as the Volga Federal District with a value of 5;

3) a group with a **low level** of achievement of the NDGs: Siberian and Far Eastern federal districts – position 6.

The generalized rating and ratings based on the forecast indicators of the NDGs for RF federal districts showed that by 2030 none of the federal districts will be able to fully meet the requirements of the president and reach the declared level of indicator values. This proves that such assessment methods should be used not only at the stage of

analyzing the implementation of the NDGs, but also during the planning of indicators.

A logical continuation of the development of our approach to analysis may be the use of new options for rating federal districts by assessing the achievability of the designated level of NDGs indicator, for example, falling into the “confidence interval” ($\pm 2\text{--}5\%$ deviation from the set level) and/or scaling the assessment based on a step-by-step distance from the required value ($\pm 5\text{--}10\%$ deviation, step from the required level).

In conclusion, we should emphasize that at present there is an objective need to develop and apply similar assessment methods for the implementation of the indicators that are stated in the national development goals of Russia and all national projects. Such approaches make it possible to model and forecast options for the achievability of set goals, calculate the level of effectiveness obtained, and therefore allow evaluating the effectiveness of project implementation from the initial stage – at the level of creating ideas – to the final one, including its further development (scaling of the project). This is very important at a time when Russia is addressing strategic tasks of import substitution, socio-economic development and industrial sovereignty on the basis of such projects. Our methodology can be useful and interesting to specialists, scientists, researchers and administrative staff who deal with the problems of development and assessment of socio-economic indicators, including the implementation of national projects that affect the possibilities of achieving national development goals in Russia.

References

- Arkhangelskii V.N., Bogdan I.V., Kalachikova O.N., Chistyakova D.P. (2023). Specifics of reproductive behavior of female residents of Moscow. *Ekonomicheskie i sotsial'nye peremeny: fakty, tendentsii, prognoz=Economic and Social Changes: Facts, Trends, Forecast*, 16(3), 231–246. DOI: 10.15838/esc.2023.3.87.12 (in Russian).
- Astanin P.A., Mironova A.A., Narkevich A.N. et al. (2022). Dynamics of preventable mortality contribution to life expectancy decrease of Krasnoyarsk Krai's population between 1999 and 2019. *Sovremennye problemy*

- zdravookhraneniya i meditsinskoi statistiki*=*Current Problems of Health Care and Medical Statistics*, 1, 15–34. DOI: 10.24412/2312-2935-2022-1-15-34 (in Russian).
- Becker S.G., Philipson T.J., Soares R.R. (2005). The quantity and quality of life and the evolution of world inequality. *American Economic Review*, 1(95), 277–291.
- Bedanokov M.K., Morgunov E.V., Chernyavskii S.V. (2022). The interaction between life expectancy and gross domestic product by countries. *Narodonaselenie=Population*, 25(4), 4–15. DOI: 10.19181/population.2022.25.4.1 (in Russian).
- Begunova L.O. (2024). Birth rate reduction as one of the acute problems in the field of demography of the Voronezh Region. In: *Sovremennaya nauka: ot teorii k praktike: sbornik statei Mezhdunarodnoi nauchno-prakticheskoi konferentsii, Penza, 25 marta 2024 goda* [Modern Science: from Theory to Practice: Proceedings of the International Scientific and Practical Conference, Penza, March 25, 2024]. Penza: Nauka i Prosveshchenie (in Russian).
- Belekhova G.V. (2023). The scale of inequality and the specifics of its perception in modern Russia. *Ekonomicheskie i sotsial'nye peremeny: fakty, tendentsii, prognoz=Economic and Social Changes: Facts, Trends, Forecast*, 16(1), 164–185. DOI: 10.15838/esc.2023.1.85.9 (in Russian).
- Belekhova G.V., Natsun L.N., Soloveva T.S. (2024). Prosperous old age: From scientific theories to the fundamentals of its programming. *Ekonomicheskie i sotsial'nye peremeny: fakty, tendentsii, prognoz=Economic and Social Changes: Facts, Trends, Forecast*, 17(2), 220–238. DOI: 10.15838/esc.2024.2.92.12 (in Russian).
- Bird M. (2021). The Covid baby bust could reverberate for decades. The sudden drop in global fertility during the pandemic will have far-reaching consequences for businesses and economies. *The Wall Street Journal*. Available at: <https://www.wsj.com/articles/the-covid-baby-bust-could-reverberate-for-decades-11614962945>
- Chekmeneva L.Yu., Balina T.A. (2019). Life expectancy in Russia and the world. *Vestnik Tverskogo gosudarstvennogo universiteta. Seriya: Geografiya i geokologiya*, 27(3), 5–13 (in Russian).
- Dockery A.M. (2022) Housing quality, remoteness and indigenous children's outcomes in Australia. *Economic Analysis and Policy*, 73, 228–241. DOI: 10.1016/j.eap.2021.11.013
- Dubrovskaya Yu.V. (2023). Determinants of life expectancy in heterogeneous constituent entities of the Russian Federation. *Ekonomicheskie i sotsial'nye peremeny: fakty, tendentsii, prognoz=Economic and Social Changes: Facts, Trends, Forecast*, 16(1), 139–163. DOI: 10.15838/esc.2023.1.85.8 (in Russian).
- Gayathiri R., Ramakrishnan L. (2013). Quality of work life – linkage with job satisfaction and performance. *International Journal of Business and Management Invention*, 1(2), 1–8.
- Ilyin V.A., Morev M.V. (2022). Nationwide poverty – “a threat to steady development and our demographic future”. *Ekonomicheskie i sotsial'nye peremeny: fakty, tendentsii, prognoz=Economic and Social Changes: Facts, Trends, Forecast*, 15(1), 9–33. DOI: 10.15838/esc.2022.1.79.1 (in Russian).
- Ilyin V.A., Morev M.V. (2024). The Russian Federation in the first quarter of the 21st century. The President has set tasks until 2030. *Ekonomicheskie i sotsial'nye peremeny: fakty, tendentsii, prognoz=Economic and Social Changes: Facts, Trends, Forecast*, 17(1), 9–40. DOI: 10.15838/esc.2024.1.91.1 (in Russian).
- Ilyin V.A., Shabunova A.A., Kalachikova O.N. (2021). The potential of increasing fertility and family and demographic policy of Russia. *Vestnik Rossiiskoi akademii nauk*, 91(9), 831–844. DOI: 10.31857/S0869587321090048 (in Russian).
- Kroshilin S.V., Medvedeva E.I., Yarasheva A.V. (2023). Creating a model for assessing satisfaction with the quality of life: an econometric approach. *Narodonaselenie=Population*, 26(4), 87–98. DOI: 10.19181/population.2023.26.4.8 (in Russian).
- Leng C.H., Tsai C.S., Chan T.C., Lee H.W. (2023). Quality of life in multiple scenarios: The impact of work mode and social contact quantity. *Frontiers in Psychology*, 14, 1018415. DOI: 10.3389/fpsyg.2023.1018415

- Lozovskaya A.N. (2021). Problems of housing per capita in the regions of the North-Caucasus Federal District and the roadmap for its elimination. *Ekonomika i predprinimatel'stvo*, 127(2), 566–572. DOI: 10.34925/EIP.2021.127.2.110 (in Russian).
- Maksimov A.M., Tutygin A.G., Malinina K.O. et al. (2022). Issues of the methodology for assessing social well-being in contemporary Russia. *Ekonomicheskie i sotsial'nye peremeny: fakty, tendentsii, prognoz=Economic and Social Changes: Facts, Trends, Forecast*, 15(2), 138–155. DOI 10.15838/esc.2022.2.80.9 (in Russian).
- Mamleeva E.R., Sazykina M.Yu., Trofimova N.V. (2021). Assessing the level of differentiation of the Volga Federal District regions by the level of residential penetration and the housing stock improvement. *Zhilishchnye strategii*, 8(4), 385–398. DOI: 10.18334/zhs.8.4.113744 (in Russian).
- Morris M. (1982). Measuring the condition of the world's poor: The physical quality of life index. *Economic Development and Cultural Change*, 4(30), 887–889.
- Ongel M.E., Yilmaz B. (2020). Why women may live longer than men do? A telomere-length regulated and diet-based entropic assessment. *Clinical Nutrition*, 3(40), 1186–1191. DOI: 10.1016/j.clnu.2020.07.030
- Plutalova E.S. (2023). The problems of the minimum wage as an instrument of state regulation of wages. *Vestnik Ivanovskogo gosudarstvennogo universiteta. Seriya: Estestvennye, obshchestvennye nauki*, 2, 58–62 (in Russian).
- Polikarpov A.V., Golubev N.A., Ogryzko E.V., Lyutsko V.V. (2023). Dynamics of medical and demographic indicators in the Far Eastern Federal District for 2015–2021. *Sovremennye problemy zdavookhraneniya i meditsinskoj statistiki=Current Problems of Health Care and Medical Statistics*, 3, 993–1014. DOI: 10.24412/2312-2935-2023-3-993-1014 (in Russian).
- Rumyantseva E.E., Shutov O.L. (2021). Regional subsistence minimum and the minimum wage: problems of simplifying approaches and distorting the real needs of the population. *Vestnik Tomskogo gosudarstvennogo universiteta. Ekonomika*, 54, 93–109. DOI: 10.17223/19988648/54/4 (in Russian).
- Sabbagha M. De S., Ledimo O., Martins N. (2018). Predicting staff retention from employee motivation and job satisfaction. *Journal of Psychology in Africa*, 2(28), 136–140.
- Shabunova A.A., Natsun L.N., Korolenko A.V. (2021). Strengthening public health: balance of responsibility of the state and a citizen. *Problemy razvitiya territorii=Problems of Territory's Development*, 25(4), 7–23. DOI: 10.15838/ptd.2021.4.114.1 (in Russian).
- Shulgin S.G., Zinkina Yu.V., Korotaev A.V. (2022). The impact of values of men and women on their life expectancy. *Narodonaselenie=Population*, 25(1), 92–104. DOI: 10.19181/population.2022.25.1.8 (in Russian).
- Thomasson E. (2021). As births slow in China and US, ex-laggard Germany bucks trend. *Reuters*. Available at: <https://www.reuters.com/world/births-slow-china-us-ex-laggard-germany-bucks-trend-2021-05-13/>
- Tuktamysheva L.M., Chibilev A.A., Meleshkin D.S., Grigorevskii D.V. (2023). Assessment of reproductive behavior and fertility on the example of the steppe regions of Russia. *Narodonaselenie=Population*, 26(1), 29–38. DOI: 10.19181/population.2023.26.1.4
- Tyrell F.A., Yates T.M. (2017). A growth curve analysis of housing quality among transition-aged foster youth. *Child and Youth Care Forum*, 1(46), 91–117. DOI: 10.1007/s10566-016-9370-1
- Volgin N.A. (2019). Living wage, minimum living wage and minimum wage: modern understanding and relationship. *Sotsial'no-trudovye issledovaniya=Social and Labor Researches*, 3(36).
- Yarasheva A.V., Makar S.V. (2022). Regional housing problems of the population: Far Eastern Federal District. *Narodonaselenie=Population*, 25(3), 89–102. DOI: 10.19181/population.2022.25.3.7 (in Russian).

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Assessment of Interregional Inequality in the Russian Federation Based on the Index of Social Well-Being of the Population



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Abstract. As part of this study, the goal was to develop adequate (high-precision) tools that would allow for not only a retrospective, but also a prospective assessment of interregional inequality in living standards in the Russian Federation based on the index of social well-being of the population, which is the result of a convolution of private indices. At first, a hypothesis was put forward about the possibility of building an adequate prognostic (traditional econometric) model of dependence of per capita average monetary incomes of the population on a group of factors. The information base of the study was exclusively official data of regional statistics for 2020–2022. In the course of empirical research (correlation and regression analysis), three econometric models differing in the number of factors (from 2 to 4) were developed. However, they allow (according to the average approximation error, taking values from the interval from 8.8 to 9.6 % for different econometric models) approximating regional statistics data only with an acceptable degree of accuracy. Next, a similar hypothesis was tested, but involving the use of a different tool (index method in combination with artificial intelligence), which makes it possible to measure the dependence of the population's standard of living on a group of factors. In the course of neuromodelling it was found that any of the 5 artificial neural networks included in the Bayesian ensemble allowed approximating the regional statistics data with a high degree of accuracy (with an average error from 2.8 to 3.9 %). Thus, the second hypothesis can be considered confirmed. As part of the study, the predictive function was implemented by forming a Bayesian ensemble of artificial neural networks. The obtained results of the empirical study can act as a scientific basis for adjusting (updating) the socio-economic policy of regulating the quality and standard of living of the population and its interregional inequality among the constituent entities of the Russian Federation.

Key words: regions of Russia, interregional inequality, standard of living, cash income, index method, correlation-regression analysis, artificial intelligence, forecasting.

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Introduction

Currently, Russia is actively involved in the implementation of the UN international program “Sustainable Development Goals”. The tenth goal is to reduce social inequality. There are several types of social inequality. In this study, we will limit ourselves to studying monetary (income) inequality.

Based on statistical data, let us briefly describe the level of income inequality in modern Russia. For example, the income ratio of the richest 10% to the poorest 10% (R/P 10%) assumed an almost identical value of the order (14) in both 2000 and 2022. In 2023, R/P 10% in Russia was 14.8, which is slightly lower than in 2015 (15.5). However, even now (in 2023) R/P 10% in some regions of Russia is significantly higher than the national average.

So, in particular, in the Nenets Autonomous Area the value is 19.3, in the Republic of Adygea – 15.5, in the Krasnodar Territory – 15.7, in the Tyumen Region with the Autonomous Area – 19.2 (due to the abnormally high value of R/P 10% in the Yamal-Nenets Autonomous Area – 22.8), in the Republic of Sakha (Yakutia) – 16.1, in the Magadan and Sakhalin regions – 15.5 / 15.6 and, finally, in the Chukotka Autonomous Area – 17.3.

The value of the decile coefficient in 2015–2019 and 2021 in Russia was about 7–7.2. In 2022 and 2023 the ratio of minimum incomes of the richest 10% to maximum incomes of the poorest 10% of Russians assumed lower values: 6.6 and 6.8, respectively. However, at present (in 2023) in some

regions (their list is almost identical to the above), the value of the decile coefficient, as well as R/P 10%, was significantly higher than the national average.

A number of other indicators also show significant polarization of Russian society in terms of money income at the current stage of the country's development. For example, in 2023 the average per capita money income of citizens from the first group (5.5%) amounted to 14,564 rubles, while citizens from the fifth group (46.4% of the total money income) received 123,349 rubles, i.e. almost 8.5 times more. At the same time, it is necessary to note a very high degree of concentration of persons with the highest money incomes (5th group) in the capital. Thus, about 43.3% of the all-Russian value of the indicator fell on Moscow; and taking into account Saint Petersburg, the value exceeded 50%.

Thus, we can conclude that smoothing interregional monetary inequality in modern Russia is an important area of state social policy. The development of this direction in the face of several negative external factors, in particular sanctions pressure on the national economy from the United States and the European Union countries, requires adequate tools for monitoring the situation.

In this regard, the aim of our research is to assess interregional inequality in the Russian Federation according to the social well-being index, using artificial intelligence. Such an adequate (high-precision) method of economic and mathematical modeling allows for not only a retrospective, but also a long-term assessment of the phenomenon in question. To achieve the goal, the following tasks were solved:

- an analysis of interregional inequality in terms of living standards was carried out;
- methodological tools for assessing interregional inequality according to the index of social well-being were developed;

– regions were grouped according to the social well-being index, and a forecast was formed.

The object of this study is constituent entities of the Russian Federation. The subject of the study is measurement of the standard of living of their population.

The achievement of the set goal and the solution of tasks predetermined the structure of the work: first, the conceptual framework is clarified, then a thematic empirical study is conducted.

Literature review

Complexity of the terms “quality of life” and “standard of living” has led to the emergence of many different interpretations; a successful attempt at classifying (systematizing) them was made in the work (Spiridonov, Naidenova, 2024). According to the authors of the above-mentioned scientific article, through the prism of the categories “needs”, “interests” and “values”, all the variety of interpretations can be combined into three approaches: 1) basic approach that takes into account needs (N-approach); 2) axiological approach that takes into account values (V-approach); 3) synthesis of the first two approaches (NV-approach). The authors of this study, regarding the interpretation of the definitions of “quality of life” and “standard of living”, adhere to the basic approach (based on needs). In turn, meeting the needs of population presupposes the availability of various sources of money income (including wages).

While analyzing the effectiveness of executive authorities at the meso-level of management, monetary inequality of the Russian population is estimated through the growth rates of real money incomes and real average monthly wages¹. This makes it possible to use the managerial factor in regulating socio-economic inequality in Russia

¹ On evaluating the effectiveness of activities of senior officials of constituent entities of the Russian Federation and activities of executive bodies of constituent entities of the Russian Federation: Presidential Decree 68, dated February 4, 2021.

(Merzlyakov, Bogdanov, 2022). However, these indicators, through the dynamics of comparable prices, take into account changes in per capita income and wages only within regions. If they are used to measure interregional inequality, then its level will not reflect interregional differences in living standards, since it does not take into account different purchasing power of the population in Russian regions.

The importance of taking into account differences in the purchasing power of the population to ensure the correctness of interregional comparisons is evidenced by a number of works (Bobkov, Odintsova, 2020, pp. 179–182; Surinov, Luppov, 2022; Bobkov, Gulyugina, 2023).

According to the author's definition, the purchasing power of the population in terms of income and wages is the number of sets of subsistence minimum / consumer baskets (on average per capita, working-age population), falling on a given amount of per capita money income, wages. This indicator measures the standard of living, i.e. current consumption² (Bobkov, Gulyugina, 2023). Accordingly, the interregional inequality of the purchasing power of the population in terms of money income measures the gaps in the average standard of living among the population of Russian regions³.

² It represents the number of sets of subsistence minimum / consumer baskets (on average per capita, working-age population, pensioners, children, respectively), falling on a given amount of money income, consumer spending or available household resources.

³ Rosstat does not calculate the indicator "purchasing power of the population". In contrast to this indicator, it calculates the purchasing power of the average per capita money income of the population through the commodity equivalent of the average per capita money income of the population per month (average monthly nominal accrued wages, average size of assigned pensions), which refers to the amount of any one product (service) with specific consumer properties, which can be purchased provided that the entire amount of money income will be used only for these purposes. Source: Social status and standard of living of the Russian population 2023. Rosstat. Available at: <https://rosstat.gov.ru/folder/210/document/13212> (accessed: June 6, 2024).

Based on the works (Ibragimova, Frants, 2020; Dorofeev, 2021; Shatalova, Kasatkina, 2022, etc.), we can conclude that social inequality in income and wealth in Russia (resource inequality) and abroad is usually estimated using several indicators (coefficients or indices): Gini coefficient, R/P 10%, decile coefficient, generalized entropy measures, Theil T and L indices, as well as the family of Atkinson inequality indices. We agree with (Ibragimova, Frants, 2020, p. 77) who point out that the most common indicator of income and wealth inequality is the Gini coefficient. In addition, researchers in the above-mentioned work used the Theil T and L indices and the Atkinson indices to study the contribution of inequality of opportunity to income and wage inequality in the Russian Federation.

The need to make more accurate measurements has led to the use of the index method in interregional comparisons, in which the integral indicator (index) includes several private indices. The work (Simionesku et al., 2020), uses an integral index to assess regional personnel differentiation, taking into account six basic components (private indices) of the labor potential of RF constituent entities: 1) duration of working life; 2) level of labor activity of the population; 3) level of professional training of the employed population; 4) real volume of capital equipment per unit of labor; 5) average per capita gross regional product and 6) average monthly wage of employees. Based on this list, we can conclude that researchers are studying several types of social inequalities simultaneously (in particular, in terms of employment, income, and education level).

Currently, the results obtained with the use of the index method can be significantly supplemented by the use of artificial intelligence or machine learning methods. In particular, Random Forest data mining technique (see, for example, Breiman, 2001) makes it possible to identify hidden interdependencies between various indicators (Zarova,

Dubravskaya, 2020), examining the impact of economic indicators on the level of informal employment in Russian regions.

We should note that recently works have begun to appear that are not limited to a retrospective assessment of the phenomenon under consideration using the index method. They conduct a multi-dimensional cluster analysis that complements the results of rating RF constituent entities, and such an analysis is carried out using various methods of artificial intelligence (AI). For example, the study (Leonidova et al., 2022) measures income inequality in Russian regions with the help of artificial intelligence. A multidimensional cluster analysis is carried out on five particular indicators: 1) average per capita money income; 2) average monthly nominal accrued wages; 3) number of people with incomes below the subsistence minimum; 4) Gini coefficient and 5) R/P 10%. Hierarchical arrangement (see, for example, Shetty, Singh, 2021) of RF constituent entities into a cluster according to the studied phenomenon is performed using Ward's method and Orange Library of machine learning of the Python programming language. However, there are still practically no articles by Russian scientists that implement a predictive function based on AI. At the same time, there are quite a lot of foreign works that use artificial neural networks for the prospective assessment of socio-economic characteristics of various systems (Qiu et al., 2019; Jin et al., 2022; Zhang et al., 2022, etc.).

Data and research methods

This study combines the index method and the use of artificial intelligence to determine the standard of living index, which the authors called *social well-being index*. Interregional inequality regarding living standards was assessed according to this index. The results of the study complement the methods of assessing the standard of living and its interregional comparisons. The retrospective assessment is deepened by clustering Russia's

regions according to the social well-being index of. The forecast function of the dynamics of the above index is also implemented.

According to the hypothesis of our study, the social well-being index helps to measure the standard of living more accurately. This implies a fairly logical definition of interregional inequality in the standard of living. The tasks (clustering and forecasting) in the framework of the work were solved using artificial intelligence (artificial neural networks). All these elements constitute the novelty of the research.

In the framework of the study, an attempt was made to combine the assessment of living standards in the social well-being index of the region through a convolution of private indices, in the center of which is the index of the purchasing power of wages, supplemented by a number of others, with the use of artificial intelligence capable of providing high accuracy approximation of the initial data of regional statistics and subsequent forecasting. The social well-being index obtained in such a combined way is used as the basis for identifying and forecasting interregional inequality in the standard of living. We believe that the definition of social well-being index can be one of the adequate tools for monitoring the current situation related to the standard of living, forecasting possible changes and reducing its interregional gaps. In this study, taking into account the above approaches to determining indicators for studying the standard of living, an attempt is made to propose an adequate (high-precision) econometric model of its assessment and application for interregional comparisons using successive iterations. Initially, taking into account case studies (Ibragimova, Frants, 2020; Zhitin, Prokofev, 2022), we propose the following system of factor indicators:

- 1) average monthly nominal accrued wages of employees of organizations (X_1), rubles;
- 2) number of employees per pensioner (X_2), people;

Table 1. Matrix of paired Pearson correlation coefficients

Indicator	Y	X ₁	X ₂	X ₃	X ₄	X ₅	X ₆	X ₇	X ₈
Y	1								
X ₁	0.920	1							
X ₂	0.679	0.608	1						
X ₃	0.649	0.517	0.637	1					
X ₄	0.573	0.480	0.684	0.842	1				
X ₅	-0.560	-0.358	-0.309	-0.642	-0.336	1			
X ₆	0.478	0.437	0.397	0.637	0.457	-0.554	1		
X ₇	0.306	0.251	0.432	0.097	0.181	-0.085	0.084	1	
X ₈	0.181	0.158	0.051	0.253	0.060	-0.198	0.108	0.018	1

Source: own elaboration.

- 3) employment rate of the population aged 15–72 years (X₃), %;
- 4) level of participation of the population aged 15–72 years in labor force (X₄), %;
- 5) share of the population with money incomes below the subsistence minimum / poverty line, 2021–2022 (X₅), %;
- 6) proportion of urban population (X₆), %;
- 7) proportion of the employed population with higher education (X₇), %;
- 8) proportion of individual entrepreneurs (X₈), %.

Let us estimate the impact of each of the factors on the resulting indicator (Y, average per capita money income of the population) based on the calculation and analysis of paired Pearson correlation coefficients according to regional statistics for 2015–2022⁴ (Tab. 1).

The first factor has a strong impact on the resulting indicator. Between the group of factors (from the second to the sixth) and the resulting

indicator, there is a direct (with the exception of the fifth factor) relationship of average strength. Finally, the seventh and eighth factors have little effect on the resulting indicator; therefore, it is impractical to include them in the model. We should note that the third and fourth factors are strongly related, but the value of their paired Pearson correlation coefficient does not exceed 0.85. Hence, there is no multicollinearity in the initial data; thus, a system of the first six factors can be used to form a number of econometric models. According to the results of the correlation and regression analysis, the third and sixth factors were excluded. The parameter of the regression equation for the third factor turned out to be insignificant. In addition, the above factors had an incorrect (negative) sign in the regression equation, contradicting the socio-economic meaning. The results of checking econometric models for adequacy (accuracy of approximation of the initial data) are presented in Table 2.

Table 2. Assessment of econometric adequacy of the models

Model	Regression equation	R ²	Normalized R ²	E, %
First	$Y = -1916.4 + 0.504X_1 + 5428.3X_2 + 188.8X_4 - 591X_5$	0.924	0.923	8.8
Second	$Y = 8469.2 + 0.506X_1 + 7068.2X_2 - 609.2X_5$	0.922	0.922	8.9
Third	$Y = 17523.4 + 0.567X_1 - 648.8X_5$	0.907	0.907	9.6

Source: own elaboration.

⁴ Regions of Russia. Socio-economic indicators. 2023: Statistics collection. Moscow: Rosstat.

According to the value of determination coefficients (exceeding 0.9), each of the three econometric models allows forecasting the value of the resulting indicator with a high degree of accuracy. However, based on the mean approximation error (E), which takes values of more than 8%, all models provide only acceptable forecast accuracy. Therefore, further in the framework of the study, in order to build a high-precision model assessing the social well-being of the population of RF constituent entities, an index method is used in combination with artificial intelligence. The resulting index is the social well-being index. Taking into account the results of the previously conducted correlation and regression analysis, the indices of the first six factor indicators are private. The social well-being index is calculated under the following basic conditions.

1. All private indexes are considered equivalent. “Convolution” is carried out using a simple arithmetic mean formula.

2. We take into account the need to subordinate the initial information to the law of normal distribution, i.e. the asymmetry should not exceed 0.5. In order to reduce the value of the indicator (if necessary), the procedure for transforming the initial information is applied (the root of the second

or third degree is extracted from the normalized values of private indicators)⁵.

3. Normalization of the values of private indicators is carried out in the maximum way. At the same time, the scope of variation is determined in the yearly context.

4. Growth of the values of private indicators in dynamics is a positive trend, with the exception of the fifth factor.

5. The first factor in the calculations appears in comparable prices for all regions of Russia. The cost of a fixed set of consumer goods and services in Moscow is taken as the base of comparison; correction coefficients are introduced for RF constituent entities. As a result, the first private index is index of the purchasing power of the region’s population according to the average monthly nominal accrued wages of employees of organizations. It has the strongest influence on the integral index of social well-being, which, as a result of the transformations carried out, represents the author’s integral index of the standard of living of the region’s population.

Research results

The results of calculating the social well-being index and a subsequent ranking of Russia’s regions are presented in *Table 3*.

Table 3. Index / rating of social well-being of the population of RF constituent entities

RF constituent entity	Index value (y) / Rank according to value y							
	2015	2016	2017	2018	2019	2020	2021	2022
Belgorod Region	0.613/ 29	0.627/ 21	0.649/ 19	0.602/ 21	0.606/ 19	0.641/ 15	0.638/ 21	0.642/ 19
Bryansk Region	0.512/ 61	0.511/ 60	0.516/ 58	0.451/ 60	0.453/ 62	0.466/ 62	0.482/ 63	0.469/ 67
Vladimir Region	0.598/ 32	0.573/ 34	0.597/ 32	0.530/ 39	0.556/ 33	0.569/ 32	0.581/ 33	0.620/ 25
Voronezh Region	0.557/ 47	0.555/ 46	0.583/ 37	0.532/ 37	0.544/ 35	0.568/ 33	0.589/ 30	0.597/ 30
Ivanovo Region	0.560/ 45	0.548/ 51	0.585/ 35	0.484/ 52	0.497/ 48	0.494/ 51	0.557/ 40	0.559/ 41

⁵ Abashkin V.L., Abdrakhmanova G.I., Bredikhin S.V. et al. (2023). The rating of innovative development of constituent entities of the Russian Federation. Issue 8. Moscow: Higher School of Economics. P. 52.

Continuation of Table 3

RF constituent entity	Index value (y) / Rank according to value y							
	2015	2016	2017	2018	2019	2020	2021	2022
Kaluga Region	0.656/ 18	0.662/ 14	0.674/ 14	0.644/ 13	0.628/ 14	0.656/ 14	0.677/ 13	0.666/ 16
Kostroma Region	0.527/ 58	0.534/ 56	0.550/ 54	0.472/ 55	0.487/ 52	0.502/ 48	0.508/ 54	0.500/ 58
Kursk Region	0.566/ 43	0.560/ 43	0.579/ 40	0.521/ 41	0.534/ 39	0.543/ 41	0.578/ 34	0.568/ 37
Lipetsk Region	0.589/ 34	0.594/ 28	0.619/ 26	0.573/ 27	0.580/ 26	0.606/ 23	0.609/ 27	0.617/ 26
Moscow Region	0.734/ 8	0.733/ 7	0.763/ 7	0.747/ 7	0.737/ 7	0.740/ 7	0.738/ 9	0.728/ 8
Orel Region	0.484/ 67	0.481/ 67	0.486/ 67	0.405/ 69	0.382/ 73	0.414/ 70	0.433/ 70	0.417/ 71
Ryazan Region	0.475/ 68	0.483/ 65	0.509/ 61	0.422/ 65	0.472/ 56	0.462/ 63	0.471/ 65	0.496/ 59
Smolensk Region	0.573/ 39	0.550/ 49	0.577/ 41	0.504/ 46	0.463/ 59	0.491/ 54	0.510/ 53	0.540/ 46
Tambov Region	0.499/ 63	0.491/ 63	0.513/ 60	0.434/ 64	0.442/ 65	0.480/ 56	0.491/ 62	0.506/ 57
Tver Region	0.607/ 30	0.590/ 29	0.618/ 28	0.573/ 26	0.573/ 28	0.586/ 28	0.585/ 32	0.587/ 34
Tula Region	0.613/ 28	0.612/ 26	0.625/ 24	0.576/ 25	0.585/ 25	0.616/ 21	0.626/ 24	0.629/ 21
Yaroslavl Region	0.670/ 13	0.648/ 17	0.655/ 17	0.604/ 20	0.590/ 23	0.614/ 22	0.641/ 20	0.628/ 22
Moscow	0.905/ 1	0.920/ 1	0.925/ 1	0.942/ 1	0.922/ 1	0.934/ 1	0.957/ 1	0.928/ 1
Republic of Karelia	0.505/ 62	0.514/ 59	0.508/ 64	0.448/ 61	0.473/ 55	0.477/ 59	0.475/ 64	0.467/ 68
Komi Republic	0.643/ 20	0.615/ 25	0.603/ 31	0.564/ 28	0.559/ 32	0.553/ 38	0.546/ 44	0.530/ 49
Arkhangelsk Region	0.562/ 44	0.547/ 53	0.573/ 43	0.511/ 44	0.513/ 42	0.515/ 47	0.540/ 46	0.527/ 51
Vologda Region	0.570/ 41	0.577/ 33	0.560/ 49	0.493/ 48	0.510/ 44	0.544/ 40	0.523/ 50	0.530/ 50
Kaliningrad Region	0.662/ 16	0.638/ 19	0.639/ 21	0.586/ 24	0.600/ 21	0.597/ 26	0.610/ 25	0.624/ 24
Leningrad Region	0.651/ 19	0.641/ 18	0.673/ 15	0.615/ 17	0.607/ 18	0.625/ 19	0.642/ 19	0.697/ 12
Murmansk Region	0.739/ 7	0.731/ 8	0.745/ 8	0.707/ 8	0.707/ 8	0.707/ 9	0.748/ 7	0.728/ 9
Novgorod Region	0.604/ 31	0.586/ 30	0.592/ 33	0.523/ 40	0.511/ 43	0.493/ 53	0.545/ 45	0.531/ 48
Pskov Region	0.491/ 66	0.489/ 64	0.471/ 69	0.416/ 67	0.451/ 63	0.439/ 66	0.497/ 59	0.478/ 63
Saint Petersburg	0.850/ 3	0.856/ 3	0.882/ 2	0.880/ 2	0.858/ 3	0.879/ 2	0.906/ 3	0.893/ 3
Republic of Adygea	0.347/ 80	0.302/ 80	0.309/ 80	0.279/ 77	0.333/ 76	0.363/ 75	0.305/ 77	0.323/ 77
Republic of Kalmykia	0.387/ 77	0.406/ 73	0.410/ 76	0.328/ 76	0.321/ 77	0.375/ 74	0.349/ 74	0.377/ 73

Continuation of Table 3

RF constituent entity	Index value (y) / Rank according to value y							
	2015	2016	2017	2018	2019	2020	2021	2022
Republic of Crimea	0.426/ 74	0.388/ 75	0.439/ 73	0.363/ 74	0.413/ 68	0.438/ 67	0.442/ 69	0.432/ 70
Krasnodar Region	0.539/ 54	0.540/ 54	0.563/ 46	0.514/ 43	0.515/ 41	0.538/ 42	0.548/ 43	0.549/ 43
Astrakhan Region	0.614/ 27	0.585/ 31	0.630/ 23	0.541/ 35	0.537/ 38	0.554/ 37	0.563/ 39	0.581/ 35
Volgograd Region	0.577/ 37	0.564/ 40	0.575/ 42	0.540/ 36	0.525/ 40	0.556/ 36	0.575/ 35	0.597/ 29
Rostov Region	0.529/ 57	0.548/ 52	0.553/ 53	0.492/ 49	0.498/ 47	0.532/ 43	0.550/ 42	0.566/ 38
Sevastopol	0.617/ 25	0.566/ 37	0.606/ 30	0.608/ 19	0.614/ 16	0.605/ 24	0.652/ 15	0.667/ 14
Republic of Dagestan	0.413/ 75	0.405/ 74	0.411/ 75	0.337/ 75	0.354/ 75	0.321/ 77	0.310/ 76	0.352/ 74
Republic of Ingushetia	0.369/ 78	0.372/ 76	0.444/ 72	0.386/ 72	0.396/ 70	0.391/ 71	0.346/ 75	0.344/ 75
Kabardino-Balkarian Republic	0.471/ 69	0.440/ 72	0.450/ 71	0.421/ 66	0.414/ 67	0.440/ 65	0.462/ 66	0.471/ 66
Karachay-Cherkess Republic	0.311/ 81	0.281/ 81	0.263/ 81	0.219/ 81	0.218/ 81	0.235/ 82	0.255/ 81	0.282/ 80
Republic of North Ossetia-Alania	0.465/ 71	0.440/ 71	0.487/ 66	0.473/ 54	0.379/ 74	0.323/ 76	0.379/ 73	0.409/ 72
Chechen Republic	0.409/ 76	0.366/ 78	0.350/ 78	0.265/ 78	0.281/ 78	0.263/ 81	0.276/ 80	0.269/ 81
Stavropol Territory	0.513/ 60	0.509/ 61	0.509/ 62	0.456/ 59	0.482/ 53	0.498/ 50	0.500/ 57	0.509/ 56
Republic of Bashkortostan	0.552/ 51	0.548/ 50	0.557/ 50	0.480/ 53	0.474/ 54	0.493/ 52	0.507/ 55	0.521/ 53
Republic of Mari El	0.518/ 59	0.495/ 62	0.496/ 65	0.394/ 70	0.428/ 66	0.422/ 69	0.446/ 68	0.448/ 69
Republic of Mordovia	0.557/ 46	0.558/ 44	0.556/ 52	0.461/ 58	0.510/ 45	0.472/ 61	0.521/ 51	0.562/ 39
Republic of Tatarstan	0.715/ 9	0.705/ 9	0.716/ 9	0.671/ 10	0.667/ 10	0.690/ 11	0.710/ 10	0.715/ 10
Udmurt Republic	0.639/ 21	0.619/ 23	0.619/ 27	0.557/ 31	0.541/ 36	0.570/ 31	0.571/ 36	0.560/ 40
Chuvash Republic	0.570/ 42	0.530/ 57	0.520/ 57	0.448/ 62	0.456/ 61	0.474/ 60	0.494/ 61	0.488/ 61
Perm Territory	0.578/ 36	0.571/ 35	0.562/ 47	0.493/ 47	0.498/ 46	0.531/ 44	0.552/ 41	0.541/ 45
Kirov Region	0.554/ 49	0.553/ 48	0.567/ 44	0.509/ 45	0.488/ 51	0.519/ 46	0.527/ 49	0.523/ 52
Nizhny Novgorod Region	0.663/ 15	0.667/ 12	0.685/ 12	0.636/ 14	0.636/ 13	0.662/ 13	0.673/ 14	0.679/ 13
Orenburg Region	0.556/ 48	0.554/ 47	0.567/ 45	0.517/ 42	0.458/ 60	0.483/ 55	0.496/ 60	0.472/ 65
Penza Region	0.553/ 50	0.561/ 41	0.529/ 56	0.492/ 50	0.469/ 57	0.478/ 57	0.530/ 48	0.481/ 62
Samara Region	0.675/ 12	0.666/ 13	0.665/ 16	0.626/ 15	0.611/ 17	0.637/ 16	0.650/ 16	0.656/ 17

RF constituent entity	Index value (y) / Rank according to value y							
	2015	2016	2017	2018	2019	2020	2021	2022
Saratov Region	0.551/ 52	0.536/ 55	0.515/ 59	0.446/ 63	0.495/ 50	0.499/ 49	0.514/ 52	0.547/ 44
Ulyanovsk Region	0.550/ 53	0.557/ 45	0.557/ 51	0.466/ 57	0.466/ 58	0.477/ 58	0.504/ 56	0.532/ 47
Kurgan Region	0.429/ 73	0.368/ 77	0.367/ 77	0.258/ 79	0.264/ 79	0.309/ 78	0.277/ 79	0.284/ 79
Sverdlovsk Region	0.681/ 11	0.651/ 16	0.651/ 18	0.591/ 23	0.604/ 20	0.617/ 20	0.642/ 18	0.625/ 23
Tyumen Region	0.763/ 5	0.761/ 5	0.777/ 5	0.761/ 6	0.747/ 6	0.748/ 6	0.760/ 6	0.749/ 6
Chelyabinsk Region	0.665/ 14	0.656/ 15	0.682/ 13	0.661/ 12	0.661/ 11	0.673/ 12	0.684/ 12	0.666/ 15
Altai Republic	0.351/ 79	0.327/ 79	0.324/ 79	0.241/ 80	0.260/ 80	0.301/ 79	0.282/ 78	0.254/ 82
Republic of Tyva	0.191/ 82	0.251/ 82	0.240/ 82	0.218/ 82	0.209/ 82	0.290/ 80	0.244/ 82	0.291/ 78
Republic of Khakassia	0.530/ 55	0.515/ 58	0.531/ 55	0.467/ 56	0.447/ 64	0.437/ 68	0.498/ 58	0.510/ 55
Altai Territory	0.495/ 65	0.468/ 69	0.468/ 70	0.378/ 73	0.395/ 71	0.387/ 72	0.407/ 71	0.474/ 64
Krasnoyarsk Territory	0.498/ 64	0.483/ 66	0.508/ 63	0.594/ 22	0.595/ 22	0.600/ 25	0.633/ 23	0.612/ 28
Irkutsk Region	0.595/ 33	0.583/ 32	0.581/ 39	0.531/ 38	0.540/ 37	0.546/ 39	0.565/ 38	0.587/ 33
Kemerovo Region	0.616/ 26	0.609/ 27	0.610/ 29	0.543/ 34	0.555/ 34	0.565/ 34	0.571/ 37	0.572/ 36
Novosibirsk Region	0.624/ 23	0.627/ 20	0.638/ 22	0.564/ 29	0.577/ 27	0.579/ 30	0.610/ 26	0.596/ 31
Omsk Region	0.629/ 22	0.616/ 24	0.620/ 25	0.563/ 30	0.563/ 30	0.594/ 27	0.596/ 29	0.592/ 32
Tomsk Region	0.530/ 56	0.566/ 38	0.561/ 48	0.552/ 32	0.560/ 31	0.562/ 35	0.586/ 31	0.557/ 42
Republic of Buryatia	0.471/ 70	0.442/ 70	0.428/ 74	0.405/ 68	0.384/ 72	0.384/ 73	0.381/ 72	0.331/ 76
Republic of Sakha (Yakutia)	0.588/ 35	0.561/ 42	0.585/ 36	0.615/ 16	0.622/ 15	0.629/ 17	0.637/ 22	0.635/ 20
Trans-Baikal Territory	0.576/ 38	0.568/ 36	0.581/ 38	0.487/ 51	0.496/ 49	0.521/ 45	0.533/ 47	0.520/ 54
Kamchatka Territory	0.702/ 10	0.678/ 10	0.686/ 11	0.675/ 9	0.694/ 9	0.723/ 8	0.739/ 8	0.735/ 7
Primorye Territory	0.623/ 24	0.626/ 22	0.645/ 20	0.610/ 18	0.589/ 24	0.628/ 18	0.648/ 17	0.648/ 18
Khabarovsk Territory	0.656/ 17	0.676/ 11	0.701/ 10	0.669/ 11	0.638/ 12	0.697/ 10	0.699/ 11	0.705/ 11
Amur Region	0.573/ 40	0.564/ 39	0.592/ 34	0.550/ 33	0.564/ 29	0.585/ 29	0.599/ 28	0.615/ 27
Magadan Region	0.842/ 4	0.824/ 4	0.868/ 4	0.863/ 4	0.836/ 4	0.876/ 4	0.912/ 2	0.897/ 2
Sakhalin Region	0.746/ 6	0.747/ 6	0.769/ 6	0.783/ 5	0.765/ 5	0.787/ 5	0.796/ 5	0.809/ 5

End of Table 3

RF constituent entity	Index value (y) / Rank according to value y							
	2015	2016	2017	2018	2019	2020	2021	2022
Jewish Autonomous Region	0.464/ 72	0.469/ 68	0.475/ 68	0.394/ 71	0.412/ 69	0.456/ 64	0.451/ 67	0.488/ 60
Chukotka Autonomous Area	0.861/ 2	0.863/ 2	0.876/ 3	0.875/ 3	0.866/ 2	0.877/ 3	0.882/ 4	0.877/ 4
Miny	0.191	0.251	0.240	0.218	0.209	0.235	0.244	0.254
Maxy	0.905	0.920	0.925	0.942	0.922	0.934	0.957	0.928
Note: The Arkhangelsk Region is considered with the Nenets Autonomous Area, and the Tyumen Region with the Khanty-Mansi Autonomous Area – Yugra and the Yamal-Nenets Autonomous Area.								
Source: own elaboration.								

The coefficient of interregional differentiation of the social well-being index (calculated as the ratio of the highest index value to the lowest) was 4.74 times in 2015, 3.67 times in 2016, 3.85 times in 2017, 4.32 times in 2018, 4.41 times in 2019, 3.97 times in 2020, 3.92 times in 2021, and 3.65 times in 2022. In 2019–2022, the differentiation of RF constituent entities according to the social well-being index decreased. In 2022, compared with 2015, the coefficient value decreased 1.3-fold.

The leaders of the rating (top five) in the analyzed period were Moscow, Saint Petersburg, the Magadan Region, the Chukotka Autonomous Area, and the Sakhalin Region. Here we should note that throughout the analyzed period, even the undisputed leader of the rating – Moscow – had an index value of less than 1; therefore, the capital city is not the absolute leader, i.e. the leader in all six private indices at the same time. The outsiders of the rating (bottom five) included on a regular basis

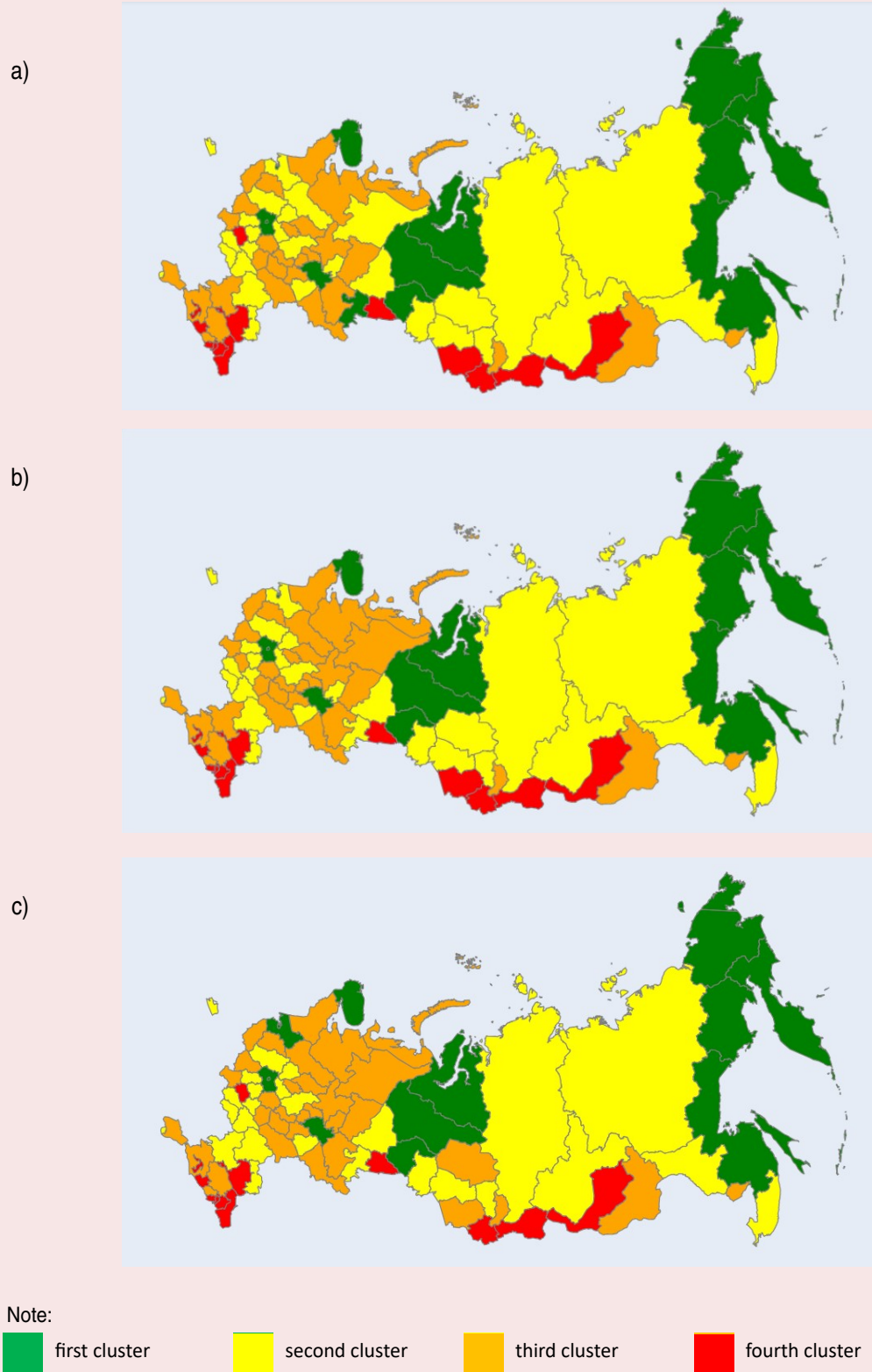
the Chechen Republic, the Karachay-Cherkess Republic, the Altai Republic, the Kurgan Region and the Republic of Tyva.

Further, using the example of 2020–2022, clustering of RF constituent entities according to the social well-being index using artificial intelligence is carried out. Cluster analysis is carried out by the method of Kohonen Self-Organizing Maps in a demo version of Deductor Studio Lite 5.1. The training of each such map is carried out under the following basic conditions: 1) initialization method is training set; 2) Gaussian neighborhood function. Based on the calculation and analysis of the highest and lowest values of the index, a decision was made on the expediency of allocating four clusters of Russian regions characterized by high, above median, median and below median levels of social well-being. The results of annual distribution of RF constituent entities according to y are shown in *Figure 1*.

Table 4. Cluster structure of RF constituent entities according to the social well-being index

Cluster	2020		2021		2022	
	Number of regions	%	Number of regions	%	Number of regions	%
First	12	14.6	11	13.4	12	14.6
Second	29	35.4	28	34.1	26	31.7
Third	28	34.1	31	37.8	32	39.0
Fourth	13	15.9	12	14.6	12	14.6
Source: own elaboration.						

Figure 1. Distribution of RF constituent entities according to the social well-being index in 2020 (a), 2021 (b), 2022 (c)



Source: own elaboration.

Next, let us analyze changes in the cluster structure of Russian regions (*Tab. 4*). Most (about 70–72%) of the country’s constituent entities in 2020–2022 were characterized by either above median or median levels of the social well-being index. At the same time, regions with high and below median levels of the social well-being index were located annually at different “poles” (approximately 13–15%).

It is necessary to note the stability of the formed cluster structure of RF constituent entities over the past three years of the period under consideration. The number of regions in both the first and fourth clusters remained almost unchanged. Insignificant (in terms of number) transitions of Russian regions were observed only between the second and third clusters.

The correctness of the procedure (cluster analysis using artificial intelligence) is confirmed by a number of indicators (*Tab. 5*).

All observations were fully recognized annually. The stability of the obtained results is also indi-

cated by the same order of both the mean and maximum errors in 2020–2022. Next, the predictive function is also implemented using artificial intelligence in the demo version of Deductor Studio Lite 5.1. Due to the limitation in the number of observations (no more than 150), neuromodeling is carried out using the example of 50 RF constituent entities, which are part of the Central, Northwestern, Southern, North Caucasus, Ural and Far Eastern federal districts, for 2020–2022.

The “output” variable is social well-being index. The “input” variables include the first, second, fourth and fifth factors. Due to the relatively small data set, neuromodels are trained on the entire set of observations. The configuration of the formed Bayesian ensemble of neuromodels is presented in *Table 6*.

Five neuromodels with either one or two hidden layers were included in the Bayesian ensemble; the number of neurons in the hidden layers varied in increments of 4.

Table 5. Assessment of the adequacy of the clustering procedure of RF constituent entities in Deductor Studio Lite 5.1

Indicator	2020	2021	2022
Maximum error	2.58E-0.3	7.91E-0.3	2.88E-0.3
Mean error	2.83E-0.4	6.83E-0.4	3.63E-0.4
Recognized (%)	100	100	100
Source: own elaboration.			

Table 6. Configuration of the Bayesian ensemble of neuromodels

Neuromodel	Number of hidden layers	Number of neurons		Activation function
		in the first hidden layer	in the second hidden layer	
First	1	4	-	Hypertangent
Second	1	8	-	
Third	1	12	-	
Fourth	2	8	8	
Fifth	2	8	12	
Source: own elaboration.				

Let us evaluate the adequacy of the formed Bayesian ensemble of neuromodels using both automatically determined and independently calculated indicators (Tab. 7, 8). In the second case, the mean (E) and maximum error (maxe) of initial data approximation are additionally determined, and the frequency criterion for the quality of neuromodeling is also calculated (the number (N) and percentage (P) of correctly recognized observations with 5 and 8% individual approximation error).

According to both the mean and maximum error, the fourth artificial neural network is the most adequate of the five neuromodels. The fifth neuromodel demonstrates similar values of indicators.

Based on the mean approximation error and the frequency quality criterion, the second neuromodel is the most adequate, while the fifth artificial neural network is the most adequate according to the maximum approximation error. Taking into account the values of all adequacy indicators, we

can conclude that artificial intelligence allows approximating with a high degree of accuracy the initial data necessary to form a forecast for the social well-being index of the population of RF constituent entities.

We implement the predictive function using the formed Bayesian ensemble of neuromodels using the example of leader regions of the rating for 2024–2025. (Tab. 9, Fig. 2); the values of factor indicators were assigned by experts based on the trends of their change in dynamics for 2015–2022. According to the formed forecast, in 2024–2025, Moscow is expected to maintain its leadership in the social well-being index.

It is predicted that the value of the effective indicator in the leading region will remain practically the same. The Magadan Region and Saint Petersburg are expected to rank 2nd and 3rd, respectively; while an increase in the index value is expected for each of the two above-mentioned regions-leaders of the rating in 2024–2025.

Table 7. The system of automatically calculated indicators of the adequacy of the Bayesian ensemble of neuromodels

Neuromodel	Maximum error	Mean error	Recognized (%)
First	9.13E-0.3	1.23E-0.3	100
Second	9.17E-0.3	9.35E-0.4	100
Third	1.08E-0.2	1.23E-0.3	100
Fourth	5.32E-0.3	4.87E-0.4	100
Fifth	5.65E-0.3	5.17E-0.4	100

Source: own elaboration.

Table 8. Additional indicators of the adequacy of the Bayesian ensemble of neuromodels

Neuromodel	E, %	N		P		maxe, %
		e = 5%	e = 8%	e = 5%	e = 8%	
First	3.7	109	140	72.7	93.3	13.9
Second	2.8	127	143	84.7	95.3	14.4
Third	3.3	117	142	78	94.7	13.6
Fourth	3.9	104	135	69.3	90	11.3
Fifth	3.6	110	138	73.3	92	10.8

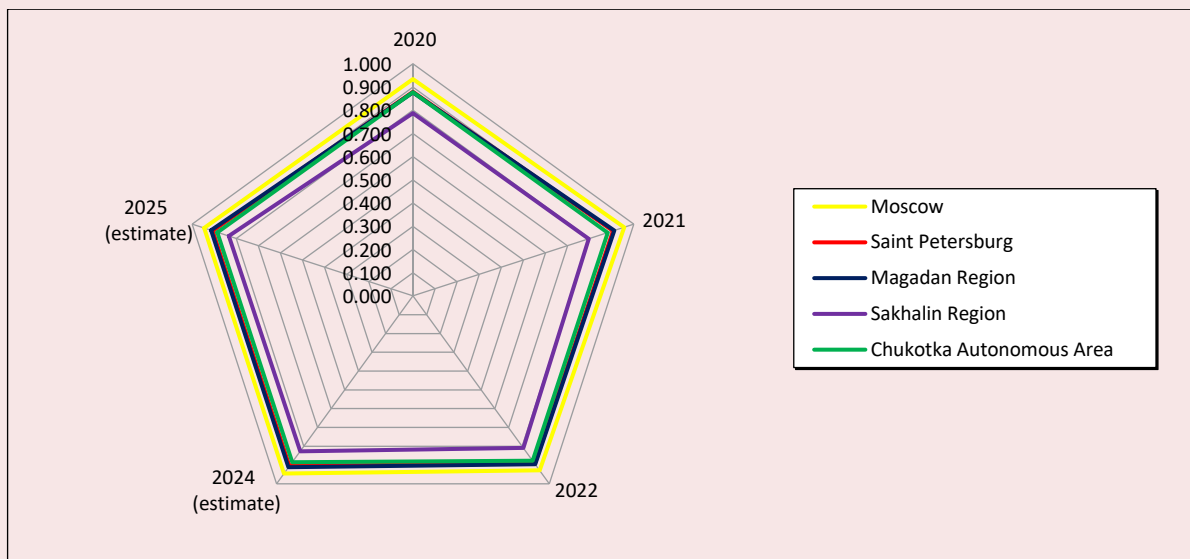
Source: own elaboration.

Table 9. Forecasting the social well-being index (y) using artificial intelligence

RF constituent entity	2024 (estimate)					2025 (estimate)				
	x_1	x_2	x_4	x_5	y	x_1	x_2	x_4	x_5	y
Moscow	0.995	1.000	0.910	0.997	0.945	0.997	1.000	0.915	0.998	0.946
Saint Petersburg	0.905	0.810	0.905	1.000	0.905	0.910	0.820	0.910	1.000	0.908
Magadan Region	1.000	0.800	0.980	0.900	0.912	1.000	0.810	0.985	0.910	0.914
Sakhalin Region	1.000	0.625	0.890	0.935	0.827	1.000	0.635	0.910	0.940	0.834
Chukotka Autonomous Area	0.985	0.870	1.000	0.925	0.885	0.990	0.880	1.000	0.930	0.887

Source: own elaboration.

Figure 2. Social well-being index of the population of the top regions in the rating



Source: own elaboration.

Based on the data in Figure 2, there is a high density of final results in 2020–2022 between the 2nd–4th leading regions of the rating according to the social well-being index. And it is expected to remain throughout the entire forecasting horizon. It is necessary to note a fairly large gap between the 5th and 4th places in the index rating.

Thus, the index method in combination with artificial intelligence ensures high accuracy of assessment of the social well-being index of the population of RF constituent entities. The results

obtained in the course of the empirical study can be interpreted within the framework of the so-called ordinalist “increase – decrease” paradigm: (Fleming, 1952).

Currently, as a rule, authorized agencies make forecasts of socio-economic indicators at the meso-level using a scenario approach implemented by experts and therefore characterized by a high degree of subjectivity. The developed tools will improve the accuracy of the prospective assessment of the phenomenon in question.

Discussion of the results

Modern Russia, as noted in the works (Lapin et al., 2020; Chernysh, 2021; Pugachev, 2023), has a high (or even excessive) level of monetary inequality of the population compared with a number of countries around the world. An identical conclusion can be drawn independently if we analyze the change in the dynamics of the value of the Gini coefficient for per capita money income for Russia when compared with other countries.

We should note that in modern Russia (2000 – present), the “peak” in the Gini coefficient for money income (about 0.42–0.422 in 2007–2010 and 2012) has been passed. In 2022, the value of the indicator repeated the historical minimum recorded in 2000 (0.395). In addition, the situation in the context of regions differs significantly from the Russian average. Some of them have a significantly higher level of monetary inequality. So, in particular, the value of the Gini coefficient for money income in 2022 in Moscow was 0.412, in the Nenets Autonomous Area – 0.419, in the Tyumen Region – 0.426, in the Yamal-Nenets Autonomous Area – 0.44, in the Chukotka Autonomous Area – 0.41. At the other pole there are regions with monetary inequality significantly below the national average: the Kostroma Region, the Republic of Khakassia – 0.320, the Republic of Kalmykia – 0.313, the Republic of Ingushetia – 0.311, the Jewish Autonomous Region – 0.310. The coefficient of interregional differentiation (the ratio of the highest value of the indicator to the lowest) is 1.4 times.

In 2022, the highest purchasing power of the population by per capita money income was recorded in the Yamal-Nenets Autonomous Area (6.1 SM (subsistence minimums) reg.), Moscow (4.8 SM reg.), Saint Petersburg (4.6 SM reg.), the Nenets Autonomous Area (4.3 SM reg.), and the Sakhalin Region (4.0 SM reg.). At the opposite pole were the Jewish Autonomous Region (1.9 SM reg.), the Republic of Kalmykia (1.89 SM reg.),

the Karachay-Cherkess Republic (1.8 SM reg.), the Republic of Ingushetia (1.7 SM reg.) and the Republic of Tyva (1.6 SM reg.). The coefficient of interregional differentiation of the purchasing power of the population (the ratio of the highest to the lowest values of the indicator) is 3.8 (Bobkov, Gulyugina, 2023, pp. 114, 137–139).

The coefficient of interregional differentiation of the social well-being index in 2022 amounted to 3.65 times, which is 0.96 of the value of a similar index of purchasing power of the population, i.e. they have close values. There are also points of intersection in the distribution of RF constituent entities at different poles of the rating. For example, in the group of leading regions for the two above-mentioned indicators are Moscow, Saint Petersburg and the Sakhalin Region, and in the group of outsider regions – the Karachay-Cherkess Republic and the Republic of Tyva.

We should note that the close coefficients of interregional differentiation according to the social well-being index and the purchasing power of the population are significantly higher than the similar coefficient measuring the interregional differentiation of the distribution of living standards resources (in our case, the Gini coefficient for money income), by about 2.6–2.7 times.

At the same time, the results of measuring interregional differentiation by the social well-being index partially do not coincide with the results of its measurement by the purchasing power of the population by per capita money income. As of 2022, the lists of leaders and outsiders in the social well-being index did not completely coincide: according to the first index, the upper group, besides three matching constituent entities, included the Yamal-Nenets Autonomous Area and the Nenets Autonomous Area; the lower group, besides three matching constituent entities, included the Jewish Autonomous Region, the Republic of Kalmykia and the Republic of Ingushetia; according to the

second index, respectively, the Magadan Region, the Chukotka Autonomous Area, and the Altai Republic, the Chechen Republic, as well as the Kurgan Region.

This is due to the fact that the social well-being index takes into account a greater number of factors determining its value, despite the fact that the purchasing power of the population in terms of the average monthly accrued wages of employees of organizations is decisive in it.

For a more detailed analysis of the results of the study, including their predictive assessment, i.e. determining which factor indicators have led / may lead to an improvement or deterioration in the social well-being index, it is necessary to decompose the factors embedded in the model for determining this index, or use a parallel forecast of the purchasing power of the population, which is the factor indicator most strongly influencing the dynamics of the social well-being index.

Conclusion

Taking into account the vastness of Russia, diversity of its living conditions and a large number of regions, the study focused on exploring the possibilities for more accurately determining the social well-being of the population to improve the effectiveness of social policy at the meso-level of management and the use of the social well-being index to assess the interregional differentiation of living standards. Currently, the effectiveness of the activities of executive authorities in RF constituent entities is assessed on a regular basis (annually). In terms of living standards, it is based on taking into account changes in the dynamics of growth rates of real money incomes of the population and real average monthly wages. In interregional comparisons of living standards, they, in terms of official estimates, do not take into account regional differences in the purchasing power of the population and a number of other factors that shape the standard of living, in connection with

which, as part of our study, an attempt was made to eliminate this disadvantage and propose our own approach consisting in determining the social well-being index using artificial intelligence, which more accurately measures the dynamics of the standard of living and can be used to assess its interregional differentiation.

Empirically, it has been proved that the index method in combination with artificial intelligence makes it possible to approximate regional statistics data with a higher degree of accuracy. Thus, for each of the three developed traditional econometric models the mean approximation error was about 9–10%, while any of the five artificial neural networks included in the Bayesian ensemble allowed approximating the initial data with a mean error of 3–4%. Therefore, the medium-term forecast of the social well-being of the population of RF constituent entities on the example of the leading regions of the rating was formed using the index method and artificial intelligence.

Thus, the results obtained in the framework of the study can:

- be a scientific basis for making effective management decisions by the leadership of Russian regions to improve living standards;
- be used by federal authorities to assess the interregional differentiation of living standards according to the social well-being index;
- orient the state social policy toward raising the social well-being index in Russian regions and equalizing its regional values.

We do not exclude the possibility of using all the methods discussed above to assess social dynamics in the regions of the Russian Federation and measure interregional differentiation: resource provision of living standards (Gini index by per capita money income); purchasing power of the population by per capita money income and the social well-being index. Comparing these indicators will make it possible to identify specific and

multidirectional processes that affect the formation of the standard of living, and to make “balanced” management decisions. Accordingly, it would be useful to conduct interregional comparisons for all three indicators considered: the Gini index by income, the purchasing power of the population by per capita money income and the social well-being index.

References

- Bobkov V.N., Gulyugina A.A. (2023). *Monitoring dokhodov i urovnya zhizni naseleniya Rossii – 2022 god. Vypusk 1 (202)* [Monitoring of Incomes and Living Standards of Russia’s Population – 2022. Issue 1 (202)]. Moscow: IE RAN.
- Bobkov V.N., Odintsova E.V. (2020). Social inequality in Russia. *Zhurnal Novoi ekonomicheskoi assotsiatsii=Journal of the New Economic Association*, 3, 179–184. DOI: 10.31737/2221-2264-2020-47-3-8 (in Russian).
- Breiman L. (2001). Random Forests. *Machine Learning*, 45(1), 5–32. DOI: 10.1023/A:1010933404324
- Chernysh M.F. (2021). The institutional foundations of inequality in modern society. *Mir Rossii=Universe of Russia*, 3, 6–28. DOI: 10.17323/1811-038X-2021-30-3-6-28 (in Russian).
- Dorofeev M.L. (2021). The current problem of the US government debt in the context of socioeconomic inequality regulation. *Vestnik Tomskogo gosudarstvennogo universiteta. Ekonomika*, 54, 273–286. DOI: 10.17223/19988648/54/16 (in Russian).
- Fleming M. (1952). A cardinal Concept of Welfare. *The American Economic Review*, XLI, 287.
- Ibragimova Z.F., Frants M.V. (2020). Inequality of opportunity: Theory and practice of measurement using RLMS-HSE microdata. *Ekonomicheskaya politika=Economic Policy*, 1, 64–89. DOI: 10.18288/1994-5124-2020-1-64-89 (in Russian).
- Jin N., Yang F., Mo Yu. et al. (2022). Highly accurate energy consumption forecasting model based on parallel LSTM neural networks. *Advanced Engineering Informatics*, 51, 101442. DOI: 10.1016/j.aei.2021.101442
- Lapin N.I., Ilyin V.A., Morev M.V. (2020). Extreme inequalities and the social state (part 1). *Sotsiologicheskie issledovaniya*, 1, 4–17. DOI:10.31857/S013216250008378-8 (in Russian).
- Leonidova G.V., Basova E.A., Rassadina M.N. (2022). Cluster analysis of income inequality of the Russian population. *Problemy razvitiya territorii=Problems of Territory’s Development*, 6, 94–114. DOI: 10.15838/ptd.2022.6.122.6 (in Russian).
- Merzlyakov A.A., Bogdanov V.S. (2022). On the study of sociological and managerial aspects of the regulation of social inequalities in the regions of Russia. *Vestnik instituta sotziologii*, 4, 130–143. DOI: 10.19181/vis.2022.13.4.853 (in Russian).
- Pugachev A.A. (2023). Economic inequality of citizens beyond averages: Assessment in the conditions of its transformation. *Ekonomicheskie i sotsial’nye peremeny: fakty, tendentsii, prognoz=Economic and Social Changes: Facts, Trends, Forecast*, 16(3), 141–158. DOI: 10.15838/esc.2023.3.87.7 (in Russian).
- Qiu J., Wang B., Zhou C. (2019). Forecasting stock prices with long-short term memory neural network based on attention mechanism. *PLoS ONE*, 2.15(1): e0227222. DOI: <https://doi.org/10.1371/journal.pone.0227222>
- Shatalova O.M., Kasatkina E.V. (2022). Socio-economic inequality of regions in the Russian Federation: Measurement issues and long-term evaluation. *Ekonomicheskie i sotsial’nye peremeny: fakty, tendentsii, prognoz=Economic and Social Changes: Facts, Trends, Forecast*, 15(4), 74–87. DOI: 10.15838/esc.2022.4.82.5 (in Russian).
- Shetty P., Singh S. (2021). Hierarchical clustering: A survey. *International Journal of Applied Research*, 7(40), 178–181. DOI: 10.22271/allresearch.2021.v7.i4c.8484
- Simionesku M., Krivokora E., Fursov V., Astakhova E. (2020). Labor capacity building in Russian regions: Effects of regional differentiation. *Terra Economicus*, 2, 117–138. DOI: 10.18522/2073-6606-2020-18-2-117-138 (in Russian).

- Spiridonov A.Yu., Naidenova A.A. (2024). Quality of life: Approaches to definition, data collection system and assessment techniques. *Ekonomika truda*, 8, 1159–1180. DOI: 10.18334/et.11.8.121438 (in Russian).
- Surinov A.E., Luppov A.B. (2022). Income inequality and the cost of living at the sub-regional level. Estimates for Russia. *Ekonomicheskii zhurnal VShE*, 4, 552–578. DOI: 10.17323/1813-8691-2022-26-4-552-578 (in Russian).
- Zarova E.V., Dubravskaya E.I. (2020). The Random Forest Method in research of impact of macroeconomic indicators of regional development on informal employment rate. *Voprosy statistiki*, 6, 37–55. DOI: 10.34023/2313-6383-2020-27-6-37-55 (in Russian).
- Zhang Q., Abdullah A.R., Chong C.W., Ali M.H.A. (2022). Study on regional GDP forecasting analysis based on Radial Basis Function Neural Network with Genetic Algorithm (RBFNN-GA) for Shandong economy. *Computational Intelligence and Neuroscience*, 12. DOI: 10.1155/2022/823530
- Zhitin D.V., Prokofev A.D. (2022). Ethno-territorial features of social inequality in the USA. *Vestnik Sankt-Peterburgskogo universiteta. Nauki o zemle*, 2, 333–359. DOI: 10.21638/spbu07.2022.207 (in Russian).

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Small and Medium-Sized Single-Industry Towns of the European North of Russia in the Context of Socio-Economic Challenges of 2020–2023



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Abstract. The Russian economy has faced a number of large-scale geopolitical and socio-economic challenges in recent years. At the same time, the territories with single-industry specialization were the most negatively affected, since their town-forming enterprises are highly dependent on external environmental factors. The list of single-industry towns in Russia was formed ten years ago; during this time there have been many global changes, but the authorities are still guided by this document when developing measures of state support. The work had two objectives: first, to assess the degree of their current monopile on the basis of analyzing the activities of the main economic entities in single-industry towns; and second, to identify how the new geopolitical and socio-economic challenges have affected the activities of town-forming enterprises. The research object was 20 small and medium-sized towns of the European North of Russia, categorized as single-industry towns. We identified three groups of towns: 1) single-industry towns with one or several large enterprises in one industry sector (i.e., towns that have retained their monopile); 2) single-industry towns that currently have several large or medium-sized enterprises in different economic sectors; 3) former single-industry towns with one or several town-forming enterprises that are currently liquidated. Based on the analysis of the financial performance of enterprises operating in small and medium-sized towns, we found that sanctions and the disruption of production chains with Western countries led to a marked decline in the profits of most of these organizations. The enterprises of the timber industry complex were particularly hard hit, as their

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activities were more export-oriented. The scientific novelty of the research lies in the development and approbation our own methodological approach to the implementation of the typology of towns classified as single-industry municipalities, based on the analysis of enterprises functioning in them.

Key words: monotown, monoprofile municipality, town-forming enterprise, small and medium-sized cities, European North of Russia.

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Introduction

In recent years, the Russian Federation has faced the most extensive sanctions pressure in its history from the countries of the collective West. Since the start of the Special Military Operation (SMO) in February 2022, over 18,000 sanctions have been imposed on Russia, which is 3.5 times more than Iran has received in 40 years¹. Changing geopolitical situation has led to a number of negative economic effects: termination of international trade with many Western countries, withdrawal of foreign companies from the market, investment restrictions, etc. (Pechenskaya-Polischuk, Malyshev, 2023). One of the current serious problems is the breakdown of the production and logistics chains that have developed over the previous few decades, including those associated with the economic turn “to the East”. The sanctions restrictions imposed by unfriendly countries have noticeably affected the economy of towns with single-industry specialization. For instance, only in the first half of 2022, direct sectoral and/or personal sanctions imposed by unfriendly countries affected more than 130 town-forming enterprises located in Russian single-industry towns² according to the Center for Strategic Research. The organizations were

banned from exporting manufactured products and importing equipment necessary for current operations and modernizing production.

It is not the first time that single-industry towns have faced serious challenges in the Russian history of the post-Soviet period. The economic reforms of the 1990s led to the destruction of previously established economic ties and the closure of many town-forming enterprises. The economic crisis of 2008–2009 also had a negative impact on the socio-economic development of single-industry towns.

Russian government authorities have repeatedly attempted to develop and implement measures to support single-industry municipalities. At present, the list of single-industry towns in the Russian Federation³ officially includes 321 municipalities, 97 of which (30%) are characterized by the most difficult socio-economic situation, 148 (46%) have risks of its deterioration, and only the remaining 76 have a stable socio-economic situation. The list of single-industry towns was compiled and approved in 2014, i.e. 10 years ago, during this period much has changed, the Russian economy has faced at least two new and very serious challenges: the coronavirus pandemic in 2020 and unprecedented sanctions pressure from unfriendly countries in 2022. It is

¹ Castellum.AI. Available at: <https://www.castellum.ai/russia-sanctions-dashboard> (accessed: July 3, 2024).

² 2022 risks: City-forming organizations and single-industry towns. Center for Strategic Research of the Russian Federation. Available at: <https://www.csr.ru/upload/iblock/14c/k88t2bqevutbs7f8b13v06tho0s37jg.pdf>

³ Approved by the RF Government Decree 1398-r, dated July 29, 2014 “On Approval of the List of Single-industry Municipal Entities of the Russian Federation (single-industry towns)”.

worth saying that experts of the Accounts Chamber of the Russian Federation have repeatedly noted the fact that the approved list of single-industry towns is not relevant⁴.

The study concerning the problems of single-industry towns development is still one of the topical areas of scientific research in modern literature. The key risks of development of these settlements have long been known and well-studied. First of all, they include increased vulnerability to cycles of economic growth and decline, lack of alternative employment opportunities, difficulties in attracting and retaining skilled labor, transport remoteness, underdeveloped social and domestic infrastructure (Storey, Hall, 2018). At the same time, the scientists focus attention on either large single-industry towns or single-industry municipalities of one region or macro-region, for example, the Urals, the Far East, and the Arctic zone of the Russian Federation (Bezverbny et al., 2020, Korchak, 2023; Kotov, 2017; Oborin, 2022; Pyzheva, Zander, 2019; Fomin et al., 2020; Fomin et al., 2022). Single-industry economy is a huge risk for the sustainable socio-economic development of any town; however, at present, tertiary (service sector) and quaternary (knowledge economy) economic sectors are usually quite well developed in large cities, which, unfortunately, cannot be said about the vast majority of small and medium-sized Russian towns. The economy of many of them is still based on a single sectoral specialization, and the sphere of social and domestic services is poorly developed, which is one of the reasons for the migration outflow. In our opinion, the problems of the development of single-industry small and medium-sized towns have been insufficiently studied at present.

The aim of our research is, first, to assess the degree of current single-industry within the

⁴ Report on the results of the expert analytical activity “Monitoring and assessment of the implementation of the priority program “Integrated development of single-industry towns” approved by the Board of the Accounts Chamber of the Russian Federation on March 26, 2019.

framework of analyzing the activities of the main economic entities of single-industry towns, and second, to identify how the new geopolitical and socio-economic challenges have affected the activities of town-forming enterprises. We solved the following tasks to achieve the aim: 1) we established the base of enterprises functioning in small and medium-sized towns of the European North of Russia, officially categorized as single-industry towns, on the basis of which we identified the types of towns; 2) we analyzed and assessed the results of enterprises’ financial performance during the Covid-19 pandemic (2020–2021) and after the beginning of the SMO (2022–2023); 3) we proposed some directions for the further development of small and medium-sized towns that help to level out the risks arising in the new conditions.

The scientific novelty of the study consists in the development and testing of our methodological approach to implement the typology of towns categorized as single-industry municipalities, based on the analysis of enterprises functioning in them. The elements of novelty are also contained in the analysis of enterprises’ activities that form the towns’ economic basis, namely, in the assessment of their sustainability at the micro level in a changing environment.

Theoretical backgrounds of the research

Modern scientific literature has no common universally recognized definition of a single-industry town. In many respects, the interpretation of this term is determined by the classification characteristics, according to which researchers refer a town to the category of single-industry ones (Dulesov, Bekhterev, 2015). At the same time, foreign works focus on the sectoral specialization of the town. For instance, the most common terms are “mining town” or a town specializing in mining (Leadbeater, 2004; Marais et al., 2020; Zhao et al., 2021), “coal town” – a coal mining town (Syafri et al., 2022; Winkler, 2021), “railroad town” – a town that is a major railway hub (Seyrek, Polat,

2024). However, the term “single industry town” (Storey, Hall, 2018) or “one-company towns” (Commander, 2018) is also quite common.

Russian literature, as a rule, has no specific sectoral reference, and such synonymous terms as “monoprofile”, “single-industry”, “mono-functional”, “single-industry town” are most often encountered. At the same time, researchers interpret these concepts in different ways, and the study of the diversity of existing approaches is even the subject of separate scientific articles (Malashenko, Mekush, 2020; Shneiderman, Sharov, 2022).

No less relevant issue is the typology of single-industry towns. Undoubtedly, single-industry towns as a special type of settlements emerged quite a long time ago. One of the Russian scientific monographs (Lyubovnyi, 2018) details the reasons for the emergence of these settlements in Russia in different historical eras. At the same time, the author pays special attention to the analysis of the functions that single-industry towns performed in the spatial and socio-economic development of territories, and based on this, systematizes their main types.

The article (Pyatsheva, 2019) presents the classification of towns according to a number of criteria: population size (large, medium, small towns); degree of remoteness from major centers (remote, nearby); stage of the town life cycle (phases of creation, stable development, fading); vector of socio-economic dynamics (dying, shrinking, with stable development prospects, with the potential for new strategic development). The approach presented in the work (Dulesov, Bekhterev, 2015), where the classification of single-industry towns based on the nature and period of the life cycle of the town and its ability to maintain self-sufficiency is quite interesting. The typologies of single-industry towns proposed in the above-mentioned articles are certainly interesting, but they practically do not take into account the characteristics of town-forming enterprises, which largely determine the essence of a single-industry town.

The monograph (Uskova et al., 2012), on the contrary, pays special attention to this aspect. The authors divide all single-industry towns into three categories: cities with one town-forming enterprise, towns with several town-forming enterprises and towns that are satellites of large multifunctional cities. Also worthy of attention is the typology of single-industry towns depending on the specifics of town-forming enterprises: production (industrial and infrastructure (electric power industry)) and non-production (research and development and infrastructure (transport hubs)) enterprises.

Foreign studies also consider the issues of urban classification. In particular, based on the analysis of 15 economic indicators, the work (Bole et al., 2019) carried out the typologization on the example of industrial towns in Slovenia, which was a socialist state in the past. In total, the authors identified 5 types of towns depending on the level of development of their economy: “neo-liberal”, “polar-ised”, “dynamic low-tech”, “post-socialist champions”, and “mixed”.

In Russia, the research interest in the study of towns with single-industry economies is largely due to the problems they faced during the transition to the market. At the same time, foreign scientific literature has already accumulated some experience on the issues of crisis recovery of former “coal” (Haggerty et al., 2018; Dragan, Zdyrko, 2023) or “metallurgical” (Hobor, 2013; Ghosh, 2019) single-industry towns, which is applicable to resource towns in Russia. However, in capitalist countries the problems of development of single-industry settlements to a greater extent were caused only by changes in the sectoral structure of the economy, arising, among other things, as a result of changing technological patterns, whereas in Russia the early 1990s were marked, in addition to serious crisis processes in the economy, by a complete change in the institutional framework of state governance (Odintsova et al., 2020).

The researchers of the Institute of Socio-Political Research of RAS (Fomin et al., 2020) distinguishes two main stages in the scientific works of the post-Soviet period on the problems of single-industry towns' development. The first is associated with the study of the impact of market reforms of the 1990s on the socio-economic development of single-industry towns (Animitsa, Novikova, 2009; Turgel, 2005), and the second one – with the consequences of the 2008–2009 economic crisis (Uskova et al., 2012; Rastvortseva, Manaeva, 2013). At present, there is another milestone in the history of research on this topic – the analysis of problems and prospects for the development of single-industry towns in the context of the emergence of epidemiological risks, the aggravated geopolitical situation and growing sanctions pressure from the countries of the Collective West unfriendly to Russia (Pitukhina, Belykh, 2023; Kurinaya et al., 2023).

In this context, one of the most important research tasks not only from the scientific, but also from the practical point of view is to work out directions and tools for the development of single-industry towns, to search for ways to reduce the newly emerging risks of sustainability of the functioning of town-forming enterprises. A large number of works by modern authors are devoted to solving these problems (Artemova, Zhegov, 2021; Kutergina, Lapin, 2015; Odintsova et al., 2020; Sedova et al., 2020), while analyzing the existing Russian experience in the implementation of socio-economic policy measures in relation to single-industry towns, most researchers note their non-systematic nature and low efficiency.

The Comprehensive Development of Single-Industry Towns program approved in 2016 was also found ineffective by the Audit Chamber of the Russian Federation and ended ahead of schedule in 2019, i.e. seven years earlier. Measures to support single-industry territories have not yielded tangible positive results. Among the key shortcomings, the

experts noted the lack of systematization in the provision of state support measures aimed at the development of single-industry towns, ignoring the specifics of municipalities and their real socio-economic situation. In addition, the program was not aimed at ensuring the consistency of sectoral and territorial development of the country, improving the national settlement system and the system of distribution of productive forces, which is one of the most important directions of the National Security Strategy of the Russian Federation.

Materials and research methods

In our study, we focus on the problems of economic development of small and medium-sized single-industry towns in the European North of Russia (hereinafter – ENR). One of the features of this macro-region is a rather high level of urbanization. The overwhelming majority of the ENR towns belong to the category of small and medium-sized ones – 61 out of 68, while one third of them (20 units) are included in the list of single-industry municipalities of the Russian Federation (single-industry towns), approved by the RF Government Decree 1398-r, dated July 29, 2014.

The high level of single-industry towns can be explained by the features of the development of the northern regions in the Soviet era. The economic development of the Soviet Union was based on the ideology of “a man at work” and, accordingly, “a town at the factory”, which caused the emergence of single-industry small and medium-sized towns in Russia's north characteristic of that historical period.

We used such research methods as induction, deduction, synthesis, comparative and demographic analysis, tabular and graphical data visualization, analysis of regulatory and legal documents during our research.

As the information base, we used the data of the List-org counterparty verification service (<https://www.list-org.com>), SPARK resource (<https://spark-interfax.ru/>), official websites of the organizations

under consideration, statistical information of the Federal State Statistics Service and its regional divisions, strategic planning documents for the development of the municipalities under consideration, information from monographs and periodicals.

The general algorithm of the study is as follows:

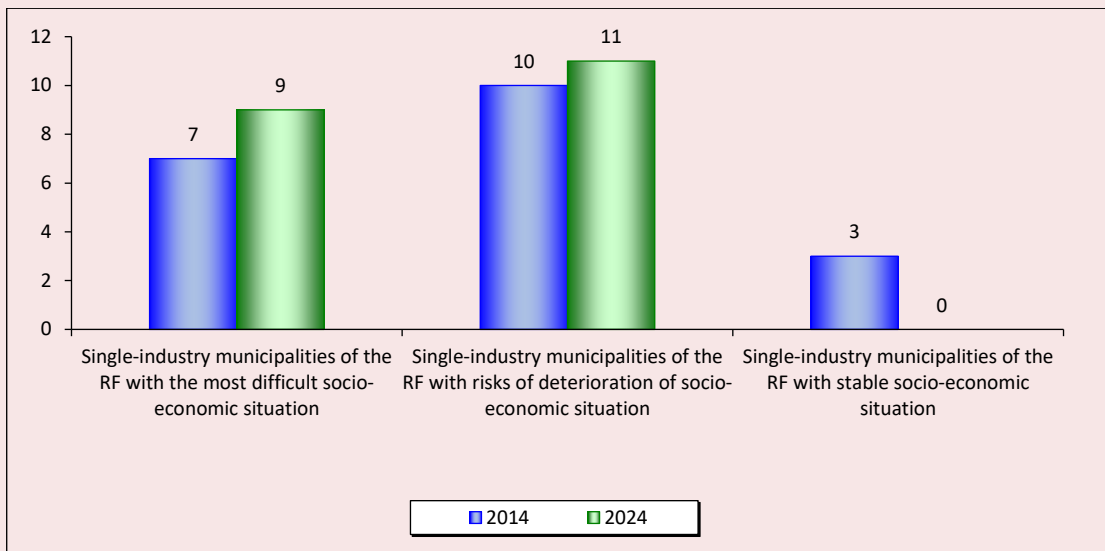
- we assessed the number of enterprises and organizations currently operating on the territory of single-industry towns, and revealed their production specialization;
- we carried out typologization of small and medium-sized cities depending on the characteristics of the enterprises functioning in them;
- we analyzed the financial performance of companies during the Covid-19 pandemic in 2020–2021 and after the start of the SMO and the imposition of anti-Russian sanctions in 2022–2023;
- we proposed number of directions for further development of single-industry towns.

The study focuses on two key points: first, it is necessary to assess the extent to which the economy of small and medium-sized towns classified as single-industry towns is monoprofile at present, and second, to see how the qualitatively new socio-economic and geopolitical challenges of recent years have affected the financial performance of enterprises operating in these towns.

Main research results

Currently, there are 33 municipalities with single-industry economy in the European North of Russia, twenty of which are small and medium-sized towns. It is worth noting that while in 2014 the socio-economic situation in three single-industry towns was assessed as stable, by 2024 there are no towns in this group; however, the number of towns with a difficult socio-economic situation has increased (by 2 units; *Figure*) and the risks of its deterioration (by 1 unit).

Number of small and medium-sized towns with single-industry economy in the European North of Russia in 2014 and 2024



Source: On Approval of the List of Single-Industry Municipalities of the Russian Federation (single-industry towns): RF Government Decree 1398-r in the original and current edition (dated January 21, 2020), dated July 29, 2014.

Table 1. Population of small and medium-sized single-industry towns in 2012–2023, people

Municipality	RF constituent entities	2012	2023	Growth rate, 2023 / 2012, %
Single-industry municipalities of the RF with the most difficult socio-economic situation				
UO Kirovsk with subordinate territory	Murmansk Region	30,552	26,253	85.9
US Onega	Arkhangelsk Region	21,017	16,449	78.3
Kondopozhskoe US	Republic of Karelia	33,051	25,848	78.2
US Emva	Komi Republic	14,179	10,883	76.8
US Krasavino	Vologda Region	7,238	5,460	75.4
UO Kovdorsky district	Murmansk Region	20,714	15,423	74.5
Pudozhskoe US	Republic of Karelia	10,850	8,068	74.4
Suojarvkoe US	Republic of Karelia	9,531	6,819	71.5
Pitkyarantskoe US	Republic of Karelia	11,562	8,407	72.7
Single-industry municipalities of the RF with risks of deterioration of socio-economic situation				
UO Olenegorsk	Murmansk Region	29,783	27,974	93.9
UO Kostomuksha	Republic of Karelia	29,044	26,531	91.3
US Zapolyarny	Murmansk Region	15,717	14,231	90.5
US Sokol	Vologda Region	38,062	34,298	90.1
UO Monchegorsk	Murmansk Region	47,664	41,729	87.5
UO Koryazhma	Arkhangelsk Region	39,117	34,002	86.9
UO Novodvinsk	Arkhangelsk Region	40,288	32,826	81.5
Lakhdenpokhskoe US	Republic of Karelia	7,716	5,855	75.9
Segezhscoe US	Republic of Karelia	29,066	23,074	79.4
UO Vorkuta	Komi Republic	91,400	67,702	74.1
UO Inta	Komi Republic	33,540	21,092	62.9

Source: own compilation based on Rosstat data.

Territorially, most of the small and medium-sized single-industry towns are located in the Republic of Karelia (7 units) and the Murmansk Region (5 units). In the Komi Republic and the Arkhangelsk Region, there are three towns each, the Vologda Region has only two. All the considered municipalities experienced a decline in population in the period from 2012 to 2023, with the highest rates of population decline characterized mainly by towns with a difficult socio-economic situation (Tab. 1).

Inta and Vorkuta belong to single-industry municipalities with risks of deterioration of their situation. Their rate of population loss is very high over the period under consideration, while we cannot ignore the fact that the situation with the migration outflow has generally stabilized, and now the problem is more likely to be a natural decline. For example, almost 4 thousand people left Vorkuta

in 2012, while in 2022, it was only 204 people; the natural decline amounted to 218 people.

The presented municipalities differ not only by population size, but also by economic specialization. The economic basis of single-industry towns in the Murmansk Region is predominantly industrial production of mineral raw materials (Kirovsk) and iron ores (Kovdor, Olenegorsk), non-ferrous metallurgy (Monchegorsk, Zapolyarny). Many towns of Karelia and the Arkhangelsk Region have developed pulp and paper industry (Kondopoga, Segezha, Koryazhma, Novodvinsk). At the same time, a single enterprise or several enterprises can operate in the same industry.

We should say that the majority of town-forming enterprises are part of large holdings, which are characterized by a complex internal structure. At the same time, a number of single-industry towns under consideration have organizations that

Table 2. Typology of small and medium-sized towns categorized as single-industry municipalities

Types of small and medium-sized towns of the ENR categorized as single-industry towns		
Towns with one or more town-forming enterprises operating in one industrial sector	Towns with several large and/or medium-sized organizations in different economic sectors	Towns with liquidated town-forming enterprises
Kondopozhskoe US, UO Kovdorsky district, UO Monchegorsk, US Zapolyarny, UO Olenegorsk, Segezhsky US, US Onega, UO Novodvinsk	UO Kostomuksha, UO Kirovsk, UO Koryazhma, US Sokol, Pitkyarantskoe US, US Evma	Pudozhskoe US, UO Inta, US Krasavino, Suojarvkoe US, Lakhdenpokhskoe US
Source: own compilation.		

independently conduct economic activities and are not part of vertically integrated companies, which in the new geopolitical and socio-economic conditions also carries certain risks.

In the territory of the European North of Russia, there are towns in which town-forming enterprises have not functioned for a long time, so the impact of sanctions on them will not be so tangible, and the emergence of unoccupied market niches in the economy after the departure of Western companies can be seen as an opportunity to get out of the crisis.

In our opinion, based on the analysis of organizations operating in municipalities, we can conditionally distinguish three groups of towns: 1) *single-industry towns with one or several large enterprises in one industry sector* (i.e., towns that have retained their single-industry specifics); 2) *single-industry towns that currently have several large or medium-sized enterprises in different economic sectors*; 3) *former single-industry towns with one or several town-forming enterprises that have been liquidated* (Tab. 2).

At the same time, the towns themselves within these groups also have significant differences, which are important to take into account when developing directions for further socio-economic development.

The first category includes towns with enterprises of the same industrial specialization (Tab. 3). At the same time, the vast majority of them are part of Russia's largest vertically integrated companies, whose activities are mainly related to mining,

timber industry, and non-ferrous metallurgy. On the one hand, in an unstable economic situation, being part of a holding or group of companies gives an organization a number of advantages, for example, existing production chains between counterparties are preserved in a changing environment. On the other hand, there is a high risk of the entire vertically integrated company being included in the sanctions lists of unfriendly countries. The results of our analysis have shown that forestry enterprises are in a particularly difficult situation. For example, in Kondopoga, three enterprises are part of LLC Karjala Pulp, collectively employing more than 4 thousand people, or almost 16% of the residents of the urban settlement. The main enterprise JSC Kondopoga Pulp-and-Paper Mill is one of the largest producers of newsprint, but its products were previously mainly exported. This factor has a significant impact on the sustainability of the entire group of enterprises. In 2022, with the beginning of the SMO and the growth of sanctions pressure, OOO Karellestrans and AO Kondopoga Forestry became unprofitable; and in 2023, the aggregate financial result of Kondopoga Pulp-and-Paper Mill also decreased significantly (by 92.6%).

Another major representative of the timber industry in the town is the vertically integrated timber holding company JSC Segezha Group, whose companies are located in several cities of the European North of Russia. For instance, in Segezha Urban Settlement, all pulp and paper industry enterprises are part of it. While the consequences of the coronavirus pandemic in 2020 affected the

Table 3. Small and medium-sized towns of the ESR with town-forming enterprises operating in the same industrial sector

Municipality	Holding, VIC, group of companies	Enterprise	Main sector of specialization	Number of personnel, people/ % of population	Total financial result, thousand rubles				
					2019	2020	2021	2022	2023
Kondopozhskoe US	LLC Kaljara Pulp	JSC Kondopoga Pulp-and-Paper Mill	Paper and cardboard production	3,251/12.6	9,877	-518,071	1,544,130	1,672,040	123,166
		OOO Karellestans	Road freight transport activities and transportation services	707/2.7	1,231	-6,362	75,606	-80,121	-168,150
		AO Kondopoga Forestry	Logging	132/0.5	215	-32,677	73,229	-75,533	-82,279
UO Kovdorsky district	EuroChem Group AG	Kovdorsky GOK	Open pit iron ore mining	5,748/37.3	1,165,970	12,228,000	34,455,000	26,112,800	No data
		OOO SP Kovdorsky	Activities of health resort organizations	346/2.2	5,091	25,531	94,353	28,166	60,045
US Zapolyarny	PJSC MMC Norilsk Nickel [»]	Subdivision of AO Kolskaya GMK*	Production of other non-ferrous metals	16,795/23.2***	-9,868,540	104,798,000	189,507,000	No data	No data
		Subdivision of AO Kolskaya GMK**	Production of other non-ferrous metals						
UO Monchegorsk	PJSC MMC Norilsk Nickel	OOO Pechenegastroi	Construction of residential and non-residential buildings	2,725/6.5	74,825	-219,132	-236,889	-224,116	-107,022
		PAO Severstal	Open pit iron ore mining	2,190/7.8	8,840,020	95,714,200	23,221,000	No data	No data
UO Olenegorsk	-	AO Olenegorsk Mechanical Plant	Machining of metal products mechanical	189/0.7	64,669	96,504	90,994	105,727	118,525
		AO Segezhsky TSBK	Production of pulp and wood pulp	2,146/9.3	585,1620	-9,927,320	6,428,930	5,467,810	-7,495,780
		Segezha Packaging	Paper and cardboard production	643/2.8	694,819	940,252	652,483	1,216,580	690,457
US Omega	Segezha Group	AO Segezha Zanad	Production of pulp and wood pulp	97/0.4	No data	No data	283	-360,616	-59,878
		Omega Sawmills	Manufacture of sawn timber	683/4.2	-234,446	407,388	1,489,570	-566,423	-470,958
		JSC Bionet	Production of fuel pellets and briquettes from wood processing waste	146/0.9	-144,143	-1,040,120	-10,848	82,660	-1,040,650
UO Novodvinsk	-	Arkhangel'sk Pulp and Paper Mill	Production of pulp and wood pulp	7,407/22.3	5,773,370	3,391,040	14,021,700	93,875,100	2,126,760
		AO Arkhbum	Production of corrugated paper and cardboard, paper and cardboard containers	1,331/4.1	-2,462,150	-32,014	890,388	994,986	729,354
		CJSC Arkhangel'sk Plywood Plant	Manufacture of plywood, wood veneered panels, etc.	912/2.9	-69,728	148,527	923,330	21,369	-322,495

* Formerly, it was Iron and steel plant "Pecheneganickel".

* Formerly, it was Plant Severnickel.

*** % of the total population of the UO Monchegorsk and Pechenegskoye municipality.

Source: own compilation according to the data of List-org counterparty verification service (<https://www.list-org.com>), SPARK resource (<https://spark-interfax.ru/>).

operations of only the largest enterprise Segezha Pulp and Paper Mill, the events of the last two years had a negative impact on the operations of all enterprises: in 2023 AO Segezha West and AO Segezhsky TSBK were unprofitable, and the profit of Segezha Packaging almost halved.

Onega is also home to the Onega Sawmill and Wood Processing Plant, which is part of the Segezha Group holding company and employs more than 4% of the town's residents; in 2023, it was unprofitable too. The second largest enterprise in terms of employed population (146 people) is the biofuel production plant of JSC Bionet. Its construction began in 2013 on the territory of the former Onega hydrolysis plant, in 2017 the enterprise was fully commissioned. It is important to note that JSC Bionet operates independently and is not part of vertically integrated companies. Initially, it was created as an export-oriented enterprise, the main consumer of its products was European countries. Over the last 5 years, the company's activity was mainly unprofitable, but the greatest financial losses were observed in 2020 and 2023.

Novodvinsk has three large enterprises of the forestry complex: Arkhangelsk Pulp and Paper Mill, AO Arkhbum, Arkhangelsk Plywood Plant. In total, they employ almost 30% of the town population (9,650 people). If in 2022 all the enterprises were profitable, already in 2023 there was a decrease in the financial results of Arkhangelsk Pulp and Paper Mill and AO Arkhbum, and Arkhangelsk Plywood Plant suffers losses.

The town-forming enterprises in the towns of Monchegorsk and Zapolyarny are subdivisions of AO Kolskaya GMK, a subsidiary of PJSC MMC Norilsk Nickel. The company is a mining and metallurgical production facility, engaged in the extraction of copper-nickel sulfide ores, production of non-ferrous metals and is the leading production complex of the entire Murmansk Region. Tentatively, the company employs almost a quarter

of the residents of Monchegorsk and Pechenegsky Municipal District. During the pandemic period, the company functioned quite stably, but it is rather difficult to assess its performance over the previous two years due to the lack of available data on its financial activities.

The situation is similar for AO Olkon, which is part of PAO Severstal. The company is engaged in the extraction of iron ores, and the number of people employed in production exceeds 2,000, or almost 8% of the town's residents, which is relatively small compared to, for example, the Kovdorsky District, where the Kovdorsky Mining and Processing Plant (Euro Chem Group AG) is located, which employs more than 37% of the municipality's residents. Data on the company's financial performance for 2023 are also unavailable, but its total profit in 2022 compared to 2021 decreased by almost a quarter.

All the single-industry towns under consideration also have organizations of other economic sectors, but these are mainly small enterprises in the sphere of trade, housing and utilities services and transport. Their role is important for maintaining the vital activity of the population, but it is obvious that they are unable to ensure the economic development of the town on their own.

The key difference between the second category of single-industry towns identified by us and the first one is that they have both large and medium-sized enterprises operating in different economic sectors. We can say that their economy is more differentiated, even despite the presence of the largest enterprises in the town, which are part of vertically integrated companies; in terms of the number of employed population they can be fully attributed to the town-forming ones. For example, in Kostomuksha, more than 14% of the town's population works at Karelskiy Okatysh, which is part of PAO Severstal (*Tab. 4*).

At the same time, the town has organizations for the production of automotive components (OOO AEK), repair and maintenance of electrical machines and apparatuses (OOO Kostomuksha Electromechanical Enterprise), fish breeding and processing (OOO Kala ya marjapojat), etc. The financial activity of OOO Karelskiy Okatysh is not comparable to similar indicators of medium and small enterprises. The volumes of financial activity of Karelskiy Okatysh are not comparable with similar indicators of medium and small enterprises, nevertheless, the very fact of presence of these organizations contributes to the development of processes of diversification of the town economy.

Due to the lack of data, it is difficult to assess the performance of Karelskiy Okatysh in the previous two years. However, PAO Severstal was one of the first companies to be included in the sanctions lists in 2022, which had a negative impact on its operations. According to the financial statements of the entire company and its subsidiaries, their profits in 2022 compared to 2021 decreased by 63%, from 299.6 billion rubles to 108.4 billion rubles⁵.

Another major enterprise of Kostomuksha, the AEK Auto Component Plant, a part of PKC Group, which is part of the Indian Motherson Group, is in a critical condition. Production activities were suspended due to the sanctions and already at the end of 2022 the company started layoffs, resulting in the dismissal of more than 700 people. The problem was that previously the company worked in the system of Western automobile manufacturing and on imported components, and the main consumers were European countries⁶. The other medium-sized

enterprises of Kostomuksha felt quite stable in the previous two years, there was no critical decrease in the volume of their profits.

In our opinion, the economy of Kirovsk cannot be called fully single-industrial one. The urban district is home to two major enterprises that extract minerals for the chemical industry and produce mineral fertilizers – the Kirovsk branch of Apatit (PhosAgro) and North-Western Phosphorous Company (Acron Group). However, in addition to them, the town has enterprises producing construction materials or chemical products. However, the most important economic sector is the tourism and entertainment sector. For example, one of the largest organizations is OOO Tirvas, which owns a health resort complex of the same name and the Northern Safari Center, which provides tourist services. This company's operations were unprofitable during the pandemic, but in 2023, its total financial result amounted to almost 2 billion rubles, which is only half as much as the performance of North-Western Phosphorous Company, while the number of employees at the latter was 3.5 times higher.

Koryazhma is home to OOO Ilim-TNP, specializing in the production and sale of paper products, which, judging by the analysis of its financial performance, adapted to the changing environment quite quickly and successfully. Kotlassky Chemical Plant also operates in the town, but it is difficult to assess its financial performance due to the lack of data.

The main industry specialization of Sokolsky urban settlement is timber industry. Three enterprises of Segezha Group (Sokol Timber Company, Sokolskiy Pulp and Paper Mill, Sokol CLT), as well as Sukhonsky Cardboard and Paper Mill, part of the Consolidated Paper Mills Company, are located in the town. The analysis of financial results of these enterprises allowed concluding that all of them were unprofitable in 2023. At the same time, the town has a developed

⁵ Disclosed consolidated financial statements for the years ended December 31, 2020, 2021, 2022, 2023. Official website of PAO Severstal. Available at: <https://severstal.com/rus/ir/indicators-reporting/financial-results/>

⁶ The AEK auto component production facility in Karelia came out of downtime. *Vedomosti*. Available at: <https://spb.vedomosti.ru/business/news/2023/12/20/1012022-predpriyatie-po-proizvodstvu-avtokomponentov-ae-k-v-karelii-vishlo-iz-prostoya>

Table 4. Small and medium-sized towns of the ENR with several large and/or medium-sized organizations operating in different economic sectors

Municipality	Holding, VIC, group of companies	Enterprise	Main sector of specialization	Number of personnel, people/ % of population	Total financial result, thousand rubles				
					2019	2020	2021	2022	2023
UO Kostomuksha	PAO Severstal	Karelskiy Okatysh	Open pit iron ore mining	3,730/14.1	39,044800	36,107500	97,239900	No data	No data
	PKC Group	OOO AEK	Manufacture of electrical and electronic equipment for motor vehicles	956/3.6	3,783	-65,778	48,692	-302,644	-268,359
	-	OOO TTS	Maintenance and repair of motor vehicles	207/0.8	22,363	15,289	6,767	91,050	195,019
	-	OOO Kostomuksha Electromechanical Enterprise	Repair of electrical equipment	140/0.5	33,772	16,096	20,904	51,889	73,253
UO Kirovsk	-	Kala ja marjapojat	Freshwater industrial fish farming	131/0.5	301,245	162,516	461,166	507,579	437,298
	PhosAgro	Kirovsk Branch of Apattit	Mining of mineral raw materials for chemical and fertilizer production	No data	39,685200	45,380500	119,307000	No data	No data
	Acron Group	North-Western Phosphorous Company	Mining of mineral raw materials for chemical and fertilizer industries	2,307/8.8	-772,066	-150,774	3,424540	4,339670	4,141800
	-	OOO Tirvas	Other entertainment and entertainment activities	620/2.4	-344,460	-272,873	-134,419	1,050740	1,968740
	-	OOO Gorny Tsek	Construction of residential and non-residential buildings	457/1.7	144,412	466,051	320,012	67,666	-564,071
UO Koryazhma	-	OOO Construction Materials Center	Production of ready-mix concrete	73/0.3	29,427	52,722	12,902	315,43	68,556
	-	OOO Nitro Sibir Zapolyarie	Manufacture of other chemical products not included in other groupings	69/0.3	136,589	157,804	97,690	139,552	285,610
	Ilim Group	ILIM-TNP	Production of corrugated paper and cardboard, paper and cardboard containers	488/1.5	48,456	82,448	130,569	211,919	193,031
-	-	OAO Kotlasky Chemical Plant	Manufacture of other paints, varnishes, enamels and similar coating materials, artistic and printing paints	340/1.0	173,948	185,788	172,440	No data	No data

End of Table 4

Municipality	Holding, VIC, group of companies	Enterprise	Main sector of specialization	Number of personnel, people/ % of population	Total financial result, thousand rubles				
					2019	2020	2021	2022	2023
US Sokol	The Consolidated Paper Mills Company	Sukhonsky Cardboard and Paper Mill LLC	Production of paper from recovered paper pulp	1,238/3.6	666,351	68,854	1,983,960	645,004	-228,372
		Sokol Timber Company	Sawing and planing of wood	959/2.8	294,259	239,375	1,299,800	-392,759	-581,681
	Segezha Group	Sokolkiy Pulp and Paper Mill	Production of pulp, wood pulp, paper and cardboard	559/1.6	120,206	143,814	1,969,511	-37,809	-337,426
		Sokol CLT	Manufacture of wooden building structures and joinery products	1,14/0.3	540	3,220	-140,549	-403,646	-220,349
Pitkyarantское US	-	OOO Sukhonsky Dairy Plant	Production of other dairy products	250/0.7	4,390	-9,168	-51,237	39,080	474,42
	-	SPK Sokolsky Meat Processing Plant	Production of chilled meat	179/0.5	2,083	3,334	-1,756	10,694	8,457
	-	OOO RK-Grant	Production of pulp and wood pulp	861/10.3	1,098,100	972,117	1,384,580	1,232,600	1,803,410
	-	OOO Pitkaranta non-metallic quarry	Mining of decorative and building stone, limestone, gypsum, chalk and slates	281/1.6	-2,236	-4,599	14,836	11,2126	50,388
US Ervva	-	OOO L-Trans	Wholesale trade in raw wood and unprocessed timber	94/1.2	11,806	16,930	32,807	3,746	32,630
	-	OOO Pititny Mir	Production of veneer, plywood, wooden boards and panels	32/3.0	12,160	2,220	160,242	60,573	1,458
	-	Timan Bauxit	Open pit mining of aluminum-containing raw materials	496/4.6	962,567	583,225	656,029	No data	No data

Source: own compilation according to the data of List-org counterparty verification service (<https://www.list-org.com/>), SPARK resource (<https://spark-interfax.ru/>).

food industry, the largest representatives of which are Sukhonsky Dairy Plant and SPK Sokolsky Meat Processing Plant. During the pandemic, both enterprises experienced serious difficulties, but they have been working quite stably in the previous two years.

Timber industry is also the key economic sector in Pitkaranta. The largest enterprise – the pulp mill Pitkyaranta (OOO RK-Grand) functioned quite successfully in 2022–2023, but the company's management was unable to carry out the planned measures to modernize production due to the disruption of supplies of Western equipment due to the imposed sanctions. Pitkyaranta non-metallic quarry, engaged in the production of crushed stone of various fractions, also operates in the town.

Two main enterprises can be distinguished in Emva: Timen Bauxite, specializing in the extraction of aluminum-containing raw materials, and OOO Plitny Mir, engaged in the production of veneer, plywood, wooden boards and panels. It is rather difficult to judge the performance of the first one due to the lack of information on financial activity, while the second enterprise has seen a noticeable decrease in profit in recent years.

The third category of towns includes municipalities where large industrial enterprises used to operate, but they were liquidated. The history of Inta's development is inextricably linked with its town-forming enterprise AO Intaugol. However, the demand for its products was gradually falling, and the enterprise was unprofitable for many years. The provided measures of state support did not help to bring it out of the crisis, and in 2019 the company's management decided to close the mine. Currently, the town has several small and medium-sized enterprises, mainly providing housing and communal services to the population. Unfortunately, there are no large enterprises capable of ensuring sustainable development of the town. A similar situation is observed in Krasavino, where OAO Krasavinsky Flax Factory operated until 2009,

as well as in Pudozh, where OOO Pudozhlesprom operated until 2011.

In this group, the towns of Lahdenpohja and Suojarvi stand out from the rest, as their economy continued developing even after the closure of town-forming enterprises (OOO Lahdenpohja Plywood Mill and OOO Suojarvi Cardboard Factory). We should note that the enterprises in the towns have different industry specialization. The largest organizations by the number of employees in Suojarvi are the wood processing plant OOO Forest Travel and AO Zapkarelles engaged in logging. However, the town also has a small food industry enterprise OOO Mama Karelia, which ranked third in terms of revenue in 2023. Lakhdenpokhya is home to enterprises also mainly engaged in logging, but the fish farm OOO Fishforel operates quite successfully.

In the context of qualitatively new challenges faced by the Russian economy, the issues of assessing the prospects and finding directions for the further development of small and medium-sized towns of the ENR are quite acute, since many of the settlements under consideration are not just town-forming enterprises, but companies whose activities determine the national security of the country, as they work for the needs of the military-industrial complex. Supporting their production activities and helping them find new markets are strategically important.

However, the solution to the problem of the development of Russian single-industry towns requires the implementation of a whole set of measures concerning not only the issues of diversification of their economy, but also the improvement of the institutional framework and strategic management system, as well as the formation of modern transport and social infrastructure. In other words, it is important to implement a comprehensive approach, where, in our opinion, the following can be identified as key areas.

Updating the list of single-industry towns. According to our analysis, only a few municipalities in the list of single-industry towns are currently characterized by a single-industry economy, and in some of them town-forming enterprises have long been liquidated. In this context, one of the most important tasks is to determine the criteria for classifying a settlement as a single-industry town. In this case, in our opinion, it is important to take into account not only the share of the population employed at the town-forming enterprise, but also the key trends in the development of the town as a territorial unit. Currently, three types of single-industry municipalities are distinguished depending on the socio-economic situation in the town. In our opinion, this approach has its place, but it is important to establish a list of indicators by which a town can be attributed to one or another of these groups. No less important in this matter is to take into account the size of the settlement because in a large town, even with a single-industry economy, the service sector is quite developed, which cannot be said about small towns. This makes them more vulnerable to external risks.

Improvement of the system of strategic planning for the development of single-industry towns. The Russian practice already has some experience in the development of comprehensive investment plans (CIPs). However, in many respects, the implementation of this tool was of an exclusively formal nature, i.e. it was essentially aimed only at the development of the document itself to receive state support measures, and not at the elaboration of a meaningful strategy for further development of the town. At the same time, the implementation of the strategic approach is necessary not only at the municipal level. The strategy of socio-economic development of the constituent entity of the Russian Federation should also take into account the risks that may be faced by single-industry municipalities and provide options for their leveling.

Development of transportation and social infrastructure in single-industry towns. Undoubtedly, the stable functioning of the town's economy is the most important strategic task, but the degree of comfort of living in the settlement is also rather essential. In this case, the Soviet experience is quite applicable, when with the construction of production enterprises, social infrastructure facilities (kindergartens, schools, hospitals, houses of culture) for workers and their families were built in parallel. The state surely played a major role then, but in market conditions such an instrument as public-private partnership can be used. In particular, it seems reasonable to develop a system of benefits and preferences for organizations investing in the improvement of the town and the development of its social sphere.

The choice of the model of socio-economic development of the town. It is worth noting that this issue has been repeatedly raised in the scientific literature. For example, in the work (Development of single-industry towns in Russia..., 2013) the key strategic directions of development of single-industry settlements include: 1) high-tech development; 2) enhanced development of economic and social spheres; 3) transition to the rotational method of organizing work at the town-forming enterprise. Other authors (Voronina et al., 2021), based on the study of world experience, distinguish three models of single-industry town development depending on the functioning of the town-forming enterprise: 1) managed contraction; 2) single-industry town stabilization; 3) industrial diversification. In our opinion, these approaches are quite similar and quite applicable to the Russian realities.

At the same time, taking into account the types of towns we have identified, a number of priority areas for their further development can be identified. In the context of a shortage of funding, which is especially important in the current economic

situation in the country, it is important to prioritize to avoid dispersal of budgetary funds.

For instance, for municipalities with one or several large enterprises in one industry sector, in other words, “true” single-industry towns, state support at the federal level is important. At the same time, since most of these towns can be referred to the “raw material” type (mining, timber industry), it is important to understand and be able to predict the degree of demand for the products manufactured in single-industry towns on Russian and foreign markets. Accordingly, support tools should be aimed at preventing possible risks. Moreover, since town-forming enterprises in many towns were established in Soviet times, an important task is to modernize them, including at the expense of budget financing.

Full diversification of the economy of towns of this type, in our opinion, is an extremely difficult task, but it is quite possible to develop related spheres of economy in parallel with the main industry. For example, one of the promising and quite realizable directions, in our opinion, can be the development of industrial tourism. In the Strategy of tourism development in the Russian Federation for the period until 2035⁷, industrial enterprises are designated as points of attraction for domestic and inbound tourists. Many enterprises are becoming more open and nowadays some of them are already quite active in conducting excursions to their production facilities. At the same time, according to the Internet portal Promtourism.ru⁸, the enterprises organize excursions only in the Murmansk and Arkhangelsk regions. At the same time, in the Arkhangelsk Region these are mainly organizations located in the regional center, the site does not provide information on any single-industry town. In the Murmansk Region, on the contrary, many towns conduct excursion activities.

First of all, it is Kirovsk, where other types of tourism are also developed. However, we should say that North-Western Phosphorous Company offers excursions only for schoolchildren and students, while Apatit also offers excursions for business groups and foreign tourists. The Kovdorsky GOK and Olenegorsky GOK are also open for visits by tourist groups.

The industrial tourism development in small and medium-sized single-industry towns of the ENR will have a number of positive effects for related economic sectors. First, tourism infrastructure enterprises will get an impetus to development: hotels, catering organizations, trade and transport. Second, it will contribute to the formation of a positive image of the town, the growth of its recognizability, and in the future, possibly, the creation of its own brand.

At the same time, it is important to realize that currently there are many barriers to the development of industrial tourism in northern single-industry towns (Ivanova, Matyunin, 2022). The issue of transportation accessibility is especially acute. It is not by chance that the tourism sphere is most developed in Kirovsk, where there is an airport. In this context, it is necessary to emphasize the importance of consistency of strategic documents of the federal, regional and municipal levels among themselves. In particular, at present Russia has been implementing the national project “Comprehensive Plan for Modernization and Expansion of Trunk Infrastructure”⁹ for many years, within the framework of which one of the federal projects is “Development of Regional Airports”. Accordingly, the allocation of funding to single-industry towns for the construction and modernization of transport infrastructure can be carried out along this line. In general, the development of this direction requires

⁷ RF Government Decree 2129-r, dated September 20, 2019 “On approval of the Strategy for the development of tourism in the Russian Federation for the period up to 2035”.

⁸ Available at: <https://promtourism.ru/>

⁹ RF Government Decree 2101-r, dated September 30, 2018 “On Approval of the Comprehensive Plan for Modernization and Expansion of Trunk Infrastructure for the Period until 2024” (as amended).

the coordinated interaction of all key stakeholders: authorities of all levels, heads of town-forming enterprises, representatives of the local business community, tourist firms and the local population.

Also, it is especially important to develop public-private and municipal-private partnerships in towns where large vertically integrated companies are present. At the same time, one of the promising areas for small and medium-sized towns is education, in particular, the opening of branches of higher and secondary vocational education organizations. This will allow enterprises to solve the problem of qualified personnel supply, and the town will be able to retain young people who leave to enter educational institutions in larger towns or regional centers.

At first glance, it may seem that the problem of single-industry may be solved for the second type of towns we have identified, where several large or medium-sized enterprises in different economic sectors are currently operating. However, in real practice, we think that the socio-economic situation of most of them can hardly be called sustainable. We should understand that potentially these towns may be excluded from the list of single-industry municipalities, and, accordingly, they will lose the opportunity to receive federal funding or be granted the status of a priority social and economic development (PSEDA). At present, only 5 out of 20 single-industry towns of the ENR have this status: Emva, Kirovsk, Kondopoga, Onega, Kostomuksha, and there is one industrial park (Sokol, Vologda Region). The assessment of the effectiveness of the application of this institution is not so unambiguous and is a separate topic of scientific research. However, as the analysis has generally shown, the economies of these towns are indeed more diversified. The issue of revising the requirements for granting a town the PSEDA status remains open and highly relevant.

We suppose that another important direction for this category of towns is to support the development

and bringing to a competitive level of small and medium-sized businesses, not only large enterprises operating in the town. The service sector, in which there are many unoccupied niches, is quite promising. Besides, it is less capital-intensive compared to the production sphere, where serious investments may be required to start a business.

Finally, the options for further development for the third group of so-called “former” single-industry towns are also not so unambiguous. One of them is the implementation of the strategy of “managed compression”. This development model is quite applicable to mining towns located in unfavorable climatic conditions. A classic example is Inta, where coal mining was stopped long ago and the population has decreased by almost 2/3 compared to the late Soviet era. For such towns the issue of maintenance of housing and communal infrastructure is acute, and the policy of “managed compression” may become one of the options for the solution.

In our opinion, position of the third type of towns in the regional settlement system is of determining importance for them. For example, Krasavino in the Vologda Region is located between the larger towns – Veliky Ustyug and Kotlas. A number of studies consider such towns as the nuclei of the emerging agglomeration (Vóroshilov, 2021; Sekushina, 2022). Accordingly, one of the promising options for Krasavino is its development as part of the Kotlas urban agglomeration.

Pudozh, Lahdenpohja and Suojarvi are territorially remote from other large towns, but are included in the officially approved list of reference settlements of the Republic of Karelia¹⁰. On the one hand, we can conclude that the public authorities of the region in the future see their development as service centers for the adjacent rural areas.

¹⁰ Government Decree of the Republic of Karelia 159r-R, dated February 27, 2023 “On approval of the list of reference settlements and adjacent settlements of the Republic of Karelia”.

On the other hand, it is impossible to ignore the presence of certain questions about the level of compliance of these towns with the designated status (Sekushina, 2023). At the same time, we believe that this direction is correct in principle, intermunicipal cooperation for these towns and adjacent territories is almost the only option for further development. However, it is important to realize a strategic approach and to develop systemic policy measures in this direction.

Conclusion

Thus, using the example of the considered small and medium-sized towns of the ENR, we were convinced of the invalidity of the existing approach to their division into only three categories: single-industry towns with a stable socio-economic situation, risks of its deterioration and a difficult situation. The analysis has shown that in general not all municipalities included in the list of single-industry towns can actually be classified as single-industry with one branch of economic specialization or one town-forming enterprise. In such towns as Kirovsk, Koryazhma or Sokol, the economy is relatively diversified despite the presence of a major enterprise. In a number of the ENR towns, the town-forming enterprises have been closed for quite a long time, and new ones, allowing to judge the town specialization, have not appeared. In fact, these municipalities do not differ from other small towns with a high share of the population employed in the public sector. They can be categorized as depressed or problematic areas, rather than single-industry towns. Such towns as Inta, Krasavino, and Pudozh are vivid examples.

Based on the analysis of financial results of enterprises operating in small and medium-sized towns, we can conclude that the serious sanctions pressure, the breakdown of production chains with Western countries led to a noticeable decline in profits. The enterprises of the timber industry complex were particularly badly affected, as this industry was more export-oriented. Almost all

organizations involved in logging, wood processing, pulp and paper production suffered losses in the last two years.

At the current stage of the country's development, the search for ways to further develop single-industry towns seems to be an urgent task. In our opinion, single-industry is not a problem in itself, but it carries certain risks for the sustainable socio-economic development of territories. Diversification of the economy of small and medium-sized towns, which is based on large industrial enterprises of regional and even national scale, seems to be an important but difficult task. At the same time, if we look at the situation from a different angle, the current circumstances can be considered as an opportunity to open new enterprises in the vacated niches of the economy.

At the current stage, the first priority is to revise the list of single-industry towns. However, it is important to take a balanced approach to this issue, especially in relation to small and medium-sized towns. The settlement itself, strictly speaking, may not be classified as single-specialized at the moment, but the socio-economic problems that have been accumulating in it for years may still be relevant. In this context, it is necessary to conduct a deeper assessment of the state of the economy and social sphere of these towns to further develop systemic measures of state policy for their development.

The scientific significance of our study lies in our proposed approach to the typology of Russian towns categorized as single-industry municipalities, as well as the assessment of the consequences of qualitatively new socio-economic and geopolitical challenges of recent years for the enterprises operating in such towns.

The practical significance of the work consists in the possibility of using the obtained results by public authorities to adjust the list of single-industry municipalities, as well as in the development of measures of state support for the development of single-industry towns.

The development of strategic planning tools for towns of different sectoral specialization, as well as the search for the development of public-private and municipal-private partnership between town-forming enterprises and state and local authorities are promising areas for further research on this topic.

References

- Animitsa E.G., Novikova N.V. (2009). Problems and prospects for the development of Russia's single-industry towns. *Upravlenets*, 1-2, 46–53 (in Russian).
- Artemova O.V., Uzhegov A.O. (2021). Prospects for the development of monotores in the regional space of the Russian Federation. *Vestnik Chelyabinskogo gosudarstvennogo universiteta. Ekonomicheskie nauki=Bulletin of Chelyabinsk State University*, 10(456), 39–50. DOI: 10.47475/1994-2796-2021-11004 (in Russian).
- Bezverbnny V.A., Mikryukov N.Yu., Miryazov T.R. (2020). Single-industry cities of the Ural economic region: Features and development prospects. *Nauchnoe obozrenie. Seriya 1: Ekonomika i pravo*, 5, 91–106. DOI: 10.26653/2076-4650-2020-5-08 (in Russian).
- Bole D., Jani K., Jernej T. (2019). Variety of industrial towns in Slovenia: A typology of their economic performance. *Bulletin of Geography. Socio-Economic Series*, 46(46), 71–83. DOI: <https://doi.org/10.2478/bog-2019-0035>
- Commander S. (2018). One-company towns: Scale and consequences. *IZA World of Labor*, 433, 1–9.
- Dragan W., Zdyrko A. (2023). The spatial dimension of coal phase-out: Exploring economic transformation and city pathways in Poland. *Energy Research & Social Science*, 99, 103058.
- Dulesov A.N., Bekhterev D.V. (2015). Classification on monocities their life cycle. *Fundamental'nye issledovaniya=Fundamental Research*, 10-1, 161–165 (in Russian).
- Fomin M.V., Bezverbnny V.A., Shushpanova I.S. et al. (2020). Company towns of the Siberia and Russia Far East: Potential and development prospects. *Voprosy gosudarstvennogo i munitsipal'nogo upravleniya=Public Administration Issues*, 1, 137–165 (in Russian).
- Fomin M.V., Smirnov O.O., Miryazov T.R. (2022). Company towns of the Ural Federal District: Development risk matrix. *Voprosy gosudarstvennogo i munitsipal'nogo upravleniya=Public Administration Issues*, 3, 171–192. DOI: 10.17323/1999-5431-2022-0-3-171-192 (in Russian).
- Ghosh S., Byahut S., Masilela C. (2019). Metropolitan regional scale smart city approaches in a Shrinking City in the American Rust Belt – case of Pittsburgh, Pennsylvania. *Smart Metropolitan Regional Development: Economic and Spatial Design Strategies*, 979–1021.
- Haggerty J.H., Haggerty M.N., Roemer K., Rose J. (2018). Planning for the local impacts of coal facility closure: Emerging strategies in the US West. *Resources Policy*, 57, 69–80.
- Hobor G. (2013). Surviving the era of deindustrialization: The new economic geography of the urban rust belt. *Journal of Urban Affairs*, 35(4), 417–434.
- Il'ina I.N. (Ed.). (2013). *Razvitie monogorodov Rossii: monografiya* [Development of Single-Industry Towns in Russia: Monograph]. Moscow: Finansovyi universite.
- Ivanova M.V., Matyunin V.M. (2022). Industrial tourism as a new trend in the development of Siberian single-industry towns. *Vestnik Kemerovskogo gosudarstvennogo universiteta. Seriya: Politicheskie, sotsiologicheskie i ekonomicheskie nauki*, 7(4), 501–510. DOI: <https://doi.org/10.21603/2500-3372-2022-7-4-501-510> (in Russian).
- Korchak E.A. (2023). Challenges and opportunities for the development of single-industry towns in the Russian Arctic. *Arktika i Sever*, 50, 23–46. DOI: 10.37482/issn2221-2698.2023.50.23 (in Russian).
- Kotov A.V. (2017). Polar Ruhr: Structural policy in single-industry towns of the Russian Arctic. *EKO=ECO Journal*, 7, 34–54 (in Russian).
- Kurinaya N.V., Semenyuta A.I., Khar'kovskii M.B. (2023). Single-industry towns in the context of today's qualitatively new socio-economic and geopolitical challenges. *Vestnik Luganskogo gosudarstvennogo universiteta imeni Vladimira Dalya*, 11(77), 39–45 (in Russian).

- Kutergina G.V., Lapin A.V. (2015). Managing the development of single-industry towns: Domestic and foreign approaches to modeling. *Vestnik Permskogo universiteta. Ser. "Ekonomika"=Perm University Herald. Economy*, 3(26), 69–77 (in Russian).
- Leadbeater D. (2004). Mining towns and the new Hinterland crisis, *Canadian Dimension*, 5, 41–44.
- Lyubovnyi V.Ya. (2018). *Monoprofil'nye goroda Rossii: istoki, evolyutsiya razvitiya i regulirovaniya* [Single-Industry Cities in Russia: Origins, Evolution of Development and Regulation]. Moscow: Ekon-Inform,
- Malashenko E.A., Mekush G.E. (2020). The concept of "single-industry city": Russian and foreign views. *Uchenye zapiski Krymskogo federal'nogo universiteta imeni V.I. Vernadskogo. Geografiya. Geologiya*, 6(3), 125–134 (in Russian).
- Marais L., Denoon-Stevens S., Cloete J. (2020). Mining towns and urban sprawl in South Africa. *Land Use Policy*, 93, 103953.
- Oborin M.S. (2022). Mechanisms for stimulating innovative development of single-industry towns in Arctic territories. *Gosudarstvennoe upravlenie. Elektronnyi vestnik*, 91, 105–119 (in Russian).
- Odintsova A.V., Kol'chugina A.V., Valentik O.N. (2020). Single-industry towns in Russia: A new vector of state support. *Vestnik Instituta ekonomiki Rossiiskoi akademii nauk=The Bulletin of the Institute of Economics of the Russian Academy of Sciences*, 4, 27–45. DOI: 10.24411/2073-6487-2020-10040 (in Russian).
- Pechenskaya-Polishchuk M.A., Malyshev M.K. (2023). Comparative analysis of trends in the development of finance of large corporations in the metallurgical and coal industries in Russian in the context of global challenges. *Ekonomicheskie i sotsial'nye peremeny: fakty, tendentsii, prognoz=Economic and Social Changes: Facts, Trends, Forecast*, 16(1), 122–138. DOI: 10.15838/esc.2023.1.85.7 (in Russian).
- Pitukhina M.A., Belykh A.D. (2023). Arctic single-industry towns under sanctions. *Korporativnoe upravlenie i innovatsionnoe razvitie ekonomiki Severa: Vestnik Nauchno-issledovatel'skogo tsentra korporativnogo prava, upravleniya i venchurnogo investirovaniya Syktyvskarskogo gosudarstvennogo universiteta=Corporate Governance and Innovative Economic Development of the North: Bulletin of the Research Center of Corporate Law, Management and Venture Investment of Syktyvkar State University*, 3(1), 31–42. DOI: <https://doi.org/10.34130/2070-4992-2023-3-1-31> (in Russian).
- Pyatsheva E.N. (2019). The functioning features of single-industry towns in Russia. *Vestnik RGGU. Seriya "Ekonomika. Upravlenie. Pravo"=RSUH/RGGU Bulletin. "Economics. Management. Law"*, 2, 18–34. DOI: 10.28995/2073-6304-2019-2-18-34 (in Russian).
- Pyzheva Yu.I., Zander E.V. (2019). Socio-economic diversity of single-industry towns in Siberia and the Far East: Statistical analysis. *Problemy razvitiya territorii=Problems of Territory's Development*, 3(101), 49–61. DOI: 10.15838/ptd.2019.3.101.3 (in Russian).
- Rastvortseva S.N., Manaeva I.V. (2013). *Sotsial'no-ekonomicheskoe razvitie monogorodov Tsentral'no-Chernozemnogo raiona Rossii: problemy i puti resheniya* [Socio-Economic Development of Single-Industry Towns in the Central Black Earth Region of Russia: Problems and Solutions]. Moscow: Ekon-inform.
- Sedova N., Ugrumova A., Garnov A., Oi'garenko D. (2020). Regulating employment in monocities: Foreign experience and Russian practice. *International Journal of Management*, 11(6), 163–170. Available at: <https://ssrn.com/abstract=3659786>
- Sekushina I.A. (2022). Spatio-temporal analysis of the urban settlement system transformation of the European North of Russia. *Vestnik Chelyabinskogo gosudarstvennogo universiteta. Ekonomicheskie nauki=Bulletin of Chelyabinsk State University*, 12(470), 79, 102–112. DOI: 10.47475/1994-2796-2022-11211 (in Russian).
- Sekushina I.A. (2023). Practical application of methodological recommendations for identifying key settlements: A case study of the European North of Russia. *Sever i rynek: formirovanie ekonomicheskogo poryadka=The North and the Market: Forming the Economic Order*, 2, 160–174. DOI: 10.37614/2220-802X.2.2023.80.011 (in Russian).
- Seyrek Ş., Polat E.E.O. (2024). Learning from Swindon Railway Town: A comparative study with Alsancak Railway Campus. *GARON*, 161.
- Shneiderman I.M., Sharov S.Yu. (2022). Genesis and socio-economic condition of single-industry towns. *Narodonaselenie=Population*, 25(4), 178–188. DOI: 10.19181/population.2022.25.4.15 (in Russian).

- Storey K., Hall H. (2018), Dependence at a distance: Labour mobility and the evolution of the single industry town. *The Canadian Geographer / Le Géographe canadien*, 62, 225–237. DOI: <https://doi.org/10.1111/cag.12390>
- Syafrini D., Nurdin M.F., Sugandi Y.S., Miko A. (2022). Transformation of a coal mining city into a cultured mining heritage tourism City in Sawahlunto, Indonesia: A response to the threat of becoming a ghost town. *Tourism Planning & Development*, 19(4), 296–315.
- Turgel' I.D. (2005). Monospecialized cities of Russia: Specifics of genesis and analysis of socio-economic development. *Regional'naya ekonomika: teoriya i praktika*, 7, 33–40 (in Russian).
- Uskova T.V. et al. (2012). *Monogorod: upravlenie razvitiem* [Single-Industry Town: Development Management]. Vologda: ISERT RAN.
- Vaishar A., Šťastná M., Zapletalová J. (2022). Small industrial towns in Moravia: A comparison of the production and post-productive eras. *European Planning Studies*, 31(8), 1776–1796. DOI: <https://doi.org/10.1080/09654313.2022.2110377>
- Voronina E.V., Mil'chakova N.N., Sergeeva I.V. (2021). Single-industry towns: The course of diversification. *Vestnik Surgutskogo gosudarstvennogo universiteta=Surgut State University Journal*, 4, 28–38. DOI: 10.34822/2312-3419-2021-4-28-38 (in Russian).
- Voroshilov N.V. (2021). Development of urban agglomerations in the European North of Russia. *Federalizm=Federalism*, 26(4), 54–74. DOI: <https://doi.org/10.21686/2073-1051-2021-4-54-74> (in Russian).
- Winkler H. (2021). *When Coal Leaves Town: Can Local Governments Help?* DOI: <https://dx.doi.org/10.2139/ssrn.4069491>
- Zhao Y., Yang Y., Leszek S., Wang X. (2021). Experience in the transformation process of “coal city” to “beautiful city”: Taking Jiaozuo City as an example. *Energy Policy*, 150, 112164.

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On the Prospects of Applying Strategic Planning for Effective Development of Small and Medium-Sized Entrepreneurship Sector



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Abstract. The research topic we have chosen is relevant due to the following factors: a key role of Russian small and medium enterprises in national economic development in a difficult geopolitical situation, specifics of enterprises in this segment, as well as the duality of scientific views on the expediency of strategic planning for this type of business. The aim of the work is to clarify the importance, features of construction and application, as well as the expediency of strategies that are effective tools for the development of the sector in question. Scientific novelty of the research lies in considering strategic planning issues of small and medium enterprises through the prism of how strategies in these companies are designed and applied. We look into theoretical foundations of the influence of strategic planning and strategies on the following aspects of the work of small and medium enterprises: competitiveness, assessment of business achievements, financial performance, productivity, viability, etc.; we review domestic and foreign scientists' ideas on this issue. Taking into account the fact that the functioning of small and medium enterprises has its own specifics, we identify certain features inherent in small and medium business strategies, namely: integrated approach, multitasking, adaptability, interactivity, inclusivity. We put forward a comparative classification of fundamental features of small (and medium) and large companies' strategies. Based on the specific analysis of Russian and foreign literature carried out within the framework of the work, we identify reasons impeding the implementation of strategies in small and medium businesses, and estimate the expediency of using strategies in such enterprises. We formulate conclusions about the current state and sentiment in the business environment, drawing upon

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the results of a survey of representatives of the sector under consideration. In the course of the work we use general scientific methods; the results of theoretical and empirical analysis are interpreted with the help of general logic methods, formalization, abstraction. Methodologically, the study is based on a systems approach and classical and modern theories of strategic planning.

Key words: strategy, small and medium enterprises, business, entrepreneurship, strategic planning, development, SMEs.

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Introduction

The development of the small and medium enterprises sector as a locomotive for intensification and modernization of the Russian economy is a strategic direction defined in state documents of federal significance (Strategy for Development of Small and Medium Enterprises in the Russian Federation for the period up to 2030; national project “Small and medium entrepreneurship and support for individual entrepreneurial initiative”, etc.)¹. However, the share of small and medium enterprises (SMEs) in Russia’s GDP over the past decades has been no more than 20%, which is 2–3 times lower than in such actively developing countries as China, the USA, Italy, France, where small business is the foundation of national economy. The share of SMEs in the total number of the employed hardly exceeds 25–30% according to various estimates, while in developed countries this figure ranges from 60–90% (Italy – 79%, China – 75%, Brazil – 54%, Hungary – 68%). It is important to note that, according to recent statements by representatives of government authorities, further expansion of

the SME sector is no longer a business support priority for the government². Labor productivity of Russian small firms, according to the Ministry of Economic Development of the Russian Federation, lags behind the level of developed countries by 2–3 times (in the European Union – 2.2 million rubles, in the USA – 3.4 million rubles, in Russia – 0.9 million rubles per person³).

In the current environment of high uncertainty and instability, strategic planning can become especially important for Russian SMEs. But this research area has not been sufficiently elaborated on from a theoretical point of view and has not received full-fledged practical application: strategies are more often absent than present in the business practices of economic agents (Guskova et al., 2021), since small and medium enterprises have certain limitations in the use of classical and generally accepted approaches to strategic planning. In addition, consideration of strategies for small and medium businesses, as a rule, involves listing practical recommendations, but does not take into account theoretical aspect and specifics of designing strategies for various businesses, and strategic planning for SMEs.

¹ Passport of the national project “Small and medium-sized entrepreneurship and support for individual entrepreneurial initiative”, approved by the Presidium of the Federation Council for Strategic Development and National Projects on December 24, 2018; Strategy for Development of Small and Medium Enterprises in the Russian Federation for the period up to 2030, approved by RF Government Resolution 1083-r, dated June 2, 2016.

² The number of entrepreneurs is growing. Available at: <https://www.kommersant.ru/doc/6666295> (accessed: August 11, 2024).

³ Strategy for Development of Small and Medium Enterprises in the Russian Federation until 2030, approved by RF Government Resolution 1083-r, dated June 2, 2016.

In the context of economic and political risks, as well as the constantly changing rules of the “game” in domestic and foreign markets, one tends to believe that the presence of a strategy is becoming less relevant, as business loses its competitive advantages (Katkalo, 2003; McGrath, 2013), and long-term planning is very difficult to implement due to high turbulence of the external environment (Baylis et al., 2022; Kobylko, 2023a). Another view is based on the fact that in conditions of uncertainty, the importance of a strategy can increase many times, since due to the frequent change of economic agents and arrival of new companies that adjust the balance of power in the market, the role of strategic planning becomes almost decisive for successful business development (Lyles et al., 1993; Stonehouse, Pemberton, 2002; Analoui, Karami, 2003; Reeves et al., 2016; Kozhanova, Merzlikina, 2022). This duality of views produces scientific controversy and numerous research works on this topic.

Traditional and modern theoretical and practical approaches to strategy development and strategic management, as a rule, are focused on large corporations and ecosystems (Kleiner, Kobylko, 2022), which have an extensive organizational structure, various areas of activity, as well as significant financial, human and administrative resource. These approaches are not suitable for other forms of business organization, such as small and medium enterprises.

The importance of Russia’s SME sector in the economic development of the country, specifics of enterprises in the small and medium businesses segment, as well as the duality of views on the need for strategies – all this substantiates the relevance of the chosen research topic and the aim of the work, which consists in determining the significance, features of designing and applying strategies in the segment of small and medium enterprises as a tool for growth/development of SME sector and the economy in general.

Scientific novelty of the work lies in the fact that the problems of strategic planning in small and medium enterprises are considered through the prism of the specifics of designing and applying strategies in these companies.

Overview of literature and research works

Strategies and strategic planning are among the most popular areas of economic research. The most well-known strategic planning concepts were developed about 70 years ago in accordance with the environment and the problems faced by the economies of Western countries, the United States, and the United Kingdom (System-Oriented..., 2023). Over the past years, numerous changes occurred; they have affected economy, technology, societal structure, people’s way of thinking and their way of life. Thus, at present, a rethinking of the concepts of strategy and strategic planning is required both in the field of large business and in the sector of small and medium enterprises (Tambovtsev, 2010; System-Oriented..., 2023). However, while there are many publications on strategic management in large companies, there are significantly fewer studies that consider the development and implementation of strategies in small and medium enterprises. It is also important to note that the area of intersection of the two topics – strategies and Russian small business – lies, as a rule, in the field of studying problems related to state support and implementation of current strategies for development of SME sector, i.e., we are talking about the macroeconomic level⁴ (Bukhvald, 2016; Kulagova, Belukhin, 2018; Shkolnik, 2018; Bukhvald, Valentik, 2020, etc.), while theoretical foundations of studying the impact of strategy on the activities of small and medium enterprises are rarely the object of scientific research.

⁴ On approving the Strategy for Development of Small and Medium Enterprises in the Russian Federation until 2030: RF Government Resolution 1083-r, dated June 2, 2016. Available at: <http://government.ru/docs/23354/> (accessed: May 1, 2024).

The 1950s and 1960 witnessed the emergence of research works on the processes of implementing strategic planning in SME segment. In the late 1980s and early 2000s this issue began to be raised more actively in the literature in foreign scientific and business circles; this was due to the increased importance of small and medium businesses in ensuring employment and welfare, increased competition and development of information and technological innovations. The development of strategy and strategic management issues has been most active mainly in those countries where SME sector has been operating successfully for a long time, occupying a significant share in the economy (advanced countries of Europe, the USA, etc.).

What is the impact of strategy on small and medium businesses? The answers to this question are contradictory. Arguments are presented both for and against the positive impact of strategies on the development of small and medium companies. At the same time we should note that the majority of works are foreign, and this topic is not so extensively represented in Russian scientific and business-oriented literature.

One of the opinions is based on the fact that the introduction of strategic planning has a positive effect on the work of SMEs: it promotes new ideas, expands capabilities of an enterprise, reduces the level of uncertainty due to a clearer understanding of the business environment (Lyles et al., 1993; Wood, Barnett, 2012; Joel, 2016), forms competitive advantages of the company on the market (Analoui, Karami, 2003; Kraus, Kauranen, 2009; Zaretskaya, Chernikova, 2022; Cherepanova, Makhinova, 2022). The work (Robinson, Pearse, 1984) emphasizes that the type of planning chosen by a small firm is determined by the current stage of its life cycle. As a small business develops and progresses through the stages of its life cycle, the strategy is transformed, becoming more complex and more extended in time (Adizes, 2004; Porter, 2005; Zavyalova, Kobylko,

2019; Astapov, Zhdanov, 2022). In this case the key point in strategic management in a small enterprise is not a change in strategy, but its adaptation, i.e. revision and appropriate adjustment of the company's behavior in accordance with the impact of the external environment (Guskova, Nikitina, 2020). We can also talk about the influence of macro environment, which includes people's mental and cultural features, the country's institutional system and historical experience, etc. (Kleiner, 2008).

The impact of strategic planning on the activities of a small enterprise can be studied by assessing organizational achievements. Thus, successful implementation of a strategy, being a criterion for the effectiveness of business functioning, either allows the company to maintain the scale and opportunities for development, or promotes further growth of the enterprise (Kraus et al., 2008; Lyles et al., 1993; Stewart 2003; Joel, 2016; Kozhanova, Merzlikina, 2022). In this case, the choice of a path in which a small enterprise will operate depends on the management style, personal and professional qualities of the business owner (Kuznetsova, 2021).

The works (Robinson, Pearse, 1984; Schwenk, Shrader, 1993) were pioneers in studying the positive impact of strategic planning on financial success and profitability of SMEs. Later, (Wheelen, Hunger, 1998) proved that small companies with a strategy achieve higher financial results than those without it. Thus, the costs that SMEs spend on designing and implementing a strategy are offset by the achievement of strategic plans and the revenue generated. A study of small and medium enterprises in various industries conducted in (Dibrell et al., 2014) revealed a positive relationship between strategic planning processes and organizational flexibility of the firm. Even in an unfavorable external environment, small and medium companies that use various strategies are able to achieve financial performance growth (Bamiatzi, Kirchmaier, 2014).

Viability of small and medium firms is another indicator influenced by strategic planning; thus, enterprises that use strategies have higher viability compared to those that do not use them (Delmar, Shane, 2003; Kraus et al., 2008).

An opposite opinion on the impact of strategy on small business activities is based on the statement that “real entrepreneurs do not plan” (Posner, 1985). This idea can be traced in the later works (Robinson et al., 1986; Gable, Topol, 1987; Shrader et al., 1989, etc.). They believe that small and medium firms do not resort to strategies, and there is little or no connection between strategic planning and the activities of a small firm. In addition, designing formalized strategies in their classical sense is not suitable for enterprises in SME sector, since they are limited in financial, labor and managerial resources to achieve this goal. The value of strategy and strategic planning is offset by factors such as managers’ competence, company’s development stage, uncertainty and variability of the external environment in which the enterprise operates.

The results of empirical studies of the impact of strategic planning on the performance of SMEs seem to be rather contradictory and not quite sufficient. A positive relationship is noted in the works (Bracker et al., 1988; Lyles et al., 1993; Schwenk, Shrader, 1993), zero or even negative – in (Gibson, Cassar, 2002).

The work (Shrader et al., 1989) clarifies that the nature of relationship between strategic planning and the success of small businesses depends on the type of industry the enterprise belongs to, while in other studies this relationship has not been found (for example, Gable, Topol, 1987; Kelly et al., 2004).

Between the above polar opinions, there is a point of view presented in (Mintzberg, 1993; Bhide, 2000; Kraus et al., 2008): strategies and strategic planning should be present in the activities of a small enterprise, but they should be “spontaneous” and flexible, rather than deliberate and formalized.

According to the author, the process of integrating entrepreneurial (practical) and strategic (theoretical and methodological) thinking seems to be a compromise, since both visions are aimed at creating and preserving competitive advantages acquired by a small enterprise in the market (McGrath, 2013; Meyer, Heppard, 2000). We are talking about the concept of strategic entrepreneurship, which appeared relatively recently and which consists in “integrating entrepreneurial (behavior aimed at finding opportunities) and strategic (behavior aimed at finding advantage) perspectives in the development and implementation of actions aimed at creating wealth” (Hitt et al., 2001; Schindehutte, Morris, 2009). It implies that those responsible for developing strategies should use entrepreneurial thinking, which allows them to evaluate and mobilize the company’s available resources and connect inter-firm and interpersonal connections in conditions of uncertainty. The degree of closeness of the relationship between the concepts of strategic and entrepreneurial thinking is determined in the work (Venkataraman, Sarasvathy, 2008), in which the authors provide a metaphorical comparison with an excerpt from William Shakespeare’s “Romeo and Juliet”: they liken entrepreneurship research without a strategic perspective to Romeo without a balcony and vice versa.

Description and substantiation of the research methodology

The study was conducted using general scientific methods that allowed us to reveal the role of strategy as a tool for the viability of small and medium businesses in an uncertain environment. The results of theoretical and empirical analysis were interpreted using general logical methods, formalization, and abstraction. Methodologically, the study was based on a systems approach, as well as classical and modern theories of strategic planning.

An empirical analysis conducted on the basis of open access materials and research by foreign and Russian scientists made it possible to identify major differences between strategies of large companies and those of small and medium enterprises, and to determine specific features of strategies used by this segment of entrepreneurship.

In the course of the work we used legislative acts and regulatory documents related to the topic under consideration, including the Strategy for Development of Small and Medium Enterprises in the Russian Federation for the period up to 2030, Federal Law 209-FZ “On the development of small and medium enterprises in the Russian Federation”, dated July 24, 2007 (amended December 12, 2023), where the main object is enterprises from SME sector. The study is also based on the materials of NAFI analytical center and the responses received by CEMI RAS during a survey of entrepreneurs. Practical research methods, including comparative and statistical analysis, allowed us to formulate several conclusions concerning the current state and sentiment in the business environment.

Research results

Basic characteristics of strategies of small and medium enterprises

Specifics of SMEs regarding their organization, functioning and interaction with other economic agents have conditioned certain features inherent in the strategies of small and medium businesses.

1. Complexity. A small enterprise performs many different functions. Applying a systems approach when designing a strategy for SME suggests that the strategy that is most suitable for achieving business performance indicators should be comprehensive (Kleiner et al., 1997; Kleiner, 2008; Turenko, 2008; Kurlykova, Kirgizova, 2023). This means that an enterprise from SME segment has a long-term program that regulates the behavior of the organization in a market economy (Turenko, Turenko, 2019). Such a strategy comprises several strategic directions

(production of goods and services, development of new products, promotion and sale, optimization of monetary and investment flows, personnel development, etc.) and includes various sub-strategies, for example, production, technological, product, financial, marketing, personnel, etc. (Turenko, 2008; Kobylko, 2023a).

The work (Kobylko, Rybachuk, 2023) considers strategy as a complex of closely related elements or attributes: core, inner contour and outer contour. The core, being the basis for development of these contours, includes mission, vision, principles, values and long-term goals of the organization. The internal contour includes a set of strategic planning tasks, taking into account major quantitative and qualitative indicators of business performance. The external contour includes duration of the planning horizon, publicity, degree of formalization and elaboration of the strategy, etc.

2. Combination. Building strategies for small and medium enterprises does not always have to comply with traditional, strictly regulated and formal models of strategic management (Analoui, Karami, 2003; Marikova et al., 2022; Zaretskaya, Chernikova, 2022). Professional and life experience, intuition and character of the owners, apparently, are more significant in the development of small and medium enterprises than any clearly structured and formalized strategy. In reality, simplified and intuitive approaches to strategic planning may actually be more suitable for micro and small firms with a small number of employees (Kraus et al., 2008). Small enterprises that focus on active growth and intend to evolve into medium or even large companies, successfully combine informal and formal approaches to the development and implementation of strategies (Leitner, 2007; Menzel, Günther, 2012). In some cases, instability and heterogeneity of the external environment push small and medium companies to combine several strategies simultaneously or sequentially, i.e. they become strategic ambidexters (Reeves et al., 2016).

3. **Adaptability.** A distinctive feature of SMEs is their high flexibility and adaptability to multiple changes in the external environment. However, small firms rarely have the political or economic power and influence to regulate their environment (Analoui, Karami, 2003; Nyangara et al., 2015). This forces small business owners to seek a balance between long-term flexibility and short-term confidence when making decisions, thereby protecting themselves from uncertainty and anticipating new difficulties and problems (Bhidé, 2000; Mintzberg, 1993).

4. **Interactivity.** Building a strategy for a SME involves addressing several key issues: determining the current position of the company in the market; identifying the desired future position of the company after a designated set period of time; identifying a set of tools to achieve the set goals and objectives. These problems are solved in an interactive process that includes the following main stages: implementing and designing a strategy, collecting feedback, accumulating information and knowledge received, adjusting the strategy (Meso-economics of Russia..., 2022). Thus, a strategy which an enterprise has designed and which takes into account feedback, gives owners

of small and medium businesses an opportunity to take preventive measures, thereby increasing the company’s readiness to face controlled and uncontrolled external events.

5. **Inclusivity.** This feature distinguishes between classical (for example, Katkalo, 2003) and modern approaches to understanding strategy and implies combining the strategy of an economic agent, taking into account its internal content, with the strategy of the external environment. The external environment should represent not only those economic agents with whom the enterprise interacts, but also their plans and projects, intentions and ideas (System-Oriented..., 2023).

Differences between the strategies of large companies and SMEs

The practical aspect of strategic planning involves classifying strategies into at least three categories depending on the size of an enterprise: for SMEs, for corporations, and for business ecosystems. Obviously, these strategies differ (Kraus et al., 2007, Kobylko, 2022). Next, let us focus in more detail on comparing some of the features of the strategies of small (medium) and large companies (Tab. 1).

Table 1. Differences in designing strategies for small (medium) and large businesses

Distinguishing criterion	Small and medium enterprise	Large company
Authors	– Owners; – management	– Divisions/departments for strategic planning and forecasting; – consulting companies
Base for designing the strategy	– Professional and life experience of the founder; – “vision” of the owner	In-depth financial analysis, market research, market analysis
Format of the strategy	– “In the head” of the founder (“vision”); – thesis plan	A voluminous document containing a detailed algorithm of actions, a set of quantitative indicators
Degree of formality of the strategy and strategic planning	It varies (depending on the industry, life cycle stage, ambitions of the founder, etc.)	High degree of formalization
The role of the entrepreneur	Considerable importance	Medium importance
Centralization of strategic decision making	High	Low/medium
Degree of owner’s control over strategy implementation	High	Medium (indirect control)
Influence of the external environment	High	Low
Source: own elaboration.		

Authors. Strategic planning issues in many large enterprises are handled by a limited number of authorized persons which include not only top managers (Zavyalova, Kobylko, 2019). A strategy is developed by specialized departments and divisions with up to several dozen employees; besides, the task may be outsourced to external experts and consultants (Kleiner, 1998). Previously, such services to large corporations were provided by consulting companies belonging to the Big Four accounting firms (Deloitte, PricewaterhouseCoopers, Ernst & Young, and KPMG), as well as McKinsey & Company, The Boston Consulting Group, etc. However, after February 2022 they ceased operations in Russia, giving way to Russian, Chinese, Indian and other consulting organizations.

The strategy of a small business is usually developed by its owners/management. Simple organizational structure, small number of employees (compared to a large corporation), as well as limited financial resources do not allow a small enterprise to maintain such numerous specialized units and hire third-party consulting companies (Samotuga, 2021).

Basis for designing a strategy. In a SME, strategy is based on a concise analysis of the company's activities, the founder's life and entrepreneurial experience, their intuition, communication skills and informal connections. In large business, strategy has a solid foundation in the form of a comprehensive financial and production analysis of the enterprise, in-depth market research, competitors, research on competitive advantages, etc.

Strategy form. The tools, methods and form of strategic planning that are suitable for a large enterprise are not always acceptable for a SME (Reboud, Mazzarol, 2008). Specialists from planning and forecasting departments in a large company design a strategy in the form of a fairly voluminous document, which contains a comprehensive algorithm of actions, key and

secondary tasks, quantitative achievable indicators, etc. Degree of elaboration regarding large companies' strategies is quite high.

The strategy of a small or medium company may not even have a clear written form, but may be just a plan "in the head" of the owner/manager, or some kind of informal document ("something sketched on the back of an envelope" (Richbell et al., 2006)), on which the managers rely when making decisions. It is a kind of description of the company's "imaginary future", for which the term "vision" is more appropriate (Collins, Porras, 2005; Kobylko, 2023b).

If we turn to cases from real practice, then, according to a survey by CEMI RAS, the strategies of small enterprises with a staff of up to 50 people are formulated briefly and use general terms, unlike similar documents of large companies (Kobylko, 2023b). This form of strategy – with a low degree of detail – is also used because at any given time the external environment can change and the goals will be achieved faster than previously intended.

Degree of formality of strategy and strategic planning. Informal strategic planning is typical for most domestic SMEs due to the following reasons: high cost of strategy development, lack of staff, lack of time, experience, information, education and managerial skills in the owners, etc. (Robinson, Pearse, 1984; Shrader et al., 1989). A formalized strategic plan is not the best solution for SMEs (and sometimes it even harms small businesses), as it limits innovation and creativity (Adizes, 2004).

The role of the entrepreneur. In small and medium businesses, an important role in the theory and practice of building strategies belongs to the entrepreneur: their personal qualities, goals and objectives, management style, professional skills and experience (Robison et al., 1986; Leitner, 2007; Samotuga, 2021; Zaretskaya, Chernikova, 2022; Debrulle et al., 2023). Thus, the level of strategic planning is higher in those enterprises whose owners are focused on business growth (Sarwoko et al.,

2013), and vice versa: owners of companies pursuing personal interests have a lower level of strategic planning (Wang et al., 2006).

The works (Bracker et al., 1988; Gibson, Cassar, 2002) highlight the following relationship: the more educated a business owner is, the higher the probability that they have strategic thinking and vision, and act according to a certain strategy.

In a large corporation, responsibility for designing and implementing a strategy is “distributed” between heads of departments and key personnel of the company; therefore, the role of the owner is not as significant as in a small enterprise.

Centralization of strategic decision-making process. The number of small business owners is usually up to five people on average. This contributes to the unity of management’s views on the design and implementation of the strategy, as well as centralized decision-making, which contributes to a timely response to changes in the external environment (Samotuga, 2021). Besides, a small number of employees, compared to a large company, provides for a more effective distribution of tasks among the staff.

In practice, SMEs tend to focus on solving short-term rather than long-term strategic issues, and decision-making tends to be reactive rather than proactive (Stonehouse, Pemberton, 2002; Reboud, Mazzarol, 2008; Covey, 2023).

At first glance, it may seem that if the owner of a small business is also its head, this facilitated the decision-making process. However, we cannot but note certain subjectivity in this matter. If a company is headed by an entrepreneur with outstanding abilities, then their impact on the enterprise’s activities is positive. If the situation is different, then the state of affairs in the organization may become very ambiguous (Drozdova, 2014).

Degree of control of the owner over the strategy implementation. Since the level of involvement of the owner (author of the strategy) is high at all stages

of its implementation, the degree of control is quite high. In a large business, the supervision of owners/managers over the execution of the strategy is carried out indirectly, since the degree of involvement of owners is less than in a small enterprise.

Influence of the external environment. The success of implementing the strategy of any enterprise largely depends on the nature of interaction with the external environment. In the case of SMEs, their ability to meet the requirements of the business community is extremely important (Robbins, Coulter, 2013). Unlike large companies, small and medium firms do not have monopoly in the markets; nor do they have extensive and influential administrative resources or financial resources in abundance; therefore, an integral part of their strategy is the ability to create trusting and mutually beneficial relationships with economic agents.

In the practice of strategic planning that has developed over many years, it is proposed to use Albert Humphrey’s SWOT analysis that includes assessment of the internal environment of the forecast object (SWOT – strengths, weaknesses, opportunities, threats) to identify the degree of influence of the external environment. However, for some time now this method has been criticized by Russian scientists (Kleiner, 1998; Katkalo, 2003; Kvint, 2022, etc.). So, it is more reasonable for a company to start an analysis not with an assessment of its strengths and weaknesses, but with threats and opportunities of the external environment, and then we get an OTSW analysis: Opportunities, Threats, Strengths, Weaknesses (Kvint, 2022). In addition, the founder’s ability to objectively assess the strengths and weaknesses of their own business does not seem entirely realistic (Katkalo, 2003); therefore, it is necessary to focus on identifying the unique “potential of the enterprise”, and then evaluate the above-mentioned sides of the company (Kleiner, 1998).

On the expediency of strategies in small and medium businesses

Despite the fact that “your strategy needs a strategy” (Reeves et al., 2016), in real practice, owners and managers of SMEs who avoid strategic planning for a number of reasons are accused of “strategic shortsightedness” (Marikova et al., 2022). Next, let us look at these reasons in more detail.

First, company owners are not fully aware of the importance and necessity of a strategy for their business. Many owners of small and medium enterprises adhere to a fairly widespread opinion that only large corporations need strategies, therefore they avoid long-term or even medium-term planning (Kraus et al., 2007; Drozdova, 2014). Mentioning the terms “strategy”, “planning” and “forecasting” arouses emotions ranging from contempt to hostility in such managers (Posner, 1985; Drozdova, 2014); and during, for example, the coronavirus pandemic, unstable political situation, or amid the active implementation of the policy of sanctions restrictions, the forecasting process for them looks like attempts to “guess the future” (Lesnova, 2020). Such entrepreneurs consider it important to be flexible, mobile and fast, to make decisions overnight, and they believe that paper reports with diagrams only deprive the business of competitive advantages.

Second, an important role in this issue belongs to initial motivation that owners have when creating and running a business. Owners who have little interest in maximizing the productivity and growth of the company and are more focused on personal goals and personal enrichment do not think in terms of strategic planning (Wang et al., 2006). If the owner has ambitions aimed at the rapid growth of the company and smooth implementation of its activities into the existing business environment, then such plans of the company owner affect accordingly both the management style of the

company and the availability of a strategy for the enterprise (Joel, 2016; Kondratskaya, 2019; Kvint, 2022; Debrulle et al., 2023).

The third major issue concerns the absence of managerial and professional skills in company managers and/or owners to initiate the process of creating a strategy and orienting the business toward it (Samotuga, 2021). In this regard, the question arises: are entrepreneurs born or created? Experts explain the success of businesspeople by genetics, character traits, luck, skills and abilities, etc. Within the framework of the NAFI study, the majority of business owners surveyed (88%) believe that these skills can be acquired if there is a desire and motivation, which is influenced by two aspects: 1) role models based on family examples and the successes of famous personalities; 2) educational system and the institution of mentoring⁵. The list of entrepreneurs who inspire young business owners the most includes Elon Musk, Oleg Tinkov* and Pavel Durov⁶.

According to the NAFI survey, a real entrepreneur should have special knowledge, distinctive character traits and skills, among which 67% of respondents distinguish the ability to think strategically, 64% – financial literacy, 62% – stress tolerance, 62% – leadership qualities, 60% – organizational and planning skills⁷. The set of key characteristics that distinguish an entrepreneur has changed a lot over the past 30 years. Thus, in the

* Included in the register of foreign agents in February 2024.

⁵ To be born with it or to learn it? How Russian business owners view the nature of entrepreneurship. Available at: <https://nafi.ru/analytics/roditsya-ili-nauchitsya-kak-rossiyskie-vladeltsy-biznesa-smotryat-na-prirodu-predprinimatelstva/> (accessed: April 27, 2024).

⁶ Budding entrepreneurs revealed who they are inspired by to start their own businesses. Available at: <https://tass.ru/ekonomika/17746413> (accessed: April 27, 2024).

⁷ To be born with it or to learn it? How Russian business owners view the nature of entrepreneurship. Available at: <https://nafi.ru/analytics/roditsya-ili-nauchitsya-kak-rossiyskie-vladeltsy-biznesa-smotryat-na-prirodu-predprinimatelstva/> (accessed: April 27, 2024).

1990s the businessperson was associated with such qualities as “banditry” (62%), “impudence” (56%), “willingness to take risks” (22%), “resourcefulness” (14%), while according to a study conducted in 2019, the respondents give more positive definitions, for example “competent” (71%), “responsible” (62%). In addition, the portrait of a modern entrepreneur is complemented by the growth of professionalism and contribution to the national economy⁸.

Data from previous NAFI surveys indicate that 90% of Russian entrepreneurs would like to learn something new. The most in-demand study fields include skills in data analysis and digital competence (23 and 17%), financial and legal literacy (36 and 20%, respectively), customer-oriented approach (22%), while strategic thinking is pointed out only by 13% of respondents.

Fourth, small and medium enterprises are limited in financial resources for objective reasons. Since the business at the start is usually financed according to the 3 F principle (Family, Friends, Fools), then the initial investment volume of a small company is quite small, at the stage of creating an enterprise there may be no detailed business plan, and cash flow planning in particular. At the same time, limited financial resources do not allow SMEs already operating on the market to maintain special planning units, as well as pay for high-quality consultations from third-party consulting companies on strategic planning and management (Guskova, 2021).

Fifth, the vague idea that the owner/manager has about the prospects of the enterprise and the market as a whole is poorly correlated with the presence of a business strategy (Kobylko, 2023a). In some cases, as the company grows, the owners still think about strategic planning, but it is difficult

to determine where the boundary between the indicators that determine the scale of the business lies. Such an indicator can be, for example, gradation of the number of enterprise employees, contained in the current legislation⁹.

And finally, sixth, managers and/or owners of small and medium companies are usually heavily loaded with routine tasks and responsibilities that consume a lot of time and do not even give an opportunity to think about a potential business development strategy (Analoui, Karami, 2003; Kraus et al., 2007). The company’s staff, in turn, are also overloaded with everyday issues of procurement and sales, finance and investment, finding customers and suppliers. In some cases, small companies resort to the services of outsourcing firms (accounting, as a rule), but this can complicate the processes of developing and following a strategy and lead to additional undesirable costs for a small enterprise (Samotuga, 2021).

Results of the survey of SME representatives

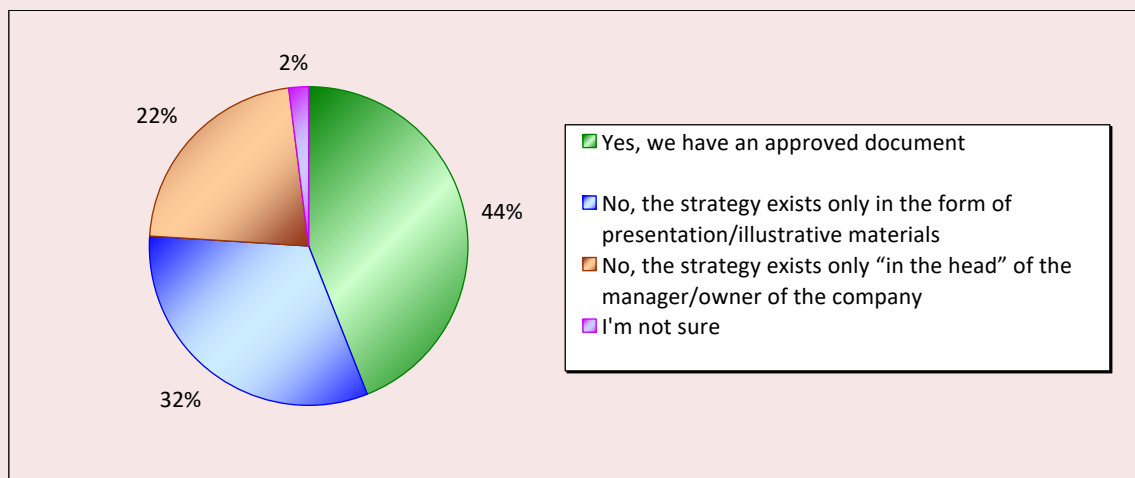
Theoretical and practical research presents the relevance of the strategy for small and medium businesses in one key, while the survey results demonstrate how things are in real life.

Publicly available research on strategic planning in small and medium businesses is based on surveys that investigate the directions of specific strategies that business owners apply during financial crises, coronavirus pandemic or numerous sanctions restrictions (for example, FOM’s research and communication project “Sociology of small business”, NAFI surveys, etc.). However, there are practically no studies that investigate applicability, significance and specifics of SME sector strategies, or identify their differences from similar documents drawn up for large businesses.

⁸ Research: Russian business through the eyes of “fathers” and “children”. Available at: <https://nafi.ru/analytics/issledovanie-rossiyskiy-biznes-glazami-ottsov-i-detey/> (accessed: April 28, 2024).

⁹ On the development of small and medium entrepreneurship in the Russian Federation: Federal Law 209-FZ, dated July 24, 2007 (amended December 12, 2023). Available at: https://www.consultant.ru/document/cons_doc_LAW_52144/08b3ecbc9a360ad1dc314150a6328886703356/ (accessed: May 1, 2024).

Figure 1. Responses of SMEs representatives to the question "Does your organization's strategy exist in the form of an approved official document?", % of respondents



Source: CEMI RAS survey of companies.

Thus, in 2023, CEMI RAS conducted a survey unique in terms of content and results, with participation of 81 SMEs. The results have shown that 70% of companies have a strategy, while about 2/3 of small and medium firms not only have a strategy, but also have it in written form (*Fig. 1*).

The priority business areas are formulated clearly and in detail only for a third of respondents, almost the same number of enterprises have this information briefly (abstractly), and 10 companies have it in the form of trends in the development of the market in which these enterprises operate. Thus, when answering the question about the details of the strategy, opinions were divided. This is probably due to the fact that the small and medium firms participating in the survey are at different stages of their life cycle and have different plans for the future.

The quantitative indicators that need to be achieved in the process of implementing the strategy are formulated in a generalized form in 52% of enterprises, in 35% they are set out in detail, in 12%

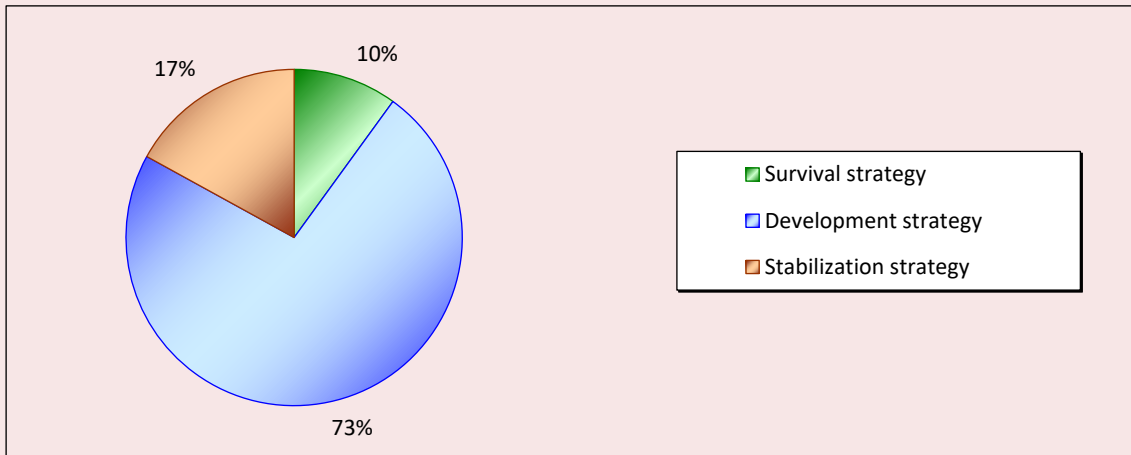
they are not formulated at all; 86% of respondents have control over the execution of the strategy, while the frequency of control varies: 39% – several times a year, 29% – about once a year, 15% – as needed.

The responses to the question about general characteristics of the current strategy of companies are shown in *Figure 2*. A positive point is the fact that almost 3/4 of companies adhere to a development strategy, rather than survival or stabilization strategy.

Further, questions were asked about the impact of existing strategies on the activities of organizations. Thus, for most companies, the business performance indicator has changed for the better, but representatives of a quarter of enterprises believe that the presence of a strategy has not had an impact on the company's effectiveness (*Fig. 3*).

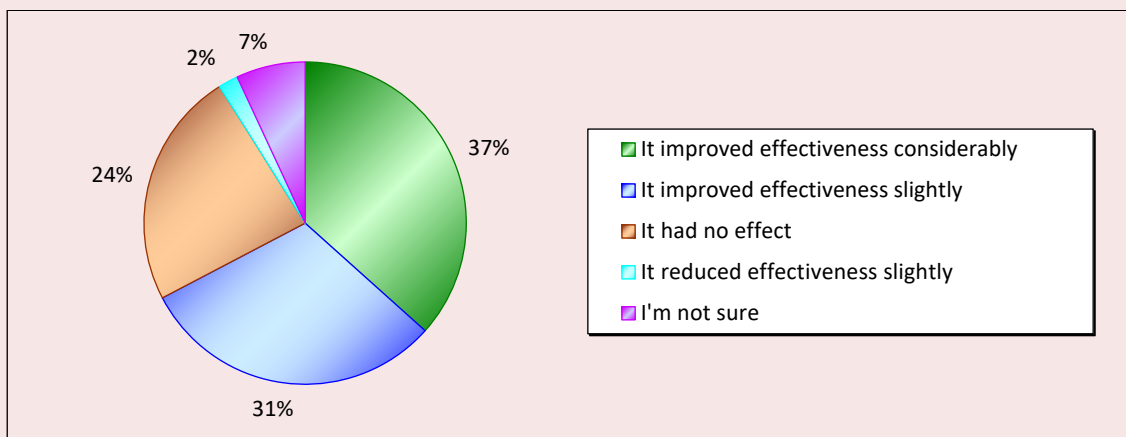
Representatives of small and medium businesses gave similar answers to the question about reducing the level of risk (uncertainty) through the implementation of the strategy. The result obtained allows us to conclude that, in general, strategies bring more good than harm to the work of SMEs.

Figure 2. Current strategy of companies, % of respondents



Source: CEMI RAS survey of companies.

Figure 3. Responses of SMEs representatives to the question “How does the strategy affect current performance effectiveness of your organization?”, % of respondents



Source: CEMI RAS survey of companies.

The final question has clarified how the adopted strategy correlates with the actual activities of the organization. It turned out that the activities of the vast majority of respondents (75%) fully comply with the adopted strategy. This indirectly confirms that if a SME owner has developed and adopted a strategy for their business, then they try to follow it despite external circumstances¹⁰.

The conducted pilot survey, which initially had a small coverage of respondents, allowed us to obtain up-to-date information about the importance and applicability of strategies in small and medium businesses in Russia. In the future, the study can be supplemented with new results by expanding the number of respondents and increasing the number of questions.

¹⁰ CEMI RAS survey “Strategy format in a turbulent period”, 2023.

Conclusions

The importance of strategy for SMEs in the modern ultra-dynamic and volatile external environment is succinctly defined by the American sociologist A. Toffler: “If you don’t have a strategy, you’re part of someone else’s strategy” (Toffler, 2004). At the same time, the value of strategy is determined by the external environment in which the enterprise is located: in a stable and prosperous environment, the importance of strategic planning is lower than in turbulent market conditions.

A review of Russian and foreign literature, as well as analysis of modern business practices on designing strategies in small and medium enterprises allowed us to formulate the following conclusions.

1. Small business is an essential component of a market economy and plays a significant role in economy and society. Modern Russian small and medium enterprises face daily problems related to increasing their competitiveness in an unstable external environment, so choosing a strategy is one of the key tools for survival in turbulence.

2. No business is small enough to do without a strategy (Analoui, Karami, 2003). Many foreign and Russian scientists believe that a firm from the SME segment that carries out strategic planning is more likely to benefit from having a strategy. This is confirmed by the results of a survey of small and medium businesses conducted in 2023 by CEMI RAS, according to which: a) 70% of companies have a strategy; b) 2/3 of respondents have a written strategy; c) using a strategy has increased business effectiveness in 68% of companies; d) 86% of enterprises control the execution of their strategy; e) 3/4 of enterprises fully comply with the adopted strategy.

3. SMEs strategies are clearly different from strategic plans of large companies. These differences are systematized and clearly presented in this article. A particularly important factor is the figure of the entrepreneur themselves, including their

professional skills and analytical abilities that affect systems thinking and managerial decision-making, as well as initial motivation to organize own business.

4. The form, term and other external attributes of strategy depend on the type of activity of the enterprise, stage of the company’s life cycle, and management style of the head/owner.

5. Strategies of small and medium firms are characterized by certain features noted in this article, namely integrated approach, multitasking, adaptability, interactivity, inclusivity. They make it necessary to apply special approaches to strategic planning at SMEs. These approaches should be, on the one hand, accessible to small business owners, and on the other, easy to design, implement and regulate.

6. In real practice, owners of small and medium enterprises are not always ready to think strategically and conduct business according to the planned strategic course, and there are a number of reasons for this: insufficient awareness of the importance of strategy for the company’s development; lack of motivation aimed at intensive growth of the enterprise; limited financial resources; engagement of owners and management in routine issues; owner’s lack of the required managerial and professional skills, as well as “strategic shortsightedness” – a vague idea of the prospects of the enterprise and the market as a whole.

7. Public and state support for the SME strategy development can be considered as a part of an infrastructure for developing entrepreneurial activity. However, the requirement for the small firms to provide a high-quality business development strategy as a condition for receiving some governmental is unlikely to have a positive effect on the mood in the business environment, since this segment of the economy has already been in the “control and supervisory grip”.

Theoretical, practical significance of the paper and the results obtained by the author consist in the fact that the main provisions and conclusions of the article can be used in the activities of state governmental authorities – for modernizing current approaches to the SME support and for the adapting of the existing system of the developing this economic sector within the framework of the “Strategy for the Development of Small and Medium Entrepreneurship in the Russian Federation for the Period up to 2030”; in the activities of owners of small and medium firms – for designing development strategies, improving the efficiency of the enterprise and to make management decisions; in the work of organizations – for providing information and consulting services to companies from the SME segment on strategic planning; in scientific activities – for the development of academic competencies on designing strategies for small and medium companies.

References

- Adizes I. (2004). *Managing Corporate Lifecycles*. Adizes Institute Publications.
- Analoui F., Karami A. (2012). *Strategic Management in Small and Medium Enterprises*. London: Thomson Learning.
- Astapov K.L., Zhdanov D.I. (2022). Strategic startup development initiatives in information technology of Russia. *Ekonomika promyshlennosti=Russian Journal of Industrial Economics*, 15(1), 78–92. DOI: <https://doi.org/10.17073/2072-1633-2022-1-78-92> (in Russian).
- Bailys J., Wirtz J., Johnson J. (2022). *Strategy in the Contemporary World*. 7th edition. Oxford: Oxford University Press.
- Bamiatzi V., Kirchmaier T. (2014). Strategies for superior performance under adverse conditions: A focus on small and medium high-growth firms. *International Small Business Journal*, 32(3), 259–284.
- Bhide A.V. (2000). *The Origin and Evolution of New Business*. Oxford: Oxford University Press.
- Bracker J.S., Keats B.W., Pearson J.N. (1988). Planning and financial performance among small firms in a growth industry. *Strategic Management Journal*, 9(6), 591–603.
- Bukhvald E.M. (2016). The strategy for development of small and medium entrepreneurship in Russia till 2030: Ambitions and realities. *Ekonomicheskie i sotsial'nye peremeny: fakty, tendentsii, prognoz=Economic and Social Changes: Facts, Trends, Forecast*, 1(43), 66–77. DOI: 10.15838/esc/2016.1.43.4 (in Russian).
- Bukhvald E.M., Valentik O.N. (2020). Do Russian small businesses need a new strategy? *Regionalnaya ekonomika. Yug Rossii=Regional Economy. South of Russia*, 8(3), 4–14. DOI: <https://doi.org/10.15688/re.volsu.2020.3.1> (in Russian).
- Cherepanova T.G., Makhinova N.V. (2022). Value-network model of a small enterprise development strategy. *Human Progress*, 8(4), 1–16. DOI: <https://doi.org/10.34709/IM.184.21>. Available at: http://progress-human.com/images/2022/Tom8_4/Cherepanova.pdf (accessed: May 1, 2024).
- Collins J., Porras J.I. (2005). *Postroennyye navechno: uspekh kompanii, obladayushchikh videniem* [Built to Last: Successful Habits of Visionary Companies]. Saint Petersburg: Stokgol'mskaya shk. ekonomiki v Sankt-Peterburge.
- Debrulle J., Steffens P., De Bock K.W., De Winne S., Maes J. (2023). Configurations of business founder resources, strategy, and environment determining new venture performance. *Journal of Small Business Management*, 61(2), 1023–1061. DOI: <https://doi.org/10.1080/00472778.2020.1831807>
- Delmar F., Shane S. (2003). Does business planning facilitate the development of new ventures? *Strategic Management Journal*, 24(12), 1165–1185.
- Dibrell C., Craig J., Newbaum D. (2014). Linking the formal strategic planning process, planning flexibility, and innovativeness to firm performance. *Journal of Business Research*, 67(2), 2000–2007.

- Drozdova V.A. (2014). Is strategy necessary for a small business? *Ekonomika i menedzhment innovatsionnykh tekhnologii*=*Economics and Innovations Management*, 4. Available at: <https://ekonomika.snauka.ru/2014/04/4832> (accessed: May 14, 2024; in Russian).
- Gable M., Topol M.T. (1987). Planning practices of small-scale retailers. *American Journal of Small Business*, 12(2), 19–32.
- Gibson B., Cassar G. (2002). Planning behavior variables in small firms. *Journal of Small Business Management*, 40(3), 171–186.
- Guskova N.D., Erastova A.V., Nikitina D.V. (2021). Strategic management of sustainable development of small business enterprises. *Regionology*=*Russian Journal of Regional Studies*, 29(2), 306–327. DOI: <https://doi.org/10.15507/2413-1407.115.029.202102.306-327> (in Russian).
- Guskova N.D., Nikitina D.V. (2020). Features of strategic management at small and medium businesses. In: *Upravlenie kachestvom v obrazovanii i promyshlennosti: sb. st. Vserossiiskoi nauchno-tekhnicheskoi konferentsii, g. Sevastopol', 21–22 maya 2020 g.* [Quality Management in Education and Industry: Proceedings of the All-Russian Scientific and Technical Conference, Sevastopol, May 21–22, 2020]. Sevastopol: Sevastopol'skii gosudarstvennyi universitet (in Russian).
- Hitt M.A., Duane Ireland R., Camp Michael S., Sexton D.L. (2001). Strategic entrepreneurship: Entrepreneurial strategies for wealth creation. *Strategic Management Journal*, 22, 479–491. DOI: <https://doi.org/10.1002/smj.196>
- Joel T. (2016). The antecedents and consequences of strategic planning in small to medium sized firms: A conceptual framework. *Human Resource Management Research*, 6(4), 83–90. DOI: <https://doi.org/10.5923/j.hrmr.20160604.01>
- Katkalo V.S. (2003). The founding concepts of strategic management and their contemporary assessment. *Rossiiskii zhurnal menedzhmenta*=*Russian Management Journal*, 1, 7–30. Available at: <https://rjm.spbu.ru/article/view/820/713> (in Russian).
- Kelly S.J., Harrison J.L., French S.J. (2004). The role of strategic planning in the performance of small, professional service firms: A research note. *Journal of Management Development*, 23(8), 765–776. DOI: <https://doi.org/10.1108/02621710410549611>
- Kleiner G., Kobylyko A. (2022). Business eco-system strategy: Design and specifics. In: Vasiliev Y.S. et. al. (Eds.). *System Analysis in Engineering and Control. SAEC 2021. Lecture Notes in Networks and Systems. Vol 442*. Cham: Springer. DOI: https://doi.org/10.1007/978-3-030-98832-6_4
- Kleiner G.B. (1998). *Strategii biznesa: analiticheskii spravochnik* [Business Strategies: Analytical Reference Book]. Moscow: Konseko. Available at: <https://kleiner.ru/wp-content/uploads/2014/10/str-biz.pdf> (accessed: May 1, 2024).
- Kleiner G.B. (2008). *Strategiya predpriyatiya* [Enterprise Strategy]. Moscow: Delo.
- Kleiner G.B. (Ed.). (2022). *Mezoeconomika Rossii: strategiya razbega: monografiya* [Meso-economics of Russia: Run-up Strategy: Monograph]. Moscow: Nauchnaya biblioteka.
- Kleiner G.B. (Ed.). (2023). *Sistemno-orientirovannoe modelirovanie real'nogo sektora rossiiskoi mezoeconomiki: monografiya* [System-Oriented Modeling of the Real Sector of the Russian Meso-economics: Monograph]. Moscow: Nauchnaya biblioteka.
- Kleiner G.B., Tambovtsev V.L., Kachalov R.M. (1997). *Predpriyatiya v nestabil'noi ekonomicheskoi srede: riski, strategii, bezopasnost'* [Enterprises in an Unstable Economic Environment: Risks, Strategies, Security]. Moscow: Ekonomika.
- Kobylyko A.A. (2022). A strategy resistant to crises: Lessons from the pandemic. *Vestnik SPbGU. Menedzhment*=*Vestnik of St Petersburg University. Management*, 1, 3–18. DOI: <https://doi.org/10.21638/11701/spbu08.2022.105> (in Russian).
- Kobylyko A.A. (2023a). Planned and actual timeline of the strategy. *Rossiiskii zhurnal menedzhmenta*=*Russian Management Journal*, 21(2), 255–274. DOI: <https://doi.org/10.21638/spbu18.2023.205> (in Russian).

- Kobylko A.A. (2023b). Strategy functions in the context of enterprise size. In: *Strategicheskoe planirovanie i razvitiye predpriyatii: materialy XXIV Vserossiiskogo simpoziuma, Moskva, 11–12 aprelya 2023 g.* [Strategic Planning and Enterprise Development: Proceedings of the 14th All-Russian Symposium, Moscow, April 11–12, 2023]. Moscow: TsEMI RAN. DOI: <https://doi.org/10.34706/978-5-8211-0814-2-s1-26>. Available at: <https://elibrary.ru/mjllhwb> (in Russian).
- Kobylko A.A., Rybachuk M.A. (2023). Publicity and duration as external attributes of a strategy: Systems approach. In: *Sistemnyi analiz v proektirovanii i upravlenii: sb. nauch. trudov XXVII Nauchno-prakticheskoi konferentsii* [Systems Analysis in Design and Management: Proceedings of the 27th Scientific and Practical Conference]. Saint Petersburg: POLITEKh-PRESS (in Russian).
- Kondratskaya T.A. (2019). Small business: Strategy as practice. *Vestnik ZabGU*, 3, 107–115. DOI: <https://doi.org/10.21209/22279245201925107115> (in Russian).
- Kovey Stephen R. (2023). *Sem' navykov vysokeffektivnykh lyudei. Moshchnye instrumenty razvitiya lichnosti* [The 7 Habits of Highly Effective People: Powerful Lessons in Personal Change]. Moscow: Al'pina Pablisherz.
- Kozhanova T.E., Merzlikina G.S. (2022). Methodological support for the management of strategic changes in the organization of small business. In: *Strategiya i taktika upravleniya predpriatiem v perekhodnoi ekonomike: sb. materialov XXII ezhegodnogo otkrytogo konkursa nauchn.-issl. rabot studentov i molodykh uchenykh s itogovym etapom v forme Vserossiiskoi (natsional'noi) nauchnoi konferentsii, Volgograd, 1–30 aprelya 2022 g. T. 44* [Strategy and Tactics of Enterprise Management in a Transitional Economy: Proceedings of the 22nd Annual Open Competition of Scientific Research Works of Students and Young Scientists with the Final Stage in the Form of All-Russian (National) Scientific Conference, Volgograd, April 1–30, 2022. Volume 44]. Volgogradskii gosudarstvennyi tekhnicheskii universitet (in Russian).
- Kraus S., Harms R., Schwarz E. (2008). Strategic business planning and success in small firms. *Int. J. Entrepreneurship and Innovation Management*, 8(4), 381–396.
- Kraus S., Kauranen I. (2009). Strategic management and entrepreneurship: Friends or foes? *International Journal of Business Science and Applied Management*, 2009, 4(1), 37–50.
- Kraus S., Reiche B., Reschke C. (2007). Implications of strategic planning in SMEs for international entrepreneurship research and practice. In: *Energizing Management Through Innovation and Entrepreneurship: European Research and Practice*. London: Routledge.
- Kulagova I.A., Belukhin A.Yu. (2018). Actual problems of management. In: *V Vserossiiskaya nauchno-prakticheskaya konferentsiya. 1–7 oktyabrya 2018 g.* [Fifth All-Russian Scientific and Practical Conference. October 1–7, 2018]. Nizhny Novgorod: Natsional'nyi issledovatel'skii Nizhegorodskii gosudarstvennyi universitet im. N.I. Lobachevskogo (in Russian).
- Kurlykova A.V., Kirgizova I.V. (2023). Small business management evaluation tools based on a strategic approach. *Kreativnaya ekonomika*, 17(1), 369–384. DOI: <https://doi.org/10.18334/ce.17.1.116925>
- Kuznetsova N.V. (2021). Strategic management as a tool for the development of small businesses. *Ekonomika i predprinimatel'stvo*, 5(130), 668–671. DOI: <https://doi.org/10.34925/EIP.2021.130.5.131>
- Kvint V.L. (2022). *Kontseptsiya strategirovaniya* [The Concept of Strategizing]. Kemerovo: Kemerovskii gosudarstvennyi universitet. DOI: <https://doi.org/10.21603/978-5-8353-2562-7>
- Leitner K.H. (2007). *Management Through Innovation and Entrepreneurship: European Research and Practice*. London: Routledge.
- Lesnova L.P. (2020). Small business in the context of the coronacrisis, tactics of adaptation to environmental uncertainty. *Finansovye rynki i banki*, 4, 9–14. Available at: https://finmarketbank.ru/upload/iblock/d61/___%D0%A4%D0%A0%D0%B8%D0%91_04_2020.pdf (accessed: May 1, 2024).
- Lyles M.A., Baird I.S., Orris J.B., Kuratko D.F. (1993). Formalized planning in small business: increasing strategic choices. *Journal of Small Business Management*, 31(2), 38–50.
- Marikova M., Rolinek L., Vrchota J., Rehor P. (2022). Determination of the level of strategic management in SMEs. *Central European Business Review*, 11. DOI: <https://doi.org/10.18267/j.cebr.296>

- McGrath R.G. (2013). *The End of Competitive Advantage: How to Keep Your Strategy Moving as Fast as Your Business*. Boston: Harvard Business Review Press.
- Menzel D., Günther L. (2012). Formal and informal strategizing in a SME. In: *Proceedings of the International Symposium on Innovation Methods and Innovation Management, Chemnitz, Germany, 29–30 March*.
- Meyer G.D., Heppard K.A. (2000). *Entrepreneurship as Strategy: Competing on the Entrepreneurial Edge*. Thousand Oaks: Sage.
- Mintzberg H. (1993). The pitfalls of strategic planning. *California Management Review*, 36(1), 32–47.
- Nyangara C., Ojera P.B., Oima D. (2015). Factors influencing choice of strategic management modes of small enterprises, *Journal of Innovation and Entrepreneurship*, 4, 1–22. DOI: <https://doi.org/10.1186/s13731-014-0016-y>
- Porter M. (2005). *Konkurentnoe preimushchestvo: kak dostich' vysokogo rezul'tata i obespechit' ego ustoichivost'* [Competitive Advantage]. Moscow: Al'pina Biznes Buks.
- Posner B.G. (1985). Real entrepreneurs don't plan. *Inc*, 7(11), 129–132.
- Reboud S., Mazzarol T. (2008). *Strategic Planning in SMEs, a Review of the English and French Literature. ANZAM Annual Conference, 2–5 December. Auckland New Zealand*. Available at: https://www.anzam.org/wp-content/uploads/pdf-manager/1404_REBOUD_SOPHIE-343.PDF (accessed: May 1, 2024).
- Reeves M., Haanaes K., Sinha J. (2016). *Strategii tozhe nuzhna strategiya* [Your Strategy Needs a Strategy]. Moscow: Eksmo.
- Richbell S.M., Watts H.D., Wardle B.D. (2006). Owner-managers and Business Planning in the Small Firm. *International Small Business Journal*, 24(5), 496–514.
- Robbins S.P., Coulter M. (2013). *Management* (12th edition). Upper Saddle River, NJ: Pearson.
- Robinson R., Pearce J. (1984). The research thrust in small firm strategic planning. *The Academy of Management Review*, 9, 128–137. DOI: 10.2307/258239
- Robinson R.B., Logan J.E., Salem M.Y. (1986). Strategic versus operational planning in small firms. *American Journal of Small Business*, 10(3), 7–16.
- Samotuga V.N. (2021). Features of strategic management of small businesses in Russia. *Ekonomika, ekologiya i obshchestvo Rossii v 21-m stoletii*, 2(1), 270–276. DOI: https://doi.org/10.52899/9785883036247_270 (in Russian).
- Sarwoko E., Surachman A., Hadiwidjojo D. (2013). Entrepreneurial characteristics and competency as determinants of business performance in SMEs. *IOSR Journal of Business and Management (IOSR-JBM)*, 7(3), 31–38.
- Schindehutte M., Morris M.H. (2009). Advancing strategic entrepreneurship research: the role of complexity science in shifting the paradigm. *Entrepreneurship Theory and Practice*, 33(1), 241–276.
- Schwenk C.R. Shrader C.B. (1993). Effects of formal strategic planning on financial performance in small firms, a meta-analysis. *Entrepreneurship Theory and Practice*, 17(3), 53–64.
- Shkolnik E.V. (2018). Strategic planning for the development of small and medium enterprises. *Vestnik Rossiiskogo universiteta kooperatsii*, 4(34), 80–85. Available at: <https://www.elibrary.ru/item.asp?edn=yshpvz> (in Russian).
- Shrader C.B., Mulford C.L., Blackburn V.L. (1989). Strategic and operational planning, uncertainty, and performance in small firms. *Journal of Small Business Management*, 27(4), 45–60.
- Stewart S.K. (2003). *The Relationship Between Strategic Planning and Growth in Small Businesses*. Unpublished Doctorate Thesis. Nova South Eastern University, Florida, United States.
- Stonehouse G., Pemberton J. (2002). Strategic planning in SMEs – some empirical findings. *Management Decision*, 40(9), 853–861.
- Tambovtsev V.L. (2010). The basic notions of strategic management: Problem of micro-foundations. *Rossiiskii zhurnal menedzhmenta=Russian Management Journal*, 8(4), 3–30. DOI: <https://elibrary.ru/item.asp?id=15564042> (in Russian).
- Toffler A. (2009). *Tret'ya volna* [The Third Wave]. Moscow: ACT.

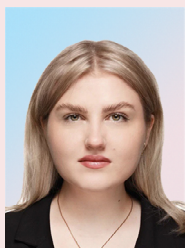
- Turenko B.G. (2008). *Strategicheskoe upravlenie predpriyatiem: teoretiko-metodologicheskii aspekt* [Strategic Enterprise Management: Theoretical and Methodological Aspect]. Irkutsk: Izd-vo BGUEP.
- Turenko B.G., Turenko T.A. (2019). On a new approach to formation of a strategy of developing small businesses. *Izvestiya BGU=Bulletin of Baikal State University*, 29(3), 484–490 (in Russian).
- Venkataraman S., Sarasvathy S. (2008). Strategy and entrepreneurship: Outlines of an untold story. In: *The Blackwell Handbook of Strategic Management*. DOI: <https://doi.org/10.1111/b.9780631218616.2006.00025.x>
- Wang C., Walker E.A., Redmond J. (2006). Explaining the lack of strategic planning in SMEs: The importance of owner motivation. *International Journal of Organizational Behavior*, 12(1), 1–16.
- Wheelen T.L., Hunger J.D. (1998). *Cases in Strategic Management*. 6th Ed. Addison-Wesley.
- Wood I.M., Barnett P. (2012). How to give strategy the status it needs to transform the fortunes of economies. *The Strategy Magazine. Exploring Strategic Thought and Action*.
- Zaretskaya V.G., Chernikova E.A. (2022). Essence and features of forming strategies small enterprise development. *Delovoi vestnik predprinimatel'nykh, 1(7)*, 73–83. Available at: <https://elibrary.ru/item.asp?id=49282086> (in Russian).
- Zavyalova E. A., Kobylko A. A. (2019). Format of strategy: The biggest Russian companies practice. *Strategicheskie resheniya i risk-menedzhment=Strategic Decisions and Risk Management*, 10(3), 210–219. DOI: <https://doi.org/10.17747/2618-947X-2019-3-210-219> (in Russian).

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The Impact of Political News about Russia on the Prices of Russian Companies' Shares: Comparative Analysis of Russian and Foreign Media



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Abstract. The dynamics of the financial market depends on the expectations of investors, which are largely determined by economic and political events. To form investment strategies, it is important to understand which events described in the news may affect changes in the value of assets. The purpose of this work is to identify the topics of political news that affect the profitability of shares of Russian companies, and to compare the predictive power of news from Russian and foreign sources. This study investigates the relationship between political news about Russia, obtained from domestic (“Interfax”) and foreign (“New York Times”) sources, and the stock returns of 193 Russian companies over the period from September 1, 2021 to August 31, 2023. There were 30 political dictionaries from each source identified using the Latent Dirichlet Allocation model, and the differences in the highlighted political themes were noted. Time-series models were used to test hypotheses about the impact of political news on the stock prices of Russian companies. The study demonstrates that the Russian stock market’s dynamics are impacted by news from various sources. Specifically, political dictionaries derived from foreign sources enhance the return predictions for the stocks of 142 Russian companies, whereas those from domestic sources improve the forecasts for 146 ones. Nevertheless, models incorporating political news from domestic sources yield higher-quality return forecasts. Additionally, using the Random Forest algorithm, it is demonstrated that the domestic media’s interpretation of events, which are covered in both Russian and foreign news, exerts a more substantial influence on the domestic stock market. Furthermore, models that integrate political dictionaries from both sources exhibit superior quality compared to those that rely on news from a single source. Based on the results obtained, it is demonstrated that incorporating political news into investment decisions enables investors to construct stock portfolios with higher returns.

Key words: political news, Russian stock market, foreign and domestic media, Latent Dirichlet Allocation, comparative analysis.

Introduction

Investors adjust their expectations regarding assets, taking into consideration news from both domestic and foreign sources. However, the same events can be interpreted differently by journalists from different countries (in particular, unfriendly ones), thus leading to different strategic decisions (Tsygankov, 2017). In this regard, the following question arises: which news – domestic or foreign – should be considered in order to predict the dynamics of the Russian stock market more effectively. Understanding the connection between various information flows and shares of the Russian stock market is important for regulators, analysts and investors during periods of high geopolitical instability.

Studying the impact of political news on the value of assets is particularly relevant in the context

of the special military operation and sanctions pressure from Western countries. The aim of our work is to identify the topics of political news that influenced the profitability of Russian companies’ shares in the period from 2021 to 2023. Political news about Russia obtained from the Russian news agency Interfax and the American New York Times Magazine are used as sources of text data. In the course of the study, political dictionaries from each source are identified using the Latent Dirichlet Allocation model, and differences in the highlighted political themes are also noted. Time-series models are used to test hypotheses about the impact of political news on the stock prices of Russian companies.

Scientific novelty of the study lies in the fact that in the course of the work we reveal the reaction time

of investors to the publication of political news and show differences in the news that are reported by Russian and foreign sources and have an impact on the Russian stock market. We find out that the quality of forecasting models using foreign news is lower than that of the models taking into account news from domestic media. The results obtained have practical significance and can be used by investors when constructing portfolios in the context of political uncertainty.

Theoretical overview and formulation of hypotheses

Investment decision-making mechanism

In order to understand the impact of political news on the financial market, let us consider the mechanism of investor decision-making. One approach is the concept of fair value, where the value of an asset is defined as the discounted value of expected cash flows. Political uncertainty affects stock prices via two channels: a change in cash flow expectations and a change in the discount rate (Brogaard et al., 2020). The first channel means that investors are reconsidering expectations about the prospects of companies, and the second is risk aversion. External shocks can increase risk aversion by forcing the disposal of risky assets (Demirer et al., 2022). If political news does not affect these parameters, then they should not change the decisions of rational investors.

Researchers often rely on the efficient market hypothesis, according to which share prices reflect all available information (Friederich, Payne, 2015). Current prices are fair and rationally set, which deprives investors of the opportunity to systematically receive returns above the market price. In addition, the hypothesis assumes the unpredictability of stock prices, since all available information has already been taken into account in current prices and any new information quickly becomes outdated (Lo, 2004). As a result, past returns cannot predict future ones; thus it becomes

unjustified to rebalance one's portfolio frequently. However, empirical evidence suggests that predicting returns based on past values is possible, especially during economic and political crises (Kim et al., 2011).

The adaptive market hypothesis (Lo, 2004) develops the ideas of previous concepts, suggesting that prices reflect both available information and the behavior of different groups of investors (who have different strategies and may deviate from a rational decision-making model). If many investors compete for a limited amount of shares, the efficiency of the market will be high, and vice versa. Cycles can occur in such a market: a high level of profit attracts new investors, which reduces the opportunities for profit, leading to the withdrawal of some groups, after which there is a decrease in efficiency, an increase in profit-making opportunities and the beginning of a new cycle.

The efficient market hypothesis implies that even if there are investors whose behavior deviates from the rational, they will incur losses (and rational investors will benefit from their presence) and disappear from the market (Lo, 2004). At the same time, the adaptive market hypothesis assumes that there can be periods of significant deviations from the rational behavior of investors in the market. Let us look at these deviations in more detail.

Investors often show overconfidence in their ability to predict market dynamics and are slow to revise company valuations even when there are clear signs of errors (Evans, 2006). This leads to the fact that they rely more on their own ideas than on public signals, which contributes to overtrading and increased volatility (Odean, 1998; Grinblatt, Han, 2002). Instead of analyzing the entire available market, they focus on the stocks that have caught their attention, and this leads to buying stocks that have recently shown strong growth or decline and are more often mentioned in the news (Odean, 1999; Barber, Odean, 2001). Researchers also note

that investors can show herding behavior when following the majority without conducting an analysis. This may contribute to price deviations from their fair values, since such price changes are not related to the performance of companies (Sari et al., 2022; Wahyono et al., 2021). Other examples of irrational behavior are increased risk avoidance after losses and regret aversion. For example, investors sell rising stocks to lock in profits, and less often sell falling stocks so as not to recognize a loss and avoid regretting bad decisions (Odean, 1999; Ngoc, 2013). This behavior contradicts diversification principles and leads to suboptimal results.

Investors also differ in their decision-making approaches: some rely on past stock price dynamics, others on non-price information (Ngoc, 2013). Surveys show that the majority of investors (about 70%) rely on fundamental financial indicators presented in company reports (Sari et al., 2022). However, 45% of investors also take into account news and opinions, especially during periods of high volatility. Negative market dynamics cause investors to worry and arouse pessimistic sentiment in them, which can lead to emotional decision-making.

There are various approaches to the formation of an investment portfolio based on objective indicators. The classical Markowitz theory assumes a compromise between profitability and risk in solving the optimization problem: maximizing expected profitability at a given level of risk or minimizing risk at a given yield (Fabozzi et al., 2002). Optimal weights are calculated using the values of expected returns, variance, and covariance of returns (they are usually calculated based on historical returns). The optimization task can be changed by introducing restrictions, for example, bans on short selling. The objective can be replaced by maximizing the Sharpe ratio or a utility function that takes into account risk avoidance (Merkle, Weber, 2014).

The uncertainty resulting from economic and political changes affects the formation of the portfolio as follows: 1) creates uncertainty about future flows and discount rates (Pástor, Veronesi, 2012); 2) affects the correlation between assets (Badshah et al., 2019); 3) increases uncertainty avoidance by investors, pushing them to replace riskier assets with less risky ones (for example, selling shares and purchasing bonds) (Brogaard et al., 2020).

Using the Black – Litterman model when compiling a portfolio, an investor can take into account not only the historical characteristics of returns, but also his/her own ideas about expected returns (and set the degree of confidence in them) (Colasanto et al., 2022). This approach is also used when there is uncertainty related to the government's economic policy (Han, Li, 2023).

Impact of news on market dynamics

Thus, financial market dynamics turn out to be sensitive to expectations (Shiller, 2000) formed by news: investors base their decisions on a feeling of fear or desire caused by a certain phenomenon (Kurov, 2008). Emergencies (which include political events) are associated with insufficient information available, and investors are forced to make decisions in a state of uncertainty (Lipsitch et al., 2011). News shapes investors' view of the stock market situation. Investors make decisions based on a wide range of information related to companies' prospects, including information on the quality of management, lawsuits or announcements of new products (Barber, Odean, 2008). If an event attracts the investor's attention, then it can influence their decision, even if the investor does not have a clear understanding of the impact of this event on companies (Barber, Odean, 2001).

Empirical studies confirm the assumptions that news has an impact on the dynamics of stock prices. S.A. Fedorova and co-authors emphasize that models based on news data make it possible to

predict the profitability of shares of the Russian stock market (Fedorova et al., 2022). However, the value of shares is influenced not so much by the amount of news as by their subject matter (Chan et al., 2001). For example, information about corruption in state-owned companies posted on a personal blog had a negative impact on the value of their shares (Enikolopov et al., 2018). News about the coronavirus pandemic has led to the highest volatility in the markets compared to other epidemics (Baek et al., 2020; Goodell, Huynh, 2020).

Researchers pay special attention to the impact of political events on the stock market (Pástor, Veronesi, 2013; Baker et al., 2016; Fedorova et al., 2022). Thus, stock yield is directly related to the political cycle in the country and the results of elections (Snowberg et al., 2007). For example, the index of the American stock market shows a 9.4% higher annual return under Democrats than under Republicans (Santa Clara, Valkanov, 2003). Financial markets are also very sensitive to the country's involvement in conflicts. For example, the value of Russian shares fell due to the outbreak of the conflict between Russia and Georgia (Korhonen, Peresetsky, 2013); and the price of Canadian shares dropped during the growth of separatist sentiments in the French-speaking regions of the country (Beaulieu et al., 2005).

In the context of technological progress and a growing asymmetry of information, news publications in one country may contain information about events in other regions and influence their stock markets. For example, the returns on Asian market stocks are connected with the publication of news in English-language sources (Wuthrich et al., 1998). However, the same events may be covered differently by domestic and foreign media (Tsygankov, 2017). Despite this, foreign news can have an even stronger impact on stock

prices of Russian companies than their domestic counterparts.

Based on the theories described above, we can draw several conclusions. Political news can have an impact on the dynamics of stock prices when rational investors make decisions (changes in expected cash flows and discount rates) and when investors demonstrate various behavioral deviations. At the same time, the presence of behavioral deviations can make the market less effective: then current political news will allow predicting future stock returns; in addition, the more the earlier news turns out to be useful in predicting current returns, the less effective is the market (low speed of taking the available information into consideration).

We put forward the following hypotheses.

H1a: Using political news from a domestic source makes it possible to improve the quality of forecasting daily returns on Russian companies' shares.

H1b: Using political news from a foreign source makes it possible to improve the quality of forecasting daily returns on Russian companies' shares.

Key political events related to Russia are covered by both domestic and foreign media, and they can present the same event in different ways. The predictive power of news depends on which of the news sources investors rely on when forming expectations.

To test the first hypothesis, we build models with a dependent variable of stock returns for various Russian companies. We assume that the average coefficient of determination is higher for models that take into account past stock returns and political news from a foreign source than for models built using only past returns. If this is true for more than half of the companies, we accept this hypothesis.

H2: Models using political news from foreign and domestic sources simultaneously make it possible to better predict the daily returns of Russian companies' shares than models built using news from only one source.

We also assume that a number of events that affect the stock returns of Russian companies may be described in foreign media and not covered in Russian sources, and vice versa. In this regard, we believe that models that take into account news data from two types of sources (both domestic and foreign) allow for a greater increase in the average coefficient of determination than models that take into account news from only one type of source. If the average increase in the adjusted coefficient of determination of models with two types of news sources turns out to be higher than that of models with news from only one source, we accept this hypothesis.

Data

In the course of the work we used financial and textual data.

Quarterly reports for 2021–2023 on the market capitalization of companies were obtained from the website of the Moscow Exchange¹. They contain lists of companies whose shares were traded on the market during the corresponding quarter. To be included in our sample, a company must have outstanding ordinary shares for at least 100 trading days (September 1, 2021 – August 31, 2023). Thus, the final sample included 193 companies of the Russian stock market. Daily data on the closing prices of the trading day were collected from the website of the financial platform Investing.com² for each company for the period from September 1, 2021 to August 31, 2023.

To take into account differences in the news published by Russian and foreign media, we collected news texts from the websites of Interfax and The New

York Times. The search and subsequent downloading were carried out using the keyword “Russia”: this word or its cognate was contained either in the headline or in the text of the news. News texts were downloaded from Interfax³ on a daily basis during the period under consideration directly from the website of the online magazine. Data from The New York Times⁴ were downloaded via an API created by the publication itself. The final sample of news from The New York Times included 5,983 items, from Interfax – 49,851 items.

Methodology

To select political news from Interfax and The New York Times (for each source separately) we first apply the Latent Dirichlet Allocation (LDA) model. According to (Arun et al., 2010; Cao et al., 2009; Deveaud et al., 2014; Griffiths, Steyvers, 2004), the optimal number of dictionaries within the data corpus for news from Interfax is 60, 30 of which we have identified as political. According to the results of assessing each of the four criteria in relation to news from The New York Times, the optimal number of dictionaries was 30; all of them were selected as related to political topics. We assume this is due to the fact that English-language media generally publish only political news about Russia. We consider that political dictionaries include those dictionaries that describe foreign or domestic policy, internal conflicts, sanctions, military actions, elections and voting (Azam et al., 2012; Baker et al., 2016; Robinson, Bangwayo-Skeete, 2017; Fedorova et al., 2022). In addition, we also do not exclude dictionaries that contain news comments from the official media of Russia and Western countries (Khrustova et al., 2020). The selected political dictionaries from Interfax and The New York Times and the words included in them with the greatest weight are presented in the Appendix (Tab. 1P and 2P, respectively).

¹ Available at: <https://www.moex.com/s26>

² Available at: <https://ru.investing.com/about-us/>

³ Available at: <https://www.interfax.ru>

⁴ Available at: <https://www.nytimes.com>

The daily stock return is used as a dependent variable. Seven stock yield lags are used as regressors describing financial data. Due to the suspension of trading on the Moscow Exchange in the period from February 24 to March 24–28 (depending on the type of shares), seven trading days after its opening were excluded from the analysis in order to correctly account for lagged values of the regressors. The current value and the seven lags of the value of the average share, by which the news items published during the day consist of the selected LDA dictionaries, are used as regressors describing political news. Regressors describing political news were formed as follows. First, for each news item, the proportion by which it consists of selected dictionaries of political topics was identified using the Latent Dirichlet Allocation model (LDA dictionaries). Further, these values were averaged over the days of news publication. Thus, the value of the average proportion by which the news items published during the day consist of the selected LDA dictionaries is used as regressors. We calculate the average proportion for the publications over the weekend before the opening of trading, so that the subsequent analysis would take into account the news that was published over the weekend and that could also affect investors' strategies. The value of this average proportion is used as a lag in the models. Adding more lags (up to 14) did not improve the quality of the models.

To test hypotheses, the Autoregressive Distributed Lag, ARDL is used, the quality of which is assessed at cross-validation. The following algorithm was implemented for each company. At the first stage, regression was evaluated with the help of the LASSO (Least Absolute Shrinkage and Selection Operator) method, which was used to select three sets of the most informative regressors describing political news (LDA dictionaries). The regularization parameter ranged from 0 to 0.1 in increments of 0.0001. At the second stage, the

ARDL model was evaluated taking into account seven lags of past stock returns, seven lags and the current value of the average share by which the news items published during the day consist of the most informative LDA dictionaries on cross-validation. At the third stage, the quality of models that take into account only past returns was compared with those that take into account both past returns and news data. To do this, Welch's t-test was used to test the hypothesis of equality of the coefficients of determination of models on cross-validation, taking into account textual data and without them. To test H2, we use Welch's t-test to compare the increments (compared with models without textual data) of the average adjusted coefficients of determination on the cross-validation of the models taking into account news from two types of sources and the models taking into account news from only one type of source.

Results and discussion

Russian source

To determine the number of companies whose stock returns are associated with the publication of news from the selected 30 political dictionaries from Interfax during the entire period under consideration, ARDL models were built. The modeling includes the current value and the seven lagged values of the proportion by which the news items published during the day consist of selected dictionaries. The daily stock return is used as a dependent variable. The results of ARDL models construction are presented in *Table 1*.

Taking into account political dictionaries from Interfax improves the quality of stock yield forecasts for 146 of the 193 companies reviewed. Thus, **we accept the H1a hypothesis**.

The company's stock returns are linked to all the selected dictionaries (Appendix, Tab. 1P). The market reaction begins in the first three days after the publication of political news. Those dictionaries that influence the largest amount of stock returns (from 30 companies) describe changes in inter-

Table 1. Results of ARDL models construction, taking into account political dictionaries from Interfax

	R ² increase from 0 to 0.03	R ² increase from 0.03 to 0.045	R ² increase from 0.045 to 0.06	R ² increase from 0.06 to 0.075	R ² increase from 0.075 to 0.12
Number of companies	1	19	42	50	34

Note. The average increase in adjusted R² on cross-validation is indicated. The columns indicate the number of companies for which the quality of models that take into account past returns and news data exceeds the quality of models built only taking into account past returns, according to the results of Welch's t-test (at a 10% significance level). The maximum value of the adjusted R² increase on cross-validation is 11.2 p.p.
Source: own compilation.

national relations (relations between Russia and China; sanctions imposed by Western countries) and the consequences of military actions (attacks on Crimea; refugees from Ukraine). The dictionary related to the returns of 69 companies describes cases related to refugees from Ukraine (their movement to border areas, financial aid to refugees, rescue of children, citizens' appeals, etc.). The news items of the covered themes have a negative effect on the returns of 67 companies; and the market reacts to the news items mainly on the day of their publication or the day after publication (30 and 15 companies, respectively). The dictionary describing the rapprochement between Russia and China is completely related to the revenues of 46 companies. The market reacts both on the day of publication of relevant news (10 companies) and within a week after publication. The negative reaction of the market to the news about the imposition of sanctions by the West against Russia begins mainly on the day of publication (29 out of 34 companies). At the same time, the market's reaction to the news describing the talks between the countries occurs only 5–6 days after publication. Such a reaction rate indicates the inefficiency of the market.

Foreign source

ARDL models were built to determine the number of companies whose stock returns are associated with the publication of news from the selected 30 political dictionaries from the New York Times during the entire period under consideration. The model also includes the current value and seven lagged values of the proportion by which the news items published during the day consist of selected dictionaries. Daily stock return is the dependent variable. The results of ARDL models construction are presented in *Table 2*.

In the course of modeling, we found that taking into account political dictionaries from NYT improves the quality of forecasts of stock returns for 142 of the 193 companies in question. Thus, **we accept the H1b hypothesis**.

Stock returns of 142 companies are associated with all the highlighted dictionaries (Appendix, Table 2P). The market reaction occurs within a week after the publication of news on relevant political topics. The dictionaries that affect the largest number of stock returns (from 30 companies) are related to the implementation of the special military operation and the imposition of sanctions.

Table 2. The results of building ARDL models based on political dictionaries from The New York Times (NYT)

	R ² increase from 0 to 0.03	R ² increase from 0.03 to 0.045	R ² increase from 0.045 to 0.06	R ² increase from 0.06 to 0.075	R ² increase from 0.075 to 0.13
Number of companies	3	23	65	37	14

Note. The average increase in adjusted R² on cross-validation is indicated. The columns indicate the number of companies for which the quality of models that take into account past returns and news data exceeds the quality of models built only taking into account past returns, according to the results of Welch's t-test (at a 10% significance level). The maximum value of the adjusted R² increase on cross-validation is 12.9 p.p.
Source: own compilation.

Thus, the dictionary, which describes the actions of the Russian army, affects stock returns of 45 companies, for 34 of which the effect is negative. The Russian market reacts mainly on the day of the appearance of news on the relevant topic (25 companies) and three days after publication (7 companies). The dictionary that describes events on the borders of Ukraine affects 28 companies, with 20 companies stock returns declining on the third day after the news is published. The dictionary describing grain transactions has only a positive effect and is associated with the profitability of 37 companies. The information is not absorbed by the market immediately: it reacts 1–2 days and 4–7 days after the publication of news on the relevant topic. The dictionary that describes Ukraine's army is positively associated with stock returns of 35 Russian companies. The reaction mainly occurs six days after the publication of the news.

We should point out that the value of companies' shares is also influenced by those dictionaries whose topics were not presented in the Russian source. For example, news about Western celebrities supporting Ukraine affects stock returns of 14 companies, and the reaction to the news occurs on average 6–7 days after publication (9 out of 14 companies).

Comparing the quality of models based on news from different sources

Taking into account political dictionaries from a foreign source makes it possible to improve the quality of forecasts for 142 of the 193 companies under consideration, and for 146 – from a domestic source. According to the results of Welch's t-test,

we found that the average increase in the coefficient of determination on cross-validation is higher for models that are based on past returns and political dictionaries from Interfax than for models that are based on past returns and political dictionaries from The New York Times (p-value < 0.01). The average increase in the coefficient of determination for models that take into account dictionaries from Interfax and past returns was 6.3 p.p., and 5.5 p.p. for models that take into account dictionaries from The New York Times and past returns. Thus, the quality of models that take into account news from a Russian source is higher than the quality of models which take into account foreign news.

There is reason to believe that in order to obtain more accurate forecasts of stock returns of Russian companies, one should take into account news not only from a Russian source. Thus, to determine the number of companies whose stock returns are associated with the publication of news from selected political dictionaries from two types of sources at once, ARDL models were built (*Tab. 3*).

The model, which takes into account political dictionaries from two types of sources, makes it possible to improve the quality of forecasts for 158 companies, in comparison to the model based only on past returns. The maximum increase in the adjusted coefficient of determination is 14.53 p.p., and the minimum is 4 p.p. Dictionaries that affect the largest number of stock returns of Russian companies (more than 20 companies) are presented in the Appendix (*Tab. 3P*).

Table 3. The results of constructing ARDL models taking into account political dictionaries from two types of sources: NYT and Interfax

	R ² increase from 0.04 to 0.06	R ² increase from 0.06 to 0.075	R ² increase from 0.075 to 0.15
Number of companies	46	50	62
<p>Note. The average increase in adjusted R² on cross-validation is indicated. The columns indicate the number of companies for which the quality of models that take into account past returns and news data exceeds the quality of models built only taking into account past returns, according to the results of Welch's t-test (at a 10% significance level). The maximum value of the adjusted R² increase on cross-validation is 14.53 p.p., minimum – 4 p.p. Source: own compilation.</p>			

Welch's t-tests were conducted to compare the increase in the adjusted coefficient of determination for models that take into account dictionaries from only one type of source (domestic or foreign) with the increase in the adjusted coefficient of determination for models that take into account dictionaries from two types of sources at once. It was found that the increase in the adjusted coefficient of determination is statistically higher for models that take into account political dictionaries from both Interfax and The New York Times than for models that take into account news from only one source (p -value < 0.01 in both cases). Thus, **we confirm the H2 hypothesis**: in order to improve the quality of forecasts of stock returns of Russian companies, it is necessary to take into account not only the domestic, but also the foreign news background.

Discussion and portfolio building

The paper analyzed political news from Russian and foreign media using the news from Interfax and The New York Times. Despite the fact that 12 dictionaries from each source describe similar topics, there are significant differences in the selected political dictionaries based on news from Russian and foreign media, respectively. Russian sources mainly describe changes in Russia's domestic policy, while foreign media mainly reflect the events of foreign policy. In addition, unlike Russian media, foreign sources cover in more detail the course of the special military operation and describe in detail the changes occurring in Ukraine due to the outbreak of the conflict. Some topics (for example, dictionaries on celebrities supporting Ukraine and forecasts of the end of the conflict, respectively) are not covered in Russian media, but are presented in foreign publications and are related to the stock returns of Russian companies.

In the course of the work we found that political news from a domestic source in general and correlated dictionaries in particular help to better predict daily stock returns of Russian companies.

At the same time, we find evidence that in order to improve the quality of forecasts of daily returns of Russian stocks, both the Russian and foreign news background should be taken into account. This conclusion is particularly important in the context of growing geopolitical instability: political news about Russia in foreign media affects the domestic stock market and the expectations of Russian investors.

The ability to predict stock returns based on political dictionaries allows building a portfolio of stocks that demonstrates higher returns (than in a situation where there is no information about the news). To build the portfolio, we selected 10 stocks of companies for which political news had the greatest predictive power (the models built for them showed the greatest increase in the coefficient of determination when variables reflecting political topics were added). Then, based on the models described in the previous part, we built forecasts of the returns of these stocks (only lagged values of variables were used for the forecast). At the next stage, a portfolio was built, where maximizing the Sharpe ratio was set as an optimization task (short selling is banned, average rate on federal bonds was used as an interest rate). It was assumed that the portfolio is rebalanced every day based on new yield forecasts (the rebalancing cost of 0.04% of the rebalancing amount was taken into account). The resulting portfolio demonstrated an average return of 14.89% per annum, while the average annual return of the portfolio (built using the same ten shares) built without taking into account political news was 3.27%. This confirms the assumption that the presence of market inefficiency allows gaining additional profitability.

Conclusion

The paper examines the relationship between political news from domestic and foreign sources and stock returns of Russian stock market companies in the period from September 1, 2021 to

August 31, 2023. The daily prices at the close of trading of 193 Russian companies were used as financial data. News items from Russian (Interfax) and foreign (The New York Times) publications were collected as sources of text data. Using the Latent Dirichlet Allocation model based on news from Interfax and The New York Times, 30 political dictionaries were identified, respectively. The current value and the lags of the average proportion by which the news items published during the day consist of the selected dictionaries were used as regressors describing political news. Daily stock return is the dependent variable.

The H1a hypothesis has been confirmed: political dictionaries obtained on the basis of news from a domestic source (Interfax) help to improve forecasts of the stock returns of 146 Russian companies. The H1b hypothesis has also been confirmed: political dictionaries obtained on the basis of news from a foreign source (The New York Times) improve the quality of forecasts of the stock

returns of 142 companies. However, we note that the quality of models using political dictionaries from Interfax is higher than the quality of models using political dictionaries from The New York Times.

There is reason to believe that in order to obtain a more accurate forecast of stock returns, it is necessary to take into account not only the domestic news background, but also the foreign one. Models that take into account financial data and political dictionaries from both Interfax and The New York Times help to improve the quality of the forecast for 158 companies. We note that the quality of these models is statistically higher than the quality of models based on past returns and political dictionaries from only one type of source. Therefore, the H2 hypothesis has also been confirmed.

The results obtained in this work contribute to a deeper understanding of the relationship between political changes and stock price dynamics in the context of growing geopolitical instability and can serve as a basis for further research.

References

- Arun R., Suresh V., Madhavan C.E.V., Murty M.N. (2010). On finding the natural number of topics with Latent Dirichlet Allocation: Some observations. *Lecture Notes in Computer Science (Including Subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, 6118 LNAI (PART 1). DOI: https://doi.org/10.1007/978-3-642-13657-3_43
- Azam M., Khan M.A., Iqbal N. (2012). Impact of political risk and uncertainty on FDI in South Asia. *Transition Studies Review*, 19(1). DOI: <https://doi.org/10.1007/s11300-012-0230-x>
- Badshah I., Demirer R., Suleman M.T. (2019). The effect of economic policy uncertainty on stock-commodity correlations and its implications on optimal hedging. *Energy Economics*, 84. DOI: <https://doi.org/10.1016/j.eneco.2019.104553>
- Baek S., Mohanty S.K., Glambosky M. (2020). COVID-19 and stock market volatility: An industry level analysis. *Finance Research Letters*, 37. DOI: <https://doi.org/10.1016/j.frl.2020.101748>
- Baker S.R., Bloom N., Davis S.J. (2016). Measuring economic policy uncertainty. *Quarterly Journal of Economics*, 131(4). DOI: <https://doi.org/10.1093/qje/qjw024>
- Barber B.M., Odean T. (2001). Boys will be boys: Gender, overconfidence, and common stock investment. *Quarterly Journal of Economics*, 116(1). DOI: <https://doi.org/10.1162/003355301556400>
- Barber B.M., Odean T. (2008). All that glitters: The effect of attention and news on the buying behavior of individual and institutional investors. *Review of Financial Studies*, 21(2). DOI: <https://doi.org/10.1093/rfs/hhm079>
- Beaulieu M.C., Cosset J.C., Essaddam N. (2005). The impact of political risk on the volatility of stock returns: The case of Canada. In *Journal of International Business Studies*, 36(6). DOI: <https://doi.org/10.1057/palgrave.jibs.8400160>

- Brogaard J., Dai L., Ngo P.T.H., Zhang B. (2020). Global political uncertainty and asset prices. *Review of Financial Studies*, 33(4). DOI: <https://doi.org/10.1093/rfs/hhz087>
- Cao J., Xia T., Li J., Zhang Y., Tang, S. (2009). A density-based method for adaptive LDA model selection. *Neurocomputing*, 72(7–9). DOI: <https://doi.org/10.1016/j.neucom.2008.06.011>
- Chan Y.C., Chui A.C.W., Kwok C.C.Y. (2001). The impact of salient political and economic news on the trading activity. *Pacific Basin Finance Journal*, 9(3). DOI: [https://doi.org/10.1016/S0927-538X\(01\)00015-4](https://doi.org/10.1016/S0927-538X(01)00015-4)
- Colasanto F., Grilli L., Santoro D., Villani G. (2022). BERT's sentiment score for portfolio optimization: A fine-tuned view in Black and Litterman model. *Neural Computing and Applications*, 34(20). DOI: <https://doi.org/10.1007/s00521-022-07403-1>
- Demirer R., Yuksel A., Yuksel A. (2022). Time-varying risk aversion and currency excess returns. *Research in International Business and Finance*, 59. DOI: <https://doi.org/10.1016/j.ribaf.2021.101555>
- Deveaud R., SanJuan E., Bellot P. (2014). Accurate and effective Latent Concept Modeling for ad hoc information retrieval. *Document Numerique*, 17(1). DOI: <https://doi.org/10.3166/dn.17.1.61-84>
- Enikolopov R., Petrova M., Sonin K. (2018). Social media and corruption. *American Economic Journal: Applied Economics*, 1.
- Evans D.A. (2006). Subject perceptions of confidence and predictive validity in financial information cues. *Journal of Behavioral Finance*, 7(1). DOI: https://doi.org/10.1207/s15427579jpfm0701_3
- Fabozzi F.J., Gupta F., Markowitz H.M. (2002). The legacy of modern portfolio theory. *The Journal of Investing*, 11(3). DOI: <https://doi.org/10.3905/joi.2002.319510>
- Fedorova E.A., Pyltsin I.V., Kovalchuk Yu.A., Drogovoz P.A. (2022). News and social networks of Russian companies: Degree of influence on the securities market. *Zhurnal Novoi ekonomicheskoi assotsiatsii=Journal of the New Economic Association*, 1(53), 32–52 (in Russian).
- Friederich S., Payne R. (2015). Order-to-trade ratios and market liquidity. *Journal of Banking and Finance*, 50. DOI: <https://doi.org/10.1016/j.jbankfin.2014.10.005>
- Goodell J.W., Huynh T.L.D. (2020). Did Congress trade ahead? Considering the reaction of US industries to COVID-19. *Finance Research Letters*, 36. DOI: <https://doi.org/10.1016/j.frl.2020.101578>
- Griffiths T.L., Steyvers M. (2004). Finding scientific topics. *Proceedings of the National Academy of Sciences of the United States of America*, 101(SUPPL. 1). DOI: <https://doi.org/10.1073/pnas.0307752101>
- Grinblatt M., Han B. (2002). *The Disposition Effect and Momentum. Working Paper.*
- Han Y., Li J. (2023). The impact of global economic policy uncertainty on portfolio optimization: A Black–Litterman approach. *International Review of Financial Analysis*, 86. DOI: <https://doi.org/10.1016/j.irfa.2022.102476>
- Hartwell C. A. (2022). Populism and financial markets. *Finance Research Letters*, 46. DOI: <https://doi.org/10.1016/j.frl.2021.102479>
- Khrustova L.E., Fedorova E.A., Fedorov F.Yu. (2020). Tonality of showing Russian position in English speaking mass media during sanction period. *Outlines of Global Transformations: Politics, Economics, Law*, 13(4). DOI: <https://doi.org/10.23932/2542-0240-2020-13-4-14>
- Kim J.H., Shamsuddin A., Lim K.P. (2011). Stock return predictability and the adaptive markets hypothesis: Evidence from century-long U.S. data. *Journal of Empirical Finance*, 18(5). DOI: <https://doi.org/10.1016/j.jempfin.2011.08.002>
- Korhonen I., Peresetsky A. (2013). What determines stock market behavior in Russia and other emerging countries? *SSRN Electronic Journal*. DOI: <https://doi.org/10.2139/ssrn.2235072>
- Kurov A. (2008). Investor sentiment, trading behavior and informational efficiency in index futures markets. *Financial Review*, 43(1). DOI: <https://doi.org/10.1111/j.1540-6288.2007.00188.x>
- Lipsitch M., Finelli L., Heffernan R.T., Leung G.M., Redd S.C. (2011). Improving the evidence base for decision making during a pandemic: The example of 2009 influenza A/H1N1. *Biosecurity and Bioterrorism*, 9(2). DOI: <https://doi.org/10.1089/bsp.2011.0007>

- Lo A. (2004). The adaptive market hypothesis: Market efficiency from an evolutionary perspective. *The Journal of Portfolio Management*, 30(5).
- Merkle C., Weber M. (2014). Do investors put their money where their mouth is? Stock market expectations and investing behavior. *Journal of Banking and Finance*, 46(1). DOI: <https://doi.org/10.1016/j.jbankfin.2014.03.042>
- Ngoc L.T.B. (2013). Behavior pattern of individual investors in stock market. *International Journal of Business and Management*, 9(1). DOI: <https://doi.org/10.5539/ijbm.v9n1p1>
- Odean T. (1998). Volume, volatility, price, and profit when all traders are above average. *Journal of Finance*, 53(6). DOI: <https://doi.org/10.1111/0022-1082.00078>
- Odean T. (1999). Do investors trade too much? *American Economic Review*, 89(5). DOI: <https://doi.org/10.1257/aer.89.5.1279>
- Pástor L., Veronesi P. (2013). Political uncertainty and risk premia. *Journal of Financial Economics*, 110(3). DOI: <https://doi.org/10.1016/j.jfineco.2013.08.007>
- Pástor L., Veronesi P. (2012). Uncertainty about government policy and stock prices. *Journal of Finance*, 67(4). DOI: <https://doi.org/10.1111/j.1540-6261.2012.01746.x>
- Robinson C.J., Bangwayo-Skeete P. (2017). Parliamentary elections and frontier stock markets: Evidence from stock market reaction to general elections in the Commonwealth Caribbean. *Global Business Review*, 18(5). DOI: <https://doi.org/10.1177/0972150917710136>
- Santa-Clara P., Valkanov R. (2003). The presidential puzzle: Political cycles and the stock market. *Journal of Finance*, 58(5). DOI: <https://doi.org/10.1111/1540-6261.00590>
- Sari R., Kusnanto K., Aswindo M. (2022). Determinants of stock investment decision making: A study on investors in Indonesia. *Golden Ratio of Finance Management*, 2(2). DOI: <https://doi.org/10.52970/grfm.v2i2.174>
- Shiller R.J. (2000). Measuring bubble expectations and investor confidence. *Journal of Psychology and Financial Markets*, 1(1). DOI: https://doi.org/10.1207/s15327760jpfm0101_05
- Snowberg E., Wolfers J., Zitzewitz E. (2007). Partisan impacts on the economy: Evidence from prediction markets and close elections. *Quarterly Journal of Economics*, 122(2). DOI: <https://doi.org/10.1162/qjec.122.2.807>
- Tsygankov A.P. (2017). The dark double: The American media perception of Russia as a neo-soviet autocracy, 2008–2014. *Politics*, 37(1). DOI: <https://doi.org/10.1177/0263395715626945>
- Wahyono H., Narmaditya B.S., Wibowo A., Kustiandi J. (2021). Irrationality and economic morality of SMEs' behavior during the Covid-19 pandemic: Lesson from Indonesia. *Heliyon*, 7(7). DOI: <https://doi.org/10.1016/j.heliyon.2021.e07400>
- Waweru N.M., Munyoki E., Uliana E. (2008). The effects of behavioural factors in investment decision-making: A survey of institutional investors operating at the Nairobi Stock Exchange. *International Journal of Business and Emerging Markets*, 1(1). DOI: <https://doi.org/10.1504/ijbem.2008.019243>
- Wuthrich B., Cho V., Leung S. et al. (1998). Daily stock market forecast from textual Web data. *Proceedings of the IEEE International Conference on Systems, Man and Cybernetics*, 3. DOI: <https://doi.org/10.1109/icsmc.1998.725072>

Appendix

Table 1P. Results of ARDL models construction using selected political dictionaries based on news from Interfax with the help of the Latent Dirichlet Allocation model

Name of the dictionary	Five words with the highest weight in the dictionary		Current value		1 st lag		2 nd lag		3 rd lag		4 th lag		5 th lag		6 th lag		7 th lag		Result
	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	
Refugees from Ukraine	30	0	15	0	7	0	1	6	0	8	0	1	0	0	1	0	0	1	69
Russia-China relations	0	10	0	11	0	7	0	6	0	5	0	2	0	4	0	0	1	46	
Western sanctions	29	0	4	0	1	0	0	0	0	0	0	0	0	0	0	0	0	34	
Strikes on Crimea	0	2	1	8	0	5	1	3	0	3	0	2	1	0	0	5	31		
Nuclear weapons	0	15	0	0	0	1	0	1	0	0	1	2	0	6	0	1	27		
Negotiations between countries	0	0	0	0	0	0	1	0	1	0	17	0	7	0	0	0	26		
War in the new territories of the Russian Federation	11	0	0	4	0	0	3	0	0	0	0	0	0	1	0	6	25		
Russian Defense Ministry reports	0	0	0	15	0	4	0	1	0	0	0	0	0	1	0	2	23		
Mobilization	8	1	4	0	6	0	0	0	0	0	1	0	0	0	0	0	20		
Navy	1	0	0	2	0	1	2	1	0	0	7	0	0	0	0	6	20		
Requirements of Roskomnadzor	0	0	5	0	1	0	3	0	4	0	2	1	0	0	3	0	19		
European statements	5	0	1	0	1	0	2	0	1	0	1	0	3	0	1	0	15		
Statement of the Ministry of Foreign Affairs	4	0	6	0	0	0	1	0	1	0	1	0	1	0	0	0	14		
Change of leaders	0	3	0	0	0	0	3	0	5	0	0	0	0	0	1	1	13		
Relations between Russia and Belarus	0	0	0	7	0	1	0	0	0	0	0	0	0	0	0	3	11		

End of Table 1P

Name of the dictionary	Five words with the highest weight in the dictionary	Current value		1 st lag		2 nd lag		3 rd lag		4 th lag		5 th lag		6 th lag		7 th lag		Result	
		0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0
Western companies leaving	Asset deal, transfer, sale, withdrawal	0	1	0	0	0	0	0	0	1	0	0	0	7	0	2	0	0	11
Closure of borders	Georgia, border, Lithuania, transportation, transport	0	2	1	0	0	1	0	0	2	0	2	0	0	1	0	0	1	10
Business support	Technological, tasks, created, support, important	0	0	0	1	0	0	0	0	0	1	2	0	2	0	2	0	1	10
Grain deal	UN, Turkey, Ukrainian (grain), deal, grain	0	0	0	4	0	2	0	2	0	0	0	1	0	0	0	0	1	10
Karabakh	Armenia, Turkey, Azerbaijan, volunteers, strike	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	7	0	9
Strikes by Ukraine	Shelling, residents, nuclear power plant, Kherson, evacuation	1	0	0	0	1	1	1	0	0	2	1	0	1	0	0	1	0	9
Foreign journalists	American, source, publication, Biden, media	0	0	3	0	0	0	0	0	0	0	0	0	0	6	0	0	0	9
Voting	Elections, party, deputy, voting, commission	4	0	1	0	0	0	0	0	0	0	0	0	1	2	0	0	1	9
Regional politics	Decree, requirements, state, regulation, holding	0	0	0	1	0	4	0	0	0	0	2	0	1	0	0	0	0	8
Criminal cases	Detain, criminal, Interior Ministry, employee, FSB	2	0	0	0	1	1	0	0	0	0	1	0	1	0	0	0	1	7
State budget	Budget, revenue, taxes, amount, Finance Ministry	0	1	0	0	0	2	0	1	0	0	0	0	0	0	2	0	1	7
Vaccination	Coronavirus, vaccination, drug, sputnik, Rosprotrebnadzor	0	0	1	0	1	0	0	0	0	1	0	1	0	1	0	1	0	6
Adoption of new laws	Law, bill, amendments, proposes, State Duma	0	0	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0	3
Kremlin statements	Peskov, Kremlin, spokesperson, answer, name	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	3
Court decisions	Case, verdict, recognize, criminal, accuse	0	0	0	0	0	0	1	0	1	0	1	0	0	0	0	0	0	2

Note: Column 1 shows the short names of dictionaries, the coefficients before which are significant in ARDL models, for which R² on cross-validation is higher than in models that take into account only past returns, according to the results of Welch's t- test. Column 2 shows the five words included in them with the highest weight. The remaining columns show the number of companies for which the coefficient in front of this dictionary is significant at least at 10% significance level: “+” means that news on relevant topics is positively related to stock returns, “-” means that news on relevant topics is negatively related to stock returns.

Table 2P. Results of ARDL models construction using selected political dictionaries based on news from The New York Times with the help of the Latent Dirichlet Allocation model

Name of the dictionary	Five words with the highest weight in the dictionary	Current value		1 st lag		2 nd lag		3 rd lag		4 th lag		5 th lag		6 th lag		7 th lag		Result	
		-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+		
Description of the actions of the Russian Army	annexation, terrorism, south, regions, control	25	0	0	1	0	1	0	7	0	0	9	0	0	0	0	1	0	44
Grain deal	grain, sea, black, deal, food	0	0	0	3	0	11	0	0	0	3	0	7	0	11	0	2	37	
Ukrainian army	weapon, military, defense, army (Ukrainian), system	0	3	0	0	0	1	0	0	0	4	0	4	0	21	0	2	35	
European community	EU, leader, support, concern, invasion	3	0	0	2	0	1	0	1	0	2	0	0	21	0	1	1	32	
US sanctions against Russia	sanctions, Biden, economy, administration, punish	0	5	0	0	2	1	0	0	2	1	6	0	11	0	1	1	30	
Ukraine's borders	border, troop, neighbor, Poland, force	0	0	4	0	2	0	20	0	0	0	1	0	0	0	0	1	28	
Strikes on Crimea	attack, force, operation, bridge, explosion	0	2	0	6	0	1	1	0	0	2	0	2	0	4	0	6	24	
Strikes by Russia	drone, strike, target, Moscow, launch	0	1	0	3	1	0	0	1	0	1	0	0	0	2	0	10	19	
Kremlin statements	Putin, speech, blame, speak, leader	1	1	0	0	5	0	1	0	1	0	0	0	6	1	0	2	18	
Eastern front	eastern, force, battle, Bakhmut, Donbass	0	3	0	2	0	0	2	0	0	4	0	1	0	0	0	4	16	
Nuclear weapons	power, nuclear, plant, threat, warn	0	0	0	1	0	2	0	4	0	1	0	6	0	3	0	0	17	
Destruction in Ukraine	kill, city, dozen, rocket, destroy	0	5	0	2	0	4	0	0	0	1	0	0	0	3	0	1	16	
Russian state media	media, propaganda, kremlin, policy, government	0	0	0	1	0	1	6	0	0	3	1	0	0	1	1	1	15	
US statements	official, Biden, administration, Washington, senior	5	0	0	0	0	0	0	0	1	1	3	0	4	0	0	1	15	
Refugees from Ukraine	country, people, leave, family, live	0	0	0	1	0	1	3	1	1	0	5	0	0	1	1	1	15	
Celebrity support for Ukraine	invasion, celebrity, call, message, visit	0	0	0	1	0	2	0	0	2	0	0	0	0	6	0	3	14	
Private Military Companies (PMCs)	Wagner, Prigozhin, private, force, rebellion	0	1	0	4	0	2	0	0	0	5	0	0	0	1	1	0	14	
NATO	NATO, talk, alliance, peace, invasion	0	0	1	0	3	0	0	0	0	0	8	0	1	0	0	0	13	
Brief of the conflict	conflict, news, Russian-Ukrainian, brief, guide	1	2	0	2	0	0	2	0	0	2	2	0	0	0	2	0	13	

End of Table 2P

Name of the dictionary	Five words with the highest weight in the dictionary	Current value		1 st lag		2 nd lag		3 rd lag		4 th lag		5 th lag		6 th lag		7 th lag		Result
Criminal cases	prison, court, arrest, crime, investigation	0	1	1	0	0	0	1	0	0	0	0	0	0	5	1	0	9
Life in Ukraine's back towns	western, soldier, artillery, Kyiv, Lviv	0	1	0	1	0	1	0	0	1	1	2	0	0	1	0	1	9
Ukrainian offensive	move, battlefield, success, territory, counteroffensive	0	0	0	2	0	0	0	1	0	3	0	1	2	0	0	0	9
Sanctions against the oil and gas sector	gas, oil, price, limit, cut	0	2	0	0	0	0	1	0	1	0	0	0	0	1	1	0	6
Predictions for the end of the conflict	time, win, end, forecast, analyze	0	0	0	0	0	0	3	1	0	1	0	1	1	1	0	0	7
Negotiations between the countries	Zelenskiy, leader, China, visit, support	0	1	0	0	0	2	0	2	0	0	0	1	0	1	0	0	7
Russian Foreign Ministry statements	Russia, foreign, Sergey, Lavrov, Moscow	2	0	1	0	0	0	1	0	0	0	0	0	3	0	0	0	7
Reaction of the world community to the conflict	Hope, happen, question, world, alliance	0	2	0	0	0	0	0	0	0	0	2	0	1	0	0	1	6
Russian opposition	Critic, politician, opposition, kill, figure	0	0	0	0	0	0	0	1	0	0	0	1	1	0	1	1	5
Military aid to Ukraine	Kyiv, tank, Germany, effort, increase	0	1	0	1	0	0	0	0	0	0	0	1	0	1	0	0	4
Events in Mariupol	Ukrainian, southern, russia-occupier, withdraw, Mariupol	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	1	4

Note. Column 1 shows the short names of dictionaries, the coefficients before which are significant in ARDL models, for which R² on cross-validation is higher than in models that take into account only past returns, according to the results of Welch's t-test. Column 2 shows five words included in them with the highest weight. The remaining columns show the number of companies for which the coefficient in front of this dictionary is significant at least at 10% significance level: "+" means that news on relevant topics is positively related to stock returns, "-" means that news on relevant topics is negatively related to stock returns.

Table 3P. Results of ARDL models construction using selected political dictionaries based on news from The New York Times and Interfax

Source	Name of the dictionary	Five words with the highest weight in the dictionary	Current value		1 st lag		2 nd lag		3 rd lag		4 th lag		5 th lag		6 th lag		7 th lag		Result	
			-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+		
Interfax	Refugees from Ukraine	Aid, children, refugees, Rostov (Region), appeal	21	0	12	0	6	0	1	0	7	0	8	0	0	0	0	1	1	56
Interfax	Russia-China relations	China, cooperation, meetings, discuss, jointly	0	7	0	8	0	6	0	5	0	3	0	1	0	3	0	1	1	34
Interfax	Western sanctions	EU, ban, package, sanctions, impose	25	0	4	0	0	0	0	0	0	0	0	0	0	1	0	0	0	30
Interfax	Strikes on Crimea	Crimea, traffic, bridge, transportation, republic	0	2	1	8	0	2	1	3	0	1	0	2	1	0	0	5	5	26
NYT	Grain deal	grain, sea, black, deal, food	0	0	0	3	0	4	0	0	0	1	0	6	0	7	0	1	1	22

Note. Column 1 shows the source of news on the basis of which the political dictionary was obtained. Column 2 shows the short names of dictionaries, the coefficients before which are significant in ARDL models, for which R² on cross-validation is higher than in models that take into account only past returns, according to the results of Welch's t-test. Column 3 shows the five words included in them with the highest weight. The remaining columns show the number of companies for which the coefficient in front of this dictionary is significant at least at 10% significance level: "+" means that news on relevant topics is positively related to stock returns, "-" means that news on relevant topics is negatively related to stock returns.

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The Specific Structure and Regional Proportions of Innovation Costs in the Russian Economy



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Abstract. The most important choice of a company in the implementation of innovative activities is the decision on the method of mastering new technologies. There is a distinction, first of all, between the development of technologies through their research and through their operation. The assessment of the ratio of these two methods of technology development in the economy of Russian regions has significant research potential. The study implements a methodology for comparative analysis of the spatial dynamics of various types of innovation activities, which allows overcoming the methodological limitations of official statistics. The coefficients of elasticity according to the time trend for the total costs of innovation activities, including research and development costs, costs for the purchase of machinery and equipment, and costs for industrial design (engineering) and design by groups of regions of Russia in 2011–2015, 2016–2018 and 2019–2022 were obtained. The results of the study detail the trends in the innovative development of groups of regions in 2011–2022 with a specification of the dynamics in the pre–sanctions and sanctions periods. It has been established that the systematic development of technologies through their research was carried out mainly in the pre-sanctions period and only in the most developed regions. During the period of increasing sanctions pressure, research and development are localized in metropolitan centers, and remote and underdeveloped regions begin to systematically master new technologies through the purchase of machinery and equipment, as well as industrial design (engineering) and design. The system of econometric estimates obtained in the study, which takes into account both the economic specifics of innovations and the methodological problems of their statistical accounting, made it possible to specify

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the role of the most important ways of mastering new technologies in the country's regions within the framework of the pre-sanctions and sanctions periods.

Key words: innovations, research and development, purchase of machinery and equipment, engineering, regions of Russia, sanctions shock, official statistics.

Introduction

The specific structure of innovations has traditionally been in the focus of research – from the classical works of J. Schumpeter to the latest taxonomic and econometric research. The effect of innovations on the economy and society depends both on the type of specific innovation and on the diversity of innovations in general (Schumpeter, 1934; Edwards-Schachter, 2018; Domnich, 2022). In Russian official statistics, the largest amount of information on the specific structure of innovations is provided by the structure of innovation costs of organizations¹ by type of innovation activity, formed on the basis of annual surveys of large and medium enterprises performed with the use of Form 4–innovations². According to Rosstat, in 2011–2022, innovation costs of Russian enterprises increased at current prices from 733.8 to 2662.6 billion rubles, which highlights the importance of the indicator. However, due to methodological limitations, the economic interpretation of this

data set is difficult. The study overcame the most important of such limitations, which hinder spatial and temporal comparisons of the structure and dynamics of innovation costs in the country's regions.

The aim of the work is to provide a generalized quantitative spatial and temporal characteristic of the change in the volume of organizations' costs for these types of innovative activities in the regions of Russia in 2011–2022. The objectives of the research are as follows: to study global experience related to the analysis of the structure of innovations in terms of two main ways of learning new technologies (exploration and exploitation); to analyze the spatial dynamics of innovations of these types in Russia's regions, taking into account methodological limitations imposed by official statistics; and to formulate stylized facts about the spatial and temporal changes in the structure of innovations in the regions of the country, taking into account significant heterogeneity of the latter.

The subject of the study is spatial and temporal differentiation of the volume and rate of change in innovation costs in the entrepreneurship sector of Russia's regions in the context of major types of innovation activities: research and development, purchase of machinery and equipment, industrial engineering and design. The object of the study includes 81 regions³ in 2011–2022 with detailed description for three periods: 2011–2015, 2016–2018 and 2019–2022, due to changes in the methodology of statistical observation.

¹ The actual expenditures, expressed in monetary form, on the implementation of one, several or all types of innovation activities (related to the process of developing and implementing technological innovations and other innovations) performed in the organization. Current and capital expenditures are taken into account as part of innovation costs. At the same time, it does not matter at what stage the innovation process is: at the final stage, when the equipment is already working, has been put into operation, that is, production has been established and goods (works, services) are being produced, or at the initial, intermediate stage, for example, when new equipment is still being installed or it is only ready for operation, but it has not been in operation yet, has not been tested in production and has not been used in the production of goods (works, services). Order of Rosstat (Federal State Statistics Service) 424, dated July 30, 2020. Available at: <https://www.garant.ru/products/ipo/prime/doc/74357805/> (accessed: August 1, 2024).

² Innovation costs of organizations (since 2010). Available at: <https://rosstat.gov.ru/storage/mediabank/Innov-5.xls> (accessed: July 1, 2024).

³ Sevastopol, as well as the republics of Ingushetia, Crimea and Chechnya were excluded from the sample.

Theoretical foundations of the research

According to Rosstat, the most important types of innovation activities are research and development, as well as the purchase of machinery and equipment. Their total share in the total innovation costs in 2011–2022 increased from 68.3% to 78.6%⁴. It is important that we are talking only about those types of research, development and investments in means of production, “which, during the observation period, are aimed at or lead to the creation of new or improved products (goods, services) that differ significantly from products previously produced by the organization, intended for market introduction, new or improved business processes, significantly different from previous relevant business processes intended for use in practice”⁵. In this regard, it is appropriate to consider these indicators as cost estimates of the intensity of implementation of two different ways of mastering new technology: research and operation. Research is defined as studying and adding technical knowledge in a new field, unfamiliar to the company before. Operation is the development of technologies that the company itself and (or) the firms surrounding it already possess (Lennerts et al., 2019; Clauss et al., 2020; Mahmood, Mubarik, 2020).

Exploration and exploitation of technology have different effects on the company’s performance. This urges enterprises to seek a compromise between them due to limited resources (Cho, 2020; Wen et al., 2020). When a firm directs funds to both exploration and exploitation (which is allowed by Form 4 –innovations), the

redistribution of resources between them entails two types of effects. When the amount of resources devoted to the exploitation of new technologies increases, then the amount of resources devoted to their exploration decreases. Thus, short-term performance of the company improves, but the opportunities for improving long-term performance decrease. On the other hand, if investments in exploration increase, then short-term performance of the firm becomes difficult to improve, but the opportunities for improving long-term performance of the firm increase. In this way, enterprises adapt to long term changes while maintaining short-term management performance through an appropriate balance between exploration and exploitation (Cho, 2020; Johnson et al., 2022).

The discussion about comparative importance of exploration and exploitation, and also about their confrontation and synergistic effect has been unfolding since the early 1990s⁶. However, the study of publication databases Google Scholar, Web of Science, Scopus and elibrary.ru showed that this discussion had never touched on the Russian experience. Therefore, the most important scientific problem of research on Russian material, according to the author, should be the most reliable assessment of the scale and dynamics of the phenomena under discussion, including in the regions of a large country.

According to official statistics and current prices, the most noticeable changes in the ratio between research and development costs and the purchase of machinery and equipment occurred in the first five years of the period under consideration, i.e. in 2011–2015. In 2011, R&D costs accounted for 23.6% of innovation costs, and the cost of

⁴ Calculated according to: Innovation costs of organizations (since 2010). Available at: <https://rosstat.gov.ru/storage/mediabank/Innov-5.xls> (accessed: July 1, 2024).

⁵ Order of Rosstat (Federal State Statistics Service) 424, dated July 30, 2020. Available at: <https://www.garant.ru/products/ipo/prime/doc/74357805/> (accessed: August 1, 2024).

⁶ For an overview of relevant research, see, for example (Li et al., 2023).

purchasing machinery and equipment – 44.8%. In 2012, the share of R&D costs increased to 35.9%, while the cost of purchasing machinery and equipment decreased to 42.1%. By 2015, the share of the indicators in innovation costs was 44.4% and 33%, respectively, and this ratio generally remained until 2022⁷.

The third most expensive, but not the most important, type of innovation activity is industrial engineering and design⁸. Engineering is considered as a link between all other types of innovation, and design is considered as a link between technology and the consumer (Medyanik, 2017; Charyton, 2015; Gershman et al., 2020). The share of industrial engineering and design in innovation costs decreased from 23.2% in 2011 to 9.8% in 2012 and further to 5% by 2022⁹.

Thus, in the whole country, the economic weight of R&D as a way of mastering new technologies is increasing and consolidating due to the outstripping growth of this type of cost compared with the purchase of machinery and equipment, and industrial engineering and design. The most significant changes occurred in 2011–2015. However, to answer the question of how universal this trend is in the context of regions – Central, Northern, Southern and Eastern, with an industrial or agricultural type economy, with a developed or insignificant scientific and production base, it is necessary to overcome significant methodological limitations.

⁷ Calculated according to: Innovation costs of organizations (since 2010). Available at: <https://rosstat.gov.ru/storage/mediabank/Innov-5.xls> (accessed: July 1, 2024).

⁸ In 2011–2014 Rosstat published the total cost of industrial engineering and design, and in 2015–2022 separately for industrial engineering and design. Accordingly, in order to ensure comparability, these costs have been added together.

⁹ Calculated according to: Innovation costs of organizations (since 2010). Available at: <https://rosstat.gov.ru/storage/mediabank/Innov-5.xls> (accessed: July 1, 2024).

Methodological problems of the study

Rosstat has been collecting data on the innovation activities of Russian organizations for three decades, but this does not contribute to the formation of an array of regional innovation statistics. The methods of collecting, processing and publishing statistics according to Form 4–innovations change regularly, which devalues the accumulated statistics from the point of view of longitudinal retrospective studies. Over 12 years (from 2011 to 2022), the coverage of the surveyed organizations changed four times: in 2011, 2015, 2016 and 2019¹⁰. Moreover, Rosstat does not publish comparable data on “old” techniques, and regional and sectoral detailing of innovation indicators for most regions does not make sense: if a single enterprise carried out innovation costs in industry *j* of region *i* per year *t* (a very frequent case), then Rosstat will not show information, referring to “ensuring confidentiality of primary statistical data”¹¹. Such data gaps are typical even for individual regions with small economies, including several innovatively active enterprises. The resulting cost indicators of technological innovations (the cost

¹⁰ In 2011, Form 4–innovations began to be distributed to organizations that engage exclusively in R&D, whose innovation costs in this year amounted to 15.9% of the total volume. Less significant changes occurred in 2015, when the range of industries surveyed was expanded and included construction of buildings and facilities made of prefabricated structures, and performance of other construction works. In the total pool of innovation costs in 2015 the above-mentioned industries accounted for only 0.001%, which makes it possible to consider 2015 as part of the period 2011–2015, and to start the next time period from 2016, when the agricultural sectors that were included in the survey already provided 1.2% of total innovation costs. Noticeable changes in sectoral coverage occurred in 2019, when “new” industries (construction, transportation and storage, healthcare and social services) raised total innovation costs by 13.2%, which makes it necessary to distinguish the periods 2016–2018 and 2019–2022. Calculated according to: Innovation costs of organizations (since 2010). Available at: <https://rosstat.gov.ru/storage/mediabank/Innov-5.xls> (accessed: July 1, 2024).

¹¹ See Federal Law 282-FZ, dated November 11, 2007 “On official statistical accounting and the system of state statistics in the Russian Federation” (Paragraph 5, Article 4; Paragraph 1, Article 9).

of innovative activities and the volume of innovative goods, works, services) cannot be normalized by the number of innovatively active enterprises and (or) the number of employees employed at such enterprises, since the relevant indicators are not made publicly available. There is also no official explanation about which deflators should be used to convert cost indicators of innovations into comparable prices; this procedure (if performed at all) is entirely at the discretion of the researcher, which gives rise to a wide arbitrariness in the methodology of empirical research.

In addition to these technical problems, there are objective statistical challenges caused by the economic nature of innovation as a phenomenon. Introducing a specific innovation is always a non-trivial social process with an unpredictable outcome (Domnich, 2022, p. 100). Russian regional innovation indicators are characterized by unsteady dynamics, high range of variation, abundance of zero values and unpredictability of cost indicators in terms of the comparative size of regional economies.

The very possibility of implementing large innovative projects in a particular region is conditioned primarily by the history of its exploration and development (the “track effect”) and the opportunity to attract funding from the federal budget¹². There is a pronounced differentiation of regions into a few territories that regularly absorb significant amounts of innovation costs, and regions whose innovation costs are incomparably small, even taking into

account the relative size of their economies. There is often a situation when the innovation system of a particular region regularly allocates funds for innovative activities, but hardly engages in shipping innovative products, and vice versa (Domnich, 2018). Therefore, economic analysis of innovation costs is valid both together with the volume of innovative goods, works and services, and separately from it.

The literature on innovative development of Russian regions does not usually take into account these methodological limitations (see, for example, Golova, 2024; Dementiev, 2024; Tereshchenko, 2024; Shorokhova, 2024). This makes a methodology that takes into account these methodological limitations even more relevant.

Research methodology

The solution of the stated tasks was carried out in four stages.

At the first stage, regional data on innovation costs, including research and development, purchase of machinery and equipment, and industrial engineering and design, hidden by Rosstat in order to “ensure the confidentiality of primary statistical data” were restored (*Tab. 1*). In the simplest case, when in year t within a particular federal district, Rosstat hid data for only one region i , then they were restored as a difference obtained by subtracting from the value of the total indicator for the district the sum of the indicator values of all other regions within the district. If data for two or more regions within the district were hidden, they were restored by proportionally distributing this difference across regions based on information about past and (or) future values of regional indicators. In total, according to four indicators for 2011–2022, 119 observations were restored, which were then used on a par with the official Rosstat data. Balanced data panels for 2011–2015, 2016–2018 and 2019–2022 were formed.

¹² The share of federal budget funding in the total innovation costs of Russian enterprises in 2010–2022 increased from 4.7 to 23.6% (Indicators of innovation activity: 2012: Statistical collection, Moscow: HSE, 2012. P. 411; Vlasova V.V., Gokhberg L.M., Gracheva G.A. et al. (2024). Indicators of innovation activity: 2024: Statistical collection; Moscow: ISIEZ VShE. P. 208. Available at: <https://www.hse.ru/primarydata/ii?ysclid=m2fjt7afyx658656305> (accessed: October 19, 2024).

Table 1. Restored data by region and year

Region	Innovation costs	including		
		Research and development	Purchase of machinery and equipment	Industrial engineering and design
Republic of Adygea	-	2021, 2022	2020	2020
Republic of Altai	-	2020–2022	2020	2020–2022
Republic of Buryatia	-	-	2020	2020–2022
Republic of Dagestan	-	-	-	2022
Republic of Kalmykia	2022	2021, 2022	2020, 2021	2020–2022
Kabardino-Balkarian Republic	-	-	2021	2020, 2022
Karachay-Cherkess Republic	2021, 2022	2020	2021, 2022	2020–2022
Republic of Karelia	-	-	-	2020, 2022
Republic of Komi	-	-	-	2021
Republic of Sakha (Yakutia)	-	-	-	2022
Republic of North Ossetia-Alania	2022	2021, 2022	2020	2020–2022
Republic of Tyva	-	2020	-	2020–2022
Republic of Khakassia	-	2020–2022	2020	2020–2022
Trans-Baikal Territory	-	2020	-	2021, 2022
Kamchatka Territory	-	-	-	2022
Amur Region	-	-	-	2020–2022
Arkhangelsk Region	2011, 2012, 2021, 2022	2020	2022	2020, 2022
Astrakhan Region	-	-	-	2020–2022
Vologda Region	-	-	-	2022
Ivanovo Region	-	2021	-	2020, 2022
Kaliningrad Region	-	-	-	2022
Kostroma Region	-	2021, 2022	-	2020, 2022
Magadan Region	-	2022	2021, 2022	2020–2022
Orel Region	-	2022	-	-
Pskov Region	-	-	-	2020–2022
Sakhalin Region	-	-	-	2022
Tyumen Region	2011, 2012	2011, 2012	-	2011, 2012
Ulyanovsk Region	-	-	-	2020
Nenets Autonomous Area	2021, 2022	2020	2022	2021, 2022
Chukotka Autonomous Area	-	2021	-	2021, 2022
Jewish Autonomous Region	-	2020–2022	2020–2022	2021, 2022
Restored, total, units	12	28	17	62

Source: own elaboration.

Table 2. Sample characteristics and deflators used

Indicator		Innovation costs	including		
			Research and development	Purchase of machinery and equipment	Industrial engineering and design
Sectoral coverage	2011–2015	Industry, communications, activities related to the use of computer and information technology, research and development, provision of other services			
	2016–2018	+ agriculture, construction of prefabricated buildings and facilities, construction of roofs of buildings and structures, performance of other construction works			
	2019–2022	+ construction, transportation and storage, activity in the field of healthcare and social services			
Mean (st. deviation) by region, billion rubles*	2011–2015	12.8 (25.6)	4.9 (14.9)	5.0 (8.6)	1.6 (5.8)
	2016–2018	17.1 (35.6)	7.5 (21.9)	5.7 (10.9)	1.8 (4.2)
	2019–2022	28.1 (75.4)	12.2 (37.3)	10.0 (25.2)	1.9 (4.8)
Number of zeros in the sample	-	53	9	61	
Deflators used		Price indices for products (costs, services) for investment purposes: total for the surveyed types of activity	Price indices for products (costs, services) for investment purposes: scientific research and development**	Indices of prices of machinery and equipment for investment purposes: total for the surveyed types of activity***	Price indices for other products (costs, services) for investment purposes: total for the surveyed types of activity****

* Calculated according to: Innovation costs of organizations (since 2010). Available at: <https://rosstat.gov.ru/storage/mediabank/Innov-5.xls> (accessed: July 1, 2024).

** Price indices for products (costs, services) for investment purposes up to 2016. Available at: <https://www.fedstat.ru/indicator/31111> (accessed: July 1, 2024); Price indices for products (costs, services) for investment purposes since 2017. Available at: <https://www.fedstat.ru/indicator/56591> (accessed: July 1, 2024).

*** Indices of prices of machinery and equipment for investment purposes up to 2016 (percent). Available at: <https://www.fedstat.ru/indicator/31104> (accessed: July 1, 2024); Indices of prices of machinery and equipment for investment purposes since 2017. (percent). Available at: <https://www.fedstat.ru/indicator/65804> (accessed: July 1, 2024).

**** Price indices for other products (costs, services) for investment purposes up to 2016 (percent). Available at: <https://www.fedstat.ru/indicator/40609> (accessed: July 1, 2024); Price indices for other products (costs, services) for investment purposes since 2017 (percent). Available at: <https://www.fedstat.ru/indicator/57798> (accessed: July 1, 2024).

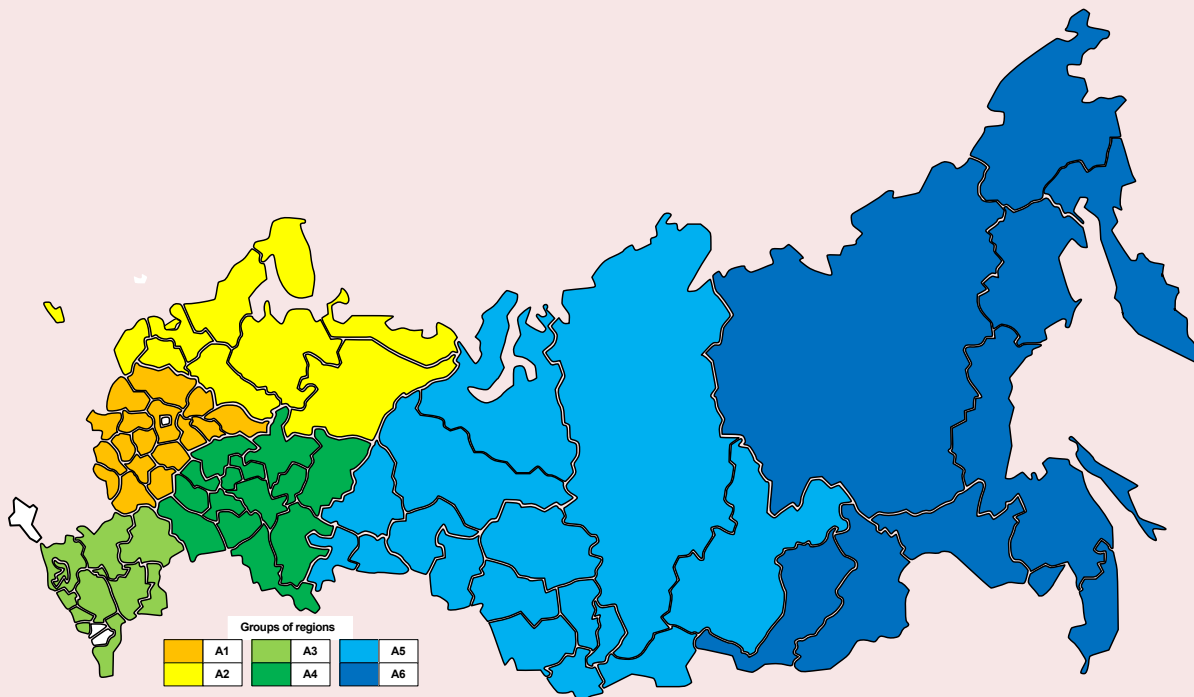
Source: own elaboration.

At the second stage, the cost indicators are brought to a comparable form by converting into 2011 prices using the most relevant, in our opinion, price indices for products, machinery and equipment and other investment products (*Tab. 2*). Thus, a deflator index was selected for each of the four indicators.

At the third stage, the regional analysis of the dynamics of innovation costs was limited to two

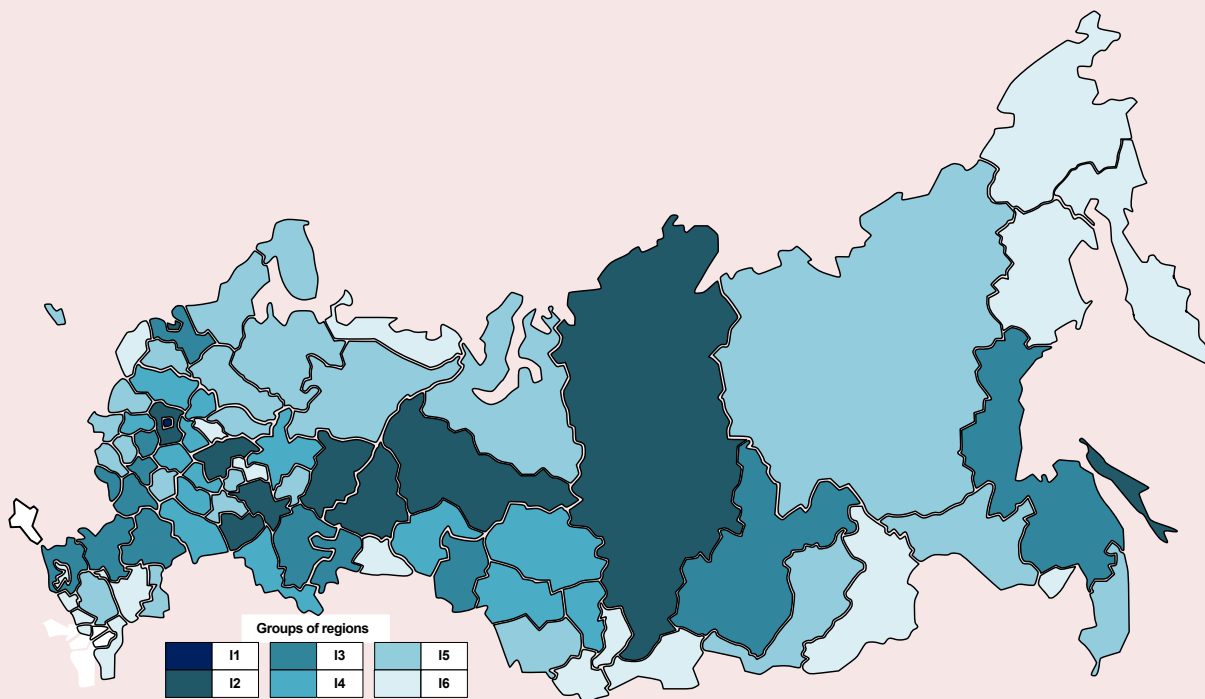
groupings of regions (*Fig. 1, 2*). The first grouping (A1... A6) is based on the administrative division of Russia's constituent entities (see *Fig. 1*). Group A1 corresponds to the Central Federal District except Moscow, Group A2 – Northwestern Federal District, Group A3 – Southern and North Caucasus federal districts, Group A4 – Volga Federal District, Group A5 – Ural and Siberian federal districts, and Group A6 – Far Eastern Federal District.

Figure 1. Grouping of regions according to administrative division



Source: own elaboration.

Figure 2. Grouping of regions by the total amount of innovation costs



Source: own elaboration.

The second grouping (I1... I6) is based on the total innovation costs for 2011–2022 in 2011 prices for each region (see Fig. 2). In it, Group I1 is represented by Moscow, a unique entity that stands out from all others with distinctively high innovation costs. In 2011–2022, their total volume in Moscow (in 2011 prices) amounted to about 2.7 trillion rubles (21.5% of all-Russian indicator), including R&D costs – 1.3 trillion rubles, costs for the purchase of machinery and equipment – 641 billion rubles, costs for industrial engineering and design – 242 billion rubles.

The 10 largest regions in terms of innovation costs after Moscow are included in Group I2: Saint Petersburg, the Republic of Tatarstan, the Krasnoyarsk and Perm territories, the Moscow, Nizhny Novgorod, Samara, Sakhalin, Sverdlovsk regions and the Khanty-Mansi Autonomous Area. This is the most economically powerful of all the identified groups with a total cost of 5.6 trillion rubles for the period under consideration (44.9% of all-Russian indicator), including 2.7 trillion rubles for R&D, 1.9 trillion rubles for the purchase of machinery and equipment, 421.8 billion rubles for industrial engineering and design.

Group I3 includes regions, in each of which the total amount of innovation costs in 2011–2022 in 2011 prices ranged from 100 to 250 billion rubles: the Republic of Bashkortostan, the Krasnodar and Khabarovsk territories, the Belgorod, Voronezh, Irkutsk, Lipetsk, Leningrad, Volgograd, Omsk, Rostov, Tula and Chelyabinsk regions. In total in 2011–2022 these regions spent 2.4 trillion rubles for innovation activities (18.8% of all-Russian indicator), including 481.9 billion rubles for R&D, 1.1 billion rubles for the purchase of machinery and equipment, 331.8 billion rubles for production design (engineering) and design.

Group I4 includes regions with innovation costs ranging from 50 to 100 billion rubles for 2011–2022:

the Republic of Mordovia, the Vladimir, Kaluga, Kemerovo, Kirov, Novosibirsk, Orenburg, Penza, Ryazan, Saratov, Tver, Tomsk, Tyumen and Yaroslavl regions. In total in 2011–2022 these regions carried out innovation expenditures in the amount of 956.5 billion rubles (7.6% of all-Russian indicator), including R&D costs – 344.2 billion rubles, costs for the purchase of machinery and equipment – 382.6 billion rubles, costs for industrial engineering and design – 123.5 billion rubles.

Group I5 includes regions with total innovation costs from 10 to 50 billion rubles for 2011–2022: the republics of Buryatia, Karelia, Komi, Udmurtia, Chuvashia, Yakutia, Altai, the Primorye and Stavropol territories, the Amur, Arkhangelsk, Astrakhan, Bryansk, Vologda, Kaliningrad, Kostroma, Kursk, Murmansk, Novgorod, Oryol, Smolensk, Tambov, Ulyanovsk regions and the Yamal-Nenets Autonomous Area. In total in 2011–2022 these regions allocated 696.1 billion rubles on innovations (5.6% of all-Russian indicator), including R&D – 162.7 billion rubles, purchase of machinery and equipment – 362.7 billion rubles, industrial engineering and design – 95.3 billion rubles.

Group I6 is represented by regions with total innovation activity costs of up to 10 billion rubles for 2011–2022: the republics of Altai, Adygea, Dagestan, Kabardino-Balkaria, Kalmykia, Karachay-Cherkessia, Mari El, North Ossetia, Tyva, Khakassia, the Trans-Baikal and Kamchatka territories, the Ivanovo, Pskov, Kurgan, Magadan regions, the Nenets and Chukotka autonomous areas, as well as the Jewish Autonomous Region. In total in 2011–2022 these regions provided 70.9 billion rubles of innovation costs (0.6% of all-Russian indicator), including R&D – 14.3 billion rubles, purchase of machinery and equipment – 39.6 billion rubles, industrial engineering and design – 9.2 billion rubles.

At the fourth stage, for the periods 2011–2015, 2016–2018 and 2019–2022, we estimated the elasticity of the indicators of innovation costs $inno_{it}$ in 2011 prices according to time trend t with detailing for groups A1... A6 and I2... I6 based on the generated data panel. This made it possible to quantify changes in the innovation costs within each period, with adjustments for spatial heterogeneity.

The elasticity of the total innovation costs according to the time trend was estimated by a linear equation on panel data with fixed effects of regions:

$$\ln inno_{it} = c + \beta^a t + \varphi_i^a + \varepsilon_{it}, \quad (1)$$

where c – constant, t – time trend, φ_i – individual effect of the i -th region, ε_{it} – equation residuals. Since the data under consideration are characterized by a significant range of fluctuations in values (see Tab. 2), the problem of heteroscedasticity of the residuals of equation (1) is relevant; robust estimates of variance obtained by the Huber – White method (Huber, 1967; White, 1980) were used in its estimation.

Data on the costs of R&D, purchase of machinery and equipment, and industrial engineering and design have a significant number of zeros in the samples; therefore, a fixed-effect Poisson model for regions and variance adjustment using the Huber – White method was used to assess their elasticity according to the time trend. The Poisson model assumes that observations $inno_{i1}, \dots, inno_{iT}$ are distributed independently, regressor t is strictly exogenous, and the individual effects of regions φ_i^b have a Poisson distribution with parameter μ_{it} :

$$\Pr(inno_{it} = y | \mu_{it}) = \exp(-\mu_{it}) \mu_{it}^y / y! \quad (2)$$

where $\mu_{it} = \exp(\beta^b t + \varphi_i^b)$

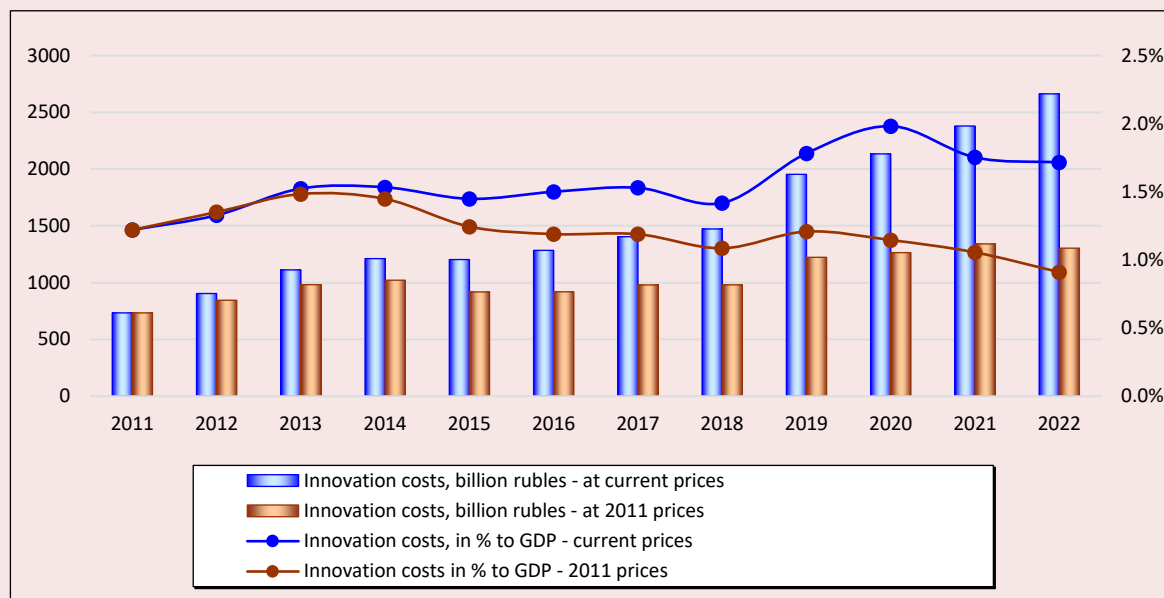
Regarding the quality of the data used, it is important that the Poisson regression provides a consistent estimate of the parameters, even if the data do not correspond to the Poisson distribution (Lukman et al., 2021).

We focus our attention on the elasticity coefficients of innovation costs indicators according to time trend β^a and β^b , interpreted as the average rate of change of the indicator over the period. The most important parameters in this case are the magnitude and statistical significance of elasticity coefficients. The latter is interpreted as a degree of consistency of the dynamics of innovation costs indicator within a group of regions. High statistical significance of elasticity coefficients according to the time trend means that during the period under consideration, innovation costs in all regions included in the group, on average, changed in one direction: they either increased or decreased. Low statistical significance of β^a and β^b , on the contrary, indicates multidirectional or unsystematic trends in the changes in innovation costs in the regions.

Research results

Innovation costs in 2011–2022 were growing almost exclusively at current prices and mainly due to the expansion of the sectoral coverage of statistical observation (Fig. 3). At constant 2011 prices the indicator increased during this time from 733.8 to 1,304 billion rubles, i.e. by 77.7%. Only in 2011–2014, the increase in the indicator at current prices was accompanied by its increase at constant 2011 prices, with the sectoral coverage remaining unchanged; this short period is the only period of innovation activity growth at Russian enterprises. Subsequent years show stagnation of innovation costs, converted into comparable prices. In comparable terms, the national economy is growing faster than innovation costs, so their economic weight in GDP is decreasing: from 1.4% to 0.9%

Figure 3. Total innovation costs in 2011–2022



Source: own calculation.

in 2014–2022¹³. Thus, we can draw a cautious conclusion about a decrease in the “quality” of the technological component of Russia’s economic growth after 2014.

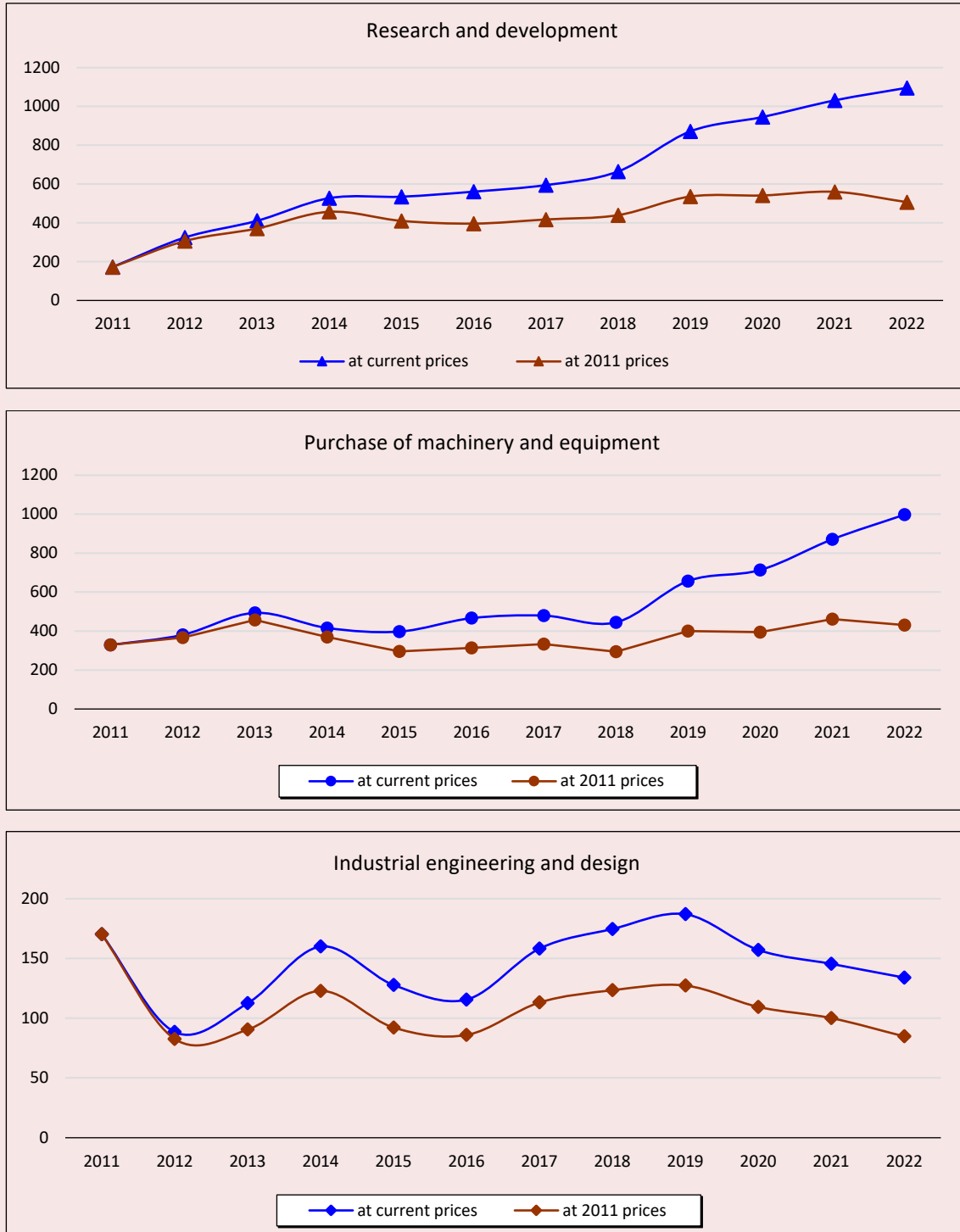
The dynamics of the aggregate indicator is determined by trends in the costs of R&D and purchase of machinery and equipment (*Fig. 4*). Consistent growth in 2011–2014 was associated with an increase in R&D costs, while the level of costs for the purchase of machinery and equipment at comparable prices decreased

from 2014 and then stagnated. The dynamics of industrial engineering and design costs are characterized by wave-like changes with peak values in 2011, 2014 and 2019, followed by a downward trend.

In the country as a whole, total innovation costs in the regions did not have clear dynamics either in 2011–2015, 2016–2018, or 2019–2022: elasticity coefficients according to time trend β^a in the full sample of regions are statistically insignificant in all periods (*Tab. 3*).

¹³ Calculated according to: Gross domestic product (in current prices, billion rubles). Available at: https://rosstat.gov.ru/storage/mediabank/VVP_god_s_1995-2023.xlsx (accessed: August 1, 2024); Indices of physical volume of gross domestic product (as a percentage of the previous year). Available at: https://rosstat.gov.ru/free_doc/new_site/vvp/vvp-god/tab3.htm (accessed: August 1, 2024).

Figure 4. Innovation costs in the regions of Russia in major areas in 2011–2022, billion rubles



Source: own calculation.

Table 3. Dynamics of innovation costs indicators broken down by group of regions in 2011–2022

Group of regions	Innovation costs (equation (1))				including (equation (2))											
					Research and development				Purchase of machinery and equipment				Industrial engineering and design			
	2011–2015	2016–2018	2019–2022		2011–2015	2016–2018	2019–2022		2011–2015	2016–2018	2019–2022		2011–2015	2016–2018	2019–2022	
Russia – total	-0.033	0.041	0.016		0.181***	0.054	-0.006		-0.019	-0.036	0.035		-0.098	0.156*	-0.142*	
Russia without Moscow	-0.033	0.042	0.016		0.191***	0.095**	-0.061*		-0.019	0.054	0.090		0.071	0.147	-0.112	
A1	0.001	-0.125*	0.000		0.290***	-0.025	-0.018		-0.126	0.049	0.047		-0.042	-0.025	0.069	
A2	-0.200*	0.057	0.064		0.124***	-0.047***	-0.022***		-0.180**	0.190	-0.100		0.077***	-0.270***	0.219	
A3	-0.026	0.062	0.127		0.276***	0.127***	-0.221***		0.156	-0.091	0.030		-0.045	0.319*	0.109*	
A4	0.067**	0.095	-0.005		0.102	0.286***	-0.021		0.015	0.082**	0.064		0.203*	0.167	-0.075	
A5	-0.050	0.131	-0.057		0.224***	0.110	-0.105**		-0.023	-0.023	0.228*		-0.014	0.278*	-0.109	
A6	-0.032	0.072	0.013		0.058	0.034	-0.303		0.130	0.141***	0.258***		-0.171	0.351	0.177*	
I2	0.167***	0.080	0.036		0.225***	0.107*	-0.062		0.052	0.045	0.118		0.192**	0.139	-0.076	
I3	0.061	0.019	-0.065		0.127***	0.036	-0.140***		-0.058	0.030	0.100		-0.061	0.289**	-0.308	
I4	0.008	-0.074	-0.071		0.081***	0.080	-0.042		-0.057	0.005	0.000		-0.053	-0.180***	0.053	
I5	-0.089	0.142	0.014		0.056	0.170	0.121		-0.193**	0.241*	-0.005		0.092	0.077	0.197***	
I6	-0.164**	-0.002	0.127		0.069	-0.084	0.034		-0.141**	-0.064	0.001		-0.126	-0.072	0.204	

* – significance at 10%;

** – significance at 5%;

*** – significance at 1%.

Source: own calculation.

Consistent nationwide growth of the indicator in 2011–2015 was provided by the top 10 regions after Moscow¹⁴ (Group I2). Among the groups of territories allocated on an administrative basis, the Volga regions (Group A4) made a significant positive contribution, where four regions of Group I2 are localized. At the same time, a statistically noticeable negative trend during this period is recorded in the least developed (Group I6) and Northwestern (Group A2) regions of the country. Thus, the only period during the entire observed period when there was an increase in innovation costs contains serious contradictions at the regional level, since a consistent increase in the indicator took place only in the most developed regions, there was no statistically significant dynamics in the median regions, and the least developed regions showed a consistent decrease.

In 2016–2018 and 2019–2022, no consistent dynamics of innovation costs were recorded within the groups under consideration, except for a negative trend in the central regions (Group A1) in 2016–2018. Thus, the seven-year period from 2016 to 2022, in terms of innovative development, which is not possible without innovation costs, appears to be a time of prolonged stagnation both in the sample as a whole and within individual groups of regions.

Breaking down innovation costs into types shows that the greatest dynamism (the largest number of statistically significant elasticity coefficients according to time trend β^b) was shown by R&D costs. In 2011–2015 their volume consistently increased both nationwide and within the majority of the groups under consideration: A1, A2, A3, A5, I1, I2, I3, I4. In 2016–2018 R&D costs began to increase in the Volga regions (Group A4) and

continued to increase in the southern regions (Group A3), as well as in the most developed regions (I1 and I2). At the same time a consistent decline in the indicator began in the northwestern regions (Group A2). The period 2019–2022 is characterized by significant negative trends in R&D costs in the nationwide sample, in the groups of regions A2, A3, A5, I3 and a positive trend in Moscow.

Here we should point out three facts: first, the absence of significant β^b coefficients within all three periods in the regions of the Far East (Group A6) and the two least developed groups of regions (groups I5 and I6); second, a sharp decrease in the number of groups of regions with significant positive coefficients β^b in 2016–2018; in terms of grouping regions by total innovation costs, significant positive dynamics remained only in the group of the most developed regions. Third, we observe extremely negative statistically significant coefficients β^b in 2019–2022, except for Moscow.

These facts show a specific picture regarding the development of corporate research and development in the regions. A consistent and relatively widespread increase in R&D costs was possible only in the period before the 2014–2015 sanctions shock. But even then, it did not affect the most remote (Far East) and least developed (innovation costs up to 50 billion rubles in total for 2011–2022) regions. As part of the grouping of regions by total value of innovation costs, the values of β^b decreased from the most developed groups of RF constituent entities to the least developed. Starting from 2016–2018, the number of groups of regions characterized by consistent R&D growth has been rapidly decreasing, and the city of Moscow ceases to fit into all-Russian trends, becoming the only stable research center in the business sector. Finally, in 2019–2022, despite significant expansion of the sectoral coverage of statistical observation, there is a widespread collapse in R&D volume, with the exception of Moscow.

¹⁴ The amount of innovation costs in Moscow remained at the level of, approximately, 160 billion rubles in 2011–2018, and after a significant expansion of the sectoral coverage of statistical observation – at 352 billion rubles in 2019–2022 (at 2011 prices).

The spatial patterns of changes in the cost of purchasing machinery and equipment were in many ways the opposite of the spatial patterns of R&D costs. The dynamics of this type of costs in a nationwide sample of regions remained inelastic in terms of the time trend throughout all three periods. In 2011–2015 significant negative β^b coefficients were recorded in the Northwestern regions (Group A2), as well as in regions with total innovation costs of up to 50 billion rubles in 2011–2022 (groups I5 and I6). Thus, while groups I1, I2, I3 and I4 consistently increased R&D costs, groups I5 and I6 consistently reduced the costs of purchasing machinery and equipment. In the period before the sanctions shock, the least developed regions were forced to reduce the intensity of technology learning, including even through exploitation, while the more developed regions increased the intensity of technology learning through exploration.

In 2016–2018, there was a consistent increase in the cost of purchasing machinery and equipment in the Volga (group A4) and Far Eastern (Group A6) regions, as well as in regions with total innovation costs in the range from 10 to 50 billion rubles in 2011–2022 (Group I5). In 2019–2022, positive statistical elasticity according to the time trend is observed in the Ural-Siberian (Group A5) and Far Eastern (Group A6) regions. Thus, in the context of the growing sanctions pressure, Far Eastern territories that were deprived of the opportunity to consistently increase the volume of R&D (i.e., to learn new technology through exploration) most consistently increased the intensity of learning new technology embodied in a new technique through exploitation. Over time, this process has been intensifying, as evidenced by a noticeable increase in β^b coefficient of Far Eastern regions in 2019–2022 compared to 2016–2018.

The decrease in the economic weight of the costs of industrial engineering and design in 2011–2022 was accompanied by their transfer from the most developed regions to the least developed ones. Thus, in 2011–2015 a consistent increase in innovation costs of this type was recorded in the regions of Group I2, while in 2016–2018 – in the regions of Group I3, and in 2019–2022 – in the regions of Group I5. We should note that this result is the least reliable due to the fact that the costs of production engineering and design are characterized by the largest range of fluctuations, the number of restored data and zeros in the sample (see Tab. 1, 2).

Conclusion

In the course of the research, we sought to answer a simple question: what are the comparative dynamics of innovation costs in the country's regions, including in terms of the most important types of innovation costs. Individual trajectories of innovative development of regions are interrupted by considerable statistical outliers, zero values of indicators, and observations hidden by Rosstat. This makes their private analysis unproductive, overly time-consuming and unrepresentative. We propose a methodology that includes comparative analysis of the spatial dynamics of innovation costs indicators based on the selection of price deflators, administrative and economic grouping of regions, as well as calculation of elasticity according to time trend, including within the framework of the Poisson model.

The disadvantages of the proposed methodology include tight time frame of periodization, arbitrariness in the use of price deflators, a priori grouping of regions and, probably, limited attention to the trajectories of innovative development of individual territories. These shortcomings determine the potential of future research. At the same time, the results of the work provide an opportunity to see

more non-obvious facts about the dynamics and specific structure of innovation costs in Russia's regions in 2011–2022.

Innovation costs at comparable prices, both aggregate and in terms of the most important areas, showed the most consistent dynamics during the period when the 2014–2015 sanctions shock did not have a systems effect on the economy. R&D costs (learning new technologies through exploration) have consistently increased during this period, and the costs of purchasing machinery and equipment (learning new technologies through exploitation) have consistently decreased. The period from 2016 to 2022, when sanctions apparently came into full force, appears to be a depressing time for searching for new configurations of innovative development, which, in the light of the proposed methodology, is expressed as the lack of consistent dynamics of innovation costs in most regions. In particular, the dynamics of R&D costs during this period remained steadily positive only in Moscow, while in the Northwestern, Southern and Ural-Siberian regions it became steadily negative.

Regions' access to new technologies and opportunities for their generation vary. There is a connection between the spatial and specific structures of innovation in the national economy, but this connection changes its functional forms

depending on the period and the strength of sanctions pressure. Thus, in 2011–2015, a consistent increase in R&D costs was observed in the most developed groups of regions, and in proportion to the amount of total innovation costs for 2011–2022. At that time, in the least developed regions the cost of purchasing machinery and equipment was consistently decreasing, i.e. these territories could not afford even the simplest way to master technologies through the operation of existing ones. During periods of increased sanctions pressure in 2016–2018 and 2019–2022 the consistent increase in the simplest forms of technology development – acquisition of machinery and equipment in combination with industrial engineering and design – was carried out far from the major metropolitan centers of science and innovation: in the Far East, as well as in the least developed regions.

Scientific significance of the results obtained is due to the fact that the discussion on the comparative economic significance of various ways of learning new technologies is shifting toward taking into account Russian specifics, and also due to the clarification of the patterns of spatial dynamics of various innovations in the regions of the country at the present stage of development. In practical terms, the results can be used to improve federal and regional innovation policy.

References

- Charyton C. (2015). Creative engineering design: The meaning of creativity and innovation in engineering. In: Charyton C. (Ed.) *Creativity and Innovation among Science and Art*. London: Springer. DOI: 10.1007/978-1-4471-6624-5_7
- Cho Y. (2020). The effects of knowledge assets and path dependence in innovations on firm value in the Korean semiconductor industry. *Sustainability*, 12(2319). DOI: 10.3390/su12062319.
- Clauss T., Kraus S., Kallinger F.L., Bican P.M., Brem A., Kailer N. (2020). Organizational ambidexterity and competitive advantage: The role of strategic agility in the exploration-exploitation paradox. *Journal of Innovation & Knowledge*, 6(4). DOI: 10.1016/j.jik.2020.07.003
- Dementiev V.E. (2024). On the ability of regions to adapt to various external shocks. *Ekonomicheskie i sotsial'nye peremeny: fakty, tendentsii, prognoz=Economic and Social Changes: Facts, Trends, Forecast*, 17(3), 36–49. DOI: 10.15838/esc.2024.3.93.2 (in Russian).

- Domnich Ye.L. (2018). Regional and sectoral proportions of technological innovations in Russia's industry. *Regionalistica=Regionalistics*, 5(1), 41–58. DOI: 10.14530/reg.2018.1.41 (in Russian).
- Domnich Ye.L. (2022). Innovation as a factor of changing the productivity of enterprises: Measurement and interpretation issues. *Prostranstvennaya ekonomika=Spatial Economics*, 4, 93–127. DOI: 10.14530/se.2022.4.093-127 (in Russian).
- Edwards-Schachter M. (2018). The nature and variety of innovation. *International Journal of Innovation Studies*, 2(2), 65–19. DOI: 10.1016/j.ijis.2018.08.004
- Gershman M., Thurner T.W., Chudaeva M. (2020). Industrial design for economic growth: Russia's efforts to improve its manufacturing sector. *Creative Industries Journal*, 13(3), 244–258. DOI: 10.1080/17510694.2019.1707520
- Golova I.M. (2024). Coordination of regional innovation processes to ensure the technological competitiveness of Russia. *Ekonomika regiona=Economy of regions*, 20(1), 63–75. DOI: 10.17059/ekon.reg.2024-1-5 (in Russian).
- Huber P.J. (1967). The behavior of maximum likelihood estimates under nonstandard conditions. In: *Proceedings of the Fifth Berkeley Symposium on Mathematical Statistics and Probability*. Berkeley, CA: University of California Press.
- Johnson P.C., Laurell C., Ots M., Sandström C. (2022). Digital innovation and the effects of artificial intelligence on firms' research and development – Automation or augmentation, exploration or exploitation? *Technological Forecasting and Social Change*, 179(121636). DOI: 10.1016/j.techfore.2022.121636.
- Lennerts S., Schulze A., Tomczak T. (2019). The asymmetric effects of exploitation and exploration on radical and incremental innovation performance: An uneven affair. *European Management Journal*, 38(1), 121–134. DOI: 10.1016/j.emj.2019.06.002
- Li P., Liu H., Li Y., Wang H. (2023). Exploration–exploitation duality with both tradeoff and synergy: The curvilinear interaction effects of learning modes on innovation types. *Management and Organization Review*, 19(3), 498–532. DOI: 10.1017/mor.2022.49
- Lukman A.F., Adewuyi E., Månsson K., Kibria B.S.G. (2021). A new estimator for the multicollinear Poisson regression model: Simulation and application. *Scientific Reports*, 11(3732). DOI: 10.1038/s41598-021-82582-w
- Mahmood T., Mubarik M.S. (2020). Balancing innovation and exploitation in the fourth industrial revolution: Role of intellectual capital and technology absorptive capacity. *Technological Forecasting and Social Change*, 160(1), 120248. DOI: 10.1016/j.techfore.2020.120248
- Medyanik Yu.V. (2017). Engineering services market in Russia: Problems and development prospects. *Rossiiskoe predprinimatel'stvo=Russian Journal of Entrepreneurship*, 18(24), 4221–4234. DOI: 10.18334/rp.18.24.38595 (in Russian).
- Schumpeter J. (1934). *The Theory of Economic Development*. Cambridge, MA: Harvard University Press.
- Shorokhova I.S. (2024). Methodological approach to assessing the impact of concentration effects on the innovative development of Russian regions. *Problemy razvitiya territorii=Problems of Territory's Development*, 28(1), 42–60. DOI: 10.15838/ptd.2024.1.129.4 (in Russian).
- Tereshchenko D.S. (2024). Interregional effects of innovations in Russia: Analysis from the Bayesian perspective. *Prostranstvennaya ekonomika=Spatial Economics*, 20(1), 125–143. DOI: 10.14530/se.2024.1.125-143 (in Russian).
- Wen J., Qualls W.J., Zeng D. (2020). To explore or exploit: The influence of inter-firm R&D network diversity and structural holes on innovation outcomes. *Technovation*, 100(3), 102178. DOI: 10.1016/j.technovation.2020.102178
- White H. (1980). A heteroskedasticity-consistent covariance matrix estimator and a direct test for heteroskedasticity. *Econometrica*, 48, 817–830. DOI: 10.2307/1912934

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Technique for Assessing the Digital Divide Based on the Engagement Index on VKontakte Social Media Platform



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Abstract. In modern society, social media have become one of the main sources of information. Many local governments began working with the population on social media platforms after this requirement was legally established in December 2022. Without involving the population in the official information agenda, it is impossible to engage them in a constructive dialogue to identify and solve local problems. Due to the difference in experience, Internet communication skills, and time, municipalities cope with this task with varying degrees of success, which indicates a digital divide. The aim of the research is to develop methods for measuring the digital divide in the work of local government on social media using VKontakte social media platform as an example. To do this, the official pages of municipalities in VKontakte were identified, engagement indices were calculated, the influence of socio-economic and other factors on their values was assessed using regression models, and municipal structures were grouped according to the engagement index using cluster analysis. The study covers 615 settlements, 198 municipalities and okrugs of the Northwestern Federal District in the period from 2017 to 2022. The findings indicate that the use of the engagement index to measure the digital divide is practical only within reference groups. It is proved that the value of the engagement index is negatively affected by the number of population, community longevity, proximity to the regional center, and average wage. It is determined that the largest digital divide is typical for a group of settlements with a population of less than 4.1 thousand people. The proposed methods for assessing the digital divide can be used by communications policy administration to evaluate the performance of local governments on social media, build a scaled system of targets, search for best practices and prevent artificial overestimating of engagement levels.

Key words: social media, VKontakte, engagement index, digital divide, municipalities, settlements.

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Introduction

Until recently, municipal entities in Russia created official accounts (communities or pages) on social media as needed. Due to the high social site activity of citizens on local problems, governments had to register their official communities in order to intercept the information agenda from spontaneously created territorial public pages (Dement'eva, 2021) and reframe the dialogue with the population. The increased importance of social media while communicating with citizens has made governments institutionalize relations with the owners of these resources. Since December 1, 2022, an official social media page (government's page) has become mandatory for municipal entities. For these purposes, it is allowed using only the VKontakte (VK) and Odnoklassniki social networks,

since they are in Russian jurisdiction. A special mark "Government organization" has appeared on these platforms to identify governments' pages.

The adoption of social media by governments around the world (Hofmann et al., 2013; Larsson, 2013; Lovari, Parisi, 2015) was a response to the request of millions of citizens for whom social networks and messengers have become a familiar and convenient way of communication. Initially, social media were not intended for public authorities' needs, but their use by local governments directly revealed a number of advantages over traditional methods of communication: low cost; rapid widespread adoption; ease of use and transfer rate (Reddick, Norris, 2013). In addition, governments' pages provoke discussions and unite citizens to solve

local problems (Dement'eva, 2021). However, there are some disadvantages in interaction with citizens via social media. First, public employees become available for inquiries around the clock, and citizens expect them to respond quickly (Zavattaro, Sementelli, 2014). Second, the inherent imaginary anonymity of social media causes inhabitants' rudeness toward the authorities and neighbors, which acts as a strong demotivating factor for social media administration employees. Perhaps the main problem identified in the early stages of the adoption of social media was that local governments were not aware of their time and resources expenditure while using social media. They did not know their actual audience, members of their organization who were responsible for communication process, how and when they should respond, and what impact their social media communication had on citizens (Kavanaugh et al., 2012).

The listed problems were also faced by domestic government bodies, who were forced to integrate social media into their working processes. Although some municipal governments' pages had existed for more than ten years by December 2022, a significant number of municipalities had no such experience or it was very little. In this regard, E.N. Rychikhina and A.M. Borovikova indicate such problems of domestic governments' pages as a low level of citizen engagement, plagiarism and little feedback (Rychikhina, Borovikova, 2023). There were no uniform rules or instructions on how to manage such a page, and the guidelines of the Regional Management Center¹ on filling the government's page with information appeared only in the spring of 2024². It should be highlighted that workload of the

Regional Management Center's specialists became overwhelming, since not only municipalities, but many subordinate public sector organizations had to create governments' pages. And while the ones of municipal districts and okrugs have been under the supervision of Regional Management Centers since 2020 and their management strategies have been more or less worked out, such systematic work has not been carried out for settlements. As a result, different experience in organizing work on social networks causes a digital divide in this area.

Due to mandatory presence on social media, an increase in the digital divide will reduce the overall efficiency of lagging local governments, as they are often not able to meet the level of the most experienced colleagues on their own and have to spend more time solving the same task. Another manifestation of this problem is the formal attitude toward the management of governments' pages in order to save time, when the main thing is to achieve certain performance targets, and the ways to do that become unimportant. This approach does not contribute to people's trust in authorities, nor to the desire to communicate and solve local problems collaboratively with government bodies. Another important issue that should be worked out to overcome the digital divide is the establishment of criteria for evaluating the effectiveness of the municipality on social media. Intuitively, it is impossible to compare within a single scale, on the one hand, a regional center, where the local administration can number several hundred people and the management of a government's page is under the supervision of an entire department, and, on the other hand, a rural settlement, where its head is the only employee of the administration who solves all issues. In these municipal entities, the number of the happening events and related social media messages will be different. Accordingly, public sector organizations responsible for information policy should set standards and rules for

¹ The Regional Management Center exists in every constituent territory of the Russian Federation to track public complaints on social media and promptly communicate the information received to relevant departments and responsible government bodies.

² They provide practice and examples only from large municipal entities.

the management of municipal governments' pages respectively to the current practice and objective capabilities of municipalities to involve the population in online communication. In this regard, research works aimed at finding ways to reduce the digital divide by introducing effective type-of-municipality-oriented programs of social media presence, are gaining high relevance and great practical value. Therefore, the aim of the article is to develop methods for measuring the digital divide in the work of municipal entities on social media using the VK social network as an example. To achieve it, the following tasks should be solved: 1) determine citizen engagement on governments' pages; 2) identify socio-economic indicators of municipalities that affect the engagement levels; 3) group municipalities by identified factors and rank engagement by groups; 4) determine the parameters of the digital divide within the groups and criteria that should be used to bridge it.

Literature review

Social media collect a variety of quantitative metrics that capture user activity. By combining these metrics, the managers of social media receive information about the engagement of their users. Depending on the platform (Triantafyllidou et al., 2016; Trunfio, Rossi, 2021) and the tasks (Larsson, 2013; Agostino, Arnaboldi, 2016; Ravenda et al., 2022), the combination of metrics used to assess engagement varies. The standard available indicators are: 1) the number of *posts*; 2) the number of *likes*; 3) the number of comments; 4) the number of reposts; 5) the number of comments' likes (*com_likes*); 6) the number of *views*; 7) the number of followers (*fans*).

In foreign works (Agostino, Arnaboldi, 2016; Levkov, 2017; Bonsón et al., 2019; Silva et al., 2019), a three-part index proposed by E. Bonsón and M. Ratkai (Bonsón, Ratkai, 2013) was most widely used to assess public engagement on the official government bodies' pages on social media (formula 1). This index shows the average number

of actions per post on the community's wall per thousand followers.

$$INDEX_{BR} = \frac{(likes + comments + reposts)}{posts \times fans} \times 1000 \quad (1)$$

The undoubted advantage of this index is that it takes into account both the publication frequency of the settlement government (*posts*) and audience coverage (*fans*), because both of these factors affect the number of comments, likes and reposts. In some works (Haro-de-Rosario et al., 2018; Gálvez-Rodríguez et al., 2018), as an improvement of this index, it is proposed to use the ratio of the number of followers to the number of municipality's population instead of the number of followers. In our opinion, it complicates index interpretation and further analysis of the established interaction practice effectiveness, since, other things being equal, communities with a small proportion of followers relative to the population will show higher engagement.

In domestic studies on this topic, engagement indices were used to audit the communication of the heads of Russian regions (Filatova, 2020) and evaluate the effectiveness of the official VK pages of the following cities: 1) seven administrative centers of the regions of the Central Federal District (Roslyakova, 2023); 2) 170 cities with a population over 100 thousand people³ (Petrov, Shitova, 2023). And while M.V. Roslyakova in her work (Roslyakova, 2023) stuck to E. Bonsón's approach to assessing engagement, O.G. Filatova developed her own engagement index (Filatova, 2020):

$$INDEX_F = \frac{posts}{(fans / (\overline{likes} + \overline{comments} + \overline{reposts}))}, \quad (2)$$

where \overline{likes} is the average value of likes per post; $\overline{comments}$ is the average value of comments per post; $\overline{reposts}$ is the average value of reposts per post.

³ The ER_Post indicator is used to assess engagement. Its calculation formula is not given in the work.

However, broadly speaking, formula (2) can be simplified and reduced to the sum of the number of comments, likes and reposts per follower.

In these studies, only spatial sampling was used to calculate the engagement index. In similar works evaluating the activity of local administrations on social media (Guillamón et al., 2016; Faber et al., 2020; Stone et al., 2022) or studying factors contributing to the creation of local governments' official accounts (Triantafillidou et al., 2016; Stone, Can, 2021; Bhatia, Mabillard, 2022), spatial sampling is also used. Only a few works can be noted (Mabillard et al., 2024; Karamagioli et al., 2022; Ravenda et al., 2022), monitoring these processes' rate.

To explain the data received on public engagement, local government activity and official page presence in one or more social media, the researchers studied the effects of many factors. First of all, the characteristics of the population were considered: number; age (average age (Ravenda et al., 2022), median age (Mabillard et al., 2024)); percentage of people in the age group 20–65 and percentage of people in the age group 65+ (Faber et al., 2020); percentage of people with higher education (Faber et al., 2020; Stone et al., 2022); as well as their income level (median income (Stone, Can, 2021; Mabillard et al., 2024), income per capita (Guillamón et al., 2016; Gálvez-Rodríguez et al., 2018; Ravenda et al., 2022), per capita purchasing power (Silva et al., 2019)). Research works show that the size of the population positively influences the activity of local governments on social media (Guillamón et al., 2016; Silva et al., 2019), and negatively influences citizen engagement (Silva et al., 2019). The high intensity of events typical for densely populated municipalities leads to a large number of posts that residents are unable to perceive due to information overload (Agostino,

Arnaboldi, 2016). In some studies (Stone et al., 2022), population income factor is considered insignificant. In a number of works, the effect of this indicator on the activity of municipalities, measured by the number of posts, is both negative (Guillamón et al., 2016), which does not align with the results of previous studies, and positive (Silva et al., 2019). Perhaps, there is an influence of national characteristics. If richer and more prosperous municipalities publish posts more often, they will receive fewer likes due to information overload, and engagement index will decrease.

In addition to the characteristics of the population, a range of financial indicators of the municipality was assessed: city income (Bhatia, Mabillard, 2022); financial autonomy (Stone, Can, 2021; Ravenda et al., 2022); economic capacity – percentage of tax revenues in total revenue (Silva et al., 2019); financial sustainability; proper revenues and debt level (Guillamón et al., 2016). Much attention was paid to the political component in the works: voter turnout (Triantafillidou et al., 2016; Silva et al., 2019; Faber et al., 2020); ideological (left-right) orientation (Larsson, 2013; Faber et al., 2020); margin of victory – difference in percentage points between 1st and 2nd place parties (Silva et al., 2019; Ravenda et al., 2022); personal characteristics of the mayor: gender (Guillamón et al., 2016; Mabillard et al., 2024), ideological positioning (Silva et al., 2019), age and education (Ravenda et al., 2022). Based on data on municipalities in Portugal, it was shown that the younger the mayor, the higher his or her activity in social media (Silva et al., 2019). Age, gender and education are significant factors determining the publication frequency on specific topics (Ravenda et al., 2022). In other research works on the activity of local governments, the gender and education of the mayor were not statistically significant (Guillamón et al., 2016;

Mabillard et al., 2024). Russian studies of the VK audience indicate that women are more active (for example, they click the “like” button more often⁴) than men (Kornienko et al., 2021). Therefore, it can be expected that in municipalities headed by women the number of posts will be higher.

Metrics characterizing the level of Internet usage are rare in studies. In some works (Triantafyllidou et al., 2016; Bonsón et al., 2017), use of Internet and e-government services are considered. In the work (Bonsón et al., 2017), social media use by citizens is taken into account. B. Faber, T. Budding and R. Gradus used an indicator of the number of registered ICT businesses per 1000 inhabitants (Faber et al., 2020), and A.O. Larsson – broadband reach (Larsson, 2013). Only two studies assessed the relationship between the citizen engagement and the work experience of local government on social media. On the one hand, the longevity on the platform does not lead to the increased number of comments from citizens (Gálvez-Rodríguez et al., 2018), on the other hand, it has a positive influence on the number of followers and posts per month (Mabillard et al., 2024).

A review of the existing research literature on the use of social media for the needs of local governments has shown that no studies have been conducted to assess the engagement rate. In addition, researchers usually focused on some particular characteristics of municipalities, setting low and high values of the group by population. Full-design studies of municipalities (Silva et al., 2019) are quite rare. In domestic practice, only cities were considered as the object of research (Roslyakova, 2023; Petrov, Shitova, 2023), and the assessment of the relationship between socio-economic factors and public engagement was not carried out. Our

study is remarkable for taking into account almost one hundred percent of Russian municipalities throughout the entire federal district⁵, both at the municipal district and settlement levels, as well as an assessment of the impact of socio-economic indicators of the municipality and the personal characteristics of its head on public engagement on the government’s page. In addition, the engagement itself is presented as dynamic over six years⁶. We have not been able to find studies that use social media metrics to measure the digital divide in municipal and public governance. All of the above forms the novelty of the presented research.

Data and methods

In general, the research algorithm is a series of milestones: 1) list governments’ pages in VK; 2) collect VK statistics for governments’ pages; 3) calculate engagement indices; 4) collect municipalities’ indicators that potentially affect the engagement index; 5) check the significance of these indicators using regression analysis methods; 6) arrange municipalities in groups according to significant indicators using the cluster analysis method; 7) classify municipalities within clusters into quartiles according to the engagement index; 8) determine target engagement index to identify reference municipalities in order to capitalize on the successful experience of social media management.

Most of the local governments of the North-western Federal District (NWFD) are present only on one domestic social network – VK. Odnoklassniki is used as a duplicate page: this practice is typical for the municipal district (okrug) level and is almost not found at the settlement level. Therefore, the object of the research is

⁴ To likes all ages yield surrender. Available at: <https://vk.company/ru/press/releases/11417/> (accessed: October 10, 2023).

⁵ Excluding the federal city Saint Petersburg.

⁶ The maximum possible period for which calculations can be carried out according to the methods used.

Northwestern Federal District governments' pages with the mark "Government organization" on VK. As a result of search queries on VK and Yandex⁷, 198 governments' pages of municipal districts (okrugs) and urban okrugs and 615 pages of settlements (territorial subdivisions and administrations⁸) were selected. The rest of the municipal entities of the NWFD⁹ either did not have official pages, or had not yet received the "Government organization" mark. The time framework of the research (2017–2022) is determined by the availability of data necessary to calculate the engagement index.

Statistics on governments' pages were obtained using the TargetHunter service: *posts* and *comments* on them were collected. Uploaded *posts* are represented by a table with a list of them, the time and date of their publication, the number of *views*, the number of *likes*, the number of reposts. There is a similar table for *comments*. The indicator "number of comments' likes" (*com_likes*) was taken from it. Among these indicators, only the number of *views* has time limits for collection: this indicator appeared only in 2017. In total, over 1.82 million posts and 1.64 million comments were collected during the research period.

To determine the engagement, the original index developed by E. Bonsón and M. Ratkai (formula 1) is used as a basis. For our calculations, it was upgraded: instead of the number of followers (*fans*), the number of *views* (formula 3) was used. There are several reasons for it. First, the possibilities

of retrospectively collecting the number of followers are significantly limited¹⁰. Second, the number of followers is a more significant metric for closed communities, where only following participants see posts and can be active, while in open communities, which include governments' pages, all VK users can actively participate. As a result, the upgraded index shows the average number of actions per post per 100,000 views.

$$INDEX_v = \frac{(likes + comments + com_likes + reposts)}{posts \times views} \times 100\,000 \quad (3)$$

In our opinion, when measuring the digital divide, it is necessary to compare municipalities within the "weight categories", which are determined by the level of their socio-economic development. There is no doubt that a large set of variables can influence citizen engagement. Unlike subject matter of posts and personal characteristics of the head of the municipality, the indicators of socio-economic development cannot be changed quickly and radically. Our work is characterized by studying digital divide and factors influencing it both at the municipal district (okrug) and settlement levels. Since the development of settlements is poorly represented in official statistics, we had to narrow down the list of socio-economic indicators. For the selected years, only the population (*Pop*) and average wage (*Wage*)¹¹ are available to us. The latest data on local budget revenues and expenditures were published only for 2020, so we

⁷ For example, "government of settlement X in VK", "official community of settlement X in VK".

⁸ Territorial subdivisions or administrations are outgrowths of the settlements included in the municipal districts that were eliminated during the transformation of municipal districts into municipal okrugs.

⁹ The municipalities of Saint Petersburg were not considered.

¹⁰ The exact number can only be obtained at the date of data collection itself. The TargetHunter service, which has been used to upload statistical data from VK since 2017, has an option to collect new followers who joined the community over a definite time period, but there is no option to collect users who unfollowed the community. Without this indicator, an attempt to count the number of followers in previous years seems futile. Preliminary calculations have shown that the cumulative annualized number of new followers in the community may exceed their actual total number. In addition, though it is possible to approximately calculate the number of followers for communities that appeared between 2017 and 2022 using ratio of those who joined the community in a particular year, this method is not applicable for communities created before 2017.

¹¹ Both indicators are taken from the Rosstat database "Indicators of municipalities".

did not consider the indicators related to financial autonomy. To calculate the average wage at the settlement level, the calculation method based on the 5-PIT (personal income tax) form (Prokopyev, 2023) was used.

The number of days of the official community's presence (*Days*), the proximity of the municipality to the regional center (*Road*), and the characteristics of the head of the municipality are considered as control variables. The number of days of the government's page presence was determined as the difference between the publication date of the first post and December 31 of each year of the research period¹². This indicator characterizes the experience of the local government in social media. The proximity of the municipality to the regional center was measured by the shortest distance along the highways that was determined using the Yandex Maps service. This parameter is not found in foreign research works, but in Russian circumstances it can affect citizen engagement for a number of reasons, including the mobile Internet speed (Mikhailova, Khvalei, 2023). Personal characteristics of municipal heads are collected according to the data of the Central Election Commission of the Russian Federation¹³. Based on them, the following variables were formed: *Age*; gender (*Male*); education (*Edu*); location (*Loc*); participation in elections as a self-nominated candidate (*Self*). The influence of the last two factors on the engagement has not been tested in the research literature.

¹² If the community appeared during the research period, the calculation was carried out only from the year of its appearance.

¹³ The data collection algorithm is presented in detail in the work: Gubina O.V., Prokopyev E.A., Shlapenko E.A., Kurilo A.E. (2023). Implementation of social media in the work of local administrations: collecting data to assess the influence of the head factor. *Trudy III Granbergovskoi konferentsii=Proceedings of III Granberg Conference*, 117–122 (in Russian).

Multiple linear regression was used to test the influence of factors on the engagement index. Previously, the dependent variable (*INDEX*,) and independent variables (factors) were plotted against each other as scatter diagrams, and after their analysis a log-transformation was conducted of some variables and some were excluded. Based on the adjusted data, a correlation matrix was built to filter out factors in order to avoid multicollinearity. Due to the significant difference in the number of observations per year¹⁴, the models were built using mainly spatial sampling. Evaluations and model validation were carried out in the R software environment using basic feature set and special packages (*lmtest*, *car* and *clubSandwich*).

Next, municipal entities were divided into clusters using hierarchical clustering by nearest neighbors¹⁵ based on statistically significant socio-economic variables in the models. Each of the generated clusters is divided into quartiles according to the value of the engagement index. The high and low values of quartile groups were analyzed to create a scale that determines the digital divide based on the engagement index.

Results

According to the results of calculations of engagement indices for governments' pages (*Tab. 1, 2*), several patterns can be identified.

First, the values of the engagement indices for municipalities turned out to be lower than for settlements. Settlement communities are exceeded by municipality communities in the absolute number of followers and, most importantly, cannot compete with them on the number of

¹⁴ The number of municipal districts and okrugs' pages at the end of 2017 was 93, and settlements' pages – only 61. By the end of 2022, 198 municipal districts and okrugs and 615 settlements had pages.

¹⁵ Basic feature set of R software environment was used: *hclust(..., method = "ward.D2")* function.

events happening. Consequently, there are much fewer posts published in these communities, which makes them visible to visitors for longer. Second, communities that have been present for less than a year and/or publish few posts are characterized by high values of the engagement index¹⁶ (Fig. 1). This can be explained by the novelty effect. Initially, the government's page accumulates the most active followers who respond to each post. As the audience and the number of posts increase, this audience's activity may not be enough to maintain a high level of engagement. The cessation of the creation of new communities reduces the statistical indicators of the engagement index (see Tab. 1).

Therefore, in order to make regression models' evaluations, it was decided to exclude communities that have been present for less than a year and ones with low publication frequency. For municipality communities, this indicator was less than 52 posts, and for settlement communities – less than 26 posts.

According to spatial regression models' evaluations (Tab. 3) it was possible to confirm the impact on the municipal (okrug) engagement index by the population, the number of days of the community's presence, the distance along the highways, the average wage and the participation of the head of the municipality in elections as a self-nominated candidate. All these factors reduce the

Table 1. Municipal districts and okrugs' engagement index rate

Year	Number of communities		Min.	Max.	Mean	Median	Standard deviation
	Total	Present less than a year, among total					
2017	93	32	0.16	400.64	10.79	1.47	46.36
2018	160	59	0.00	4761.90	108.79	1.49	572.09
2019	181	18	0.14	2811.07	42.23	1.82	255.84
2020	193	10	0.00	24.69	2.31	1.19	3.20
2021	198	4	0.21	46.51	2.38	1.51	3.80
2022	198	0	0.16	7.48	1.44	1.05	1.18

Source: own compilation based on VK data.

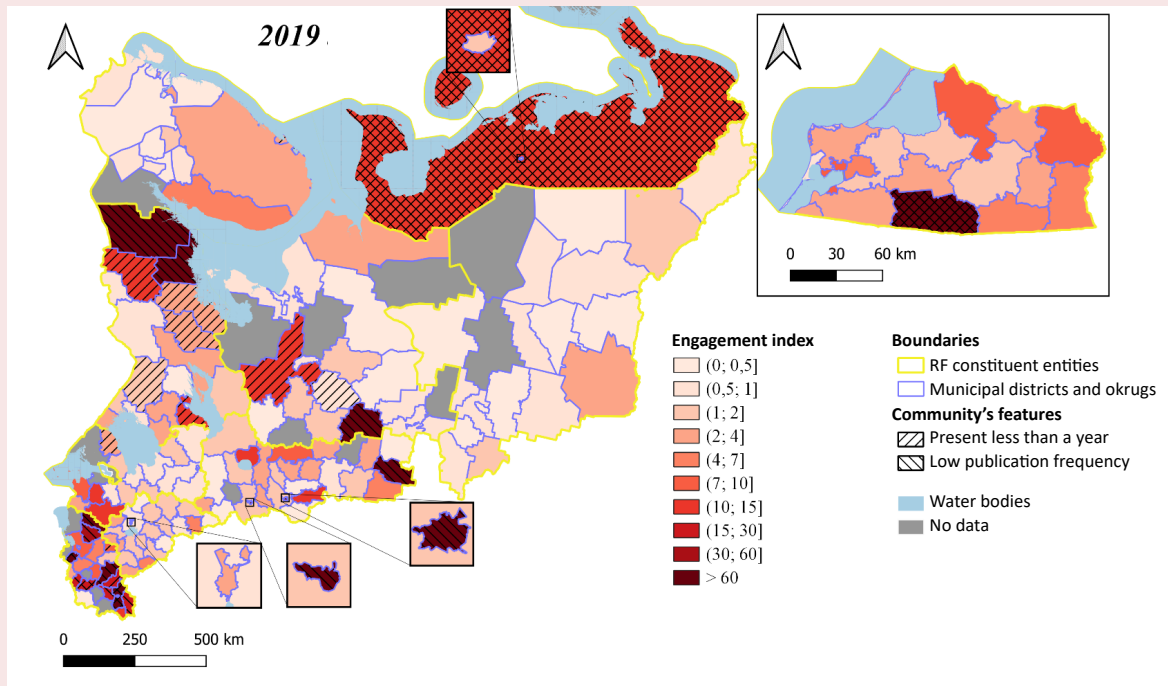
Table 2. Settlements' engagement index rate

Year	Number of communities		Min.	Max.	Mean	Median	Standard deviation
	Total	Present less than a year, among total					
2017	61	20	0.00	294.57	16.78	5.89	41.20
2018	129	65	0.00	2597.40	53.97	6.86	244.11
2019	191	60	0.00	1253.13	45.27	7.68	158.88
2020	258	72	0.00	7692.31	77.41	6.59	529.86
2021	374	110	0.00	3846.15	55.10	9.84	273.41
2022	615	232	0.00	9329.71	137.09	12.49	595.73

Source: own compilation based on VK data.

¹⁶ There are exceptions. Our sample included several communities that were created at the end of the year and managed to publish only a few posts. There was not a single user reaction to the posts in these communities, and therefore, the engagement index for the current year is zero. It is worth noting that a similar result can be obtained in communities that have been present for more than a year if posts were deleted.

Figure 1. Municipal districts and okrugs' engagement index in 2019



Source: own compilation based on VK data.

engagement. However, the influence of the self-nomination factor is unstable: it was significant only in 2018 and 2022, while the average wage with an increase in the number of observations in the last three years has constantly been significant. The other variables being tested turned out to be statistically insignificant.

The data on the relationship between citizen engagement, average wage and government's page longevity supports conclusions of the research on Belgian municipalities with a population over 10 thousand people (Mabillard et al., 2024). It turns out that the poorer the population, the more they express their dissatisfaction with the work of the authorities on social media¹⁷. The influence of population on citizen engagement does not

¹⁷ Focus groups with heads of municipalities conducted within the project showed that the ratio of negative to positive comments in official VK communities is two to one.

contradict foreign studies (Agostino, Arnaboldi, 2016; Silva et al., 2019). The negative impact of distance along the highways can be explained by several reasons. First, mobile Internet becomes less accessible with distance from the center. Second, citizens of municipalities close to the regional capital have more in common to compare changes, in addition, part of the center residents own dachas in neighboring municipalities and participate in discussions of problems with local authorities. Third, due to the concentration of the population in the regional capital, the total number of active citizens in it is greater; therefore, it is more likely that information about the problem in neighboring municipalities will cause a wide public response, while residents of remote municipalities are less likely to be heard and get a reaction from regional government. Participating in elections as a self-nominated candidate indicates that the candidate

Table 3. Values of spatial regression models: municipalities and okrugs

Variable	2017	2018	2019	2020	2021	2022
Intercept	3.23974* (1.41568)	6.23471*** (1.16349)	4.35330*** (0.77410)	4.17993*** (0.78133)	4.17207*** (0.59500)	2.97675*** (0.51104)
Log <i>Pop</i>	-0.26789' (0.13799)	-0.50353*** (0.11309)	-0.33124*** (0.07597)	-0.25542** (0.08264)	-0.24294*** (0.06293)	-0.17335** (0.05446)
<i>Days</i>	-0.00051* (0.00023)	-0.00063*** (0.00016)	-0.00044*** (0.00011)	-0.00049*** (0.00011)	-0.00041*** (0.00008)	-0.00018** (0.00006)
<i>Road</i>	–	-0.00091* (0.00045)	-0.00110** (0.00039)	-0.00141*** (0.00041)	-0.00122*** (0.00031)	-0.00118*** (0.00027)
<i>Self</i>	–	-0.84268* (0.36696)	–	–	–	-0.62951*** (0.17720)
<i>Wage</i>	–	–	–	-0.000009* (0.000005)	-0.000008* (0.000004)	-0.000009** (0.000003)
Number of observations	56	81	149	180	192	170
R2 / R2 adjusted	0.157 / 0.125	0.396 / 0.365	0.261 / 0.245	0.295 / 0.279	0.335 / 0.321	0.350 / 0.330

Note. The assumptions of homoscedasticity, normality, no multicollinearity, and no significant autocorrelation are met. Standard error is indicated in parentheses.
p-value: ' $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.
Source: own compilation based on data from VK, Rosstat, Yandex Maps, Central Election Commission of Russia.

has good social capital and interacts with people a lot. Initially, it was supposed that this factor would contribute to increased engagement. Apparently, self-nominated heads prefer live communication to virtual one.

For further clustering by municipalities and okrugs, it was decided to use indicators of population and average wages.

In regression models based on settlement data, only three variables turned out to be significant (Tab. 4). Moreover, the distance along highways to the regional center in the period 2019–2022 became insignificant. Only the influence of the population and the number of days of the community's presence is stable. To generate clusters for this type of municipality, only the population was used.

Table 4. Values of spatial regression models: settlements

Variable	2017	2018 ¹⁸	2019	2020	2021	2022
Intercept	5.5458*** (1.4231)	6.0579*** (1.4289)	4.7836*** (0.7717)	6.0999*** (0.5929)	5.8224*** (0.4210)	5.1900*** (0.3434)
Log <i>Pop</i>	-0.5019** (0.1624)	-0.5728** (0.1665)	-0.3697*** (0.0944)	-0.4814*** (0.0716)	-0.4227*** (0.0529)	-0.3733*** (0.0448)
<i>Road</i>	-0.0019' (0.0011)	-0.0018* (0.0009)	–	–	–	–
<i>Days</i>	–	–	-0.0004* (0.0002)	-0.0006*** (0.0001)	-0.0005*** (0.0001)	-0.0003*** (0.0001)
Number of observations	37	57	121	176	241	329
R2 / R2 adjusted	0.224 / 0.178	0.183 / 0.152	0.161 / 0.146	0.287 / 0.279	0.305 / 0.299	0.232 / 0.228

Note. The assumptions of homoscedasticity, normality, no multicollinearity, and no significant autocorrelation are met (excluding 2018). Standard error is indicated in parentheses.
p-value: ' $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.
Source: own compilation based on data from VK, Rosstat, Federal Tax Service, Yandex Maps, Central Election Commission of Russia.

¹⁸ Residuals do not follow a normal distribution; therefore, estimated coefficients are shifted.

According to the values, we have developed a method based on a color-coded system to assess the digital divide at the municipal level. To use it, the following indicators are needed: 1) number of days of the community's presence; 2) number of posts; 3) engagement index; 4) population; 5) average wage¹⁹. If the community has been present for less than a year, the municipality is colored white. It is on a "test period" and is not to be evaluated. If there is no community, the municipality is colored red. Starting from December 1, 2022, this is a law violation: the community must be created²⁰. If the number of posts in the community for municipalities and okrugs is less than 52, and for settlements – less than 26, the municipality is colored orange. In these cases, there is a high probability that the community is being pencil whipped, which does not help to attract citizens to government's activities. Therefore, it is necessary to understand the causes of low publishing frequency individually within each municipality.

The remaining municipalities are compared according to the engagement index, but before that they are divided into clusters by population and average wage²¹. Due to clustering, reference municipalities are compared. Within each cluster, there is a division into quartile groups. Municipalities of the first quartile – with the lowest indices – are colored yellow. Green is for the second and third quartiles, purple is for the fourth. High values of the engagement index may indicate the presence of high-profile events or population's dissatisfaction with the government. Practice shows that negative events spread better, gain more comments and likes on social media; therefore, to compare the index values of the best practices in social media, municipalities from the

green group that are most similar in socio-economic indicators should be chosen. Thus, the value of the digital divide within the cluster is calculated as the difference between the minimum value of the engagement index (the low value of the yellow group) and the low value of the green group. The decrease in this parameter over time, as well as green group values' amplitude contraction, will indicate bridging the digital gap in the use of social media by local governments.

Using hierarchical clustering, three municipal district (okrug) groups were formed (*Tab. 5*) and five²² settlement groups (*Tab. 6*). In both cases, the groups turned out to be uneven. The smallest group of municipal districts and okrugs (MP2) consists of municipalities with the largest population in their region. These are regional capitals, municipalities adjacent to them²³, and the ones competing with regional capitals²⁴. The second tier of municipal entities (MP3) mainly represent urban okrugs with enterprises important for the regional economy. Their key difference from the largest group of districts (MP1) is higher average wages. In general, among municipal districts and okrugs with maximum audiences of governments' pages, the digital gap has decreased both between yellow and green groups, and within the green group.

When clustering settlements by population, the following group values were obtained: 1) MO1 – up to 4.1 thousand people; 2) MO2 – up to 12 thousand people; 3) MO3 – up to 18.1 thousand people; 4) MO4 – up to 32.1 thousand people; 5) MO5 – over 32.1 thousand people. The MO5 group includes only two urban settlements – Zanevskoye and Sertolovskoye of Vsevolozhsky Municipal District,

²² The fifth group consists of only two settlements, so it is not listed in Table 6.

²³ For the Leningrad Region – adjacent to Saint Petersburg.

²⁴ For example, Cherepovets urban okrug in the Vologda Region.

¹⁹ For municipal districts and okrugs.

²⁰ The legal requirements do not apply to settlements that are part of a municipal okrug.

²¹ For municipal districts and okrugs only.

Table 5. Digital divide rate: municipal districts and okrugs

Cluster	Year	Number of municipalities	Digital divide	
			between low values of green and yellow groups	within the green group
MP1	2020	136	0.30	2.28
	2021	140	0.52	2.30
	2022	144	0.51	1.32
MP2	2020	13	0.10	1.30
	2021	13	0.12	1.45
	2022	16	0.12	0.72
MP3	2020	32	0.17	1.21
	2021	40	0.19	1.34
	2022	37	0.28	0.67

Source: own compilation based on VK data.

Table 6. Digital divide rate: settlements

Cluster	Year	Number of settlements	Digital divide	
			between low values of green and yellow groups	between the green group's low value and the minimum value
MO1	2020	106	2.7	12.58
	2021	161	4.28	13.38
	2022	236	3.73	14.71
MO2	2020	50	1.06	4.11
	2021	57	1.98	5.80
	2022	67	1.68	4.82
MO3	2020	7	0.71	0.69
	2021	9	0.77	2.39
	2022	15	0.60	4.98
MO4	2020	11	1.10	5.79
	2021	12	0.79	3.84
	2022	10	0.27	4.73

Source: own compilation based on VK data.

whose rapid population growth is associated with the agglomeration effects of Saint Petersburg. In the future, to measure the digital divide according to the proposed methods, they will need to be classified as municipal districts and okrugs. Since most settlements are characterized by a decrease in population over the years, the number of settlements in quartile groups could decline over the years²⁵. As all settlements fulfill the requirements and create

²⁵ The number of settlements in the MO4 group declined in 2022 compared to 2021.

governments' pages, the proposed values can be revised and detailed. Under current conditions, the MO1 group turned out to be the most numerous and fastest growing, within which in 2022 there are the largest indicators of the digital gap both between the green group's low value and the minimum value, and within the green group (see Tab. 6). This category of settlements is worth close attention and requires the development of separate instructional guidelines for the management of governments' pages. In the remaining groups, the digital gap

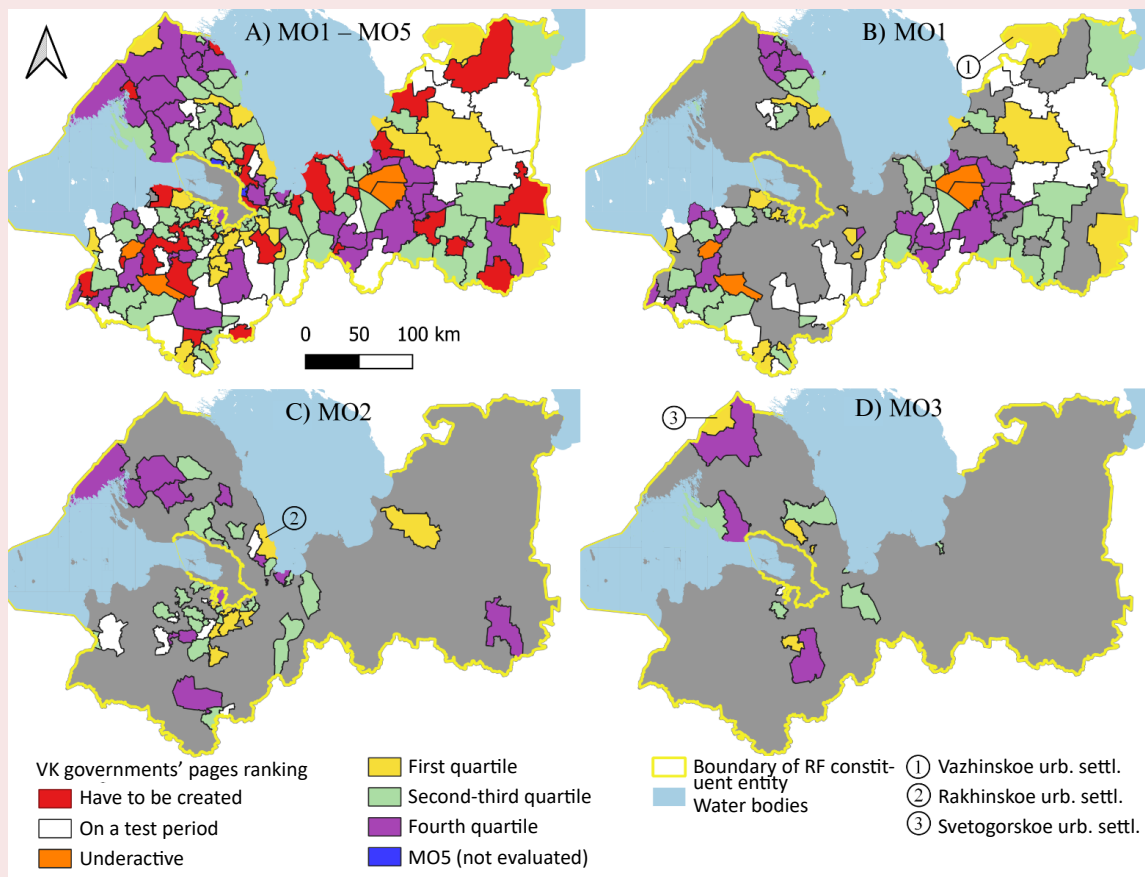
between the yellow and green groups has decreased. At the same time, in the MO3 and MO4 groups, it has increased within the green group.

As an example of testing methods on the data of the Northwestern Federal District for 2022, we present the distribution by groups in the Leningrad Region (Fig. 2A). The result is as follows: 25 municipalities are red, 28 are on a “test period”, 4 are orange, 30 are yellow, 61 are green, 37 are purple; two settlements (MO5) were not evaluated.

Nine municipal entities from the red zone have created official communities, but the “Government

organization” marks have not been received. At the same time, 16 out of 17 municipal districts’ centers of the Leningrad Region do not have governments’ pages²⁶. Another characteristic of the region is that in order to assign the status of a “Government organization” to the community, some settlements re-created official accounts. In the MO1 group, 17 Leningrad settlements appeared in the yellow zone (Fig. 2B). One of its representatives is Vazhinskoe urban settlement of Podporozhsky District with an index of 3.87 and a population of 2.6 thousand people. The range of

Figure 2. Distribution of settlements in the Leningrad Region by engagement level, 2022



Source: own compilation based on VK data.

²⁶ Except for Kirovskoye urban settlement of Kirovsky Municipal District.

green zone engagement index for the MO1 group is from 4.25 to 18.97. As a target for Vazhinskoe administration, it can be suggested to study the experience of comparable Nifantonovskoe rural settlement of Sheksninsky District of the Vologda Region (index 18.10) or Voznesenskoe urban settlement neighboring in the municipal district (index 10.52). Similarly, for Rakhinskoe urban settlement of Vsevolozhsky District (population – 8.9 thousand people with an engagement index of 2.14) the experience of government employees from the MO2 group, whose engagement indices are greater than 2.02 and less than 7.02, will be useful. It can be governments' pages of Lyubanskoe urban settlement of Tosnensky District of the Leningrad Region (index 3.76) or Kemscoe urban settlement of the Republic of Karelia (index 6.56). And the administration of Svetogorskoe urban settlement of Vyborgsky District (population – 17.5 thousand people with an engagement index of 1.39) should pay attention to the government's page of Sortavalskoe urban settlement of the Republic of Karelia, whose engagement index (3.81) is in the middle of the green zone of MO3 (from 1.65 to 6.63).

Discussion and conclusion

Using the example of municipal governments' pages on the VK social network, methods for assessing the digital divide in the area of interaction between authorities and the population through social media have been developed. Its novelty lies in the fact that for these purposes it is proposed to use an updated engagement index, the features and conditions of its application are revealed. It is shown that it is impossible to focus only on the index values without analyzing the publication frequency, the community longevity and the socio-economic situation of the municipal entity. For the first time, the impact of socio-economic parameters of municipalities and personal characteristics

of their leaders on the citizen engagement in the information agenda of governments' pages was assessed on Russian data. Among the large number of assessed factors affecting the engagement level, only the population and the official page longevity turned out to be statistically significant for both municipal districts (okrugs) and settlements. The influence of proximity to the regional center and the average wage has also been confirmed for the municipal districts. A decrease in the engagement index over time is an objective process facilitated by high publication frequency. To increase it, it is necessary to pay attention to the factors that require separate research: 1) content and length of posts; 2) list of posts' topics and their combinations; 3) timing of posts.

A comparison of municipal engagement indices by reference groups confirmed that the digital divide is greater among settlements rather than among municipal districts and okrugs. This problem especially concerns a large group of settlements with a population of less than 4.1 thousand people. For this category of settlements of all others it is necessary, primarily, to develop their own criteria for evaluating the effectiveness of work on social media, separate instructional guidelines for managing governments' pages, find and spread best practices among them, and train employees responsible for official pages. As the settlements are fully covered by governments' pages and they accumulate experience, it will be advisable to divide this group into subgroups for further improvement of work with the population.

The proposed methods can be applied both within a single region and nationwide. The latter is of the greatest practical interest, since it allows setting normative indicators and determine criteria for evaluating the effectiveness of work on social media based on objective reality for different groups of municipal entities. According to our methods,

local government can select several targets similar in socio-economic parameters, including those located outside the “home” region, with a high probability that someone else’s experience will be applicable and useful for them. The practice of the purple group’s municipalities should be studied in detail by specialists responsible for information policy. It is necessary, on the one hand, to highlight original techniques and solutions that should become standards in the future and, on the other hand, to identify and stop artificial ways of overestimating the engagement level.

References

- Agostino D., Arnaboldi M. (2016). A measurement framework for assessing the contribution of social media to public engagement: An empirical analysis on Facebook. *Public Management Review*, 18(9), 1289–1307. DOI: 10.1080/14719037.2015.1100320
- Bhatia I., Mabillard V. (2022). How do cities use their communication channels? A study of social media adoption in two European federal states. *Electronic Government*, 18(2), 119–136. DOI: 10.1504/EG.2022.121970
- Bonsón E., Perea D., Bednárová M. (2019). Twitter as a tool for citizen engagement: An empirical study of the Andalusian municipalities. *Government Information Quarterly*, 36(3), 480–489. DOI: 10.1016/j.giq.2019.03.001
- Bonsón E., Ratkai M. (2013). A set of metrics to assess stakeholder engagement and social legitimacy on a corporate Facebook page. *Online Information Review*, 37(5), 787–803. DOI: 10.1108/OIR-03-2012-0054
- Bonsón E., Royo S., Ratkai M. (2017). Facebook practices in Western European municipalities: An empirical analysis of activity and citizens’ engagement. *Administration & Society*, 49(3), 320–347. DOI: 10.1177/0095399714544945
- Dement’eva K.V. (2021). Cities’ public pages of the social network VKontakte: Features of attracting the audience and presenting information. *Vestnik Tomskogo gosudarstvennogo universiteta. Filologiya=Tomsk State University Journal of Philology*, 73, 287–310. DOI: 10.17223/19986645/73/16 (in Russian).
- Faber B., Budding T., Gradus R. (2020). Assessing social media use in Dutch municipalities: Political, institutional, and socio-economic determinants. *Government Information Quarterly*, 37(3), 101484. DOI: 10.1016/j.giq.2020.101484
- Filatova O.G. (2020). Heads of Russian regions in social media: Audit of public communications. *PR i reklama v izmenyayushchemsya mire: regional’nyi aspekt=PR and Advertising in a Changing World: Regional Aspect*, 23, 6–16 (in Russian).
- Gálvez-Rodríguez M., Sáez-Martín A., García-Tabuyo M., Caba-Pérez C. (2018). Exploring dialogic strategies in social media for fostering citizens’ interactions with Latin American local governments. *Public Relations Review*, 44(2), 265–276. DOI: 10.1016/j.pubrev.2018.03.003
- Guillamón M.-D., Ríos A.-M., Gesuele B., Metallo C. (2016). Factors influencing social media use in local governments: The case of Italy and Spain. *Government Information Quarterly*, 33(3), 460–471. DOI: 10.1016/j.giq.2016.06.005
- Haro-de-Rosario A., Sáez-Martín A., Caba-Pérez C. (2018). Using social media to enhance citizen engagement with local government: Twitter or Facebook? *New Media & Society*, 20(1), 29–49. DOI: 10.1177/1461444816645652
- Hofmann S., Beverungen D., Räckers M., Becker J. (2013). What makes local governments’ online communications successful? Insights from a multi-method analysis of Facebook. *Government Information Quarterly*, 30(4), 387–396. DOI: 10.1016/j.giq.2013.05.013
- Karamagioli E., Staiou E.R., Gouscos D. (2022). Assessing the social media presence and activity of major Greek cities during 2014–2017: Towards Local Government 2.0? In: *Research Anthology on Citizen Engagement and Activism for Social Change*. DOI: 10.4018/978-1-6684-3706-3.ch015
- Kavanaugh A.L., Fox E.A., Sheetz S.D. et al. (2012). Social media use by government: From the routine to the critical. *Government Information Quarterly*, 29(4), 480–491. DOI: 10.1016/j.giq.2012.06.002

- Kornienko D.S., Derish F.V., Nikitina E.Yu. (2021). Sex and age differences in the personal orientation of user activity in the Russian social network “VKontakte”. *Vestnik Rossiiskogo universiteta družby narodov. Seriya: Psikhologiya i pedagogika=RUDN Journal of Psychology and Pedagogics*, 18(3), 631–649. DOI: 10.22363/2313-1683-2021-18-3-631-649 (in Russian).
- Larsson A.O. (2013). Bringing it all back home? Social media practices by Swedish municipalities. *European Journal of Communication*, 28, 681–695. DOI: 10.1177/0267323113502277
- Levkov N. (2017). How Macedonian municipalities are using social media for public communication. *Annual of The Faculty of Economics*, 199–211.
- Lovari A., Parisi L. (2015). Listening to digital publics. Investigating citizens’ voices and engagement within Italian municipalities’ Facebook pages. *Public Relations Review*, 41(2), 205–213. DOI: 10.1016/j.pubrev.2014.11.013
- Mabillard V., Zumofen R., Pasquier M. (2024). Local governments’ communication on social media platforms: refining and assessing patterns of adoption in Belgium. *International Review of Administrative Sciences*, 90(1), 65–81. DOI: 10.1177/00208523221133229
- Mikhailova A.A., Khvalei D.V. (2023). Geography of the mobile internet in the border and interior regions of Russia. *Baltiiskii region=Baltic Region*, 15(3), 140–166. DOI: 10.5922/2079-8555-2023-3-8 (in Russian).
- Petrov A.S., Shitova Yu.Yu. (2023). Representation and activity of city administrations in social networks: Structure and trends in 2021–2022. *Epomen. Global*, 34, 379–389 (in Russian).
- Prokopyev E.A. (2023). The average wage in the North-West Federal District: An assessment of territorial disparities on a settlement level. *Regionologiya=Regionology*, 31(2), 335–356. DOI: 10.15507/2413-1407.123.031.202302.335-356 (in Russian).
- Ravenda D., Valencia-Silva M.M., Argiles-Bosch J.M., García-Blandón J. (2022). The strategic usage of Facebook by local governments: A structural topic modelling analysis. *Information & Management*, 59(8), 103704. DOI: 10.1016/j.im.2022.103704
- Reddick C.G., Norris D.F. (2013). Social media adoption at the American grass roots: Web 2.0 or 1.5? *Government Information Quarterly*, 30(4), 498–507. DOI: 10.1016/j.giq.2013.05.011
- Roslyakova M.V. (2023). Social networks as a tool for involving citizens in governance (using the example of the official pages of local administrations of cities in Central Russia). *Sotsiodinamika=Sociodynamics*, 7, 1–18. DOI: 10.25136/2409-7144.2023.7.43708 (in Russian).
- Rychikhina E.N., Borovikova A.M. (2023). Efficiency of relations with the public of government bodies in social networks. *Russian Economic Bulletin*, 6(3), 19–24 (in Russian).
- Silva P., Tavares A.F., Silva T., Lameiras M. (2019). The good, the bad and the ugly: Three faces of social media usage by local governments. *Government Information Quarterly*, 36(3), 469–479. DOI: 10.1016/j.giq.2019.05.006
- Stone J.A., Can S.H. (2021). Investigating factors of Twitter use among municipal governments. *Journal of Computer Information Systems*, 61(3), 267–274. DOI: 10.1080/08874417.2019.1628673
- Stone J.A., Flanders K.J., Hakan S. (2022). Can, Strategic communication? Measurement and evaluation of Twitter use among municipal governments. *Government Information Quarterly*, 39(4), 101755, DOI: 10.1016/j.giq.2022.101755
- Triantafillidou A., Lappas G., Yannas P., Klefodimos A. (2016). Greek local E-government 2.0: Drivers and outcomes of social media adoption. *Social Media and Local Governments. Public Administration and Information Technology*, 15, 153–170. DOI: 10.1007/978-3-319-17722-9_9
- Trunfio M., Rossi S. (2021). Conceptualising and measuring social media engagement: A systematic literature review. *Italian Journal of Marketing*, 2021, 267–292. DOI: 10.1007/s43039-021-00035-8
- Zavattaro S.M., Sementelli A.J. (2014). A critical examination of social media adoption in government: Introducing omnipresence. *Government Information Quarterly*, 31(2), 257–264. DOI: 10.1016/j.giq.2013.10.007

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Development of Small Cities: From Individual Trajectories to Strategic Planning



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Abstract. The relevance of the study is due to increased attention to small cities and improving the quality of life, which is directly related to the strategic planning of small cities development, taking into account individual features. However, small cities in Russia are characterized by negative trends in the social and economic spheres. The aim of the study is to identify key areas of small cities development strategies, taking into account individual trajectories identified on the basis of expert assessments. The city of Kostomuksha of the Republic of Karelia, which is the administrative center of Kostomukshsky Urban Okrug, was chosen as the object of research. We use qualitative sociology methods, namely, the results of an expert focus group and individual interviews with representatives of government, business and non-profit organizations. We reveal problems in the social sphere typical for the city of Kostomuksha and for small cities in general: low level of accessibility of education and healthcare services, including personnel in these areas, migration outflow of young people, lack of renovation of housing stock. Regarding the stakeholders of territorial

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transformations, we find out that the main feature of Kostomuksha is predominant participation of large socially oriented businesses in addressing urban problems with rather weak participation of citizens. As a result of the research, we have identified new individual development trajectories: sports and wellness tourism, which must be taken into account in the development strategy of Kostomuksha. We conclude that it is necessary to design strategies for the development of territories, taking into account the opinions and activity of local communities, opportunities for collaboration of various actors in addressing social issues of small cities. The novelty of the research lies in expanding the methodological approach to strategic planning for small cities development using original tools of qualitative sociology – expert assessments of stakeholders in territorial development.

Key words: small cities, small territories, development strategies, socio-economic development, civic participation, individual trajectories.

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Introduction

The relevance of small cities development in modern conditions is becoming more and more obvious, especially in the context of sustainable development archetypes. Small cities have long remained on the margins of economic processes, but in recent years, they have begun attracting the attention of public administration. Special support measures for single-industry towns, small and medium-sized settlements are being adopted, aimed at their priority development and improvement of the settlement system. The spatial development strategy until 2030 has the reduction of differentiation in socio-economic development of territories among the key objectives, including the level of infrastructure provision and availability of basic social services, primarily in relation to strategic settlements, small and medium-sized cities¹.

Small cities have a unique potential (socio-cultural, natural-resource, recreational, labor, etc.), which can be realized through strategic planning. It is impossible to ensure the sustainable development that meets the interests of the local population and preserve cultural heritage without a well thought-out strategy. Strategic planning requires a comprehensive approach that includes analyzing resources, identifying growth areas and identifying key areas for investment. It is important not only to create basic infrastructure, but also to promote innovation, support small and medium-sized businesses, and develop social programs. In this context, an important aspect is the stakeholders' involvement, including local residents, in the decision-making process, which promotes greater responsibility for the future development of the territory. Thus, the development of small cities not only supports economic prosperity, but also strengthens social ties, creating conditions for sustainable and dynamic growth, which is necessary to ensure well-being at all levels.

Governmental structures and scientific circles actualize the issues of Russia's spatial connectivity,

¹ Concept of the Spatial Development Strategy of the Russian Federation for the period until 2030 with a forecast up to 2036. *Ministry of Economic Development of the Russian Federation*. Available at: https://www.economy.gov.ru/material/file/85fb48440f79df778539e0b215af5345/koncepciya_strategii_prostranstvennogo_razvitiya_rf_na_period_do_2030_goda.pdf (accessed: September 25, 2024).

preservation and development of small territories (Uskova, Sekushina, 2021). Small cities and settlements are becoming increasingly attractive as strongholds of ecotourism, preservation and adaptation of folk crafts to the requirements of modern life. Researchers emphasize the new Russian trend of urban residents moving to villages and small cities (Zvyagintsev, Neuvazhayeva, 2015). At the same time, the “new wave” of migrants is qualitatively different from the first wave of the 1990s, as the mobility of the population is preserved, and the share of urban residents who moved, their human capital and resource endowment are sufficient to initiate positive changes in small territories.

The factors common to small cities that have a negative impact on their development and quality of life are manifested in various aspects: demographic and socio-economic, limitations of the social sphere and labor market problems, insufficient comfort of the urban environment (Smoleva, 2023). The low level of socio-economic development of such cities is due to the problems of resource provision, single-industry economic structure, and low competitiveness². Small cities with additional development risks are widely represented: remote areas with low transport accessibility, areas with unfavorable climatic conditions, single-industry territories (Volkov, Simakova, 2022). In this regard, a special role is assigned to the management of territory development, the formation of individual development trajectories, and the use of strategic planning tools. Moreover, it seems necessary to follow the path from particular to general – from the identification of individual trajectories, taking into account the specific development problems and advantages of a particular territory, to the elaboration of a long-term strategy for its development.

² Starovoitov V.G. (2005). Formation of a modern strategy for the development of small cities: Doctor of Sciences (Economics) Thesis. Moscow.

Taking into account the above-mentioned, the purpose of our study is to identify the key directions of small city development strategies taking into account individual trajectories identified on the basis of expert assessments. The research was carried out on the example of Kostomuksha (Republic of Karelia) using the toolkit of expert assessments of territorial development stakeholders.

Theoretical and methodological foundations of the research

The scientific discourse discusses various aspects of strategic planning for the development of small territories, particularly cities. In the economic context, the focus is on economic diversification, in the social context – on the social sustainability of local communities (Boschma, 2017; Kalyuzhnova, Violin, 2020; Eferin, Kutsenko, 2021). As studies show, economic diversification is one of the effective tools for sustainable development of the territory (Klimanov et al., 2016), the basis for it is the availability of human resources, transportation infrastructure, energy capacity, opportunities to attract investment. Therefore, quite often the presence of these factors ensures the development of industries related to the established ones in the region (linked diversification). The development of unrelated industries (unrelated diversification) requires, in addition to the above resources, the availability of labor force with new qualifications, new infrastructure and a larger amount of financial investments. When choosing the type of diversification, both available resources and opportunities for economic growth (effect) and risks related to the chosen direction of development are taken into account.

However, for single-industry territories the choice of diversification type (linked or unlinked) and the search for new directions of economic specialization of the territory are significantly complicated. On the one hand, narrow specialization and linked diversification increase susceptibility to economic crises (Krugman, 1993),

on the other hand, unlinked diversification carries the risk of dispersion of resources, which are already limited for small, especially single-industry territories.

The territories' development is associated with the attraction of investment funds and qualified personnel, inclusion in projects of regional and federal levels, increasing the tourist attractiveness of the place. The main factors concerning development of small settlements include developed human capital, culture of urban community, developed communications, and urban innovation system³. In recent years, it has become actual the study of the possibilities of applying the concept of smart specialization for the formation of territorial development strategies (Eferin, Kutsenko, 2021). The researchers' attention also focuses on the issue of choosing the optimal strategy of long-term planning against the background of sustainable depopulation of small and medium-sized cities in Russia (Gunko et al., 2020). The research shows that it is difficult to maintain the mode of growth and economic development in conditions of limited resources, so in the case of urban shrinkage the strategies of struggle to return to growth or adaptation to contraction are chosen (Hospers, 2014).

The second issue to be solved when choosing strategies for the territory's development is the problem of inter-municipal cooperation. Based on the available resources, the authors chose integration or competition with neighbors, individual development path or mixed-type development (Eferin, Kutsenko, 2021, p. 85).

Strategic planning is based on two processes: analysis of the features and factors concerning the object's development on the basis of available factual data and identification of possible

development directions (individual trajectories). Individual trajectories are not a full-fledged development strategy, but represent unique specific points of growth for a particular territory. Their identification becomes the first stage in the formation of the territory's development strategy, taking into account the opinions of all development subjects and stakeholders.

From this point of view, an additional paradigm in the research of small cities can be the socio-spatial and stakeholder approaches, focused on studying local communities, which show a special subjectivity in solving social problems of territories (Chernysh et al., 2020; Eferin, Kutsenko, 2021). The significant role of stakeholders in strategic planning of territorial development is justified by the fact that they act not only as bearers of isolated interests, but also as owners of certain resources (Tazhitdinov, 2013). Stakeholders of spatial transformations are representatives of the government, business community, public associations, non-profit organizations, state/municipal institutions, solidarity groups and individual citizens (Markin et al., 2019; Kosygina, Ukhanova, 2024). The research shows that development planning at the local level requires a bottom-up approach that increases the impact of actions (Moallemi et al., 2021). Local actors and populations have strong ties to the territory of residence, knowledge of the main problems necessary to develop local solutions (Manzo, Perkins, 2006).

How is the request for the involvement of residents in solving social problems and urban development represented in municipal programs? From this point of view, it is interesting to look at the results of A.A. Popkova's research, which conducts a content analysis of strategies for socio-economic development of small territories. The author made a general conclusion about the "underdevelopment of demanded organizational mechanisms in the system of territory development management" and the absence of the authorities' vision of the

³ Starovoitov V.G. (2005). Formation of a modern strategy for the development of small cities: Doctor of Sciences (Economics) Thesis. Moscow. P. 7.

population as an initiative subject (Popkova, 2022, p. 114). Studies of civic participation practices in the Vologda Region also confirm that, despite the high potential readiness of small cities' residents to participate in solving common issues, the level of real participation should be assessed as rather low (Kosygina, 2023, p. 219).

At the same time, Federal Law of the Russian Federation 172-FZ "On Strategic Planning in the Russian Federation" dated June 28 2014, which regulates the issues of strategic planning, defines only local self-government authorities and municipal organizations as strategic planning participants at the municipality level. The actual existence of a centralized planning system noted by researchers makes it difficult to elaborate development strategies (Batunova, Gunko, 2018).

However, methodologically and methodically, the process of defining, accounting and identifying the stakeholders' interests in the formation of strategic priorities of socio-economic development of small cities requires further scientific support. In the absence of complete municipal statistics, sociological surveys and expert assessments of stakeholders are used (Kuznetsov et al., 2020).

To determine individual trajectories of territories' development with subsequent orientation on the development strategy, it is necessary to analyze the problems and competitive advantages in the social and economic spheres of a small city, to assess the ability of business, government and local community collaboration to solve the identified problems. In this regard, it is of scientific significance the research and substantiation of effective mechanisms of strategic development of small territories, including on the basis of activating the potential of the local community.

Materials and methods

We chose Kostomuksha as the research objects, which is the administrative center of the Kostomuksha Urban Okrug and can be classified as a small city. The population of Kostomuksha is 26.5

thousand inhabitants⁴. In this regard, small cities are considered according to the established approach depending on the population and specialization. In Russia, small cities include cities with a population of 10–50 thousand people with non-agricultural specialization of the economy: industry, trade, and service industries (Makarova, 2017).

The main town-forming enterprise of Kostomuksha is AO Karelsky Okatysh, which is part of PAO Severstal, a major steel and mining company. In 2024, Severstal and the charitable foundation Dobrota Severa with the support of the Kostomuksha Urban Okrug launched the Kostomuksha Integrated Development Program. Small and medium-sized businesses play an important role in urban development in addition to large enterprises. According to Rosstat, the number of small and medium-sized enterprises per 10 thousand people in Kostomuksha is 373 units⁵, and the share of the average number of employees of small and medium-sized enterprises in the average number of employees of all enterprises and organizations is 19.7%. According to the methodology of the Center for Urban Economics KB Strelka⁶, Kostomuksha belongs to the first group with a sufficient number of SMEs (more than 32 per 1,000 inhabitants) and the presence of conditions for their further development⁷.

Researchers note a relatively favorable demographic situation in the city with certain problems in the labor market associated with a decrease in the share of working-age population

⁴ Municipal statistics. Territorial authority of the Federal State Statistics Service for the Republic of Karelia. Available at: <https://10.rosstat.gov.ru/statistic> (accessed: July 12, 2024).

⁵ According to the results of the continuous observation of the activities of small and medium-sized enterprises for 2020.

⁶ The Center for Urban Economics of OOO KB Strelka conducted a study of SME development in small Russian cities in 2021, which resulted in a ranking of territories. It included 1,117 cities.

⁷ *Business in the City: Small and Medium-Sized Entrepreneurship in Russian Cities* (2021). Moscow: KB "Strelka".

and lack of qualified personnel (Simakova et al., 2023, pp. 155–157). However, it is worth noting an outlined decrease in the population from 2021 from 30 thousand people in 2020 to 26.5 in 2021–2024⁸.

The municipality's feature is its character: first, it is a single-industry city, and second, it is a city that is part of the Arctic zone of the Russian Federation. These features form significant risk factors for its sustainable development (Volkov, Simakova, 2022). On the other hand, Kostomuksha has two parallel regimes that give certain preferences to business representatives: the territory of advanced socio-economic development and the territory included in the Arctic zone of Russia⁹. These statuses should become a resource for attracting investments into the territory's economy and creating new enterprises and new jobs.

Thus, the data analysis shows that Kostomuksha has all the prerequisites for successful development under the condition of a comprehensive approach to solving the existing problems and using the noted advantages of the city on the way to improving the quality of life of its residents.

The research is based on the methods of qualitative sociology. We conducted one focus group with the expert community of Kostomuksha and a series of expert individual interviews using the developed methodological toolkit to analyze the existing social problems in more depth and identify individual trajectories of the city development in 2024. Ten experts took part in the focus group discussions, and nine individual interviews were held (three each with representatives from three spheres – government, business, and non-profit sector).

⁸ Municipal statistics. Territorial authority of the Federal State Statistics Service for the Republic of Karelia. Available at: <https://10.rosstat.gov.ru/statistic> (accessed: July 12, 2024).

⁹ Kostomuksha: plans, prospects, results. Available at: <https://64parallel.ru/gorod/kostomuksha-plany-perspektivy-rezultaty/?ysclid=m14noag8x2803112691> (accessed: July 12, 2024).

Individual interview method is a formalized personal interview using standardized tools with an expert representing the reference group to determine their main positions and attitudes to the problem under consideration. Focus group method is an informalized interview with the use of non-standardized tools in the form of a group discussion. We put up four blocks of questions for discussion: “local identity”, “socio-economic situation of the territory”, “directions of territory development”, “resources and subjects/actors of territory development”.

We carried out the search for informants for the focus group by the “snowball” method among territorial development stakeholders from three sectors – government, business, non-profit sector, which allowed comparing positions and identify common trends in evaluative judgments. We transcribed interviews and focus group discussions, and then selected statements related to the research problem according to their semantic context.

Research results

Problems and competitive advantages of the city in social and economic spheres as starting conditions for strategic planning of territorial development

We should say that residents have positive connotations regarding their place of residence, the presence of local identity based on socio-cultural dominants, at the same time related to the physical environment itself: “For me, the city has always been associated with comfort... in our city, for example, everything is beautiful for me” (E1). “Nature is very close to me and Karelian culture” (E5).

Experts note such advantages of a compact area as accessibility, comfort, the possibility of closer communication with other residents of the city, when “you are in full view of everyone”, which creates a safe environment and community cohesion, where residents find support and help from their immediate surroundings: “So we really have some special people due to the fact that the

city is really small, we practically know each other, we know each other, so it is easier to do many things together. Always come to help, always support” (E6). “Everything is compact, everything is really within walking distance here. And due to this a lot of time is saved” (E6). “I think, it is perfect to raise and educate children in our city. It is comfortable and safe. Where else can we let our child go safely and know that nothing will happen to them” (E8).

The city has successfully blended in with the surrounding nature, providing residents with the opportunity to enjoy the forest within walking distance. “Also, it is the forest, mushrooms, berries. You can walk around the city and pick mushrooms” (E5). A separate emphasis is placed on the absence of environmental problems: “We drink tap water. So, what environmental problems can there be” (E5). “Specialists from Saint Petersburg (research institute) came to take samples and said that there are no problems in principle” (E4). “There are 17,000 cars for a city of 26,000 people and yet we have mushrooms and berries growing in the city” (E6).

The comfort of living in Kostomuksha is confirmed by the urban environment quality index, which in 2023 is 202 points, which is higher than the borderline 180 points and corresponds to favorable living conditions. They include the following, housing is 36, street and road network – 39, landscaping – 32, public and business infrastructure – 29, social and leisure infrastructure – 30, citywide space – 36 points. Of the private indicators, it is only the level of public and business infrastructure development that is below the norm. In the region, Petrozavodsk has the highest index of comfortable urban environment according to the results of 2023 (247 points), but it has a different status – the capital of the republic and a large city. Among small cities, Sortavala has higher indicators of urban environment comfort (226 points). We would like focus on such private indicators as

street and road network – 43, landscaping – 44, public and business infrastructure – 44, social and leisure infrastructure – 35 points¹⁰. They could be considered as guidelines for building a development strategy of the Kostomuksha Urban Okrug

Against the background of favorable environmental conditions and comfort of the city, experts note unresolved problems in the social sphere. Most often people speak about them as negative factors hindering development. First of all, experts name the low level of accessibility of services in education and health care, which affects demographic processes, migration outflow of young people and increase of human capital, as limitations for comfortable life.

On the one hand, the lack of opportunities to get a good education encourages young people to leave for big cities, on the other hand, employment problems force them to return to their hometown: “If we talk about young people, first of all, it’s a stereotype because you have to go (like to Moscow), so it’s automatic, parents put it in their heads. Of course, we have one disadvantage – there is no higher education institution. So, of course, people leave it for education. But I want to say that the latest trend is that many people, having studied, come back without finding a job” (E3). “There are not enough young people in the city” (E7).

Climatic conditions are one of the most frequently noted negative factors affecting the health of the population and contributing to the change of place of residence: “Northern peoples are more likely to suffer from depression, probably because there is a polar night, polar day, and this somehow affects human biorhythms, and when we have a small amount of sun, and you wake up in the morning and want to see the sun, and it is still dark.

¹⁰ Urban Environment Quality Index is a tool for assessing the quality of the material urban environment and the conditions of its formation. Results for 2023. Available at: <https://xn----dtbcccchtsypabxk.xn--plai/#/> (accessed: July 22, 2024).

In fact, you don't see white light in winter when we have polar night" (E3). "I want to go to a place with more comfortable climatic conditions, if such conditions exist" (E7).

Residents attribute the problems in the social sphere of the city to insufficient staffing: "We have one big problem everywhere, both in health care and in education – it is a shortage of staff. We have teachers now on average working at 1.7 rates. The situation in health care is similar. Even the provision of housing is not the basis for professionals to settle here. They come, work for a while and leave" (E2).

The features of the housing sphere in Kostomuksha are the absence of municipal housing and multifamily housing construction, despite the availability of space: "We do not have it, and what we have, it is already provided for use, service or commercial rent. And nothing has been built for many years, the private sector is developing" (E2). "Yes, we have plots for the construction of high-rise buildings. Contractors do not want to come in, there are no developers" (E6).

We should say that there is an ambivalent attitude toward the enterprises operating in the city, as, on the one hand, they negatively affect the comfort of living in terms of ecology, and on the other hand, they provide jobs and salaries: "But nevertheless, residents complain that the water has worsened with the opening of trout farm" (E2). "Well, there is a balance here, but the trout farm provides a large number of jobs with very decent and competitive salaries" (E6).

Statistical data also testify to a fairly favorable situation with the population's income in Kostomuksha. The volume of social payments and taxable cash income of the population on average per 1 resident in the Republic of Karelia in 2023 amounted to 534 thousand rubles, in Kostomuksha – 699.8 thousand rubles. The average monthly salary of employees of organizations was 96.4 thousand rubles in 2023, which is significantly higher than

the average data for the Republic as a whole (70 thousand rubles)¹¹.

Some of the problems are common to the social sphere of many cities, especially with regard to the support of socially vulnerable segments of the population. For example, it concerns the issues of assistance to large families, which is enshrined in the regulations, but the funds for provision are allocated in insufficient amounts: "Another problem is the lack of infrastructure on the plots that are given to large families. The plots are allocated, it is necessary to provide infrastructure" (E3). "There is no electricity, water, communications. All this is expensive if we do it ourselves" (E7).

Experts see the main reason for the lack of opportunities to solve social problems in the limited budget revenues. "It is not a subsidized district, city. We spend what we earn. Naturally, what we earn goes to fulfill social obligations. And it is for the development of something that we do not have enough money" (E1). "We do not have money for infrastructure in the budget, it requires very large sums. This is also a problem" (E4).

The features of Kostomuksha's economic development are due to its specifics – it is a single-industry town where the town-forming enterprise Karelsky Okatysh is a part of the mining division of the world's largest steel and mining company PAO Severstal.

Before the economic sanctions imposed by unfriendly countries, the city had a well-developed timber industry, transportation, and cross-border trade. However, these industries are now facing serious problems due to changes in the market and economic conditions: staff cuts, job cuts, fewer orders, idle space: "We used to have an agro-complex in the city. We had our own greenhouses

¹¹ Municipal statistics. Territorial body of the Federal State Statistics Service for the Republic of Karelia. Available at: <https://10.rosstat.gov.ru/statistic> (accessed: July 12, 2024).

at Okatysh, but now everything is closed. We also had our own brewery” (E7). “There is a problem with the organization OOO Aek Group, which made wiring for heavy trucks, but due to sanctions a significant part of the staff was cut. The enterprise is working, but with fewer people and significantly fewer orders” (E1). “Aek faced the problem that they also did a lot of machining for Volvo. They had more than 1,000 people working for them and now they have 150. Now large areas are idle” (E4). “The timber industry, of course, was the most affected and the organizations that carried out trucking”.

The border situation has had a significant impact on the city’s economy, the flow of tourists has decreased, and there is a negative impact on the retail and restaurant business. “Yes, we have been hit very hard by the border situation. At least “shopping” tourism has flourished, and “restaurant tourism” too” (E6).

There are objective barriers in the form of lack of necessary resources for the development of production and social sphere of the city: power capacities, professional staff, infrastructure, transportation accessibility. “The big problem is the lack of free power capacities. A new industrial enterprise can’t even build, can’t organize production because there is a real lack of capacity. The problem is the lack of hotels” (E6). “Taking into account that we do not actively develop tourism, the hotel network that we have today is quite enough. But if we are talking about development, it is necessary to build a hotel complex” (E1). “An airport by 2030. We have entered the federal program. Lengthening the runway for medium jets” (E5). “We were talking about the airport and they are demanding railroads and trains, we have reduced the number of trains, flights to 2 per week now” (E6). “The city roads are still in poor conditions” (E1).

Thus, the city is facing serious challenges that require multifaceted approaches and solutions to restore economic prosperity and create new

opportunities to support industries that previously played a defining role in urban development.

Urban development management: actors’ participation in solving social problems

Experts note that the small size of the settlement provides a number of advantages in urban management: “Our roads have started to fail. Literally, it will only be a short time, it will be drier, and we will see the same comfort again. These holes on the roads will no longer be there. I think the head of our city reacts to such moments quite promptly. Such a compact and small city is easy enough to manage” (E4). However, the advantages of a compact area are offset by insufficient funding for the development of the territory.

There is also a lack of balance in the activity of actors involved in solving urban problems. The main feature of Kostomuksha can be attributed to the participation of socially oriented business in solving urban problems with rather weak participation of citizens.

Experts noted the inactive participation of residents in solving social problems and developing the urban environment: “Territorial public self-government is poorly developed in our city. We need to start from ourselves, from our own yard, where we are close to each other” (E2). “There is a backbone – active people. I would not say that there are a lot of them” (E6). “We don’t have very active residents. It is hard to sway and raise them. We are more like “sofa critics” (E4).

The population does not take an active part in the working out of the city development program or projects related to initiative budgeting: “Voting for comfortable urban environment... We have to persuade everyone to vote. 2800 people voted” (E6). “Units who are ready to propose some project and participate with it” (E1).

Among the population, young people stand out with low activity: “Our working youth is inactive, unorganized. Somehow it turned out that it was missed and only now it is all starting to revive” (E1).

At the same time, we should note that there is a potential for the development of civic participation because when acute social conflicts arise, the population consolidates and actively defends its interests: “Do you know where they actively joined in? When the issue arose that we could put containers for garbage collection, because the legislation changed and the rego-operator came. Here, of course, people showed their activity. We have a unified position in the city as a whole – we do not want containers, we do not want rats, we do not want to breed dirt” (E1).

There are cases when the low activity of the population is due to their lack of awareness: “If we talk about a comfortable urban environment, then technically it is inconvenient. But we tell people that you are whining that you have potholes in the adjacent territory, but the guys from the neighboring yard came to the department of construction and repair, they were helped to make a project. And some of them go to participate. Last year there was a “bloody” selection in the comfortable urban environment of the adjacent territories, nostril to nostril” (E6).

Studies testify to the active role of non-profit organizations (NPOs) in the development of territories. NPOs act as a tool for attracting grant funds and an aggregator of non-financial resources, a channel for articulating the interests (needs) of the local community, an activator of civic initiative (Mersyanova, Benevolenskii, 2016; Chernega, 2020; Salamon, Toepler, 2015). However, there are disparities in the development of the sector of these organizations between large and small cities, which is confirmed in the Republic of Karelia. According to the Ministry of Justice of the Russian Federation, 953 organizations are registered in Petrozavodsk, and it is only 43 in Kostomuksha, by organizational-legal form religious and public organizations prevail¹². The limited number of

¹² Data of the Ministry of Justice of the RF. Available at: <https://minjust.gov.ru/ru/> (accessed: July 22, 2024).

operating non-profit organizations affects their activity in attracting federal budget funds. Within the framework of the Presidential Grants Fund competition since 2017, only one project of the autonomous non-profit organization autonomous ethno-cultural center “Severia” has been supported for an insignificant amount of 496,890 rubles. At the same time, 19 social projects were supported totaling more than 42 million rubles in the large city of Petrozavodsk in 2023¹³.

This trend can be traced in the expert opinion as well. We noted that the influence of public organizations is insufficient during the focus group. NPOs’ activities operating in the city are most often aimed at preserving Karelian culture. “We have few working NPOs in Kostomuksha. There are registered ones, but they do not work at all” (E2). “Severia” and “Spinning”, “Archip Perttunen Foundation” are active and that’s all. There is no comprehensive work. If we joined forces, we would solve this problem together” (E5). According to experts, low activity is due to the lack of resources of NPOs: “There is an opinion that NPOs should earn their development through grants” (E6). “There is a lack of premises– houses for NPOs” (E2).

The passivity of public associations and citizens may be partly due to the active position of socially oriented business, as Kostomuksha urban district belongs to the cities of presence of PAO Severstal, which together with the charitable foundation Dobrota Severa with the support of the administration is implementing a program of integrated development of the settlement. “I don’t even have enough hands to count the latest implemented projects jointly with Karelsky Okatysh. Take preschool education, kindergartens, cultural institutions – they always support, support schoolchildren on some outings. Sports are very

¹³ According to the Presidential Grants Foundation for all competitions held by the Presidential Grants Foundation since its launch on April 3, 2017. Available at: президентскиегранты.рф (accessed: July 20, 2024).

actively supported, our sports school” (E5). The strengths of the program include the preparatory stage, when the urban environment quality index, opinions of federal experts in the field of urbanism and city residents were taken into account. The most problematic areas of urban development are included in the objectives of the program: health care, landscaping, and youth education. Severstal will allocate more than 200 million rubles to implement the program in 2024¹⁴. The new development areas will complement the traditional programs of measures aimed at improving environmental safety: “GOK has a large environmental program, various treatment facilities throughout. Emissions into the air are filtered” (E6).

At the same time, we should remember that small territories rely on small and medium-sized businesses for their development. Interviews with experts revealed differences in the views of the population on the representatives of small and medium-sized businesses depending on their social position and division into “friend-or-foe”. This is well traced in relation to entrepreneurs who are engaged in fish farming and harvesting berry and mushroom products. Positive connotations are observed in statements about the activities of a local entrepreneur – “trout breeder” who is interested in preserving the environment and solving social problems: “In addition, the entrepreneur has a social burden. He helps a lot in the maintenance of the village. And he is also very often involved in supporting children and social projects” (E7). Residents demonstrate a completely different attitude toward businesses “coming in from outside”: “Our municipal control department fights with them. They report on the issue of trout breeders at every meeting” (E6). “But they are not socially responsible. Oppositional to the society and to the city” (E1. Note: Concerning berry processing enterprises).

¹⁴ Severstal will allocate more than 200 million rubles for the development of Kostomuksha in 2024. Available at: <https://severstal.com/rus/media/archive/severstal-napravit-bolee-200-millionov-rublej-na-razvitie-kostomukshi-v-2024-godu/> (accessed: July 22, 2024).

As a result, we see an imbalance of power when it comes to solving urban problems. With a strong and interested position of big business, population activity, NPOs, small and medium-sized businesses are reduced. In this regard, the question arises about the choice of urban development strategy and the actions of stakeholders because in case of reduced profitability or the closure of the town-forming enterprise due to the depletion of natural resources, the territory will face the degradation of the economy and social infrastructure, reduced quality of life and population outflow.

Promising development directions of Kostomuksha Urban Okrug

The benchmark for the strategic development of the border area in difficult socio-economic conditions should be the possibility of forming a territory with a high potential for building a new economy. Economic restructuring is associated with the re-profiling of enterprises and reorientation of existing enterprises to other sales markets. According to experts, these processes have been launched: “Okatysh served the company Zeppelin, it is not working now either. But others have entered this niche. There was also a company Sumitec International, they served their competitor corporation Komatsu Ltd. It was a Russian-Japanese enterprise. They also left Kostomuksha, and the employees were transferred one day to OOO Instroy Tech Com, if I am not mistaken. This is also a large network in Russia, they are distributors of this equipment (quarry equipment and equipment in general). Here, all the employees just left to other contractors who came to take their places” (E6). “Earlier in Soviet times Belazy (Belarusian automobile plant) were the only plant, then Caterpillar, Komatsi appeared. Now Caterpillar and Komatsi have moved away and Belazs are being assembled again; 27 Belazs were assembled at Okatysh during the year. They are assembled right here, as they are huge and cannot be transported in parts” (E7).

The experts identified the following as the main barriers to the emergence and development of new economic enterprises and specializations: lack of necessary resources and lack of sense to create large enterprises in small territories: “Lack of electricity capacity. This is such a big problem that discourages us” (E3). “And our city is small enough to build large-scale events” (E7). “Lack of skilled labor. Even our industrial enterprises, large and not large, say that it is difficult to find staff” (E1). These problems are partly alleviated. For example, to solve personnel issues, AO Karelsky Okatysh launches its own programs on the basis of educational institutions of the city: Karelsky Okatysh raises its personnel at the Kostomuksha Polytechnic College. They actively cooperate, update equipment, the college updates educational programs. And the students have to undergo practical training at Karelsky Okatysh with a guarantee of further employment. The guys even study, then go to serve in the army for a year and return with a guarantee of employment” (E6).

The local authorities quite often link the strategic development of the territory with the tourism development, which is supported by the trend for domestic tourism under the effect of sanctions. However, the tourism industry relies on developed infrastructure, so it is not worth choosing the territories with low potential for economic development as a direction of its development. The choice of sports and health tourism as new directions of development in Kostomuksha is based on the existing experience of providing services in this sphere: “If we are talking about the long-term perspective and if this is a single-industry town and resources are exhaustible, then naturally some kind of production should be opened here. If we are talking about the short-term perspective, it is the tourism sector, biathlon development, air travel. It was said that we are ready to allocate a land plot in Karelia to build a year-round center for children. This issue is hanging in the balance yet, but in fact

it is a good stimulus for development, it is new jobs, children could get healthy here, considering what kind of air we have” (E1). “A health center is possible. Radon baths. That is the prospect of wellness tourism” (E2).

Another mechanism of territorial development is economic integration of territories. However, according to experts, municipal authorities should not choose the path of rapprochement with neighboring territories. If there is a reliance on the existing enterprise AO Karelsky Okatysh, which participates in solving urban problems, the residents feel more secure than, for example, the population of neighboring districts. Therefore, they have no intention to unite with other entities to jointly solve social problems and build development strategies. For example, with regard to the idea of uniting with the neighboring Kalevala District, the following opinions were expressed: “We do not want to unite with anyone, sorry” (E5). “They are subsidized. What do we need them for? They are used to begging. How much can we drag?” (E6). “It is necessary to work and manage locally, not to enlarge territories” (E3).

The possibilities of resource provision for solving social problems are seen in regulating the issues of replenishing the city budget through agreements with the leadership of the Republic of Karelia: “We have an unfair distribution of income. Taxation all goes there” (E6). “Taxes were returned to us, and we lived on self-sufficiency. In such cases we could say that we could run our own economic activity, without subsidies. At least with current problems, roads we could cope with building roads” (E2). Thus, given the current state of affairs, experts do not see any financial grounds for the development of the territory beyond the implementation of the development program at the expense of subsidies from PAO Severstal.

Therefore, despite the trends of increasing differentiation of regional development and depopulation of small territories, small towns have

a rather important role in the socio-economic situation of the country, preservation of territorial unity and security of the state, which is reflected in the main provisions of the Spatial Development Strategy of the Russian Federation for the period until 2025 and the Concept until 2030. Each territory has a certain potential, which is reflected in its strategic management and choice of the way of possible development or adaptation to the existing socio-economic conditions.

Discussion of findings and conclusions

Comparison of the main provisions of the socio-economic development Strategy of the municipal formation “Kostomuksha Urban Okrug” up to 2030 with the research results showed the presence of numerous points of contact in the list of key problems and main directions of the territory development. Let us dwell on those provisions that are either not addressed in the regulatory document or require rethinking. The developers see the territory’s capacity building in the resources of big business. It is no coincidence that practically all the main threats in the SWOT-analysis concern big business; moreover, practically all of them are realized in connection with the introduction of international sanctions against Russia. At the same time, the resources of small and medium-sized businesses, NPOs, active citizens are overlooked. The sections of the Strategy dealing with big business and other subjects of the territory development differ in content: detailed plans in the first case and streamlined formulations from regulatory documents of the federal level in the other. The Strategy also relies on attracting foreign residents to do business. In connection with changes in the economic environment, it is necessary to make adjustments in the strategic planning of the territory’s development, so as a recommendation we can suggest, first, to supplement the regulatory document with a section highlighting the main stakeholders or subjects of the territory’s development. Second, one of the development

directions is tourism (ecotourism, industrial, cultural, ethnographic, sports), but the Strategy lacks such a direction as health tourism, which can be included to consider the available resources. The focus group participants emphasized the individual way of development (“their own” way), but we note the possibility of cooperation with tourist areas of the Republic of Karelia, for example, competent redirection of tourist flows from Sortavala further north, including Kostomuksha. As part of the development of rural and ethnographic tourism it is necessary to cooperate with rural areas that are part of the Kostomuksha rural agglomeration along with Kostomuksha.

Kostomuksha Urban Okrug belongs to the following types by its characteristics: local socio-economic and cultural center, potential area of compression, single-industry territory of raw materials orientation, which determines the risks of further urban development. The opportunities of unrelated diversification, due to the presence of favorable economic statuses of the territory, are seen as the reference points of strategic development. As a scenario of inter-territorial interaction, we propose to develop a mixed-type strategy, when the number of industries is expected to grow, both related and coinciding with neighboring territories. In this case, the main barriers to development are the lack of electricity for the creation of new industries, poor transport accessibility, poor condition of urban infrastructure, insufficient level of human capital.

Thus, as a result of the study, we identified new individual development trajectories based on expert assessments: sports and health tourism, which should be taken into account in the development strategy of Kostomuksha along with the participation of big business, taking into account its significant role as a stakeholder in the development of this territory. However, we identified insufficiently active participation of citizens, NPOs, small and medium-sized businesses in solving social problems as one of the main barriers. This is partly due to the

active position of large socially-oriented business. In cities where big business is present and whose interests include urban development issues, small and medium businesses are not given a prominent role, which may have negative effects in case of external economic risks and loss of corporate sustainability of the enterprise. Undoubtedly, there are close links between sustainable corporate development and social sustainability of the local community (Volkov, Simakova, 2022, p. 860), but as a resource for development we should highlight the activation of citizens and support of non-profit organizations, whose activities will contribute to community cohesion and preservation of Karelian

culture, identity of the city and, as a consequence, its socio-economic development.

The results of our work make a certain contribution to the development of scientific knowledge and have the potential for practical application, as the conclusions on the activation of various stakeholders and the definition of individual trajectories and development strategies can be extended to other single-industry territories. The novelty of the study lies in the expansion of the methodological approach to strategic planning of small cities' development with the use of the original toolkit of qualitative sociology – expert assessments of territorial development stakeholders.

References

- Batunova E., Gunko M. (2018). Urban shrinkage: An unspoken challenge of spatial planning in Russian small and medium-sized cities. *European Planning Studies*, 26(8), 1580–1597.
- Boschma R., Coenen L., Frenken K., Truffer B. (2017). Towards a theory of regional diversification: Combining insights from evolutionary economic geography and transition studies. *Regional Studies*, 51(1), 31–45.
- Chernega A.A. (2020). “The power of local communities”: Practices, mechanisms and models of resident’s participation in sociocultural development of territories (on the materials of small towns and villages in the Vologda Region). *Zhurnal sotsiologii i sotsial’noi antropologii=The Journal of Sociology and Social Anthropology*, 23(3), 51–77. DOI: 10.31119/JSSA.2020.23.3.3 (in Russian).
- Chernysh M.F., Markin V.V. et al. (2020). *Prostranstvennoe razvitie malykh gorodov: sotsial’nye strategii i praktiki* [Spatial Development of Small Towns: Social Strategies and Practices]. Moscow: FNISTS RAN.
- Eferin Ya.Yu., Kutsenko E.S. (2021). Adjusting smart specialization concept for Russian regions. *Voprosy gosudarstvennogo i munitsipal’nogo upravleniya=Public Administration Issues*, 3, 75–110 (in Russian).
- Gunko M.S., Eremenko Yu.A., Batunova E.Yu. (2020). Planning strategies in the context of urban shrinkage in Russia: Evidence from small and medium-sized cities. *Mir Rossii*, 29(3), 121–141. DOI: 10.17323/1811-038X-2020-29-3-121-141 (in Russian).
- Hospers G.J. (2014). Policy responses to urban shrinkage: From growth thinking to civic engagement. *European Planning Studies*, 22(7), 1507–1523.
- Kalyuzhnova N.Ya., Violin S.I. (2020). Smart specialization of Russian regions: Prospects and limitations. *Ekonomika, predprinimatel’stvo i pravo=Journal of Economics, Entrepreneurship and Law*, 10, 2457–2472. DOI: 10.18334/epp.10.10.111061 (in Russian).
- Klimanov V.V., Chernyshova N.A., Nedopivtseva D.A. (2016). The mechanisms of formation of strategic socio-economic priorities. *Mir ekonomiki i upravleniya=World of Economics and Management*, 16(4), 80–92 (in Russian).
- Kosygina K.E. (2023). The role of local communities in the development of small territories. *Ekonomicheskie i sotsial’nye peremeny: fakty, tendentsii, prognoz=Economic and Social Changes: Facts, Trends, Forecast*, 16(5), 210–229. DOI: 10.15838/esc.2023.5.89.12 (in Russian).
- Kosygina K.E., Ukhanova Yu.V. (2024). Intersectoral social partnership as a basis for municipal public policy. *Zhurnal sotsiologii i sotsial’noi antropologii=The Journal of Sociology and Social Anthropology*, 27(1), 192–215. DOI:10.31119/jssa.2024.27.1.9 (in Russian).
- Krugman P.R. (1993). On the relationship between trade theory and location theory. *Review of International Economics*, 1(2), 110–122.

- Kuznetsov S.V., Sviridenko M.V., Shamakhov V.A. (2020). Strategic priorities of municipal development based on identifying the interests of stakeholders: Methodological approaches and practical implementation. *Upravlencheskoe konsul'tirovanie=Administrative Consulting*, 11(143). DOI: 10.22394/1726-1139-2020-11-10-22 (in Russian).
- Makarova M.N. (2017). Small towns in the spatial structure of regional population distribution. *Ekonomicheskie i sotsial'nye peremeny: fakty, tendentsii, prognoz=Economic and Social Changes: Facts, Trends, Forecast*, 10(2), 181–194. DOI: 10.15838/esc/2017.2.50.10 (in Russian).
- Manzo L.C., Perkins D. (2006). Finding common ground: The importance of place attachment to community participation and planning. *Journal of Planning Literature*, 20(4), 335–350. DOI: 10.1177/0885412205286160
- Markin V.V., Voronov V.V., Peshkova V.M. (2019). Small cities in the state policy of spatial development of Russia: On the methodology of social modeling of regional strategies and practices. *Rossiia reformiruyushchayasya*, 17, 271–286 (in Russian).
- Mersyanova I.V., Benevolenskii V.B. (2016). The comparative advantages of NPOs as social welfare services providers: An examination in the Russian context. *Voprosy gosudarstvennogo i munitsipal'nogo upravleniya=Public Administration Issues*, 4, 7–26 (in Russian).
- Moallemi et al. (2021). A review of systems modelling for local sustainability. *Environmental Research Letters*, 16, 113004. DOI: 10.1088/1748-9326/ac2f62
- Popkova A.A. (2022). Citizen engagement in the system of strategic development of small territories. *Izvestiya vysshikh uchebnykh zavedenii. Sotsiologiya. Ekonomika. Politika=Proceedings from Higher Educational Institutions. Sociology. Economics. Politics*, 4, 104–117. DOI: 10.31660/1993-1824-2022-4-104-117 (in Russian).
- Salamon L.M., Toepler S. (2015). Government – nonprofit cooperation: Anomaly or necessity? *Voluntas: International Journal of Voluntary and Nonprofit Organizations*, 26(6), 2155–2177.
- Simakova A.V., Volkov A.D., Tishkov S.V. (2023). Environmental and social aspects of a city-forming enterprise activity in Arctic individual city (evidence of Kostomuksha). *Vestnik Moskovskogo universiteta. Seriya 6: Ekonomika=Lomonosov Economics Journal*, 58(6), 149–169. DOI: 10.55959/MSU0130-0105-6-58-6-9. Available at: <https://elibrary.ru/item.asp?id=59765067> (in Russian).
- Smoleva E.O. (2023). Social contradictions of small territories of the Vologda Oblast: Assessment methodology. *Society and Security Insights*, 6(4), 91–107. DOI: 10.14258/SSI(2023)4-06 (in Russian).
- Tazhitdinov I.A. (2013). The applying stakeholder approach to the strategic management of territories development. *Ekonomika regiona*, 2(34). Available at: <https://cyberleninka.ru/article/n/primenenie-steykholderskogo-podhoda-v-strategicheskoy-upravlenii-razvitiem-territorii> (дата обращения 22.09.2024; in Russian).
- Uskova T.V., Sekushina I.A. (2021). Strategic priorities of small and medium towns' development. *Ekonomicheskie i sotsial'nye peremeny: fakty, tendentsii, prognoz=Economic and Social Changes: Facts, Trends, Forecast*, 14(1), 56–70. DOI: 10.15838/esc.2021.1.73.5 (in Russian).
- Volkov A.D., Simakova A.V. (2022). Arctic single-industry city: The population's perception of their future in the prospects for its development. *Regionologiya=Russian Journal of Regional Studies*, 30, 4(121), 851–881. DOI: 10.15507/2413-1407.121.030.202204.851-881 (in Russian).
- Zvyagintsev V.I., Neuvazhaeva M.A. (2015). Migration from urban to rural areas: The phenomenon of “counter-urbanisation” in modern Russia. *Mir Rossii. Sotsiologiya. Etnologiya=Universe of Russia. Sociology. Ethnology*, 24(1), 101–135 (in Russian).

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On the Issue of “New” Poverty in Russia in 2000–2023



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Abstract. The research topic is relevant because the phenomenon of “new” poverty has been recognized as Russia’s deep and lingering problem of the 21st century, which is accompanied by underutilization of accumulated human capital and an increased risk of a decline in the economic value of education, which hinders progressive and sustainable economic growth. The aim of the work is to concretize key qualitative features of “new” poverty and substantiate the reproduction of this phenomenon in Russia in 2000–2023, which is driven by rent-oriented behavior of the state and extreme socio-economic inequality. The methodology of the study is based on a systems approach, analysis using linear and separation methods in relation to identification, and analysis of causes, concomitant factors and consequences; we also use hierarchical classification of variables for clustering Russia’s constituent entities taking into account the spread of the phenomenon of absolute monetary poverty. We identify a fundamental condition, main causes determined by extreme socio-economic inequality, and their accompanying factors, which

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together explain the reproduction of “new” poverty in Russia as a major problem requiring solution at the political level. We consider key qualitative signs of “new” poverty in Russia, revealing its nature in the conditions of rent-oriented behavior of the state. They include social exclusion from the use of resources, various benefits and privileges; coverage of employees with secondary and higher professional education working in different economic sectors, downward professional and qualification mobility; expansion of the “shadow economy of survival”, etc. We conduct the clustering of Russia’s constituent entities, taking into account the spread of absolute monetary poverty in 2023. We propose some basic and fundamental measures aimed at overcoming poverty (taking into account its “new” quality) and raising Russians’ incomes.

Key words: “new” poverty, poverty line, median per capita income, rent orientation, social inequality, downward professional mobility, the “working poor” paradox, poverty alleviation policy.

Introduction

The relevance and significance of the issue under consideration

The current stage of socio-economic development in different countries of the world, according to the Nobel laureate in Economic Sciences P. Krugman, is characterized as a systemic and stadial regression, manifested primarily in polarization, the driver of which is “unequal ownership of assets, not unequal pay” (Krugman, 2014, p. 6). The socially unjust economic system with its wealth inequality and poverty, accompanied by discrimination in education and medical care, is in a marked contrast to the basic principles of an inclusive society and sustainable development. In addition, such an economic system is incompatible with the well-known constitutional regulation about Russia as a social state, reflected in Article 7 of the Constitution of the Russian Federation, according to which one of the main purposes of a social state is to create conditions for a worthy life and free development of people (Ilyin, 2017, p. 10).

In connection with this, poverty, as a characteristic of one of the standards of living in the economic and social aspects, meaning, in fact, the impossibility of normal physical reproduction of a person, his or her labor and human potentials (Bobkov, Verzhinina, 2022, p. 179), becomes an area of special interest for responsible scientific research and development. The importance of overcoming

poverty in all its forms for achieving sustainable development has been officially recognized at the global level¹ and reflected in the coordination of international efforts to “end poverty as well as to promote economic growth, address a number of issues in education, health care, social protection and employment”².

It should be noted that worldwide, in 1990–2023, humankind achieved impressive results in reducing extreme poverty. However, starting in 2020, this sustained trend was reversed due mainly to the effects of the COVID-19 pandemic; in 2020–2023, the whole world experienced the largest annual increase in poverty, which was documented in the World Bank report “Poverty and Shared Prosperity” (Braithwaite, 2022). As reported by the United Nations Development Programme (UNDP), during this period, for example, in countries with low per capita income, the number of the poor increased by 165 million people; even in the United States, the poverty rate increased from 7.8% in 2021 to 11.5% in 2022.

¹ Primarily, we are talking about such UN conceptual documents as “Millennium Development Goals” (2000–2015) and “17 Sustainable Development Goals” for the period 2016–2030 for all countries of the world.

² Transforming our world: the 2030 Agenda for Sustainable Development (2015). UN. Available at: <https://sdgs.un.org/ru/2030agenda> (accessed: July 8, 2024).

In Russia, on the contrary, there was a decline in the proportion of the population officially defined as the poor. According to updated data from Rosstat, in 2023, 8.5% of Russians, or 12.4 million people, were in absolute monetary poverty (this is historically the lowest value for the entire post-Soviet period) against 9.8% in 2022, 10.7% in 2012. At the same time, under the influence of anti-Russian sanctions and cyclic downturns in production, the real disposable incomes of Russians turned out to be 6.5% lower than in 2013 (Klepach et al., 2022, p. 5), and the poverty rate has not reached the 6.5% value that has been set in the National Development Goals.

It is worth noting that in the long-term outlook until 2030, as stated in the instruction of the President of the Russian Federation, following his Address to the Federal Assembly dated February 29, 2024, the Government of the Russian Federation should not only ensure a reduction in the poverty rate to at least 7%, but among multi-child families – by more than 2 times (to no more than 12%), and to reconsider approaches to the definition of poverty in order to raise the standards of living of low-income groups of the population.

Poverty as a socio-economic phenomenon is relative; its theoretical concepts are being concretized and modernized taking into account general trends and patterns of the era and features of the economic development of a particular country in a specific time period. As for the current period, for example, according to the Nobel Prize laureates in Economic Sciences (Banerjee, Duflo, 2012, p. 33), “poverty is not just a lack of money; it is not having the capability to realize one’s full potential as a human being”. Director of the HSE Institute for Social Policy L.N. Ovcharova emphasizes: “One thing is when there is less money than the poverty line... another thing is when there are

enough resources for survival, but consumption is significantly lower than the common consumption standard in the country”³.

In this context, the idea that “poverty is always with us” (Stiglitz, 2015, p. 75) means actually that under the influence of certain objective conditions and causes, the concept of poverty and its profile may change. Thus, due to the growing social inequality and “concomitant polarization” in all countries of the world in recent decades, the issue of poverty among the working-age population is acute, resulting in the emergence of an extra social group – the “new” poor, who are characterized by relatively high indicators of competency and low wages (Stiglitz, 2021, p. 69; Selivanova, Razumov, 2023).

In respect of today’s Russia, undoubtedly there is an issue of concern about the spread of this phenomenon to households with children, to those engaged in productive labor and young population, namely to those who are expected by society to reproduce the population, as well as human and labor potentials of the country. In other words, a factor of self-reproduction of poverty has formed in post-Soviet Russia due to the low level of real incomes of gainfully employed citizens; the stability of the “poverty trap” remains, which can become a powerful limiter of labor motivation and economic activity of the population, and is fraught with a rise in crime and social upheavals (Kormishkina, Ermakova, 2021).

This having been said, the issue of poverty, including its new qualitative features and identification of the main catalysts of “new” poverty, is urgent, requiring further theoretical research; it should remain the most important priority of the socio-economic policy of the Russian state, despite the crisis associated with the blockade of the Russian economy by the West that began in 2022 (Klepach et al., 2022, p. 5).

³ Poverty is a threat to the quality of economic growth (materials of an interview with the director of the HSE Institute for Social Policy L. Ovcharova). *Ekspert*, 2019, no. 29. Available at: <https://expert.ekiosk.pro/743949> (accessed: July 1, 2024).

The current state of research on the issue

The problem of poverty has been the subject of an active scientific discussion since the end of the 19th century, in which issues related to the definition and measurement of the phenomenon were in focus at different time intervals. Since poverty as a socio-economic phenomenon is closely correlated with the level of economic development and the characteristics of a particular country, theoretical concepts about it and its forms of manifestation are differentiated in time and space (Kapustin, 2006, p. 12; Ovcharova, 2009, p. 8; Ilyin, Morev, 2022, p. 14).

In the modern theory of poverty definition, three competing approaches can be distinguished, differing in their conceptual basis: welfare concept, deprivation concept, and capability approach of A. Sen. As determined in the welfare concept, based on the idea of maximizing well-being by maximizing consumer utility factors, indicators such as incomes and consumption expenditures are fundamental in poverty analysis. Moreover, a conceptual preference is given to income, which is considered, for example, by (Athkinson, Micklewright, 1992), as opportunities offered to a person to lead a favorable lifestyle. Sufficient methodological elaboration of this approach allows it to remain dominant today in the official system of defining and measuring poverty in different countries, including Russia.

The deprivation approach is grounded in the theory of basic needs, developed by the famous British economist R. Townsend (Townsend, 1979); the study of poverty is based on deprivation in the consumption of goods or services, the set of which is determined depending on the socio-economic conditions and lifestyle of a country or region. This approach, unlike the previous one, allows taking into account certain social factors related to the quality of life (for example, the ability to demonstrate and effectively use one's mental and physical capacities in the work process, social protection and social justice, etc.), which expands

theoretical ideas about well-being. In addition, P. Townsend drew attention to the fact that a significant concentration of deprivation (signs of poverty) of an individual (or households) is observed up to the income level of 50–60% of the median (Me) (Kormishkin, 2023, p. 221). We should note that the definition of poverty as deprivation has been widely used in practice in developed countries since the late 1990s; while the method itself continues to develop.

According to the capability approach put forward by the Nobel Prize laureate in Economic Sciences A.K. Sen, the assessment of well-being should be based on personal capabilities that contribute to achieving the highest value – choosing a lifestyle as one sees fit (Sen, 1982). At the same time, the scientist defines poverty as the most noticeable form of inequality, as a result of depriving an individual of basic capabilities – ranging from life's necessities (the ability to avoid death, eat normally, have access to clean drinking water, have tent), to complex, related to actions or personal feelings (get an education, take part in the life of the community, respect oneself, etc.) (Sen, 1987). It should be highlighted that the practical task of determining and justifying such a list of capabilities does not have a convincing solution today.

A comparison of various definitions of poverty and its measurement methods within the indicated theoretical approaches allows us to state the transition to a higher standard of poverty, which ensures not only physiological survival for an individual, but also takes into account his or her exclusion from socio-cultural practices accepted in the society, setting requirements for the level and method of performing certain activities (Ovcharova et al., 2022). With this understanding of poverty, there remains an urgent need for further discussion of issues related to the definition of the poverty line as a multi-criteria socio-economic phenomenon. Three well-known concepts of poverty (absolute, relative and subjective) compete here; at the same

time, some experts⁴ point to the need to combine several poverty lines as a common method in the scientific mainstream of the 21st century (Bobkov, Odintsova, 2020; Bobkov et al., 2021; Bobkov et al., 2022; Dovgotko et al., 2022; Ovcharova et al., 2022). In this regard, it is crucial to consider the reasoned statement that in countries that faced a decline in the standard of living, the transition to the relative monetary poverty line only, which in practice is usually set at 40–60% of Me, without linking it to the absolute poverty, based on a comparison of income with the cost of a minimum expenditure basket, can lower the official poverty line below the level of physiological survival (Ovcharova, 2009, p. 32; Ovcharova et al., 2022, p. 7). This “novation” was the basis for changing models for calculating the poverty line in Russia in 2021 (it was set at 44.2% of Me and defined as relative monetary poverty). However, the mentioned method for determining the poverty line has been sharply and constructively criticized by some leading researchers of Russian poverty: by V.N. Bobkov⁵, for instance.

The development of theoretical concepts about poverty as a socio-economic phenomenon in recent decades, in addition to the above, is reflected in original judgments about the “new” poverty. The mentioned term is applied, as a rule, to people who find themselves at a loss as a result of new economic conditions (for example, a reduction of the influence of the state in welfare programs; a decline in standards of living due to worsening economic and social situation; an increase in life expectancy) (Armstrong, 2017).

In this context, we should note an issue raised by a famous French economist T. Piketty and Nobel laureates in Economic Sciences (P. Krugman,

J.E. Stiglitz, A.V. Banerjee, E. Duflo), regarding the relationship between extreme socio-economic inequality, capabilities of an individual and economic growth. And new trends of inequality in the 21st century, hindering sustainable economic growth and determining the existence of deep and persistent poverty, are: the so-called one percent problem; “concomitant polarization”, when the demand for highly skilled work increases to some extent, and the rest of the employment growth is accounted for low-skilled work with a correspondingly low level of wages (Stiglitz, 2021, p. 163); reduction of the influence of the state in welfare programs. Scientists argue that an extreme degree of inequality when “... social, economic, and political effects become evident” (Stiglitz, 2016, p. 323), and which is observed in the 21st century in different countries, including Russia, is due primarily to rent orientation⁶ and the transition from socially beneficial competition (based on the principles of the free market) to socially harmful, or positional (proceeding from the predominance of private property relations) (Piketty, 2020, p. 327; Fishman et al., 2019, p. 29).

In addition, after neoliberal economic reforms implemented in Russia in the 1990s, the World Bank experts noted the spread of “new” poverty in Russian society, which primarily meant recognition of this phenomenon as one of the main economic and social problems of the country. At the same time, they explained the “new” poverty in Russia in the 1990s by the destruction of the system of state distribution based on the principle of real socialism

⁴ Poverty is a threat to the quality of economic growth (materials of an interview with the director of the HSE Institute for Social Policy L. Ovcharova). *Ekspert*, 2019, no. 29. Available at: <https://expert.ekiosk.pro/743949> (accessed: July 1, 2024).

⁵ Bobkov V. (2021). Poverty line is murky waters. *Argumenty i fakty*, 11(755), 3.

⁶ In the new economic literature, rent orientation in a general meaning refers to all the numerous methods due to which current political processes help the rich to enrich themselves even more at the expense of others (for example, due to untraceable and traceable transfers and government subsidies; obtaining state property (such as oil or minerals) at below-market prices; selling manufactured products to the government at above-market prices (uncompetitive production); sluggish functioning of existing competition law, etc.). It is believed that rent orientation is especially common among countries with abundant natural resources (Stiglitz, 2015, pp. 99–103; Stiglitz, 2016, pp. 131–133).

“to each according to his contribution” and the consequences of the transformational recession; as its main feature, the spread of poverty among workers was identified. The “new” poor cannot alleviate their poverty getting jobs available to them, emphasizes World Bank expert J.D. Braithwaite (Braithwaite, 1998). As stated by J. Stiglitz, the “new” poverty is interconnected with concomitant polarization (Stiglitz, 2021, p. 70).

It is significant that in Russian economics, the problem of poverty as a special subject of research was identified only in the early 1990s after a series of neoliberal market reforms (in Soviet Russia, its ideological denial took place), adopting the format of academic debates around changes in the composition (profile) of the poor and, accordingly, in the nature of Russian poverty; determining the factors that influence poverty among the able-bodied and working population; explaining the impact of poverty on economic growth. The new quality of poverty in relation to the conditions of market development of the economy was considered in the works of leading domestic researchers (Rzhanitsyna, 2001; Tikhonova, 2003; Tikhonova, 2018; Ovcharova, 2009; Ovcharova et al., 2022; Razumov, Yagodkina, 2007; Shevyakov, Kiruta, 2009; Yaroshenko, 2010; Bobkov, Odintsova, 2020; Bobkov et al., 2022; Klepach et al., 2022, etc.). More specifically, the “new” poverty in Russia is positioned as a permanent, lingering socio-economic phenomenon, a result of “not a lack of finances to meet common standards of living accepted as basic in specific social conditions in a given country, but as a result of multiple social exclusion” (Yaroshenko, 2010, p. 229). A peculiarity of the Russian “new” poverty, according to N.E. Tikhonova, is predetermined by the type of economic activity and manifests itself, for instance, in the appearance of white-collar workers, employed in the public sector, among the poor (Tikhonova, 2003, p. 88; Tikhonova, 2018, p. 19). According to V.N. Bobkov and E.V. Odintsova, attempting to

specify quantitative criteria for the phenomenon of poverty, the “new” poor include those of the gainfully employed population working in any sector with a low standard of living and quality of life, who do not have standard employment incomes (at least 4.1 times more than the poverty line), which would ensure a stable financial situation of households, considering dependents, and increase their level of money income to at least 3.2 times more than the poverty line (Bobkov, Odintsova, 2020, p. 178).

In other words, in the new economic literature, “new” poverty is considered as a relative and multi-valued socio-economic phenomenon that depends on the standard of living and quality of life in a particular country and historical period, and therefore predetermined by some objective event or phenomenon (fundamental condition), for example, market transformation in Russia in the 1990s (Braithwaite, 1998); a decline in the standard of living as a result of worsening economic problems in the context of market development of the country (Bobkov et al., 2022), etc. At the same time, a change in relative perception of poverty (its “novelty”) motivates the establishment of not only adequate quantitative criteria, but mainly key qualitative (behavioral) signs of this phenomenon, depending on the context.

The complexity, controversy and insufficient elaboration of these aspects of the poverty issue predetermined the subject of this research – the “new” poverty in the conditions of rent-oriented behavior of the Russian state.

The aim of the research is to specify the key qualitative features of the “new” poverty and substantiate the reproduction of this phenomenon in Russia in 2000–2023, based on the rent-oriented behavior of the state accompanied by extreme socio-economic inequality as its existence condition. In this regard, the following main tasks have been set:

– identify the main causes and concomitant factors of the “new” poverty, determined by extreme socio-economic inequality and allowing us in their

entirety to explain the mechanism of reproduction of this phenomenon in Russia in the designated time period;

- identify the key qualitative (behavioral) signs of the Russian “new” poverty, reflecting the change in its nature in conditions of extreme socio-economic inequality;

- create the minimum necessary tools of public policy to help end the “new” poverty in modern Russia.

Research methods

The research methodology is based generally on a comprehensive systems approach, which represents a special theory of cognition of composite objects, which contributes to the development of means to solve complex problems. In this approach, the tools of historical and comparative analysis were used, along with the methods of inductive and deductive analysis.

Among other things, the following special methods and techniques were used in the research:

1. Methods of analysis of the main causes, based on linear and separation methods for analysis of causes and effects by posing numerous questions (why?) as an effective way to identify one or more conditions leading to “errors”. In this technique, the cause is understood as a condition that creates an effect; the elimination of the cause eliminates the effect. A concomitant factor is a condition that affects the consequence by increasing its acceleration over time, and by severity of the consequences. Application of the indicated methods makes it possible to develop a number of corrective actions to prevent “errors” in the future.

2. Creation of databases necessary to display economic potential, standard of living and quality of life of the population, inequality and poverty in Russia for 2000–2023; the data from Rosstat, the World Bank, etc. served as the information base.

3. Data mining with instrumental support by Microsoft Excel, application software packages Statistica, Matlab, including clustering of the

constituent entities of the Russian Federation, taking into account the spread of the phenomenon of absolute monetary poverty in 2023 according to specified criteria, followed by analysis. Clustering provides not only visualization of the negative trend of increasing regional inequality in terms of poverty in Russia; the assessment of the obtained segments (cluster analysis) makes it possible to test the hypothesis of the spread of “new” poverty in the constituent entities of the Russian Federation, due, among other things, to the persistence of high regional inequality in per capita income.

In cluster analysis, the k-means method was used to pre-group the analyzed data set in order to determine the number of clusters with preliminary standardization of variables (in our case, $k = 3$) and calculate the average values of points (indicators that become new cluster centers) belonging to a particular cluster.

Results and discussion

The main causes and concomitant factors of sustainable reproduction and qualitative changes in the phenomenon of “new” poverty in Russia in 2000–2023, predetermined by rent-oriented behavior of the state

The expanded monographic survey conducted on the stated topic and the analysis of some factual data served as the basis for the assertion that, by its nature, the “new” poverty in Russia in 2000–2023⁷ is a deep, permanent, lingering problem recognized by society, in which various (economic, social, behavioral, psychological) aspects are closely intertwined. It is important that, in relation to Russian economic environment, the indicated term focuses on the fact that today’s work and motivation for it are increasingly less likely to provide release

⁷ 2000–2023 is an extremely controversial period for Russia, when measures to restore and/or improve welfare of the population were carried out during the economic growth in 2000–2007, manifestations of the global crisis in 2008–2009, the autonomous recession in 2010–2013, the sanctions pressure and the consequences of “the great lockdown in the wake of COVID-19”.

from the “poverty trap”, supporting the mass phenomenon of the working poor; “increasingly, income ... is affected by the capability to receive class-status⁸ rent in the form of a bonus payment, which does not depend on labor productivity, but is dictated by class affiliation, location and industry organization of the employer” (Fishman et al., 2019, p. 203).

At the same time, the fundamental condition for the reproduction of deep and permanent “new” poverty in Russia of the 2000–2023 period is the established raw materials export model of the national economy, which is characterized by high dependence of the latter on the development of natural resources with an extremely low level of contribution of social and human capital to it (Kormishkina et al., 2020). In the conditions of a rent-oriented state, with the weakness of political and social institutions, a “self-expanding rental spiral” is created, when political and administrative elites are interested in increasing the share of rent for their services more than in the development of the mass labor market and in social impact investments; in the general trend of transferring public sector employees, “politically less valuable”, to a lower-standard category of workers, depriving them of part of the rent and privileges they previously enjoyed (Spence, 2013, p. 154; Fishman et al., 2019, p. 205; Stiglitz, 2021, pp. 235–236). Ultimately, rent-oriented behavior of the Russian state causes extreme socio-economic inequality, which in today’s Russia is becoming the main catalyst for the “new” poverty.

In our research, an attempt was made to systematize the main causes and concomitant factors of reproduction and to specify qualitative changes in this phenomenon in Russia in 2000–2023. These, in our opinion, include the following.

⁸ In the new economic literature, rent is understood as financial and other benefits, privileges that individuals, social groups and even some societies receive as a result of occupying an advantageous position in the socio-political structure (see: for example, Stiglitz, 2016, p. 131).

1. The continuing polarization of public production into competing (for resources and business conditions) raw materials (mainly energy) export sector and traditional sector that serves the national market, which reinforces, among other things, the institutional trap of the “low wages system” in conditions of a peripheral market economy.

Such imbalance, which has developed in Russia under the influence of the raw materials (rental) export model of the national economy, is primarily dangerous by destroying the key balance in the form of the relation between sectoral structure of economic potential (fixed assets and labor resources), gross income and investments in long-term assets, only within which the economy can be reproduced as a whole. In this regard, we consider it important to note that in Russia in the first decades of the 21st century the structure of the economy was so formed that manufacturing, creating high added value and knowledge-intensive in nature, occupied a peripheral position due to the predominance of rent-seeking relations in society over relations developing in the labor market. The validity of this statement is confirmed by the calculated factual data⁹ provided below.

The raw materials sector of the Russian economy, with relatively small production potential (in 2022 – 2.2% of all employed, 8.8% of fixed assets), provided 14.1% of Russia’s GDP, 15.2% of investments, and 40% of tax revenues. At the prevailing price ratios, gross income per employee in the raw materials sector is 3.4 times more than that in the traditional one, and the average monthly wage paid is 1.8 times higher than the average wage in the economy in general and almost twice as much in comparison with manufacturing.

⁹ Data calculated according to: Russian Statistical Yearbook. 2008. Available at: https://rosstat.gov.ru/bgd/regl/b08_13/Main.htm; Russian Statistical Yearbook. Moscow: Rosstat, 2019. Available at: https://rosstat.gov.ru/bgd/regl/b19_13/Main.htm; Russian Statistical Yearbook. Moscow: Rosstat, 2023. Available at: https://rosstat.gov.ru/storage/mediabank/Ejegodnik_2023.pdf

In the Russian Federation in 2022, 14% of the total workforce was employed in manufacturing (for comparison: in 2007 – 16.9, in 2010 – 14.9, in 2018 – 14.1%); 6.9% of all types of fixed assets and 13.4% of production investments were concentrated; average nominal wage of employees here amounted to 60.4 thousand rubles and did not reach the level of the average wage in the economy (65.3 thousand rubles).

Under sanctions pressure and due to the manufacturing’s loss of its former position in public production, anti-stable trends (concomitant factors of polarization of public production) manifest themselves in new barriers to the growth of total factor productivity (or TFP) and production of low-paid employment on this basis. We are talking about such negative trends as the strengthening of the chreod effect (updating funds and production technologies mainly due to imports); depreciation of fixed assets, evaluated in economic security criteria as “close to unstable” [for reference: the degree of depreciation of fixed assets in the Russian Federation at the end of the accounting period in 2021–2022 was 40.5% vs 39% in 2020]; low production demand for research results, reflected in the indicator “ratio of technological innovation expenses to research and development expenses” [for reference: according to 2000–2022 Rosstat data the value of this indicator, which reflects, among other things, the possibility of creating high-tech jobs in the economy, has never reached the threshold value 2.0 recommended in the theory of economic stability (Innovative Transformation..., 2013, p. 313); its maximum value was registered in 2020 (1.9); in 2021 it decreased again and was 1.83, in 2022 – 1.85; the lowest values of the indicator were registered in 2005 (0.54), 2007 (0.56), 2008 (0.64) in years with GDP growth]¹⁰.

The trend toward a rent-oriented political regime, accompanied in modern Russia by the

¹⁰ The indicator is calculated on the basis of data from the Federal State Statistics Service (<https://rosstat.gov.ru/folder/210/document/12994>).

marked structural imbalance of public production, ultimately not only prevents overcoming the institutional trap of the “low wage system” inherited from the Soviet period, but also displaces market turnover into the growing “shadow economy of survival”¹¹. The indicated trend can be traced based on the data given in *Table 1*. They indicate a significant increase in Russia in 2018–2021 in those not employed in the economy (unemployed) among the poor and extremely poor, whose share in relation to the population surveyed by Rosstat was 76.2% in 2021 against 62.8% in 2018, and excluding retirees, 63.8 and 49.8%, respectively.

The new economic theory, confirmed by a number of experimental studies, focuses on the fact that the decline in productivity of low-paid workers is much higher than the increase in productivity of their high-paid colleagues, and therefore overall productivity is still declining (Banerjee, Duflo, 2019, p. 282).

Hence, we can conclude that overcoming the trap of the “low wage system” in today’s Russia is problematic without an active industrial policy aimed at helping to ensure structural shifts in the economy, taking into account future needs, and creating high-tech jobs that provide an increase in the cost of labor associated with improving its quality.

2. *The growing concentration of income and wealth within the upper decile of the population, accompanied by “concomitant polarization”.*

One of the main trends in socio-economic development of the 21st century in different countries of the world, including Russia, due to rent orientation, is an extremely high concentration of income and wealth in the upper decile (10% of the wealthiest population). In the context of T. Piketty’s

¹¹ In the book (Fishman et al., 2019, p. 200), the “shadow economy of survival” is considered as part of the economy (in the form of various forms including self-employment, individual survival, barter, subsistence farming, etc.), which, unlike the “gray” (semi-legal) or “black” (illegal), is legal, but is not adapted to the additional formal and informal expenses that its unveiling entails.

Table 1. Distribution of the total number of the poor in the Russian Federation in relation to their economic activity*, %

Indicator	Poor						People living in extreme poverty						Population observed in total, 2021
	2000	2008	2018	2019	2020	2021	2000	2008	2018	2019	2020	2021	
Workers	-	59.7	31.0	28.9	27.3	26.2	-	54.3	21.0	19.1	17.0	14.9	53.0
seniors that work, among workers	-	4.2	0.8	0.7	0.4	0.4	-	2.6	0.2	0.2	-	0.1	8.1
Nonworkers	-	38.6	29.2	30.1	33.1	33.6	-	42.6	33.8	33.4	42.7	42.6	28.1
including:													
retirees	-	14.3	8.2	8.5	7.2	7.6	-	11.4	5.0	4.4	3.7	4.7	19.1
other groups of nonworkers	-	-	21.0	21.6	25.9	25.9	-	-	28.8	29.0	39.0	37.9	9.0

* Data are published without taking into account the results of 2020 national census.
Source: Social status and standard of living of the Russian population. 2023. Statistical book. Moscow: Rosstat; Social status and standard of living of the Russian population. 2008. Available at: https://rosstat.gov.ru/bgd/regl/b08_44/Main.htm

concept of the fundamental law, the essence of this phenomenon lies in the inequality $r > g$, where r is the rate of return on capital (in the form of profits, dividends, interest, rent and other types of income) as a percentage of its value, and g is the annual increase in income and production (Piketty, 2014, p. 44). This means that accumulated capital reproduces itself faster than production increases (Piketty, 2014, p. 585).

The extremely high concentration of income and wealth in the upper decile of the population leads to dangerous consequences, among which, in the context of the stated topic, in our opinion, the following should be highlighted: achieving well-being not via the production of values, but

rent seeking behavior; the increasing importance of inheritance in the formation of social status; the increasing polarization of society (between the rich and poor) in the conditions of limited availability of decent vacancies in the labor market and loss of positions by representatives of the middle class (Stiglitz, 2015, p. 67).

The growing concentration of income and wealth in the upper decile of the Russian population was confirmed by the results of a special research “From Soviets to Oligarchs: Inequality and Property in Russia 1905–2016” conducted by F. Novokmet, T. Piketty and G. Zucman (Novokmet et al., 2017). The values obtained by these authors and subsequently supplemented are reflected in *Table 2*.

Table 2. Growth of income and inequality in Russia (1989–2023), %

Income brackets (pretax income distribution per adult)	National income share		Average annual growth rate		Total real growth	
	2016*	2022**	1989–2016*	2016–2023**	1989–2016*	2016–2023**
Population in total	100.0	100	1.3	1.1	41	no data
including						
50% with the lowest incomes	17.0	15.7	-0.89	-1.2	-20	no data
40 % with middle incomes	37.5	33.5	0.5	no data	15	no data
10 % with the highest incomes	45.5	50.8	3.8	1.7	171	no data
including 1 % with the highest incomes	20.2	23.8	6.4	2.9	429	no data

Compiled based on: *(Novokmet et al., 2017, p. 78);
** WorldINEQUALITYDATABASEBETA / Income inequality, Russian Federation, 1905–2021: Available at: <https://wid.world/country/russian-federation/>

It is significant that under the influence of “the great lockdown” (2020) and international sanctions against Russian economy (starting from 2014 to the present), according to Table 2, there was a noticeable decrease in the average annual income growth rate in the upper decile of the population (the so-called effect of “malign” and “benign” forces that reduce inequality, formulated by one of the leading experts on inequality in the world B. Milanovich (Milanovich, 2017, pp. 84–86); at the same time, the dynamics of the indicator for 50% of Russians with the lowest incomes was negative).

On this evidence, official statistics recorded in Russia in 2000–2023 an excess of the actual poverty line compared with the threshold value of economic security for this indicator (“no more than 7%” based on world experience (Innovative Transformation..., 2013, p. 322)), as well as with the value of 6.5% set for national development purposes.

According to updated data from Rosstat, in 2023 8.5% of the population were in absolute monetary poverty, using the rules for determining the boundaries of poverty in the RF as a whole and by constituent entities of the Russian Federation, approved by RF Government Resolution 2049, dated November 26, 2021 (amended December 16, 2023) [for reference: the population with money incomes below the poverty line/subsistence minimum was 29% in 2000, 2007 – 13.4%, 2010 – 12.5%, 2015 – 13.3%, 2020 – 12.1%, 2021 – 11.0%, 2022 – 9.8%]¹². Historically, the

¹² Russian statistical yearbook – 2008 (Living standards / Socio-economic differentiation of population by income / Population with money income below poverty line and deficit of money income). Available at: https://rosstat.gov.ru/bgd/regl/b08_13/Main.htm; Russian statistical yearbook – 2016 (Living standards / Socio-economic differentiation of population by income / Population with money income below poverty line and deficit of money income). Available at: https://rosstat.gov.ru/bgd/regl/b16_13/Main.htm/; Chapter 6. Living standards (2023). In: Russian Statistical Yearbook. Moscow: Rosstat. Available at: https://rosstat.gov.ru/storage/mediabank/Ejegodnik_2023.pdf

minimum value of the indicator for the entire post-Soviet period by Rosstat is explained by GDP growth; record low unemployment; situational income growth of citizens caused by increased payments to the military and defense enterprises’ employees; growth in offered wages as a result of the “job seeker market” formed in the labor market; increased income from entrepreneurial activities; increased budget payments to families with children, etc.

Poverty assessment in Russia in 2021–2023 changes significantly when using an international approach (the OECD methodology) to determine this phenomenon, in which the limit of relative monetary poverty is set at 50–60% of Me. According to this approach, the poverty rate in our country in 2023 was 17.8% of the total population.

It is important to note that the “new” poverty in Russia in 2000–2023 is characterized by some qualitative (behavioral) signs. In the conditions of the dominant rent-class character of Russian society and rent-power social relations generated by it, the “novelty” of this phenomenon consists primarily in changing its nature: from a temporary phenomenon of the life cycle of a household, poverty transformed into a deep and permanent socio-economic problem; its main factors are “not predetermined (socio-demographic), but achieved characteristics, such as education” (Yaroshenko, 2010, p. 224). It is the level of education that should determine the position of an individual in the labor market (for example, the risk of unemployment, wages (bonus payments) for various levels of education, occupational mobility), as well as social status, the depth of poverty. This leads to the conclusion that the inability to increase the level of education and get qualifications increases the likelihood of poverty (Stiglitz, 2021, p. 241).

In general, according to our extensive monographic survey of the relevant literature, the “novelty” of poverty in relation to today’s Russian

realities can be determined based on income-generating activities, kind of economic activities, stability of this phenomenon, and education of individuals. The “new” poverty seems to be a socio-economic problem, which means not so much a lack of money for those employed in any economic sector among the gainfully occupied population to meet the standard of living and quality of life accepted in a given country in specific economic conditions as the minimum justifiable, as recognition of social exclusion from the use of resources, various kinds of benefits and privileges.

It is foundational to say that in Russia in 2000–2023, due to the dependence of economic development on raw materials, accompanied by low investment and innovation activity, deindustrialization and low rates of total factor productivity, an imbalance between demand and supply of qualified (workers with secondary and higher professional education) labor¹³ was formed. In other words, such an economy cannot provide enough jobs with middle class wages, capable of absorbing a huge mass of workers with high formal education. Hence, there is a downward professional and qualification mobility, when workers move to worse jobs (with low wages) that do not correspond to the high formal education they received in order to avoid unemployment, as well as an anti-stable tendency toward maintaining low real earnings among those engaged in productive work, including not only young people, but also pre-retirees, working senior citizens, parents of multi-child families with part-time jobs, self-employed, as well as those employed in the public sector [for reference: in the domestic economy in 2016, at least a third of all workers with secondary and higher education were doing jobs that do not

require high qualifications (Kapelyushnikov, 2016, p. 508)]. This situation is dangerous for the country due to underutilization of accumulated human capital, which means that it hinders progressive and sustainable economic growth. It is encouraging that the escalation of the supply of highly qualified labor has not yet led to any noticeable decline in the economic value of higher education; however, it increases the requirements for qualifications of students. It is significant that under the influence of the well-known institutional and organizational (partly technological) restructuring of the Russian economy and the “job seeker market” formed in the last two years, the demand for highly qualified labor began to grow faster than its supply, which contributes to an increase in the number of jobs with sufficient wages provided a favorable business climate is created.

Considering that the “new” poor, in terms of their financial behavior, gravitate toward the middle class (Klepach et al., 2022, p. 12), and money borrowed from credit institutions are of great value among the main aspects of their financial security level, the urgency of the issue of heavy household debt and growing debt load increases among gainfully employed population in the Russian Federation. Thus, according to the Bank of Russia, as of March 1, 2024, approximately 440 thousand rubles of loan indebtedness accounted for every gainfully employed Russian¹⁴.

At the same time, a comparison of the ratio of debt load of gainfully employed population in today’s Russia to GDP demonstrates that in our country this figure is 21% against, for example, 62% in the United States¹⁵. This means that the issue is not the total amount of loans taken, but non-

¹³ According to the International Standard Classification of Education, tertiary education is understood as education of type A (Russian equivalent – higher education) and type B (Russian equivalent – secondary education).

¹⁴ Belyanchikova T. (2024). Our debt has increased. How much have Russians borrowed, and what indicator of debt load is considered normal. *Argumenty i fakty*, 19, 10. Available at: <https://aif.ru/money/mymoney/v-nashem-dolgu-pribyloskolko-nazanimali-rossiyane>.

¹⁵ Ibidem.

performing liabilities and complete defaults of credit users. In this regard, the judgments of the economist S. Mullainathan and the psychologist E. Shafir (Mullainathan, Shafir, 2011), who experimentally proved that living in need often involves choices that can lead to even greater need, are illuminative: “The poor borrow at great cost and stay poor”.

To summarize the above, we note that the growing concentration of income and wealth in the upper decile of the population of Russia, accompanied by “concomitant polarization”, determines the need for “a well-planned active policy in the labor market and industry, which can ensure the creation of jobs ... and the switching of people from old jobs to new ones” (Stiglitz, 2021, p. 242). At the same time, a progressive and efficient tax system should be an important part of a dynamic and fair society.

3. High regional economic inequality, which, along with a weak institutional environment, reproduces the uneven distribution of poverty (taking into account its qualitative changes) across the RF constituent entities.

Researchers, as a rule, associate the phenomenon of Russian regional economic inequality with the agglomeration effect of large cities, which is enhanced by the institutional advantages available here; with a significant competitive edge in the form of hydrocarbons (oil, gas) or primary processing products in demand in the world market (even under conditions of international anti-Russian economic sanctions), predetermined by the raw materials export model of the national economy. It is obvious that the presence of these factors expands the possibilities of territories in improving the welfare of the population and social support for citizens in need (Kormishkin et al., 2023).

To visualize regional inequality, taking into account the spread of the phenomenon of absolute monetary poverty in the Russian Federation in 2023, the clustering of constituent entities

was carried out according to three indicators: proportion of the population with money incomes below the poverty line/subsistence minimum, % of the total population (X1); poverty line per capita of the able-bodied population, rubles per month (X2); minimum wage, rubles (X3). Also, indicators X2 and X3 generally reflect the prevailing minimum standard of living in the country, and the ratio of X3 to X2 – the region’s ability to reduce the extreme level of absolute poverty among the employed. The results of the clustering are presented in *Table 3*.

We consider it fundamental to note that the “new” poverty makes a significant contribution to the overall level of poverty in the constituent entities of the Russian Federation/countries; therefore, with some assumption, the clustering of the constituent entities of the Russian Federation by the general poverty rate reflects the significant impact of the “new” poverty.

Without making a detailed analysis and assessment of the situation in each of the three clusters formed, we consider it necessary to underline the following: in 2023, only in cluster I, which united 11 RF constituent entities, the level of absolute monetary poverty (7.38%), calculated in accordance with the adopted in Russia in 2021 (RF Government Resolution 2049, dated November 26, 2021) methodology, was lower than the national average value of this indicator (8.5%), which is explained by higher per capita incomes and the standard of living due to the special competitive advantages mentioned above, as well as the effect of the northern and district coefficients in regions with specific climatic conditions.

As a result of the clustering, we found an interesting fact: in the constituent entities of the Russian Federation in which titular nations are the majority of the population (for example, the Republic of Ingushetia, the Republic of Tyva) the proportion of the poor exceeds 20%.

Table 3. Clustering of the constituent entities of the Russian Federation, considering the spread of absolute monetary poverty in 2023

Number of a cluster	Cluster composition	Indicators' means		
		X1	X2	X3
I (11 constituent entities)	Moscow, Nenets Autonomous Area, Murmansk Region, Khanty-Mansi Autonomous Area – Yugra, Yamal-Nenets Autonomous Area, Republic of Sakha (Yakutia), Kamchatka Territory, Khabarovsk Territory, Magadan Region, Sakhalin Region, Chukotka Autonomous Area	7.38	17034	25901
II (55 constituent entities)	Belgorod Region, Bryansk Region, Vladimir Region, Voronezh Region, Ivanovo Region, Kaluga Region, Kostroma Region, Kursk Region, Lipetsk Region, Moscow Region, Orel Region, Ryazan Region, Smolensk Region, Tambov Region, Tver Region, Tula Region, Yaroslavl Region, Republic of Karelia, Komi Republic, Arkhangelsk Region without Autonomous Area, Vologda Region, Kaliningrad Region, Leningrad Region, Novgorod Region, Pskov Region, City of Saint Petersburg, Republic of Adygea, Krasnodar Territory, Astrakhan Region, Volgograd Region, Rostov Region, City of Sevastopol, Republic of North Ossetia-Alania, Stavropol Territory, Republic of Bashkortostan, Republic of Tatarstan, Republic of Udmurtia, Perm Territory, Kirov Region, Nizhny Novgorod Region, Orenburg Region, Penza Region, Samara Region, Saratov Region, Ulyanovsk Region, Sverdlovsk Region, Tyumen Region (without Autonomous Areas), Chelyabinsk Region, Altai Territory, Kemerovo Region – Kuzbass, Novosibirsk Region, Omsk Region, Tomsk Region, Primorye Territory, Amur Region	9.48	17283	15056
III (19 constituent entities)	Republic of Kalmykia, Republic of Crimea, Republic of Dagestan, Republic of Ingushetia, Kabardino-Balkarian Republic, Karachayevo-Circassian Republic, Chechen Republic, Republic of Mari El, Republic of Mordovia , Chuvash Republic, Kurgan Region, Republic of Altai, Republic of Tyva, Republic of Khakassia, Krasnoyarsk Territory, Irkutsk Region, Republic of Buryatia, Trans-Baikal Territory, Jewish Autonomous Region	16.45	16370	15667

Source: the minimum wage is presented on the basis of the ConsultantPlus reference information “Minimum wage in the constituent entities of the Russian Federation (accessed: September 1, 2023)”. For a number of constituent entities, the minimum wage is indicated as 16,242 rubles, raised by a district coefficient and a rated increase for work experience in areas with specific climatic conditions, including the Far North, the Far East and areas equated to them, or for work experience in the constituent entity (Republic of Buryatia, Republic of Sakha (Yakutia), Republic of Tyva, Republic of Khakassia, Trans-Baikal Territory, Kamchatka Territory, Primorye Territory, Magadan Region, Yamal-Nenets Autonomous Area).

In addition, the proportion of the poor population is noticeably increasing even in the regions of cluster I when using the international standard for assessing relative monetary poverty (income below 50% of Me), which indicates a significant layer of the low-income population that are not covered by social support measures. For example, in the Yamal-Nenets Autonomous Area, the poverty rate increases from 3.6% (the lowest value in the Russian Federation according to the country’s methodology for assessing the phenomenon under consideration) to 21.4%; in Moscow – 4.5 and 19%, respectively; in the Sakhalin Region – 6.1 and 18.2%; in the Magadan Region – 6.6 and 18.2%, etc.

The situation with loan indebtedness and debt load per each gainfully employed citizen broken down by RF constituent entity is also indicative. Thus, with the average national value of this indicator of 440 thousand rubles on March 1, 2024, its excess was noted even in the regions included in cluster I. For example, in the Yamal-Nenets Autonomous Area, this indicator reached 836 thousand rubles, in the Khanty-Mansi Autonomous Area – Yugra – 734 thousand rubles, in the Magadan Region – 650 thousand rubles¹⁶.

¹⁶ Belyanchikova T. (2024). Our debt has increased. How much have Russians borrowed, and what indicator of debt load is considered normal. Argumenty i fakty, 19, 10. Available at: <https://aif.ru/money/mymoney/v-nashem-dolgu-pribylo-skolko-nazanimali-rossiyane> (accessed: June 29, 2024).

However, the highest loan indebtedness and debt load per gainfully employed citizen (925 thousand rubles) as of March 1, 2024 were noted in the Republic of Tyva¹⁷, where the proportion of the titular nation is 77% of the total population of the republic [Tyva is included in cluster III, which unites 19 constituent entities with the lowest standards of living, in which the proportion of the population with incomes below the poverty line/subsistence minimum reached 23.5% of the total population of the region in 2023]. At the same time, in the Republic of Ingushetia (the proportion of the titular nation in the total population here reaches 94.1%), where the absolute monetary poverty rate in 2023 was 27.7%, there is the lowest loan indebtedness and debt load per gainfully employed citizen (58 thousand rubles)¹⁸. In our opinion, such interesting facts discovered using cluster analysis concerning the financial behavior of the gainfully employed population in different regions of the Federation should become a special line of research of the “novelty” of poverty in modern Russia.

In addition, the clustering of RF constituent entities, considering the spread of absolute monetary poverty in 2023, confirms the need to continue improving the welfare of the population and overcoming poverty as a priority of the state socio-economic policy of Russia (considering qualitative changes).

The policy of overcoming the “new” poverty

In the course of the study, it was found that in the conditions of rent-oriented behavior of the Russian state in 2000–2023, the main catalyst for the “new” poverty is high socio-economic inequality and related factors. In this context, the policy of overcoming the phenomenon under study involves the implementation of a number of basic, foundational measures, among which, in our opinion, the following can be named.

¹⁷ Ibidem.

¹⁸ Ibidem.

1. *The active industrial policy of the state*, which in the current economic conditions actually means accelerated neo-industrial (digital, knowledge-intensive, innovative) modernization of the Russian economy based on the construction and priority development of a high-tech complex as the core of the economy and, taking into account future needs, the main source of reproduction of systemic technical and technological resources capable of ensuring the growth of the total factor productivity. Such a policy expands the economy’s ability to generate a sufficient number of high-tech and high-paid jobs, including via new innovative industries; it should be combined with an active labor market policy that involves helping people with retraining and finding a new job.

At the same time, it should be recognized that new innovative technologies (primarily in the field of artificial intelligence and robotics) can create more problems. On the one hand, some achievements in this field (for example, intellectual support systems) stimulate an increase in the level of education and improvement of professional training of employees, which means that they ensure an increase in productivity and wages. On the other hand, innovative technologies with mediocre management can cause concomitant polarization in the labor market and be accompanied by a decline in wages, especially for low-skilled workers; job cuts are also possible, which can stimulate unemployment.

Considering this, the issue of the introduction of artificial intelligence, in our opinion, acquires the status of a political problem, and the government decisions are of great significance.

2. *Progressive fair tax system as a tool aimed at reducing the extremely high concentration of income and wealth in the upper decile of the population and the concomitant polarization*. It is known that from January 1, 2025, a progressive personal income tax system with rates from 13 to 22% will begin to operate in Russia. However, in the context of a

dynamic and fair society, such an adjustment of the tax system seems insufficient. In the conditions of the persistence of large-scale extreme poverty and low income of Russians against the background of a high concentration of income and wealth in the upper decile of the population, it seems advisable to extend the principle of progressive tax not only to income, but also to wealth for the fair circulation of capital. Such a tax instrument is more difficult to manipulate than personal income tax. In addition, property (for example, expensive housing, hotels, retail chains) that is unaffordable for the middle class should be subject to increased taxation.

The designated tax instruments (progressive taxes on property and large fortune) can become a source of financing, for example, a special Capital Investment Fund for the young (for example, at the age of 25), designed for various social needs.

3. *Increase in the minimum wage as a tool initially aimed at protecting the employed from excessively low wages.* In the Russian Federation, great attention has traditionally been paid to state regulation of the minimum wage (only in 2018–2022 the government increased it 8 times). In the scientific community the increase in the minimum wage itself is associated with two main effects: 1) it acts as a “soft buffer” to support the standard of living of low-paid workers; 2) reduces wage differentiation. In accordance with the current methodology for determining the poverty line / subsistence minimum in 2024, the minimum wage is 19,242 rubles, which seems insufficient to significantly reduce extreme poverty and increase welfare of the population. According to the calculations of some experts, Russia already has the opportunity to set the minimum wage at the level of 1.4–1.5 of the poverty line. At the same time, this indicates an underestimation of the official poverty line in Russia and necessitates the adjustment of the methodology for determining it.

4. *Expansion of public and private investment in human development*, i.e. in education and

healthcare, which increases labor productivity and income levels of the employed (provided active development of a segment of highly qualified jobs in the economy). In this context, insufficient financing of the education sector limits the development potential of children and youth, which can subsequently not only negatively affect the level of income received, but also lead to the preservation of the established structure of society and “new” poverty. The main measures to expand access to higher education, based on the best international practices, include reducing the cost of education, as well as public educational (student) loans tied to the borrower’s future income, and the ability to convert a private educational loan into a public one.

5. *Transformation of traditional (passive) welfare system into a new development-oriented model.* In the context of countering the “new” poverty, which in today’s Russia extends, among others, to families with children and those not employed in the real economy, but involved in the “shadow economy of survival”, priority is given to expanding measures within the framework of “family policy”, as well as the practice of concluding “social contracts” that allow setting up one’s own business, develop a personal subsidiary plot, retraining, etc. Such measures make it possible to enhance the significance of regional poverty reduction programs, including targeted ones, with an assessment of need, and social contracts.

Conclusion

Based on the completed study of the phenomenon of “new” poverty in Russia in 2000–2023, results were obtained that contribute to the development of scientific knowledge in this subject area and have a certain socio-economic significance, in particular:

1) formulation and theoretical substantiation of the idea of a “new quality” (nature) of Russian poverty in 2000–2023: from a temporary phenomenon associated with the life cycle of an individual (household), it is transformed into a deep,

permanent, lingering socio-economic problem, accompanied by underutilization of accumulated human capital and an increased risk of a decline in the economic value of education, meaning that it hinders progressive and sustainable economic growth; the “new” poor in today’s Russia are primarily low-paid people engaged in productive work, with high formal education; not officially employed, but “included” in the so-called “shadow economy of survival”;

2) concretization and theoretical substantiation of the fundamental condition (rent orientation); the main causes determined by the extreme level of socio-economic inequality (continued polarization of public production; growing concentration of income and wealth in the upper decile of the population, accompanied by “concomitant” polarization; high regional inequality in terms of absolute monetary poverty); concomitant factors of these reasons (destruction of the key balance in the form of correspondence between the sectoral structure of economic potential (fixed assets and labor resources), gross income and investments in fixed assets; depreciation of fixed assets, low innovation and investment activity; the inability of the Russian economy to generate a sufficient number of high-tech and high-paid jobs; the increasing importance of inheritance in the formation of social status, etc.), which together determine the reproduction of the “new” poverty in Russia as a major problem requiring the rapid improvement of public relations, including the development and implementation of a number of fundamental measures to overcome this phenomenon in the constituent entities of the country;

3) definition and theoretical justification of key qualitative features revealing the nature of the phenomenon of the Russian “new” poverty in 2000–2023 as a deep and permanent socio-economic problem: the stability of the institutional trap of the “low wage system”; social exclusion from the use of resources, various kinds of benefits and privileges; spread to the employed with high formal (secondary and higher) education, working in different sectors of the economy; downward professional and qualification mobility due to the ratio between demand and supply of highly qualified labor; growing debt load per gainfully employed Russian; “inclusion” in the “shadow economy of survival”;

4) proposed minimum necessary basic tools of state policy to help overcome Russian poverty (considering its “new” quality): an active industrial policy, progressive and fair tax, an increase in the minimum wage with appropriate adjustments to the methodology for determining the poverty line / subsistence minimum, the expansion of public and private investment in human development.

The authors of this article are undoubtedly fully aware that the range of issues raised in it is so complex, debatable or limited by a property of a unit of analysis, that it leaves little chance of coming up with definite solutions to them. In this regard, it is planned to continue research on this issue in order to elaborate on it and form our opinion, for example, on measuring and quantifying the phenomenon of “new” poverty in Russia in changing economic and social conditions.

References

- Armstrong S. (2017). *The New Poverty*. Verso.
- Athkinson A.B., Micklewright J. (1992). *Economic Transformation in Eastern Europe and the Distribution of Income*. Cambridge: Cambridge University Press.
- Banerjee A.V., Duflo E. (2012). *Poor Economics: A Radical Rethinking of the Way to Fight Global Poverty*. New York: Public affairs.

- Banerjee A.V., Duflo E. (2019). *Good Economics for Hard Times: Better Answers to Our Biggest Problems*. New York: Public affairs.
- Bobkov B.N., Vershinina M.A. (2022). Labor and quality of life of the population of Russia in the context of the scientific attitude of E.I. Kapustin (to the 100-th anniversary of the birth of the scientist). *Vestnik Instituta Ekonomiki Rossiyskoy Akademii Nauk=The Bulletin of the Institute of Economics of the Russian Academy of Sciences*, 2, 175–191. DOI: 10.52180/2073-6487_2022_2_175_191 (in Russian).
- Bobkov V.N., Gulyugina A.A., Odintsova E.V. (2022). Social consequences of thirty years of capitalist reforms in Russia. *Rossiiskii ekonomicheskii zhurnal=Russian Economic Journal*, 1, 78–107. DOI: 10.33983/0130-9757-2022-1-78-107 (in Russian).
- Bobkov V.N., Gulyugina A.A., Odintsova E.V., Safronova A.M. (2021). The socially acceptable consumption basket. *Uroven' zhizni naseleniya regionov Rossii=Living Standards of the Population in the Regions of Russia*, 15(2), 8–26. DOI: 10.19181/1999-9836-2019-10060 (in Russian).
- Bobkov V.N., Odintsova E.V. (2020). Low level and quality of life among economically active population: Identification criteria and assessment of occurrence. *Ekonomicheskie i sotsial'nye peremeny: fakty, tendentsii, prognoz=Economic and Social Changes: Facts, Trends, Forecast*, 13(5), 168–181. DOI: 10.15838/esc.2020.5.71.10 (in Russian).
- Braithwaite J. (1998). The old and new poor in Russia. In: Klugman J. (Ed.). *Poverty in Russia. Public Policy and Private Responses*. Washington, D.C.: The World Bank.
- Dovgotko N.A., Skiperskaya E.V., Rybasova Yu.V. (2022). Poverty of the population in modern Russia: Assessment and ways of reduction. *Ekonomicheskije nauki=Economic Sciences*, 8(213), 36–40. DOI: 10.14451/1.213.36 (in Russian).
- Fishman L.G., Martianov V.S., Davydov D.A. (2019). *Rentnoe obshchestvo: v teni truda, kapitala i demokratii* [Rental Society: In the Shadow of Capital, Labor and Democracy]. Moscow: HSE Publishing House.
- Ilyin V.A. (2017). “Crony capitalism” – a source of social inequality in modern Russia. *Ekonomicheskije i sotsial'nye peremeny: fakty, tendentsii, prognoz=Economic and Social Changes: Facts, Trends, Forecast*, 10(6), 9–23. DOI: 10.15838/esc.2017.6.54.1 (in Russian).
- Ilyin V.A., Morev M.V. (2022). Nationwide poverty – “a threat to steady development and our demographic future”. *Ekonomicheskije i sotsial'nye peremeny: fakty, tendentsii, prognoz=Economic and Social Changes: Facts, Trends, Forecast*, 15(1), 9–33. DOI: 10.15838/esc.2022.1.79.1 (in Russian).
- Kapeliushnikov R.I. (2016). *Ekonomicheskije ocherki: Metodologiya, instituty, chelovecheskij kapital* [Economic Essays: Methodology, Institutions, Human Capital]. Moscow: Higher School of Economics Publishing House.
- Kapustin E.I. (2006). *Uroven', kachestvo i obraz zhizni naseleniya Rossii* [The Standards of Living, Quality and Way of Life of the Russian Population]. Moscow: Nauka.
- Klepach A.N., Lukyanenko R.F., Nikolaenko S.A. (2022). How to overcome poverty and ensure sustainable growth of the middle class: Criteria of distribution and policy measures. *Vestnik Moskovskogo universiteta. Seriya 6. Ekonomika=Moscow University Economics Bulletin*, 6, 3–20 (in Russian).
- Kormishkin E.D., Ivanova I.A., Moiseeva I.V. (2023). On the issue of poverty in Russia: Facts, paradoxes, specifics, and alleviation prospects. *Ekonomicheskije i sotsial'nye peremeny: fakty, tendentsii, prognoz=Economic and Social Changes: Facts, Trends, Forecast*, 16(4), 218–235. DOI: 10.15838/esc.2023.4.88.12 (in Russian).
- Kormishkina L.A., Ermakova E.R. (2021). On the assessment of the national poverty threshold. *Natsional'naya bezopasnost' / nota bene=National Security*, 3, 1–15. DOI: 10.7256/2454-0668.2021.3.35821 (in Russian).
- Kormishkina L.A., Kormishkin E.D., Koloskov D.A. (2020). Socio-economic analysis of disproportions and disbalances of the raw material export model in post-Soviet Russia. *International Journal of Criminology and Sociology*, 9, 633–645. DOI: 10.6000/1929-4409.2020.09.61
- Krugman P. (2014). *Why We're in a New Gilded Age*. *The New York Review*. Available at: <https://www.nybooks.com/articles/2014/05/08/thomas-piketty-new-gilded-age/>

- Milanovich B. (2017). *Global Inequality: A New Approach for the Age of Globalization*. Moscow: Gaidar Institute Press.
- Mullainathan S., Shafir E. (2011). *The Packing Problem: Time, Money, and the Science of Scarcity*. Available at: <http://westallen.typepad.com/idealawg/2011/07/are-you-money-poor.html>
- Novokmet F., Piketty T., Zucman G. (2017). *From Soviets to Oligarchs: Inequality and Property in Russia 1905–2016*. Cambridge, Massachusetts: National Bureau of Economic Research.
- Ovcharova L.N et al. (2022). Social protection in Russia: Forks of the future. *Voprosy ekonomiki*, 6, 5–31. DOI: 10.32609/0042-8736-2022-8-5-31 (in Russian).
- Ovcharova L.N. (2009). *Teoreticheskie i prakticheskie podkhody k otsenke urovnya, profilya i faktorov bednosti: rossiiskii i mezhdunarodnyi opyt* [Theoretical and Practical Approaches to Poverty Measurement, Poverty Profile and Factors Evaluation: Russian and International Experience]. Moscow: M-Studio.
- Piketty T. (2014). *Capital in the Twenty-First Century*. Cambridge, Massachusetts: Belknap Press of Harvard University Press. DOI:10.1017/S0047279415000616
- Piketty T. (2020). *Capital and Ideology*. Cambridge, Massachusetts: Harvard University Press.
- Razumov A.A., Yagodkina M.A. (2007). *Bednost' v sovremennoi Rossii* [Poverty in Modern Russia]. Moscow: Formula Prava.
- Rzhanitsyna L.S. (2001). Poverty in Russia: Causes, features, ways to reduce. *Ekonomist*, 4, 71–77 (in Russian).
- Selivanova O.V., Razumov A.A. (2023). Working poverty: Main trends and regional experience to reduce its level. *Ekonomika truda=Russian Journal of Labour Economics*, 10(2), 279–296. DOI: 10.18334/et.10.2.117385 (in Russian).
- Sen A.K. (1982). *Poverty and Famines: An Essay on Entitlement and Deprivation*. New York: Oxford University Press.
- Sen A.K. (1987). *Commodities and Capabilities*. Amsterdam: Elsevier Science Publisher.
- Senchagov V.K. (Ed.). (2013). *Innovacionnyye preobrazovanija kak imperativ ustojchivogo razvitiya i jekonomicheskoi bezopasnosti Rossii* [Innovative Transformation as an Imperative for Sustainable Development and Economic Security of Russia]. Moscow: Ankil.
- Shevyakov A.Yu., Kiruta A.Ya. (2009). *Neravenstvo, ekonomicheskii rost i demografiya: neissledovannyye vzaimosvyazi* [Inequality, Economic Growth and Demography: Unstudied Relationships]. Moscow: M-Studio.
- Spence M. (2013). *Sleduyushchaya konvergentsiya: budushchee ekonomicheskogo rosta v mire, zhivushchem na raznykh skorostyakh* [The Next Convergence: The Future of Economic Growth in a Multispeed World]. Moscow: Gaidar Institute Press.
- Stiglitz J.E. (2015). *Tsena neravenstva. Chem rassloenie obshchestva grozit nashemu budushchemu* [The Price of Inequality: How Today's Divided Society Endangers Our Future]. Moscow: Eksmo.
- Stiglitz J.E. (2016). *Velikoe razdelenie. Neravenstvo v obshchestve, ili Chto delat' ostavshimsya 99 % naseleniya?* [The Great Divide: Unequal Societies and What We Can Do About Them]. Moscow: Eksmo.
- Stiglitz J.E. (2021). *Lyudi, vlast' i pribyl': Progressivnyi kapitalizm v epokhu massovogo nedovol'stva* [People, Power, and Profits: Progressive Capitalism for an Age of Discontent]. Moscow: Alpina Publisher.
- Tikhonova N. (2018). Subjective stratification of Russian society model and its dynamic. *Vestnik obshchestvennogo mneniya. Dannye. Analiz. Diskussii=The Russian Public Opinion Herald. Data. Analysis. Discussions*, 1–2(126), 17–29. Available at: <https://www.isras.ru/publ.html?id=6323> (accessed: June 28, 2024; in Russian).
- Tikhonova N.E. (2003). *Fenomen gorodskoi bednosti v sovremennoi Rossii* [Phenomenon of Urban Poverty in Contemporary Russia]. Moscow: Letnii sad.
- Townsend P. (1979). *Poverty in the United Kingdom: A Survey of Household Resources and Standards of Living*. Berkeley: University of California Press.
- Yaroshenko S.S. (2010). “New” poverty in Russia after socialism. *Laboratorium*, 2, 221–251 (in Russian).

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Regulating Return Labor Migration in the 21st Century: Foreign Experience and Russian Practice



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Abstract. The article analyzes current practices and measures of regulating commuting in different countries by classifying them according to the level, object of impact, actor, type of impact and purpose. The analysis shows that the regulation of migration processes in foreign countries is carried out by various branches of law, and measures are aimed not only at managing the flows of commuting, but also at mitigating its consequences at various levels. In Russia in general, commuting is mentioned in the strategies of socio-economic development of individual regions without being fully integrated into management mechanisms. We reveal that its mentioning in regional development strategies does not take into consideration its actual volumes and implications for the regional economy. Thus, regional authorities do not sufficiently take into account economic and social consequences of commuting in their strategies. This also applies to its positive aspects, such as job creation and economic recovery, as well as potential negative effects associated with infrastructure overload, regional budget losses, etc. The importance of developing a system for monitoring commuting is emphasized, as well as the need for additional research to assess all aspects of its impact on the regions. The article is of interest to a wide range of researchers studying labor migration and regional development. The results can be used to develop practical recommendations for optimizing measures to regulate commuting in Russia, aimed at reducing its negative consequences and enhancing its potential for socio-economic development of territories.

Key words: migration, return labor migration, commuting, measures to regulate commuting, regional economy, region.

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Introduction

The existing labor shortage, the consequences of the COVID-19 pandemic, mobilization and “relocation” of part of the working-age population lead to an increase in the number of vacancies in all sectors and occupational groups. This negatively affects the sustainable development of the country’s economy in the conditions of shrinking labor supply, low unemployment, high staff turnover and stagnating wages (Kapelyushnikov, 2024). The imbalance is exacerbated by the uneven development of different industries and territories, which creates challenges for the successful functioning of regional economies. Labor migration¹ is one of the most effective ways to alleviate the shortage of human resources, contributing to the redistribution of labor force between regions. A special role in this process is played by those forms of labor migration that do not involve relocation, such as commuting.

The aim of the work is to study foreign and Russian practices of regulating commuting. The scientific novelty of the study consists in the systematization of practices and justification of the need to regulate it.

¹ The concept of “migration” in this case does not imply a move with a change of permanent place of residence. It is used in a broad sense. For instance, according to L.L. Rybakovskii, any territorial movement between different settlements of one or several administrative-territorial units, regardless of duration, regularity and purpose, is migration in the broad sense of the word (Rybakovskii L.L. *Population Migration: Forecasts, Factors, Policy*. Moscow: Nauka, 1987). V.I. Perevedentsev distinguishes migration in the broad sense (all movements of people) and narrow sense (resettlement with a long-term change of residence) (Perevedentsev V.I. *Methods of Studying Population Migration*. Moscow: Nauka, 1975). M.B. Denisenko, V.A. Iontsev and B.S. Khorev define migration in the narrow sense as irretrievable inter-settlement movement, and in the broader sense they include resettlement, pendulum and seasonal migration (Denisenko M.B., Iontsev V.A., Khorev B.S. *Migration*. Moscow: Izd-vo MSU, 1989).

We did not have a task to study the scale and consequences of commuting, but it is impossible to assess the need to regulate this phenomenon without their consideration. The commuting level has been stable for a long time (Shitova, 2024). It is difficult to estimate its scale due to the lack of monitoring practice of commuting², and currently, it is possible to study this phenomenon through indirect sources of information. For instance, the share of interregional commuting migrants in the structure of the employed population ranged from 1.3 to 2.0% in the period from 2013 to 2023, while the data of the All-Russian census of the population by taking into account interregional and intraregional movements of this kind recorded the specific weight of the studied group of the population – 8.0% of the employed population in 2021 according to the results of the sample survey of the labor force³ (Sokolova, Kalachikova, 2023).

Previously, we have systematized the consequences of commuting at three levels: territory, employer and household (Sokolova, Kalachikova, 2023). At the household level, migration negatively affects the physical and mental health of an individual (Künn-Nelen, 2016; Shitova, 2024), reduces the level of subjective well-being (Chatterjee et al., 2020), and leads to problems in

² Makhrova A.G., Bochkarev A.N. (2017). Commuting in the Moscow Region: New data. *Demoscope Weekly*, 727–728. Available at: <http://demoscope.ru/weekly/2017/0727/tema01.php>

³ The labor force survey results include the time range from 2013, since in this source it is from this year that it is possible to identify interregional commuting migrants in the structure of persons who work on the territory of another subject. With regard to the population census, we used the year 2021, since only the results of the last census made it possible to identify commuting migrants for all Russia’s regions.

relationships within the family (Antonova, 2018). However, choosing such a livelihood strategy, labor migrant can ensure a higher income level than in the place of their residence, thereby increasing the standard of living (Öhman, Lindgren, 2003). The employer, as a rule, benefits from the employment of commuting migrants, as it has the opportunity to obtain from other settlements personnel with the required qualifications and at a satisfactory wage, which allows it to respond quickly to changes in the labor markets. The negative consequences at the employer's level include the risk of labor discipline violations associated with late arrivals and possible absenteeism due to difficulties that may arise on the way to work. At the territorial level, the positive effects are mainly redistribution of cash flows due to interregional cash transfers (Mkrtchyan, Florinskaya, 2016), increase in demographic and labor potential as a result of the influx of working-age population (Akhmetova, 2021). Negative effects include deterioration of the environmental situation and noise pollution caused by increased traffic (Ashforth, 2000), regional budget losses, etc.

Taking into account the relationship between the consequences of commuting and measures to regulate it will minimize the negative effects on the regional economy, employers and households, as well as contribute to the socio-demographic and economic development of the territory of origin⁴.

Materials and methods

The article consists of several parts in accordance with the research logic. The first part of the paper considers the practices of commuting regulation based on the literature analysis on the topic in the field of foreign studies. The next part of the work is devoted to the consideration of Russian practices in relation to the regulation of the phenomenon under study. In addition to scientific literature, we used the texts of strategies

⁴ The territory of origin in this paper means the territory of residence of a commuting migrant.

of socio-economic development of Russian regions as sources of information. Further, we grouped the regions according to the criterion of mentioning commuting (presence or absence) and attitude to ward it (as a risk or as a strength). To assess the adequacy of accounting for the impact of commuting on regional development, the presence of measures to regulate commuting in the strategies of socio-economic development of the regions is correlated with the share of commuting migrants in the structure of the regions' employed population, as well as with the economic effects it has on the territory. As part of the latter task, we used data from the All-Russian Population Census-2020 (ARPC-2020), data on the average nominal accrued wages of workers in the full range of organizations in the economy as a whole in the region of work, as well as information from the Ministry of Finance of the Russian Federation on the executed consolidated budgets of the constituent entities.

We took into account the results of the application of the methodology for calculating the under-received personal income tax (hereinafter – PIT) to assess the economic effects in the structure of the PIT revenue part of the consolidated budget of the corresponding region. This methodology allowed presenting extremely approximately the amount of money, that commuting migrants do not bring to the budget of the region of origin (Sokolova, Kalachikova, 2023). Personal income tax is 13% of wages and goes to the budget of the subject where the commuting migrant works. In the case of interregional commuting, 85% of the tax settles in the budget of the subject in which the individual works, and 15% in the budget of the specific municipality of work. In sum, the entire amount of personal income tax remains in the region of work, not the residence of the migrant worker⁵.

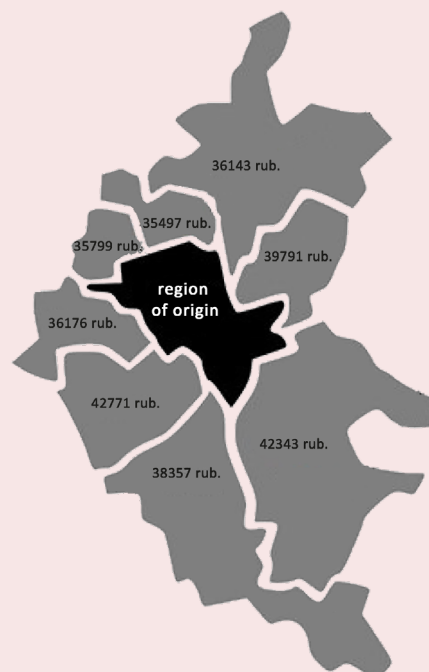
⁵ Budget Code of the Russian Federation 145-FZ, dated July 31, 1998 (ed. Of April 14, 2023). Articles 56 and 61. *SPS Konsultant Plus*. Available at: https://www.consultant.ru/document/cons_doc_LAW_19702/c347478b850fb7c4a92141cb188a76d83ac72e0f

In addition, we applied the method of assessing the economic consequences for the territory of origin by calculating the volume of interregional cash transfers from commuting. Russian researchers note that citizens who carry out labor activity outside their locality spend a significant part of their income in the region of residence rather than the region of work; in general, the authors note the range from 2/3 to 3/4 of earnings (Mkrtychyan, Florinskaya, 2019), which they spend at the place of residence.

We took as a basis the hypothesis that 2/3 of their earnings are spent by interregional commuting migrants at the place of their permanent residence, where it is made the expenses of various sizes and purposes, such as rent, children's education, etc.. (Maltseva, Plakhov, 2014). However, based on the theoretical analysis of scientific works, we know that this kind of labor movements are not carried out

over long distances. We stipulate in advance that the calculations are approximate. Knowing the region of origin and the approximate radius of movement of the population group under consideration, we make the assumption that commuting migrants do not go further than the borders of the adjacent entity. For each region of origin, we have identified satellite regions where commuting migrants can carry out labor activities. Since the available statistical information does not provide information on the sphere in which commuting migrants are employed, the average nominal accrued wages of workers for a full range of organizations in the economy as a whole is taken as a starting point, which is also a limitation of our study, as it strongly averages the obtained effects (*Figure*). Having identified the subjects adjacent to the region under study, we were able to calculate the average amount of cash transfers that a commuting migrant realizes in the

Method for calculating the volume of interregional monetary transfers to the region of origin from interregional commuting migration



Source: own compilation.

⁵ Бюджетный кодекс Российской Федерации от 31.07.1998 № 145-ФЗ (ред. от 14.04.2023). Статьи 56 и 61 // СПС «КонсультантПлюс». URL: https://www.consultant.ru/document/cons_doc_LAW_19702/c347478b850fb7c4a92141cb188a76d83ac72e0f

place of their residence during the year. We used the following formula for this purpose:

$$VIMT_{ICM} = \left(\frac{2}{3} av. sal. * number_{ICM} \right) * 12 months,$$

where $VIMT_{ICM}$ – volume of interregional monetary transfers of interregional commuting migrants;

$number_{ICM}$ – number of interregional commuting migrants in the region of origin, rubles;

$av. sal.$ – average nominal accrued salary of employees in the full range of organizations in the economy as a whole in the region of operation, rubles.

It is important to note that the calculations made are approximate, which, in addition to the above-mentioned limitations of the study, is due to insufficient consideration of commuting. The WNP-2020 data used in the study reflect only interregional commuting. The calculations cover only part of the economic impact of the phenomenon under consideration on the source region. In addition to interregional cash transfers and losses of the consolidated budget from under-received personal income tax, there are many other aspects of the impact of commuting on the regional economy. A full assessment of the economic consequences of commuting requires a deeper and more comprehensive analysis that would take into account a wide range of its impact. This underscores the need to develop commuting accounting and monitoring systems, and to conduct additional research to accurately assess all aspects of the impact of commuting on the regions of origin and regions of employment.

Review of measures to regulate commuting migration: foreign experience

The regulation of commuting affects different areas that are not directly related to migration policy. Commuting is an important tool for sus-

tainable development, as it helps to balance labor supply and demand, allowing regions to attract labor resources in accordance with the needs of the economy. In addition to labor, commuting affects transport policy, stimulates the search for new infrastructure solutions, and requires environmental policy decisions.

One of the distinctive features of foreign research and practice of commuting regulation is that the phenomenon of commuting is not something “hidden from the eyes” of the public, statistics, researchers, government authorities, employers, etc. In the practice of foreign countries, “commuting”⁶ is perceived as a phenomenon that is constantly present in the daily life of society, it is observed, actively studied, and also taken into account in the formation of regulatory measures in the framework of labor, environmental, transport, housing, land use policy, etc. When analyzing the experience of foreign countries related to the practice of regulating the commuting processes, we revealed that measures can be aimed not only at managing its flows and volumes, but also at leveling the negative effects of this process at different levels (Tab. 1). For instance, at the territory level, the measures to regulate the phenomenon under consideration are taken into account in national strategies for the development of the transport system, in regional and urban programs of development and planning of territories, at the employer level they are fixed in local regulatory legal documents and have the scope of action in the territory of the enterprise, and the household level is defined in the behavioral practices of individuals, which are formed under the influence of social norms, beliefs, etc.

⁶ Our paper systematized information on such a phenomenon as “commuting” because, in our opinion, it is the most relevant to the Russian phenomenon “маятниковая трудовая миграция”.

Table 1. Classification of foreign measures of commuting regulation

Basis	Classification	Examples
By level	Territory level	The concept of “Transit-oriented development”: it is the basis of urban planning documentation of a number of cities (London, San Francisco) and embodies a multifaceted approach to urban planning, which takes into account the interrelationships between different elements of the urban environment and aims to create sustainable, comfortable, accessible living conditions for all population groups. Within this framework, the regulation of pendulum labor migration is mentioned in such items as: <ul style="list-style-type: none"> – creating conditions where housing and workplaces are in close proximity to transportation hubs; – equal development of central and peripheral areas by creating prerequisites for reducing the use of road transport; – increasing the attractiveness and efficiency of public transport, creating an integrated public transport system; – provision of showers, storerooms and locker rooms for staff traveling long distances to work
	Employer level	TravelWise is a local program of Ottawa to be implemented at the employer level to improve travel conditions for commuters. The program involves a customized plan that includes a site assessment, a commuter survey, and information support. The program offers a number of measures such as: <ul style="list-style-type: none"> – increasing the attractiveness of using alternative means of transportation as a means of commuting to work; – parking lot management
	Household level	The practice of carpooling involves carpooling between different employees to travel to work together. In some countries, the Ministry of Transport provides free parking for carpooling participants (e.g. Ottawa, Canada)
By object of impact	Transport systems	<ul style="list-style-type: none"> – Allocating additional lanes for public transportation only or for those who practice carpooling; – reduction of parking spaces for private cars; – improving the frequency, capacity and speed of local public transport from regional transport connections, upgrading the condition of public transport and optimizing routes to meet user demand; – smart traffic light system
	Urban environment and housing construction	<ul style="list-style-type: none"> – Implementation of housing development near public transportation stations; – introduction of green and park areas, improvement of pedestrian infrastructure
	Individual’s behavior and health	<ul style="list-style-type: none"> – Incentivize employees to use bicycle transportation; – informing individuals about the cost of time and money spent on commuting to and from work
	Ecology	<ul style="list-style-type: none"> – Limiting emissions of harmful substances; – encouraging the use of electric vehicles
By actor	Legislative authorities at various levels	Master Plan for Urban Development is a long-term planning document for urban development, addressing aspects of housing planning, transportation network development, economy, environmental issues and social aspects. In the context of commuting, it is proposed to: <ul style="list-style-type: none"> – development of public transportation, which includes increasing the availability of public transportation and reducing personal motor vehicles; – creating compact neighborhoods around transportation hubs (e.g. San Francisco)
	Educational organizations	Special student programs. A number of universities in the United States and Europe are developing preference programs for students who commute regularly from other communities. These programs often include: <ul style="list-style-type: none"> – system of discounts for commuter travel on public transportation or reimbursement of fares; – programs to encourage bicycle transport: creating safe and convenient bicycle lanes and parking, rental programs, etc...; – carpooling programs: creation of online platforms for finding carpooling companions, provision of special parking lots for carpooling (e.g. University of California).
	Employer	Hybrid work schedule: performing work duties partly from home, partly from the office

End of Table 1

Basis	Classification	Examples
By type of exposure	Direct	Restriction of traffic, e.g., on certain days private cars are restricted and free public transportation is introduced (e.g., "Journée sans voiture" in Paris)
	Indirect	Tax incentives. In practice, some countries (e.g. the United States and Canada) have programs that offer tax credits for employees who commute to work. Both the employee and the employer in this case do not pay part of the tax rate, which allows them to save money
	Behavioral	Nudging. This approach involves using small changes in the environment that are intended to change people's behavior without coercion. An example of such an influence on behavior might be placing bicycle parking lots closer to the entrance of the building where an individual works than parking lots. Social norms. This approach uses the influence of social norms on people's behavior. In the context of commuting, it happens that people often choose the same mode of travel as their friends, colleagues, neighbors or representatives of a reference social group. As part of this influence, individuals are, for example, informed (in the form of billboards or videos) that modern and environmentally conscious people already use public transportation instead of private cars. Loss aversion. This approach relies on the fact that people are more sensitive to losses than gains. For example, providing information on the cost of idling in traffic jams (lost time, additional gasoline costs) while emphasizing the negative consequences of car use (e.g., pollution, increased congestion). Gamification. The use of gadgets to change people's behavior is studied. In this direction we can mention such ways as creation of games and applications, when users form the desired behavior through the performance of tasks with rewards, leaderboards, as well as communication within the application with the aim of mutual support of participants
By aim	Leveling the impact	Regulatory measures that encourage the use of alternative modes of travel (bicycles, electric vehicles, public transportation) to reduce traffic and emissions.
	Volume and flow management	Introduction of congestion charging (e.g. Congestion Charge in London); restricting traffic during certain hours reduces the flow of vehicles entering the settlement, forces the use of alternative means of transportation, and helps to enrich the municipal budget.
According to: (Zuo et al., 2024; Zimmermann et al., 2024; Franssens et al., 2021; Taale et al., 2022; Reindl et al., 2023; Whillans et al., 2021; Aravind et al., 2024; Biggar, 2019; Ek et al., 2021; Hidalgo-González et al., 2022; Pantelaki et al., 2024); City of Ottawa. Employee commuting programs. Available at: https://ottawa.ca/en/parking-roads-and-travel/employee-commuting-programs#section-e4c446f8-ec45-47cf-9934-f300a7255d4c ; City Plan 2036. Shaping the future City. City of London Corporation. Available at: https://democracy.cityoflondon.gov.uk/documents/s103835/Appendix%201%20Draft%20Plan.pdf ; Transportation. San Francisco General Plan. Available at: https://generalplan.sfplanning.org/ ; Commuter Support & Programs. University of California. Available at: https://commuterstudents.ucla.edu/ ; Why a Car Free Day in Paris. Paris sans voiture. Available at: https://www.parissansvoiture.org/ ; Commuter tax benefit. Great Mercer TMA. Available at: https://gmtma.org/commuter-tax-benefit/ ; Congestion Charge in London. Visit London. Official Visitor Guide. Available at: https://www.visitlondon.com/traveller-information/getting-around-london/congestion-charge		

Actors of commuting regulatory measures can be governmental authorities that dictate measures through legislative acts and strategic documents (Zuo et al., 2024), as well as municipal authorities that work out infrastructure development strategies at the level of municipalities and cities (Waedhani et al., 2020), the very enterprises that employ commuting migrants (Taale et al., 2022), and educational organizations⁷.

Measures to regulate commuting are not reflected in any separate document on migration regulation, but are taken into account in the drafting

⁷ Commuter Support & Programs. University of California. Available at: <https://commuterstudents.ucla.edu>

of legal acts affecting various spheres of society. Since commuting cannot be imagined in isolation from transportation movements, there are many measures in the practice of regulating this process, which are designed to reduce the negative effects of transportation. The practice of foreign countries presents management decisions affecting transport systems, for example, public transport in terms of expanding the network of routes, increasing the frequency of travel (Pantelaki et al., 2024), modernization of the transport fleet. Some of the measures affecting transport systems are designed to mitigate the environmental impacts of commuting. There are such practices as promoting the use of transport consuming alternative energy sources

(Hidalgo-Gonzalez et al., 2022), developing bicycle infrastructure (construction of bicycle lanes and bicycle parking lots, bicycle rental programs) (Ungsuchaval et al., 2022), improving pedestrian infrastructure (sidewalks and crosswalks) (Zuo et al., 2024). Carpooling is being introduced to minimize emissions, relieve roads from excessive vehicles (Kanaroglou et al., 2015). Carpooling allows for subsidized sharing of travel costs, and passengers have additional time for resting, reading, socializing, etc. during long trips. Special parking spaces are allocated, apps are created to find passengers⁸, and tax incentives are used for participants in these programs⁹. Moreover, to minimize the cost of money and time for people who work in other communities, convenient transfer hubs are formed, and the system of connections between different modes of transport is improved (Zhu et al., 2022).

In addition to transport infrastructure, commuting transforms the urban environment over time. In the practice of foreign countries, commuting includes movements not only from one settlement to another, but also within the city, in particular within large metropolitan cities, such as Beijing (Zhao et al., 2011). In this regard, there are a number of measures to regulate the phenomenon under consideration in relation to the urban planning sphere. For example, one urban planning practice is to concentrate housing and employment development near required public transportation stations, “transit-oriented development” (Zhu et al., 2022). To control the volume of flows of commuting migrants using motor vehicles, road construction is restricted in favor of pedestrian zones and bicycle paths (Zuo et al., 2024), “green” areas (parks, squares) are created (Zulian et al., 2022), which, on the one hand, encourage walking, on the other hand, improve the ecology of the city.

⁸ Sharing a sustainable way of life. Repsol. Available at: <https://www.repsol.com/en/energy-and-the-future/sustainable-mobility/what-is-carpooling/index.cshtml>

⁹ Commuter Tax Benefits. SLO Regional Rideshare. Available at: <https://rideshare.org/tax-benefits/>

To minimize the negative effects of commuting at the household level, regulatory measures such as tax incentives (there is a practice of taking tax deductions from an employee’s tax return for systematic commuting between home and workplace) (Steinsland et al., 2018), fare subsidies, transportation and parking subscriptions (Pantelaki et al., 2024) are attracted. Some companies introduce a hybrid work schedule for their employees, which involves the individual being partly at home and partly at the office. This measure contributes to the creation of a home-work balance for the individual, which affects productivity and company image, as well as reducing the frequency of commuting (Taale et al., 2022).

Interventions can take the form of direct and indirect effects on commuting, but behavioral regulation is of particular interest because it is a relatively new field. Such measures are based on the principles of behavioral economics, namely nudge theory (Franssens et al., 2021), loss aversion (Dauth, Haller, 2019), social norms (Biggar, 2019), use of digital tools (“gamification” (Reindl et al., 2023), and digital nudging (Zimmerman et al., 2024)). Indirect regulatory measures at first glance seem very similar to behavioral measures, but at the core they have significant differences, which made it possible to unite them into a separate group. For instance, indirect methods are aimed at changing the external environment or systemic factors, which then influence people’s behavior (improvement of transport infrastructure, regulation of parking and tax incentives for the use of certain types of transport). Behavioral measures focus on changing decision-making and behavioral contexts, such as changing choice architecture or establishing new social norms. Indirect measures are often implemented with engineering, economic, or legal tools that work at the macro level, while behavioral measures use principles of behavioral economics and psychology to create small changes that work at the individual level. These measures, which take

into account the peculiarities of human thinking, are based on the application of minor modifications of the environment in order to form the required behavior without coercion (Aravind et al., 2024). Behavioral regulatory measures have results, but the rate of change in people's behavior is not as rapid as with other measures. The potential of behavioral interventions in combination with direct and indirect interventions is high (Whillans et al., 2021) because it promotes the formation of stable habits and long-term patterns of behavior.

Current situation regarding the regulation of commuting in the Russian Federation

Currently, commuting in the Russian Federation is not regulated by legal and regulatory documents (Gruzdeva, Kalachikova, 2023). This type of spatial movement is reflected in the strategies of socio-economic development of regions, where commuting is most often mentioned as an existing phenomenon or described as a factor that negatively affects the region's development. We analyzed the strategies of socio-economic development of all constituent entities of the Russian Federation (Tab. 2).

It is important to note that the presence or absence of mention of commuting in these documents is not associated with its specific weight in the structure of the employed population, as well as with the volume of interregional cash transfers or the share of under-received personal income tax in the structure of the consolidated budget of the region. As a result of calculations, we obtained that the spread of values of interregional cash transfers is quite significant and has a direct dependence on the specific weight of interregional commuting. For instance, the maximum volume of interregional cash transfers is observed in the Moscow Region (227044.21 million rubles per year), the Leningrad Region (54118.72 million rubles per year) and Moscow (13650.98 million rubles per year), and the minimum – in the Chechen Republic (13.63

million rubles per year), the Magadan Region (12.51 million rubles per year) and the Chukotka Autonomous Area (0.78 million rubles per year). These transfers revitalize the economy of the region of origin of commuting migrants, as well as contribute to the improvement of the financial well-being of the household of the participant of such spatial movements. In the case of under-received personal income tax, the variation in monetary equivalent ranges from 0.204 to 11620.938 million rubles per year, which is a different share in the structure of consolidated budget revenues – from 0.004 to 25.631%, respectively (Sokolova, Kalachikova, 2023).

As a result of the grouping, the group of subjects that positively assess the phenomenon under consideration turned out to be the smallest. It includes five regions characterized by a different share of commuting in the employed population structure. The texts of their strategies include recommendations on the need to form reverse flows of commuting (Leningrad Region¹⁰), as well as to improve the forms and methods of coordination of entities included in the agglomeration zone. The strategy of the Altai Territory¹¹ recognizes that commuting is “one of the effective mechanisms of rational labor force distribution”, and within the framework of regional policy proposes the creation of a platform for interaction between employers and employees. The Strategies for socio-economic development of the Yamal-Nenets Autonomous

¹⁰ On the Strategy for Socio-Economic Development of the Leningrad Region until 2030 and the invalidation of the regional law “On the Concept of Socio-Economic Development of the Leningrad Region until 2025” (as amended on December 19, 2019). *Electronic fund of legal and normative-technical documents “Codex Consortium”*. Available at: docs.cntd.ru

¹¹ On approval of the Strategy for socio-economic development of the Altai Territory until 2035: Law of the Altai Territory 86-ZS, dated September 6, 2021. *Electronic fund of legal and normative-technical documents “Codex Consortium”*. Available at: docs.cntd.ru

Table 2. Grouping of regions by mentioning commuting in the strategies of socio-economic development of the RF constituent entities, 2021

RF constituent entity	Losses from under-received personal income tax in the structure of personal income tax revenue of the consolidated budget		Volume of interregional cash transfers, million rubles per year	Specific weight of commuting, %
	%	million rubles		
Positive assessment of the phenomenon of commuting (5 subjects)				
Leningrad Region	25.631	11620.938	54118.72	24.7
Altai Territory	0.392	108.745	698.76	15.3
Republic of Khakassia	0.463	39.908	208.45	10.5
Voronezh Region	0.065	25.414	124.22	8.3
Yamal-Nenets AA	0.147	88.413	294.66	0.4
Phenomenon of commuting is noted (15 subjects)				
Republic of Adygea	19.199	941.212	12531.23	15.5
Lipetsk Region	1.629	323.560	1628.61	13.5
Kaluga Region	6.897	1578.949	7183.52	13.1
Republic of Crimea	0.813	215.426	1210.99	11.7
Saint Petersburg	0.313	932.678	3308.42	0.4
...				
Irkutsk Region	0.005	2.928	15.72	6.6
Primorye Territory	0.304	154.171	835.70	5.2
Omsk Region	0.100	29.787	188.56	5.1
Republic of Dagestan	0.285	68.636	374.56	4.1
Bryansk Region	0.854	131.443	764.45	0.8
Negatively assess the phenomenon of commuting (7 subjects)				
Moscow Region	21.233	56070.698	227044.21	21.25
Vladimir Region	7.016	1611.367	9178.68	13.1
Republic of North Ossetia–Alania	2.695	174.203	891.70	10.7
Ivanovo Region	0.725	82.9	518.55	8.5
Ulyanovsk Region	1.283	214.042	1176.41	8.5
Krasnodar Territory	0.350	330.147	1279.75	5.6
Sevastopol	0.576	49.287	240.24	0.7
No mention (56 subjects)				
Republic of Mari El	5.168	436.358	2507.59	17.09
Belgorod Region	0.381	112.547	560.39	15.3
Tula Region	5.718	1598.420	8410.39	13.45
Kaliningrad Region	0.506	109.771	596.74	12.82
Ryazan Region	0.753	145.847	770.47	12.7
...				
Nenets AA	3.316	78.382	329.17	3.18
Republic of Kalmykia	0.612	13.964	82.24	2.13
Khanty-Mansi AA	1.623	1365.231	5127.42	1.71
Magadan Region	0.025	2.993	12.51	1.29
Chukotka AA	0.004	0.204	0.78	0.29

The list for 2021 does not include Moscow, as this entity does not have a valid socio-economic development strategy, there is only a draft of the inactive document "Strategy for Socio-Economic Development of Moscow for the period until 2025".

Source: Strategies for socio-economic development of the allocated territories, own compilation.

Area¹² and the Voronezh Region¹³ also note the positive impact of commuting movements on the employment of suburban settlements.

Those regions, which in their strategies indicate only the fact of the presence of commuting, were categorized in the group of those stating this phenomenon. The variation in the share of commuting is also variable, which can be said about the scale of its consequences for the economy. Regions in this group have the potential to introduce measures to regulate commuting, as they already recognize the existence of this type of migration in their regional legal acts.

In the regions that negatively assess commuting, the phenomenon under study is described as a risk factor (Ivanovo Region¹⁴), as a weakness (Vladimir Region¹⁵), and as a key problem of the subject's development (Republic of North Ossetia–Alania¹⁶). A number of regions (Moscow¹⁷ and

Ivanovo¹⁸ regions, Sevastopol¹⁹) declare the need to reduce labor migration from the region to a large agglomeration center. The Moscow Region²⁰ proposes the creation of alternative centers of attraction as measures to regulate the volume and flows of commuting, which will help reduce the outflow to Moscow and preserve labor resources in the peripheral areas of the region. It is proposed to approve competitive wages at enterprises and increase the number of jobs²¹ in the Ivanovo Region, to control the volume of outgoing commuting migrants. In the Krasnodar Territory²², it is proposed to create prerequisites for self-actualization and training in the hubs of the Territory.

The group of subjects with no mention of the existence of commuting was the most numerous. In accordance with Table 2, the haphazard inclusion of references to the need to regulate commuting in the documents of strategic planning of regional development, without reference to the scale of the spread of commuting, as well as to the size of economic consequences for the subject, becomes noticeable. For example, a quarter of the regions from the list of those that do not mention the

¹² On the Strategy for Socio-Economic Development of the Yamal-Nenets Autonomous Area until 2035 (as amended on February 17, 2022): Resolution of the Legislative Assembly of the Yamal-Nenets Autonomous Area 478, dated June 24, 2021. *Electronic fund of legal and normative-technical documents "Codex Consortium"*. Available at: docs.cntd.ru

¹³ On the Strategy of socio-economic development of the Voronezh Region for the period until 2035: Law of the Voronezh Region 165-OZ, dated December 23, 2019". *Electronic fund of legal and normative-technical documents "Codex Consortium"*. Available at: docs.cntd.ru

¹⁴ On Approval of the Strategy for Socio-Economic Development of the Ivanovo Region until 2030 (as amended as of June 14, 2022: Resolution of the Government of the Ivanovo Region 220-p, dated April 27, 2021). *Electronic fund of legal and normative-technical documents "Codex Consortium"*. Available at: docs.cntd.ru

¹⁵ On Approval of the Strategy for Socio-Economic Development of the Vladimir Region until 2030 (with amendments as of January 10, 2024)" Decree of the Governor of the Vladimir Region 10, dated June 2, 2009. *Electronic fund of legal and normative-technical documents "Codex Consortium"*. Available at: docs.cntd.ru

¹⁶ On the Strategy for Social and Economic Development of the Republic of North Ossetia–Alania until 2030 (as amended on November 11, 2021): Law of the Republic of North Ossetia–Alania 60-RZ, dated September 18, 2019. *Electronic fund of legal and normative-technical documents "Codex Consortium"*. Available at: docs.cntd.ru

¹⁷ Strategy for Socio-Economic Development of the Moscow Region until 2030. *Electronic fund of legal and normative-technical documents "Codex Consortium"*. Available at: <https://www.economy.gov.ru>

¹⁸ On Approval of the Strategy for Socio-Economic Development of the Ivanovo Region until 2030 (as amended as of June 14, 2022: Resolution of the Government of the Ivanovo Region 220-p, dated April 27, 2021). *Electronic fund of legal and normative-technical documents "Codex Consortium"*. Available at: docs.cntd.ru

¹⁹ On approval of the Strategy for socio-economic development of Sevastopol until 2030: Law of the city of Sevastopol 357-ZS, dated July 21, 2017. *Electronic fund of legal and normative-technical documents "Codex Consortium"*. Available at: docs.cntd.ru

²⁰ Strategy for Socio-Economic Development of the Moscow Region until 2030. Ministry of Economic Development of the Russian Federation. Available at: <https://www.economy.gov.ru>

²¹ On approval of the Strategy for socio-economic development of the Ivanovo Region until 2030 (with amendments as of June 14, 2022): Resolution of the Government of the Ivanovo Region 220-p, dated April 27, 2021. *Electronic fund of legal and normative-technical documents "Codex Consortium"*. Available at: docs.cntd.ru

²² On the Strategy for Socio-Economic Development of the Krasnodar Territory until 2030 (as amended on December 5, 2023): Krasnodar Territory Law 3930-KZ, dated December 21, 2018. *Electronic fund of legal and normative-technical documents "Codex Consortium"*. Available at: docs.cntd.ru

phenomenon under consideration have a higher share of commuting in the employed population compared to the national indicator, which, in our opinion, makes them potential subjects for the introduction of measures to regulate it. Some regions (e.g., the Ivanovo Region and the Krasnodar Territory) that negatively assess commuting have a low share of losses from lost personal income tax and a significant amount of interregional cash transfers to the source region, which indirectly indicates the prevalence of positive economic effects. Strategies for socio-economic development of regions, where this phenomenon is mentioned, mostly do not have a specific description of measures and directions of regulation, except for units that see the purpose of controlling the volume of commuting movements. We did not find any mention of the need to level the negative consequences of the phenomenon under consideration in any of the documents mentioned above.

Previously systematizing the experience of foreign countries in regulating commuting, we noted that the measures under consideration are reflected in urban planning documents. Such practice also exists in Russia. For instance, it becomes evident from the Regulations on Territorial Planning of Moscow that in planning an effective settlement system, creating comfortable transport accessibility and placement of objects of mass labor and cultural and domestic gravity should take into account the commuting²³. This document also declares that the commuting volume in Moscow should be regulated in cooperation with the Moscow Region. It is also possible to find implicit references to the need to regulate this type of movement in urban planning documents of other RF constituent entities. For example, the design solutions of the

Ufa general plan provide for a balance of population and labor application places, which indicates that the authorities understand the transformational processes of employment and settlement system and indirectly indicates the need to regulate the commuting²⁴.

The lack of clear regulatory measures in Russian documents can be explained by the fact that the commuting effects have recently come to the attention of Russian scientists and managers. The difficulty of their identification and assessment is due to the fact that data for the study of commuting movements are not published and are not properly accumulated. Ultimately, this affects the measures of commuting regulation, and especially their absence in the Russian realities.

Conclusion

The study revealed that commuting remains underestimated in most Russian regions. The lack of a systematic approach to its regulation deprives regions of the opportunity to effectively use its potential to increase employment and economic growth, as well as to minimize associated risks. However, before starting to develop any support measures or other management initiatives, it is necessary to clearly understand the real scale of this phenomenon. Russian researchers have long focused attention on the problems of migration statistics (Perevedentsev, 1975; Mkrtchyan, 2009), including the need to take into account commuting (Khorev, Chapek, 1978; Makhrova, Bochkarev, 2017; Shitova, Shitov, 2016), actualize the importance of developing measures to regulate commuting in the form of support focused on caring for the health and well-being of commuting migrants (Shitova, 2024).

²³ Regulations on Territorial Planning of Moscow. Annex to the Law of Moscow 17, dated May 5, 2010 "On the General Plan of Moscow". Official portal of the Mayor and Government of Moscow. Available at: <https://www.mos.ru/mka/function/dlia-spetcialistov/dokumenty-territorialnogo-planirovaniia/>

²⁴ On approval of the General Plan of the urban district of Ufa of the Republic of Bashkortostan until 2042: Decision of the Council of the urban district of Ufa of the Republic of Bashkortostan 12/5, dated March 23, 2022. *Electronic fund of legal and normative-technical documents "Codex Consortium"*. Available at: <https://docs.cntd.ru/document/578171943>

To date, the need to create a system of accounting for commuting in Russia is due to the fact that previously it was done only indirectly, which does not allow accurately assessing the volumes and directions of flows and fully understand the impact of commuting on regional development. Commuting has a significant impact on the economy of both the regions of origin and the regions of work: regular monetary transfers of migrants revitalize the economy of the regions of origin, such labor mobility allows solving the issues of imbalances in the labor market and employment in small towns and rural areas. Underestimation of the negative effects of commuting on regional budgets leads to the fact that measures to support infrastructure, transportation networks and social policy remain insufficient and ineffective. In addition, the lack of studying the commuting effects does not allow minimizing their negative impact on households, employers and socio-

economic development of the territory. Despite this, currently in Russia the effects of commuting are not properly taken into account neither in the strategic documents of the regions, nor in any other normative legal acts. A well-established accounting system would make it possible to assess the real contribution of commuting migrants to the economy, and up-to-date data on the movement of labor force between regions can be used to eliminate imbalances in the labor market, helping to prevent labor shortages in some regions and labor surpluses in others, to create programs to improve the quality of life and, in general, to contribute to the sustainable development of regions.

Thus, the creation of commuting accounting system will be the foundation for the development of effective measures for its regulation, aimed at minimizing the negative effects and maximizing its positive impact of commuting at the level of the territory of the region, employer and household.

References

- Akhmetova G.F. (2021). Dynamics of labor migration in the Republic of Bashkortostan. *Vestnik Rossiiskogo universiteta druzhby narodov. Seriya: Sotsiologiya=RUDN Journal of Sociology*, 21(2), 265–278. DOI: 10.22363/2313-2272-2021-21-2-265-278 (in Russian).
- Antonova A.V. (2018). The commuters' way of life in the Moscow agglomeration. *Migratsiya i sotsial'no-ekonomicheskoe razvitie*, 3(3), 113–118. DOI: 10.18334/migration.3.3.41042 (in Russian).
- Aravind A., Mishra S., Meservy M. (2024). Nudging towards sustainable urban mobility: Exploring behavioral interventions for promoting public transit. *Transportation Research Part D*, 129, 2–25. Available at: <https://doi.org/10.1016/j.trd.2024.104130>
- Ashforth B.E. (2000). *Role Transitions in Organizational Life: An Identity-Based Perspective*. New York: Macmillan.
- Biggar M. (2019). Unpacking the influence of social norms and past experience on commuting mode choice. *Journal of Behavioral Public Administration*, 2(1), 1–8. DOI: 10.30636/jbpa.21.52
- Chatterjee K. et al. (2020). Commuting and wellbeing: A critical overview of the literature with implications for policy and future research. *Transport Review*, 40, 5–34.
- Dauth W., Haller P. (2019). Loss aversion in the trade-off between wages and commuting distances. In: *Beiträge zur Jahrestagung des Vereins für Socialpolitik 2019: 30 Jahre Mauerfall – Demokratie und Marktwirtschaft – Session: Urban Economics, No. D12-V3, ZBW – Leibniz-Informationszentrum Wirtschaft, Kiel, Hamburg*.
- Ek Ch., Wårell L., Andersson L. (2021). Motives for walking and cycling when commuting – differences in local contexts and attitudes. *European Transport Research Review*, 13(1), 1–12. DOI: 10.1186/s12544-021-00502-5
- Franssens S., Botchway E., Swart W., Dewitte S. (2021). Nudging commuters to increase public transport use: A field experiment in Rotterdam. *Frontiers in Psychology*, 12, 1–12. DOI: 10.3389/fpsyg.2021.633865
- Gruzdeva M.A., Kalachikova O.N. (2023). Problems of legal regulation of employment of temporary labour migrants. *Zhurnal issledovaniy po upravleniyu=Journal of Management Studies*, 5, 64–74 (in Russian).

- Hidalgo-González C., Rodríguez-Fernández M.P., Pérez-Neira D. (2022). Energy consumption in university commuting: Barriers, policies and reduction scenarios in León (Spain). *Transport Policy*, 116, 48–57. DOI: <https://doi.org/10.1016/j.tranpol.2021.10.016>
- Julsrud T.E., Randi Hjorthol R. (2020). Commuting in knowledge-intensive organizations: An outline of six different practices. *International Journal of Sustainable Transportation*, 15(2), 1–15. DOI: 10.1080/15568318.2020.1833116
- Kanaroglou P.S., Higgins Ch., Chowdhury T. (2015). Excess commuting: A critical review and comparative analysis of concepts, indices, and policy implications. *Journal of Transport Geography*, 44, 4–27. DOI: 10.1016/j.jtrangeo.2015.02.009
- Kapelyushnikov R.I. (2024). *Eskalatsiya vakansii na rossiiskom rynke truda (dinamika, struktura, trigger)* [Escalation of Vacancies on the Russian Labor Market (Dynamics, Structure, Triggers)]. Preprint: Nats. issled. un-t “Vysshaya shkola ekonomiki”. Moscow: Izd. dom Vyssei shkoly ekonomiki.
- Khorev B.S., Chapek V.N. (1978). *Problemy izucheniya migratsii naseleniya (statistiko-geograficheskie ocherki)* [Problems of Studying Population Migration (Statistical-Geographical Essays)]. Moscow: Mysl’.
- Künn-Nelen A. (2016). Does commuting affect health? *Health Economics*, 25, 984–1004.
- Maltseva E.S., Plakhov A.V. (2014). Influence of pendular labour migration on tax incomes of municipal unions’ budget. *Vestnik OrelGIET*, 4(30), 85–89 (in Russian).
- Mkrtchyan N.V. (2007). Statistical sources of information on population migration in Russia. In: Zaionchkovskaya Zh., Molodikova I., Mukomel’ V. (Eds.). *Metodologiya i metody izucheniya migratsionnykh protsessov* [Methodology and Methods of Studying Migration Processes]. Moscow: Tsentr migratsionnykh issledovaniy (in Russian).
- Mkrtchyan N.V., Florinskaya Yu.F. (2016). Socio-economic effects of labor migration from small towns of Russia. *Voprosy ekonomiki*, 4, 203–123. DOI: 10.32609/0042-8736-2016-4-103-123 (in Russian).
- Mkrtchyan N.V., Florinskaya Yu.F. (2019). Residents of small and mid-size towns of Russia: Labor migration as an alternative to permanent transfer. *Zhurnal Novoi ekonomicheskoi assotsiatsii*, 3, 78–94. DOI: 10.31737/2221-2264-2019-43-3-4 (in Russian).
- Öhman M., Lindgren U. (2003). Who are the long-distance commuters? Patterns and driving forces in Sweden. *Cybergeo. European Journal of Geography*. Available at: <https://journals.openedition.org/cybergeo/4118?Lang=en#citedby>. DOI: 10.4000/cybergeo.4118
- Pantelaki E., Caspani A.-C., Maggi E. (2024). Impact of home-school commuting mode choice on carbon footprint and sustainable transport policy scenarios. *Case Studies on Transport Policy*, 15, 1–17. DOI: <https://doi.org/10.1016/j.cstp.2023.101110>
- Perevedentsev V.I. (1975). *Metody izucheniya migratsii naseleniya* [Methods of Studying Population Migration]. Moscow: Nauka.
- Reindl A., Juppe M., Graf Ph., Putz-Egger L.-M., Schildorfer W. The use of gamification to change commuters’ mobility behavior: A literature review. In: *7th International GamiFIN Conference 2023 (GamiFIN 2023), April 18–21, 2023, Lapland, Finland*.
- Shitova Yu.Yu. (2024). The impact of long-distance commuting on the health of pendulous labor migrants: Review of the literature. *Naselenie i ekonomika*, 8(1), 37–51. DOI: <https://doi.org/10.3897/popecon.8.e109997> (in Russian).
- Shitova Yu.Yu., Shitov Yu.A. (2016). Analysis of long-term dynamics of factors determining pendular labor migration in the Moscow region. *Problemy prognozirovaniya=Studies on Russian Economic Development*, 4(157), 151–162 (in Russian).
- Sokolova A.A., Kalachikova O.N. (2023). Commuting in Russia: Scale and consequence. *Narodonaselenie=Population*, 26(3), 16–28. DOI: 10.19181/population.2023.26.3.2 (in Russian).
- Steinsland Ch., Fridstrom L., Madslein A., Minken H. (2018). The climate, economic and equity effects of fuel tax, road toll and commuter tax credit. *Transport Policy*, 72, 225–241. DOI: <https://doi.org/10.1016/j.tranpol.2018.04.019>

- Taale H., Kalter M.-J. O., Haaijer R., Damen C. (2022). The impact of COVID-19 and policy measures on commuting in the Netherlands. *Case Studies on Transport Policy*, 10(4), 2369–2376. DOI: <https://doi.org/10.1016/j.cstp.2022.10.018>
- Ungsuchaval T.H., Kantamaturapoj K., Leelahavarong P., Yothasamut J., Ponragdee K., Prawjaeng J., Hadnorntun P.H. (2022). Advocating evidence-informed policy in Thailand: The case of the development of bicycle commuting policy framework. *Case Study on Transport Policy*, 10(3), 1727–1734. DOI: <https://doi.org/10.1016/j.cstp.2022.07.003>
- Waedhani M., Yoshida T., Malik A. (2020). Third Place Design strategy for commuter in sub-urban (Case study: Outdoor public space in Tangerang city, Indonesia). *Journal of Architectural Design and Urbanism*, 3(1), 29–39. DOI: [10.14710/jadu.v3i1.8886](https://doi.org/10.14710/jadu.v3i1.8886)
- Whillans A., Sherlock J., Roberts J., O’Flaherty S., Gavin L., Dykstra H., Daly M. (2021). Nudging the commute: Using behaviorally informed interventions to promote sustainable transportation. *Behavioral Science & Policy*, 7(2), 27–49.
- Zhao P., Lu B., Roo G. (2011). The impact of urban growth on commuting patterns in a restructuring city: Evidence from Beijing. *Papers in Regional Science*, 90(4), 735–755. DOI: <https://doi.org/10.1111/j.1435-5957.2010.00343.x>
- Zhu P., Tan X., Zhao S., Shi Sh., Wang M. (2022). Land use regulations, transit investment, and commuting preferences. *Land Use Policy*, 122, 1–17. DOI: <https://doi.org/10.1016/j.landusepol.2022.106343>
- Zimmermann S., Schulz Th., Hein A., Gewald H., Krcmar H. (2024). Motivating change in commuters’ mobility behaviour: Digital nudging for public transportation use. *Journal of Decision Systems*, 33, 79–105. DOI: [10.1080/12460125.2023.2198056](https://doi.org/10.1080/12460125.2023.2198056)
- Zulian G., Marando F., Mentaschi L., Alzetta C., Wilk B., Maes J. (2022). Green balance in urban areas as an indicator for policy support: A multi-level application. *One Ecosystem*, 7, e72685, 1–35. DOI: <https://doi.org/10.3897/oneeco.7>
- Zuo J., Zheng W., Hong J. (2024). Interactions between centrality and commuting costs in a mountainous city: Implications for jobs-housing relationships and land use policies. *Land Use Policy*, 134, 1–12. DOI: <https://doi.org/10.1016/j.landusepol.2023.106999>

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Main Approaches to Assessing the Scale of Settlement of Russian-Speaking Population Abroad



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Abstract. Russian diaspora is one of the largest in the world and, according to various sources, includes from 10 to 40 million expatriates. It has been forming since the 18th–19th century during periods of unrest, wars and political change. Natural decline of Russian population, reduction in the migration growth of the population of Russia, and changes in ethnic composition determine the need and relevance of assessing the scale of the country’s repatriation potential. The aim of the work is to analyze existing data sources and approaches to estimating the number of Russian-speaking population and to identify the countries in which it is concentrated, for subsequent assessment of Russia’s repatriation potential. The article presents main approaches to identifying Russian expatriates, estimates the number and describes the geographical distribution of Russian-speaking communities abroad. The interpretations of such widely used concepts as “emigrants”, “diaspora”, “compatriots” and “Russian-speaking communities” are considered in detail and comprehensively, as well as the specifics of their definition and statistical accounting. We use data from the United Nations, national statistical services of various countries, and expert assessments. The data presented emphasize the importance of Russian-speaking communities in the context of globalization and international migration. The article provides statistics on international migration flows from Russia, including an analysis by country of residence and the dynamics of the number of emigrants since 1990. We discuss differences in migration statistics presented in Russian and foreign sources, methods of determining the basis (by place of birth, by ethnic origin), as well as new forms of emigration, including labor emigration and episodic emigration. The analysis of the territorial distribution of Russian-speaking communities shows their geographical diversity with significant presence in Russia’s neighboring countries (Ukraine, Kazakhstan, Uzbekistan) and in other regions, including North America (USA, Canada), Europe (Germany, France, Baltic countries), and the Middle East (Israel, Türkiye, UAE). The findings of our research can be useful in the development of state migration policy and assessment of geopolitical implications of migration processes, including the repatriation potential of the Russian Federation.

Key words: Russian expatriate community, emigration, diaspora, compatriots, Russian-speaking communities, migration statistics, globalization, international migration.

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Introduction

Russian diaspora is one of the largest in the world and, according to various sources, includes from 10 to 40 million expatriates. It has been forming since the 18th–19th century during periods of unrest, wars and political change.

The main stages of emigration from Russia are described in sufficient detail in Russian and foreign literature: emigration waves are highlighted (Iontsev et al., 2001; Ryazantsev, Grebenyuk, 2014; Ryazantsev, Khramova, 2018); its causes and

consequences are investigated (Ryazantsev, 2017; Ryazantsev, Pismennaya, 2016; Ryazantsev, Bragin, 2023); its scale is estimated (Andryushchenko, 2020; Denisenko, 2003; Korobkov, 2020 Subbotin, Aref, 2021; Subbotin, 2024); individual regions are analyzed (Dezhina et al., 2020; Pismennaya, Nioradze, 2022; Sulpasso et al., 2023; Osadchaya et al., 2023), etc. However, there is still no unified approach to understanding the terms such as “emigrants”, “diaspora”, “compatriots”, “Russian-

speaking communities”, etc. The accuracy of assessing each category depends on their clear definition.

The relevance of the study is due to the need to conceptualize these terms and quantify the number of Russian expatriates in order to understand their scale and geography of settlement. In the context of globalization and increased international migration, attention to Russian-speaking diasporas on the world stage increases as well. Analyzing their number and territorial distribution not only makes it possible to identify current trends in migration processes and track their transformations, but also contributes to the development of a more effective state migration policy and helps to assess geopolitical implications of population migration. The aim of the research is to analyze existing data sources and approaches to estimating the number of Russian-speaking population and identify the countries in which it is concentrated, for subsequent assessment of Russia’s repatriation potential, i.e. the maximum possible number of population that is ready, under certain conditions, to return to their country of origin.

The results of the study are of great practical importance for strategic planning and decision-making at the state level.

Basic concepts and literature review

The most widely used and generally accepted term “emigrant” is not so unambiguous from the point of view of statistical accounting. Simply put, an emigrant is a person who leaves the country of their permanent residence. But a number of circumstances clarifying the reasons for departure, period of absence from the place of permanent residence, purpose of departure and others do not allow all those leaving to be united into a common group of “emigrants”. That is why statistical observation of this category of migrants differs significantly in each country. The data obtained also differ with respect to a seemingly homogeneous group of migrants. Many countries classify

emigrants as citizens who have left for at least three months (Denisenko, 2003). Pointing out the period of absence from the country of one’s citizenship, after which a citizen who has left can be classified as an emigrant, becomes practically a key criterion. According to the UN recommendations, this period is one year or more; nevertheless, it is often defined as three months. The goals and channels of departure are not considered as determining criteria (Ryazantsev, 2017).

A fairly broad interpretation is used in relation to the term “emigrants from Russia”. The phenomenon of mass departure from the Russian Empire, the USSR and the Russian Federation has been noted repeatedly for more than a hundred years and had a wave-like character; thus, the term is applied in different historical periods to people who went abroad for permanent residence or for long periods to live and work there (Ryazantsev, 2017). Emigrants from Russia and their descendants of the second and third generation can be found in almost all countries of the world, and their number is difficult to determine.

The term “diaspora” in the classical version means “a part of the people (ethnos) living outside their country of origin, forming cohesive and stable ethnic groups in the country of residence and having social institutions to maintain and develop their identity and community” (Gritsanov et al., 2003). However, in reality, cohesive and stable groups can be formed by people from the same country or region, not necessarily on an ethnic basis, but rather on the principle of “fellow country people” in order to support each other in difficult conditions outside their country of origin. The main goal of such an association is to more successfully solve their problems related to integration into the host community and even for the purpose of greater security. In addition, in reality, immigrants from the same country who do not live as a community in the host country can identify as a diaspora, but precisely for the same reasons that their former

compatriots prefer to settle as a community. We agree with those authors who define diasporas as “stable communities of people of common origin, language, cultural traditions, and mentality that have developed outside the historical homeland” (Medvedeva, Bushueva, 2016).

Migration attitudes of those who have left their country of origin depend on the success of adaptation and further integration. They range from “staying forever” to “I will definitely come back if...”. Both the conditions in which migrants find themselves and the circumstances that forced them to leave their country of permanent residence are important. Diasporas can be organized spontaneously and exist for a short period of time, uniting migrants who were forced to leave a country or region due to an emergency; or they can exist for several generations of migrants, ensuring the preservation of culture, language and supporting their members in difficult life circumstances. There is a pattern: the more successfully migrants integrate into the host community, the less necessary and stable are their social ties within the diaspora.

The term “compatriots” is more difficult to define, despite the existence of a legislative framework and relevant programs for this category of migrants¹. For the situation that has developed in the former USSR, the category of “compatriots” includes not only those who left Russia and found themselves outside their country of origin, but also those who did not move anywhere at all, but found themselves outside their historical Homeland. Moreover, in this case, the term does not define ethnicity, but rather the past, civic essence of the Soviet period (Gerasimova, 2019).

In the early 1990s Russians made up about a third of the population in some union republics and were the second largest people in the state

¹ See for example: Federal Law 99, dated May 24, 1999 “On the state policy of the Russian Federation in relation to compatriots abroad”.

(Kazakhstan – 37%, Latvia – 33%, Estonia – 30%), in Ukraine and Kyrgyzstan they also became the second largest ethnic group, accounting for more than a fifth of the population of these countries (Sushchiy, 2020). In general, according to the 1989 census, there were 25.3 million Russians outside the RSFSR (Uryadova, 2024). In our opinion, compatriots abroad can be understood as all those who came from the same country or region, regardless of the form of their settlement, relationships, goals and duration of stay and further migration sentiments. This understanding makes it possible to unite all migrants who left the same country at different times and for various reasons, or who lived outside Russia from birth, but were connected by former Soviet citizenship. This approach makes their quantitative assessment somewhat difficult. In addition, it would be a mistake to take into account only those who go abroad from the territory of Russia, and ignore departures from other former Soviet republics, and to use the concept of “Russian expatriate community” to assess the scale of repatriation potential.

The most significant migration flows from the territory of all the republics of the former USSR have been occurring for almost four decades. All immigrants from the republics are united by knowledge of the Russian language, which allows them to communicate with each other in any country of the world. The Russian language is successfully used by migrants from the Caucasus, Central Asia, and Russia to communicate with each other. Any community abroad may include representatives of various ethnic groups who lived in Russia, left under the influence of various factors and reasons, and have different migration intentions.

In this regard, for the purposes of our study, in which we attempt to assess the quantitative scale of residence of natives of Russia and other republics in various countries as well as their descendants of

at least the first generation, it will be most accurate to use the general concept of “Russian-speaking community” (Ryazantsev, 2016; Ryazantsev et al., 2021).

Data and methods

Administrative sources of data such as population censuses, registration data (current accounting) and statistical reports are usually used to determine the number of Russian-speaking communities abroad. There are two main ways to assess the extent of departure from the country and the relatively long-term residence of its former citizens abroad.

The first way is to rely on various sources of information in the country of departure. The second one is to use data from various sources in the host country. The most accurate result will be given by data obtained separately for each country that accepts Russian or former Soviet migrants in great numbers.

Rosstat (Federal Service for State Statistics of the Russian Federation) and the Ministry of Internal Affairs of Russia are official data sources for accounting for citizens who have left Russia. At the same time, the Russian statistics service receives information from the Ministry of Internal Affairs, which receives it from passport offices (Vorobieva, Grebenyuk, 2017b). Taking into account those who have left for permanent residence is based on de-registration or renunciation of citizenship, which does not always happen. Many people choose “living in two countries”, which is not reflected in current statistics (Vorobieva, Grebenyuk, 2017a).

There is a hypothesis about significant discrepancies between Russian migration data and the information from countries hosting emigrants (Subbotin, 2021; Subbotin, 2024). The entry of migrants is recorded by the country of destination with greater accuracy than the departure by the country of origin. This is due to the fact that it is important for the state to know the size of the actual population in order to effectively allocate

resources, plan social infrastructure, etc. For example, S.V. Ryazantsev and E.E. Pismennaya revealed a significant underestimation of emigration numbers by Russian statistics: for Spain – 22 times, for France – 14 times, for Germany – 8 times (Ryazantsev, Pismennaya, 2016, p. 20). O.D. Vorobieva and A.A. Grebenyuk argue that in order to obtain the real scale of emigration, Rosstat data should be increased at least 3–4-fold (Vorobieva, Grebenyuk, 2017a, p. 19).

In addition, researchers point out that at the current stage of migration processes in Russia, new forms of emigration have appeared, including labor and episodic (Iontsev et al., 2016). However, accounting for external labor migration in Russia is also provided by the Ministry of Internal Affairs and is based on information provided by specialized agencies licensed to carry out activities related to the provision of employment services for Russian citizens abroad².

In recent years, alternative sources of information are becoming increasingly important; they allow estimating the number and activity of Russian-speaking communities using data from the Internet and social media:

- search queries – analysis of the data from search engines such as Yandex, Google, allows assessing interest in the Russian language resources and topics in different countries;
- social media platforms such as VKontakte and others provide an opportunity to analyze accounts, groups and pages oriented toward Russian-speaking audience; the number of participants in such groups and their activity can serve as indicators of the number and level of integration of Russian speakers into local communities;
- statistics of online trade and delivery services – online trading and delivery platforms such

² Rosstat Order 220 dated March 31, 2017 “On approval of statistical tools for the Ministry of Internal Affairs of the Russian Federation to organize statistical monitoring of external labor migration”. Appendix 2, Form 1-T (migration).

as Amazon, eBay and local delivery services can provide data on orders and deliveries in Russian; analysis of such data allows assessing the concentration of Russian-speaking consumers in different regions; orders for Russian-language literature, products and cultural goods can serve as indicators of the presence of Russian-speaking communities;

– mobile applications and messaging platforms – applications popular among Russian speakers, such as Telegram and WhatsApp, can provide data on the number of users and their geographical distribution, for example, large Russian-language channels and Telegram chats often include participants from different countries, which allows estimating the number and activity of the diaspora.

The combination of administrative and alternative sources helps to obtain a more complete and up-to-date understanding of the number and characteristics of Russian-speaking communities abroad, taking into account both official data and dynamic indicators from additional information sources.

The article uses UN data characterized by long-term dynamics covering the period from 1990 to 2020. When estimating the number of international migrants, the latter are classified as the population born abroad when such information is available, which is typical for most countries. In cases where there is no data on the place of birth, international migrants are classified as foreign citizens on the basis of information on the nationality of the registered persons. The use of such a unified methodology in data collection and processing makes it possible to

conduct a comparative analysis in both temporal and spatial aspects, i.e. it is sufficiently reliable to assess changes in the number and geographical distribution of Russian expatriates, ensuring a high degree of accuracy and comparability of the results throughout the period under consideration. The work also uses data from official statistics of national statistics services of various countries (including population censuses).

Scale and geography of settlement of Russian-speaking communities abroad

According to the latest available data from the UN Department of Economic and Social Affairs, in 2020 there were 280.6 million international migrants in the world, while in 1990 their number was 153.0 million people (*Tab. 1*). That is, over 30 years, the number of international migrants (world diaspora) increased by 83% (almost doubled). This is mainly due to the processes of globalization taking place all over the world.

Meanwhile, according to the same UN estimates, the number of migrants from Russia from 1990 to 2020 decreased from 12.7 to 10.8 million people. A detailed study of the dynamics shows that the analyzed period can be divided into two stages: from 1990 to 2010, when there was a decrease in migrants from Russia (the main decrease occurred in the 1990s – almost 2 million people), and from 2010 to 2020, when the number of international migrants from Russia increased by 640 thousand people, or 6.3% (from 10.12 to 10.76 million people). At the same time, according to the UN, the share of migrants from Russia in the total number of international migrants has been decreasing (from 8.3% in 1990 to 3.8% in 2020).

Table 1. Dynamics of the number of international migrants in the world and Russia in 1990–2020, thousand people

	1990	1995	2000	2005	2010	2015	2020
World	152 986.2	161 290.0	173 230.6	191 446.8	220 983.2	247 958.6	280 598.1
Russia	12 653.3	11 588.0	10 664.8	10 302.9	10 118.7	10 180.0	10 756.7
Share of migrants from Russia, %	8.3	7.2	6.2	5.4	4.6	4.1	3.8
Compiled according to: United Nations Department of Economic and Social Affairs, Population Division. (2020). International Migrant Stock 2020.							

The availability of statistics by sex makes it possible to determine migration specifics among men and women. In 1885, E. Ravenstein published eleven patterns of migration he had identified, many of which have not lost their relevance and have become even more pronounced (for example: the main causes of migration are economic ones; large cities grow mainly due to migration). One of the migration patterns is that men are more mobile in international movements than women. This hypothesis is confirmed by the UN statistics. If we look at the sex structure of international migrants in the world, we see that men averaged about 51% throughout the period under consideration. However, if we look at the Russian situation, we see a different picture: the vast majority of emigrants from Russia are women, whose share in the total number of international migrants is 57%.

Territorial distribution of international migrants from Russia (*Tab. 2*) shows that more than half of them live in Ukraine (31%) and Kazakhstan (23%). In 2020, 75% of international migrants from Russia lived in ten neighboring countries; in 1990 this figure exceeded 89%.

The largest number of migrants from Russia to foreign countries is concentrated in Germany (1.2 million people), in the USA their number is three times less (397 thousand people), in Israel – 10 times less (111 thousand people), Spain (96), Canada (85), Italy (83), France (73), Greece (55), Poland (50), Czech Republic, UK, Austria and Bulgaria (33–37 thousand people each); in other countries – less than 30 thousand people (less than 0.3% of all international migrants born in Russia).

According to SIL Ethnologue³ (USA), a well-known reference book on world languages, in 2010 the number of native speakers of Russian living

outside Russia was about 30 million (Lewis et al., 2014).

Ethnic Russians make up a significant part of the population living outside the Russian Federation. According to various estimates, their number varies from 20 to 40 million depending on how ethnicity is defined⁴. However, it is not easy to determine the exact number of ethnic Russians abroad because of differences in the way ethnicity is accounted for from country to country. Many national statistics services tend to count only one ethnicity. However, there are countries that provide more detailed information on citizens, including data on multiple ethnicities. A prime example is Canada, where the national statistical office gathers detailed population statistics, including data on migrants.

Thus, the official website of Statistics Canada, based on the results of the 2021 census, presents the following data on the number of Russian expatriates⁵:

- 1) by place of birth – 87,380 people;
- 2) by ethnic or cultural origin – 548,145 people.

That is, depending on the method of determination, the number of Russian expatriates can vary more than 6-fold. We should note that the concept of “ethnic or cultural origin” in Canada refers to the origin of the individual’s ancestors. It can encompass both indigenous ancestry and ancestry related to different countries. A person in the census may identify with more than one ethnic or cultural group. That is, the total sum of data on people with ethnic or cultural backgrounds may exceed the total population because respondents may indicate more than one ethnicity.

⁴ See for example (Diamant, 2017).

⁵ Statistics Canada. (2023). Census Profile. 2021 Census of Population. Statistics Canada Catalogue No. 98-316-X2021001. Ottawa. Available at: <https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/index.cfm?Lang=E> (accessed: August 1, 2024).

³ The most famous reference publication on languages of the world, developed and published by SIL International (formerly known as the Summer Institute of Linguistics) in print and online.

Table 2. Distribution of migrants from Russia by country of residence (top 35 countries) in 1990–2020

Country of residence	1990		2000		2010		2020	
	thousand people	% of all migrants from Russia	thousand people	% of all migrants from Russia	thousand people	% of all migrants from Russia	thousand people	% of all migrants from Russia
Ukraine	5018.1	39.66	3745.8	35.12	3265.8	32.27	3330.6	30.96
Kazakhstan	2474.1	19.55	2032.9	19.06	2211.9	21.86	2476.0	23.02
Germany	77.3	0.61	903.8	8.47	857.2	8.47	1198.8	11.14
Uzbekistan	1267.2	10.01	1067.2	10.01	913.7	9.03	871.0	8.10
Belarus	791.5	6.26	708.0	6.64	688.4	6.80	672.5	6.25
USA	190.7	1.51	348.8	3.27	405.7	4.01	397.1	3.69
Tajikistan	363.6	2.87	252.1	2.36	238.1	2.35	235.0	2.18
Estonia	283.5	2.24	189.0	1.77	154.7	1.53	119.1	1.11
Latvia	473.2	3.74	234.8	2.20	163.6	1.62	116.8	1.09
Israel	175.9	1.39	162.2	1.52	111.1	1.10	111.3	1.03
Kyrgyzstan	349.2	2.76	212.4	1.99	126.9	1.25	108.9	1.01
Spain	3.1	0.02	8.3	0.08	58.5	0.58	96.1	0.89
Canada	95.3	0.75	50.3	0.47	73.0	0.72	84.7	0.79
Italy	7.4	0.06	14.8	0.14	79.6	0.79	82.9	0.77
Turkmenistan	118.3	0.93	79.2	0.74	75.5	0.75	74.6	0.69
France	21.4	0.17	22.8	0.21	60.1	0.59	73.2	0.68
Greece	28.3	0.22	72.0	0.68	57.4	0.57	55.3	0.51
Lithuania	158.4	1.25	95.3	0.89	70.3	0.69	51.7	0.48
Poland	77.0	0.61	56.3	0.53	39.6	0.39	50.3	0.47
Moldova	225.6	1.78	102.7	0.96	52.1	0.51	40.0	0.37
Czech Republic	3.3	0.03	6.6	0.06	28.5	0.28	37.5	0.35
Georgia	151.1	1.19	35.7	0.33	34.2	0.34	37.3	0.35
United Kingdom	4.2	0.03	15.1	0.14	26.8	0.26	36.2	0.34
Austria	17.1	0.14	21.4	0.20	26.4	0.26	34.7	0.32
Bulgaria	6.9	0.05	11.0	0.10	17.0	0.17	32.8	0.30
Australia	8.4	0.07	16.8	0.16	20.8	0.21	29.3	0.27
Azerbaijan	39.2	0.31	34.7	0.33	30.2	0.30	27.5	0.26
Türkiye	11.4	0.09	18.5	0.17	19.7	0.19	27.3	0.25
Switzerland	5.9	0.05	12.3	0.12	16.2	0.16	24.7	0.23
Sweden	5.1	0.04	6.5	0.06	14.4	0.14	22.2	0.21
Armenia	62.2	0.49	20.4	0.19	11.2	0.11	19.1	0.18
Norway	0.1	0.00	3.1	0.03	13.7	0.14	18.5	0.17
Finland	1.9	0.02	2.6	0.02	7.3	0.07	15.2	0.14
Cyprus	3.2	0.03	5.9	0.06	13.6	0.13	12.9	0.12
Romania	7.2	0.06	7.7	0.07	8.1	0.08	9.6	0.09

Compiled according to: United Nations Department of Economic and Social Affairs, Population Division. International Migrant Stock 2020.

Table 3 presents top 30 countries in terms of the number of ethnic Russians based on data from national statistical services of different countries and expert estimates from open sources (although, given the context of the article and the specifics of data collection, it would be more correct to speak not of ethnic Russians, but of people of Russian origin or with Russian roots).

Table 3. Distribution of ethnic Russians (persons of Russian origin) by country of residence (top 30 countries) for the year for which the data are available

Country of residence	Number of ethnic Russians, thousand people	Year for which the data are available
Ukraine	8334.0	2001
Kazakhstan	3512.9	2020
USA	2538.4	2020
Brazil	200.0–1 800.0*	2015
Israel	1216.7	2022
Germany	1213.0	2018
Uzbekistan	839.973	2019
Belarus	706.992	2019
Canada	548.145	2021
Türkiye	150.0–500.0	2022
France	100.0–500.0	2015–2022
Latvia	441.305	2021
Turkmenistan	314.000	2003
Estonia	306.801	2023
Argentina	300.0	2020
Kyrgyzstan	283.0	2022
Italy	170.0	2022
UAE	60.0–150.0	2021
Lithuania	141.100	2021
Moldova	112.0	2014
Australia	98.110	2021
Finland	93.535	2022
United Kingdom	50.0–90.0	2023
Spain	82.380	2022
Azerbaijan	71.0	2019
Belgium	70.0	2012
Austria	36.0	2018
Romania	36.0	2016
Tajikistan	35.0	2010
Sweden	32.0	2018

* According to the author of the book *Imigrantes russos no Brasil e seus descendentes* (Chnee, 2016), about 1.8 million descendants of Russian emigrants and refugees (including Russian Germans and Russian Jews) lived in Brazil in the 2010s. Compiled according to: Population, employment and living conditions in the countries of the Commonwealth of Independent States: Statistics Collection. (2023). Moscow: Interstate Statistical Committee of the CIS. P. 48; data from national statistical services of individual countries.

The data analysis shows a significant number of people of Russian origin living outside the Russian Federation. The largest number of ethnic Russians is concentrated in the countries of the former Soviet Union, such as Ukraine (8.334 million people), Kazakhstan (3.512 million) and Belarus (707 thousand). This is due to the historical resettlement and the presence of Russian communities in these regions. Outside the former USSR, significant Russian-speaking communities are also present in the USA (2.538 million), Germany (1.213 million) and Israel (1.217 million). These figures reflect waves of migration, including emigration for political and economic reasons.

Some countries, such as Brazil and Türkiye, demonstrate a wide range of estimates of the number of Russians (from 200 thousand to 1.8 million people in Brazil, and from 150 thousand to 500 thousand people in Türkiye), which indicates difficulties in accurate accounting and once again emphasizes a wide range of approaches to defining the concepts. European countries such as Latvia, Estonia and Lithuania also have significant Russian diasporas, which is associated with historical factors and migration processes.

In general, the data emphasize geographical diversity of Russian-speaking communities with their significant presence both in neighboring countries (Ukraine, Kazakhstan, Uzbekistan) and in other regions of the world, including North America (USA, Canada), Europe (Germany, France, Baltic countries) and the Middle East (Israel, Türkiye, UAE).

Conclusion

The analysis of the number and geographical distribution of Russian-speaking communities abroad is important for both science and practice. The results of the study demonstrate significant changes in migration processes related to the Russian-speaking diaspora over the past decades.

Special attention is paid to a reduction in the number of emigrants from Russia in the period from 1990 to 2020, which may be due to many factors, including economic and political transformations both in Russia and in the international arena.

However, despite this reduction, we should note that Russian-speaking communities still play an important role in the socio-economic and cultural life of their host countries. The largest communities are concentrated in neighboring countries, such as Ukraine and Kazakhstan, which indicates the preservation of close ties between these countries and Russia. Besides, the number of Russian-speaking emigrants in non-CIS countries, such as Germany and the United States, has increased significantly, indicating the global nature of migration processes.

At the same time, it is obvious that the methodological difficulties associated with assessing the number and characteristics of Russian-speaking communities require further close attention of researchers. This article illustrates a significant discrepancy in the figures presented in Russian and foreign sources, which makes it difficult to accurately estimate the number of Russian-speaking emigrants and their descendants. Moreover, modern forms of emigration, such as labor and episodic, significantly complicate migrants' registration and require revision of generally accepted approaches.

Traditional data have certain inertia, an inability to respond instantly to changes taking place in the world. It usually takes time to adjust such indicators, since they are collected and processed with a delay (statistics collection may even cease due to certain circumstances). This sometimes leads to a situation where data do not reflect current events in a timely manner and, accordingly, become useless for making timely decisions.

In this regard, when conducting such studies, it is necessary to take into account the role of alternative data sources: social media, various online platforms and mobile applications that can provide valuable information about the number and activity of Russian-speaking communities abroad. Such sources can complement traditional administrative data and expand the understanding of current trends and dynamics of the distribution of Russian-speaking migrants.

In conclusion, we emphasize the importance of research in this area. In the context of globalization and expanding migration processes, it is necessary to regularly clarify the number and geographical distribution of Russian-speaking communities abroad. This will make it possible to

more accurately assess the scale of migration and develop effective measures to support compatriots abroad, as well as to manage migration flows. Only an integrated approach to the study of Russian-speaking communities, including both traditional and innovative methods, will provide objective and relevant data necessary for the formation of public policy and strategic planning in this area.

Understanding the repatriation potential of Russian-speaking communities in key countries of their settlement will help to develop effective strategies for their return to Russia, design a balanced and reasonable migration policy that contributes to the sustainable socio-economic development of the country.

References

- Andryushchenko K.D. (2020). Analysis of the results of the transformation of Russian emigration at the present stage. *The Newman in Foreign Policy*, 1(52)(96), 15–18 (in Russian).
- Chnee I. (2016). *Imigrantes russos no Brasil e seus descendentes*. San Paulo.
- Denisenko M.B. (2003). Emigration from Russia according to foreign statistics. *Mir Rossii=Universe of Russia*, 12(3), 157–169 (in Russian).
- Dezhina I.G., Soldatova S.E., Ushakova S.E. (2020). Migration of researchers in the Baltic region: A forecast and factors. *Baltic Region*, 12(1), 115–131. DOI: 10.5922/2079-8555-2020-1-7
- Diamant J. (2017). Ethnic Russians in some former Soviet republics feel a close connection to Russia. *Pew Research Center*. Available at: <http://pewrsr.ch/2eHLrSS> (accessed: August 1, 2024).
- Gerasimova V.A. (2019). Russian compatriots abroad. *Postsovetskie issledovaniya*, 2(1), 904–922. DOI: 10.24411/2618-7426-2019-00009 (in Russian).
- Gritsanov A.A., Abushenko V.L., Evel'kin G.M., Sokolova G.N., Tereshchenko O.V. (2003). *Sotsiologiya: entsiklopediya* [Sociology: Encyclopedia]. Minsk: Knizhnyi Dom.
- Iontsev V.A., Lebedeva N.M., Nazarov M.V. (2001). *Emigratsiya i repatriatsiya v Rossii* [Emigration and Repatriation in Russia]. Moscow: Popechitel'stvo o nuzhdakh ros. repatriantov.
- Iontsev V.A., Ryazantsev S.V., Iontseva S.V. (2016). Emigration from Russia: New trends and forms. *Ekonomika regiona=Economy of Region*, 12(2), 499–509. DOI: 10.17059/2016-2-15 (in Russian).
- Korobkov A.V. (2020). Russian academic diaspora: Its scale, dynamics, structural characteristics, and ties to the RF. In: *Migration from the Newly Independent States: 25 Years after the Collapse of the USSR*. DOI: 10.1007/978-3-030-36075-7
- Lewis M.P., Simons G.F., Fennig C.D. (2014). *Ethnologue: Languages of Africa and Europe*. SIL International.
- Medvedeva T.A., Bushueva S.V. (2016). The Russian diaspora of the twentieth century: The features of formation, adaptation and preservation of the national identity of Russian emigration. *Vestnik Nizhegorodskogo universiteta im. N.I. Lobachevskogo*, 2, 32–41 (in Russian).

- Osadchaya G.I., Yudina T.N., Volkova O.A., Kireev E.Y. (2023). Return migration from Russia to Kyrgyzstan: Dynamics, causes, and structure. *Changing Societies & Personalities*, 7(3), 122–140. DOI: 0.15826/csp.2023.7.3.244
- Pismennaya E.E., Nioradze G.V. (2022). Emigration of Russian pensioners to Vietnam (and other countries of Southeast Asia). *The Russian Journal of Vietnamese Studies*, 6(4), 33–41. DOI: 10.54631/VS.2022.64-101666
- Ryazantsev S., Bragin A. (2023). The influence of political and economic factors on emigration from Russia to Europe. *Journal of Population & Social Studies*, 31, 152. DOI: 10.25133/JPSSv312023.009
- Ryazantsev S.V. (2016). Russian diaspora abroad or Russian speaking communities? *Sotsiologicheskie issledovaniya=Sociological Studies*, 12, 84–94 (in Russian).
- Ryazantsev S.V. (2017). Conceptual approaches and key concepts of emigration from Russia and Russian-appropriate population abroad. *Nauchnoe obozrenie. Seriya 2. Gumanitarnye nauki*, 6, 5–15. DOI: 10.26653/2076-4685-2017-6-01 (in Russian).
- Ryazantsev S.V., Grebenyuk A.A. (2014). “Nashi” za granitsei. *Russkie, rossiyanе, russkogovoryashchie, sootchestvenniki: rasselenie, integratsiya i vozvratnaya migratsiya v Rossiyu* [Our fellow-countrymen Abroad. Russians, Russian Speakers, Compatriots: Resettlement, Integration and Return Migration to Russia]. Moscow: ISPI RAN.
- Ryazantsev S.V., Khramova M.N. (2018). Factors of emigration from Russia: Regional features. *Ekonomika regiona=Economy of Region*, 14(4), 1298–1311. DOI: 10.17059/2018-4-19 (in Russian).
- Ryazantsev S.V., Pismennaya E.E. (2016). Emigration of scientists and highly qualified specialists from Russia: Trends, consequences and governmental policy. *Sotsiologiya=Sociology*, 4, 18–27 (in Russian).
- Ryazantsev S.V., Pismennaya E.E., Ochirova G.N. (2021). Russian-Speaking population in Far-Abroad countries. *Vestnik MGIMO-Universiteta=MGIMO Review of International Relations*, 14(5), 81–100. DOI: 10.24833/2071-8160-2021-5-80-81-100 (in Russian).
- Subbotin A., Aref S. (2021). Brain drain and brain gain in Russia: Analyzing international migration of researchers by discipline using Scopus bibliometric data 1996–2020. *Scientometrics*, 126(9), 7875–7900. DOI: 10.1007/s11192-021-04091-x
- Subbotin A.A. (2021). The scale of migration from Russia (based on American and Russian statistical data). *Sotsial'no-gumanitarnye znaniya*, 6, 329–335. DOI: 10.34823/SGZ.2021.6.517735 (in Russian).
- Subbotin A.A. (2024). *Mezhdunarodnaya intellektual'naya migratsiya v Rossii: vyzovy i perspektivy* [International Intellectual Migration in Russia: Challenges and Prospects]. Moscow: Znanie-M. DOI: 10.38006/00187-744-8.2024.1.272
- Sulpasso B., Piccolo L., Accattoli A. (2023). Thirty years of studies on Russian emigration to Italy. *Studi Slavistici*, 181–198. DOI: 10.36253/Studi_Slavis-14993
- Sushchiy S.Ya. (2020). The Russian population of the near abroad: Geodemographic dynamics of the post-Soviet period. *Demograficheskoe obozrenie=Demographic Review*, 7(2), 6–30 (in Russian).
- Uryadova A. (2024). Russian diasporas of the Near Abroad in the Post-perestroika period: Phantom or reality? *Quaestio Rossica*, 12(1), 96–109. DOI: 10.15826/qr.2024.1.867 (in Russian).
- Vorobieva O.D., Grebenyuk A.A. (2017a). Comparative analysis of domestic and foreign statistics on the emigration of Russian citizens. *Voprosy statistiki*, 9, 64–73 (in Russian).
- Vorobieva O.D., Grebenyuk A.A. (2017b). Emigration from Russia according to national statistics. *Voprosy statistiki*, 11, 44–53 (in Russian).

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Sustainability of Digital and Non-Digital Forms of Employment: Comparative Assessments



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Abstract. Modern theoretical and practical views on the impact of digitalization on welfare and quality of working life are controversial and fragmentary. The effectiveness of the application of digital social and labor relations is considered in scientific publications, as a rule, outside the context of sustainability. The aim of the work is to identify differences between digital and non-digital employment according to the criteria of sustainability in the context of standard and non-standard forms of social and labor relations. Key tasks are to develop our own methodology for assessing the sustainability of employment forms; carry out comparative and rating assessment of the sustainability of digital and non-digital forms of employment based on objective and subjective indicators. Empirical basis includes the results of a nationwide survey of able-bodied population aged 20 to 59, N = 2,896 people, quota sample. Key controlled features are sex and type of residence area (region's administrative center, city, rural settlement). All federal districts are covered with the exception of the Southern Federal District. We reveal that, according to most indicators, digital standard and non-standard forms of employment are more stable than non-digital forms, they occupy 1st and 2nd places in the final ranking. Digital standard employment is inferior to non-digital standard employment only in terms of the ratio of labor income to subsistence minimum. According to other objective indicators, digital employment demonstrates either significantly better working conditions or comparable social effectiveness. Digital non-standard employment is significantly more sustainable than non-digital non-standard employment in terms of the ratio of labor income to subsistence minimum, probability of a normal working week and possibility of voluntary choice of afterhours. The non-digital format is more stable in terms of legitimacy of labor relations and possibility of voluntary choice of underemployment. Subjective assessments of the effectiveness of employment formats among respondents in the digital segment are higher in all indicators of sustainability, especially in terms of job satisfaction and financial situation. A promising direction for future research lies in conducting expert assessments of the significance of the proposed indicators for the development of an integrated index methodology for assessing employment sustainability.

Key words: employment, sustainable employment, digital employment, non-digital employment, non-standard employment, standard employment, sustainability indicators, methodology.

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Introduction

Sustainability is one of the key characteristics of modern living conditions, including labor relations. The problems of paid labor have recently become one of the vectors of the discussion on sustainable development. In recent decades, a vast array of Russian (Kuchenkova, Kolosova, 2018; Leonidova, Chekmareva, 2018; Bobkov et al., 2022) and foreign publications devoted to the problems of sustainable employment and the identification of the main criteria of unsustainability in the sphere

of labor have appeared. Sustainability is considered as a criterion of social efficiency of employment (Kolesnikova, 2010) and an important factor in shaping the labor world of the future (Littig, 2018).

In the context of digitalization, the academia and political circles more often recognize the importance of understanding the impact of information and communication technologies (ICTs) on efforts to sustainably transform societies (Azmuq, 2020). With the emergence of “digital

workplaces” (Lee, Sirgy, 2019), workers have two broad groups of flexibilities when using ICTs: time flexibility and workplace flexibility (Čiarnienė et al., 2018). Reversing the flexibilities are the risks of digitalization of working conditions in relation to sustainable employment security.

Although the digitalization of working conditions and sustainable development have been widely analyzed by the scientific community in recent years, the intersection of these two areas in a single focus of attention is quite rare. There are few studies devoted to both topics (Čiarnienė et al., 2018). The lack of research on the risks and opportunities of digital employment forms in the context of sustainability determines the novelty of the research question.

The aim of our study is to identify the differences between digital and non-digital employment by sustainability criteria in the context of standard and non-standard forms of social and labor relations.

The key tasks are the development of our own methodology for assessing the sustainability of employment forms on the basis of generalization and supplementation of existing theoretical provisions; testing of methodological tools on the materials of sociological survey of working Russians; comparative and rating assessment of the sustainability of digital and non-digital employment forms by objective and subjective indicators, taking into account the parameter “standardness/non-standardness” of working conditions.

Our own methodological toolkit should integrate both objective and subjective approaches to test the hypothesis.

The study tested the following scientific hypothesis: digital employment forms have greater sustainability compared to non-digital forms.

Theoretical background of the research

Despite the extensive body of theoretical and practical research, the literature has underdeveloped a unified approach to the definition of the concept of “sustainable employment”. The substantive

interpretation of the concept of “sustainable employment” is formulated on the basis of the semantic opposite of the terms sustainability/unsustainability. Sustainable employment is employment that have no instability signs.

As defined by the International Labour Organization (ILO), precarious employment is “work performed in the formal and informal economy that is characterized by uncertainty about the duration of employment, multiple possible employers or hidden/ambiguous employment relationships, lack of access to social protection and benefits normally associated with employment, low pay, and significant legal barriers to unionization and collective bargaining. Insecure employment is used by employers as a way of reducing the workforce, increasing its flexibility and shifting responsibility for possible risks to the workers themselves”¹.

Western studies of the parameters of employment precariousness conducted in the late 20th – early 21st century consider the concept of “sustainable employment” in the context of standard/non-standard labor relations (Rodgers, 1989). From this perspective, sustainable employment is characterized by a single employer, year-round employment and full-time employment. Sustainable employment involves working on the employer’s premises using the employer’s means of production, an open-ended contract and the provision of state-guaranteed benefits and rights (Cranford et al., 2003).

The generalization of definitions of precarious employment in 63 review articles by foreign authors (Kreshpaj et al., 2020) showed that modern foreign researchers refer to the lack of job security; insufficient income; lack of rights and social

¹ Policies and regulations to combat precarious employment (2011). *International Labour Organization*. 48 p. Available at: http://www.ilo.org/wcmsp5/groups/public/@ed_dialogue/@actrav/documents/meetingdocument/wcms_164286.pdf

protection as the main criteria of precarious employment. At the same time, a significant number of studies rely solely on income and employment status as criteria of precariousness, adhering to the view that the lack of a full-time and/or long-term contract is not a criterion of precariousness (Kreshpaj et al., 2020). In recent years, particular attention has been paid to study the characteristics of the relationship between precarious employment and workers' subjective well-being (Conigliaro, 2021), to identify the nature of the impact of precarious employment on work-family balance (Littig, 2008; Gálvez et al., 2020).

Russian scientists also have different approaches to defining the key properties of "unsustainable employment", noting that unsustainable employment is associated with negative effects for the employee (Kuchenkova, Kolosova, 2018) and lack of access to social guarantees (Bobkov et al., 2023). When analyzing the concept of "employment", A.M. Panov concludes that "sustainability along with regularity are not mandatory characteristics of employment, so the division into 'sustainable' and 'unsustainable' employment is based on its ability to preserve or not to preserve its quantitative and qualitative characteristics under the influence of external causes" (Panov, 2016, p. 3).

In general, Russian scientific discourse identifies the sustainable employment on the basis of the analysis of the criteria of the form of the employment contract and employment conditions; sustainable employment is recognized as work with the following characteristics: "open-ended employment contract, standard working hours (full working day, normal working week), provision of labor and social guarantees provided by the Labor Code of the Russian Federation" (Bobkov et al., 2023).

The scientific publications have an essential intersection of the concepts of unstable and precarious employment. Some researchers consider them as synonyms (Marin, 2013; Bobkov et

al., 2016; Veredyuk, 2016), it is proposed to consider unstable/precarious employment as a multidimensional construct with a number of unfavorable characteristics of employment quality (Kreshpaj et al., 2020). Other scholars distinguish these concepts (Standing, 2014). For example, A.M. Panov, analyzing the concept of G. Standing (Panov, 2016), draws attention to the fact that the distinguishing characteristics of precariat are employment in the informal sector and the threat of job loss, while precarity becomes an attribute of employment in the formal sector.

In recent years, the emerging studies (Kuchenkova, Kolosova, 2018; Bobkov et al., 2023) use an integrated approach to analyze objective and subjective signs of employment instability.

Taking into account the above-mentioned formulations of the criteria of unsustainable employment based on the materials of foreign and Russian publications, we have summarized them into a classification list (*Tab. 1, 2*).

The systematization of scientific publications reveals differences both in the number of criteria identified and the possibility of their use in different national contexts. For example, it is noteworthy that in the concepts of precarious employment formulated by foreign researchers, one of the key criteria of employment sustainability is the possibility of defending employee rights through trade unions. In Russian conditions, this criterion cannot be used, as the degree of unionization of enterprises and industries does not allow assessing the bargaining power of employees (Panov, 2016, p. 5).

In general, the existence of different methodological approaches to the study of sustainable / unsustainable employment indicates the multidimensionality of this phenomenon. Some forms of digital social and labor relations (e.g., platform and self-employment) are defined as a type of employment with high risks of precarious and unsustainable labor relations. Nevertheless, we did

Table 1. Objective criteria of employment sustainability in the concepts of Russian and foreign researchers

Sustainability/unsustainability attributes	Formulation of criteria	Authors
1. Labor relations 1.1. Term of employment contact	Unstable employment (no long-term contract). Part-time employment under contract. Temporary employment/work (fixed-term contracts, temporary agency work, seasonal work or outsourced and subcontracted work). Temporary employment (frequent job changes). Seasonal, casual, day labor. Employment during the probationary period / internship period.	(Standing, 2011); (Kreshpaj et al., 2020); (Rodgers, 1989); (Bobkov et al., 2018) (Kuchenkova, Kolosova, 2018); (Odintsova, 2018); (McKay et al., 2011)
	Urgent employment. Work “on call”. Hourly employment contract (zero hours contract).	(Lewchuk et al., 2013); (McKay et al., 2011)
1.2. Type of employment relationships	Lack of labor rights. Unofficial employment, job without an employment record book, employment agreement, contract. Employment on the basis of civil law relations. Involuntary nature of the employment relationship. Multilateral (e.g. agency) or hidden employment relations. Multiple employment. Self-employment. Platform employment.	(McKay et al., 2011); (Kuchenkova, Kolosova, 2018); (Bobkov et al., 2018); (Rodgers, 1989); (Lewchuk et al., 2013); (Kreshpaj et al., 2020)
2. Labor conditions 2.1. Income / remuneration of labor / salary	Unofficial (partially or fully) payment of labor (in-cash). Insufficient (low and/or unstable) income; income from main employment does not provide a sustainable financial situation; wage level is below the minimum wage. Reduction of wages / salary reduction by the employer not at the will of the employee. Wage arrears / underpaid wages and salaries.	(Kreshpaj et al., 2020); (Lewchuk et al., 2013); (Bobkov et al., 2023); (Kuchenkova, Kolosova, 2018)
2.2. Working hours	Lack of control over working hours. Part-time employment (involuntary part-time work/reduction of working hours not at the will of the employee, working week of 15–20 hours, job sharing between several employees).	(McKay et al., 2011); (Kuchenkova, Kolosova, 2018)
	Instability in the length of the working week.	(Lewchuk et al., 2013)
	Deviating from standard working hours (under- and over-employment).	(Bobkov, Odintsova, Podvoiskii, 2023)
2.3. Work schedule	Unstable and unpredictable work schedule. Lack of control over the schedule.	(Lewchuk et al., 2013); (McKay et al., 2011)
2.4. Safe working conditions	Inadequate and/or hazardous working conditions.	(Kuchenkova, Kolosova, 2018); (McKay et al., 2011)
2.5. Workplace	Home-based employment. It is possible to change the workplace at the employer’s request.	(Rodgers, 1989); (Standing, 2011)
2.6. Employment guarantees	Lack of rights to social guarantees and benefits typical of sustainable employment (state and corporate). Lack of social security system. Involuntary unpaid leave at the initiative of the employer. No paid vacation during the year.	(Lewchuk et al., 2013); (Standing, 2011); (McKay et al., 2011); (Bobkov, Odintsova, Podvoiskii, 2023); (Kuchenkova, Kolosova, 2018)
2.7. Standing up for labor rights through trade unions	Lack of rights and social protection (no access to employee representation through independent trade unions, regulatory support and workplace rights).	(Kreshpaj et al., 2020); (McKay et al., 2011); (Lewchuk et al., 2013)
2.8. Promotion / career growth	Lack of career prospects. Lack of on-the-job training opportunities to develop professional skills and competencies. Low degree of independence and variability of tasks. Lack of professional self-identification	(Lewchuk et al., 2013); (Standing, 2011); (McKay et al., 2011)
Source: own compilation.		

Table 2. Subjective criteria of employment instability in the concepts of Russian and foreign researchers

Sustainability/unsustainability attributes	Formulation of criteria	Authors
1. Labor relations	Sense of uncertainty in the employment relationship.	(Shkaratan et al., 2015); (Vorobyova, 2021)
2. Employment guarantees	Fear of losing a job / subjective feeling of job insecurity / feeling of unreliability of labor relations / presence of concern among employees about losing their job, desire to find a new job.	(Shkaratan et al., 2015); (Chuikova, Sotnikova, 2016); Vorobyova (2021); (Bobkov et al., 2023); (Kuchenkova, Kolosova, 2018)
3. Remuneration of labor	Employees' dissatisfaction with labor remuneration.	(Bobkov et al., 2023)
4. Labor conditions	Employees' dissatisfaction with working conditions.	(Bobkov et al., 2023)
5. Social status	Subjective perception of social status.	(Zudina, 2013)
6. Satisfaction with life	Employee's self-assessment of life and job satisfaction as an integral indicator of advantages and limitations of the form of employment.	(Aistov, Leonova, 2011); (Aistov et al., 2012)
Source: own compilation.		

not find any comprehensive comparative studies of the sustainability of digital and non-digital employment, which confirms the relevance and novelty of the question we have posed.

Methods and materials

The generalization of theoretical and practical research results on the issues of risks, sustainability and precarization of employment allowed formulating our own methodological approach to assessing the sustainability level of different employment forms. The selection of criteria for the indicative methodology for assessing the sustainability of employment forms was based on the classification list of employment instability criteria presented in the concepts of Russian and foreign researchers (see Tab. 2), taking into account the frequency of references. The methodological core of our toolkit was based on the findings of the research team led by Doctor of Sciences (Economics), Professor V.N. Bobkov, namely, a complex block system of indicators covering the attributes of labor relations and working conditions, labor status and employment satisfaction (Bobkov et al., 2022).

We understand the sustainable employment not only as the standard employment models (open-ended employment contract, standard working hours, social guarantees in accordance with the Labor Code of the RF), but also non-standard ones, if they are chosen by the employee voluntarily and meet their life needs.

A distinctive feature of our methodology is its focus on the "positive" type of indicators. For example, the criterion "income/payment of labor" in the block of objective criteria is considered not as an indicator of precarious employment according to the methods (Kreshpaj et al., 2020; Kuchenkova, Kolosova, 2018, etc.), but as an indicator of sustainability. We agree with the arguments of V.N. Bobkov, E.V. Odintsova and G.L. Podvoyskii (2023) that in addition to the size of labor income it is important to take into account the ratio of income to the minimum wage, so the list of objective indicators of the sustainability of employment forms includes the criterion "the ratio of labor income to the minimum wage of the working-age population" (Tab. 3).

Table 3. Indicative methodology for assessing the sustainability of employment forms

Objective indicators		
Criterion	Indicator	Calculation
1. Ratio of labor income to the minimum subsistence level of working-age population	Coefficient of the ratio of labor income to the minimum wage level of the able-bodied population in the i-th region (C_{ii})	$1. C_{ii} = R_{av.inc.i} / MW_i,$ <p>where i – regions: CFD, NWFD, NCFD, VFD, UFD, SibFD, FEFD, SFD; $R_{av.inc.i}$ – average monthly income of respondents in i-th region MW_i – minimum wage of working-age population in i-th region.</p> $2. C_{in} = \frac{\sum_i = C_{ii} \times d_i}{100}$ <p>where C_{in} – average labor income coefficient of respondents of n-th employment group; n – employment groups: digital standard, digital non-standard, non-digital standard, non-digital non-standard (there may be other groupings); d i – share of respondents from i-region</p>
2. Legitimacy of employment contracts	Formal employment rate (R_{EC}), %	$R_{EC} = N_{EC} / N_e \times 100,$ <p>where N_{EC} – number of those employed with formal employment contracts N_e – number of employed</p>
3. Prevalence of permanent employment relationships	Permanent employment rater (R_{pe}), %	$R_{pe} = N_{pe} / N_e \times 100,$ <p>where N_{pe} – number of employed persons with permanent jobs</p>
4. Prevalence of the normal working week	Share of employees with a normal working week according to the Labor Code of the RF (S_{E40h}), %	$S_{E40h} = N_{e40/36h} / N_e \times 100,$ <p>where N_{e40h} – number of employees working 40/36 hours per week</p>
5. Frequency of voluntary choice of underemployment	Voluntary underemployment rate (R_{VUE}), %	$R_{VUE} = N_{Bms} / N_{ue} \times 100,$ <p>where N_{Vue} – number of employees working less than 40/36 hours per week on their own initiative N_{ue} – number of underemployed</p>
6. Frequency of voluntary choice of over-employment	Voluntary overemployment rate (R_{VOE}), %	$R_{VOE} = N_{Voe} / N_{oe} \times 100,$ <p>where N_{Voe} – number of employees working more than 40/36 hours per week on their own initiative N_{oe} – number of overemployed</p>
Subjective indicators		
Criterion	Indicator	Calculation
1. Job satisfaction	Job satisfaction rate ($R_{Job\ satisf.}$), %	$R_{Job\ satisf.} = N_{Job\ satisf.} / N_e \times 100,$ <p>where $N_{Job\ satisf.}$ – number of employed people satisfied with their jobs</p>
2. Satisfaction with financial position	Financial satisfaction rate ($R_{fin.satisf.}$), %	$R_{fin.satisf.} = N_{fin.satisf.} / N_e \times 100,$ <p>where $N_{fin.satisf.}$ – number of employed people satisfied with their financial situation</p>
3. Satisfaction with life in general	Rate of life satisfaction in general ($R_{Life\ satisf.}$), %	$R_{Life\ satisf.} = N_{Life\ satisf.} / N_e \times 100,$ <p>where $N_{Life\ satisf.}$ – number of those satisfied with life in general in the workforce</p>
4. Happiness index	Share of happy people in employment (S_{Happy}), %	$S_{Happy} = N_{Happy} / N_e \times 100,$ <p>where N_{Happy} – number of people who consider themselves happy</p>
Source: own compilation.		

The expert environment considers an income comparable to one times the minimum wage (MW) as the poverty line, while two times – as the poverty line. A single worker with an income of three times the MW is at the entry level of the average standard of living. A decent wage for a working parent should ensure the possibility of supporting at least one dependent, which implies an income level of 5–6 minimum wages. However, in Russia there are problems of underestimation of the cost of labor and high differentiation of labor income. The established value of the minimum wage for working-age population was 16,844 rubles in the country as a whole for 2023². The median wage is 46,751 rubles; the average monthly accrued wage of salaried employees is 57,210 rubles³. The ratio of the average monthly wage to the minimum wage is 3.4 times. We chose a threefold ratio of wages to the minimum wage level of working-age population as a threshold value taking into account the current economic realities. The employment form is considered sustainable by this parameter if the ratio exceeds threefold value (more than 3.0).

The next important feature of the methodology is a three-aspect consideration of the parameter “working hours”. First, we estimate the probability of a normal working week according to the Labor Code of the Russian Federation (no more than 36/40 hours per week, depending on the professional profile). Second, we propose to take into account the circumstances of part-time work and to include only the risk of forced underemployment (at the employer’s initiative) as negative factors; the possibility to work part-time by one’s own choice is a sign of sustainable employment. The third aspect is represented by the indicator of “voluntary choice

of over-employment”, i.e. working more than the normal working hours (36/40 hours per week). Those who work beyond the normal working hours on their own initiative for reasons not related to the lack of labor income are not considered to be unsustainably employed. “Voluntariness” of the choice of non-standard working hours is relevant to consider in connection with the growth of individual entrepreneurship and self-employment, when workers independently set their working hours in accordance with their personal vector of self-actualization.

The block of subjective indicators of employment sustainability (see Tab. 3) combines and somewhat expands the methodologies of Russian researchers. The indicators “job satisfaction” (Bobkov et al., 2023) and “satisfaction with life in general” (Aistov et al., 2011; Aistov et al., 2012) are supplemented by the indicator the “share of the happy among the employed”. The basis is the following: the New Economics Foundation proposed the International Happiness Index as a measure of the “real” well-being of the population in 2006, since recently the goal of most people is to be happy and healthy instead of being rich. Studies of happiness at work among the employed population confirm the relevance of this criterion. Recently, Russia demonstrates a growing interest in the development and implementation of tools for managing employee happiness, which begin complementing / replacing traditional tools for managing staff satisfaction, engagement and loyalty⁴. The positions of “happiness director”, “happiness director and head of HR-brand”, etc. are appearing in the staff of large Russian companies.

The indicator “satisfaction with financial position” was introduced due to objective limitations of the empirical database. It is advisable to

² Information on the minimum wage level. *Official website of the Federal State Statistics Service*. Available at: <https://rosstat.gov.ru/vpm>

³ Median salary calculated on the basis of administrative data of the Pension and Social Insurance Fund of the Russian Federation. *Official website of the Federal State Statistics Service*. Available at: https://rosstat.gov.ru/labour_costs

⁴ Who is the head of happiness? *Article in the portal HH.ru*. Available at: <https://ekaterinburg.hh.ru/article/32093>

replace it with “satisfaction with wages” in future studies. Nevertheless, a significant part of the working population considers labor income as the main source of income, which allows using this indicator as a measure of employment sustainability.

We purposely chose the “positive” type of relative metrics, which suggests that the metric should tend to the maximum; the higher the value of a particular indicator – the higher the employment sustainability rate. The principle of uniformity in the choice of metrics helps to subsequently conduct an integral assessment of the sustainability of any employment form, to perform a comparative analysis.

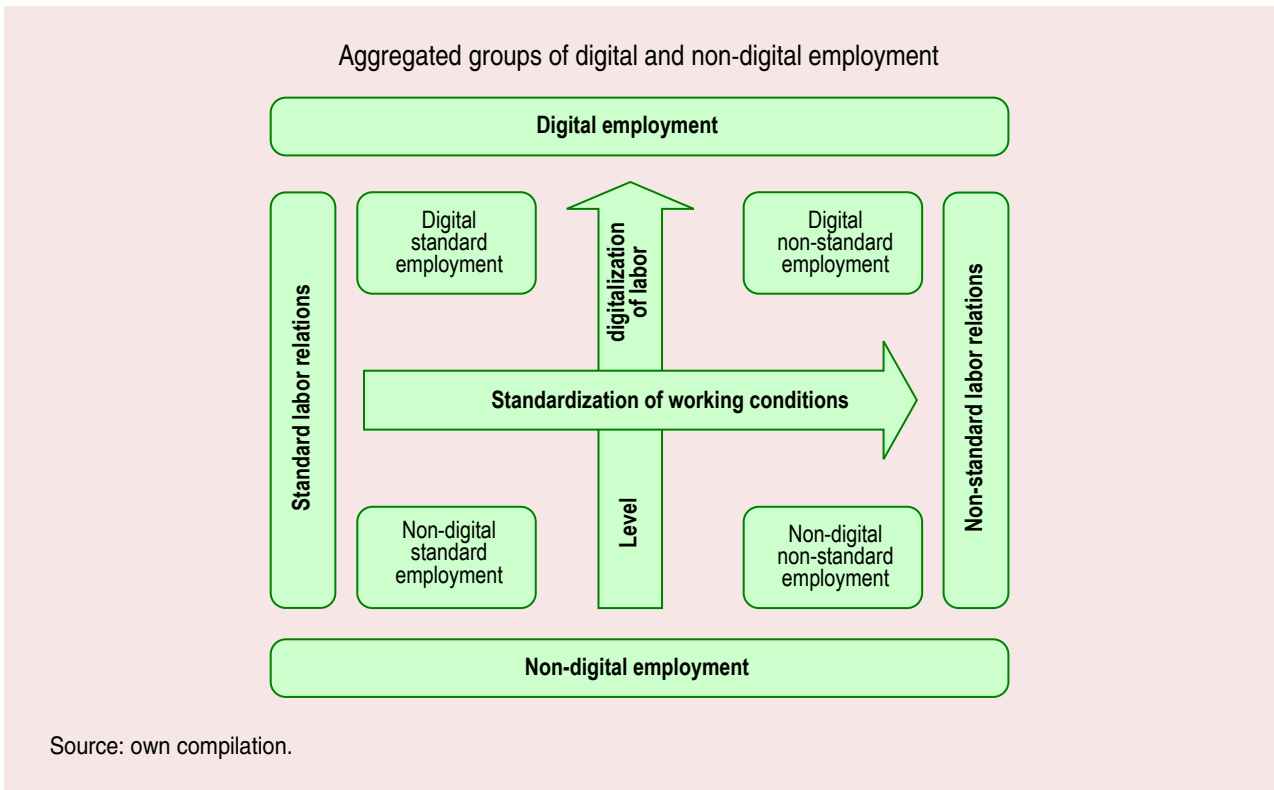
Practical application of the methodology on the materials of regular labor force surveys conducted by Rosstat is possible only in terms of the first four indicators included in the block of objective indicators in terms of gender, age, industry and professional structure of the employed. The full

application of the methodology requires special sociological research.

The empirical basis for testing our own methodological approach to assessing the sustainability of different employment forms was the data of the sociological all-Russian survey of the working-age population of the Russian Federation in the territories of all federal districts of the RF, except for the Southern Federal District, which is associated with the Special Military Operation (SMO) and the high level of anxiety among the target audience. The survey was conducted between November and December 2023, and 3,890 people aged 20–59 took part in it. The field research was conducted by the AO “Euro-Asian Center for Social Research”. The key controlled characteristics were the following: gender, type of residence area (administrative center of the region, city, rural settlement). In the context of the purpose and objectives of the study, we excluded from the realized sample those

Table 4. Characteristics of final sample respondents, %

Indicator	Meaning
Gender structure of respondents	
male	51.7
female	48.3
Employment structure of respondents	
has only a full-time job	95.3
has both a full-time job and additional part-time job	4.7
Respondent structure by age	
20–24 years	6.1
25–29 years	8.4
30–34 years	16.0
35–39 years	16.9
40–44 years	15.6
45–49 years	12.7
50–54 years	9.8
55–59 years	14.4
Respondent structure by place of residence	
Central FD	29.7
Northwestern FD	10.8
North Caucasus FD	7.9
Volga FD	22.8
Ural FD	9.0
Siberian FD	12.8
Far Eastern FD	7.0
Source: own compilation based on our own sociological study.	



respondents who were not working at the time of the survey and had only temporary jobs. The volume of the final sample amounted to 2,896 people (Tab. 4). The survey results were downloaded into Microsoft Excel format for further calculations.

The survey was conducted by the “face-to-face” method using a specially designed questionnaire, which included: 1) measurement questions for objective indicators; 2) measurement questions for subjective indicators; 3) identification questions for digital employment forms; 4) identification questions for working conditions to codify them into standard and non-standard ones.

We carried out the grouping of digital and non-digital forms according to our own classification (Kamarova, Tonkikh, 2023). Figure visualizes the classification.

Digital employment involves the intensive use of ICT and digital tools in the performance of work functions during the working day. Representatives of digital employment include IT specialists; specialists who use ICT intensively in the performance

of work; and workers who use online platforms and digital services in the performance of work.

Non-digital employment involves employment without the use of information and communication technologies and tools as an integral part of performing core labor functions.

Standard and non-standard segments of labor relations were identified on the basis of the generally accepted practice, when non-standard employment conditions are considered to be those in which at least one of the listed components of working conditions deviates from the following: employment in the employer’s staff with a labor contract; full-time work in accordance with the norms of the national labor legislation; stationary workplace is located on the employer’s territory or determined by the employer; start/end time of the working shift and work schedule are rigid. For example, non-standard is work for several employers on the basis of civil law contracts, home-based employment, self-employment, remote or hybrid work, platform employment.

Table 5. Respondents' structure by aggregated groups of digital and non-digital employment, %

Employment type	Employment format		Total
	Standard	Non-standard	
Digital employment	57.3	42.7	100.0
Non-digital employment	49.5	50.5	100.0

Source: own compilation based on our own sociological study.

Table 5 presents the respondent structure by employment forms in terms of standardization of working conditions.

In the digital segment, the standard nature of employment is significantly predominant, while in the non-digital segment, the shares of standard and non-standard employment are almost equal.

Results and discussion

Table 6 presents the results of calculations of employment sustainability assessment by objective criteria in aggregated employment groups according to our own methodology.

We did not determine the prevalence of permanent employment relationships, as all respondents in the final sample have permanent jobs, and there are no segmental differences in the level of availability of additional work in various employment groups.

The first place by the sustainability criterion **“ratio of labor income to the minimum wage”** is occupied by the standard segment of non-digital employment – labor income exceeds the subsistence minimum by 4.4 times. There is an acute shortage

of workers in the labor market, which, against the background of increasing defense orders for the SMO, leads to an increase in wages for working professions. In the digital segment of employment by the level of labor income only non-standard employment can be recognized as sustainable. The standard digital form is unstable, the ratio is less than 3.0. We assume that non-standard working conditions in the digital segment of employment (e.g., remote format of work) provide flexible opportunities for combining the main and additional work, thereby increasing labor income. The high level of “frequency of voluntary choice of over-employment” in the non-standard group of digital workers speaks in favor of this assumption (25.4%).

In general, a pairwise comparison of objective sustainability indicators of digital and non-digital employment forms in comparable groups by characteristics of social and labor relations showed that digital employment is more sustainable than non-digital employment by most objective social indicators.

Table 6. Results of employment sustainability assessment by objective criteria in aggregated groups of digital and non-digital employment, %

Criterion	Digital employment		Non-digital employment	
	Standard	Non-standard	Standard	Non-standard
Ratio of labor income to the minimum wage level of the working-age population	2.6	3.0	4.4	2.6
Legitimacy of labor relations	95.7	64.1	91.1	74.6
Prevalence of normal working week duration	81.9	38.4	77.4	29.5
Frequency of voluntary choice of underemployment	95.7	86.5	60.7	90.0
Frequency of voluntary choice of over-employment	13.7	25.4	16.1	18.3

Source: own compilation based on the materials of our own sociological research.

Table 7. Assessment of employment sustainability by subjective criteria in aggregated groups of digital and non-digital employment, %

Criterion	Digital employment		Non-digital employment	
	Standard	Non-standard	Standard	Non-standard
Job satisfaction	90.5	86.6	64.9	69.9
Satisfaction with financial situation	55.1	60.5	45.8	49.5
Happiness index	95.9	92.8	89.3	87.0
Satisfaction with life in general	88.4	84.8	83.7	80.4

Note. In calculations of job satisfaction and happiness index, we determined the total frequency of “yes” and “more likely yes than no” answers to the corresponding questions: “Can we say that you are satisfied with your job?” and ‘In your opinion, are you happy?’. To calculate the indicators “satisfaction with financial position and “satisfaction with life in general” the group of satisfied respondents includes those who marked 10, 9, 8 or 7 points on a scale from 1 to 10, where 10 is the highest degree of satisfaction.
Source: own compilation based on the materials of our own sociological research.

The results of calculations of employment sustainability assessment by subjective criteria show that digital employment forms are leading in all parameters (Tab. 7).

It is worth noting that respondents of digital employment formats significantly more often than those in the non-digital segment chose the unambiguously affirmative answer “yes”: 54.9% and 61.9%, respectively. The group of digital non-stand-

ard employment has the highest frequency of choosing the maximum points (10 points) to the question “How satisfied are you with your life in general at present?”, it is 36.8%, and digital standard employment the lowest – 29.7% (non-digital standard – 31.5%; non-digital non-standard – 30.9%).

Table 8 summarizes the final and partial ranking positions of the employment forms according to the sustainability indicators.

Table 8. Rating of sustainability of employment forms, position number

Indicator	Digital employment		Non-digital employment	
	Standard	Non-standard	Standard	Non-standard
Objective indicator				
Ratio of labor income to the minimum wage level of the working-age population	4	2	1	3
Legitimacy of labor relations	1	4	2	3
Prevalence of normal working week duration	1	3	2	4
Frequency of voluntary choice of underemployment	1	3	4	2
Frequency of voluntary choice of over-employment	4	1	3	2
Average place	2.2	2.6	2.4	2.8
Position in the rating of objective indicators	1	3	2	4
Subjective indicators				
Job satisfaction	1	2	4	3
Satisfaction with financial situation	2	1	4	3
Happiness index	1	2	3	4
Satisfaction with life in general	1	2	3	4
Average place	1.3	1.8	3.5	3.5
Position in the rating of subjective indicators	1	2	3	3
Final place in the ranking	1	2	3	4

Source: own compilation.

Conclusion

The testing of our own methodology proved its viability for conducting a comparative analysis of the sustainability of digital and non-digital employment forms in the context of standard and non-standard types of social and labor relations. The advantages of the proposed approach are in the use of “positive indicators” and taking into account the factor of “voluntariness” of choosing non-standard social and labor relations.

We reveal that such types of employment as digital standard and non-standard took the first positions in the final ranking of sustainability of employment forms.

Pairwise comparative analysis of objective indicators of the effectiveness of digital and non-digital employment by sustainability criteria in the context of standard and non-standard forms of social and labor relations allows noting the following.

1. Digital standard employment is significantly inferior to non-digital standard employment by the economic criterion of the ratio of labor income to the minimum wage (1.7 times). According to other indicators, digital employment demonstrates either significantly better working conditions (legitimacy of labor relations, length of the working week, voluntary choice of underemployment) or comparable social efficiency (probability of voluntary choice of over-employment).

2. Digital non-standard employment is significantly more sustainable than non-digital non-standard employment in terms of the ratio of labor income to the minimum wage, the probability of a normal working week and the possibility of voluntary choice of over-employment. The non-digital format is more sustainable in terms of the legitimacy of labor relations and the possibility of voluntary choice of underemployment.

Comparative analysis of the effectiveness of employment forms by subjective indicators of sustainability revealed the advantage of digital formats by all criteria, the most striking difference is observed in the indicators of job satisfaction and financial position. The social advantages of non-standard labor relations in both digital and non-digital segments are expressed in job satisfaction under flexible working conditions.

The proposed methodology is universal and can be adapted to assess the sustainability of other employment forms, which were out of the focus of our study. We see the addition of indicators of numerical inequality between the parameters of urban and rural employment to the methodology and expert survey of leading specialists in economics and sociology of labor to prioritize the list of criteria of employment sustainability for integral assessments as promising areas for future research. The development of an index integral methodology for assessing the sustainability of employment forms will make it possible to carry out monitoring studies.

References

- Aistov A.V., Larin A.V., Leonova L.A. (2012). Informal employment and life satisfaction: Empirical analysis taking into account endogeneity. *Prikladnaya ekonometrika*, 2(26), 17–36 (in Russian).
- Aistov A.V., Leonova L.A. (2011). *Udovletvorennost' zhizn'yu i rabotoi, svyaz' s nezaregistrirrovannoi zanyatost'yu: preprint WP15/2011/04* [Life and Job Satisfaction, Association with Unregistered Employment: Preprint WP15/2011/04]. Moscow: Izd. Dom Vyshei shkoly ekonomiki.
- Azmuk N.A. (2020). Digital employment in the system of regulation of the national economy. *The Problems of Economy*, 1(43), 52–58. DOI: 10.32983/2222-0712-2020-1-52-58
- Bobkov V.N. et al. (2019). *Neustoichivaya zanyatost' v Rossiiskoi Federatsii: teoriya i metodologiya vyyavleniya, otsenivanie i vektor sokrashcheniya: monografiya. 2-e izd., ster.* [Unsustainable Employment in the Russian

- Federation: Theory and Methodology of Identification, Assessment and Vector of Reduction: Monograph. 2nd Edition, ster.]. Moscow: KNORUS.
- Bobkov V.N., Kvachev V.G., Loktyukhina N.V. (2016) Unstable employment: The economic and sociological genesis of the concept. *Bulletin VSU, Ser. Economics and Management*, 4, 81–86.
- Bobkov V.N., Odintsova E.V., Ivanova T.V., Chashchina T.V. (2022). Significant indicators of precarious employment and their priority. *Uroven' zhizni naseleniya regionov Rossii=Living Standards of the Population in the Regions of Russia*, 18(4), 502–520. DOI: 10.19181/lsprr.2022.18.4.7 (in Russian).
- Bobkov V.N., Odintsova E.V., Podvoiskii G.L. (2023). Sustainable and precarious employment in the Russian Federation. *Mir novoi ekonomiki=The World of New Economy*, 17(3), 109–124. DOI: 10.26794/2220-6469-2023-17-3-109-124 (in Russian).
- Chuykova T.S., Sotnikova D.I. (2016). Attitude to work under the conditions of insecure employment. *Organizatsionnaya psikhologiya=Organizational Psychology*, 6(1), 6–19 (in Russian).
- Čiarnienė R., Vienažindienė M., Adamonienė R. (2018). Implementation of flexible work arrangements for sustainable development. *European Journal of Sustainable Development*, 7(4), 11–11.
- Conigliaro P. (2021). Between social sustainability and subjective well-being: The role of decent work. *Social Indicators Research*, 157(1), 139–174.
- Cranford C.J., Vosko L.F., Zukevich N. (2003) Precarious employment in the Canadian labor market: A statistical portrait. *Just Labor*, 3. Available at: <http://www.justlabour.yorku.ca/volume3/pdfs/cranfordetal.pdf>
- Gálvez A., Tirado F., Martínez M.J. (2020). Work–life balance, organizations and social sustainability: Analyzing female telework in Spain. *Sustainability*, 12(9), 3567.
- Josten C., Lordan G. (2020). Robots at work: Automatable and non-automatable jobs. In: Zimmermann K. (Ed.). *Handbook of Labor, Human Resources and Population Economics*. Cham: Springer.
- Kamarova T.A., Tonkikh N.V. (2023). Digitalization of employment: The conceptual apparatus. *MIR (Modernizatsiya. Innovatsii. Razvitie)=MIR (Modernization, Innovation, Research)*, 14(4), 554–571 (in Russian).
- Kolesnikova O.A. (2010). Effective employment as the basis for an efficient economy. *Vestnik Voronezhskogo gosudarstvennogo universiteta. Seriya: Ekonomika i upravlenie*, 2, 42–44 (in Russian).
- Kreshpaj B., Orellana C., Burström B. et al. (2020). What is precarious employment? A systematic review of definitions and operationalizations from quantitative and qualitative studies. *Scandinavian Journal of Work, Environment & Health*, 46(3), 235–247.
- Kuchenkova A.V., Kolosova E.A. (2018). Differentiation of workers by features of precarious employment. *Monitoring obshchestvennogo mneniya: Ekonomicheskie i sotsial'nye peremeny=Monitoring of Public Opinion: Economic and Social Changes*, 3, 288–305. DOI: 10.14515/monitoring.2018.3.15 (in Russian).
- Lee D.J., Joseph Sirgy M. (2019). Work-life balance in the digital workplace: The impact of schedule flexibility and telecommuting on work-life balance and overall life satisfaction. In: *Thriving in Digital Workspaces: Emerging Issues for Research and Practice*. Available at: https://doi.org/10.1007/978-3-030-24463-7_18
- Leonidova G.V., Chekmareva E.A. (2018). Precarious employment as a barrier to effective implementation of employment potential. *Problemy razvitiya territorii=Problems of Territory's Development*, 1(93), 7–21. DOI: 10.15838/ptd/2018.2.93.1 (in Russian).
- Lewchuk W., Lafleche M., WoodGreen D.D. et al. (2013). *It's More than Poverty: Employment Precarity and Household Well-Being, Poverty and Employment Precarity in Southern Ontario*. Available at: <https://www.unitedwaygt.org/document.doc?id=91>
- Littig B. (2008). *Work Life Balance – Catchword or Catalyst for Sustainable Work?* Reihe Soziologie. Institut für Höhere Studien, Abt. Soziologie.
- Littig B. (2018). Good work? Sustainable work and sustainable development: A critical gender perspective from the Global North. *Globalizations*, 15(4), 565–579.
- Marin E. (2013). Precarious work: An international problem. *International Journal of Labour Research*, 5(1), 153.

- McKay S., Clark N., Paraskevopoulou A. (2011). *Precarious Work in Europe: Causes and consequences for the Agriculture, Food and Tourism sectors*. Working Lives Research Institute, London Metropolitan University. Available at: http://www.precarious-work.eu/sites/default/files/effat/files/publications/EFFAT_Study_on_Precarious_Work_EN.pdf
- Odintsova E.V. (2018). Indicators of precarious employment in the formal economy in Russia, quantitative evaluation. *Uroven' zhizni naseleniya regionov Rossii=Living Standards of the Population in the Regions of Russia*, 14(1), 7–14 (in Russian).
- Panov A.M. (2016). Precarious employment: Conceptualization of the term and assessment criteria. *Voprosy territorial'nogo razvitiya=Territorial development Issues*, 3(33). Available at: <http://vtr.isert-ran.ru/article/1894> (accessed: February 27, 2024; in Russian).
- Rodgers G. (1989). Precarious work in Western Europe: The state of the debate. In: *Precarious Jobs in Labour Market Regulation: The Growth of Atypical Employment in Western Europe*.
- Shkaratan O.I., Karacharovskiy V.V., Gasiukova E.N. (2015). Precariat: Theory and empirical analysis (polls in Russia 1994–2013 data). *Sotsiologicheskie issledovaniya*, 12, 99–110 (in Russian).
- Standing G. (2011). *The Precariat: The New Dangerous Class*. Bloomsbury academic.
- Standing G. (2014). Work after Globalization. Building Occupational Citizenship. Cheltenham, UK, and Northampton, MA, USA. Edgar Elgar: Book review. *Nordic Journal of Working Life Studies*, 75–80.
- Veredyuk O.V. (2016). Informal employment: Structure and risk determinants in Russia. *Vestnik SPbGU. Ser. 5, 4*, 33–48. Available at: <https://dx.doi.org/10.21638/11701/spbu05.2016.402> (accessed: April 7, 2004; in Russian).
- Vorobyova I.V. (2021). Precarization of youth in the field of social and labor relations. *Znanie. Ponimanie. Umenie*, 3, 100–112 (in Russian).
- Zudina A.A. (2013). Informal employment and subjective social status: The case of Russia. *Ekonomicheskaya sotsiologiya*, 14(3), 27–63 (in Russian).

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The Role of Entrepreneurship in Raising the Level of Relative Income and Subjective Well-Being of Farmers in China



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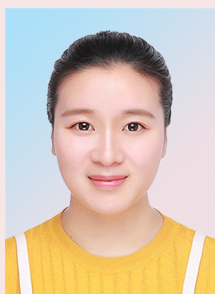
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Abstract. Entrepreneurship belongs to the category of initial distribution of income. The article raises questions whether entrepreneurship plays a positive role in the process of achieving the overall welfare of Chinese farmers, whether it contributes to increasing the level of their relative income and whether it can increase their subjective happiness. A theoretical hypothetical model “farmer entrepreneurship – relative income level – happiness” is constructed, and empirical analysis is carried out based on the data of the “Thousand Villages Survey” project, implemented by Shanghai University of Finance and Economics. First, we consider the impact of entrepreneurship on raising the level of relative income of Chinese farmers; then we analyze the impact of entrepreneurship on their sense of happiness. Finally, we use the mediator effect model to test the role of relative income level as a mediator in the process of influence of entrepreneurship on farmers’ sense of happiness. The study has found that across China entrepreneurship does indeed contribute to the increase in the level of farmers’ relative income, demonstrating the “enrichment effect”; it also contributes to the increase in their level of subjective sense of happiness, demonstrating the “happiness effect”; and the level of relative income plays a partial mediating role in this process. Thus, the sense of happiness of farmers engaged in entrepreneurship arises due to an increase in the level of their relative income and also due to the process of entrepreneurial activity itself. On this basis, it is recommended that state authorities and relevant structures actively promote the concept of “mass entrepreneurship and innovation” in rural areas, create a favorable environment for rural entrepreneurship, encourage farmers to become entrepreneurs, and promote the concept of “mass entrepreneurship and innovations” for rural entrepreneurship, encourage farmers to do business in order to increase their relative income and enhance their sense of happiness, thereby contributing to the overall financial and spiritual well-being of rural residents.

Key words: general well-being, farmer entrepreneurship, relative income level, sense of happiness.

Introduction

Entrepreneurship belongs to the category of initial distribution of income and is a distribution in which the income of an entrepreneur is directly related to such factors of production as labor, capital, land, knowledge, technology, management and costs invested in the business process. The article considers issues whether entrepreneurship is relevant in the process of achieving the general well-being of Chinese farmers¹, whether it contributes to an increase in their relative incomes² and whether it can increase their subjective happiness? The aim of the research is to determine the impact of entrepreneurship on increasing the relative incomes of Chinese farmers and enhancing their sense of happiness. The objectives of the work include the construction of a theoretical hypothetical model and conducting an empirical analysis based on data from the “Thousand Villages Survey”³ project implemented by the Shanghai University of Finance and Economics. First, the impact of entrepreneurship on increasing the relative incomes of farmers (the so-called “enrichment effect of farmers due to entrepreneurship”) is being investigated. Second, the influence of entrepreneurship on enhancing the sense of happiness of Chinese farmers (the so-called “happiness effect of farmers due to

entrepreneurship”) is being studied. Finally, using the mediator effect model, the role of the relative income level as a mediator in the process of influence of entrepreneurship on farmers’ happiness is tested⁴.

Currently, a significant amount of studies has been accumulated in the academic environment on the topic of farmer entrepreneurship, and some scientists have specifically considered the relationship between farmer entrepreneurship and happiness (Wang Qiong, Huang Weiqiao, 2020; Markussen et al., 2018), as well as between entrepreneurship of farmers and their incomes (Yuan Fang et al., 2019; Yu, Artz, 2019; Gu Jiarun, Xie Fenghua, 2012), however, the general relationship between farmer entrepreneurship, income level and happiness has been overlooked. In the presented article we aim to fill this gap. The novelty and contribution of the work are as follows: first, the role of the relative income level in the process of influence of entrepreneurship on farmers’ happiness is tested, it is found that entrepreneurship affects the happiness of farmers not only directly, but also indirectly, through the impact on their income levels; second, the important role of farmer entrepreneurship in promoting the general well-being and happiness among the rural population of China has been identified, which provides a theoretical basis for the development and improvement of policies to support entrepreneurship among farmers by the relevant authorities.

¹ Common prosperity is a political term of the People’s Republic of China, meaning that all members of society live happily, in prosperity and lead a wonderful cultural life in favorable financial circumstances. This is the main goal of the development of socialist market economy in China.

² Relative income is an income that is compared with incomes of other people; absolute income is an objective income that represents the actual income of an individual.

³ The “Thousand Villages Survey” project is a major social practical and research project organized by the Shanghai University of Finance and Economics, which focuses on the “three rural” issues. The questionnaire is usually addressed to farmers in rural areas.

⁴ The “enrichment effect” refers to the process of increasing individual wealth under the influence of certain factors. The “happiness effect” refers to the process of increasing an individual’s happiness level under the influence of certain factors.

Theory and hypotheses

The hypothesis of the “enrichment effect” of farmers-entrepreneurs

Farmer entrepreneurship⁵ is the process of adding value by the rural population of China by opening enterprises, creating farms or businesses of a certain scale or with certain characteristics, or engaging in individual commercial activities (Luo Mingzhong, Chen Ming, 2014). Research works on the relationship between entrepreneurship and farmers’ incomes tend to be negatively affected by the limited data of field studies covering China’s large rural population, which makes quantitative research difficult. Currently, conclusions on whether entrepreneurship contributes to increasing farmers’ incomes remain controversial. For example, (Gu Jiarun, Xie Fenghua, 2012), analyzing the data from statistical yearbooks, found that in the eastern and central regions of China entrepreneurship has a positive impact on the growth of farmers’ incomes, whereas in the western regions there is an inverse relationship. The research (Yuan Fang et al., 2019) demonstrated that farmer entrepreneurship contributes to poverty reduction only in the eastern and northeastern regions, and in the central and western regions this effect is insignificant. Therefore, the impact of farmer entrepreneurship on the income level requires further research, especially using the data of field studies covering rural areas of China.

Theoretically, entrepreneurial activities reorganize factors of production and marshal them, as well as resources, for achieving new goals, which, in turn, develops into social wealth with higher value (Guo Cheng, He Anhua, 2017). Farmers-

entrepreneurs, using factors such as their labor, creativity and natural resources, engage in entrepreneurial activities and gain income through the market exchange of products they produce or services they provide. As a rule, successful entrepreneurship can lead to an increase in the income level. For example, (Yu, Artz, 2019) investigated the choice of entrepreneurship among Americans with higher education and found that in the case of choosing rural entrepreneurship, their incomes were significantly higher than those of rural workers. However, it is worth noting that entrepreneurship is a high-risk economic activity. For example, rural entrepreneurship faces long manufacturing cycles, dependence on external factors such as weather, and often a lack of innovation. Entrepreneurship’s entry barriers lead to a high concentration of farmers in the same industries, to the phenomenon of homogeneity of products and services, and the general competitiveness of entrepreneurs remains low. Moreover, the probability of failure in business is quite high. According to statistics, in 2015–2016 the failure rate of farming startups in Heilongjiang Province was about 30% (Li Gang, 2018), which, on the contrary, could reduce the level of farmers’ incomes. However, due to entrepreneur-friendly policies (mass innovation, mass entrepreneurship), the business environment in rural areas of China is gradually improving. We assume that at the national level farmer entrepreneurship contributes to an increase in the relative income levels of farmers, which means that farmer entrepreneurship has an “enrichment effect”. Based on this, the first research hypothesis is put forward.

H1: Entrepreneurship contributes to an increase in the relative incomes of Chinese farmers and has an “enrichment effect”.

⁵ A farmer is a person with a rural residence permit in China; farmer entrepreneurship is the entrepreneurial activity of this group; rural entrepreneurship is the entrepreneurial activity carried out in rural areas.

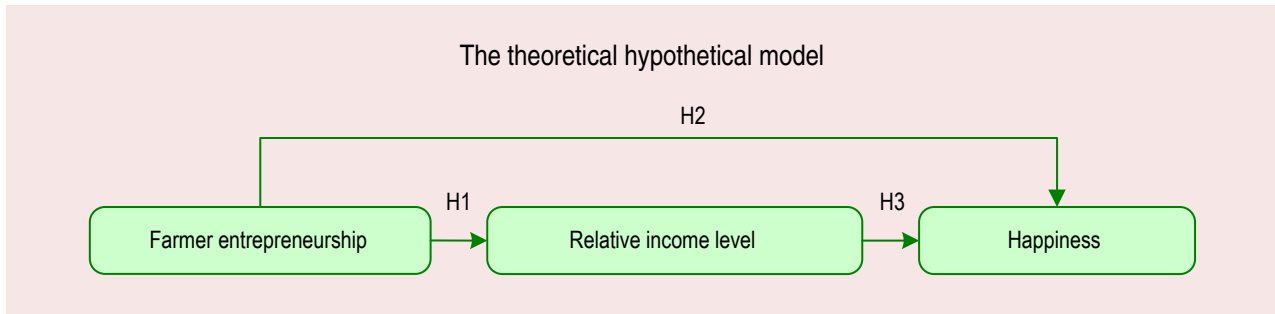
The hypothesis of the impact of entrepreneurship of farmers on their subjective well-being

Subjective well-being (SWB) is a general assessment of an individual's quality of life based on his or her own standards (Diener, 2000), which represents subjective feelings of joy and pleasure based on satisfaction and a sense of security. Although there are many works on the relationship between entrepreneurship and subjective well-being (Ravina-Ripoll et al., 2021; Xu Haiping et al., 2020; Teixeira et al., 2020; Liu Pengcheng et al., 2019; Blanchflower, Oswald, 1992), there are relatively few studies focused on the subjective well-being of farmers-entrepreneurs. Due to strict regulation and many factors affecting the business environment, farmers face huge obstacles in their activities (McElwee, 2006). (Wang Qiong, Huang Weiqiao, 2020) argue that not all farmers can achieve subjective well-being through entrepreneurship, as it depends on their motivation, type of business and other factors. The research (Martin, Verheul, 2012) demonstrated that entrepreneurship can harm farmers' health and, consequently, significantly reduce their subjective well-being. Despite some challenges, rural entrepreneurship continues to have a positive impact on the subjective well-being of farmers, which may be associated with an increased sense of independence, utility and interconnectedness (Markussen et al., 2018). For example, (Rui Zhenyun, 2017) notes that local entrepreneurship among migrants can not only bring satisfaction from achieving great results, but also enhance a sense of subjective well-being by realizing one's potential, raising social status, satisfying higher-level needs. We believe that entrepreneurship contributes to the improvement of the subjective well-being of farmers and propose the second research hypothesis.

H2: Entrepreneurship contributes to the improvement of the subjective well-being of Chinese farmers and has the effect of "increasing satisfaction".

The hypothesis of the mediator effect of the relative income level

Since (Easterlin, 1974) put forward the paradox of "happiness and income", the uncertainty in the relationship between income and subjective well-being has drawn the attention of researchers who began to study various aspects such as family, job, emotional state, interpersonal relationships etc. (Xu Yingmei, Xia Lun, 2014; Wang Yanping, 2017). Research works demonstrate a complex relationship between absolute and relative incomes and their impact on happiness. Numerous studies have established a positive correlation between absolute and relative incomes and subjective well-being, and the influence of relative income is often more significant (Ball, Chernova, 2008; Verme, 2013). The Easterlin paradox demonstrates that an increase in absolute income does not necessarily lead to an increase in subjective well-being, whereas an increase in relative income can considerably increase the level of happiness. Currently, Chinese scientists adhere to three main points of view on the relationship between income and subjective well-being: a positive, negative or insignificant correlation. Most studies support the positive impact of income on the subjective well-being of farmers (Xiong Caiyun et al., 2014; You Liang et al., 2018), since farmers' incomes in China are generally lower than those of urban residents; therefore, an increase in both absolute and relative incomes can increase their subjective well-being. The main factors influencing the subjective well-being of farmers are the improvement of their quality of life and horizontal comparison with home folks (Liao Yongsong, 2014). An increase in relative incomes



is likely to cause an increase in the subjective well-being of farmers (You Liang et al., 2018; Xu Haiping et al., 2020). However, most of these research works are of theoretical nature and are not supported by empirical data. In our work, it is assumed that entrepreneurship can influence the subjective well-being of farmers through changes in the level of relative income. Based on this, the third hypothesis is put forward.

H3: The level of relative income acts as a mediator in the process of influence of entrepreneurship on the subjective well-being of Chinese farmers.

The theoretical hypothetical model constructed in this article is presented in the *Figure*.

Research design

Data description

Data of the “Thousand Villages Survey” project, implemented by the Shanghai University of Finance and Economics, were used in the work. The project examined the current entrepreneurship situation in rural areas of China. The survey was conducted by approximately 2,200 lecturers and students of the Shanghai University of Finance and Economics, who have been doing research and obtaining interviews in 31 provinces (autonomous regions and direct-administered municipalities) of China for a month. A total of 1,209 villages were surveyed in mainland China. A team of 30 lecturers from Shanghai University of Finance

and Economics, leading a group of 302 students, conducted targeted studies in 30 counties of 22 provinces (autonomous regions and direct-administered municipalities) of China. The objects for targeted studies were selected using the method of multistage systematic disproportional probability sampling.

In particular, first, 30 counties were selected based on the probability of a sample proportional to the population, then two cities were chosen in each county, after that – 10 administrative villages. Finally, 5 households with entrepreneurs and 10 households without entrepreneurs were randomly taken from each selected village. In addition, as part of the research, a team of 1,886 students from Shanghai University of Finance and Economics, who used their summer holidays and returned to their homeland in order to conduct research, was organized. Each returning student did research in one or two villages. As a result of targeted studies and homecoming, more than 30,000 questionnaires were distributed, including those for mayors, chairpersons of village committees (secretaries), members of village committees⁶,

⁶ Criteria for selecting students to participate in the survey: (1) understanding the local dialect in order to successfully communicate with local residents; (2) participation in similar social research, having some practical experience; (3) the village from which students return should be representative and meet the basic principles of sampling; (4) preparatory strict training before conducting the study.

Table 1. The number of respondents and their territorial distribution

Territory	Rural residents	Farmers	Proportion (%)	Territory	Rural residents	Farmers	Proportion (%)
East China	512	3548	43.05	West China	333	2190	26.57
Beijing	8	49	0.59	Inner Mongolia	13	76	0.92
Tianjin	7	37	0.45	Guangxi	25	179	2.17
Hebei	64	429	5.21	Chongqing	34	246	2.98
Shanghai	135	893	10.83	Sichuan	60	405	4.91
Jiangsu	81	592	7.18	Guizhou	45	300	3.64
Zhejiang	77	562	6.82	Yunnan	43	303	3.68
Fujian	23	139	1.69	Tibet	5	26	0.32
Shandong	71	539	6.54	Shaanxi	33	177	2.15
Guangdong	39	272	3.30	Gansu	27	205	2.49
Hainan	7	36	0.44	Qinghai	13	77	0.93
Central China	298	2050	24.87	Ningxia	7	36	0.44
Shanxi	36	267	3.24	Xinjiang	28	160	1.94
Anhui	68	382	4.63	Northeast China	66	454	5.51
Jiangxi	49	345	4.19	Liaoning	22	145	1.76
Henan	73	562	6.82	Jilin	26	180	2.18
Hubei	28	186	2.26	Heilongjiang	18	129	1.57
Hunan	44	308	3.74	Total	1209	8242	100

Source: data of the “Thousand Villages Survey” project.

as well as for entrepreneurs and non-entrepreneurs among rural residents. According to the logic of the study, questionnaires of entrepreneurs and non-entrepreneurs were retrieved from the database, and after excluding some questionnaires with contradictory answers and missing data, a total of 8,242 valid questionnaires were received, of which 3,113 were questionnaires of entrepreneurs and 5,129 were those of non-entrepreneurs. The number of respondents and their territorial distribution are presented in *Table 1*.

Definition of variables

Dependent variables⁷: the level of relative income (*Income*) and happiness (*Happiness*).

⁷ The article studies several models. When testing the H1 hypothesis, the dependent variable is set as the level of relative income of farmers; when testing the H2 and H3 hypotheses, the dependent variable is set as the level of happiness of farmers.

The analysis of the “enrichment effect” of Chinese farmer entrepreneurship compares the annual average total household income of farmers over the past three years with the average income level in the village to determine whether the farmer is highly profitable compared with other villagers. When analyzing whether entrepreneurship can increase the happiness of Chinese farmers, the subjective happiness is used.

Explanatory variable: whether the farmer is engaged in entrepreneurship (*Entrepre*). Regardless of whether the “enrichment effect” of entrepreneurship or the “happiness effect” is analyzed, the fact of farmer entrepreneurship is used as an explanatory variable.

Control variables: when analyzing the “enrichment effect” of entrepreneurship among Chinese farmers, gender, age, health status, education level,

skills and parents' occupation are selected; when studying the "happiness effect", gender, age, health status, education level, relative income level and region of residence are selected. The selection criteria are as follows.

Gender. The research (Kong Lingwen, 2018) demonstrated that the trend of bridging the gender income gap is more noticeable in low-income groups compared with high-income ones. Traditional gender stereotypes in China, according to which men are engaged in employment outside the home and women do household chores, significantly constrain women's incomes and widen the income gap with men through mediator factors such as education, marriage, working hours and profession status, especially in rural areas of China, where patriarchy and traditional gender roles prevail. Therefore, it is expected that gender differences may affect farmers' income level. In addition, studies demonstrate that gender also affects personal happiness, but the question of who is happier – men or women – remains a matter of debate in academic community. For example, the research (Graham, Chattopadhyay, 2012) demonstrates that all over the world, except the poorest countries, women's happiness level is often higher than that of men. The empirical research (Huang Jiawen, 2013) demonstrated that the happiness level of men in cities is lower than that of women. However (Shmotkin, 1990) argues that women's limitations and restrictions in work, leisure, and family status reduce their sense of happiness compared with men. Therefore, although it is impossible to determine exactly who is happier – male farmers or female farmers – it is expected that gender will affect the happiness of farmers.

Age. People at different stages of life usually have different income levels; as a rule, incomes gradually

reach a maximum in adulthood and then decrease, so it is assumed that the influence of age on farmers' incomes has the form of an inverted U. In addition, age is also an important factor affecting the level of life satisfaction. Studies demonstrate that there is a U-shaped relationship between age and happiness: young people and elderly people tend to be happier than middle-aged people (Diener, 2000). This phenomenon may be caused by the fact that middle-aged people have more family obligations and are more likely to experience work-related stress than young and elderly people.

Health. Health status can also determine a person's income, especially for farmers engaged and not engaged in entrepreneurship. In most cases, they earn their living by physical labor, and the deterioration of their health can significantly affect income. Empirical studies confirm that health status is usually positively associated with income (Jiang Qiuchuan, 2015). Therefore, it is expected that the physical health of farmers will have a certain impact on their incomes. In addition, health status also usually affects the assessment of life satisfaction. Deteriorating health often causes people to suffer from more diseases, which affects their quality of life and happiness. In this regard, it is assumed that the worse the health of farmers, the lower their subjective happiness will be.

Education level (Educ). Education is always an important factor influencing the income levels of individuals. Studies demonstrate that farmers' education significantly increases agricultural incomes per acre of land cultivated, with the impact of women's education being particularly noticeable (Panda, 2015). Raise in the level of education of farmers can effectively increase their incomes (Le Junjie, 2008). In addition, some research works have demonstrated that the level of education can

affect the happiness of individuals, but the direction of influence varies from positive (Blanchflower, Oswald, 2004) to negative (Clark, 2003). Therefore, we also include the level of education as a control variable in the analysis of the impact of farmer entrepreneurship on income and happiness.

Skills. Farmers can sometimes get appropriate allowance for their work due to their skills. According to research works, the development of entrepreneurial and commercial skills is crucial for income and productivity growth. Farmers work in a complex and regulated environment, which can hinder entrepreneurial activities (McElwee, 2006). Nevertheless, well-directed efforts can improve farmers' skills and incomes. A social media-based program aimed at young small farmers demonstrated that within five years their commercial skills and incomes increased, which led to higher profits (Gever et al., 2023). In connection with the above, we consider skills as a control variable.

Parents' occupation (Parents). The income level is subject to intergenerational transmission (Qi Shouwei, 2016). Parents, partly reducing their own consumption, invest in the human capital of their children, allowing them to benefit from future income. Children from wealthy families have more opportunities to receive educational resources compared to children from low-income families, and differences in parents' incomes are mainly due to differences in their professions. Therefore, it is expected that the profession of parents has indirect impact on the income level of children, affecting their level of education. During the farmer survey, no direct influence of the profession of parents on the happiness of children was found, therefore, the profession of parents will not be included in the analysis as a control variable.

*Relative income level (Income)*⁸. Income level usually affects personal happiness. Both absolute and relative incomes are positively related to the level of happiness, but the influence of relative income is usually more significant (Ball, Chernova, 2008; Verme, 2013). However, (Easterlin, 1974) proposed the "paradox of income and happiness", arguing that after reaching a certain income level in a country, the relationship between income and happiness becomes unnoticeable. Therefore, within the framework of our research, the level of relative income will be included as a control variable for analyzing the happiness effect of farmers' entrepreneurial activities.

Region. Currently, there are differences in the income levels of farmers from urban and rural areas, as well as between different regions in China. Although regional differences may affect income levels, this article compares the average annual income of farmers over the past three years with the average level in their village to determine whether a farmer is highly profitable in his or her place of residence, so regional differences will not affect the selection of high-income farmers. Thus, the region will not be included in the analysis as a control variable while investigating the enrichment effect of entrepreneurial activities. However, differences in income levels by region can lead to divergence of subjective happiness of farmers, therefore, while studying the impact of farmer entrepreneurship on his or her sense of happiness, the region will be taken into account as a control variable.

⁸ While researching the "enrichment effect" of farmer entrepreneurship, the relative income level is a dependent variable; while researching the "happiness effect" of farmer entrepreneurship, the relative income level will be considered as a control and mediator variable.

Table 2. The variables and descriptive statistics (N = 8242)

Variable type	Variable name	Value	Frequency	Percent (%)
Dependent variable	<i>Relative Income Level</i>	1 = A farmer with a high income (above the village average values)	2367	28.7
		0 = Other farmers (not higher than the village average values)	5875	71.3
	<i>Happiness</i>	0 = Very unhappy	12	0.15
		1 = Unhappy	408	5.0
		2 = So-so	793	9.6
		3 = A bit happy	1039	12.6
		4 = Happy	3511	42.6
5 = Very happy	2479	30.1		
Independent variable	<i>Entrepreneurship</i>	1 = Yes	3113	37.8
		0 = No	5129	62.2
Control variable	<i>Gender</i>	1 = Male	5788	70.2
		0 = Female	2454	29.8
	<i>Age</i>	From 20 to 80 years old	-	-
	<i>Health Status</i>	From 1 to 8, the greater the number, the worse the health	-	-
	<i>Education Level</i>	From 1 to 5, the greater the number, the higher the education level	-	-
	<i>Skills</i>	1 = Yes	2780	33.7
		0 = No	5462	66.3
	<i>Parents' Occupation</i>	1 = At least one of the parents was engaged in other activities besides farming	2169	26.3
		0 = Both parents have always farmed for a living	6073	73.7
	<i>Region</i>	1 = East	3548	43.0
		2 = West	2190	26.6
		3 = Central	2050	24.9
4 = Northeast		454	5.5	

The variables and descriptive statistics are presented in *Table 2*.

Econometric models and empirical analysis

Measurement model

1. The model of the “enrichment effect” of farmer entrepreneurship. Considering that the level of relative income as a response variable is a binary choice, a binomial logit model is used for empirical analysis when studying the effect of increasing the welfare of farmers and entrepreneurs. The econometric equation is given as follows:

$$\ln\left(\frac{P(\text{Income}_i = 1|X_i)}{1 - P(\text{Income}_i = 1|X_i)}\right) = \partial_0 + \partial_1 \text{Entrepre}_i + \sum_j \partial_j \times \text{Control}_i + \varepsilon_i \tag{1}$$

Equation (1) is called model 1, its purpose is to test hypothesis H1. $P(\text{Income}_i = 1|X_i)$ represents the probability that the i -farmer is a high-income farmer, X_i represents all explanatory variables and control variables. As noted above, gender, age, health status, education, skills and occupation of the parents were selected as control variables.

2. The model of the “happiness effect” of farmer entrepreneurship. To study whether entrepreneurial activities can increase the happiness of farmers, namely to test the H2 hypothesis, the subjective happiness of farmers was used as a response variable, and the need to start a business was chosen as an explanatory variable. Gender, age, health status, education, relative income level and region were selected as control variables. Since the response variable has several categories, and the data in this research are set up in a wide format, the multinomial logit model (MNL)⁹ is used for empirical analysis. The measurement model is given by equation (2), which is called model 2.

$$P(\text{Happiness}_i = j | \mathbf{X}_i) = \begin{cases} \frac{1}{1 + \sum_{k=2}^J \exp(\mathbf{X}_i' \boldsymbol{\beta}_k)} & (j = 1) \\ \frac{\exp(\mathbf{X}_i' \boldsymbol{\beta}_j)}{1 + \sum_{k=2}^J \exp(\mathbf{X}_i' \boldsymbol{\beta}_k)} & (j = 2, \dots, J) \end{cases} \quad (2)$$

3. The model of the mediator effect of the relative income level. As mentioned above, entrepreneurship can directly and indirectly affect the subjective well-being of farmers. In order to deeply analyze the process and mechanism of the impact of farmer entrepreneurship on their subjective well-being and test the H3 hypothesis, we have built a model of the mediator effect “farmer entrepreneurship – relative income level – subjective well-being”. The mediator variable in this case is the level of relative income, the independent variable is whether farmers start their own business, and the dependent variable is subjective well-being. The test procedures are based on equations (3) – (5). ∂ in equation (3) reflects the influence of entrepreneurship on the subjective well-being of farmers, if mediators are not taken into account; β in formula (4) represents the impact of entrepreneurship on the level of relative

income; δ in formula (5) reflects the influence of the level of relative income of farmers on their subjective well-being. ∂' indicates the direct impact of entrepreneurship on the subjective well-being of farmers after taking into account the mediator variable (relative income level).

$$\text{Happiness}_i = C_1 + \partial \times \text{Entrepre}_i + \gamma_1 \times \text{Control}_i + e_1 \quad (3)$$

$$\ln\left(\frac{P(\text{Income}_i = 1 | \mathbf{X}_i)}{P(\text{Income}_i = 0 | \mathbf{X}_i)}\right) = C_2 + \beta \times \text{Entrepre}_i + \gamma_2 \times \text{Control}_i + e_2 \quad (4)$$

$$\text{Happiness}_i = C_3 + \partial' \times \text{Entrepre}_i + \delta \times \text{Income} + \gamma_2 \times \text{Control}_i + e_3 \quad (5)$$

Testing is carried out in three stages: first, the significance of the ∂ coefficient of equation (3) is checked; second, the significance of the β coefficient of equation (4) is checked; third, the significance of the δ and ∂' coefficients of equation (5) is checked. If all the coefficients (∂ , ∂' and δ) are significant, then there is a mediator effect. At the same time, if the ∂' coefficient is not significant, then the mediator effect is full; if ∂' is significant, but $\partial' < \partial$, then this effect is partial.

Empirical analysis

1. Analysis of the “enrichment effect” of farmer entrepreneurship. In order to study whether entrepreneurship can increase the income levels of Chinese farmers, a regression analysis was performed using model 1 for all 8,242 farmers-entrepreneurs and non-entrepreneurs. The econometric model is represented by formula (1). The regression results are presented in the three left columns of *Table 3*. Among them: the coefficient of expediency of starting a business is 1.335, it is significant at the level of 1%, and the corresponding probability coefficient is 3.799. Consequently, when the control variables remain unchanged, the probability that the income of farmers who decide to start a business is above the village average is

⁹ Although the dependent variable is an ordered sequence, the assumption of parallel slopes has not been met, so the ordered multiclass classification model is not used. Due to limitations on the volume of the article, the testing process is not presented.

Table 3. Regression results of the binary logit model of the impact of entrepreneurship on the well-being of farmers

Variable		Model 1		East	West	Central	Northeast
		Coefficient	Probability ratio	Coefficient	Coefficient	Coefficient	Coefficient
Independent variable	<i>Entrepreneurship</i>	1.335*** (0.054)	3.799	1.268*** (0.081)	1.510*** (0.105)	1.326*** (0.110)	1.040*** (0.236)
Control variables	<i>Gender</i>	0.198*** (0.062)	1.219	0.212** (0.092)	0.299** (0.121)	0.114 (0.130)	-0.031 (0.275)
	<i>Age</i>	0.081*** (0.015)	1.084	0.070*** (0.022)	0.082*** (0.030)	0.143*** (0.035)	0.103 (0.073)
	<i>Age squared</i>	-0.001*** (0.000)	0.999	-0.001*** (0.000)	-0.001*** (0.000)	-0.002*** (0.000)	-0.001 (0.001)
	<i>Health Status</i>	-0.149*** (0.034)	0.862	-0.159*** (0.058)	-0.179*** (0.065)	-0.112* (0.068)	-0.086 (0.126)
	<i>Education Level</i>	0.297*** (0.026)	1.346	0.250*** (0.038)	0.371*** (0.051)	0.341*** (0.060)	0.302** (0.118)
	<i>Skills</i>	0.159*** (0.055)	1.172	0.152* (0.083)	0.221** (0.108)	0.089 (0.112)	0.171 (0.258)
	<i>Parents' Occupation</i>	0.276*** (0.060)	1.318	0.406*** (0.085)	0.140 (0.130)	0.234* (0.128)	0.084 (0.293)
	<i>Intercept</i>	-4.061*** (0.367)	0.017	-3.801*** (0.554)	-4.162*** (0.691)	-5.603*** (0.852)	-4.175** (1.753)
Data points		8242		3548	2190	2050	454
Note: ***, **, * indicate that the evaluation results are significant at the levels of 0.01, 0.05 and 0.1, respectively; the numbers in parentheses represent robust standard errors.							

3.799 times higher than that of farmers who are not engaged in entrepreneurship. In other words, across China, entrepreneurship does help farmers raise the relative income level, which supports the H1 hypothesis and demonstrates that farmer entrepreneurship leads to enrichment.

In addition, the regression results of model 1 indicate that when other variables remain unchanged, the probability that the income of male farmers will be above the village average is 21.9% higher than that of female farmers. This indicates a significant gender inequality in the income of farmers in rural areas of China; the probability that income will be above the village average is 8.4% higher per each year of life of the surveyed farmers, but it tends to decrease gradually with age, so the effect of age on income is an inverted U-shaped curve; the good health and higher education level of the surveyed farmers have a significant positive impact on their

relative incomes; the probability that qualified farmers will have an income above the village average is 17.2% higher than that of unskilled ones; also, the probability that farmers' income will be above the village average is 31.8% higher if at least one of their parents not always farmed, rather than if both parents farm.

Moreover, as already mentioned, (Gu Jiarun, Xie Fenghua, 2012) and (Yuan Fang et al., 2019) came to different conclusions by studying the relationship between farmer entrepreneurship and the income levels of farmers in different regions. For further study on this issue, our research used the econometric model 1 in a regression analysis of subsamples of East, Central, West and Northeast China. The regression results are presented in the right half of Table 3. It can be found that farmer entrepreneurship in East, Central, West and Northeast China has significantly increased

the levels of relative income of entrepreneurs, indicating that farmer entrepreneurship in these regions is characterized by a significant enrichment effect.

2. Analysis of the “happiness effect” of farmer entrepreneurship. The key assumption in applying the MNL model is the independence of irrelevant alternatives (IIA), which means that the odds ratio of a person *i* choosing any two categories does not depend on other choice behavior. In other words, further increasing or decreasing the number of alternatives does not affect the odds ratio of choosing between two categories. Assumption IIA is a background for the application of the MNL model. Therefore, before using the model, it is necessary to evaluate the IIA assumption. In the presented article, the Hausman test is used to check whether the assumption IIA is met in order to proceed to the next stage of the analysis. *Table 4* presents the results of the test, which demonstrates that the IIA assumption cannot be violated after excluding any of the six categories that form subjective happiness of farmers.

To find out whether entrepreneurship can increase farmers’ happiness, an MNL model is used for empirical research. To facilitate analysis and understanding, the article uses the farmers’

happiness estimator “OK = 2”¹⁰ as a reference scheme. The econometric model is represented by formula (2), and the regression results are presented in *Table 5*.

In this research, the coefficients of the variable “engagement in entrepreneurship” demonstrate that at the significance level of 1%, the relative risk ratios (RRR)¹¹ for the categories “a bit happy”, “happy” and “very happy” are 1.484, 1.435 and 1.960, respectively. This means that, all other things being equal, the probability that farmers-entrepreneurs will answer “a bit happy”, “happy” and “very happy” is higher than for non-entrepreneurs, increasing by 48.4, 43.5 and 96.0%, respectively. This confirms the H2 hypothesis: entrepreneurship does increase the happiness level of Chinese farmers, which indicates the presence of a “happiness effect”.

In addition, the coefficients of the “health status” variable are significant, which indicates a strong relationship between health status and the subjective happiness. Farmers with poorer health estimate their happiness lower, while farmers with good health – higher. This empirical conclusion is in harmony with the research results of other scientists (Jiang Qiuchuan, 2015). Relating to the variable “education level”, the coefficient for the

Table 4. Hausman test results for the IIA assumption in the MNL model

Missed variable	chi2	df	P > chi2	Null Hypothesis
0	-353.285	23	1.000	Fail to reject Ho
1	-532.172	24	1.000	Fail to reject Ho
2	-500.055	32	1.000	Fail to reject Ho
3	-509.738	24	1.000	Fail to reject Ho
4	-1100.000	24	1.000	Fail to reject Ho
5	-563.077	24	1.000	Fail to reject Ho

Note: although the value of the chi2 less than zero indicates that the model does not meet the asymptotic assumptions of the test, such result is normal and does not contradict the IIA assumption (Zhang Longyao, Jiang Chun, 2011).

¹⁰ A farmer’s assessment of his or her level of happiness as “so-so” acts as a benchmark, because “so-so” is the boundary between the unhappiness and happiness of farmers. Using “so-so” responses as a benchmark facilitates understanding of the relative risk ratio.

¹¹ Relative risk is the ratio of the probability of choosing a certain category to the probability of choosing a base category.

Table 5. Regression results of the MNL model of the impact of entrepreneurship on farmers' well-being

Variable		Model 2									
		Very unhappy		Unhappy		A bit happy		Happy		Very happy	
		Coeffici	RRR	Coeffici	RRR	Coeffici	RRR	Coeffici	RRR	Coeffici	RRR
Inde- pendent variable	<i>Entre- preneurship</i>	0.057	1.059	-0.166	0.847	0.395***	1.484	0.361***	1.435	0.673***	1.960
Control variables	<i>Gender</i>	1.399	4.051	0.039	1.039	-0.120	0.887	-0.244***	0.783	-0.315***	0.730
	<i>Age</i>	0.140	1.150	-0.009	0.991	-0.061**	0.941	-0.028	0.972	-0.021	0.980
	<i>Age squared</i>	-0.001	0.999	0.001	1.000	0.001***	1.000	0.000**	1.000	0.000*	1.000
	<i>Health Status</i>	0.454**	1.574	0.169***	1.183	-0.107**	0.898	-0.228***	0.796	-0.538***	0.584
	<i>Education Level</i>	-0.023	0.977	-0.198***	0.821	0.026	1.026	0.173***	1.188	0.188***	1.207
	<i>Relative Income Level</i>	-0.604	0.547	0.144	1.154	0.302**	1.352	0.606***	1.834	0.751***	2.118
	<i>Region</i>	0.353	1.423	-0.013	0.986	-0.065	0.937	-0.111***	0.895	-0.116***	0.891
	<i>Intercept</i>	-11.191*	0.000	-0.292	0.747	1.702***	5.486	1.926***	6.865	1.648***	5.194
Data points = 8242 Pseudo Log-Likelihood = -10980.718 Wald $\chi^2(40) = 517.61$ Prob > $\chi^2 = 0.000$ Pseudo R ² = 0.0272											
Note: ***, **, * indicate that the evaluation results are significant at the levels of 0.01, 0.05 and 0.1, respectively. Coeffici – coefficient, RRR – relative risk ratio.											

category “unhappy” is negative and is significant at the level of 1%, the respective relative risk is 0.821. Consequently, the lower the education level of the surveyed farmers, the lower their subjective happiness. At the same time, the coefficients for the categories “happy” and “very happy” are positive and also significant at the level of 1%, the respective relative risks are 1.188 and 1.207, which indicates that the higher the education level, the higher the subjective happiness of the surveyed farmers. This also confirms the conclusions of other researchers (Blanchflower, Oswald, 2004). Finally, in the row of the variable “relative income level”, the coefficients for the categories “a bit happy”, “happy” and “very happy” are positive and significant at the level of 1%, and the relative risks exceed 1. It follows that the happiness level of the surveyed farmers is strongly related to the level of their relative income. Farmers with incomes above the village average are more likely to choose “happy”. This conclusion is in agreement with studies of many

scientists (You Liang et al., 2018; Xu Haiping et al., 2020) and does not contradict the Easterlin paradox (Easterlin, 1974).

3. Analysis of the mediator effect of the relative income level. Empirical analysis performed in the previous section demonstrated that the level of relative income of the surveyed farmers affects their sense of happiness, while entrepreneurship affects the level of their relative income. In order to study extensively the mechanism of the influence of entrepreneurship on the subjective happiness of farmers, the level of relative income will be considered as a mediator.

The happiness variable includes six categories. The modeling carried out (Liu Hunyun et al., 2013) demonstrated that when a dependent variable has five or more categories, the usual linear regression analysis can be considered to analyze the mediator effect, since the level variable will be closer to continuous data as the number of categories increases. Therefore, in order to analyze the mediator effect, in this section the dependent

variable is considered as a continuous variable. In addition, since the mediator variable “relative income level” represents data from two categories, we use a logistic regression model when studying the impact of entrepreneurship on relative income.

Table 6 presents the regression results of equations (3), (4) and (5), from which we see that the calculated values δ , β , δ , and δ' are: $\hat{\delta} = 0.287$, $\hat{\beta} = 1.345$, $\hat{\delta} = 0.221$, and $\hat{\delta}' = 0.227$ respectively, and all of them are significant at the level of 1%. Since all the coefficients δ , β , δ , and δ' are significant and $\hat{\delta}' < \hat{\delta}$, the level of relative income is of importance in the process of influence of entrepreneurship on the happiness of farmers, acting as a partial mediator. Thus, the H3 hypothesis was verified.

Reliability test

Since starting a business requires a certain amount of start-up capital, farmers who decide to

start an entrepreneurial activity may have higher incomes than those who prefer not to start a business in the village. In this regard, the sample may be biased. To eliminate the problem of endogeneity caused by possible selection bias in model 1 and further prove the reliability of the conclusion, we use the propensity score matching (PSM) method. The results of the regression analysis are presented at the top of Table 7. The explanatory variable of the robustness test of model 1 is whether to start a business, and the response variable is the level of relative income. The following can be found: although three different comparison methods are used, all the results demonstrate that the ATT value remains positive and significant after the endogeneity problem caused by selection bias is eliminated. This proves that the empirical results of model 1 are relatively robust.

Table 6. Analysis of the mediator effect of the relative income level on the impact of entrepreneurship on the well-being of farmers

Dependent variable	(3)	(4)	(5)
	Happiness Level	Relative Income Level	Happiness Level
Entrepreneurship	0.287*** (0.025)	1.345*** (0.054)	0.227*** (0.026)
Relative Income Level			0.221*** (0.027)
Gender	-0.110*** (0.027)	0.202*** (0.061)	-0.117*** (0.027)
Age	0.001 (0.006)	0.079*** (0.015)	-0.002 (0.006)
Age squared	0.000 (0.000)	-0.001*** (0.000)	0.000 (0.000)
Health Status	-0.227*** (0.018)	-0.146*** (0.034)	-0.222*** (0.018)
Education Level	0.104*** (0.011)	0.314*** (0.025)	0.092*** (0.011)
Region	-0.042*** (0.013)	-0.055*** (0.028)	-0.039*** (0.013)
Intercept	3.827*** (0.151)	-3.802*** (0.373)	3.865*** (0.151)
Data points	8242	8242	8242
R ² or Pseudo R ²	0.0592	0.1141	0.0661

Note: ***, **, * indicate that the evaluation results are significant at the levels of 0.01, 0.05 and 0.1, respectively; the numbers in parentheses represent robust standard errors.

Table 7. Robustness test results

Model 1		K-nearest neighbors matching	Radius matching	Kernel matching
	Treatment group	0.475	0.474	0.475
	Control group	0.189	0.193	0.190
	ATT	0.286***	0.281***	0.284***
	T-value	23.97	25.76	26.16
Model 2	Variable	Regression coefficient		Probability ratio
	<i>Entrepreneurship</i>	0.647***		1.910
	<i>Gender</i>	-0.311***		0.732
	<i>Age</i>	-0.027		0.974
	<i>Age squared</i>	0.000*		1.000
	<i>Health Status</i>	-0.459***		0.632
	<i>Education Level</i>	0.344***		1.411
	<i>Relative Income Level</i>	0.482***		1.619
	<i>Region</i>	-0.100		0.904
<i>Intercept</i>	3.225***		25.164	

Note: ***, **, * indicate that the evaluation results are significant at the levels of 0.01, 0.05 and 0.1, respectively.

In addition, to test the robustness of the empirical findings obtained using model 2, those of 8,242 surveyed farmers who gave responses “very unhappy” and “unhappy” were classified as “unhappy” in the research. Those who answered “a bit happy”, “happy” and “very happy” were grouped into the “happy” category. Thus, a subsample of 7,449 farmers was formed, and these two categories of farmers were used as a dependent variable, with happiness assigned a value of 1 and unhappiness assigned a value of 0. The independent and control variables remained unchanged and corresponded to model 2. A binary logistic model was used for regression analysis. The results are presented at the bottom of Table 7. It was revealed that, all other things being equal, the happiness level of farmers-entrepreneurs is significantly higher than that of farmers who are not engaged in entrepreneurial activities, which indicates the robustness of the empirical results of model 2.

Conclusion and recommendations

In the present research, a theoretical hypothetical model “farmer entrepreneurship – relative income level – happiness” was constructed, and an

empirical analysis of the impact of entrepreneurship on increasing the levels of relative income and happiness of Chinese farmers was carried out. In addition, the mediator effect of the relative income level in the process of influence of entrepreneurship on the happiness of Chinese farmers has been verified. As a result of the work, the following conclusions were obtained.

In the country as a whole, entrepreneurship contributes to an increase in the relative incomes of farmers and has a significant “enrichment effect”. Empirical research has demonstrated that, all other things being equal, farmers-entrepreneurs are 3.799 times more likely to receive incomes above the village average than farmers who are not engaged in entrepreneurship. Moreover, entrepreneurship contributes to an increase in the farmers’ relative incomes, even considering regional differences of East, Central, West and Northeast China.

Entrepreneurship also leads to an increase in the subjective happiness of Chinese farmers, i.e. it has a significant “happiness effect”. It has both direct and indirect effects on the sense of happiness, and the relative income level acts as a partial mediator in this

process. The “happiness effect” of entrepreneurship among farmers is associated with both an increase in relative income and an improvement in purchasing power, as well as with the spiritual gratification they receive in the process of entrepreneurial activity.

Based on all this, it can be concluded that in the process of achieving the goal of cooperative enrichment of rural farmers in China, entrepreneurship, as a category of initial distribution of income, plays an important role in increasing the

farmers’ relative incomes, as well as contributes to strengthening the sense of happiness. In this regard, state authorities and relevant structures need to actively support mass entrepreneurship and innovation in rural areas by creating a favorable business environment, encourage farmers to engage in entrepreneurial activities to increase their income and subjective happiness levels, as well as promote the cooperative enrichment of the material and spiritual conditions of a farmer’s life in rural areas.

References

- Ball R., Chernova K. (2008). Absolute income, relative income, and happiness. *Social Indicators Research*, 88, 497–529.
- Blanchflower D.G., Oswald A.J. (1992). Entrepreneurship, happiness and supernormal returns: Evidence from Britain and the US. *NBER Press*.
- Blanchflower D.G., Oswald A.J. (2004). Well-being over time in Britain and the USA. *Journal of Public Economics*, 88(7), 1359–1386.
- Clark A. (2003). Unemployment as a social norm: Psychological evidence from panel data. *Journal of Labor Economics*, 21(2), 323–351.
- Diener E. (2000). Subjective well-being. The science of happiness and a proposal for a national index. *American Psychologist*, 55(1), 34–43.
- Easterlin R.A. (1974). Does economic growth improve the human lot? Some empirical evidence. In: *Nations and Households in Economic Growth*. New York: Academic Press.
- Gever V.C., Abdullah N.N., Onakpa M.S. et al. (2024). Developing and testing a social media-based intervention for improving business skills and income levels of young smallholder farmers. *Aslib Journal of Information Management*, 76(4), 694–711.
- Graham C., Chattopadhyay S. (2012). *Gender and Well-being Around the World: Some Insights from the Economics of Happiness*. Human Capital and Economic Opportunity Working Group, IDEAS Press.
- Gu Jiarun, Xie Fenghua (2012). Analysis of regional differences in the impact of farmers’ entrepreneurial activity on farmers’ incomes. An empirical study based on provinces’ panel data for 1997–2009. *Issues in Agricultural Economy*, 2, 19–23.
- Guo Cheng, He Anhua (2017). Social capital, entrepreneurial environment and peasants’ entrepreneurial performance in agriculture-related businesses. *Journal of the Shanghai University of Finance and Economics*, 19(2), 76–85.
- Huang Jiawen (2013). Level of education, income and happiness among urban residents of China – an empirical analysis based on CGSS2005 data. *Society*, 5, 181–203.
- Jiang Qiuchuan (2015). Evolution and decomposition of wealth inequality in China. *Economics (Trimestrial)*, 4, 211–238.
- Kong Lingwen (2018). New achievements in the study of gender income gap. *Economic Dynamics*, 2, 117–129.
- Le Junjie (2008). Determination of rural workers’ incomes and hours of employment, as well as gender differences, based on data of the survey in Daishan County, Zhejiang Province. *Chinese Rural Economy*, 11, 38–47.
- Li Gang (2018). The influence of the characteristics of entrepreneurs, their connections and adaptation to politics on the results of entrepreneurship in agriculture. *Research on Financial and Economic Theory*, 1, 43–54.

- Liao Yongsong (2014). “Thankful for small mercies” farmer: View from the perspective of happiness economy. *China’s Rural Areas Economy*, 9, 4–16.
- Liu Hunyun, Luo Fang, Zhang Yu, Zhang Danhui (2013). Analysis of the mediator effect with a dependent variable as an ordinal variable. *Journal of Psychology*, 45(12), 1431–1442.
- Liu Pengcheng, Liu Yongan, Meng Xia (2019). Are entrepreneurs happy? Analysis based on CGSS data. *Population and Development*, 2, 108–116.
- Luo Mingzhong, Chen Ming (2014). Personal qualities, entrepreneurship training and the results of farmer entrepreneurship. *Chinese Rural Economy*, 10, 64–77.
- Markussen T., Fibæk M., Tarp F. et al. (2018). The happy farmer: Self-employment and subjective well-being in rural Vietnam. *Journal of Happiness Studies*, 19, 1613–1636.
- Martin A.C., Verheul I. (2012). What makes entrepreneurs happy? Determinants of satisfaction among founders. *Journal of Happiness Studies*, 13(2), 371–387.
- McElwee G. (2006). Farmers as entrepreneurs: Developing competitive skills. *Journal of Developmental Entrepreneurship*, 11(03), 187–206.
- Panda S. (2015). Farmer education and household agricultural income in rural India. *International Journal of Social Economics*, 42(6), 514–529.
- Qi Shouwei (2016). Trends in intergenerational income transfer in China and the role of education in this transfer. *Statistical Research*, 5, 79–88.
- Ravina-Ripoll R., Foncubierta-Rodríguez M.J., Ahumada-Tello E. et al. (2021). Does entrepreneurship make you happier? A comparative analysis between entrepreneurs and wage earners. *Sustainability*, 13(18), 9997.
- Rui Zhenyun (2017). Unleashing entrepreneurial passion: Impact of introduction of urban social networks on life satisfaction of rural migrants who stayed in the city to do business. *Modern Economic Science*, 39(6), 25–32.
- Shmotkin D. (1990). Subjective well-being as a function of age and gender: A multivariate look for differentiated trends. *Social Indicators Research*, 23(3), 201–230.
- Teixeira A.A., Vasque R. (2020). Entrepreneurship and happiness: Does national culture matter? *Journal of Developmental Entrepreneurship*, 25(01), 2050007.
- Verme P. (2013). The relative income and relative deprivation hypotheses: A review of the empirical literature. *World Bank Policy Research Working Paper 6606*.
- Wang Qiong, Huang Weiqiao (2020). Are farmers happier doing business? Empirical research based on CLDS data. *Journal of Nanjing Agricultural University (Social Studies)*, 20(3), 99–110.
- Wang Yanping (2017). New achievements in the study of happiness economics. *Economic Dynamics*, 10, 128–144.
- Xiong Caiyun, Meng Rongzhao, Shi Yafeng (2014). Empirical research of Chinese farmers’ happiness index. *Agriculture Based Economy Issues*, 35(12), 33–40.
- Xu Haiping, Zhang Youxue, Fu Guohua (2020). Absolute income, social identity and life satisfaction of rural residents. Microempirical evidence based on CGSS data. *Economics of Agricultural Technology*, 11, 56–71.
- Xu Yingmei, Xia Lun (2014). Analysis of the factors influencing sense of life satisfaction among Chinese residents is a comprehensive analytic structure. *Jingan University Journal of Economics and Law*, 2, 12–19.
- You Liang, Huo Xuexi, Du Wenchao (2018). Absolute income, social comparison and farmers’ sense of happiness – an empirical study based on data from two rural settlements in Shaanxi Province. *Agricultural Technologies and Economics*, 4, 111–125.
- Yu L., Artz G.M. (2019). Does rural entrepreneurship pay? *Small Business Economics*, 53, 647–668.
- Yuan Fang, Ye Bing, Shi Qinghua (2019). Entrepreneurship of Chinese farmers and multidimensional poverty reduction in rural areas – discussion based on a “targeted” multidimensional poverty model. *Economics of Agricultural Technology*, 1, 71–87.
- Zhang Lunyao, Jiang Chun (2011). Theoretical and empirical analysis of non-price credit distribution in the Chinese rural financial market. *Financial Research*, 7, 98–113.

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Trends in the Spatial Development of Regions in the Northwest of Russia in the 21st Century



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Abstract. Russia, being the largest country in the world in terms of territory, attaches great importance to the effective use of its vast space. The paper considers findings of a monitoring of the current situation and key trends regarding spatial development of the Northwestern Federal District and the RF constituent entities included in it. Spatial development of the macro region is studied from the position of center-peripheral and frame approaches; spatial organization is considered taking into account the transformation of the settlement, production, economic and infrastructural frames. The conclusion is made about the increasing nature of the centripetal vector of development and peripherization at the macro and intraregional levels (this is especially acute in the regions of the North). In addition, the paper presents current estimates (2020–2023) of the ranks of Northwestern regions among RF constituent entities on key indicators of spatial development, which can be used by federal and regional authorities as part of monitoring and revising their policies. We prove that an important task is to create conditions conducive to the development of the spatial frame of the macro region by unlocking the potential of various kinds of localities (cities and agglomerations of various levels of hierarchy, rural, industrial periphery). We substantiate a set of measures to increase the connectivity of the macro region's space, which are in line with the priorities of the new Concept and draft Strategy for Spatial Development of the Russian Federation until 2036.

Key words: spatial frame, agglomeration processes, locational compression, strategic priorities, connectivity of space, Northwest of Russia.

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Introduction

An important task is to increase the efficiency of the use of internal (endogenous) factors of development, which includes a huge *spatial potential*¹ in the context of Russia's growing geopolitical confrontation with the countries of the Collective West, expressed in the Special Military Operation (SMO) and increased sanctions pressure (Ilyin, Morev, 2022); however, it is currently used not fully and effectively enough to ensure national security of the country.

These circumstances determine the importance of scientific-methodological and information-analytical support of the activities of public authorities in the development and implementation of spatial development policy priorities. At the

same time, we should agree with the researchers (Lazhentsev, 2020; Kryukov et al., 2020) that it is advisable to implement such a policy not only within the boundaries of the RF constituent entities, but also at a higher level of hierarchy (macro region). This will help to form a strategic approach to Russia's spatial development, which allows consolidating and using the potential of interregional integration.

The purpose of the study is to monitor the state and key trends in the spatial development of the Northwestern Federal District (NWFED) regions at the current stage.

The presented materials² can serve as a *scientific, analytical and methodological basis* for the deve-

¹ In the most general form, the spatial potential of a country, macro region, region is characterized by the degree of economic, settlement development and livability, the actual level of cohesion (integrity) of the territory and, in practice, synthesizes all other components of the aggregate potential (Kuznetsova, Nikiforov, 2013).

² A monitoring system is currently being formed for various aspects related to the development of Northwestern Federal District regions (demography, economy, space, scientific and technological development, etc.). This is done under the leadership of Vladimir A. Ilyin, RAS Corresponding Member, Doctor of Sciences (Economics), Professor. The presented work is devoted to monitoring the spatial development of the Northwest of Russia.

development and implementation of spatial development policy at the macro and regional levels in the light of the aggravation of geopolitical challenges and the development of a new Concept³ and Strategy for Spatial Development of Russia until 2036⁴, which are focused on the development of the supply economy in the country, creation of conditions for ensuring the sustainability of the settlement system (reduction of population outflow from the regions of Siberia, the Arctic and the Far East; development of strategic settlements, small and medium-sized cities, rural areas), provision of infrastructural development and growth of transport accessibility of territories.

Methodology and information base of the research

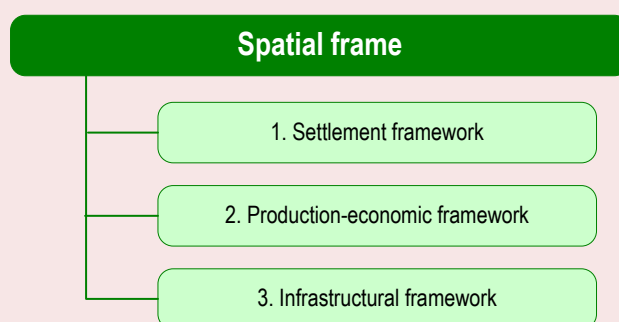
The methodological basis of the study is the provisions of the “*center – periphery*” theory (Friedmann, 1966; Demyanenko, Isaev, 2015; Castells, 2020; Nefedova, Treivish, 2020; etc.), the concept of the supporting spatial frame⁵ (Lazhentsev, 2011; Yakovleva, 2013; Lazhentsev,

2018; Dmitrieva, 2016; Dmitrieva, 2023; Gainanov et al., 2021; etc.). The spatial frame as an integral category of multidimensional socio-economic space (Kurushina, 2019) includes settlement, production-economic, infrastructural frameworks (*Fig. 1*).

The spatial frame development of a macro region is a mechanism of territorial and economic integration (Luchnikov, Nikolaev, 2017). In addition, as noted by the famous Russian geographer G.M. Lappo (Lappo, 1983), the use of the spatial frame concept stimulates the development of “frame thinking”, which allows thinking strategically, seeing large problems, operating over vast territories (zones, macro regions, countries).

To study and characterize individual frames, taking into account the methodological approach of Academician A.G. Granberg⁶, we formed a list of indicators characterizing the *quality of economic space* from the perspective of *density* parameters (density of population, economic activity, e.g. GRP,

Figure 1. Spatial frame components of the macro region



Source: own compilation.

³ Concept of the Strategy for Spatial Development of the Russian Federation until 2030 with a forecast up to 2036. Ministry of Economic Development of the Russian Federation. Available at: https://www.economy.gov.ru/material/file/85fb48440f79df778539e0b215af5345/koncepciya_strategii_prostranstvennogo_razvitiya_rf_na_period_do_2030_goda.pdf

⁴ On the main provisions of the projected strategy for spatial development of the Russian Federation until 2030. Federation Council of the Federal Assembly of the Russian Federation. Available at: <http://council.gov.ru/activity/activities/parliamentary/160906/>

⁵ In the classic works of the Soviet period, there were references to the “territorial framework” (Baransky, 1956), “settlement frame”, “supporting frame of settlement” (Khorev, 1975), “supporting frame of the national economy” (Lappo, 1983). The focus was on nodes (large cities and urban agglomerations) and linear elements (roads, trunk roads) that connect these nodes with each other, thus “stitching together” the socio-economic space.

⁶ Granberg A.G. (2000). *Fundamentals of Regional Economics: Textbook for Higher Education Institutions*. Moscow: GU VSHE.

number of organizations per capita, communication routes, etc.), *connectivity* (connectivity between parts and elements of space, development of transport and communication networks), *location* (determined through the presence of economically developed and undeveloped territories indicators of evenness, concentration of population, subjects of economic activity through the prism of the concept “center – periphery”).

Our paper considers the NWFD space as heterogeneous. In the process of analysis, we have distinguished its *northern* (RF constituent entities that are part of the European North of Russia⁷: the Arkhangelsk, Murmansk, Vologda regions, the Komi Republics and the Republic of Karelia, the Nenets Autonomous Area) and *southern* (Saint Petersburg, the Leningrad, Novgorod, Pskov, Kaliningrad regions) *latitudinal projections*. The necessity of such an approach is due to the fact that these territories significantly differ from each other in terms of natural and climatic conditions, economic structure, infrastructure and, accordingly, trends in spatial development⁸.

The main period of the analysis is 1990–2023; at the same time, we identified a number of time points within it, which allowed revealing the development features at different time intervals and taking into account the specifics of socio-economic and spatial policy carried out in this period.

The information base of the study was formed by the data of Rosstat and its territorial bodies, Rosavtodor; data from the official websites of public authorities of the Russian Federation, Russia’s constituent entities, monitoring data of VolIRC RAS, materials of periodicals.

Appendices 1 and 2 to the article present the ranks of NWFD regions among 85 RF constituent entities

⁷ The European North of Russia is considered within the boundaries in accordance with the All-Russian Classifier of Economic Regions. OK 024-95 (approved by Decree of the State Standard of Russia 640, dated December 27, 1995).

⁸ It is worth noting that this approach was once reflected in the Strategy for socio-economic development of the Northwestern Federal District for the period until 2020.

(excluding information on the Donetsk People’s Republic, the Lugansk People’s Republic, the Zaporozhye and Kherson regions) by the values of key indicators of spatial development in 2023 and by their average value for 2020–2022.

Research results

Settlement frame

The processes of “exodus” of the population from the North began in the post-Soviet period of the country’s development, associated with the liberalization of socio-economic relations (*Tab. 1*). For instance, the European North of Russia (ENR) lost 2.12 million in 1989–2023. The European North of Russia (ENR) lost 2.12 million people, or 34.4% of its population. The greatest reduction was observed in the Murmansk Region (-44.7%, or 532 thousand people) and the Komi Republic (-41.9%, or 521 thousand people)⁹. Such processes are associated *not only with natural decline, but also to a large extent with the migration outflow* to more southern subjects and lead to the destruction of the territory’s settlement frame.

The situation is somewhat different in the subjects of the southern latitudinal projection of the district. The center of population concentration here is the actively developing largest Saint Petersburg agglomeration: the core is Saint Petersburg (population grew for the given period by 594 thousand people, or 12%) and the surrounding Leningrad Region (by 358.1 thousand people, 21.5%). Along with it, the Kaliningrad Region (by 147.2 thousand people, 16.6%) registered an increase, which is mainly due to the migration inflow. At the same time, due to the “pulling” of human resources by these territories, the population of the neighboring but less developed Novgorod Region (by 178.9 thousand people, 23.8%) and the Pskov Region (by 259 thousand people, 30.7%) decreased.

⁹ The Nenets Autonomous Area is the only northern subject of the ENR (due to the active development of oil and gas production in the region), which in recent years has seen a slight increase in population (+1.8% compared to 2000).

Table 1. Average annual population of the Northwestern Federal District in 1990–2023, thousand people

Territory	Year						2023 to 1990, %**	2023 to 2000, %	2023 to 2020, %
	1990	2000	2010	2020	2022	2023			
RF*	148.0	146.6	142.8	147.7	146.7	146.3	98.9	99.0	99.0
NWFD*	15.3	14.3	13.6	14.0	13.9	13.9	90.5	99.3	99.3
Northern latitudinal projection of the macro region (European North of Russia, ENR)									
Republic of Karelia	791.6	732.1	645.7	546.1	530.1	525.9	66.4	71.8	96.3
Komi Republic	1244.4	1050.4	905.6	756.9	730.4	723.5	58.1	68.9	95.6
Arkhangelsk Region without NAA	1520.4	1338.7	1189.1	1004.8	969.5	960.1	63.1	71.7	95.6
Nenets Autonomous Area	51.8	41.1	42.1	41.6	41.4	41.8	80.7	101.8	100.5
Vologda Region	1354.1	1295.0	1204.8	1154.8	1133.6	1125.1	83.1	86.9	97.4
Murmansk Region	1190.1	932.0	796.9	685.4	662.0	657.6	55.3	70.6	95.9
Total for the northern projection	6152.5	5389.2	4784.1	4189.6	4067.0	4033.9	65.6	74.9	96.3
Southern latitudinal projection of the macro region									
Saint Petersburg	5005.0	4728.4	4866.1	5584.6	5604.0	5598.9	111.9	118.4	100.3
Kaliningrad Region	885.9	958.1	940.2	1018.5	1031.7	1033.1	116.6	107.8	101.4
Leningrad Region	1671.2	1683.5	1711.7	1964.1	2014.9	2029.8	121.5	120.6	103.3
Novgorod Region	752.6	714.4	636.2	590.6	578.8	573.7	76.2	80.3	97.1
Pskov Region	843.5	787.5	676.6	608.8	592.3	584.5	69.3	74.2	96.0
Total for the southern projection	9158.3	8872.0	8830.9	9766.6	9821.6	9820.0	107.2	110.7	100.5
* Data for the Russian Federation and NWFD are presented in million people.									
** Hereinafter in the tables green shading indicates positive trends, red – negative trends.									
Source: own compilation based on Rosstat data.									

At the intra-regional level, the depopulation processes are particularly outstanding (Fig. 2, Tab. 2). For example, in the Komi Republic, the population of almost all municipalities of the north-eastern corner (Inta, Vorkuta, Vuktyl, Troitsko-Pechorsky) decreased more than twofold over the period¹⁰. A similar situation is observed in the two western municipalities of the Republic (Knyazhpogostsky and Udorsky municipal districts), where the population in 2023 was, respectively, 37.1 and 30.9% in relation to 1989. These districts specialize in logging and wood processing, but the local timber processing industry is characterized by low output, labor demand, and low wages, which serves as one of the key reasons for migration.

There was also a noticeable decrease in the population in the Murmansk and Arkhangelsk

regions: in the prevailing number of municipalities, it decreased by more than half. Not only rural periphery, but also cities, including administrative centers of the regions (Arkhangelsk, Murmansk) depopulated due to natural and migration loss.

Population also decreased in the Vologda Region, in all municipalities, except for Vologda (from 13 to 57.7%). However, the municipal entities located in the zone of influence of a large city (Vologda) and included in the Vologda agglomeration (Sokolsky, Vologdsky, Gryazovetsky districts) were in a more stable state during the given period, as a result of which the share of the agglomeration in the total population of the region in 1990–2023 increased from 35 to 40%.

As can be seen from Figure 2, in general, the municipalities of the emerging urban agglomerations (Vologda, Murmansk, Arkhangelsk) are characterized by a more favorable demographic situation against the background of depopulation of the middle and far periphery. These facts indicate the predominance of the centripetal vector in the development, weak translation of positive agglomeration effects to the territories remote from large cities.

¹⁰ In Vuktyl and Troitsko-Pechorsky District, this is due to the low level of social and transport infrastructure development, the preservation of the single industry economic nature; in Inta and Vorkuta, this is supplemented by the crisis in the sectors of territories' specialization (cessation of coal production due to the depletion and closure of a number of coal mines) (Dmitrieva, 2023).

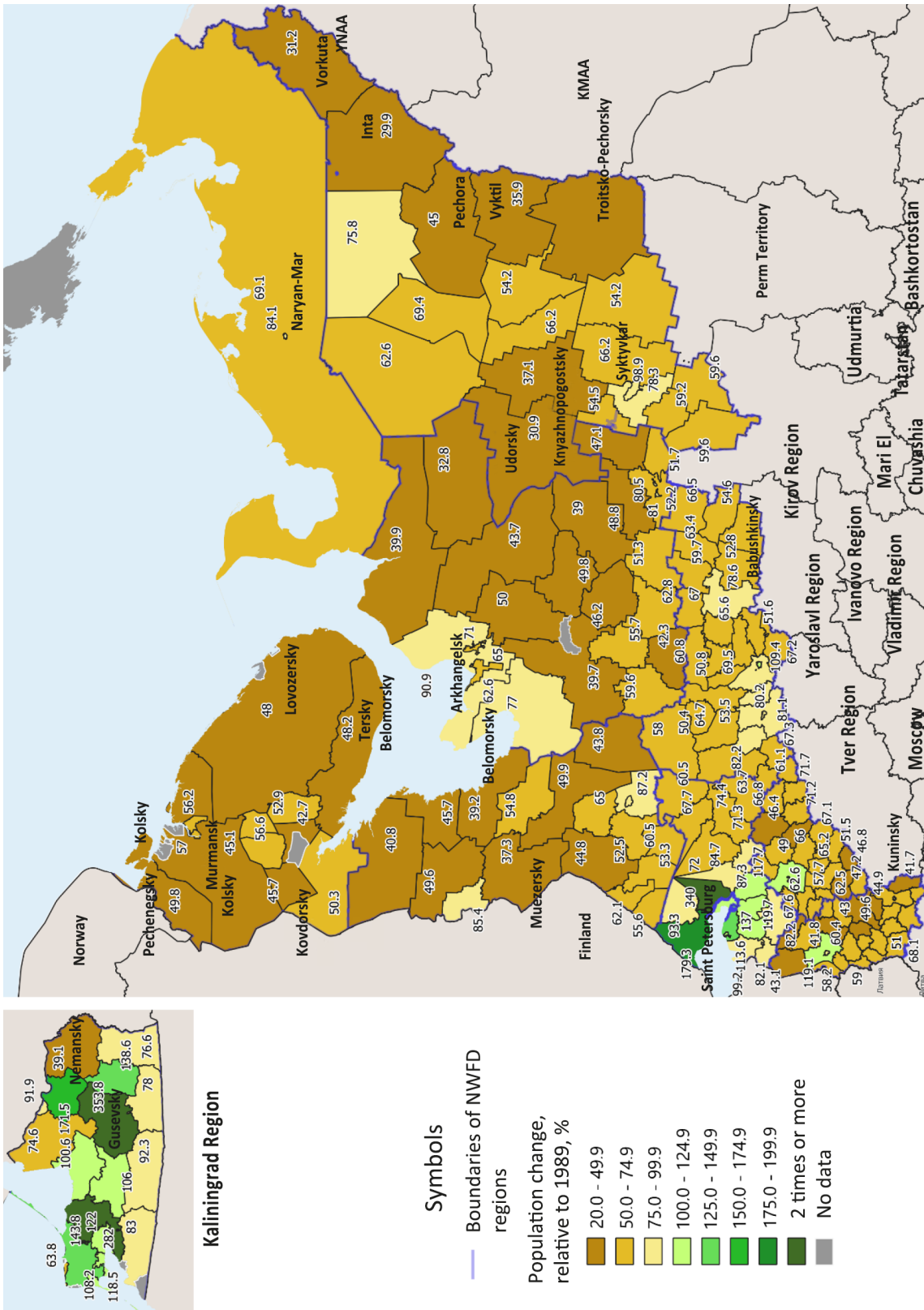


Figure 2. Population of NWFD municipalities in 2023, % to 1989

Source: Rosstat data. The cartogram was compiled with the participation of M.A. Lebedeva using the QGIS toolkit.

Table 2. Grouping of NWFD municipalities by population dynamics in 1989–2023

Population, % to the level of 1989	Number of municipalities in the group, units (% of the total number of NWFD municipalities)	Region (number of municipalities)
20.0–49.9	44 (23.4)	Arkhangelsk Region (11), Republic of Karelia (8), Komi Republic (7), Pskov Region (7), Murmansk Region (6), Novgorod Region (4), Kaliningrad Region (1)
50.0–74.9	94 (50)	Vologda Region (21), Pskov Region (16), Novgorod Region (16), Komi Republic (10), Arkhangelsk Region (10), Republic of Karelia (7), Murmansk Region (6), Leningrad Region (5), Kaliningrad Region (2), Nenets Autonomous Area (1)
75.0–99.9	30 (15.9)	Vologda Region (6), Leningrad Region (6), Kaliningrad Region (5), Republic of Karelia (3), Komi Republic (3), Arkhangelsk Region (3), Pskov Region (2), Nenets Autonomous Area (1), Novgorod Region (1)
Total: population decrease in 168 municipalities (89.3% of the total)		
100.0–124.9	12 (6.5)	Kaliningrad Region (5), Leningrad Region (4), Vologda Region (1), Pskov Region (1), Novgorod Region (1)
125.0–149.9	3 (1.6)	Kaliningrad Region (2), Leningrad Region (1)
150.0–174.9	1 (0.5)	Kaliningrad Region (1)
175.0–199.9	1 (0.5)	Leningrad Region (1)
in 2 times and more	3 (1.6)	Kaliningrad Region (2), Leningrad Region (1)
Total: population increase in 20 municipalities (10.7% of the total)		
Note: due to unavailability, we did not take into account data on 11 municipalities of the Northwestern Federal District (UO Closed City of Mirny and UO Novaya Zemlya, Arkhangelsk Region; UO Closed City of Aleksandrovsk, UO Closed City of Vidyaev, UO Closed City of Zaozersk, UO Closed City of Ostrovnoy, Polyarnye Zori, Murmansk Region; Ladushkinsky UO, Mamonovsky UO, Pionersky UO and Yantarny UO, Kaliningrad Region). In Saint Petersburg, population in 2023 amounted to 111.4% of the 1989 level.		

The situation is more positive in the more southern subjects of the Northwestern Federal District, including due to the migration inflow. For example, in some districts of the Leningrad Region, the number of residents has increased quite significantly. As a rule, these are the districts that are closest to Saint Petersburg (the number of residents increased 3.4 times in Vsevolzhsky District, in Sosnovoborsky Urban Okrug, the increase amounted to 13.6%; in Vyborgsky District – 79.3%). This was also one of the manifestations of agglomeration processes. At the same time, the districts that do not have a common border with the northern capital, mostly lost from 6 to 39.5% of the population (Priozersky District – 6.7%, Lodeynopolsky District – 32.3%, Tikhvinsky District – 25.6%, Podporozhsky District – 39.5%).

The Pskov and Novgorod regions demonstrate the similar situation: the population is growing only in the area adjacent to the administrative center of the region, while in the administrative center itself the number of residents has slightly decreased. The

remaining territories of the subjects also show a decrease in the number of population, reaching almost 60%, both in the peripheral districts and those close to the regional center. For instance, in the Pskov Region, the population loss in Porkhovskiy District relative to 1990 amounted to 58.2%, in Bezhanitskiy District – 57%, in Kunyinskiy District – 58.3%.

The most favorable demographic situation is observed in the Kaliningrad Region. In 1990–2023, 10 out of 22 municipalities experienced population growth, including Guryevsk and Chernyakhovsk municipal districts 2.8 times (from 39.6 to 110.4 thousand people) and 3.5 times (from 12.8 to 45.3 thousand people). Population growth here is provided not only by interregional migration, but to a certain extent by the inflow of residents from Germany and Poland (return of Russians)¹¹.

¹¹ “RG”: Foreigners go to the Kaliningrad Region. *RBK*. Available at: <https://kaliningrad.rbc.ru/kaliningrad/25/01/2023/63d0f1af9a79473f596096f8> (accessed: October 12, 2024); The share of those who came to Guryevskiy District from abroad was announced. *Russkii Zapad*. Available at: <https://ruwest.ru/news/132462> (accessed: October 12, 2024).

Table 3. Total population density in NWFD, people/km²

Territory	Year						2023 to 1990, %	2023 to 2000, %	2023 to 2020, %
	1990	2000	2010	2020	2022	2023			
RF	8.7	8.6	8.4	8.6	8.6	8.5	98.6	99.6	99.0
NWFD	9.2	8.5	8.1	8.3	8.2	8.2	89.2	97.1	99.3
Northern latitudinal projection of the macro region (European North of Russia)									
Republic of Karelia	4.6	4.1	3.6	3.0	2.9	2.9	63.5	71.8	96.3
Komi Republic	3.0	2.5	2.2	1.8	1.8	1.7	58.0	68.9	95.6
Arkhangelsk Region without NAA	3.7	3.2	2.9	2.4	2.3	2.3	62.8	71.7	95.6
Neenets Autonomous Area	0.3	0.2	0.2	0.2	0.2	0.2	80.6	101.8	100.5
Vologda Region	9.3	9.0	8.3	8.0	7.8	7.8	83.8	86.9	97.4
Murmansk Region	8.2	6.4	5.5	4.7	4.6	4.5	55.3	70.6	95.9
Southern latitudinal projection of the macro region									
Saint Petersburg	3575.0	3377.4	3475.8	3989.0	4002.8	3999.2	111.9	118.4	100.3
Kaliningrad Region	58.7	63.5	62.3	67.4	68.3	68.4	116.6	107.8	101.4
Leningrad Region	19.8	20.1	20.4	23.4	24.0	24.2	122.3	120.6	103.3
Novgorod Region	13.6	13.1	11.7	10.8	10.6	10.5	77.3	80.3	97.1
Pskov Region	15.3	14.2	12.2	11.0	10.7	10.5	69.2	74.2	96.0

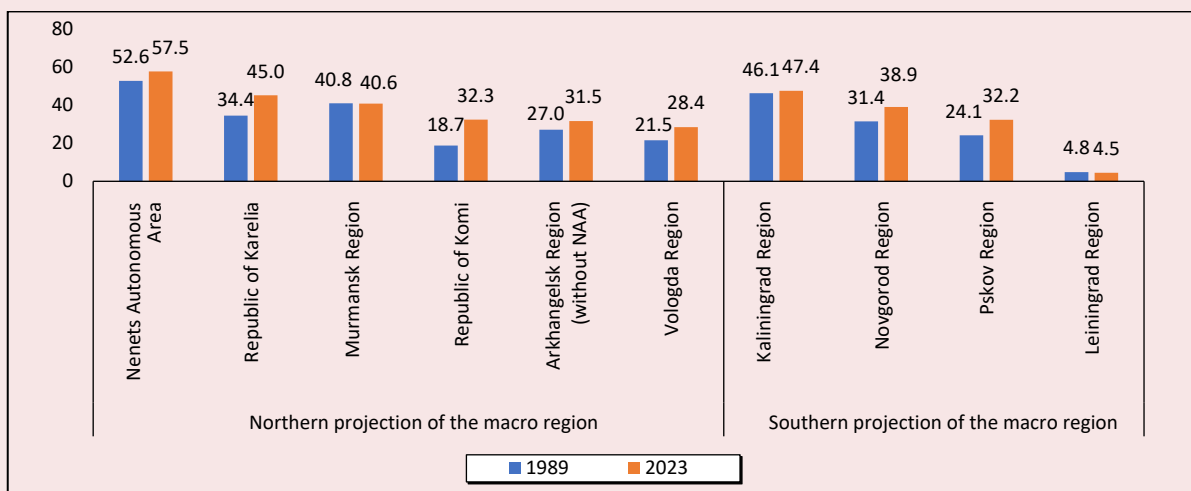
Source: own compilation based on Rosstat data.

As a result, depopulation processes in significant areas of the district have led to a further *decline in population density*. For instance, if in 1990, as a whole the density exceeded the national average in the NWFD (9.2 vs 8.7 people per thousand square kilometers), in 2023 it was already below it (8.2 vs 8.5, *Tab. 3*). This was mainly due to a further decrease in population density in the subjects of the European North of Russia: in the Murmansk Oblast, it was from 8.2 to 4.5 people per square kilometer, in the Komi Republic – from 3.0 to 1.7 people per

square kilometer. This leads to the “collapse” of the capacity of local markets and is a trigger for further stagnation of not only local, but to a certain extent regional economy.

Another trend of changes in the settlement frame is *the increase in the share of the population living in regional administrative centers*, which indicates the centripetal development nature and is a risk for maintaining the stability of the territory’s settlement frame (*Fig. 3*). For instance, there was an increase in this indicator in all subjects of the Northwestern

Figure 3. Share of population living in the administrative center of the constituent entity of the RF in 1989 and 2023, %



Source: own compilation based on Rosstat data.

Federal District except for the Leningrad Region in 1989–2023 (its share currently varies from 28.4% in the Vologda Region to 57.5% in the Nenets Autonomous Area).

Along with this, another negative trend is the shrinking of the *settlement structure*. For example, even in one of the southernmost subjects of the Northwestern Federal District – the Vologda Region – the number of rural settlements decreased by 655 units in 1989–2020 (from 8,459 to 7,824 units, or 7%). At the same time, the number of uninhabited settlements increased by 967 units (or 72%); there was an increase in the number of settlements with population of less than 10 persons – by 414 units, or 15%. As a result, currently, 70% of rural settlements in the region are without population or with a population of less than 10 persons. Similar trends are observed in other NWFd regions, which against the background of rapidly aging population may lead to almost complete depopulation and economic “desertification” of these settlements in the coming years.

Industrial and economic frame

The Northwestern Federal District is one of the country’s leaders in terms of contribution to the national economy: its share in Russia’s total GRP in 2022 amounted to 13.5% (+1 p.p. vs 1998; behind the CFD, UFD, and VFD).

One of the key indicators characterizing the scale of economic activity in the region is GRP per capita. In the Northwestern Federal District, it is currently 1.4 times higher than the average Russian value: 1362.9 vs 958.8 thousand rubles per capita. The highest indicators are observed in the Nenets Autonomous Area (11787.8 thousand rubles/person in 2022; *Tab. 4*), Saint Petersburg (1992.6 thousand rubles/person) and the Murmansk Region (1735.2 thousand rubles/person); the lowest are in the Pskov and Novgorod regions (435.2 and 657.6 thousand rubles/person, respectively).

The number of organizations per 1 thousand people characterizes the density of economic activity, business activity and, ultimately, the quality of the region’s economic space. In the Northwestern Federal District, as well as in the Russian Federation

Table 4. Gross regional product per capita (in comparable prices of 2022), thousand rubles

Territory	Year						2022 to 1998, times	2022 to 2000, times	2022 to 2020, %
	1998	2000	2010	2020	2021	2022			
RF	389.2	457.9	782.9	884.9	952.7	958.8	2.5	2.1	108.4
NWFd	496.2	594.9	1069.8	1236.5	1394.3	1362.9	2.7	2.3	110.2
Northern latitudinal projection of the macro region (European North of Russia)									
Republic of Karelia	352.8	432.2	602.7	765.4	801.1	738.4	2.1	1.7	96.5
Komi Republic	715.3	784.8	1216.7	1262.6	1315.6	1335.8	1.9	1.7	105.8
Arkhangelsk Region without NAA	295.5	395.5	845.2	1052.0	1129.1	1175.5	4.0	3.0	111.7
Nenets Autonomous Area	No data	No data	No data	695.0	736.5	722.3	-	-	103.9
Vologda Region	No data	3900.7	11903.8	9619.0	10471.4	11787.8	-	3.0	122.5
Murmansk Region	471.1	585.6	772.3	905.4	940.2	903.5	1.9	1.5	99.8
Republic of Karelia	894.1	1034.2	1228.9	1712.2	1846.2	1735.2	1.9	1.7	101.3
Southern latitudinal projection of the macro region									
Saint Petersburg	664.0	783.0	1567.4	1707.2	2043.7	1992.6	3.0	2.5	116.7
Kaliningrad Region	234.5	288.2	603.0	696.1	753.0	715.3	3.1	2.5	102.8
Leningrad Region	247.3	318.4	701.8	790.3	831.6	822.8	3.3	2.6	104.1
Novgorod Region	240.4	268.4	456.4	628.6	660.0	657.6	2.7	2.4	104.6
Pskov Region	180.1	230.5	350.4	420.5	432.8	435.2	2.4	1.9	103.5

Source: own compilation based on Rosstat data.

Table 5. Number of organizations of all forms of ownership, units per 1 thousand people

Territory	Year						2023 to 2000, %	2023 to 2020, %
	2000	2010	2020	2021	2022	2023		
RF	22.8	33.8	23.8	22.7	22.4	22.3	97.7	93.7
NWFD	27.9	46.4	31.3	29.7	28.8	28.1	100.7	89.9
Northern latitudinal projection of the macro region (European North of Russia)								
Republic of Karelia	21.4	34.7	34.4	32.4	32.0	31.1	145.5	90.4
Komi Republic	18.1	25.7	20.6	19.1	18.4	17.9	99.3	87.2
Arkhangelsk Region without NAA	15.2	27.2	22.5	22.9	23.0	24.4	160.2	108.5
Nenets Autonomous Area	14.5	21.3	18.8	18.0	18.0	18.0	124.0	95.4
Vologda Region	17.4	32.0	30.0	29.3	28.0	26.3	151.6	87.7
Murmansk Region	17.7	28.8	20.6	20.5	20.7	20.7	117.2	100.3
Southern latitudinal projection of the macro region								
Saint Petersburg	46.2	77.0	43.0	40.4	38.8	37.4	80.8	86.9
Kaliningrad Region	28.5	54.7	35.7	33.8	32.6	31.9	111.9	89.3
Leningrad Region	18.6	24.1	16.6	16.1	16.0	17.0	91.4	102.3
Novgorod Region	17.4	23.4	19.9	19.6	18.9	18.7	107.5	94.0
Pskov Region	18.5	23.6	19.8	19.6	19.1	18.8	101.5	95.1
Source: own compilation based on Rosstat data.								

as a whole, this indicator increased in 2000–2010, and since 2010 it has shown a declining trend (Tab. 5). The greatest reduction in the number of organizations in absolute terms was in 2021, which is mainly due to the suspension of work, liquidation of organizations during the period of the pandemic and the introduction of appropriate restrictions.

In general, according to 2023 results, the highest density of organizations was observed in Saint Petersburg (37.4 units/thousand people), the Kaliningrad Region (31.9 units/thousand people) and the Republic of Karelia (31.1 units/thousand people). We should note that in 2000 they also held the leading positions. In 2023, the lowest density of organizations was recorded in the Leningrad Region, in 2000 – in the Arkhangelsk Region (17.0 and 14.5 units/thousand people, respectively).

The investment volume in fixed capital is a significant indicator that allows distinguishing the economic activity areas. The Nenets Autonomous Area has been and remains the leader among the Northwestern Federal District subjects in terms of

attracted investment funds per capita¹² (in 2023 – 2063.4 thousand rubles, which is 9 times higher than the average Russian level and the macro region level as a whole; Tab. 6).

Since 2020 the second place is held by the Murmansk Region (405.9 thousand rubles/person in 2023). Territorially, the funds are directed mainly to the Murmansk urban okrug (53% of the total investment volume in fixed capital of the region in 2023¹³; the type of activity attracting the largest investment volume in Murmansk is “Transportation and storage”); Kola Municipal District (15.0% of the total investment volume in fixed capital of the region; the type of activity attracting the largest volume of investment is “Transportation and storage”); Kirovsk (10%), where the Kirov branch of Apatit JSC is located. The Leningrad Region rounds out the top three (337.8 thousand rubles/person in 2023; 300.6 thousand rubles/person in 2022). Of the total investment volume in the region in 2022, 47% was directed to manufacturing industries, 22% – in the sphere of transportation and storage¹⁴.

¹² Funds are mainly used for development, storage and transportation through the Varandey terminal of minerals from the Timan-Pechora oil and gas basin.

¹³ Official website of Murmanskstat. Available at: <https://51.rosstat.gov.ru/folder/72872>

¹⁴ Leningrad Region in 2022. Petrostat. Saint Petersburg, 2023.

Table 6. Investment volume in fixed capital per capita (in comparable prices of 2023), thousand rubles

Territory	Year							2022 to 1990, %	2022 to 2020, %
	1990	2000	2010	2020	2021	2022	2023		
RF	244.3	64.0	160.8	184.7	201.3	211.3	232.6	95.2	125.9
NWFD	183.0	62.1	214.6	214.6	222.8	212.2	221.9	121.3	103.4
Northern latitudinal projection of the macro region (European North of Russia)									
Republic of Karelia	155.7	48.8	89.4	141.8	194.5	204.2	197.0	126.5	138.9
Komi Republic	300.8	103.7	282.4	237.3	212.9	178.7	177.7	59.1	74.9
Arkhangelsk Region with NAA	207.7	58.0	202.3	243.3	216.0	206.4	205.6	98.9	84.5
Nenets Autonomous Area	no data	473.4	1763.4	2541.4	2106.8	2206.9	2063.4	-	81.2
Arkhangelsk Region without NAA	no data	no data	no data	148.3	139.0	122.5	124.7	-	84.1
Vologda Region	209.2	46.6	175.1	252.4	241.7	171.8	150.0	71.7	59.5
Murmansk Region	172.0	56.4	128.1	418.0	517.3	443.1	405.9	236.0	97.1
Southern latitudinal projection of the macro region									
Saint Petersburg	124.9	58.9	217.6	200.0	217.6	206.3	213.5	170.9	106.8
Kaliningrad Region	100.3	42.4	137.9	130.0	111.3	133.1	189.7	189.2	145.9
Leningrad Region	170.7	83.5	358.6	268.3	272.5	300.6	337.8	197.9	125.9
Novgorod Region	125.5	56.8	186.6	120.9	108.6	111.6	131.7	104.9	108.9
Pskov Region	174.3	30.8	70.0	92.7	111.2	80.0	81.4	46.7	87.9

Source: own compilation based on Rosstat data.

In 2023, the per capita volume of investments in comparable prices of 2022 in the Northwestern Federal District was 21.3% higher than the 1990 level: 183.0 vs 221.9 thousand rubles/person. Among the subjects of the northern latitudinal projection the situation is similar: the excess of the 1990 level was observed in Karelia (by 26.5%) and the Murmansk Region (by 2.4 times); among the subjects of the southern projection – in Saint Petersburg (by 70.9%), the Kaliningrad (by 89.2%), Leningrad (by 97.9%), Novgorod (by 4.9%) regions.

The maximum average annual investment growth rates in the NWFD and most of its subjects were observed in the 10-year period from 2001 to 2010 (the exception is the Murmansk Region in the period 2011–2020; *Tab. 7*). In the three-year period 2021–2023, the highest average annual growth rates are characteristic of the Republic of Karelia; growth was also observed in the Kaliningrad, Leningrad, Novgorod regions and Saint Petersburg.

It is important to note that while in 2023 at the macro-regional level the maximum volume of investment in fixed capital (NAA) exceeded the minimum (Pskov Region) by 25 times, at the intra-regional level the disproportions were significantly greater: in the Republic of Karelia – 42 times, the

Komi Republic – 88 times. This gap has grown since the 1990s both among the NWFD subjects and their municipalities (for example, in Karelia from three to 42 times, etc.). Municipalities with raw materials specialization (for example, Usinsk and Ukhta in Komi, whose share in the total regional investment volume in 1995–2022 increased from 12.5 to 32.3% and from 16.7 to 24.4%, respectively); with developed manufacturing industry (Petrozavodsk, Cherepovets) remain attractive areas for investment since the 1990s and even increase their weight in the total regional investment volume.

The least attractive from the point of view of investment are peripheral municipalities, remote from the centers of extraction and processing of raw materials, with a high proportion of rural population.

Infrastructure frame

In the macro region as a whole, the *density of paved roads* increased by 1.6 times in 2000–2022: from 40 to 63 km of roads per 1 thousand square kilometers of territory (*Tab. 8*). At the same time, if in 2000 the NWFD indicator values exceeded the average Russian level (40 vs 31.2 km of roads/thousand square kilometers of territory), at present they are lower (63 vs 66).

Table 7. Average annual growth rate of investments in fixed capital per capita (in comparable prices in 2023), %

Territory	1991–2000	2001–2010	2011–2020	2021–2023
RF	0.87	1.10	1.01	1.08
NWFD	0.90	1.13	1.00	1.01
Northern latitudinal projection of the macro region (European North of Russia)				
Republic of Karelia	0.89	1.06	1.05	1.12
Komi Republic	0.90	1.11	0.98	0.91
Arkhangelsk Region with NAA	0.88	1.13	1.02	0.95
Nenets Autonomous Area	no data	1.14	1.04	0.93
Arkhangelsk Region without NAA	no data	no data	no data	0.94
Vologda Region	0.86	1.14	1.04	0.84
Murmansk Region	0.89	1.09	1.13	0.99
Southern latitudinal projection of the macro region				
Saint Petersburg	0.93	1.14	0.99	1.02
Kaliningrad Region	0.92	1.13	0.99	1.13
Leningrad Region	0.93	1.16	0.97	1.08
Novgorod Region	0.92	1.13	0.96	1.03
Pskov Region	0.84	1.09	1.03	0.96

Source: own compilation based on Rosstat data.

Table 8. Density of public roads with hard surface, km of roads per 1 thousand square kilometers of territory

Territory	Year						2023 to 2000, %	2023 to 2020, %
	2000	2010	2020	2021	2022	2023		
RF	31.2	39	64	65	65	66	210.5	102.5
NWFD	40	45	63	63	63	63	156.9	100.3
Northern latitudinal projection of the macro region (European North of Russia)								
Republic of Karelia	38.0	37.0	46.9	46.6	47.2	48.1	126.6	102.5
Komi Republic	13.0	14.0	16.2	16.5	16.2	16.5	126.9	102.0
Arkhangelsk Region with NAA	17.0	25.6	29.4	29.7	29.5	29.6	174.2	100.9
Nenets Autonomous Area	0.9	1.1	1.6	1.7	1.8	1.9	206.5	115.3
Vologda Region	81.0	81.0	115.8	116.5	115.2	110.7	136.7	95.6
Murmansk Region	17.0	19.0	23.6	23.9	23.8	24.2	142.6	102.6
Southern latitudinal projection of the macro region								
Saint Petersburg	no data	no data	2525.8	2522.3	2530.6	2542.4	-	100.7
Kaliningrad Region	303.0	439.0	527.1	526.2	524.1	518.9	171.3	98.4
Leningrad Region	122.0	135.0	216.9	218.0	220.4	221.7	181.7	102.2
Novgorod Region	156.0	175.0	202.7	203.7	203.7	200.8	128.7	99.1
Pskov Region	180.0	200.0	308.1	311.3	298.2	312.6	173.7	101.5

Source: own compilation based on Rosstat data.

At the same time, significant differences between its northern and southern latitudinal projections remain in the macro region space (even taking into account the exclusion of Saint Petersburg from the analysis). Such differences in 2023 reached 273 times (between the Kaliningrad Region and the Nenets Autonomous Area). Obviously, the northern territories will have a more underdeveloped road network due to unfavorable natural and climatic

conditions, dispersed nature of settlement and economic activities¹⁵. However, this is one of the factors that limit the transport connectivity of the territories.

¹⁵ For comparison, we note that in the northern foreign countries the density of highways is much higher: in Norway, it is 287 km, Finland – 230 km per 1 thousand square kilometers (although these countries are much smaller in area). Source: Worldstat Info. Available at: <http://ru.worldstat.info/>

Some increase in road density in the NWFD regions is due to both changes in the statistical accounting system (inclusion of local roads in the length of roads since 2006 and streets since 2012) and direct construction of roads, including within the framework of major infrastructure programs and projects¹⁶.

The share of public roads of regional or intermunicipal significance meeting the standards in the subjects of the Northwestern Federal District in 2022 ranged from 24.6% (Arkhangelsk Region; *Tab. 9*) to 68.2% (Saint Petersburg). At the same time, while in all regions of the southern latitudinal projection this share has increased since 2007, in three out of six regions of the northern projection it has decreased by 6–19 p.p. (Komi, NAA, Vologda Region).

In terms of space connectivity, along with linear (highways), the availability of so-called “soft” infrastructure currently plays a significant role. In 2014, *the share of households with access to the Internet* in most (8 out of 11; *Tab. 10*) subjects of the NWFD was above the national average of 69.9%. By

2023, despite positive trends in the growth of network availability, the situation has changed: the share of households in 8 subjects was below the Russian average of 87.9%.

Despite this, in 2014–2022 there was a decrease in the numerical gap between the NWFD regions due to “pulling up the laggards”: the gap between the maximum and minimum values of indicators decreased from 22.6 to 10.7 p.p.

Social infrastructure plays a significant role in the infrastructure provision of the territory. In 1990–2020, *the number of hospital beds per 10,000 people* in the Northwestern Federal District decreased by 40% (from 133.8 to 80.8 units; *Tab. 11*). Then the situation changed slightly: in 2020–2022, there was a 1% increase (from 80.8 to 81.6 units), provided by the positive dynamics of the indicator in the Arkhangelsk and Kaliningrad regions and Saint Petersburg. The situation is the same in the Novgorod Region. In the rest of the NWFD regions the number of beds per 10 thousand people decreased by 0.1–6.6% in 2020–2022.

Table 9. Share of public roads of regional or intermunicipal significance that meet regulatory requirements, %

Territory	Year					2022 to 2007 (+/-), p.p.	2022 to 2020 (+/-), p.p.
	2007	2010	2020	2021	2022		
RF	44.3	36.8	45.8	48.2	50.6	6.3	4.8
NWFD	34.4	23.4	40.7	43	45.4	11	4.7
Northern latitudinal projection of the macro region (European North of Russia)							
Republic of Karelia	25	31	36.2	36.6	36.6	11.6	0.4
Komi Republic	57	43.4	50.6	49.7	50.9	-6.1	0.3
Arkhangelsk Region with NAA	7	8.8	19	20.3	24.6	17.6	5.6
Nenets Autonomous Area	67	8.3	36.9	52.4	55.1	-11.9	18.2
Vologda Region	60	6.5	38.3	39.7	40.6	-19.4	2.3
Murmansk Region	23	21.8	43.8	46.3	45.5	22.5	1.7
Southern latitudinal projection of the macro region							
Saint Petersburg	no data	no data	65.5	68.7	68.2	-	2.7
Kaliningrad Region	30	30	38.2	43.2	48	18.0	9.8
Leningrad Region	47.7	38.5	49.5	50.4	51.3	3.6	1.8
Novgorod Region	9	16.5	47.6	54.1	61.4	52.4	13.8
Pskov Region	30	25.9	34.3	36.4	40.1	10.1	5.8

Source: own compilation based on EMISS data.

¹⁶ “Modernization of the Transport System of Russia” (implementation period: 2002–2010); “Transport System Development” (2018–2021); “Safe Quality Roads” (2018–2030); “Comprehensive Plan for Modernization and Expansion of Trunk Infrastructure” (2018–2024).

Table 10. Share of households with access to the Internet, % of the total number

Northern latitudinal projection			Southern latitudinal projection		
Territory	2014	2023	Territory	2014	2023
Republic of Karelia	70.8	84.0	Saint Petersburg	84.9	88
Komi Republic	70.3	83.2	Kaliningrad Region	81.6	89.2
Arkhangelsk Region with NAA	73.2	82.8	Leningrad Region	75.6	84
Nenets Autonomous Area	62.3	87.4	Novgorod Region	63.1	78.5
Vologda Region	62.6	83.2	Pskov Region	63.6	85.9
Murmansk Region	80.4	88.9			

Note: In 2014, the indicator for the RF amounted to 69.9%, for the NWFD – 76.4%; in 2023, the RF – 87.9%, NWFD – 85.7%.
Source: own compilation based on Rosstat data.

Table 11. Number of hospital beds, units per 10,000 people

Territory	Year						2022 to 1990, %	2022 to 2000, %	2022 to 2020, %
	1990	2000	2010	2020	2021	2022			
RF	137.5	115.0	93.8	80.6	79.1	78.0	56.7	67.8	96.8
NWFD	133.8	111.7	93.2	80.8	80.9	81.6	61.0	73.1	101.0
Northern latitudinal projection of the macro region (European North of Russia)									
Republic of Karelia	151.2	121.0	106.0	88.1	86.3	82.7	54.7	68.3	93.9
Komi Republic	147.9	119.9	111.7	104.5	99.3	104.4	70.6	87.1	99.9
Arkhangelsk Region with NAA	142.7	123.1	101.9	87.9	91.1	93.4	65.5	75.9	106.3
Nenets Autonomous Area	120.4	127.8	122.3	79.2	79.9	74.7	62.0	58.5	94.3
Vologda Region	145.3	118.6	89.5	77.2	77.1	76.3	52.5	64.3	98.8
Murmansk Region	112.9	115.3	124.7	111.9	109.3	104.5	92.6	90.6	93.4
Southern latitudinal projection of the macro region									
Saint Petersburg	123.8	101.3	89.3	79.7	81.2	83.6	67.5	82.5	104.9
Kaliningrad Region	143.2	113.0	78.0	77.5	77.5	79.9	55.8	70.7	103.1
Leningrad Region	126	97.9	73.7	57.0	58.4	55.0	43.7	56.2	96.5
Novgorod Region	149.1	135.7	98.6	81.9	80.8	81.9	54.9	60.4	100.0
Pskov Region	142.3	125.8	103.4	96.8	91.5	93.6	65.8	74.4	96.7

Source: own compilation based on Rosstat data.

Conclusion

The following conclusions can be drawn based on the results of the analysis. The spatial development of the Northwestern Federal District in the post-Soviet period was influenced by many factors, including transformational ones. However, despite this, a number of stable trends, manifested in the settlement, industrial-economic and infrastructural frames of the Northwestern Federal District, are quite clearly distinguished.

The main *positive trends* in the spatial development of the NWFD in 1990–2023 include the following:

- the share of the NWFD in the total GRP of Russia in 2022 amounted to 13.5%, having increased by 2.9 p.p. as compared to the level of 1995; as a result, in 2022, the average per capita GRP in the

NWFD was 1.4 times higher than the Russian average: 1362.9 vs 958.8 thousand rubles (the highest indicators are observed in the Nenets Autonomous Area (11786.4 thousand rubles/person), Saint Petersburg (1992.6 thousand rubles/person) and the Murmansk Region (1735.2 thousand rubles/person); the lowest one is in the Pskov and Novgorod regions (435.2 and 657.7 thousand rubles/person));

- the share of the NWFD in the all-Russian volume of shipped goods of own production, works and services performed by own forces in 1990–2023 increased from 9.7% to 12.5%; however, according to the results of 2022–2023, the Northwestern Federal District and most of its regions became one of the most affected by the sanctions pressure of unfriendly countries. The NWFD and most of its constituent

regions became one of the most affected by the sanctions pressure of unfriendly countries;

- the number of organizations per 1 thousand people, which characterizes business activity in the region, increased in 2000–2023 in most subjects of the NWFD and now exceeds the average Russian level: Saint Petersburg – 37.4 units/thousand people, the Kaliningrad Region – 31.9, the Republic of Karelia – 31.1; the average for the Russian Federation – 22.3;

- population growth in some southern subjects of the NWFD: Saint Petersburg – by 11.9% (from 5.0 to 5.6 million people), the Leningrad Region – by 21.5% (from 1.7 to 2.0 million people), the Kaliningrad Region – by 16.6% (from 0.9 to 1.0 million people);

- increasing the density of paved roads from 40 (2000) to 63 km (2022) of roads per 1,000 square kilometers of territory;

- there is a decrease in the gap between the NWFD regions in terms of the share of households with the Internet access due to “pulling up the laggards” (the gap between the maximum and minimum indicators in 2014–2022 decreased from 22.6 to 10.7 p.p.). However, at present, in 8 subjects of the NWFD (out of 11) the share of households with the Internet access is lower than in Russia as a whole (87.9%).

The key *negative trends* include the following:

- decrease in the total population of the NWFD, and especially of the northern subjects of the Russian Federation (in 1990–2023, the population in the European North of Russia decreased by 34.4% (from 6.2 to 4.0 million people); in the Russian Federation – by 1.1%; in the NWFD – 9.5%); this is due not only to natural but also, to a large extent, to migration loss of population;

- depopulation processes have led to a decrease in population density in significant areas of the district; for instance, while in 1990, the density in the NWFD as a whole exceeded the national average (9.2 vs 8.7 people per thousand square kilometers), in 2023 it was already lower (8.2 vs 8.5); this indicator

in the Murmansk Region decreased from 8.2 to 4.5 people per square kilometer; in the Komi Republic – from 3.0 to 1.7 people per square kilometer. Along with a general decrease in the number of people, this leads to a “collapse” of the capacity of local markets and is a trigger for further stagnation of their economies;

- locational compression of the developed space of the district and transformation of its settlement frame, which is manifested primarily in the increase in the urban population: for example, in 2023, the share of urban population in the Murmansk Region was 93%, while in most other subjects of the Northwestern Federal District, almost 3/4 of their population lived in cities; at the same time, administrative centers grew especially fast; on the other hand, the settlement network has been shrinking, for example, in the Vologda Region currently 70% of the total number of rural settlements in the region are without inhabitants or with a population of less than 10 people; against the background of a rapidly aging population, this may lead to almost complete depopulation and economic “desertification” of these territories;

- significant shift of the center of economic “gravity” of the macro region in the direction from north to south: in 1995–2022, the share of the regions of the northern projection of the NWFD in the country’s GRP decreased from 5.4% to 3.4% (the NWFD as a whole increased from 10.6% to 13.5%);

- growth of inter- and intra-regional differentiation in investment activity: if in 2022 at the macro-regional level, the maximum volume of investments in fixed capital (NAA – 2065.4 thousand rubles/person) exceeded the minimum (Pskov Region – 66.8 thousand rubles/person) 31 times, then at the intra-regional level such disproportions were multiplied: in the Republic of Karelia, it was 42 times, in the Komi Republic – 88 times, in the Vologda Region – 22 times); this gap has grown since the 1990s both among the subjects of the NWFD and their municipalities (for example, in Karelia, it was from 3 to 42 times, etc.);

– underdevelopment and unsatisfactory quality of roads in the northern regions of the okrug: three out of six regions of the European North of Russia (Komi Republic, Nenets Autonomous Area, Vologda Region) present the decrease in the share of public roads of regional or inter-municipal importance meeting the normative requirements decreased by 6–19 p.p. in 2007–2022. Currently, almost 1/2 of rural settlements in the Arkhangelsk Region are not connected by paved roads to the public road network (48.3%), it is almost one third in the Komi Republic and the Vologda Region (31.9 and 31.4%, respectively).

Thus, we should say that *the centripetal vector of development and peripheralization processes are clearly observed both at the macro- and intra-regional levels* in the post-Soviet period according to the results of the analysis. This is manifested primarily in depopulation, economic “desertification”, poor transport connectivity of territories remote from administrative and major centers of economic

growth, especially acute in the regions of the North, characterized by more difficult conditions for living and doing business.

In this regard, an important task of the federal and regional authorities is to create conditions promoting the development of the spatial frame of the macro region by unlocking the potential of different kinds of places (cities and agglomerations of different levels of hierarchy, rural, industrial periphery), increasing the connectivity of the NWFD space. Taking this into account, we think that the priority of the spatial development policy should be the implementation of a set of measures (Tab. 12), which organically fit into the priorities of the new Concept and Strategy for Spatial Development of the Russian Federation until 2036, which identifies the support of accelerated development of supportive settlements of different hierarchical levels (2,319 units), increasing their infrastructure and transport connectivity as key priorities.

Table 12. Priority directions of spatial development of the NWFD in the context of ensuring spatial connectivity

Economic sphere	Social sphere	Institutional and legal regulation
<ul style="list-style-type: none"> – Modernization and expansion of “bottlenecks” in the development of transport infrastructure; coordinated development of key transport corridors (Northern Sea Route, Northern Latitudinal Railway, Belkomur), various modes of transport (sea, rail, road, etc.); modernization of roads and development of alternative modes of transport in peripheral areas; – organizational and communication support for the implementation of both small and medium-sized projects in priority areas of cooperation within the framework of inter-municipal cooperation (e.g., northern and Arctic tourism), as well as the implementation of budgetary investments in the form of public-private partnership (PPP), the use of horizontal subsidies and loans for the implementation of joint projects in strategic areas of regional development (neo-industrialization of territorial-economic systems with traditional industrial ecology); – support the formation and development of inter-regional clusters, innovation networks (ICST – Innovative Center of Sciences and Technology) on the basis of existing scientific and technological reserves (e.g., biotechnology, automotive); – stimulating production cooperation between enterprises along the “north – south” line to support Arctic development projects in the context of implementing the import substitution policy 	<ul style="list-style-type: none"> – Reduction of disproportions in the quality of life and human capital in the macro region along the line “north – south”, “urban – rural” by investing in health care, education, science, culture, gasification of remote areas, elimination of their “digital” inequality; – supporting social cohesion, providing informational, scientific and expert support to the initiative “from below” in the development and implementation of territorial public self-government (TPSG) projects in the sphere of culture, education, tourism, management, etc. 	<ul style="list-style-type: none"> – Development and adoption of the strategy and development program for the NWFD and its northern latitudinal projection, specific interregional projects in the economic and social spheres, including those coordinated with the development strategies of large corporations based in the district (e.g., JSC RZD, PJSC Gazprom, etc.); – working out of strategic development and spatial planning documents for several NWFD subjects; parts of the RF constituent entity (subregions, agglomerations) in accordance with Federal Law 172 “On Strategic Planning in the Russian Federation”; – formation of a favorable institutional and legal environment that would enhance the effectiveness of interregional development institutions of the RF constituent entities (e.g., the world-class research and development center “Russian Arctic: New Materials, Technologies and Research Methods”)

According to: (Lazhentsev, 2020; Kryukov et al., 2020; Kozhevnikov, 2022).

References

- Baranskii N.N. (1956). On the economic and geographical study of cities. In: *Ekonomicheskaya geografiya. Ekonomicheskaya kartografiya* [Economic Geography. Economic Cartography]. Moscow: Geografiz.
- Castells M. (2000). *Informatsionnaya epokha: ekonomika, obshchestvo i kul'tura* [The Information Age Economy, Society and Culture]. Moscow: GU-VSH.
- Dem'yanenko A.N., Isaev A.G. (2015). On cyclical processes in the economic space of Russia. *Regionalistika*, 2(5-6), 6–17. DOI: 10.14530/reg.2015.5-6
- Dmitrieva T.E. (2016). The effective space – factor in the development of the Komi Republic. *Izvestiya Komi nauchnogo tsentra UrO RAN*, 3(27), 111–120 (in Russian).
- Dmitrieva T.E. (2023). Settlement patterns as a foundation of an efficient space for regional social development in the North: A case study of the Komi Republic. *Sever i rynok: formirovanie ekonomicheskogo poryadka=The North and the Market. Forming The Economic Order*, 4, 34–48 (in Russian).
- Friedmann J. (1966). *Regional Development Policy: A Case Study of Venezuela*. MIT Press.
- Gainanov D.A., Gataullin R.F., Ataeva A.G. (2021). Methodological approach and tools for ensuring region's balanced spatial development. *Ekonomicheskie i sotsial'nye peremeny: fakty, tendentsii, prognoz=Economic and Social Changes: Facts, Trends, Forecast*, 14(2), 75–91. DOI: 10.15838/esc.2021.2.74.5 (in Russian).
- Ilyin V.A., Morev M.V. (2022). The rubicon has been crossed: February 24, 2022, Russia entered a new stage in its development in the 21st century. *Ekonomicheskie i sotsial'nye peremeny: fakty, tendentsii, prognoz=Economic and Social Changes: Facts, Trends, Forecast*, 15(2), 9–30. DOI: 10.15838/esc.2022.2.80.1 (in Russian)
- Khorev B.S. (1975). *Problemy gorodov (urbanizatsiya i edinaya sistema rasseleniya v SSSR)* [Urban Problems (Urbanization and Unified Settlement System in the USSR)]. Moscow: Mysl'.
- Kozhevnikov S.A. (2020). Problems of project management in the public sector in the perspective of achieving national goals. *Problemy razvitiya territorii=Problems of Territory's Development*, 1(105), 64–77. DOI: 10.15838/ptd.2020.1.105.5 (in Russian).
- Kryukov V.A., Lavrovskii B.L., Seliverstov V.E., Suslov V.I., Suslov N.I. (2020). Siberian development vector: Cooperation and interaction at the heart of it. *Problemy prognozirovaniya=Studies on Russian Economic Development*, 5(182), 46–59. DOI: 10.1134/S1075700720050111 (in Russian).
- Kurushina E.V. (2019). *Upravlenie prostranstvennym razvitiem na osnove mezhregional'noi ekonomicheskoi integratsii: monografiya* [Management of Spatial Development on the Basis of Interregional Economic Integration: Monograph]. Tyumen: TIU.
- Kuznetsova T.V., Nikiforov L.V. (2013). On strategy of using space potential in Russia. *Voprosy gosudarstvennogo i munitsipal'nogo upravleniya=Public Administration Issues*, 2, 51–64 (in Russian).
- Lappo G.M. (1983). The concept of the supporting framework of the territorial structure of the national economy: Development, theoretical and practical significance. *Izvestiya AN SSSR. Seriya geograficheskaya*, 5, 16–28 (in Russian).
- Lazhentsev V.N. (2011). North of Russia: Distribution of productive forces and spatial development. *Ekonomicheskie i sotsial'nye peremeny: fakty, tendentsii, prognoz=Economic and Social Changes: Facts, Trends, Forecast*, 1, 37–46 (in Russian).
- Lazhentsev V.N. (2018). *Ekonomiko-geograficheskie aspekty razvitiya Severa Rossii* [Economic and Geographical Aspects of the Development of the North of Russia]. Syktyvkar: ISEiEPS FITs Komi NTs UrO RAN.
- Lazhentsev V.N. (2020). The North and integration of socio-economic space (the example of North-West Russia). *Problemy prognozirovaniya=Studies on Russian Economic Development*, 3, 50 (in Russian).
- Luchnikov A.S., Nikolaev R.S. (2017). Economic framework optimization as an instrument for regional development. *R-Economy* 3(4), 213–230.
- Nefyodova T.G., Treyvish A.I. (2020). Polarization and shrinkage of active space in the core of Russia: Trends, problems and possible solutions. *Demograficheskoe obozrenie=Demographic Review*, 7(2), 31–53 (in Russian).
- Yakovleva S.I. (2013). Wireframe in regional scheme of territorial planning. *Pskovskii regionologicheskii zhurnal*, 15, 15–25 (in Russian).

Appendix 1

Regional trends in 2020–2023

The consolidated ranks of the NWF regions in 2020–2023 presented in *Appendices 1 and 2* are calculated as an arithmetic average of these regions among 85 regions of the Russian Federation¹⁷ according to the indicators characterizing the state and trends in the development of *settlement, industrial-economic, infrastructural frames* (Tab. 13).

Table 13. Indicators used to assess trends in spatial development of the NWF regions

1. Settlement frame	2. Production and economic frame	3. Infrastructure frame
1.1. Population density, persons per square kilometer of territory	2.1. GRP per capita, thousand rubles per person	3.1. Density of public roads with paved surface, km of tracks / thousand square kilometer of territory
1.2. Share of the region's population living in the administrative center, %	2.2. Investments in fixed capital per capita, thousand rubles/person	3.2. Number of hospital beds, units per 10,000 people
1.3. Migration rate of population growth, persons per 1 thousand population	2.3. Number of organizations, units per 1 thousand people	3.3. Share of households with access to the Internet, %
Source: for direct indicators (1.1, 1.3, 2.1, 2.2, 2.3, 3.1, 3.2, 3.3), the increase in which indicates positive trends, the region with the maximum value was assigned the 1st place, with the minimum – 85; for reverse indicators (1.2) – vice versa. Due to the non-provision/non-comparability of data on GRP and hospital beds in open statistics, the data for the previous year were used to calculate the ranks of regions for 2023.		
Source: own compilation.		

Table 14 presents detailed information on changes in the positions of the NWF regions by the above nine indicators among 85 constituent entities of the Russian Federation.

Table 14. Change in the positions of the NWF regions by average per capita / specific¹⁸ indicators among 85 RF constituent entities for 2023 compared to the average for 2020–2022

Indicator	Significant improvement in positions	Significant deterioration in positions
1. Population density, persons per square kilometer of territory	–	–
2. Share of the region's population living in the administrative center, %	Arkhangelsk Region without NAA (+3 p.: 30→27).	–
3. Migration gain coefficient, people per 1 thousand people	Vologda Region (+8 p.: 55→47); Nenets Autonomous Area (+26 p.: 27→1); Murmansk Region (+48 p.: 77→29)	Republic of Karelia (-3 p.: 27→30); Republic of Komi (-4 p.: 76→80); Kaliningrad Region (-4 p.: 4→8); Saint Petersburg (-5 p.: 18→23); Novgorod Region (-8 p.: 18→26); Pskov Region (-18 p.: 38→56)
4. GRP per capita, thousand rubles per person	Vologda Region (+3 p.: 20→17)	Arkhangelsk Region without NAA (-4 p.: 30→34); Republic of Karelia (-9 p.: 24→33)

¹⁷ Excluding Donetsk People's Republic, Luhansk People's Republic, Zaporozhye and Kherson regions due to lack of statistical data.

¹⁸ Specific indicators – indicators that are calculated as a ratio of absolute (volumetric) indicators to each other and characterize the quality of economic space (e.g., population density, roads, etc.).

End of Table 14

Indicator	Significant improvement in positions	Significant deterioration in positions
5. Investments in fixed capital per capita, thousand rubles/person	Republic of Karelia (+3 p.: 28→25); Novgorod Region (+6 p.: 53→47); Kaliningrad Region (+13 p.: 40→27)	Arkhangelsk Region without NAA (-9 p.: 40→49); Pskov Region (-9 p.: 68→77); Komi Republic (-10 p.: 19→29); Vologda Region (-21 p.: 19→40)
6. Number of organizations, units per 1 thousand population	Murmansk Region (+3 p.: 37→34); Nenets Autonomous Area (+7 p.: 24→17); Leningrad Region (+11 p.: 63→52)	Vologda Region (-4 p.: 8→12); Komi Republic (-4 p.: 43→47)
7. Density of public roads with hard surface, kilometer of tracks per 1 thousand square kilometers of territory	–	–
8. Number of hospital beds, units per 10 thousand population	Arkhangelsk Region without NAA (+6 p.: 24→18); Kaliningrad Region (+7 p.: 58→51); Saint Petersburg (+9 p.: 44→35)	Republic of Karelia (-8 p.: 33→41); Nenets Autonomous Area (-8 p.: 57→65)
9. Share of households with access to the Internet, %	Pskov Region (+14 p.: 66→52); Vologda Region (+5 p.: 67→62)	Republic of Karelia (-4 p.: 54→58); Kaliningrad Region (-6 p.: 28→34); Arkhangelsk Region without NAA (-9 p.: 59→68); Murmansk Region (-13 p.: 22→35); Komi Republic (-14 p.: 50→64); Leningrad Region (-14 p.: 43→57); Saint Petersburg (-18 p.: 22→40)
Note: significant improvement/deterioration of positions is understood as improvement/deterioration by 3 or more positions in the ranking of regions. No significant (by 3 positions or more) changes in the regions' positions were observed in the indicators of population density and density of public roads with hard surface. Source: own compilation.		

We present the change in the composite ranks of the regions of Northwest Russia in 2023 compared to the average for 2020–2022 by the indicators of the settlement frame as follows (*Tab. 15*):

– consolidated ranks of 4 *NWFD regions* in 2023 **increased** by 1–16 p.: the Arkhangelsk Region without NAA (+1 p.: from 56th to 55th place), the Vologda Region (+2 p.: from 45th to 43rd place), the Nenets Autonomous Area (+9 p.: from 63rd to 54th place), the Murmansk Region (+16 p.: from 65th to 49th place);

– consolidated ranks of 5 *NWFD regions* in 2023 **worsened** by 1–5 p.: the Kaliningrad Region (-1 p.: from 29th to 30th place), the Komi Republic (-1 p.: from 60th to 61st place), the Novgorod Region (-3 p.: from 40th to 43rd place), Saint Petersburg (-3 p.: from 10th to 13th place), the Pskov Region: -5 p. (from 43rd to 48th place);

– consolidated ranks of 2 *NWFD regions* (Republic of Karelia, Leningrad Region) in 2023 **remained at the level of the average** for 2020–2022.

At the same time, the leader in 2023 and on average for 2020–2022 was Saint Petersburg (13th and 10th place, respectively).

In general, in terms of key characteristics of the settlement frame, most regions of the northern latitudinal projection of the *NWFD* (Vologda, Murmansk, Arkhangelsk regions and Nenets Autonomous Area) improved their positions in 2020–2023, although they remained in the 5th–7th tens in the rating table of 85 Russian regions. In turn, the prevailing number of regions of the southern latitudinal projection (Saint Petersburg, Kaliningrad, Novgorod and Pskov regions) lost their positions, but remained in the 2nd–5th tens.

Table 15. Ranks of regions by indicators of the settlement frame among the RF constituent entities

Region	On average in 2020–2022	2023	2023 to 2020–2022 (+/-)
Saint Petersburg	10	13	-3
Leningrad Region	16	16	0
Kaliningrad Region	29	30	-1
Vologda Region	45	43	+2
Novgorod Region	40	43	-3
Pskov Region	43	48	-5
Murmansk Region	65	49	+16
Nenets Autonomous Area	63	54	+9
Arkhangelsk Region without NAA	56	55	+1
Republic of Karelia	55	55	0
Komi Republic	60	61	-1

Source: own compilation.
Note: ranked in ascending order of rank values in 2023.

Table 16. Ranks of regions by indicators of the production and economic frame among the RF constituent entities

Region	On average in 2020–2022	2023	2023 to 2020–2022 (+/-)
Nenets Autonomous Area	9	7	+2
Saint Petersburg	11	11	0
Murmansk Region	18	18	0
Republic of Karelia	19	21	-2
Kaliningrad Region	25	22	+3
Vologda Region	16	23	-7
Komi Republic	25	29	-4
Leningrad Region	33	30	+3
Arkhangelsk Region without NAA	40	43	-3
Novgorod Region	45	44	+1
Pskov Region	59	63	-4

Source: own compilation.
Note: ranked in ascending order of rank values in 2023.

Table 16 shows the change in the composite ranks of the regions of Northwest Russia in 2023 compared to the average for 2020–2022 by the indicators of the *production and economic frame* as follows:

- consolidated ranks of 4 regions of the NWFD in 2023 **improved** by 1–3 p.: the Novgorod Region (+1 p.: from 45th to 44th place), the Nenets Autonomous Area (+2 p.: from 9th to 7th place), the Kaliningrad Region (+3 p.: from 25th to 22nd place), the Leningrad Region (+3 p.: from 33rd to 30th place);
- consolidated ranks of 5 regions of the NWFD in 2023 **deteriorated** by 2–7 p.: the Republic of Karelia (-2 p.: from 19th to 21st place), the Arkhangelsk Region (-3 p.: from 40th to 43rd place),

the Pskov Region (-4 p.: from 59th to 63rd place), the Komi Republic (-4 p.: from 25th to 29th place), the Vologda Region (-7 p.: from 16th to 23rd place);

- consolidated ranks of 2 NWFD regions (Murmansk Region, Saint Petersburg) in 2023 **remained at the level of the average** for 2020–2022.

The Nenets Autonomous Area was the leader in 2023 and on average for 2020–2022 (7th and 9th place, respectively).

In general, in terms of key characteristics of the production and economic frame, all regions of the northern latitudinal projection of the NWFD (except for the Arkhangelsk Region) retained their places in the 1st–3rd tens in the ranking table of 85 Russian regions, despite the absence of unambiguously

positive trends in some cases. At the same time, 3 out of 4 NWFD regions that improved their positions (ranks) in 2023 compared to the average for 2020–2022 are part of the southern latitudinal projection of the macro region; 4 out of 5 regions that worsened their positions are part of the northern latitudinal projection.

Table 17 presents the change in the consolidated ranks of the NWFD regions in 2023 compared to the average for 2020–2022 in terms of *infrastructure frame* indicators as follows:

- consolidated ranks of 3 NWFD regions in 2023 **improved** by 1–14 p.: the Novgorod Region (+1 p.: from 81 to 80th place), the Vologda Region (+1 p.: from 67 to 62nd place), the Pskov Region (+14 p.: from 66 to 52nd place);
- composite ranks of 8 regions of the NWFD in 2023 **deteriorated** by 2–18 p.: the Nenets

Autonomous Area (-2 p.: from 40 to 42 place), the Republic of Karelia (-4 p.: from 54 to 58 place), the Kaliningrad Region (-6 p.: from 28 to 34 place), the Arkhangelsk Region without NAA (-9 p.: from 59 to 68 place), the Murmansk Region (-13 p.: from 22 to 35 place), the Leningrad Region (-14 p.: from 43 to 57 place), the Komi Republic (-14 p.: from 50th to 64th place), Saint Petersburg (-18 p.: from 22nd to 40th place).

The leader in 2023 was the Kaliningrad Region (34th place); in 2020–2022, leaders were the Murmansk Region and Saint Petersburg (22nd place each).

In general, in terms of key characteristics of the infrastructure frame, most of the NWFD regions that are part of both the southern and northern projection (8 out of 11) lost their positions in the all-Russian rating.

Table 17. Ranks of NWFD regions in terms of infrastructure frame indicators among RF constituent entities

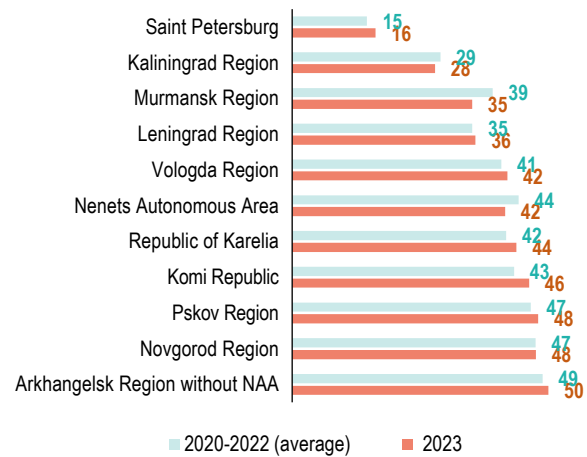
Region	On average in 2020–2022	2023	2023 to 2020–2022 (+/-)
Kaliningrad Region	28	34	-6
Murmansk Region	22	35	-13
Saint Petersburg	22	40	-18
Nenets Autonomous Area	40	42	-2
Pskov Region	66	52	+14
Leningrad Region	43	57	-14
Republic of Karelia	54	58	-4
Vologda Region	67	62	+5
Republic of Komi	50	64	-14
Arkhangelsk Region without NAA	59	68	-9
Novgorod Region	81	80	+1

Source: own compilation.
Note: ranked in ascending order of rank values in 2023.

Regional cases

Depending on the values of key indicators characterizing the development of the settlement, production, economic and infrastructural frames, the NWFD regions occupy different positions in the consolidated rating of the RF constituent entities.

The leader of the macro region in terms of the average ranking by these indicators was Saint Petersburg (16th place among 85 RF constituent entities) in 2023. The Kaliningrad Region entered the 3rd ten of the rating (28th place). The rest of the NWFD regions took positions in the 4th–5th tens.



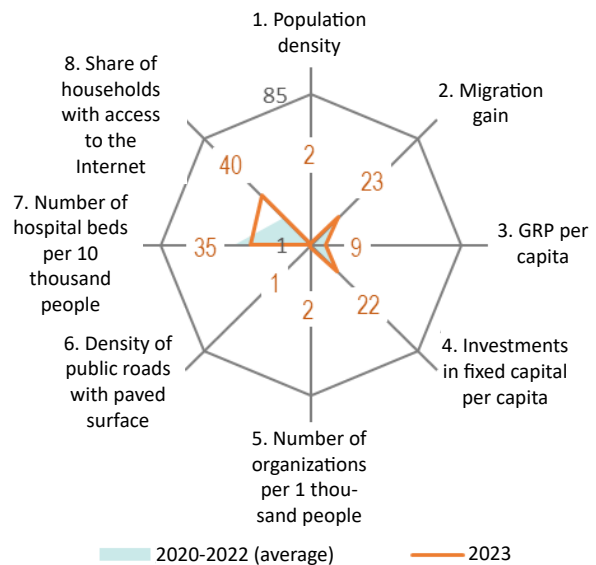
1. Saint Peterburg

The region’s consolidated rank in 2023 was 16, having deteriorated by 1 p. (on average, 2020–2022 – 15).

Saint Petersburg became the country’s leader in the density of paved public roads in 2023. It was one of the top three regions in terms of population density and the number of organizations per 1,000 people. It improved its position in terms of the number of hospital beds per 10,000 people in 2023. The situation has worsened in terms of migration growth and the proportion of households with the Internet access.

At the same time, a significant (by 18 p.: from 22nd to 40th place) decline in the share of households with the Internet access is due to the outpacing growth rates of the indicator in other regions of

Russia (Kaliningrad, Murmansk regions, Krasnodar Territory, etc.).



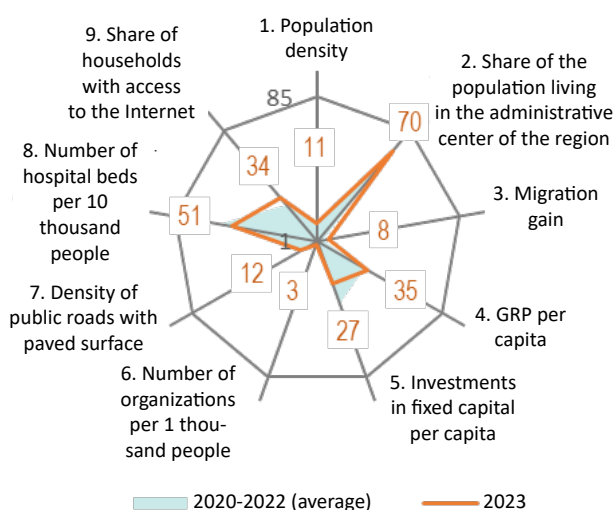
2. Kaliningrad Region

The region's consolidated rank in 2023 was 28, having improved by 1 p. (on average 2020–2022 – 29).

The Kaliningrad Region was among the top three regions in terms of the number of organizations per 1,000 people in 2023. The region's position has improved in terms of the number of hospital beds per 10,000 people, as well as the per capita volume of investments in fixed assets. The situation in the region has worsened in terms of migration growth and the proportion of households with the Internet access.

At the same time, a significant (+13 p.: from 40 to 27th place) improvement in the region's position in terms of investments in fixed assets per capita is due to a 1.8-fold increase in 2023 compared to 2020 in the investment volumes directly related to the launch of large investment projects in the region

(a plant for the production of equipment for solar energy, pharmaceutical plant of the company Oti-sipharm Pro, etc.¹⁹).



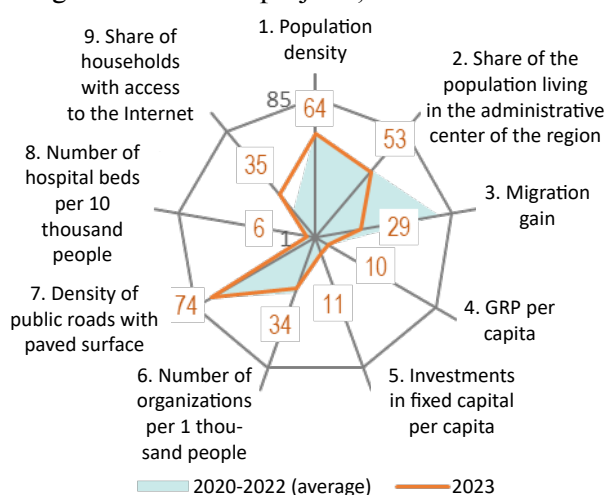
3. Murmansk Region

The region's consolidated rank in 2023 was 35, having improved by 4 p. on average, 2020–2022 – 39).

The Murmansk Region held high positions in terms of the number of hospital beds per 10,000 people, GRP and fixed capital investments per capita in 2023. The region's position in terms of migration growth and the number of organizations per 1,000 people has improved. The situation in the region has worsened in terms of the proportion of households with the Internet access.

According to Rosstat, a significant decrease (by 13 points: from 22nd to 35th place) in positions in terms of the share of households with the Internet access was due to the outpacing growth rates of the indicator in other Russia's regions; the improvement in positions in terms of migration growth was due

to the implementation of a whole range (70 units) of social support measures for various categories of citizens, attracting personnel for the implementation of large infrastructure projects, etc.²⁰



¹⁹ Website of the Government of the Kaliningrad Region. Available at: <https://gov39.ru/press/338923/>

²⁰ Website of the Ministry of Information Policy of the Murmansk Region. Available at: <https://mininform.gov-murman.ru/info/news/521761/>

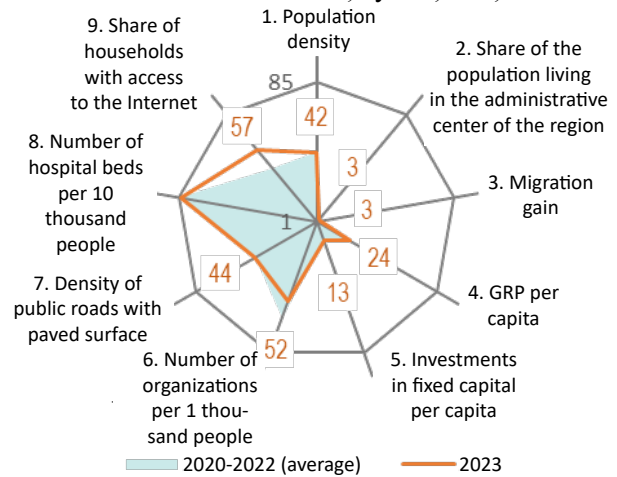
4. Leningrad Region

The region’s consolidated rank in 2023 was 36, having deteriorated by 1 p. (on average, 2020–2022 – 35).

The region holds high positions in terms of migration population growth and per capita investment in fixed assets. In 2023, there was an improvement in the rank of the number of organizations per 1,000 people. The region’s position in the ranking table by the proportion of households with the Internet access worsened in 2023.

A significant decline (by 14 p.: from 43 to 57th place) in the share of households with the Internet access was due to the outpacing growth rates of the indicator in other Russia’s regions according to Rosstat. In turn, an essential improvement (by 11

p.: from 63 to 52nd place) in the region’s position in terms of the number of organizations per 1,000 people is mainly due to an increase in their number: in 2023, compared with 2020, by 6%, or 1,860 units.



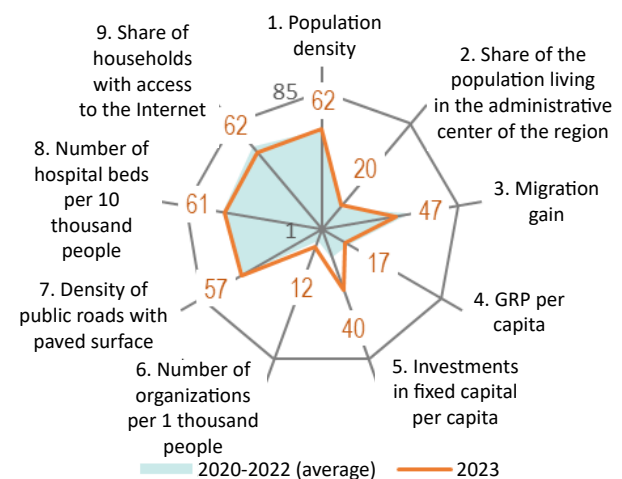
5. Vologda Region

The region’s consolidated rank in 2023 was 42, having deteriorated by 1 p. (on average, 2020–2022 – 41).

The region holds high positions in terms of the share of the population living in the administrative center, the per capita volume of investments in fixed assets and the number of organizations per 1,000 people. In 2023, there was an improvement in the ranks in terms of GRP, the share of households with the Internet access, and migration growth. We noted the deterioration of the region’s position in the ranking table by the number of organizations per 1,000 people, and the volume of investments in fixed assets.

A significant decrease (by 21 p.: from 19th to 40th place) in positions in the indicator of investments in fixed assets per capita is associated with a 19% decrease in 2023 compared to 2020 in the volume

of investments itself due to the completion of investment cycles by a number of companies, as well as the negative impact of sanctions from foreign countries on the activities of large enterprises in the region (Severstal, etc.).



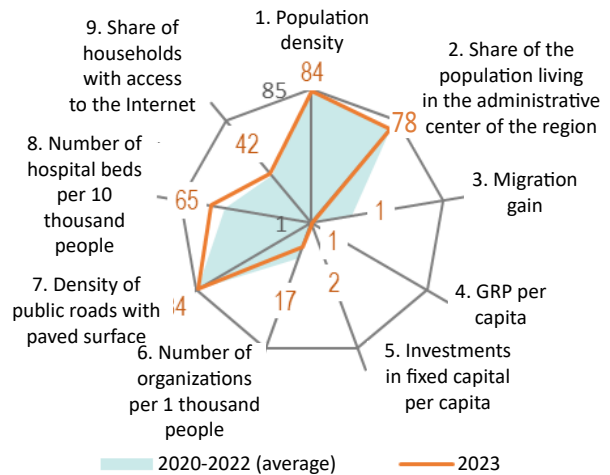
6. Nenets Autonomous Area

The region's consolidated rank in 2023 was 42, having improved by 2 p. (on average, 2020–2022 – 44).

The region took a leading position in 2023 in terms of migration population growth and GRP per capita. It also took high positions in terms of investments in fixed assets per capita and the number of organizations per 1,000 people. In 2023, there was an improvement in the ranks of migration growth and the number of organizations per 1,000 people. We noted the deterioration of the region's position in terms of the number of hospital beds per 10,000 people.

A significant improvement in the position in terms of migration growth (+26 p.: from 27 to 1

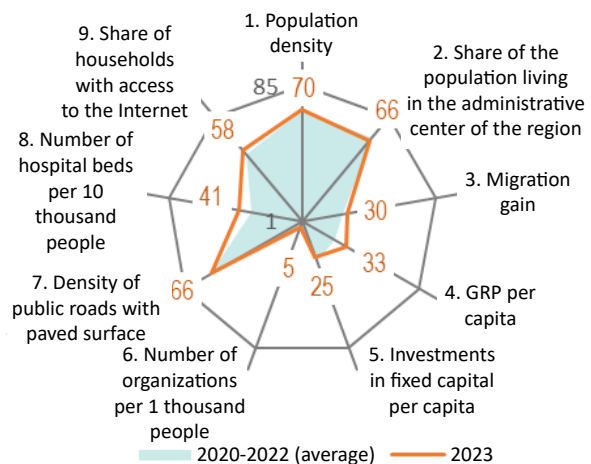
place) is mainly due to the influx of personnel for the implementation of large projects in the field of natural resource development while maintaining a relatively low average annual population.



7. Republic of Karelia

The region's consolidated rank in 2023 was 44, having deteriorated by 2 p. (on average, 2020–2022 – 42).

The region holds high positions in terms of the number of organizations per 1,000 people. In 2023, there was an improvement in the region's positions in the ranking table in terms of investments in fixed assets, a deterioration in positions in terms of migration growth, the share of households with Internet access, the number of hospital beds per 10,000 people and the volume of GRP per capita.



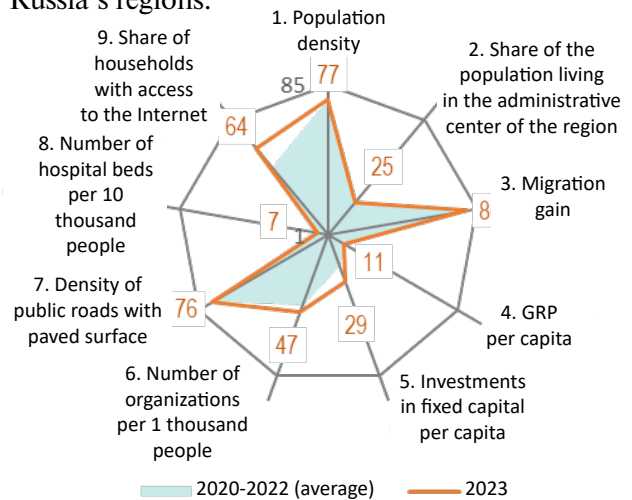
8. Komi Republic

The region’s consolidated rank in 2023 was 46, having deteriorated by 3 p. (on average, 2020–2022 – 43).

The region holds high positions in terms of the number of hospital beds per 10,000 people and the volume of GRP per capita. In 2023, the region’s position in the all-Russian ranking deteriorated in terms of migration growth, the number of organizations per 1,000 people, the volume of investments in fixed assets per capita, and the proportion of households with Internet access. There was no significant improvement in the analyzed indicators in 2023.

A significant decrease (by 10 p.: from 19th to 29th place) in positions in the indicator of investments in fixed assets per capita is associated with an 8% decrease in 2023 compared to 2020 in the volume of investments itself due to the completion of investment cycles by a number of companies, as

well as the negative impact of sanctions from foreign countries on the activities of large enterprises in the region. In turn, an essential decline (by 14 p.: from 50 to 64th place) in the share of households with the Internet access, according to Rosstat, was due to the outpacing growth rates of the indicator in other Russia’s regions.



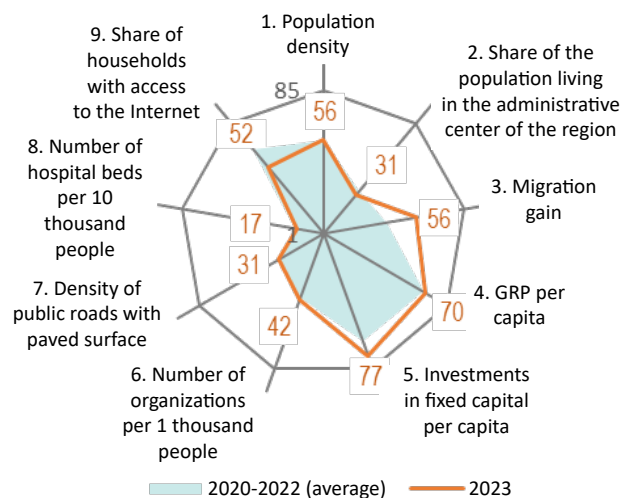
9. Pskov Region

The region’s consolidated rank in 2023 was 48, having deteriorated by 1 p. (on average, 2020–2022 – 47).

The region holds high positions in the all-Russian ranking in terms of the number of hospital beds per 10,000 people. In 2023, there was an improvement in the share of households with the Internet access; a deterioration in the position in terms of investments in fixed assets per capita, migration growth.

A significant improvement (by 14 p.: from 66 to 52nd place) in the share of households with the Internet access is directly due to the high growth rates of the indicator in the region (+10%: from 75.4% in 2020 to 85.9% in 2023) according to Rosstat. A decrease in positions in the rating table for

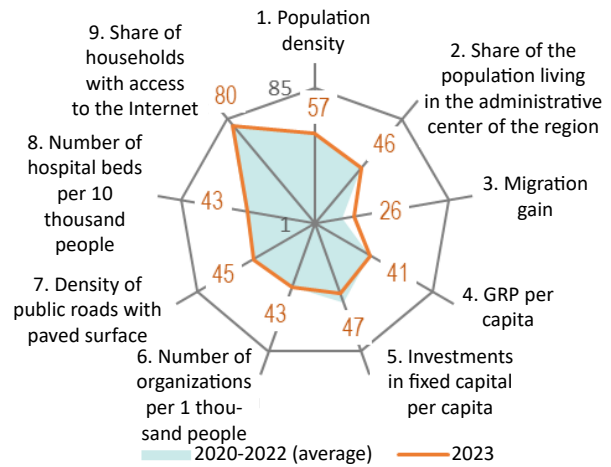
migration growth (-18 p.: from 38th to 56th place) is due to the traditionally high outflow of population to Saint Petersburg and the Leningrad Region, which has been especially increasing in recent years.



10. Novgorod Region

The region's consolidated rank in 2023 was 48, having deteriorated by 1 p. (on average, 2020–2022 – 47).

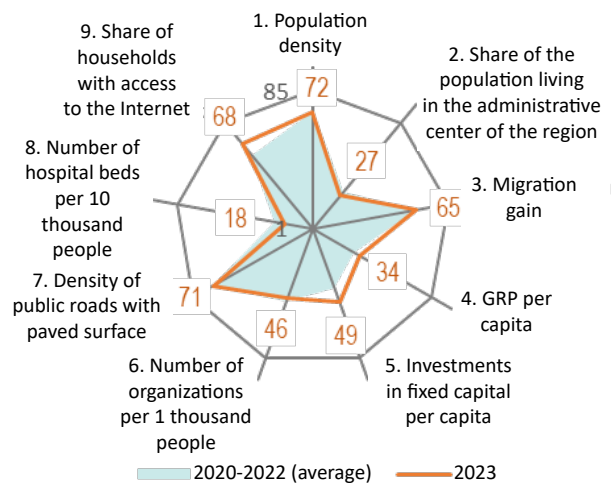
The region occupies an average position among the regions of the country in most of the key indicators characterizing the settlement, production, economic and infrastructural frameworks. In 2023, there was an improvement in the region's position in the all-Russian rating in terms of investments in fixed assets, and a deterioration in positions in terms of migration growth.



11. Arkhangelsk Region (without the Nenets Autonomous Area)

The region's consolidated rank in 2023 was 50, having deteriorated by 1 p. (on average, 2020–2022 – 49).

The region ranks high in terms of the number of hospital beds per 10,000 people. In 2023, the region will improve its position in the ranking table by the share of the population living in the administrative center and the number of hospital beds; its position will deteriorate by the volume of GRP and investment in fixed capital per capita, the share of households with access to the Internet.



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The Monitoring of Public Opinion on 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 Region¹.

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 (October 2024) and for the period from October 2023 to October 2024 (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), 2011 (the last year of Dmitry Medvedev's presidency), and 2012 (the first year of Vladimir Putin's third presidential term).

We also present the annual dynamics of the data for 2018 and for 2020–2023²

In August 2024 – October 2024 the President's approval rating did not change and amounted to 67%. The proportion of negative assessments remains within the limits of 19%³.

Over the past 12 months (from October 2023 to October 2024) the President's approval rating increased by 5 percentage points (from 63 to 68%)⁴.

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.vsc.ac.ru/](http://www.vsc.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.

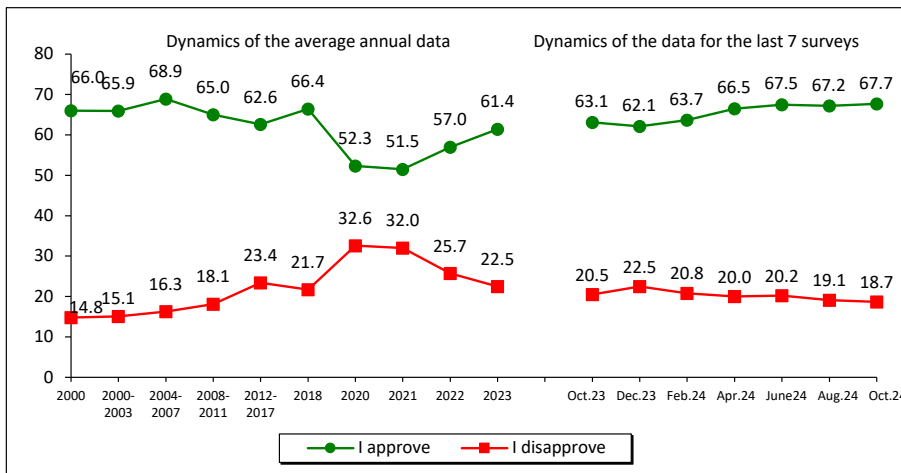
³ Here and elsewhere, in all tables and in the text, positive changes are highlighted in green, negative changes are highlighted in red, and no changes – in blue. Due to the fact that the changes of +/- 3 p.p. fall within the limits of sampling error, they are considered insignificant and are marked in blue.

⁴ Here and elsewhere in the text, the results of a comparative analysis of the data from the survey conducted in October 2024 and the results of the monitoring round conducted in October 2023 are given in the frame.

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 (+/-), Oct. 2024 to	
	2000	2007	2011	2012	2018	2020	2021	2022	2023	Oct. 2023	Dec. 2023	Feb. 2024	Apr. 2024	June 2024	Aug. 2024	Oct. 2024	Oct. 2023	Aug. 2024
RF President																		
I approve	66.0	75.3	58.7	51.7	66.4	52.3	51.5	57.0	61.4	63.1	62.1	63.7	66.5	67.5	67.2	67.7	+5	+1
I disapprove	14.8	11.5	25.5	32.6	21.7	32.6	32.0	25.7	22.5	20.5	22.5	20.8	20.0	20.2	19.1	18.7	-2	0
Chairman of the RF Government																		
I approve	-	-	59.3	49.6	48.0	38.7	39.9	45.4	50.1	51.3	51.9	52.7	53.7	53.5	55.3	53.7	+2	-2
I disapprove	-	-	24.7	33.3	31.6	40.4	37.6	32.0	27.6	28.6	27.9	26.2	24.3	23.4	24.1	25.5	-3	+1
Vologda Region Governor																		
I approve	56.1	55.8	45.7	41.9	38.4	35.0	36.7	40.9	48.1	47.5	49.1	50.8	51.7	51.6	53.4	51.9	+4	-2
I disapprove	19.3	22.2	30.5	33.3	37.6	42.5	40.5	35.8	30.9	29.7	29.9	27.5	30.1	28.0	26.7	28.0	-2	+1
Wording of the question: "How would you assess the current work of ...?"																		

How would you assess the way that the RF President is handling his job? (% of respondents, VoIRC RAS data)*



Dynamics (+/-), October 2024 to		
Response	Oct. 2023	Aug. 2024
I approve	+5	+1
I disapprove	-2	0

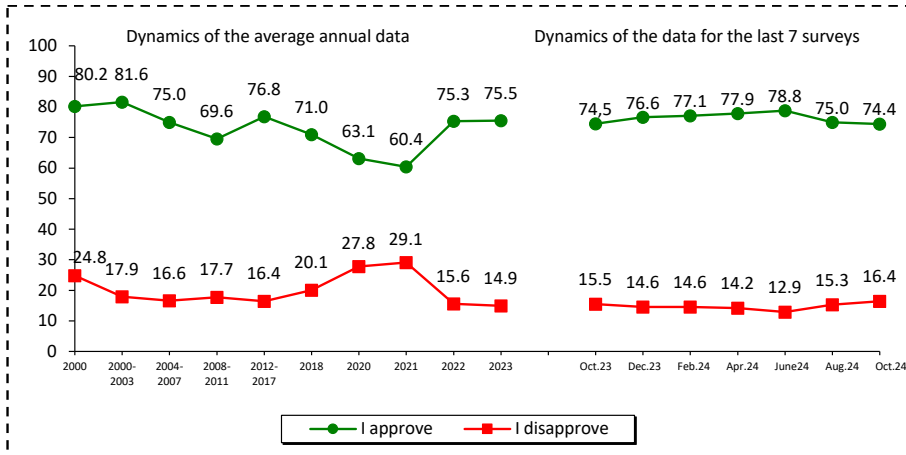
* Here and elsewhere, all graphs show the average annual data for 2000, 2018, 2020, 2021, 2022, 2023, as well as the average annual data for the periods 2000–2003, 2004–2007, 2008–2011, 2012–2017 that correspond to presidential terms.

For reference:

According to VCIOM, the President’s approval rating from August to the first half of October 2024 did not undergo considerable changes: the share of positive assessments is 74%, the proportion of negative ones – 16%.

The President’s approval rating in the first half of October 2024 remained the same as in October 2023.

Do you approve or disapprove of the way that the RF President is handling his job?
(% of respondents; VCIOM data)



Response	Oct. 2023	Aug. 2024
I approve	0	-1
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?"

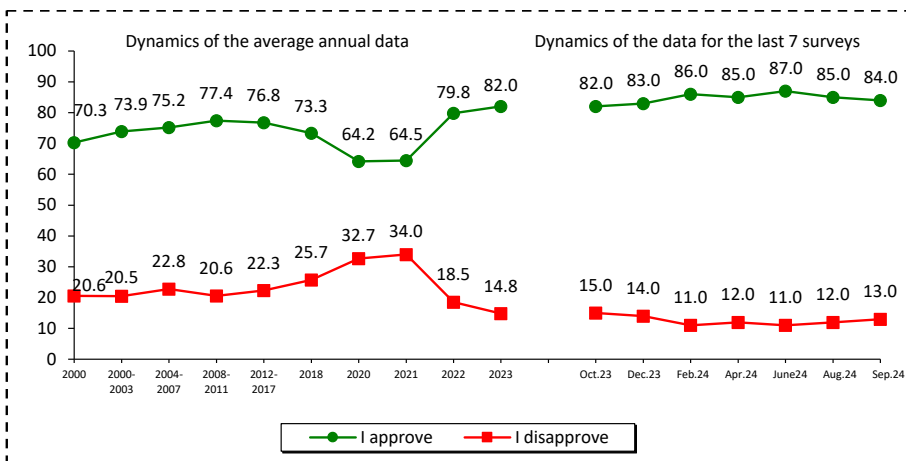
Data as of October 2024 reflect an average for two surveys: as of October 6, 2024, and October 13, 2024.

Source: VCIOM. Available at: <https://wciom.ru/>

According to Levada-Center*, the share of positive assessments of the President's work in August – October 2024 amounted to 84%; the proportion of negative judgments was 12–13%.

In the annual retrospective, there are also no significant changes: over the past 12 months the share of positive assessments amounted to 82–84%, negative – 13–15%.

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	Oct. 2023	Aug. 2024
I approve	+2	-1
I disapprove	-2	+1

Source: Levada-Center*. Available at: <https://www.levada.ru/>

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?"

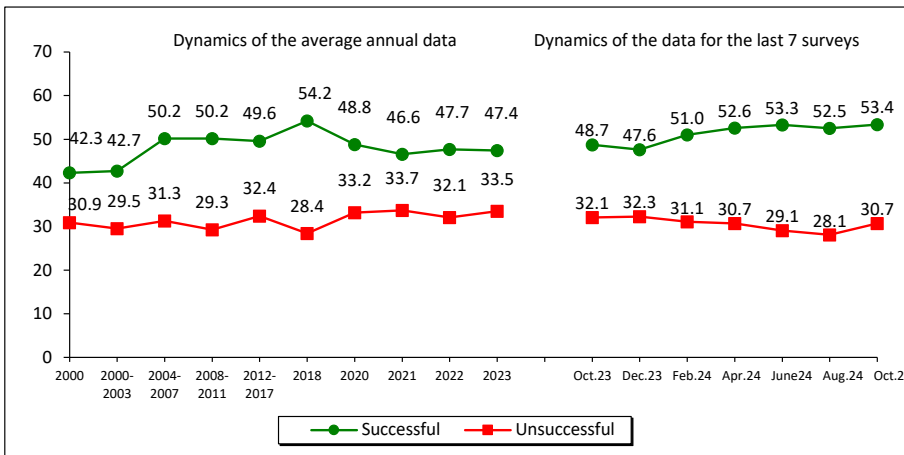
* Included in the register of foreign agents.

Over the past two months the share of those who consider the President’s actions to strengthen Russia’s international positions successful amounted to 53%. The proportion of those who hold the opposite point of view is considerably lower and also remains stable (28–31%).

From October 2023 to October 2024 the share of positive assessments of the President’s work to strengthen Russia’s international positions has increased by 5 percentage points (from 48 to 53%), while the share of negative characteristics has remained virtually at the same level of 31–32%.

In your opinion, how successful is the RF President in handling challenging issues? (% of respondents; VoIRC RAS data)

Strengthening Russia’s international position

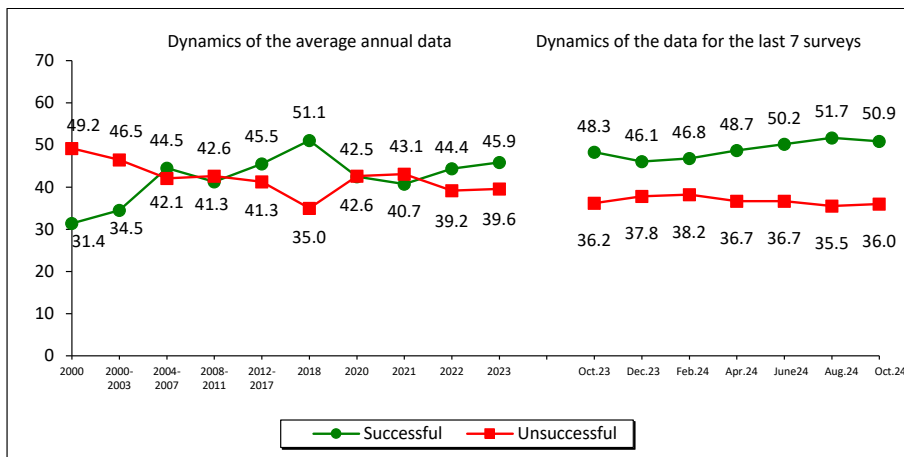


Dynamics (+ /-), October 2024 to		
Response	Oct. 2023	Aug. 2024
Successful	+5	+1
Unsuccessful	-1	+3

The share of the region’s residents who positively assess the work of the head of state aimed at restoring order in the country in August – October 2024 amounted to 51–52%, the proportion of negative judgments is lower: 36%.

Over the 12 months (from October 2023 to October 2024), assessments of the President’s work to restore order in the country have been stable with a slight increase in the share of positive responses by 3 percentage points (from 48 to 51%).

Imposing order in the country

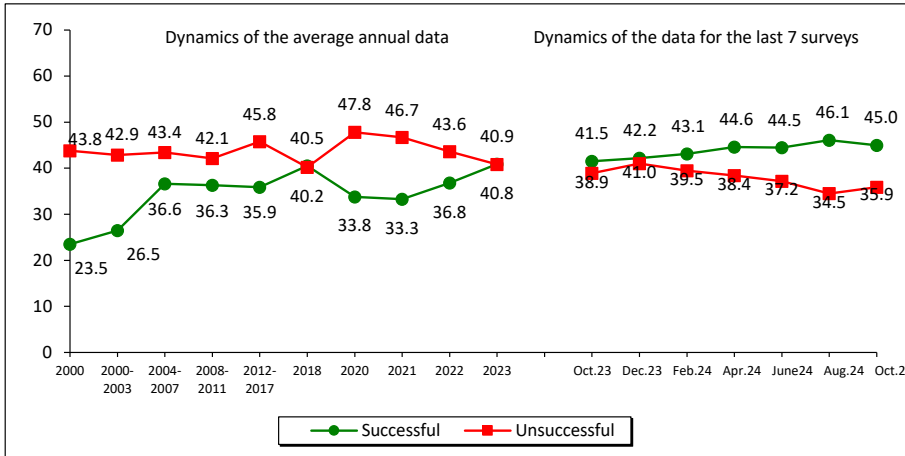


Dynamics (+ /-), October 2024 to		
Response	Oct. 2023	Aug. 2024
Successful	+3	-1
Unsuccessful	0	+1

In October 2024 the share of positive assessments of the President’s work to protect democracy and strengthen citizens’ freedoms was 41%.

From October 2023 to October 2024 we observe an increase in the share of positive characteristics by 4 percentage points, from 41 to 45% when evaluating the work of the head of state to protect democracy and strengthen citizens’ freedoms. The proportion of negative judgments remains stable and amounts to 36–39%.

Protecting democracy and strengthening citizens’ freedoms

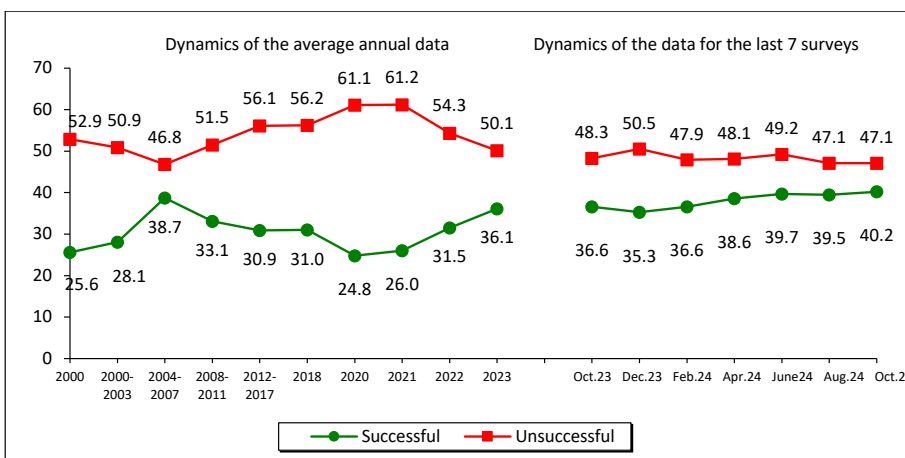


Dynamics (+ /-), October 2024 to		
Response	Oct. 2023	Aug. 2024
Successful	+4	-1
Unsuccessful	-3	+1

Since August 2024 the share of positive assessments of the way the Russian President handles the problem of economic recovery and growth of citizens’ welfare has remained stable (40%). The proportion of negative judgments is still high and remains at the level of 47%.

Over the past 12 months there has been an increase in the share of positive characteristics by 4 percentage points in the assessments of the head of state’s work to protect democracy and strengthen citizens’ freedoms.

Economic recovery, increase in citizens’ welfare



Dynamics (+ /-), October 2024 to		
Response	Oct. 2023	Aug. 2024
Successful	+4	+1
Unsuccessful	-1	0

The political preferences of Vologda Region inhabitants over the past two months do not show any considerable changes: in August – October 2024 the share of people whose interests are expressed by the United Russia party was 42%, the Communist Party – 9–10%, the Liberal Democratic Party – 6–7%, the Just Russia – 3–4%, the New People – 1–2%.

From October 2023 to October 2024 the political preferences of the Vologda Region’s residents remain unchanged. The proportion of people who believe that none of the parties represented in Parliament reflects their interests is 24–25%.

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 (+/-), Oct. 2024 to	
	2000	2007	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	Oct. 2023	Dec. 2023	Feb. 2024	Apr. 2024	June 2024	Aug. 2024	Oct. 2024	Oct. 2023	Aug. 2024
United Russia	18.5	30.2	31.1	33.4	29.1	35.4	38.0	37.9	31.5	49.8	31.7	35.2	39.5	40.3	41.7	42.7	44.5	43.7	42.5	41.8	+2	-1
KPRF	11.5	7.0	10.3	16.8	10.6	8.3	14.2	9.2	8.4	18.9	9.3	10.1	9.6	9.8	9.8	9.0	8.5	8.2	9.7	8.7	-1	-1
LDPR	4.8	7.5	7.8	15.4	7.8	10.4	21.9	9.6	9.5	7.6	9.9	7.3	7.0	7.9	6.5	6.6	6.5	7.1	6.1	7.5	0	+1
Just Russia – Patriots for the Truth	-	7.8	5.6	27.2	6.6	4.2	10.8	2.9	4.7	7.5	4.7	4.9	4.4	4.5	3.5	3.6	2.8	2.7	3.5	4.2	0	+1
New People*	-	-	-	-	-	-	-	-	-	5.3	2.3	1.5	1.9	1.5	1.9	1.4	1.9	2.3	1.6	2.3	+1	+1
Other	0.9	1.8	1.9	-	2.1	0.3	-	0.7	0.5	-	0.2	0.3	0.1	0.0	0.3	0.1	0.1	0.1	0.0	0.3	0	0
None	29.6	17.8	29.4	-	31.3	29.4	-	28.5	34.2	-	33.9	30.6	26.5	24.6	26.6	25.2	24.2	26.1	25.1	24.1	-1	-1
Difficult to answer	20.3	21.2	13.2	-	11.7	12.0	-	11.2	11.1	-	10.0	10.1	11.1	11.4	9.9	11.4	11.4	9.8	11.5	11.0	0	-1

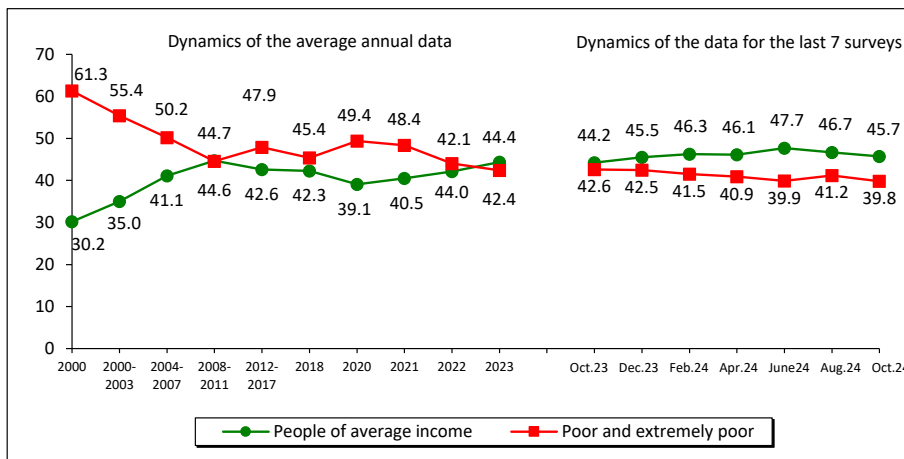
* The New People party was elected to the State Duma of the Russian Federation for the first time following the results of the election held on September 17–19, 2021.

Estimation of social condition (% of respondents; VoIRC RAS data)

From August to October 2024 the share of positive assessments of social mood remained at the level of 69–70%. The proportion of people experiencing predominantly negative emotions also did not change and amounted to 26–28%.

Over the year (from October 2023 to October 2024) the proportion of people describing their mood as “normal, fine” did not change. The proportion of those who more often feel “tension, irritation, fear, sadness” remains stable as well (26–28%).

Social mood

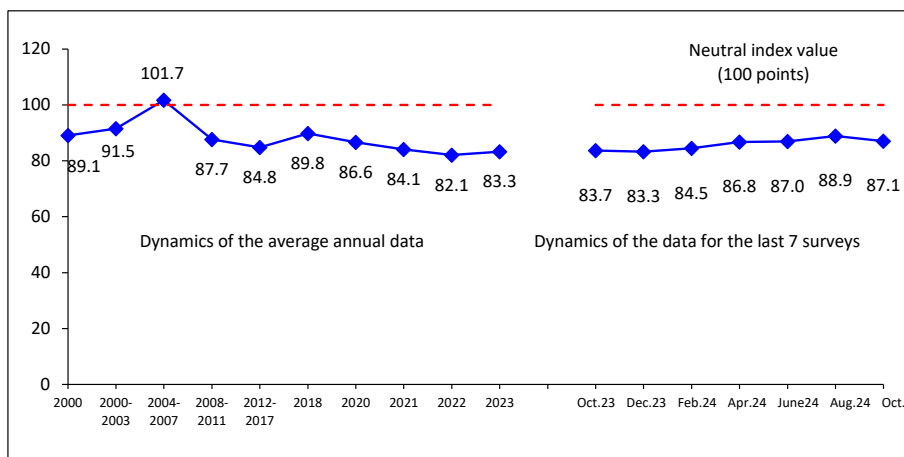


Dynamics (+/-), October 2024 to		
Response	Oct. 2023	Aug. 2024
Normal condition, good mood	+2	+1
I feel tension, irritation, fear, sadness	-1	-2

The stock of patience remains at a consistently high level: 80% of Vologda Region residents in October 2024 noted that “everything is not so bad and life is livable”. The proportion of those who believe that “it is impossible to bear such plight” did not change, too, and amounted to 14–15%.

From October 2023 to October 2024 the proportion of positive characteristics of the stock of patience was 80–77%; the share of negative judgments was 14%. Thus, the proportion of negative judgments is significantly lower.

Stock of patience

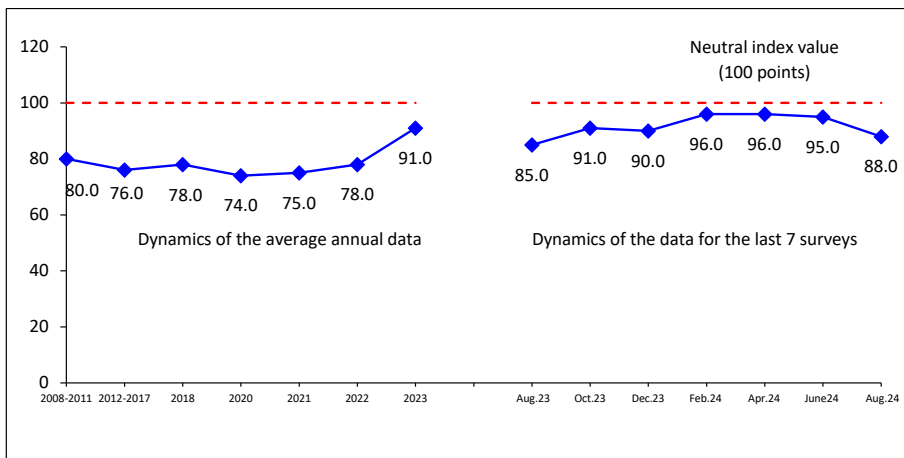


Dynamics (+/-), October 2024 to		
Response	Oct. 2023	Aug. 2024
Everything is not so bad and life is livable; life is hard, but we can endure it	+2	+2
It's impossible to bear such plight	-1	0

In August – October 2024 the proportion of Vologda Region residents who consider themselves “poor and extremely poor” amounted to 40–41%. The share of those who describe themselves as “middle-income people” was 46–47%.

There are no noticeable changes in the annual dynamics, as well. Over the past 12 months, the share of the “poor and extremely poor” increased by 3 percentage points (from 40 to 43%); the proportion of those who consider themselves “middle-income people” was 44–46%.

Social self-identification



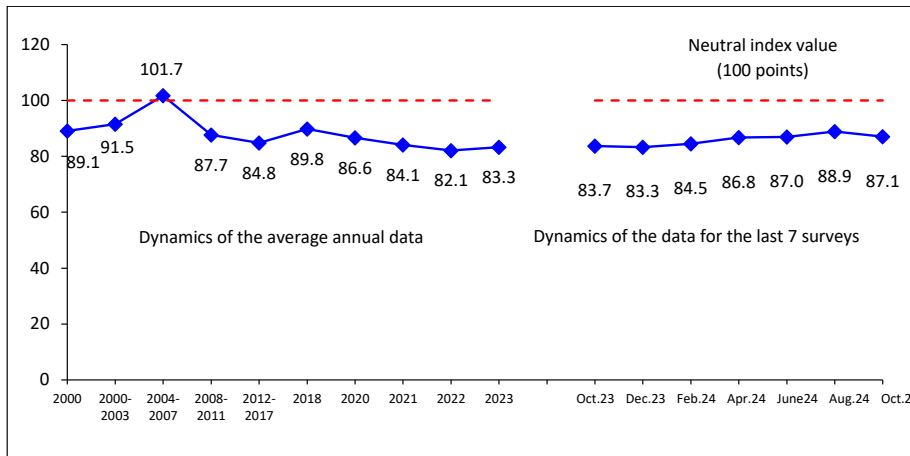
Dynamics (+ /-), October 2024 to		
Response	Oct. 2023	Aug. 2024
People of average income	+2	-1
Poor and extremely poor	-3	-1

Wording of the question: “What category do you belong to, in your opinion?”

In the past two months the Consumer Sentiment Index (CSI) did not change and amounted to 87–88 points.

Over the past year there were no considerable changes in the values of the CSI: we observe an increase by 4 points (from 84 to 87 points).

Consumer Sentiment Index
(CSI, points; VoIRC RAS data for the Vologda Region)



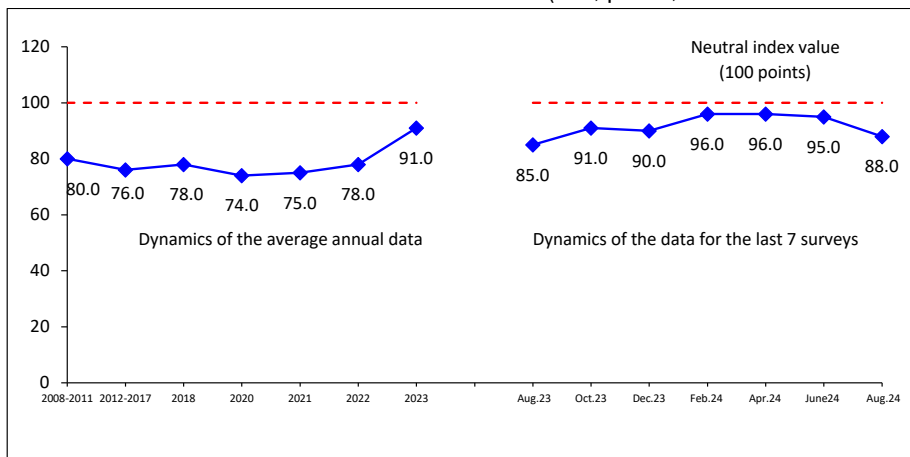
Dynamics (+/-), October 2024 to		
CSI	Oct. 2023	Aug. 2024
Index value, points	+3	-2

For reference:

According to the latest data from the all-Russian surveys by Levada-Center*, for the period from June to August 2024 the Consumer Sentiment Index dropped considerably (by 7 points, from 95 to 88 points).

However, annual dynamics show insignificant but positive changes. The CSI increased by 3 points, from 85 to 88 points.

Consumer Sentiment Index (CSI, points; Levada-Center* data for Russia)



Dynamics (+/-), August 2024 to		
CSI	Aug. 2023	June 2024
Index value, points	+3	-7

The index is calculated since 2008.

The latest data are as of August 2024.

Source: Levada-Center*. Available at: <https://www.levada.ru/indikatory/sotsialno-ekonomicheskie-indikatory/>

* Included in the register of foreign agents.

From August to October 2024 the estimates of social mood did not change significantly in 12 socio-demographic groups out of 14. The increase in the proportion of people experiencing predominantly positive emotions in everyday life is noted in two groups: among the older generation (by 5 percentage points, from 62 to 67%) and people with secondary vocational education (by 5 percentage points, from 70 to 75%).

We observe positive trends in the annual dynamics in five out of 14 groups, while the estimates remain stable in the rest of the groups. While the most pronounced positive changes are observed in women; people over 55 years of age; people with secondary vocational education; and the most affluent residents of Vologda.

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 (+ / -). Oct. 2024 to		
	2000	2007	2011	2012	2018	2020	2021	2022	2023	Oct. 2023	Dec. 2023	Feb. 2024	Apr. 2024	June 2024	Aug. 2024	Oct. 2024	Oct. 2023	Aug. 2024
Sex																		
Men	50.1	65.9	64.5	69.1	72.8	60.8	65.7	66.8	65.5	66.9	69.6	66.5	67.7	63.5	67.1	65.2	-2	-2
Women	43.3	61.7	62.0	65.8	69.8	61.2	67.4	67.9	65.7	69.4	68.9	66.5	67.1	72.1	70.9	74.0	+5	+3
Age																		
Under 30	59.1	71.3	70.0	72.3	80.0	67.6	73.5	77.6	75.0	79.4	78.0	75.1	77.5	71.8	76.1	78.0	-1	+2
30–55	44.2	64.8	62.5	67.9	72.6	61.8	69.5	69.4	68.8	71.1	72.3	69.9	70.0	71.8	72.8	69.8	-1	-3
Over 55	37.4	54.8	58.3	62.1	65.2	57.4	60.5	61.1	58.2	60.5	62.0	59.2	60.7	62.7	62.1	67.4	+7	+5
Education																		
Secondary and incomplete secondary	41.7	58.4	57.4	57.2	64.8	56.1	62.1	64.6	62.0	64.4	65.5	63.9	64.7	65.5	65.3	62.5	-2	-3
Secondary vocational	46.4	64.6	63.6	66.7	72.2	63.5	66.7	68.3	66.1	70.1	69.1	66.0	67.9	65.2	70.7	75.2	+5	+5
Higher and incomplete higher	53.3	68.6	68.3	77.0	76.8	63.3	71.5	69.5	68.8	70.0	72.8	69.4	69.8	76.0	72.1	72.3	+2	0
Income group																		
Bottom 20%	28.4	51.6	45.3	51.5	57.3	43.4	54.6	57.0	50.1	52.5	54.2	52.2	53.0	51.3	53.7	54.8	+2	+1
Middle 60%	45.5	62.9	65.3	68.7	71.9	62.6	67.3	68.1	67.4	71.0	73.1	66.9	68.5	70.0	71.0	73.6	+3	+3
Top 20%	64.6	74.9	75.3	81.1	82.9	75.6	79.9	78.3	73.9	73.2	75.9	74.4	77.5	78.5	75.9	78.4	+5	+3
Territory																		
Vologda	49.2	63.1	67.1	73.6	71.0	60.9	60.3	59.8	59.6	63.8	64.8	62.5	64.2	65.2	66.4	67.9	+4	+2
Cherepovets	50.8	68.1	71.2	76.2	75.8	60.4	71.0	71.2	68.1	69.4	70.6	67.2	68.2	69.4	70.2	70.7	+1	+1
Districts	42.2	61.6	57.1	59.8	68.7	61.4	67.8	69.5	67.7	70.2	70.9	68.5	68.8	69.4	70.3	71.0	+1	+1
Region	46.2	63.6	63.1	67.3	71.2	61.0	66.6	67.4	65.6	68.3	69.2	66.5	67.4	68.3	69.2	70.1	+2	+1

RESUME

The latest round of the public opinion monitoring (September – October 2024) took place in the context of increasing threats to national security for Russia. There are more and more signs that NATO countries are preparing to enter into direct conflict with Russia and use nuclear weapons⁵. In response to external threats, the President of the Russian Federation decided to adjust the foundations of state policy in the field of nuclear deterrence: on September 25, at the meeting of the Security Council standing conference on nuclear deterrence, Vladimir Putin announced changes in Russia's nuclear doctrine.

In the internal life of the Vologda Region, an event occurred that determines the political situation and further socio-economic development – the election of the Vologda Region Governor, which took place on September 6–8. Acting Governor of the region Georgy Filimonov (United Russia) won the election. He received 273,380 votes (62.3%).

Despite these significant events that determine the further vector of development of both the country and the region, population estimates on key parameters have not undergone significant changes, nor have they shifted in a positive direction; all this was reflected in monitoring measurements for two months (August – October 2024) and 12 months (October 2023 – October 2024).

In the short term we observe stability in public opinion regarding the way the RF President is handling his job: the approval rating is still high (67–68%). In October, estimates for the main areas of activity of the head of state remain at the level of August 2024. We should note that for all the problems the President is dealing with, the share of positive assessments is more than 50%, except for issues related to economic recovery and growth of citizens' welfare: according to this indicator, the share of approving judgments amounts to 40%, while the proportion of negative assessments is higher and remains at 47%. The absence of obvious positive changes in this area in recent months may be due to some restrictions in monetary policy: suspension of preferential mortgage programs (family and rural)⁶, as well as raising the key interest rate by the Central Bank of the Russian Federation⁷, which led to an increase in the cost of loans for the population.

However, the current picture regarding the social mood and personal financial situation of Vologda Region residents from August to October 2024 demonstrates stability, most residents remain optimistic.

During the year of measurements (October 2023 – October 2024), we observe a positive trend in people's assessments of the President's work, alongside relatively stable judgments of the region's residents about their financial situation and emotional state.

Thus, the results of the public opinion monitoring indicate that public sentiment in Russia and in the Vologda Region remains stable. However, the issues of economic development and improving the standard of living remain acute, and the lack of significant changes in these areas can undermine people's positive perception of the government's activities.

Maintaining the support of the national course by the population is especially significant in the tense situation that is unfolding in Russia in the context of the Special Military Operation. It is important to remember that the unity and cohesion of society are the key to success in overcoming challenges.

Prepared by K.E. Kosygina and I.M. Bakhvalova

⁵ Speech by Russian Foreign Minister Sergey Lavrov at the general debate of the 79th session of the UN General Assembly, New York, September 28, 2024. Available at: https://www.mid.ru/ru/press_service/video/posledniye_dobavlnenniye/1972774

⁶ Family mortgage suspended. Available at: <https://www.kommersant.ru/doc/7165818>; Rosselkhozbank suspended the acceptance of applications for rural mortgages at 3% per annum. Available at: <https://tass.ru/nedvizhimost/21818233>

⁷ On September 13, 2024, the Bank of Russia decided to increase the key rate by 100 basis points to 19.00% per annum. Available at: <https://cbr.ru/press/keypr/>

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