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RUSSIAN ACADEMY OF SCIENCES

FEDERAL STATE BUDGETARY INSTITUTION OF SCIENCE
INSTITUTE OF SOCIO-ECONOMIC DEVELOPMENT OF TERRITORIES
OF RUSSIAN ACADEMY OF SCIENCE

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ECONOMIC AND SOCIAL CHANGES:

FACTS, TRENDS, FORECAST

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Federal State Budgetary Institution of Science Institute of Socio-Economic Development of Territories of Russian Academy of Science (ISEDT RAS), which existed as Vologda Scientific Coordinating Center of Central Economic and Mathematical Institute of RAS until March 2009, is situated on the territory of the Vologda Oblast. V.A. Ilyin, Doctor of Economics, Professor, Honored Scientist of Russia, is the permanent director of the Institute. A lot of great scientists have played an important role in the formation and the development of ISEDT RAS as a scientific institution such as: academicians D.S. Lvov, V.L. Makarov, V.I. Mayevsky, A.D. Nekipelov, Y.S. Osipov. Everything that has been done before and is being done nowadays by the personnel of the Institute, it would be impossible without the constant support of the Vologda Oblast's Government and city leaders.

The formation of the scientific personnel with an active life position, a great demand for Institute's investigation, academic community's support of the new journal published by ISEDT RAS, which combined efforts of the economic institutes of RAS in the Northwestern Federal District, and furthermore development of international ties have become the main outcomes of the last years.

MAIN RESEARCH DIRECTIONS

Due to the Resolution № 96 by the Presidium of Russian Academy of Sciences dated from March 31, 2009 ISEDT RAS carries out investigations in the following fields:

- problems of economic growth, scientific basis of regional policy, sustainable development of territories and municipalities, and transformations of socio-economic space;
- regional integration into global economic and political processes, problems of economic security and competitiveness of territorial socio-economic systems;
- territorial characteristics of living standards and lifestyle, behavioral strategies and world view of different groups of the Russian society;
- development of regional socio-economic systems, implementation of new forms and methods concerning territorial organization of society and economy, development of territories' recreational area;
- socio-economic problems regarding scientific and innovative transformation activities of territories;
- elaboration of society's informatization problems, development of intellectual technologies in information territorial systems, science and education.

INTERNATIONAL TIES AND PROJECTS

In order to integrate scientific activities of the Institute's scholars into global research area, international scientific conferences are held on a regular basis; they result in cooperation agreements with different scientific establishments:

2007 – Cooperation agreement is signed with Institute of Sociology, of the National Academy of Sciences of Belarus , Center for Sociological and Marketing Investigations at the "International Institute of Humanities and Economics" (Belarus, 2008).

2008 – Protocol of intentions is signed with Alexander's Institute at the Helsinki University (Finland, 2008).

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

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

2011 – Cooperation agreements are signed with National Institute of Oriental Languages and Civilizations (Paris, 2011), Institute of Business Economy at Eszterhazy Karoly College (Hungary, 2011), Republican research and production unitary enterprise "Energy Institute of NAS" (Belarus, 2011). Protocol of intentions 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 – Cooperation agreement is signed with Jiangxi Academy of Social Sciences (China, 2013).

July 2013 – The application for research performance by international consortium involving ISEDT RAS within the 7th Framework Programme of European Community.

2014 – Cooperation agreement is signed with Jiangxi Academy of Social Sciences (China, 2014).

NEW PUBLICATIONS OF ISEDT RAS

Ilyin V.A., Povarova A.I. *Public Administration Efficiency. 2000–2015. Contradictory Outcomes – an Expected Result: Monograph*.

While Analyzing the Past, to Think about the Future. Under the scientific supervision of Doctor of Economics, Professor V.A. Ilyin.

Ilyin V.A. *Public Administration Efficiency: Chief Editor's Point of View.*

Strategy and Tactics of Implementation of Socio-Economic Reforms: Regional Aspect: Proceedings of the Seventh Research-to-Practice Conference, Vologda, Russia, December 17–19, 2015.

Shabunova A.A., Guzhavina T.A., Dement'eva I.N., Kozhina T.P., Lastovkina D.A., Afanas'ev D.A. *Regional Civil Society: Development Dynamics: Monograph*

Global Challenges and Regional Development in the Mirror of Sociological Measurement: Proceedings of the Online Research-to-Practice Conference. Vologda, March 14–18, 2016.

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FROM THE CHIEF EDITOR

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What a Shame...

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In each issue of the journal "Economic and Social Changes: Facts, Trends, Forecast" we analyze expert assessments of the current state of public administration efficiency. Many well-known Russian economists, politicians, writers, and philosophers[1] agree that unresolved contradictions, which have been lingering for many years in the Russian ruling elite, have an enormous impact on all levels of management hierarchy and are ultimately projected on all layers of Russian society, causing a decrease in people's trust in the government, psychological alienation, political apathy, decline in civic responsibility, social tensions, and an acute demand for social justice.

The impunity and, as a result, the irresponsibility of representatives of the bureaucratic apparatus whose task is to solve key problems of the population and secure sustainable economic growth in a country leads to the absence of system approach, lack of clear goal setting and careful planning; all this is evident in all spheres of life, from politics and economy to culture and social sphere. Perhaps it is only the military-industrial complex that has been under the direct control of the President and therefore, developing continuously and sustainably during the last decade.

Experts point out that "1060 regulations, orders or decrees to the laws adopted in

[1] The articles from the chief editor often contain the assessments by expert such as S.S. Gubanov, S.Yu. Glazyev, V.M. Polterovich, E.V. Balatsky, N.V. Starikov, Yu.Yu. Boldyrev, V.A. Fadeev, A.G. Mekhanik, A.A. Prokhanov, A.G. Dugin and others.

[2] Ozerova M. Pravitel'stvo Rossii zakhlebnulos' polnomochiyami: kabmin tormozit realizatsiyu zakonov [The Russian Government has choked on its powers: the Cabinet hinders the implementation of laws]. *Moskovskii komsomolets,* 2017, March 13. Available at: http://www.mk.ru/politics/2017/03/13/pravitelstvo-rossii-zakhlebnulos-polnomochiyami-kabmin-tormozit-realizaciyu-zakonov.html

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2013–2016 are still not ready, resulting in the fact that many of these laws cannot work fully"[2]. Arrests of governors have been going on: the period from 2003 to 2017 criminal proceedings were initiated against M. Mashkovtsev (Kamchatka Oblast, 2003), A. Barinov (Nenets Autonomous Okrug, 2007), A. Tishanin (Irkutsk Oblast, 2008), L. Korotkov (Amur Oblast, 2010), V. Dudka (Tula Oblast, 2011), V. Yurchenko (Novosibirsk Oblast, 2014), A. Khoroshavin (Sakhalin, 2015). N. Denin (Bryansk Oblast, 2015), V. Gaizer (Komi, 2015). N. Belykh (Kirov Oblast, 2016), A. Soloviev (Udmurtia, 2017).

According to experts, "criminal cases of top officials are in the public eye, they are reported in the federal media. But there are thousands of less publicized cases... The fight against corrupt officials is going on, and it has been going in full swing. For example, the famous case of V. Gaizer, Head of the Komi Republic. In September 2015 he was arrested and accused of organizing a criminal association. Fourteen people were arrested along with him, and they all formed almost the entire top of the Republic. This case is well-known. It is in the limelight. But as for other anti-corruption cases in Komi Republic, very few people outside the Republic know about them: **in the same year of 2015, 108 people were arrested on similar charges, 113 – last year, 36 people were arrested in the 1st quarter of this year. And this region has very small population... In some municipalities, it is two mayors that are already behind bars"**[3].

Indeed, a system approach to the fight against corruption is obvious. However, it is also clear that across the country hundreds of officials, bankers, businessmen have been engaging in criminal activities and amassing billion-dollar fortunes. This means that there is a flaw somewhere in the current system of public administration. At least, it is strange that the population of Russia, "the world's richest country, has one of the largest reserves of hydrocarbons, minerals, cultivated areas, forests, biological resources, etc."[4] dreams of "living in prosperity; of being able to spend money without scraping a living and wants to live in a more fair and reasonably organized society"[5].

In 2016, for the first time in the entire history of post-Soviet Russia, a federal official (Minister of Economic Development Alexei Ulyukayev) was detained for bribery. His place was taken by M. Oreshkin, who, according to experts, "has not worked a single day in the real economy, it is "unchartered waters" to him. He does not understand a bit how the real economy works, all his life he was engaged in analyzing the speculative "casino economy". How can he develop a program for the development of something, the workings of which he just does not know? This is approximately the same as a ballet master coaching a football team"[6].

[3] Fadeev V.A. News on Channel One Russia, April 09, 2017. *Official Website of Channel One Russia*. Available at: https://www.1tv.ru/news/issue/2017-04-09/21:00#10

[4] M.V. Kovalchuk in the TV show "The Right to Know!"

[5] According to RAS Institute of Sociology, the most popular answers to the question "What do you dream about?" are as follows: "living in prosperity, spending money without scraping a living (40%); "good health" (33%) and "living in a more fair and reasonably organized society (33%). Gorshkov M.K., Krumm R., Tikhonova N.E. (Eds.). *O chem mechtayut rossiyane: ideal i real'nost'* [What Russians dream about: ideal and reality]. Moscow: Ves' mir, 2013. P. 23.

[6] Aivazov A. Integral'noe planirovanie [Integral planning]. *Gazeta "Zavtra"*, 2017, March 23. Available at: http://zavtra.ru/blogs/integral_noe_planirovanie

In a long list of facts indicating the inefficiency of the modern public administration system there is one extremely ugly, yet revealing story: the breakdown of the regular election of the President and the Presidium of the Russian Academy of Sciences. March 20, 2017, all three candidates for the post (V. Fortov, V. Panchenko, and A. Makarov) withdrew their candidacies; as a result, the election was postponed to November, and the Academy remained without permanent leadership. A famous mathematician academician V. Kozlov became Acting President, so far he "makes no comment and apparently turned out in such a situation against his will"[7].

Ingeneral, domestic science is a telling example of severe consequences of the whole range of negative factors that have "struck" the modern system of public administration. We can say that disruption of the presidential election at the Russian Academy of Sciences was a culmination of the processes that threw the Academy into confusion since the 1990s. "The policy of getting access to the body of the main operator of manual control inevitably creates a desire to eliminate competition and to abuse artificial monopoly, among other things, on the market of knowledge production"[8].

It goes without saying that the development of high-tech manufacturing and knowledge-intensive industries has long been a major factor in geopolitical competition. Since the Cold War, the importance of this factor has become much greater: from the struggle for space exploration to the nuclear arms race. Today high technology is present in everyday life of every person, in every home, and people cannot imagine their life without gadgets and the Internet.

> Monday, March 20, the election of the President of the Russian Academy of Sciences was to start. But the academicians and corresponding members who gathered in the hall on Leninsky Avenue were stunned by an unexpected announcement: all candidates for the position of the head of RAS withdrew their candidacies and the election will be postponed for six months. By the fall the principle of independent election may be cancelled – the State Duma is discussing a bill, under which the head of RAS will be appointed by the decree of the President of Russia... The current President of the Academy of Sciences explained the withdrawal of his candidacy by the non-regulated election procedure, which could cast a shadow on the legitimacy of a newly elected head of the Russian Academy of Sciences. However, not all believed the officially announced reason. It would be a farce if it did not have something serious behind it. And this serious matter is the fact that the leadership of the country is discontented with the Academy (E. Galimov)[9].

[7] Maksutova A., Gur'eva A., Gnilitskaya A., Leibin V. Akademiya skandalov [Academy of scandals]. *Zhurnal "Ekspert-online"* ["Expert Online Journal"], 2017, April 07. Available at: http://expert.ru/russian_reporter/2017/03/akademiya-skandalov

[8] Rubtsov A. "Science of friends": why scientists and the authorities in Russia do not trust each other. *RBC Channel,* March 28, 2017. Available at: http://www.rbc.ru/opinions/society/28/03/2017/58da36dc9a794784062cadda

[9] Goncharova O. Who disrupted the election of the President of the Russian Academy of Sciences and why? *Information resource "Vademecum"*. Available at: ven.:http://www.vademec.ru/article/kto_i_zachem_sorval_vybory_prezidenta_ran/

> In the USSR, the country of scientific ideology, science could not be anything but advanced – it was a political issue, like spaceflight, for instance. The country just had to have a complete scientific complex – a rare phenomenon in the history. Problems of national economy and military-industrial complex were solved only because even the Communists retained a stock of reverence and preventive trust toward science[10].

However, this is only the end result: every invention (whether a mobile phone or a new ballistic missile) has behind it a long process of translating scientific ideas into practical developments. At the heart of this process lies fundamental academic scientific knowledge, the experience accumulated by previous generations and transformed in accordance with modern requirements, and (which is equally) individual creative talent of certain representatives of scientific profession.

The Strategy for scientific and technological development of Russia up to 2035 states that "in the next 10–15 years, the priorities of scientific and technological development of the Russian Federation should be those areas that will produce scientific and technological results and create technology that is the basis of innovation development of the domestic market and a stable position of Russia in the external market"[11]. Experts say that it is "definitely important, but without a continuous development of fundamental science the technology that we want to create will sooner or later reach an impasse, which will have to be overcome with the help of foreign science, if it is possible at all..."[12]

However, despite the importance of fundamental knowledge for the present and the future of our country, Russian academic science is undergoing a difficult, more precisely, a crisis period. "Back in the 1990s, when the funding of science collapsed, there emerged a continuing conflict between the government that was trying to reform the Russian Academy of Sciences and the Academy that was fighting for what was left of the funding and organizing the institutes. The essence of the conflict was always like this: the reformers believed that RAS prevents the modern organization of science by acquiring most of the resources, and the academicians believed that they were preserving the patches of the great Soviet science before the invasion of the barbarians. **Until recently, RAS has remained an island of strange independence in the conditions of management centralization in the country,** and in its autonomy it lasted much longer than the oligarchs and heavyweight governors..."[13]

The reform of RAS conducted in 2013 resembled a military operation in many respects. Its organizers tried to do it quietly, quickly and peremptorily. For many experts it is obvious that under the guise of good intentions the beneficiaries of the reforms were just trying to create a "friends' science",

[10] Rubtsov A. "Science of friends": why scientists and the authorities in Russia do not trust each other. *RBC Channel,* March 28, 2017. Available at: http://www.rbc.ru/opinions/society/28/03/2017/58da36dc9a794784062cadda

[11] About the Strategy for scientific and technological development of the Russian Federation: Decree of the President of the Russian Federation from December 01, 2016 No. 642. *Official website of Russian President.* Available at:http://www.kremlin.ru/acts/bank/41449

[12] Mekhanik A. RAN v institutsional'noi pustyne [RAS in an institutional desert]. *Zhurnal "Ekspert"* [Journal "Expert"], 2017, March 27 – April 03, p. 34.

[13] Maksutova A., Gur'eva A., Gnilitskaya A., Leibin V. Akademiya skandalov [Academy of scandals]. *Zhurnal "Ekspert-online"* ["Expert Online Journal"], 2017, April 07. Available at: http://expert.ru/russian_reporter/2017/03/akademiya-skandalov/

V.M. Polterovich: "The decisive events began on 27 June. At the session of the Government, Chairman Dmitry Medvedev and Minister Dmitry Livanov presented a draft reform of RAS. V. Fortov, elected President of the Russian Academy of Sciences in May, who was also present at the session, learned about the existence of such a project in the evening of June 26. Discussion of the project was not on the agenda of the session. The project was approved by the Government and the next day, on June 28, it was submitted to the State Duma. It was supposed to be considered in the first reading on July 02, in the second reading on July 03, and the final, third reading was scheduled to be held on July 05 – the last day of work of the Duma. Members of the newly established councils – the Public Council and the Council for Science under the MES, which largely supported the policy pursued by Livanov – were not informed about the project. Several decrees were violated: RF Government Resolution No. 851 dated August 25, 2012 and the decree of the President of the Russian Federation No. 601 dated May 07, 2012, they provide for public discussions of such draft laws for a period of not less than 60 days before submitting them to the Duma. The draft was prepared without consultations with lawyers; it contained many ambiguities and gaps. The names of the authors of the draft were kept secret. The press called this campaign covert operation or blitzkrieg"[14].

[14] Polterovich V.M. Reforma RAN: ekspertnyi analiz [The reform of RAS: expert analysis]. *Social sciences and modernity,* 2014, no. 1, p. 8.

where "personalism is way ahead the leading and guiding role... After the government and politics infiltrated science with their people and orders, there emerged a crowd of fake doctors of sciences whose academic degrees cannot be revoked, even when the insignificance of the author and his/her findings is obvious and the diploma is preserved only through multi-move intrigue with the abuse of official position"[15] *(Insert 1)*.

Amid the scientists' protests associated with the reform of RAS, a club "July, 1st" was established, which included up to a hundred academicians. About the same time there emerged the Society of Scientific Workers that includes more than a thousand people of different positions and ranks. "Young and active scientists prior to the 2013 reform criticized an obviously outdated style of management of RAS. They argued that **actual modern science lived outside the administrative struggle between the government and RAS and that it was necessary to discuss how to fund the most successful and powerful scientific teams rather than argue who is worse"**[16].

Thus, at a time when Russia needs to ensure its geo-political competitiveness and to keep the high standards achieved by the successes in foreign policy (which is impossible to do without the support of innovation technology and development of knowledge-based industries), the whole system of fundamental academic knowledge in our

[15] Rubtsov A. "Science of friends": why scientists and the authorities in Russia do not trust each other. *RBC Channel,* March 28, 2017. Available at: http://www.rbc.ru/opinions/society/28/03/2017/58da36dc9a794784062cadda

[16] Maksutova A., Gur'eva A., Gnilitskaya A., Leibin V. Akademiya skandalov [Academy of scandals]. *Zhurnal "Ekspert-online"* ["Expert Online Journal"], 2017, April 07. Available at: http://expert.ru/russian_reporter/2017/03/akademiya-skandalov/

country is under threat. The disruption of the RAS election in March 2017 has become a litmus test for what is happening for many years – the alienation of the intellectual elite from power and society; the crisis of the engine that could pull all spheres of life and all segments of the population *(Insert 2)*.

The situation in which Russian science (its past and future) represented by the Academy, according to many experts, reminds us of "the intrigue that does no credit to those who are behind it. The academic community of Russia, most of whom are prominent and major scientists and specialists, do not deserve such treatment"[17]. The top favors an ideology, according to which any business can be governed and promoted by a competent manager, it is external control in relation to the subject. Invariants and model solution algorithms for problems are stronger than the specifics of the sector... But not everything is amenable to similar abstraction in principle – in particular, that, which is somehow connected with creativity. **If a perfect manager is assigned to manage the art, he/she will effectively sell what is available and will kill everything that is currently "ineffective". The process will stop forever, and the art market will be filled with forgery.** The same can be said about science. Great discoveries are usually accidental; they are often an adverse and unexpected finding of the research. Even scientists themselves cannot always govern the process and program the result. Thus, it is highly improbable that the managers, no matter how high their skills are, can succeed in doing this. In this case, **the quality of management is rather defined by understanding the boundaries of acceptable intervention**. Our management do not see these boundaries and have hardly heard about them. The motto of those who impudently poke their noses into everything is "There is no barrier that could stop us!" To subordinate everything to detailed planning and reporting according to strict, formal and mechanically calculable criteria – this is an ideal for effective control over that which lies outside the competence of the person in control, i.e. over everything"[18].

It should be noted that this "nasty situation" related to Russian science is only one example of the consequences of poor public administration. Corruption, the facts of which increasingly pop up in the press, and the struggle for power "behind the scenes" in the higher echelons of the ruling elite, even under the "arbitration and moderation"[19] of the President of the Russian Federation, adversely affect the functioning of key elements of the economic system, preventing the transition of Russian economy to an innovative path of development, exacerbating moral irresponsibility of senior executives of the largest budget-forming industrial enterprises[20]. The result is a crisis that many experts call "man-made"[21].

[17] Mekhanik A. RAN v institutsional'noi pustyne [RAS in an institutional desert]. *Zhurnal "Ekspert"* [Journal "Expert"], 2017, March 27 – April 03, p. 32.

[18] Rubtsov A. "Science of friends": why scientists and the authorities in Russia do not trust each other. *RBC Channel,* March 28, 2017. Available at: http://www.rbc.ru/opinions/society/28/03/2017/58da36dc9a794784062cadda

[19] Arbitrazh Putina. Redaktsionnaya stat'ya [The arbitration of Putin. Editorial]. *Nezavisimaya gazeta,* 2016, November 17. Available at: http://www.ng.ru/editorial/2016-11-17/2_6861_red.html

[20] More information can be found in previous articles from the chief editor, in particular:

Ilyin V.A. Non-systemic solutions of systemic problems. *Economic and Social Changes: Facts, Trends, Forecast,* 2015, no. 3, pp. 9-19; Ilyin V.A. National and regional security: a view from the region. Ibidem, 2013, no. 3, pp. 9-20.

[21] Solov'eva O. Man-made crisis of the national economy. *Blog "Geopolitics: scenarios and forecasts" from 06.04.2017.* Available at: http://sensaysay.ru/blog/43447989658/Rukotvornyiy-krizis-otechestvennoy-ekonomiki

Insert 1

Expert opinion of experts on the 2013 reform of RAS

Expert	Opinion	Source
V.A. Rubakov (Academician, Doctor of Physics and Mathematics, Professor, head of Section of Nuclear Physics, RAS Institute for Nuclear Research)	"Where there was no restructuring of institutes, the reform had minimal impact on scientific work. But directors of institutes, scientific secretaries and planning and economic agencies now have to do loads of paperwork, often meaningless, on a regular basis. Meanwhile, there were virtually no positive changes. Institutes remain underfunded. Our fundamental academic science remains in a difficult situation, if we talk about financial security..."	Maksutova A., Gur'eva A., Gnilitskaya A., Leibin V. Akademiya skandalov [Academy of scandals]. *Zhurnal "Ekspert-online"* ["Expert Online Journal"], 2017, April 07. Available at: http://expert.ru/russian_reporter/2017/03/akademiya-skandalov/
A. R. Oganov (Doctor of Engineering, Professor of the Moscow Institute of Physics and Technology and Skolkovo Institute of Science and Technology)	"The reform itself stirs mixed feelings... Time will show whether it was necessary to do such a cruel deed to RAS. Now instead of giving the Academy some freedom in its powers, so many things are being beamed down from the top. Instead of increasing the funding, quite the opposite processes are taking place; but it goes without saying that any effective reform needs resources. If reforms are needed, than it is certainly not in the sphere of great ambitions and intrigues they need to be carried out, but in creating new directions and providing support to current research groups. The reality shows that attempts to do something new and great are facing red tape and administrative madness. And here it is especially important to rely on the scientists... Administrative problems in universities and in RAS are similar, there are administrative mergers, competition for resources and positions; and it is outstanding scientists that are the first to suffer in this game. Russian science could be developing rapidly now: some great scientists have returned, for the first time in many years there exist objective opportunities for rapid promotion of young teams, older generations are receding into the background, and there is a gap in the middle aged. But the subject of reforms remains formal and bureaucratic, with deliberate contempt for the "object of reforms" – science itself".	
B.E Shtern (Doctor of Physics and Mathematics, leading researcher at RAS Institute for Nuclear Research)	"Having knocked science, RAS and government together, the reform united all: people who would never shake hands with one another under ordinary circumstances, now spoke from the same rostrum at the same time. The reason is lack of confidence in the reformers, who do not reveal their goals, trying to deal with everything by sudden attack, apparently without consulting anyone, without discussing anything, paying no attention to any scientists."	
V.M. Polterovich (Academician, Social Sciences Department of RAS, Economics Section)	"...An enormously costly and hopeless from a social point of view, the reform plan was the result of a complex combination of misconceptions and political motives. Among the political motives there is a major one, though not the only one, and it is the desire to snatch organizational independence away from the community of potential opponents of the regime, the opponents who, among other things, enjoy the respect and confidence of the population".	Polterovich V.M. Reforma RAN: ekspertnyi analiz [The reform of RAS: expert analysis]. *Obshchestvennye nauki i sovremennost'* [Social sciences and modernity], 2014, no. 1, p. 26.

Insert 2

Expert opinion on the election of RAS President in March 20, 2017

Expert	Opinion	Source
A.G. Aganbegyan (Academician, RAS Social Sciences Department, Economics Section)	"It's a shame...During the Soviet era, the country's leadership approved candidates for the election and the general meeting of the Academy chose them. Now I don't know what they want to do... I have never seen such a mess. One can be ashamed to be called academician".	Akademiki schitayut "pozorom" skandal s vyborami prezidenta RAN [Academicians consider the scandal with the election of RAS President a "shame"]. *Gazeta "Kommersant"*, 2017, March 27. Available at: http://kommersant.ru/doc/3254105
A.I. Miroshnikov (Academician, Doctor of Chemistry, Member of the Presidium of the Russian Academy of Sciences, RAS Department of Biological Sciences, Section of Physico-Chemical Biology)	"What happened is a result of reforms launched in 2013. Unfortunately, the state has a strange attitude toward science. This is a big mistake. People just don't understand what science is and what role it plays in modern society. Previously, we successfully represented our country in the world, we participated in symposiums abroad. We talked on equal terms with foreign colleagues. Now if we are allowed to give lectures, it is "against the wall", we are not offered plenary lectures. And this attitude is a reflection of what is being done to science in our country. This is all very disappointing."	
G.B. Kleiner (RAS Corresponding Member, Doctor of Economics, RAS Social Sciences Department, Economics Section)	"They have been trying to belittle the authority of the Academy of Sciences foe more than a year. After the past events, in which, I believe, the government had played a hand, the authority of the Academy declined to an unacceptable limit. It was a powerful blow to the scientists and not only to us, it is a blow to innovation development of the Russian economy. We will face serious problems."	
G.A. Mesyats (Academician, Member of the Presidium of Russian Academy of Sciences, Bureau of the Department of Physical Sciences)	"We are witnessing the process of making us, patriots, into enemies of the nation. We are not dissidents so why is it happening?"	Mekhanik A. RAN v institutsional'noi pustyne [RAS in an institutional desert]. *Zhurnal "Ekspert"* [Journal "Expert"], 2017, March 27 – April 03, p. 32.
Zh.I. Alferov (Academician, Doctor of Physics and Mathematics, RAS Vice-President)	"We are driven to the wall and we actually have to postpone the election till the fall. And we have to be very careful with the election of a new President of RAS. He will either work for the revival of the country, or agree with everyone and everything."	Vybory glavy RAN pereneseny na osen' [Election of RAS Head postponed till the fall]. *Novosti Sibirskoi nauki* [News of Siberian science]. Available at: http://www.sib-science.info/ru/ras/vozmozhnost-perenosa-vyborov-glavy-ran-20032017
V.P. Kalinushkin (Ph.D. in Physics and Mathematics, Chairman of RAS Trade Union)	"It is obvious that under a totally false pretense RAS was just knocked out of the game for 8–10 months, for the period when decisions will be made on funding basic research in the country and for the period when these funds will be distributed."	Kotlyar P. RAN vybili iz igry na 8–10 mesyatsev [RAS knocked out of the game for 8–10 months]. *"Gazeta.ru"*, 2017, March 20. Available at: https://www.gazeta.ru/cience/2017/03/20_a_10585631.shtml

S.Yu. Glazyev: "The policy that our financial authorities are pursuing, is clearly "alien" in its essence, it goes against the entire experience of today's world"[22].

N. Kolomeitsev: «We have a government of big talkers who are not responsible for anything. No minister is responsible for pieces, kilometers or cubic meters. Their major goal is to talk about a strategy or road map, to present it, and then, shortly before the implementation timeline, create a new map with shifted timeline[23].

A. Aivazov: "Due to the fact that they do not understand the fundamental laws of economic development and due to their commitment to liberal dogma, Russian leaders dooms the country to a long-term stagnation that can prevent Russia from becoming one of the main centers of power in a polycentric world system not so much in the military-political as in economic sense"[24].

Today, the consequences of poor governance, and certain people responsible for dealing with the issues of domestic economic development are being used by leaders of non-system opposition. The protests arranged by them mobilize a certain number of people from different social strata, and it speaks not so much about a purely utilitarian threat of rising social tension before the presidential election, as about a more global issue – the looming critical mass, the foundation of which is dissatisfaction with the social justice that is maintained and protected by the government. The results of regular polls clearly demonstrate the fact that the representatives of various strata of Russian society are unanimous in the opinion that the state is unable to cope with the challenge of economic recovery and growth of welfare of citizens: according to the surveys conducted on the territory of the Vologda Oblast, in 2011–2016, only 27–30% of the population considered that the President successfully copes with this issue, while the opposite viewpoint is expressed by about 55–60%, which is two times higher *(Insert 3)*.

According to experts, the growth of public activity of the population is observed since the second half of 2016, but at the time it did not have a nature of protest actions (the speech was against the Yarovaya law and the "Flayers from Khabarovsk") Nevertheless, "even such protests seemingly not related to socio-economic policy in the future could turn out to be a delay-action bomb. If people who have shown no interest in politics understand that their problems are directly related to the actions of the authorities, then we will get several other notable groups within the general protest movement"[25].

[22] Gur'yanov S. Glaz'ev nazval kreditno-denezhnuyu politiku Rossii ekzoticheskoi [Glazyev called Russian fiscal policy exotic]. *Gazeta "Vzglyad"*, 2017, March 30. Available at: https://vz.ru/news/2017/3/30/864215.print.html

[23] Solov'eva O. Man-made crisis of the national economy. *Blog "Geopolitics: scenarios and forecasts" from 06.04.2017.* Available at: http://sensaysay.ru/blog/43447989658/Rukotvornyiy-krizis-otechestvennoy-ekonomiki

[24] Aivazov A. Integral'noe planirovanie [Integral planning]. *Gazeta "Zavtra",* 2017, March 23. Available at: http://zavtra.ru/blogs/integral_noe_planirovanie

[25] Gorbachev A. Russia has been called a "boiling pot". *Official website of the community "Politika" from 03.03.2017.* Available at: http://maxpark.com/community/politic/content/5711869

A. Kurtov: "A lot of young people participated in the protests against corruption, and it was mostly adults who took part in the March in memory of Nemtsov. It is mostly the middle class that comes to meetings with deputies against paid parking; and it is family breadwinners who protest against "Platon", an electronic toll collection system. The rallies at Bolotnaya Square were mostly attended by educated people. Women with children demand the optimization of healthcare be stopped. Rallies against election fraud and against United Russia are attended by politically charged people. Tomsk residents take to streets to protect their TV... If this series is continued, it turns out that active protests cover a lot of different people and regions, and at the root of all these protest actions is one adversary – the power"[26].

V.V. Fedorov: "The proposal, which Putin is to make to the society, will determine not only the percentage of those who will vote for him, but also the quality of his victory. It is necessary to win not only with the help of persistent and faithful followers, although they are the most important, but also by gaining the confidence of new social groups... The main intrigue of the election consists not in a set of opposition candidates, but on the agenda and the message, with which Putin will go to the election and on the image of the future, which he is to present to the society for the next six years. This is a very long period of time – in itself, and especially now, when the flow of time was dramatically accelerated by the communications revolution"[27].

Describing the March in memory of Boris Nemtsov organized by the non-systemic opposition in February 2017, the newspaper "Nezavisimaya Gazeta" writes: "The mood of the participants and their slogans were combative, they reminded more about the Dissenter's March held earlier than about the previous year's procession that had been truly sorrowful. The current atmosphere could be assessed as more radical and largely anti-Putin"[28].

Thus, in 2017, i.e. a year before the presidential election and regional election of governors[29], a greater outreach of the opposition forces threatens to increase social tensions, and in many ways it is impossible

[26] Gorbachev A. Khodorkovsky is also planning a large-scale action. *Independent information project "Politinformator.ru" from 31.03.2017.* Available at: http://politinformator.ru/articles/4422

[27] Galanina A. Glavnaya intriga vyborov – messedzh, s kotorym na nikh poidet Putin (interv'yu s general'nym direktorom VTsIOM V.V. Fedorovym) [The main intrigue of the election – a message with which Putin will participate in it (an interview with V.V. Fedorov, General Director of VTsIOM)]. *Gazeta "Izvestiya",* 2017, March 31. Available at: http://izvestia.ru/news/674904

[28] Garmonenko D., Gorbachev A. Oppozitsiya prosnulas' vmeste s vesnoi [The opposition has awoken in spring]. *Nezavisimaya gazeta,* 2017, February, 27. Available at: http://www.ng.ru/politics/2017-02-27/1_6936_opposicia.htmll

[29] In September 2017 the election of the governors will be held in 14 regions of Russia: Belgorod Oblast, Republic of Buryatia, Kaliningrad Oblast, Republic of Karelia, Kirov Oblast, Republic of Mordovia, Novgorod Oblast, Perm Krai, Ryazan, Saratov, Sverdlovsk, Tomsk and Yaroslavl oblasts, and Sevastopol. Experts note that "the upcoming election will be the last test for the political system before the presidential campaign, which will unfold in full force immediately after the Single day of voting" (Source: Kanter M. Battle – 2017: the opposition is eyeing the regions. *Online edition "Aktual'nye kommentarii"*, 2016, December 29. Available at: http://actualcomment.ru/bitva-2017-oppozitsiya-prismatrivaetsya-k-regionam-1612291756.html).

Insert 3

In your opinion, how successful is the RF President in ensuring economic recovery and increase in the citizens' welfare? (answer option: "successful and fairly successful", percentage of the number of respondents)

Population group	2007	2011	2013	2014	2015	2016	June 2016	Aug. 2016	Oct. 2016	Dec. 2016	Feb. 2017	Apr. 2017	Average for the latest 6 surveys	Dynamics (+/-), the latest 6 surveys compared to…		
														2015	2011	2007
Sex																
Men	47.3	30.3	31.3	33.6	34.0	27.5	29.6	27.5	23.8	28.0	25.0	25.0	26.5	-8	-4	-21
Women	47.2	31.1	31.3	35.8	34.3	27.1	25.9	26.1	28.5	26.5	26.9	26.4	26.7	-8	-4	-21
Age																
Under 30	51.6	31.0	29.9	34.8	34.7	29.6	29.9	29.2	28.8	29.5	28.1	23.8	28.2	-7	-3	-23
30-55	47.9	29.6	31.6	33.4	34.6	26.3	26.0	26.4	24.0	26.0	26.0	26.2	25.8	-9	-4	-22
Over 55	42.2	32.3	32.1	36.8	33.1	27.2	28.3	25.7	28.3	27.6	25.0	26.3	26.9	-6	-5	-15
Education																
Secondary and incomplete secondary	43.1	27.4	30.0	32.6	31.9	24.2	23.6	24.2	21.6	23.4	20.5	22.6	22.7	-9	-5	-21
Secondary vocational	47.9	31.8	31.0	36.1	34.3	26.8	27.0	26.6	27.7	28.4	27.2	23.6	26.8	-8	-5	-21
Higher and incomplete higher	51.5	32.9	33.1	36.0	36.3	31.4	33.2	29.9	30.5	30.4	30.9	32.1	31.2	-5	-2	-20
Income groups																
20% of the poorest people	41.8	20.2	24.2	24.6	20.4	19.0	18.0	16.9	21.5	22.3	18.5	22.0	19.9	-1	0	-22
60% of the people with median income	46.6	32.3	31.8	35.7	36.1	26.8	27.1	23.9	27.0	26.7	24.7	23.7	25.5	-11	-7	-21
20% of the most prosperous people	60.2	37.7	37.1	43.6	41.8	35.4	39.3	39.5	32.0	31.5	37.3	33.0	35.4	-6	-2	-25
Territories																
Vologda	41.1	31.2	27.3	30.5	30.8	27.4	27.7	25.9	24.4	26.4	24.7	26.8	26.0	-5	-5	-15
Cherepovets	58.4	36.7	32.1	40.2	37.5	30.1	31.2	34.1	31.5	27.8	31.0	30.8	31.1	-6	-6	-27
Districts	44.5	27.5	33.0	34.2	34.1	25.5	25.4	23.1	24.6	27.3	24.0	22.3	24.5	-10	-3	-20
Oblast	47.2	30.7	31.3	34.8	34.1	27.2	27.5	26.7	26.4	27.2	26.1	25.8	26.6	-8	-4	-21

In annual dynamics in all socio-demographic categories of the population there is a decrease in the proportion of people who believe that the President of the Russian Federation copes with the problem of economic recovery and growth of welfare of citizens. In 2016 compared to 2015, the proportion of those who share this view decreased in all the groups by approximately 3-10 p.p. (including those who, according to their own assessments of their incomes, fall into 20% of the wealthiest inhabitants of the oblast); **in comparison with 2007 – by 15–25%**.

There have been no positive changes in the short-term retrospect. So, for the last six surveys (in the period from June 2016 to April 2017), the percentage of people positively evaluating the activities of the head of state to address the economic problems of the population, decreased in 7 out of 14 socio-demographic groups. **While none of these categories showed positive dynamics for at least 6 months.**

In most groups, the population estimates did not significantly change, they remain very low: **the President's actions to strengthen the financial situation of the population and the economic situation in the country are considered successful by less than a third of the oblast residents.**

In your opinion, how successful is the RF President in ensuring economic recovery and increase in the citizens' welfare? (answer option: "without much success and completely unsuccessful", percentage of the number of respondents)

Population group	2007	2011	2013	2014	2015	2016	June 2016	Aug. 2016	Oct. 2016	Dec. 2016	Feb. 2017	Apr. 2017	Average for the latest 6 surveys	Dynamics (+/-), the latest 6 surveys compared to…		
														2015	2011	2007
Sex																
Men	40.7	57.3	57.6	54.7	52.6	59.2	58.0	61.0	61.0	60.3	63.9	61.0	61.0	+8	+4	+20
Women	37.7	54.6	56.2	52.4	52.1	59.6	60.0	60.0	60.7	61.7	55.2	54.3	58.7	+7	+4	+21
Age																
Under 30	33.7	53.7	55.3	52.2	50.1	57.1	58.1	57.4	56.3	58.0	55.4	53.1	56.4	+6	+3	+23
30-55	38.7	58.1	57.5	54.8	52.9	60.8	61.1	62.1	62.8	61.6	59.6	58.6	61.0	+8	+3	+22
Over 55	44.4	53.9	56.9	52.3	52.9	58.9	57.0	59.8	60.8	62.1	60.4	58.0	59.7	+7	+6	+15
Education																
Secondary and incomplete secondary	40.9	55.3	57.0	54.6	52.8	59.8	60.3	60.2	61.4	62.1	63.4	57.1	60.8	+8	+5	+20
Secondary vocational	39.1	55.5	57.1	52.5	51.6	59.4	59.1	59.1	60.8	60.7	57.8	58.4	59.3	+8	+4	+20
Higher and incomplete higher	36.7	56.4	56.4	52.9	52.6	58.8	57.6	61.6	60.2	60.1	56.0	56.3	58.6	+6	+2	+22
Income groups																
20% of the poorest people	42.8	62.2	61.8	63.4	61.8	62.4	66.4	68.6	61.1	59.7	63.1	59.3	63.0	+1	+1	+20
60% of the people with median income	40.1	54.9	56.7	52.6	51.4	60.6	60.2	61.6	61.8	63.1	61.9	59.7	61.4	+10	+7	+21
20% of the most prosperous people	30.4	53.9	53.8	47.4	47.3	55.7	55.3	53.3	60.9	56.8	47.9	53.5	54.6	+7	+1	+24
Territories																
Vologda	41.8	53.3	61.3	53.2	54.8	60.1	59.6	61.3	64.7	63.8	58.5	57.5	60.9	+6	+8	+19
Cherepovets	34.1	57.7	57.5	51.7	51.8	62.8	62.1	60.9	62.3	64.3	61.5	58.7	61.6	+10	+4	+28
Districts	40.2	56.0	54.2	54.4	51.3	57.1	57.2	59.7	57.9	57.7	58.0	56.5	57.8	+7	+2	+18
Oblast	39.0	55.8	56.8	53.4	52.3	59.4	59.1	60.4	60.9	61.1	59.1	57.3	59.7	+7	+4	+21

More than 50% of the population in all major social strata considers that the President's actions aimed at economic recovery and growth of welfare of citizens are not successful. According to the latest data (April 2017) in 11 of 14 socio-demographic categories of the population this opinion is shared by **57–60%.**

In 2016 compared to 2015, the share of negative assessments increased by 2–12 p.p.; in comparison with 2007 – **by 18–28 p.p.**

We can talk about relatively positive changes in the short-term dynamics (over the latest 6 surveys) only with respect to women (the proportion of negative evaluations decreased by 6 p.p., from 60 to 54%) and people who, according to their own assessments of their incomes fall into the category of 20% of the poorest (from June 2016 to April 2017, the proportion of people who consider unsuccessful the actions of the President aimed to solve financial problems of the population in this group decreased by 7 p.p., from 66 to 59%).

It cannot be concluded that at least in one of the 14 considered categories of citizens there has been a continuous decrease in negative assessments of the success with which the President handles the issues of economic recovery and growth of welfare of citizens.

to disagree with their leaders who claim that "now the ground seems favorable for the protests"[30]; "the government itself is helping us, there will be even more economic and political demands"[31]; "we are unable even to predict what the next notable event is going to be, especially when it comes to economic protests. Despite the assurances of the government, Russians don't feel any positive changes in their lives..."[32].

The largest protest rallies held in Russia in the 2010s were attended by dozens (according to some estimates – hundreds) of thousands of people; they were the Russians dissatisfied with the state of affairs in the country, with issues of social justice, social welfare and decent quality of life. According to the Ministry of Internal Affairs, in 2012 the rally on Bolotnaya Square was attended by up to 36 thousand people, the rally on Poklonnaya Hill – by 138 thousand people[33]. These figures by themselves speak volumes, but the opinion of experts arises even greater concern: **"God forbid, if one day there might be something similar to Bolotnaya Square and Poklonnaya Hill joining forces..."**[34].

The country is tired of the "ugly" stories and is now waiting for the President to take decisive action.

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[30] Gorbachev A. Khodorkovsky is also planning a large-scale action. *Independent information project "Politinformator.ru" from 31.03.2017*. Available at: http://politinformator.ru/articles/4422

[31] Garmonenko D. Novaya oppozitsiya prorvalas' v 60 gorodov [The new opposition invaded 60 cities]. *Nezavisimaya gazeta,* 2017, February 21. Available at: http://www.ng.ru/politics/2017-02-21/3_6934_newopposicia.html

[32] *Ibidem*. K. Kolachev's opinion.

[33] Poklonnaya Hill against Bolotnaya Square. *Online newspaper "Stoletiye"*. Available at: http://www.stoletie.ru/na_pervuiu_polosu/poklonnaja_protiv_bolotnoj_2012-02-04.htm)

[34] Prokhanov A. Pokaites', ekhidny! [Vipers, repent!]. *Gazeta "Zavtra",* 2017, March 22. Available at: http://zavtra.ru/blogs/pokajtes_ehidni

Public Opinion Monitoring of the State of the Russian Society

As in the previous issues, we publish the results of the monitoring of public opinion concerning the state of the Russian society conducted by ISEDT RAS in the Vologda Oblast[1].

The following tables show the dynamics of several parameters indicating the social feeling and socio-political sentiment of the Vologda Oblast population in February – April 2017, and also on average for the latest six polls (June 2016 – April 2017). These data are compared with the data for 2007 (the last year of Vladimir Putin's second presidential term, when the assessment of the President's work was the highest) and for 2011 (the last year of Dmitri Medvedev's presidency). The yearly dynamics of the data is presented beginning from 2013.

In February – April 2017 the assessment of the work of the President of the Russian Federation did not change significantly (64–66%). At the same time, it should be noted that approval of the President's work at the beginning of 2017 is lower that in 2015 – 2016 (68–69%).

The assessment of the work of the Chairman of the Government of the Russian Federation over the past two months deteriorated slightly: the share of positive judgements decreased by 3 p.p. (from 50 to 47%). For comparison: in 2015 the level of support of the Chairman of the Government was 58%, in 2016 – 52%, in March 2017 – 48%.

For reference: the nationwide level of approval of the RF President's performance remains stable. In February – March 2017 it was 84–85% according to VTsIOM (the share of negative assessments was 10%) and 82–84% – according to Levada-Center (the share of negative judgements was 15–17%). The proportion of positive assessments of the work of the Chairman of the RF Government, according to Levada-Center, has decreased significantly in February – March 2017 – by 10 p.p., from 52 to 42%.

[1] The polls are held six times a year in Vologda, Cherepovets, and in eight districts of the oblast (Babayevsky District, Velikoustyugsky District, Vozhegodsky District, Gryazovetsky District, Kirillovsky District, Nikolsky District, Tarnogsky District and Sheksninsky 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 oblast's adult population. Sampling error does not exceed 3%.

More details on the results of ISEDT RAS polls are available at http://www.vscc.ac.ru/.

How do you assess the current performance of..? (as a percentage of the number of respondents)

Answer option	2007	2011	2013	2014	2015	2016	June 2016	Aug. 2016	Oct. 2016	Dec. 2016	Feb. 2017	Apr. 2017	Average for the latest 6 surveys	Dynamics (+/-) the latest 6 surveys compared to…		
														2015	2011	2007
RF President																
I approve	75.3	58.7	55.3	64.1	69.1	67.8	67.4	68.7	68.4	67.3	65.7	63.6	66.9	-2	+8	-8
I don't approve	11.5	25.6	29.4	22.3	17.5	18.8	20.1	19.6	19.7	19.3	21.1	23.6	20.6	+3	-5	+9
Chairman of the RF Government*																
I approve	-*	59.3	48.9	54.2	58.1	52.3	52.8	52.7	49.4	50.4	50.4	47.5	50.5	-8	-9	-
I don't approve	-	24.7	32.8	27.6	21.7	27.6	28.6	27.7	30.6	30.1	29.8	32.8	29.9	+8	+5	-
Governor																
I approve	55.8	45.7	44.4	40.1	39.3	37.7	38.2	38.4	39.1	40.2	38.9	36.7	38.6	-1	-7	-17
I don't approve	22.2	30.5	33.2	38.9	36.2	39.3	40.3	40.0	39.3	38.5	37.8	41.1	39.5	+3	+9	+17

* Included in the survey since 2008.

From February to April, 2017 there was a slight decrease in the assessments of the President's work to strengthen Russia's international standing (the percentage of positive judgments decreased by 3 p.p., from 55 to 52%) and his work to restore order in the country (by 3 p.p., from 50 to 47%).

The opinion of the oblast residents about the success of the President's work to protect democracy and strengthen freedoms of citizens and his work to ensure economic recovery and citizens' prosperity over the past two months did not change significantly (the share of positive assessments is 37 and 26%, respectively).

On average for the latest 6 surveys, compared with 2015, the proportion of the oblast residents who believe that the head of state successfully copes with the challenge of protecting democracy and strengthening freedoms of citizens decreased by 3 p.p. (from 40 to 37%); with the challenge of economic recovery and increasing welfare of citizens – by 8 p.p. (from 34 to 26%). In 2007, the proportion of people, who positively assessed the work of the head of state to address financial issues of the population, accounted for 47%, in 2011 – 31% in April 2017 – 26%. Thus, over the past 5 years a negative trend in public opinion continues.

In your opinion, how successful is the RF President in coping with challenging issues?*
(as a percentage of the number of respondents)

Answer option	2007	2011	2013	2014	2015	2016	June 2016	Aug. 2016	Oct. 2016	Dec. 2016	Feb. 2017	Apr. 2017	Average for the latest 6 surveys	Dynamics (+/-) the latest 6 surveys compared to…		
														2015	2011	2007
Strengthening Russia's international standing																
Successful	58.4	46.2	45.7	50.4	51.7	51.2	52.2	50.1	51.4	51.9	54.5	52.4	52.1	0	+6	-6
Unsuccessful	24.9	33.7	36.2	32.4	31.3	29.9	29.0	30.3	28.8	31.1	26.5	27.7	28.9	-2	-5	+4
Success index	*133.5*	*112.5*	*109.5*	*118.0*	*120.4*	*121.3*	123.2	119.8	122.6	120.8	*128.0*	*124.7*	*123.2*	*+3*	*+11*	*-10*
Imposing order in the country																
Successful	53.2	36.6	39.4	48.0	50.2	49.2	49.7	50.0	49.7	50.2	49.5	47.3	49.4	-1	+13	-4
Unsuccessful	34.0	50.0	47.5	39.1	37.9	36.7	37.5	35.1	35.6	36.7	36.8	38.8	36.8	-1	-13	+3
Success index	*119.2*	*86.6*	*91.9*	*108.9*	*112.3*	*112.6*	112.2	115.4	114.1	113.5	*112.7*	*108.5*	*112.7*	*0*	*+26*	*-6*
Protecting democracy and strengthening the citizens' freedoms																
Successful	44.4	32.4	31.8	37.5	40.4	36.6	38.3	36.7	35.7	36.2	38.6	36.8	37.1	-3	+5	-7
Unsuccessful	37.0	48.3	51.0	45.4	41.5	44.3	42.2	45.0	44.7	44.3	41.3	43.5	43.5	+2	-5	+7
Success index	*107.4*	*84.1*	*80.8*	*92.1*	*99.0*	*92.3*	96.1	91.7	91.0	91.9	*97.3*	*93.3*	*93.6*	*-5*	*+9*	*-14*
Economic recovery and increase in the citizens' welfare																
Successful	47.2	30.7	31.3	34.8	34.2	27.2	27.5	26.7	26.4	27.2	26.1	25.8	26.6	-8	-4	-21
Unsuccessful	39.1	56.1	56.8	53.4	52.3	59.4	59.1	60.4	60.9	61.1	59.1	57.3	59.7	+7	+4	+21
Success index	*108.1*	*74.6*	*74.5*	*81.4*	*81.8*	*67.8*	68.4	66.3	65.5	66.1	*67.0*	*68.5*	*67.0*	*-15*	*-8*	*-41*

* Ranked according to the average value of the index of success for 2016.

Over the past two months, the structure of Russians' preferences concerning political parties did not change significantly. The United Russia Party is supported by 32–34% (which is lower that in 2015 – 39%), LDPR – by 11%, KPRF – by 6–8%, the Just Russia Party – by 4–5%.

In February – April 2017 there was an increase in the proportion of people who think that no political party reflects their interests (by 3 p.p., from 31 to 35%). It is significantly higher than in 2016 (29%).

Which party expresses your interests?
(as a percentage of the number of respondents)

Party	2007	Election to the RF State Duma 2007, fact	2011	Election to the RF State Duma 2011, fact	2013	2014	2015	2016	Election to the RF State Duma 2016, fact	June 2016	Aug. 2016	Oct. 2016	Dec. 2016	Feb. 2017	Apr. 2017	Average for the latest 6 surveys	Dynamics (+/-) the latest 6 surveys compared to…		
																	2015	2011	2007
United Russia	30.2	60.5	31.1	33.4	29.4	32.8	38.8	35.4	38.0	36.0	36.5	36.3	34.5	33.9	31.8	34.8	-4	+4	+5
LDPR	7.5	11.0	7.8	15.4	7.2	7.6	6.2	10.4	21.9	10.3	10.5	12.8	13.9	10.2	10.7	11.4	+5	+4	+4
KPRF	7.0	9.3	10.3	16.8	11.3	9.7	7.1	8.3	14.2	8.0	7.5	9.0	8.7	7.2	6.2	7.8	+1	-3	+1
Just Russia	7.8	8.8	5.6	27.2	4.6	3.5	3.6	4.2	10.8	4.0	4.7	6.1	4.9	4.3	4.8	4.8	+1	-1	-3
Other	1.8	–	1.9	–	0.6	0.3	0.2	0.3	–	0.3	0.4	0.3	0.3	0.1	0.5	0.3	0	-2	-1
No party	17.8	–	29.4	–	34.9	34.4	31.8	29.4	–	29.7	26.1	23.7	30.1	30.7	34.8	29.2	-3	0	+11
It is difficult to answer	21.2	–	13.2	–	10.2	11.7	12.2	12.0	–	11.7	14.3	11.8	7.7	13.6	11.2	11.7	0	-1	-9

Over the past two months, assessments of social well-being of the population did not change significantly. The percentage of people describing their mood as positive is 67–69%, the share of those who believe that "everything is not so bad; it is difficult to live, but possible to stand it" is 77–78%.

In March 2017 the proportion of the oblast residents who consider themselves "poor" and "extremely poor" was 47%, which corresponds to the indicators as of December 2016 and February 2017. The proportion of people of "middle" income is slightly lower: 43%.

The consumer sentiment index in February – April 2017 was 81–82 points. This is higher than in 2015–2016 (77 p.), but it is still below 100 p., which means the predominance of pessimistic population forecasts regarding the dynamics of development of the economic situation and their personal financial situation.

Estimation of social condition (as a percentage of the number of respondents)

Answer option	2007	2011	2013	2014	2015	2016	June 2016	Aug. 2016	Oct. 2016	Dec. 2016	Feb. 2017	Apr. 2017	Average for the latest 6 surveys	Dynamics (+/-) the latest 6 surveys compared to…		
														2015	2011	2007
Mood																
Usual condition, good mood	63.6	63.1	68.6	69.4	68.7	68.0	68.0	68.8	70.2	70.4	67.2	68.6	68.9	0	+6	+5
I feel stress, anger, fear, depression	27.8	28.9	26.2	24.9	25.9	26.2	26.7	25.8	24.3	26.1	28.5	25.5	26.2	0	-3	-2
Stock of patience																
Everything is not so bad; it's difficult to live, but it's possible to stand it	74.1	74.8	79.3	80.8	78.4	78.0	78.2	78.3	79.5	81.1	78.2	77.3	78.8	0	+4	+5
It's impossible to bear such plight	13.6	15.3	14.2	12.6	14.5	15.6	15.7	15.5	14.9	14.9	16.1	16.4	15.6	+1	0	+2
Social self-identification*																
The share of people who consider themselves to have average income	48.2	43.1	43.9	43.2	38.7	42.1	42.8	43.2	42.3	43.7	42.5	42.8	42.9	+4	0	-5
The share of people who consider themselves to be poor and extremely poor	42.4	44.3	46.9	49.1	50.7	49.0	47.1	49.5	48.9	47.4	47.2	47.3	47.9	-3	+4	+6
Consumer sentiment index																
Index value, points	105.9	89.6	90.3	87.6	77.1	77.7	77.3	79.4	80.8	79.4	82.0	80.8	80.0	+3	-10	-26

* Question: "Which category do you belong to, in your opinion?"

In February–April 2017 the proportion of people describing their mood as "normal, excellent, good", in most socio-demographic groups did not change.

At the same time, there was an increase in the proportion of residents experiencing positive emotions: in people under the age of 30 (by 10 p.p., from 71 to 81%), from 30 to 55 years old (by 3 p.p. from 67 to 70%) and among those who, according to their own assessments of their income, fall within the 20% of the least wealthy (by 4 p.p., from 45 to 49%).

Negative changes in the dynamics of social mood over the past two months are observed among people older than 55 years of age (by 6 p.p., from 66 to 60%) and among those who, according to their own assessments of their income, fall within the 20% of the wealthiest residents of the oblast (by 6 p.p., from 86 to 80%).

Social mood in different social groups (answer: "Good mood, normal condition", as a percentage of the number of respondents)

Population group	2007	2011	2013	2014	2015	2016	June 2016	Aug. 2016	Oct. 2016	Dec. 2016	Feb. 2017	Apr. 2017	Average for the latest 6 surveys	Dynamics (+/-) the latest 6 surveys compared to…		
														2015	2011	2007
Sex																
Men	65.9	64.5	69.9	68.9	69.5	68.8	70.0	67.3	71.6	73.3	66.9	67.6	69.5	0	+5	+4
Women	61.7	62.0	67.5	69.8	68.0	67.4	66.5	70.0	69.0	68.1	67.4	69.4	68.4	0	+6	+7
Age																
Under 30	71.3	70.0	75.5	75.1	77.1	76.4	81.2	74.5	76.3	80.8	70.9	80.5	77.4	0	+7	+6
30-55	64.8	62.5	69.2	69.5	67.2	67.4	68.3	67.1	68.9	71.8	66.7	70.1	68.8	+2	+6	+4
Over 55	54.8	58.3	62.4	65.4	65.5	64.0	59.8	67.7	68.3	62.8	65.8	60.4	64.1	-1	+6	+9
Education																
Secondary and incomplete secondary	58.4	57.4	60.6	62.5	63.6	62.1	62.9	61.7	64.7	62.8	61.4	64.9	63.1	-1	+6	+5
Secondary vocational	64.6	63.6	68.1	70.4	70.1	68.4	69.3	68.5	72.1	72.7	67.7	69.3	69.9	0	+6	+5
Higher and incomplete higher	68.6	68.3	77.4	76.2	72.7	74.3	73.3	76.8	74.6	76.9	73.1	71.7	74.4	+2	+6	+6
Income groups																
20% of the poorest people	51.6	45.3	46.2	50.8	51.8	52.5	52.0	56.3	55.5	57.5	44.6	49.1	52.5	+1	+7	+1
60% of the people with median income	62.9	65.3	71.9	72.3	71.0	69.4	69.3	70.4	71.8	70.7	70.8	70.6	70.6	0	+5	+8
20% of the most prosperous people	74.9	75.3	83.3	84.8	82.0	80.9	85.2	78.5	79.3	83.5	86.3	79.9	82.1	0	+7	+7
Territories																
Vologda	63.1	67.1	75.0	76.4	73.9	69.9	71.5	69.2	71.0	73.6	67.9	70.6	70.6	-3	+4	+8
Cherepovets	68.1	71.2	75.3	76.3	70.6	71.7	72.5	74.0	72.7	74.0	73.7	74.1	73.5	+3	+2	+5
Districts	61.6	57.1	61.6	61.8	64.6	64.8	63.7	65.7	68.1	66.6	63.1	64.3	65.3	+1	+8	+4
Oblast	63.6	63.1	68.6	69.4	68.7	68.0	68.1	68.8	70.1	70.4	67.2	68.6	68.9	0	+6	+5

Conclusion

The results of a poll conducted in April 2017 show that there still remain the troubling trends in people's assessment of the work of the authorities. During the latest 6 polls (June 2016–April 2017) the level of support for the President of the Russian Federation decreased by 3 p.p. (from 67 to 64%), for the Chairman of the RF Government – by 5 p.p. (from 53 to 48%). During this entire period there were no positive changes in the public opinion.

At the same time, the proportion of people who consider that the President successfully copes with the issues of economic recovery and growth of welfare of citizens remains stable (25–26%). For comparison: 57–60% of people share the opposite viewpoint.

The dynamics of people's preferences concerning political parties can be considered a telling indicator. The support of the ruling party after the 2016 election to the State Duma has a negative trend so far: in October 2017 it was 36%, in February 2017 – 34%, in April – 32%. The share of supporters of other parliamentary parties remains stable. At the same time, there is a continuous increase in the share of the oblast residents who believe that none of the political forces today expresses their interests: in October 2016 – 24%, in February 2017 – 31%, in April – 35%. Such dynamics of population estimates may be due either to a general increase in political apathy of the population, or disappointment in the political system which developed in Russia. In any case, the President's address to the parliamentary parties (and especially to United Russia) concerning the fact that "this election result is good, but it is without question an advance on the part of our people, and we now must live up to their expectations"[2], remains without attention yet.

For the past two months there were no significant changes in the dynamics of indicators of social mood and people's self-assessment of the level of their income. It should be noted that people's assessments of the prospects of their welfare are still dominated by pessimistic judgments (as evidenced by the value of the consumer sentiment index, which is below 100 points).

In February – April 2016, the indices of social mood among people under the age of 30 improved (the share of positive ratings increased by 10 p.p., from 71 to 81%), and deteriorated – among people of 55 years of age (by 6 p.p., from 66 to 60%) and among those who, according to self-assessments of their incomes fall within the group of 20% of the wealthiest inhabitants of the oblast (by 6 p.p., from 86 to 80%). In our view, this may be a consequence of large protests organized by the opposition in early 2017 (in particular, an anti-corruption rally held on March 26, 2017). According to the experts (E. Minchenko), "anti-corruption protests can unite different population groups – schoolchildren and truckers, liberal democrats and the leftists... Another

[2] Transcript of the meeting of President Vladimir Putin with Government members on September 19, 2016. Official website of the Russian President. Available at: http://www.kremlin.ru/events/president/transcripts/52913

serious risk of protests consists in the fact the potentially they can be "appropriated" by the most radical power. For example, A. Navalny, who last December said he intended to run for president in 2018. So far, there was no unification of different forces in the protests against corruption – in particular, students and truckers have different needs, but it is likely that the bond between them will happen in the future"[3].

It would seem that recently (in 2014, 2015), sociologists have noted a record growth of support for the President's work, but the effect of the "Crimean spring" and the international success of the President's policy is giving way to the issues of domestic economic development and social well-being and confidence in the future. With the approach of the presidential election scheduled for March 2018, the expectations of society regarding the effective solution of urgent issues related to the achievement of social justice, improvement of the standard of living and quality of life are increasingly becoming the unifying factor that is used by the non-systemic opposition and motivates the representatives of various social strata to participate in mass protests.

"In the future everything will depend on the actions of the government: if it is able to solve the problems, then it is unlikely that someone will unite against it, if not – then any unrest is possible"[4].

[3] Scientists have named the main risks of Navalny's protest for the Kremlin. *RBC Channel from April 03, 2017*. Available at: http://www.rbc.ru/politics/03/04/2017/58de4d6d9a7947f6ac645050?from=main.

[4] *Ibidem*.

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Reflections upon the Results of the Fiftieth Issue of the Journal "Economic and Social Changes: Facts, Trends, Forecast"

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Dear reader!

You are looking at the 50th issue of the journal "Economic and Social Changes: Facts, Trends, Forecast", the leading periodical of RAS Institute of Socio-Economic Development of Territories.

In cooperation with the Department of Social Sciences of the Russian Academy of Sciences, regional government and Vologda City Administration, ISEDT RAS promotes academic scientific knowledge in the Vologda Oblast for over 25 years. Throughout its development the Institute has always focused on deep historical traditions of domestic and world science and, simultaneously, on innovation trends emerging in accordance with the needs of socio-economic and socio-political life**. The system built in a quarter of a century was formed exclusively for one purpose – to create a cell of self-developing fundamental scientific knowledge in the Vologda Oblast.**

The history of the journal "Economic and Social Changes: Facts, Trends, Forecast" largely reflects the development of ISEDT RAS itself and the Department of Social Sciences. In this regard, the Journals' Editorial Board conducted a scientific analysis of the main stages of formation of the Journal and criteria for assessing its efficiency. The results of this work show that **mutual interest and joint efforts of the academic community and local authorities can produce effective results in the creation of a high-quality scientific journal as one of the most important components in the development of scientific potential of territories.**

> *«Anyone who embarks on informing the public of what is contained in the new works must first consider their own strength. Indeed, they are about to do a difficult and very complex job, in which it is necessary to report not about ordinary things or common places, but to grasp something new and significant that is contained in the works produced often by the greatest people».*
>
> M.V. Lomonosov. The argument about the responsibilities of journalists in presenting their essays, to maintain the freedom of philosophy (1755)

1. A scientific journal in Russia: history and modernity

In the world of high technology, rapid innovation and turbulence of political processes the role of basic scientific knowledge is difficult to overestimate. "The new century, according to the forecasts and conclusions of futurology, is to be the century of the triumph of scientific worldview; it is to show the world qualitatively new principles and approaches to the world community oriented toward unification, to the management of each country and society"[1].

Today, the more urgent is the question of establishing a system for accumulation,

[1] Osipov G.V. Ne upustit' predostavivshiisya shans! [Do not Miss This Chance!]. *Sotsiologiya i ekonomika sovremennoi sotsial'noi real'nosti. Sotsial'naya i sotsial'no-politicheskaya situatsiya v Rossii v 2013 godu* [Sociology and Economics of the Current Social Reality. Social and Socio-Political Situation in Russia in 2013]. Moscow: ISPI RAN. P. 9.

preservation and transfer of fundamental scientific knowledge in the regions; in each particular division of the Russian Academy of Sciences. In our opinion, it is not so much a question of survival of Russian science or **its quality**, as a question of moral responsibility of its leading representatives on site, and first and foremost, leaders of scientific institutions.

There can be many criteria for assessing the efficiency at which this task is implemented: the number of graduate students who defended their dissertations, the academic status of employees, the dynamics of publication activity, etc. No doubt, these indicators, as we see it, are important, but **one of the most objective criteria is the quality of scientific products, especially periodicals, issued by a scientific organization.**

We all know that today many "advanced entrepreneurs" try to turn a scientific journal into a tool for earning money. The Internet is filled with proposals concerning the publication of manuscripts in journals on the VAK List, journals indexed in Scopus, etc. provided that a substantial sum will be paid for that. Those who can pay even more can speed up the publication of their papers... However, this is the very indicator of a crisis of scientific knowledge in our country: everything can be bought and sold, and it can become a fatal trend for science.

Continuing our speculations regarding the scientific journal as a criterion of the state of academic knowledge, we note that its role in the development of scientific and philosophical thought in Russia (as well as in the life of Russian society, science and government) is almost impossible to overestimate. To prove it, it is sufficient to glance at the history of Russian periodicals.


ВѢДОМОСТИ
РОСТОВСКОЙ НА ДОНУ ГОРОДСКОЙ УПРАВЫ.
ГОДЪ ДЕСЯТЫЙ.

First Russian printed newspaper "Vedomosti" (1703)

The first regularly published newspaper in our country was "Vedomosti", or, as Peter the Great (by whose order it was founded) called it, "Chimes". It is possible that Peter the Great pursued higher goals when he established the newspaper, but the tasks and the content of its first issues were very utilitarian: "It stands to reason that the decree on the establishment of the newspaper dates back to 1702. The beginning of the Great Northern War was no success for Russia. After the defeat at Narva, the Russian army lost all its artillery. And then, when Russia was straining every nerve to fight the army of Charles XII, it was necessary to convince people of the need to continue the war with the Swedes, to explain the meaning of certain government measures, such as the confiscation of church bells to melt them into cannons. Finally, it was necessary to inform people that factories are increasing production of weapons and ammunition, that the tsar has the support of not only the Russian troops, but also the peoples of Russia..."[2]

[2] Rokhlenko D. Pervaya russkaya pechatnaya gazeta [The first Russian printed newspaper]. *Nauka i zhizn'* [Science and life], 2017, no. 4. Available at: http://www.nkj.ru/archive/articles/9324/

The newspaper was not divided into thematic sections, so many of its issues were a "patchwork of various information – from the description of a naval battle to the advertising of healing properties of mineral waters from Olonets Province". The main topics covered the events of the Great Northern War (events that were mostly victorious for the Russian army). Also, the newspaper wrote about industry and trade; changes in education, etc. "Vedomosti" undoubtedly expanded the horizons of its readers, introduced them to the life of European countries, popularized geographical knowledge, systematically explained geographical terms, etc."[3].

However, after the death of Peter the Great, the "dearest publication" (as he himself called his "brainchild") lasted less than two years. The subject of published materials was gradually narrowed, and the paper confined itself to the description of official celebrations. Publication frequency of the newspaper was very low, and in 1727 it was transferred to the jurisdiction of the Academy of Sciences, after which it was named "Sankt-Peterburgskie Vedomosti".

Unlike the first newspaper, the first scientific journal in our country appeared, we might say, spontaneously, as a supplement to the newspaper. And this is very important feature of the scientific journal as a form of publication. Due to the fact that editor-in-chief of "Sankt-Peterburgskie Vedomosti" was G.F. Miller of German descent (also known for his historical essays on Siberia), the newspaper was published in two languages – Russian and German. Due to the abundance of terms that were difficult for readers to understand,

ѢСТОРИЧЕСКИХЪ,
ГЕНЕАЛОГИЧЕСКИХЪ И ГЕОГРАФИЧЕСКИХЪ
ПРИМѢЧАНІЕВЪ
ВЪ ВѢДОМОСТЯХЪ
ЗА I. ЧАСТЬ
ВЪ САНКТПЕТЕРБУРГѢ 4 ДНЯ ГЕНВАРЯ 1729 ГОДА.

БЛАГОСКЛОННЫЙ ЧИТАТЕЛЮ.

При семъ подается тебѣ паки начатые нѣкоторыхъ новыхъ трудовъ, которые токмо ради увеселенія тебя, и ради твоея пользы воспріяты. Ты видишь, что сіи имѣютъ быть примѣчанія въ вѣдомостяхъ, которымъ подобные, какъ я надѣюсь, ты уже изъ другихъ мѣстъ разные видѣлъ, но однакожъ съ такою разностію, что сіи нынѣ токмо начинаются, оные же уже отъ нѣкотораго времяни остановлены. Ибо сія нова нынѣ толь рѣдчайшая есть, сколь болѣе трудностей при томъ случается, отъ которыхъ трудностей у другихъ произведеніе оныхъ въ остановку приведено. Большая часть изъ оныхъ производилась такъ, какъ Моральческіе понедѣльные письма въ наши времена. Патріотъ* устрашъ отъ ревнованія. Хулителицы** перестали хулить, Аспектаторъ*** которой въ разсужденіи превращенныхъ нравовъ и обычаевъ человѣческихъ болѣ всѣхъ свои дѣла продолжалъ, однакожъ напослѣдокъ ослабѣлъ. А, какъ долго Бидерманъ**** решилъ

*Патріотъ [ревнитель о пользѣ отечества:]
**Хулителицы [которые всѣ недобродѣтели хулятъ]
***Аспектаторъ [зритель или разсуждатель о всякихъ дѣлахъ:] ****Бидерманъ [честной человѣкъ, такожде о добрыхъ и злыхъ дѣлахъ разсуждающій.] Сіи суть такіе книги и письма, которые подъ сими званіями издаются.

"Monthly historical, genealogical and geographical notes in "Vedomosti" (1729)

the so-called "Mesyachnye istoricheskie, genealogicheskie i geograficheskie primechaniya v Vedomostyakh" "Monthly historical, genealogical and geographical notes in "Vedomosti" (or simply the "Notes") were established.

Many of the articles in the "Notes" were a continuation of or addition to the information already published in "Sankt-Peterburgskie Vedomosti". To make this relationship clear to readers, the link to the issue of the newspaper was printed in the margin. Later, the remit of articles published in the journal was expanded and was only partially associated with the content of the newspaper. The "Notes" published poems of the poets mentioned in "Sankt-Peterburgskie Vedomosti", or poems on the topic similar to that of the article in the newspaper. Then, prose appears and develops in the journal. In 1741 it began

[3] *Ibidem.*

to publish translated and original odes by M.V. Lomonosov, original texts of ancient poets and syllabic translations, series of articles on the history and theory of dramatic and poetic art, etc. Many publications were devoted to science: physics, mathematics, astronomy, philosophy, chemistry, natural science. The "Notes" also included the first printed review in Russian on a book on economic issues[4].

This is how the first Russian scientific journal was founded. It was issued every month for about 15 years (1728–1742), and later it was reprinted several times in abridged form.

Thus, the very history of the first scientific journal shows its role in Russia: just a summary of news, which was offered by the first printed newspaper ("Vedomosti"), did not suit Russian public. Despite the fact that the newspaper was established and maintained "from above" (Peter the Great himself edited the articles published in it).

We observe quite a different situation if we look at the history of the first Russian journal that was originally conceived as a reference edition and was eventually turned into a regular publication with comprehensive thematic coverage, which became the prototype of the so-called "thick journal" – a purely Russian phenomenon, which indicates that Russian readers need deeper and more comprehensive information.

N.A. Ulyanov: "Our Russian literature (in general) has, among others, one original feature that distinguishes it from Western European literature. This feature consists in the significant expansion of the so-called thick journals"[5].

"Russian thick monthly that remained the main type of periodicals for a very long time was formed in specific Russian conditions: the lack of books and the enormous extent of territory left the readers who did not live in big cities with the possibility to obtain the information they need and to find good literature only inside a journal. This publication combined a collection of literature, a political newspaper, and a kind of encyclopedia. Russian journalists called it the "journal of the usual Russian type". The fact that a thick journal is a type of periodicals brought to life by specific Russian conditions plays a special role in Russian journalism was noted by all those who wrote about the development of the press in the country"[6].

The Academy of Sciences published three journals: "Ezhemesyachnye sochineniya k pol'ze i uveseleniyu sluzhashchie" ("Monthly writings for benefit and entertainment") (1755–1764); "Akademicheskie izvestiya" ("Academic news") (1779–1781) and "Novye ezhemesyachnye sochineniya" ("New monthly writings" (1786–1796). "All these publications sought to popularize science among Russian readers, and also tried to unite the best literary forces. Doing good deeds and

[4] Kozlova M.M. *Istoriya otechestvennykh sredstv massovoi informatsii: ucheb. pos.* [The history of Russian media: textbook]. Ulyanovsk, 2000. Available at: http://evartist.narod.ru/text3/09.htm#%D0%B7_02

[5] *Ukazatel' zhurnal'noi literatury* [Index of journal literature]. Compiled by N.A. Ul'yanov. Saint Petersburg, 1912. P. 6.

[6] Makhonina S.Ya. *Istoriya russkoi zhurnalistiki* [The history of Russian journalism]. Available at: http://www.evartist.narod.ru/text1/93.htm#_top

serving the public good were also declared to be the tasks of these publications"[7].

The comprehensive nature of the content that combined literary or artistic works, political news and encyclopedic information, along with a large number of pages (up to 300–500) were distinguishing features of a thick journal.

Journals such as "Zhizn'" ("Life"), "Obrazovanie" ("Education") and others that emerged in the 1890s "were inevitably transformed into traditional thick journals. It was due to the demands of the audience and a more complicated social life in the pre-revolutionary period, which urged the editor to make broad generalizing coverage of events, to provide detailed comments, i.e. exactly what a thick journal did so well"[8].

At the end of the 19th century and at the beginning of the 20th century, the development of newspapers pushed journals into the background of the press. People talked about the end of this type of publications. Scientific and technological progress of the early 20th century increased readers' needs in scientific knowledge; thus thick journals increased their encyclopedic content, and much attention was paid to education and enlightenment. Further differentiation of the sciences and an interest in the natural sciences gave rise to a large number of specialized publications ("Vestnik znaniya" ("Bulletin of knowledge"), "Vokrug sveta" ("Around the world"), "Priroda i lyudi" ("Nature and people"), etc.). Thick journals with their comprehensive content find it more and more difficult to satisfy the needs of readers. The journal "Sovremennaya zhizn'" ("Modern life") in 1906 wrote that journals are "too slow and too cumbersome to serve as the main channels of ideological currents in critical periods of public life. But one has to admit that their solidity and thoroughness in the development of tasks of the present is way above the techniques used by frivolous press. But as long as the center of gravity of interests lies in practical rather than theoretical work, as long as there is no voluntary or involuntary calm – this solidity is of little help to them"[9].

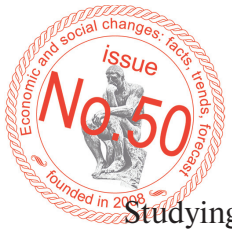
"However, despite all the talk about the end of the thick journal, it neither died nor disappeared, but once again proved the viability of the "ordinary Russian" publication in a qualitatively changed system of journalism. The journal "Sovremennaya zhizn'" was right: the thick journal, having receded into the background during the period of social upheaval, again took its usual place in a calm period, when it was time for an in-depth analysis of the revolutionary storms that people had lived through: a journal of this type proved once again that it was best suited for the job"[10]. Classic thick journals in Russia in the 20th century were "Vestnik Evropy" ("Herald of Europe"), "Russkoe bogatstvo" ("Russian wealth"), "Russkaya mysl'" ("Russian thought"), "Sovremennyi mir" ("Modern world"), etc.

[7] Kozlova M.M. *Istoriya otechestvennykh sredstv massovoi informatsii: ucheb. pos.* [The history of Russian media: textbook]. Ulyanovsk, 2000. Available at: http://evartist.narod.ru/text3/09.htm#%D0%B7_02

[8] *Ibidem.*

[9] *Sovremennaya zhizn'* [Modern life], 1906, no. 9–10, pp. 241.

[10] Kozlova M.M. *Istoriya otechestvennykh sredstv massovoi informatsii: ucheb. pos.* [The history of Russian media: textbook]. Ulyanovsk, 2000. Available at: http://evartist.narod.ru/text3/09.htm#%D0%B7_02.



Studying the content of and trends in the publications of his time, a distinguished literary critic and journalist Vissarion Belinsky formulated basic provisions of journalism as a profession. He considered that the journal must have its remit as a "necessary condition for the existence of the journal and for the trust of the public toward it"; he wrote: **"The journal must have a face, a character; it is the worst thing if the journal is impersonal like a literary miscellany. The face and character of the journal can be found in its remit, its opinion, its dominant doctrine, which it must be part of".** According to Belinsky, in journalism, as well as in literature, it was very important to have **a sense of "modernity", i.e. the ability to respond to urgent problems of life and to the needs of society.** To do this, one must study the readers and know them. Belinsky called "multiplication of the readers" the first and most sacred duty of the journalist. **The journalist must educate the taste of the reader, and the journal's mission is to be a "leader of society".** In his review "Russian literature in 1842" Belinsky touched upon the work with the fact – another aspect of journalism as a profession. A "vivid, restless, anxious" need to understand life requires more than just recording the facts: **"It's all about understanding the value of the facts". This is possible when the journalist clearly understands "the meaning and significance of the fact" and when he is able to "transform the fact into an idea"**[11].

At the same time (in the middle of the 19th century), Alexander Herzen in the Preface to the first issue of the journal "Kolokol" ("Bell") wrote: *"Events in Russia are going at full speed, they have to be hawked in the air and served immediately"*[12].

Over the past half century, the mission and role of scientific journals have not lost their meaning and value. On the contrary, along with the acceleration of the pace of life, complexity of political processes and social relations, the growth of information technology (contributed to the dissemination of electronic resources), more complex, global challenges to the entire world civilization, to the country and to science began to emerge; on the other hand, there increased the need for high-quality and deep analytics, which is a distinctive feature of journals.

The above trends are particularly important for Russia. Our country has long existed in terms of the need to catch up with Western countries, but today this need has become urgent as ever: many experts (S.S. Gubanov, S.Yu. Glazyev, B.Yu. Titov, E.V. Balatsky and others) argue that Russia needs a breakthrough, based on the change of economic model and implementation of innovation technology. Such a breakthrough cannot occur if the authorities do not alter their understanding of the principles of modern economy; and this requires a strong base of fundamental scientific knowledge ("critical mass"), which is concentrated in research journals; its carriers (actors) are contributors to printed editions.

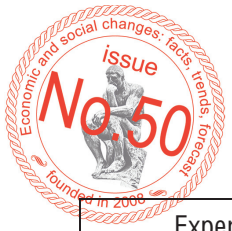
[11] V.G. Belinskii – zhurnalist i kritik [V. G. Belinsky – a journalist and critic]. *Informatsionnyi portal "Russkie pisateli i poety"* [Information portal "Russian writers and poets"]. Available at: http://writerstob.narod.ru/raznoe/raznoe_belinsky.htm

[12] Herzen A.I. Predislovie k zhurnalu "Kolokol" [Foreword to the journal "Kolokol", 1857, no. 1]. *Informatsionnyi portal "Biografia.ru"* [Information portal "Biography.ru"]. Available at. http://www.biografia.ru/arhiv/600.html

Insert 1

Experts on the modern role of the scientific journal

Expert	Opinion	Source
N.M. Pliskevich (Ph.D. in Economics, economist, deputy chief editor of the journal "Social Sciences and Modernity")	"Globalization and informatization in the economy have reached such a level that the usual methods of state regulation of the economy are clearly inadequate. This, in particular, was clearly demonstrated during the latest economic crisis. The regulatory capacity of the state needs to be updated, as well as supplemented with modern mechanisms for self-regulation of economic processes. This new self-regulation implies a new and more complex role of the subject of economic relations, demanding specific requirements from this subject, new estimates of economic reality by the subject. In fact, all of this implies a revision of the ideas of economic rationality that are not limited to purely material criteria of economic efficiency, but include spiritual and moral components. Naturally, the development of new ideas of economic rationality that include intangible, spiritual aspects into the very body of economic theory as opposed to considering them only as a kind of external frame is impossible without cooperation of economists with philosophers, psychologists, sociologists, ecologists, and representatives of other disciplines. And in this case economic journals can become a platform for such cooperation".	Pliskevich N.M. An interdisciplinary approach to economic realities. *Social Sciences and Modernity*, 2011, no. 12, p. 180.
J.T. Toshchenko (RAS Corresponding Member, Doctor of Philosophy, Professor, Chef Research Associate at RAS Institute of Sociology)	"Society lives in anticipation of change. The analysis shows that the opportunities that opened in the early 2000s are now exhausted. We need a new qualitative leap in development. As a result, the government and the opposition forces (and of course, science) are looking for solutions to this difficult problem. This is particularly evident in the increasing number of those who are dissatisfied with the course of the ongoing changes. Therefore, the editor considers it of great importance to have the materials that analyze the status and problems of social and group consciousness, that describe the willingness to work for the implementation of what is ripe in the hearts and souls of people. Ultimately, the development will go in that direction, which is not embodied in the programs of the authorities or their opponents, but which reflects the expectations and attitudes of most people".	Toshchenko J.T. Acme time. *Sociological Studies,* 2014, no. 7, p. 7.



Expert	Opinion	Source
G.B. Kleiner (RAS Corresponding Member, Doctor of Economics, RAS Social Sciences Department, Economics Section)	"In Russia, under its current institutional framework, the Russian Academy of Sciences is the main institution that can be qualified to perform these functions. This is where vast research experience is accumulated, this is where the understanding, validation and adjustment (if necessary) of research results and their publication, etc. takes place. In fact, RAS itself is an extensive knowledge base, a powerful processor of knowledge and a network of non-governmental institutions, whose role is to receive, validate, store and publish knowledge. This first and primary mission of the Academy of Sciences is projected onto the activity of academic journals. They should publish, first of all, fundamental knowledge – the results of fundamental academic research, and the very fact of publication needs to be a link from information as raw material for science to knowledge as its socially recognized result. Thus, publication of basic research findings is the main component in the mission of an academic journal".	Kleiner G.B. The mission of an academic journal: between fundamental approach and topicality. *The Journal of the New Economic Association*, 2011, no.12, p. 171.
E.V. Balatsky (Doctor of Economics, Professor, Chief Research Associate at CEMI RAS)	"Although the role of scientific journals is still of paramount importance in any assessments in the scientific world, we can already observe some new opposing trends...today the world of science is in a state when different trends clash: on the one hand, certain mechanisms have been formed that reinforce the role of academic journals and their rankings, on the other hand, there are certain factors that weaken the influence of journals on the development of science. At the moment, there is still a rough equality of the forces of colliding trends with a small advantage of the former trend".	Balatsky E.V. The role of academic journals: a period of uncertainty. *The Journal of the New Economic Association*, 2011, no.12, p. 166.

Leading modern Russian scientists note the exceptional role of a scientific journal in the development of economic, sociological and philosophical thought, which is a necessary condition for addressing major problems of our country and for its continued existence in the framework of global geopolitical competition *(Insert 1)*.

Thus, since the emergence of the scientific journal, the role it plays in the formation and development of scientific potential of Russia has not changed; it even became more important. As the pace of life accelerates and social and political processes become more complex, the requirements to such a publication become higher: it must combine interdisciplinary research; find a balance between classic and innovative work, between theoretical and experimental articles; keep a finger "on the pulse" of world events and a mainstream scientific and philosophical paradigm of development. Compliance with these requirements is an integral condition for ensuring continuity of academic knowledge, a critical task of modern science. And only the journal that sets before itself this very task can be considered a worthy representative of basic science.

2. Main stages in the development of ISEDT RAS journal in 2008–2016

The journal "Economic and Social Changes: Facts, Trends, Forecast" founded by RAS Institute of Socio-Economic Development of Territories in 2008 was **established with a deep understanding of historical and contemporary aspects of the mission of a scientific journal in our country**. The Journal's editorial board completely agrees with the viewpoint of G.B. Kleiner who points out that "when creating an academic journal that covers all aspects of the economy, one must consciously avoid any boundaries of subject, problem, or instrumental areas. Economics as a science is unified, because the world it explores is also unified, being diverse at the same time; and the main task of the journal is to integrate economic research and researchers, no matter what scientific school or organization they belong to"[13].

It should be noted that the Journal was established in a period extremely difficult for Russia in both political and economic sense: after two presidential terms of Vladimir Putin, Dmitry Medvedev became president in 2000; this fact created some uncertainty concerning further development of internal and external political situation. In 2009 Russia (and especially the Vologda Oblast) fully felt the impact of the global financial crisis.

However, understanding the importance of promoting Russian academic science, especially at the regional level, led to the fact that during this period, Vologda Scientific-Coordination Center of RAS (eventually developed into ISEDT RAS) put forward an initiative on the publication of an interregional journal. This initiative was supported by other economic institutions of RAS located in the Northwestern Federal District: RAS Institute for Regional Economic Studies (Saint Petersburg), Luzin Institute for Economic Studies, Kola Scientific Center of RAS (Apatity), Institute of Economics, Karelian

[13] Kleiner G.B. Missiya akademicheskogo zhurnala: mezhdu fundamental'nost'yu i aktual'nost'yu [The Mission of an Academic Journal: Between Fundamental Approach and Topicality]. *Zhurnal novoi ekonomicheskoi assotsiatsii* [The Journal of the New Economic Association], 2011, no.12, p. 171.

Research Center of RAS, Institute for Socio-Economic and Energy Problems of the North, Komi Scientific Center, Ural Branch of RAS, and Saint Petersburg State University of Engineering and Economics. They took part in the formation of the editorial board and editorial staff of the Journal. The heads of RAS Institute of Economic Forecasting (Academician **V.V. Ivanter**), RAS Central Economics and Mathematics Institute (Academician **V.L. Makarov**), well-known scientists from the Republic of Belarus, People's Republic of China, and Finland agreed to join the editorial board of the Journal.

Addressing the readers, authors, editorial board and staff members of the first issue of the Journal, RAS Vice-President, Academician A.D. Nekipelov noted that this new edition would help consolidate the efforts of academic institutions in addressing the challenges associated with scientific support of progressive development of the national economy, formation of effective interaction with state authorities and business structures by uniting the efforts of central and regional academic institutions in the substantiation of rational ways for economic and social development of the North-West of Russia[14].

During the first three years since its foundation the journal was published quarterly. Each issue was devoted to the topic that was identified in the annual plan and which, in the opinion of the editorial board and editorial staff, had priority significance for the development of the northern regions. The main section – "Development Strategy" – in that period focused on analyzing the trends and results of market transformations in different regions of the North-West, on the justification of strategic directions and criteria for assessing the achievement of goals and stages of their implementation[15].

The issues published in 2008 discussed the following issues: transition of regions to innovative development; increase in labor productivity in individual industries and in general in the regional economy. One of the main discussion topics was the development of the forest industry, which in North-West Russia has significant reserves for growth, because the territory has large areas of forest resources and many years of experience of their utilization.

In 2009 the Journal published a series of articles on boosting small business and agriculture and on promoting food security, on the prospects of development of engineering and regional tourism in the

[14] Privetstvie vitse-prezidenta RAN akademika A.D. Nekipelova [Welcome speech by RAS Academician A.D. Nekipelov]. *Ekonomicheskie i sotsial'nye peremeny: fakty, tendentsii, prognoz* [Economic and social changes: facts, trends, forecast], 2008, no. 1, pp. 8-9.

[15] See, for example:

Gulin K.A. Kontseptsiya dolgosrochnogo sotsial'no-ekonomicheskogo razvitiya ("Rossiya – 2020"): vyzovy dlya regionov [The Concept for long-term socio-economic development ("Russia – 2020"): challenges for regions]. *Ekonomicheskie i sotsial'nye peremeny: fakty, tendentsii, prognoz* [Economic and social changes: facts, trends, forecast], 2008, no. 4, pp. 8-14;

Lazhentsev V.N. Dinamika sotsial'no-ekonomicheskogo razvitiya Respubliki Komi [Dynamics of socio-economic development of the Republic of Komi]. *Ibidem*, 2008, no. 1, pp. 18-35;

Shishkin A.I. Sotsial'no-ekonomicheskoe razvitie Karelii [Socio-economic development of Karelia]. *Ibidem*, 2008, no. 2, pp. 6-13;

Larichkin F.D., Antonov S.A. Sovershenstvovanie strategicheskogo planirovaniya regional'nogo razvitiya s uchetom kachestva ekonomicheskogo rosta [Improving the strategic planning of regional development taking into account the quality of economic growth]. *Ibidem*, 2008, no. 2, pp. 14-20.

Russian North-West. The state of affairs in that period demanded that the Journal publish articles on the causes of the financial crisis in the world economy that affected Russia, and on the measures to overcome its consequences[16].

In the framework of the Journal's thematic issues in 2010, its contributors discussed the improvement of local self-government, development of the energy base and energy security in the regions, and the issues of their social development. Moreover, the authors dwelled upon various aspects of foreign economic activity that acquired considerable importance in the Northwestern Federal District due to its orientation toward raw materials and semi-finished products on the basis of production of iron ore and other mining and mineral resources.

As the number of annual issues of the Journal increased from four to six in 2011, it became possible to shift from thematic planning to problem-based planning. However, to date, some of the sections include thematic collections of articles. For instance, the series of articles published in 2012 were prepared as a result of cooperation of scientists from academic institutions of Russia and Belarus in the framework of the Union State; the articles describe the stages of development of this cooperation, directions of development of the common scientific space, development of trade and economic integration of the regions within the NWFD of the Russian Federation and the Republic of Belarus, major trends in their socio-demographic processes that are associated primarily with the organization of health care, education, and with the enhancement of people's welfare[17].

In the run-up to the 9th Session of the Russia-Belarus InterAcademy Council on the

[16] See, for example:

Iogman L.G. Ekonomika regiona: ot krizisa k ustoichivomu razvitiyu [Economy of the region: from crisis to sustainable development]. *Ekonomicheskie i sotsial'nye peremeny: fakty, tendentsii, prognoz* [Economic and social changes: facts, trends, forecast], 2009, no. 3, pp. 14-24;

Kostygov N.V. Vologodskaya oblast': antikrizisnaya programma deistvii [The Vologda region: anti-crisis action program]. *Ibidem*, 2009, no. 1, pp. 14-17;

Gulin K.A., Dement'eva I.N. Ekonomicheskoe polozhenie i sotsial'noe samochuvstvie naseleniya regionov Severo-Zapada Rossii v usloviyakh krizisa [Economic status and social well-being of North-West Russia regions' population amid the economic crisis]. *Ibidem*, 2009, no. 4, pp. 18-28;

Sovetov P.M. Reveransy antikrizisnykh vozdeistvii gosudarstva [Anti-crisis influence reverences of the state]. *Ibidem*, 2009, no. 2, pp. 14-18;

Selin V.S. Stsenarnyi prognoz razvitiya regiona v usloviyakh ekonomicheskoi nestabil'nosti [Scenario development forecast of the region under the conditions of economic instability]. *Ibidem*, 2009, no. 1, p. 18-25;

Leus S.M., Istomin A.V. Otsenka vliyaniya ekonomicheskogo krizisa na bazovye otrasli i perspektivnye proekty v Murmanskoi oblasti [Evaluation of the economic crisis impact on the basic sectors and long-term projects in the Murmansk Region]. *Ibidem*, 2009, no. 2, pp. 19-29;

Nemkovich E.G., Kurilo A.E. Vliyanie krizisa na ekonomiku Karelii i vozmozhnosti ego preodoleniya [The crisis influence on economy of Karelia and opportunity of its overcoming]. *Ibidem*, 2009, no. 1, pp. 18-25.

[17] See, for example:

Dedkov S.M., Egorov V.K. Rossiisko-belorusskoe nauchnoe sotrudnichestvo na pervom etape soyuznykh otnoshenii: vosstanovlenie edinogo nauchnogo prostranstva [Scientific collaboration between russia and belarus at the first stage of allied relations: the restoration of a single research area]. *Ekonomicheskie i sotsial'nye peremeny: fakty, tendentsii, prognoz* [Economic and social changes: facts, trends, forecast], 2012, no. 2, pp. 50-59;

Uskova T.V., Selimenkov R.Yu., Asanovich V.Ya. Modelirovanie vneshneekonomicheskoi deyatel'nosti regionov SZFO RF i Respubliki Belarus' [Methodological modeling aspects of foreign-economic activity in the regions of the North-West Federal District and the Republic of Belarus]. *Ibidem*, pp. 60-70;

Shabunova A.A., Leonidova G.V., Shukhatovich V.R., Artyukhin M.I. Sotsial'no-demograficheskie aspekty razvitiya trudovogo potentsiala [Socio-demographic aspects of labor potential development]. *Ibidem*, pp. 71-82.

Issues of Development of the Union State and the International Research-to-Practice Conference "Integration within the Union State as the main tool for the implementation of Russia and Belarus security strategy" held in Vologda (July 03– 05) ISEDT RAS published a thematic issue of the Journal dedicated to the economic and social aspects of integration and cooperation between Russia and Belarus.

In 2012-2013, the Journal's editorial board directed its major efforts toward selecting such articles that revealed the reasons for a slow recovery trend in the Russian economy in general and in the context of its territories and the ways of overcoming the barriers to country's transition to an innovative stage of development. Articles on the influence of interests of owners of private corporations on the formation of the regional budgets, and on escalating public debt of territories made up a qualitatively new bunch of publications[18]. In those years the Journal published a series of articles on the content and stages of socio-cultural modernization, without which it is impossible to increase economic efficiency and eliminate excessive differentiation of people's incomes[19].

One of the indicators showing the quality and scientific level of the Journal was its inclusion in 2010 in the List of leading scientific publications recommended by the Higher Attestation Commission for publication of major findings of Ph.D. and doctor of science dissertations. In November 2015, the Journal was included in the international database "Web of Science" and is now covered in Emerging Sources Citation Index (ESCI), which is a new database within Web of Science Core Collection[20]. It should be noted that initially this new database contained only 16 Russian journals, and the journal published by ISEDT RAS was the only economic publication in this list.

It became possible for the Journal to enter a leading international citation database because the Journal's editorial board has consistently implemented the corresponding policy. During 2013–2015, several measures aimed at achieving a qualitatively new level corresponding to requirements of international standards were implemented *(Insert 2)*.

[18] See:

Ilyin V.A. Vliyanie interesov sobstvennikov metallurgicheskikh korporatsii na natsional'noe i regional'noe razvitie [The influence of ferrous metallurgy corporations' interests on the regional development]. *Ekonomicheskie i sotsial'nye peremeny: fakty, tendentsii, prognoz* [Economic and social changes: facts, trends, forecast], 2011, no. 3, pp. 14-38;

Povarova A.I. Vliyanie interesov sobstvennikov metallurgicheskoi korporatsii na finansovye rezul'taty golovnogo predpriyatiya (na primere OAO "Severstal'") [The influence of the metallurgical corporation owners' interests on the financial performances of the parent enterprise (in case of OJSC "Severstal")]. *Ibidem*, 2011, no. 5, pp. 36-51;

Il'in V.A., Povarova A.I. Byudzhetnyi krizis regionov v 2013–2015 godakh – ugroza bezopasnosti Rossii [Budget crisis of the regions in 2013–2015: a threat to Russia's security]. *Ibidem*, 2012, no. 6, pp. 30-41.

[19] See:

Sztompka P. Modernizatsiya kak sotsial'noe stanovlenie (10 tezisov po modernizatsii) [Modernization as social becoming (ten theses on modernization)]. *Ekonomicheskie i sotsial'nye peremeny: fakty, tendentsii, prognoz* [Economic and social changes: facts, trends, forecast], 2013, no. 6, pp. 119-126;

Lastochkina M.A., Shabunova A.A. Vozmozhnosti i ogranicheniya modernizatsionnogo razvitiya regionov Severo-Zapadnogo federal'nogo okruga [Opportunities for and constraints in the modernization development of the regions of the Northwestern Federal District]. *Ibidem*, 2013, no. 5, pp. 39-52.

[20] Web of Science Core Collection includes eight science citation indices: Science Citation Index Expanded – SCIE, Social Sciences Citation Index – SSCI, Arts & Humanities Citation Index – A&HCI, Emerging Sources Citation Index – ESCI and four citation indices for conference proceedings and books.

Insert 2

Tasks and areas of the work of the editorial board of the journal "Economic and Social Changes: Facts, Trends, Forecast" to bring the publication in line with international publishing standards and requirements of international scientometric databases

Tasks	Measures taken
Bringing the Journal in line with requirements of international databases	**October-November, 2013.** Development and adoption of Regulations on publication ethics of the journal, based on international standards proposed by the Committee on Publication Ethics (COPE). **January, 2014.** In the Russian version of the Journal, abstracts in English, as well as data on affiliation of its authors (address of the place of work), were moved from the end of the Journal and are now placed directly with the article. J**anuary, 2014.** A new method of placing the parts of the article was approved: the entire English part is now placed at the end of the article. **January, 2014.** References are given in the Roman alphabet. **June, 2014.** ISSN is received for the online version of the Journal. **August 2014**. Data on affiliation of editorial board members are supplemented**.**
Improving the quality of the articles in accordance with the requirements of foreign databases	**January, 2014**. Requirements to the manuscripts submitted to ISEDT RAS journals are revised: - requirements to abstracts are changed (length of the abstract is increased up to 1800 characters (200–250 words); clear structuring of the article is required that contains the following sections: introduction, goals and objectives, methodology, results, conclusion; - samples of abstracts in Russian and English are developed. **January, 2014.** New rules for authors are adopted, the rules are posted on the websites. **October – December, 2014**. Changes are made to the Provision on peer review in ISEDT RAS journals: the reviewers are to review articles for their compliance with all the requirements to manuscripts submitted to the editor of the journal (scope and content of the abstract; references and page references in accordance with state standards; size of the article; foreign sources).

Tasks	Measures taken
Expanding the Journal's editorial board by inviting foreign scientists, whose citation metrics in foreign databases is high	The editorial board of the journal "Economic and Social Changes: Facts, Trends, Forecast" is joined by the following scientists: **August, 2014.** Piotr Sztompka, Professor, Head of the Center for Theoretical Sociology at Jagiellonian University (Poland). **July, 2016.** Peter Oeij, Ph.D., Senior Research Scientist and Consultant, Netherlands Organization for Applied Scientific Research (Leiden, the Netherlands). **September, 2016.** Julien Vercueil, Professor, Director of International Trade Department, National Institute of Oriental Languages and Civilizations INALCO, (Paris, France)
Promoting the Journal's distribution abroad	**June, 2014.** The German National Library of Economics included the Journal into its fund. **July, 2014.** The U.S. Library of Congress included the Journal into its fund.
Increasing international visibility of the Journal: expanding its presence in international systems	**2013.** The Journal is included in the international reference system Ulrich's Periodicals Directory. **2013.** The Journal is included in the international database ProQuest (ProQuest Natural Sciences Journals; ProQuest SciTech Journals; ProQuest Sustainability Science Collection; ProQuest Illustrata: Natural Science). **2013.** The Journal is included in databases of EBSCO Information Services, EBSCOhost platform. **September, 2014.** Joining PILA international organization, agreement with CrossRef to receive DOIs for articles. **May, 2015.** The Journal is included in DOAJ (Directory of Open Access Journals), the largest international database of open access journals. **August, 2015.** The Journal began exporting its materials to the international open repositories of scientific information Google Scholar, OCLC WorldCat, ROAR, BASE, OpenAIRE, RePEc, Socionet via "CyberLeninka" scientific electronic library. **November, 2015.** Journal is included in the Emerging Sources Citation Index, a new database within the Web of Science Core Collection.

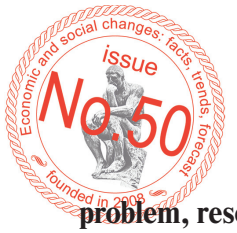
Starting in 2012, members of the editorial staff of the Journal are regular participants of the annual international research-to-practice conference "Scientific publication of the international level" held by the non-profit partnership "National Electronic Information Consortium" jointly with representatives of the largest international publishing houses and editors of leading international journals. Systematic participation in the event allows the editorial staff to shape the publication policy that involves the Journal's compliance with international standards and promotion of publications and titles in the global scientific community. In May 2016, according to the results of participation in the exhibition "Scientific journals of Russia and CIS countries as a source of information about research findings for the international community", which took place in the framework of the above mentioned conference, the journal "Economic and Social Changes: Facts, Trends, Forecast" received a quality certificate confirming its compliance with international standards and criteria of Scopus database. Preparing the applications for inclusion of the Journal in this database, as well as strengthening the Journal's position and its further promotion in the international information space – these are the tasks for the editorial staff for the near future.

Based on the conviction that the mission of a scientific journal is to bring together representatives of the scientific community, to accumulate world experience and basic scientific knowledge and transfer it to future generations, the most important criterion for the Journal's development is to enhance the academic status of ISEDT RAS staff and increase the number of publications of young authors.

Given the fact that modern economy (especially in Russia) is objectively in need of innovative development, it should be noted that it is representatives of the younger generation that are bearers of innovative knowledge. **Therefore, one of the main tasks for publishers of a scientific journal is to ensure the continuity of basic knowledge – to transfer the knowledge from generation to generation, which should be organized at the system-wide level.**

In this context it must be stressed that many authors who published their articles in the Journal as research associates and laboratory assistants eventually achieved success not only in their career but also in terms of personal growth; they became winners of prestigious Russian and international awards, received grant support from leading Russian funds and won many contests. Today they are making a solid foundation for the prosperity of academic research at the regional level; they train a new generation of young scientists acting as scientific advisors to graduate students and working as teachers at ISEDT RAS Research and Education Center, actively participate in the life of the youth Parliament of the Vologda Oblast and in the Regional Council of Young Scientists.

Thus, from its very first issue, the Journal received comprehensive support from the leading scientific institutions of Russia. This suggests that the need for the preservation and development of scientific potential in the regions was always understood by the scientific community, and that initiatives to address this



problem, resonate with people not indifferent to the destiny of Russian academic science.

A brief analysis of the dynamics of the Journal's content shows that its remit transformed depending on the requirements of the time. And it is an important criterion that proves that the work of the editorial staff and the Journals' contributors is efficient. Through the pages of its issues published in different years, we can trace the key milestones in economic and social development of Russian regions, see the dynamics of the most important problems that are of interest to the academic community in Russia and abroad.

The ability to be in the mainstream and monitor major trends in science and public life contributes to the development of the scientific potential of the Journal's authors and editorial staff. Perhaps we can call it the main task, the implementation of which was and will remain in the focus of attention of the editors.

3. Trends in the quantitative indicators of the Journal

In our opinion, the results of almost 10 years of work of the editorial staff, authors, reviewers, and professionals engaged in marketing activities to promote the Journal, and many others can be assessed with the help of two groups of criteria:

1. The first group is the most extensive one. It includes **classic quantitative indicators of journal development** describing the geography of the authors, website traffic, a set of bibliometric indicators to assess its relevance, etc.

2. The second group of indicators is **the feedback** from readers, authors and everyone interested. We believe these indicators should draw the attention of any scientific journal's publisher. A qualitative criterion does not require additional comment; however, it is a no less important aspect of performance evaluation.

Speaking about the first group of indicators, it should be noted that in the period since its first issue the Journal gradually acquired its range of authors and readership, which is increasing every year, and it occupied its own niche in the field of economic periodicals[21].

In 2008–2016, over 700 scientific articles were published in the Journal *(Fig. 1)*; the topics of the articles correspond to the priority directions of fundamental and applied research in the field of economic knowledge.

The Journal's contributors include famous Russian and foreign scientists in economics and sociology[22].

During this period, over a thousand authors published their papers in the Journal, of which around 800 people have an academic degree. Consequently, the share of articles by highly qualified authors exceeds 70%: 3.8% in the volume of publications falls on the articles of RAS academicians and corresponding members, 29.6% are written by doctors of sciences, 39.9% – by Ph.D.'s and 26.7% – by researchers without a degree and by graduate students *(Fig. 2)*.

[21] Tret'yakova O.V. Ekonomicheskii zhurnal: problemy i perspektivy prodvizheniya na natsional'nom i mezhdunarodnom urovne [Economic journal: problems and prospects of promotion at the national and international level]. *Ekonomicheskie i sotsial'nye peremeny: fakty, tendentsii, prognoz* [Economic and social changes: facts, trends, forecast], 2014, no. 3, p. 212. DOI: 10.15838/esc/2014.3.33.16

[22] The full list and geography of the authors whose papers are published in the journal "Economic and Social Changes: Facts, Trends, Forecast" are given at the end of issue (pp. 308-315).

Figure 1. Dynamics of the number of scientific articles published in the journal "Economic and Social Changes: Facts, Trends, Forecast" in 2008–2016

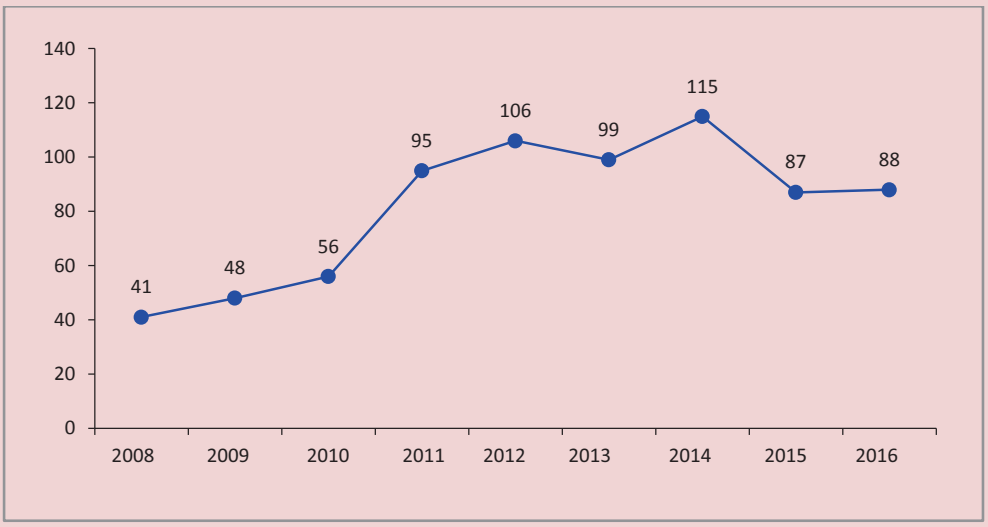
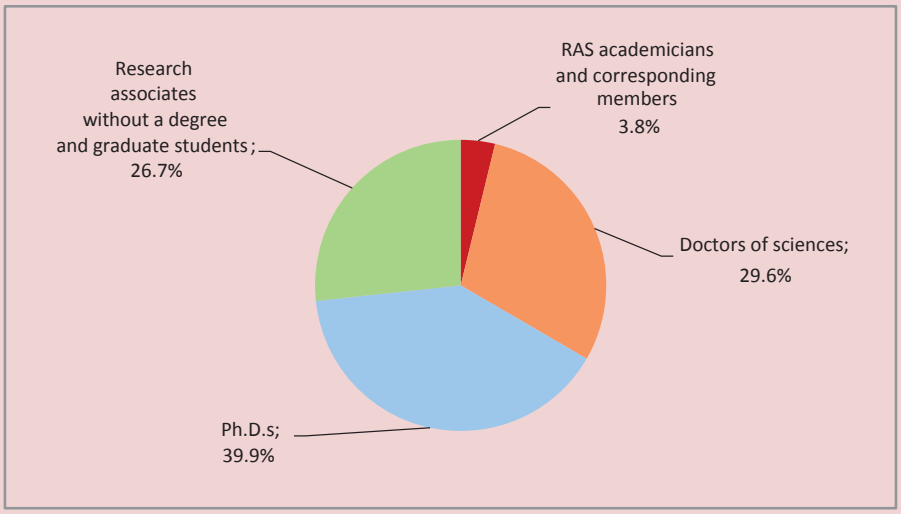


Figure 2. Composition of authors who submitted their papers to the journal "Economic and Social Changes: Facts, Trends, Forecast" in 2008–2016



Guided by the opinion that a modern scientific journal should not be just a discussion platform for domestic scientists, but also a platform that brings together the achievements of researchers from different countries, the editorial staff is consistently implementing several measures to attract foreign authors. Since its foundation, the

Figure 3. Dynamics of the number of RF constituent entities and federal districts, the authors from which published articles in the journal "Economic and Social Changes: Facts, Trends, Forecast" in 2008–2016

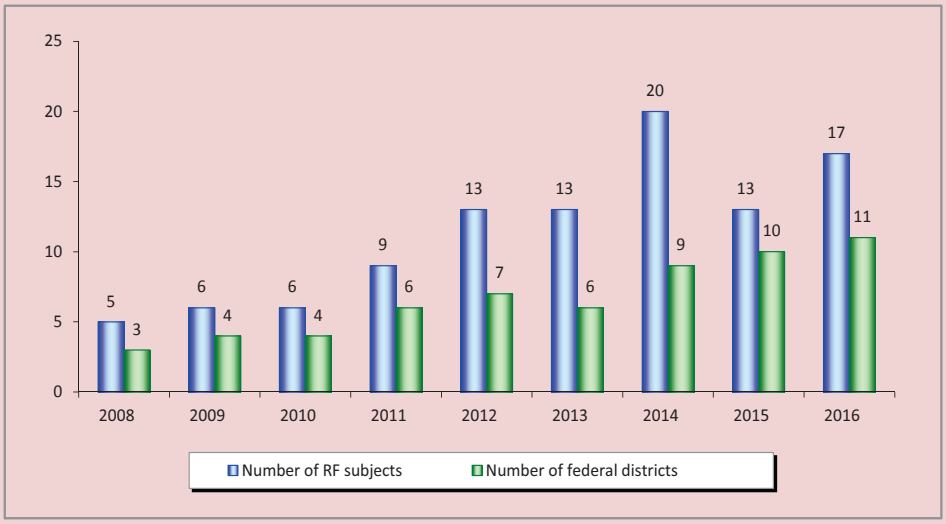
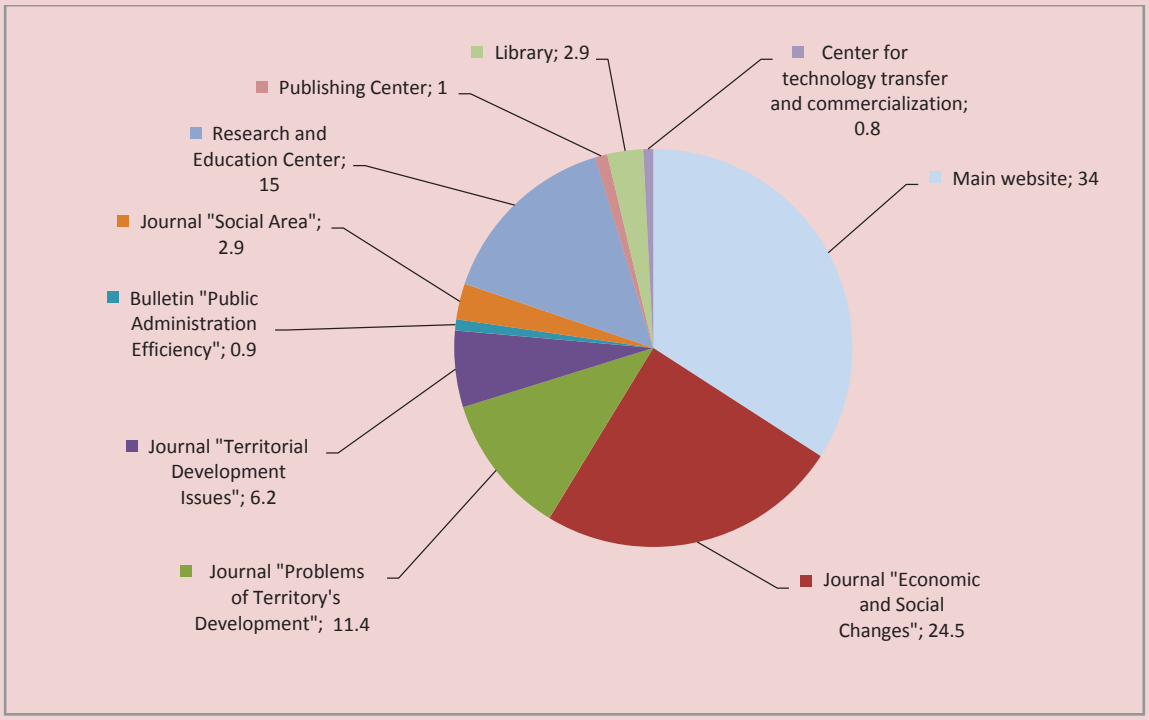


Figure 4. Structure of ISEDT RAS website traffic in 2016, %



Journal has published papers of researchers from 16 countries[23]. The share of foreign articles is about 8% in the total number of publications. A considerable part of them belongs to scientists from China (43%) and Belarus (34%), which is a result of close cooperation of ISEDT RAS with Jiangxi Academy of Social Sciences (Jiangxi province, China) and the National Academy of Sciences of Belarus. Many joint articles by Russian and foreign authors were published, which proves that scientific cooperation with colleagues from abroad has reached a higher quality level.

The geography of Russian authors is also gradually expanding. For the period from 2008 to 2016, the number of federal districts, the authors of which published their papers in the Journal during the year, increased from three to eleven, and the number of constituent entities – from five to seventeen *(Fig. 3)*.

In general, authors from 11 federal districts, two cities of federal importance and more than 30 constituent entities of the Russian Federation published their papers in the Journal. T**he fact that the geography of the authors is expanding proves the following two facts: first, that the work on attracting members of the scientific community from different regions of Russia and foreign countries have become systematic; second, that the Journal is gaining more and more recognition in the Russian scientific community and among the readers of scientific literature.**

The results of system-wide policy of the Journal are clearly reflected in the continuous growth of statistical indicators of its website. In 2016–2017 the number of its views increased by 73% (from 50,878 to 87,816), which, in our opinion, is due to the increase in the Journal's international visibility. According to the data as of 2016, the share of Journal accounts for 25% of all the pageviews of ISEDT RAS portal *(Fig. 4)*.

Significant popularity of the website of the Journal's website is evidenced by the number of downloads from it. Thus, for the period from January to November 2016, more than half of all downloads (52%) from the resources of the Institute fall on the Journal's website.

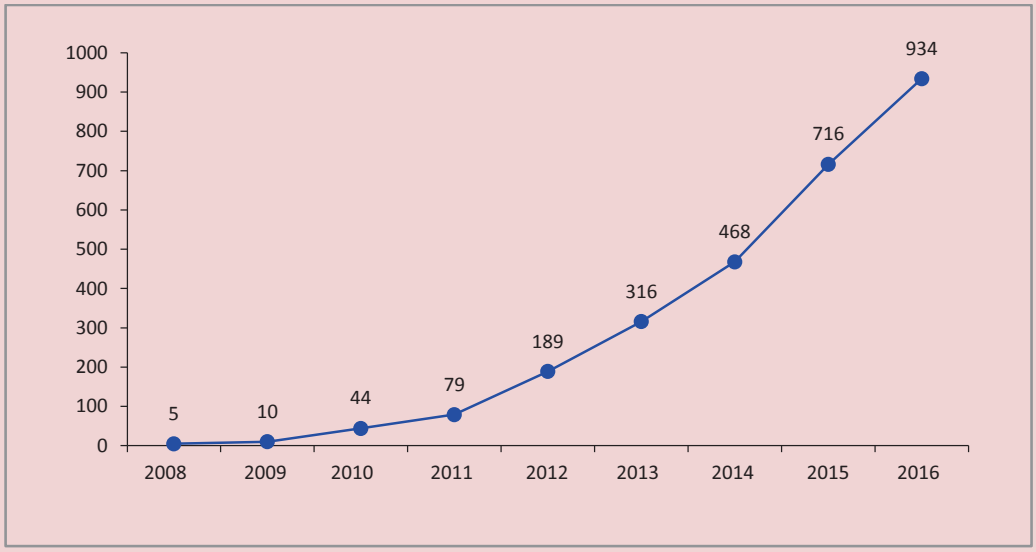
Due to the fact that a free open access to research results helps increase global exchange of knowledge, the Journal provides such access to full-text electronic versions of the articles and other materials published in it. It is the presence of a large number of full-text scientific articles available for download that provides a significant advantage to the Journal's website by the number of downloads.

In addition, in 2016, compared to the same period of the previous year, the number of unique visitors[24] to the Journal's website increased by 16% (from 39,387 to 45,588). The highest number (31%) of users of ISEDT RAS portal visited it, which is a kind of indicator of the success of editorial policy and means that the work for the improvement and optimization of websites of scientific journals is going on in the right direction.

[23] For the period from 2008 to 2016 the Journal published papers of scientists from China, Poland, France, Finland, Czech Republic, Italy, The Netherlands, Spain, UK, Iran, Azerbaijan, Belarus, Latvia, Lithuania, Kazakhstan, and Ukraine.

[24] It should be noted that Piwik system monitors the uniqueness of the visitors with the help of cookies (a piece of data sent by a web server and stored on the user's computer). When taking account of unique visitors, their repeat visits to the website are not counted (they are taken into account when considering a different metric – the number of visits).

Figure 5. Dynamics of the total number of citations of the journal "Economic and Social Changes: Facts, Trends, Forecast" in the RSCI (data as of 23.03.2017)



The relevance of the Journal in Russian academic circles is indirectly confirmed by the data on its scientometric indicators in the Russian Science Citation Index: their continuous positive dynamics are obvious. The total number of citations of the publication in the RSCI is increasing *(Fig. 5)*.

The notion of citation as an indicator of impact, usefulness and importance of cited documents, and also as a tool for evaluating scientific contribution allows us to make a conclusion about the growth of scientific authority of the Journal. This is confirmed by the positive dynamics of the values of the impact factor in the RSCI, which on average increased 5-fold in 2015 compared to 2011 *(Fig. 6)*. The growth rate of the values of the impact factor are in the range from 430 to 580%.

If we compare the values of the two-year impact factor[25] of economic journals that are published by Russian institutes subordinate to FANO and included in the "Economic science, economic geography"[26] reference group, it should be noted that, according to this indicator, the Journal is among leading editions. *Table 1* lists the five journals published by RAS economic institutes, which have the highest values of the two-year impact factor.

[25] Traditional classic indicator, which is calculated by the most prestigious database Web of Science and is recognized throughout the world as the basis for the ranking of journals relative to each other; one of the basic scientometric indicators to evaluate an academic journal.

[26] The reference groups of scientific organizations were formed in the federal system for monitoring and evaluating the performance of research organizations for the execution of the plan on implementation of the state program of the Russian Federation "Development of science and technology" for 2013–2020.

Figure 6. Dynamics of the values of the impact factor of the journal "Economic and Social Changes: Facts, Trends, Forecast" in the RSCI (data as of 23.03.2017)

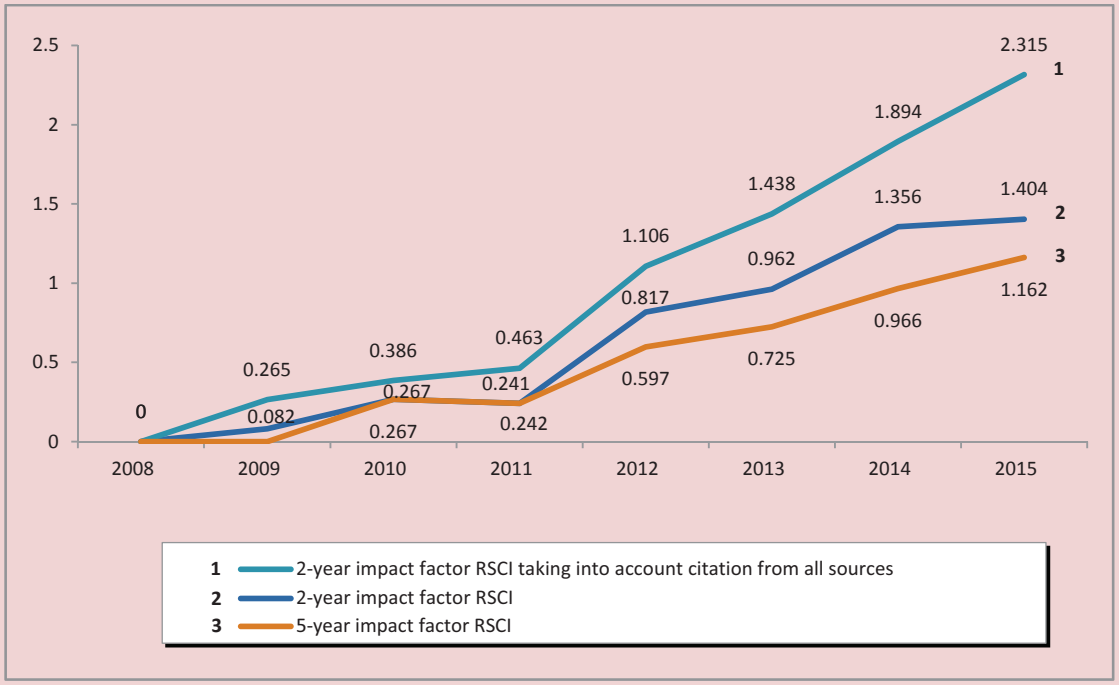


Table 1. Top-5 economic journals published by RAS institutes, ranked by the value of the two-year impact factor RSCI

No.	Journal	RAS institute	IF2 2015
1.	Voprosy ekonomiki (Issues of Economy)	RAS Institute of Economics	6.567
2.	Ekonomika regiona (Economy of Region)	Institute of Economics, Ural Branch of RAS	2.324
3.	Problemy prognozirovaniya (Studies on Russian Economic Development)	Institute of Economic Forecasting, RAS	2.209
4.	Prostranstvennaya ekonomika (Spatial Economics)	Economic Research Institute, Far Eastern Branch of RAS	2.048
5.	**Economic and Social Changes: Facts, Trends, Forecast**	**Institute of Socio-Economic Development Of Territories of RAS**	**1.404**

It is important to note that the increase in the impact factor of the publication is provided by the citations in external sources, but not at the expense of self-citation, it is indicated by the reduction in the five-year self-citation coefficient of the Journal: from 28% in 2012 to 17% in 2015. This level of self-citation is low. For comparison, 80% of journals included in Web of Science have the ratio of self-citation about 20%[27].

[27] Rossiiskie nauchnye zhurnaly v Web of Science [Russian scientific journals in Web of Science]. *Okna rosta: informats.-analitich. byull. NIU VShE* [Windows of growth: information and analytical bulletin of NRU HSE], 2014, no. 19 (95), p. 4.

Overall, judging by the results of the analysis of quantitative indicators of our Journal in the Russian Science Citation Index, it ranks quite high in relation to other publications of the same remit and has good conditions for the integration in the national and international information space.

Thus, the dynamics of the main indicators of the journal "Economic and Social Changes: Facts, Trends, Forecast" allows us to speak with confidence about systematic and integrated approach to addressing key issues of the publication; it also shows that the Journal now complies with all the requirements of a modern print edition devoted to the problems of academic science.

Over the years of its publication the journal has acquired its own distinctive features, it has become well-known in the scientific world; it is expanding its horizons from the point of view of geographical distribution of authors, as well as from the standpoint of the content of its issues. Quantitative indicators reflecting the dynamics of development of the Journal clearly indicate that the work is headed in the right direction.

However, the geography and status of authors and the ranking in the RISC are not the only indicators by which the development of the publication can be assessed. No less important is the opinion of the very actors of this system: authors, readers, and editorial staff.

4. Assessment of the Journal by the scientific community

Since 2010, the Institute of Socio-Economic Development of Territories of the Russian Academy of Sciences carries out annual expert evaluation of its scientific journal "Economic and Social Changes: Facts, Trends, Forecast". The Journal's editorial staff, authors, and receivers participate in the questionnaire survey. In general, in 2010–2016, 760 people were surveyed *(Tab. 2)*. The number of participants of the monitoring increased from 94 in 2010 to 125 in 2016.

The vast majority of experts who have agreed to evaluate the content and design of the Journal, assess the changes taking place in it as being positive (83% in 2010, 82% in 2016, *Fig. 7*). Over the past three years (from 2014 to 2016), the proportion of experts who express positive judgments about the dynamics of the Journal's development increased from 75 to 82%.

Since 2013 there is a stable positive dynamics of assessment of the quality of published papers. In general, during 2010–2016, the percentage of positive responses increased by 8 p.p. (from 89 to 97%; *Fig. 8*).

Table 2. Dynamics of the number of respondents who participated in an expert assessment survey of the scientific journal "Economic and Social Changes: Facts, Trends, Forecast" in 2010–2016, people

Group of respondents	2010	2011	2012	2013	2014	2015	2016	Growth rate 2016 to 2015, %
Editorial board and editorial staff members	13	20	17	11	13	17	**17**	**100**
ISEDT RAS staff	81	86	86	82	88	75	**73**	**97**
Journal readers	-	-	-	-	13	33	**35**	**106**
Total	**94**	**106**	**103**	**93**	**114**	**125**	**125**	**100**

Figure 7. Dynamics of the share of respondents who answered the question: "How would you assess the changes that the Journal has undergone?", for 2010–2016, %

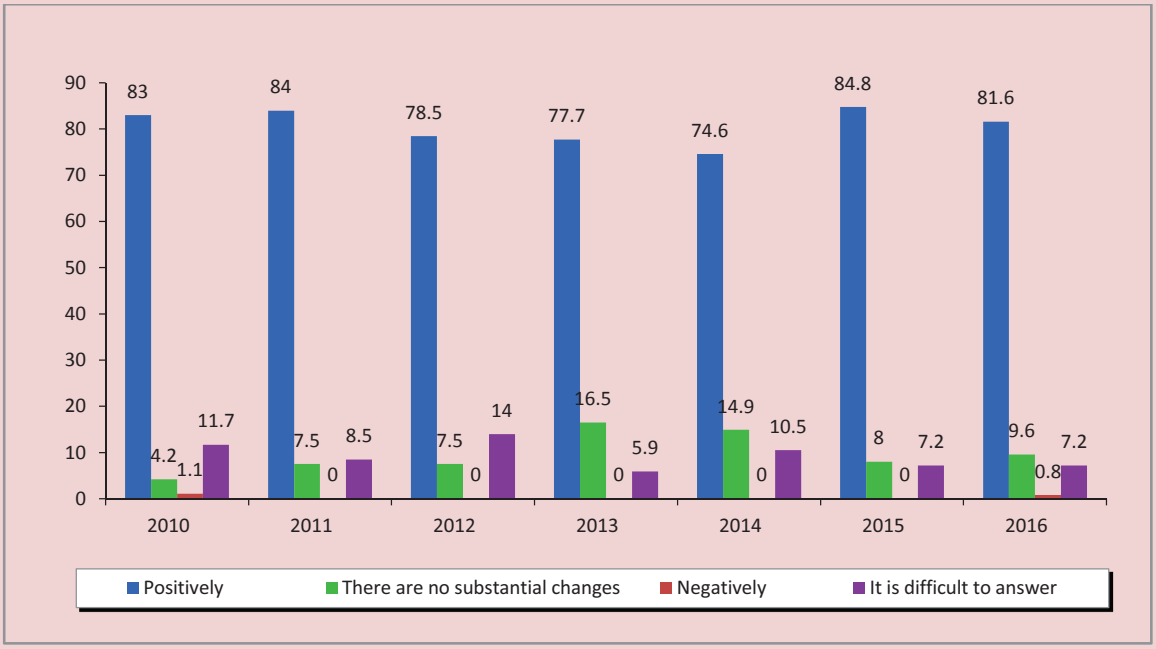
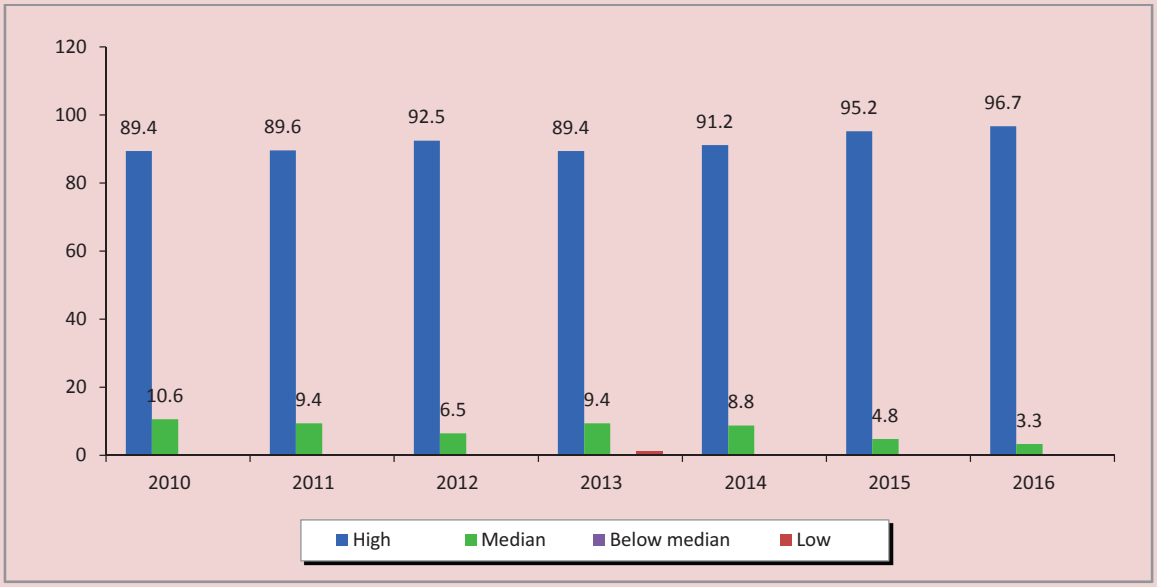


Figure 8. Dynamics of the share of respondents who answered the question: "How would you assess the level of materials published in the Journal?", for 2010–2016, %



Thematic issues addressed in the Journal are grouped in 20 sections[28]. Their large number is due, on the one hand, to the complex ideological approach to the Journal's content, with the understanding of the need for a multifaceted vision of economic and social aspects of development of territories; on the other hand, with granting potential authors more opportunities to submit their manuscripts to the editor. For instance, there are special sections for young authors, for those willing to share foreign experience, etc.

As the results of the annual monitoring of the Journal's development effectiveness, readers find the sections "From the chief editor" and "Socio-economic development strategy" most interesting *(Tab. 3)*. At the same time, expert estimates for all the sections in the period under review have positive dynamics. According to the results of the latest survey, none of the sections received an expert assessment below 7.8 points (on a 10-point scale).

The Journal is currently published in four versions: printed Russian, online Russian, printed English, and online English. Judging by the results of the ongoing monitoring, the relevance of each of the versions is growing. The only exception is the Russian-language printed version; this fact may be associated with an irreversible trend of development of information technology and virtual networks, which increasingly become a platform for periodicals *(Tab. 4)*.

Table 3. Answers of respondents to the question: "What sections, in your opinion, are of greatest interest"? (average score on a 10-point scale)

Section	2010	2011	2012	2013	2014	2015	2016	2016, +/– to 2010
From the chief editor	8.7	8.4	8.4	8.5	8.7	8.9	9.0	**0**
Socio-economic development strategy	6.7	8.6	8.2	8.5	8.7	8.9	9.0	**+2**
Social development	8.7	8.5	8.5	8.6	8.8	8.8	8.8	**0**
Regional economy	5.6	8.7	8.7	8.4	8.5	8.8	8.8	**+3**
Innovation development	5.0	8.6	8.3	8.2	8.5	8.6	8.6	**+4**
Branch-wise economy	5.6	8.7	8.7	8.4	8.5	8.5	8.3	**+3**

[28] Full list of sections in the journal "Economic and Social Changes: Facts, Trends, Forecast":

1. From the chief editor
2. Socio-economic development strategy
3. Issues of theory
4. Spatial aspects of territorial development
5. Branch-wise economy
6. Regional economics
7. Social development
8. Public finance
9. Economics and sociology of public health and health care
10. Critical economic issues
11. Innovation development
12. Nature management
13. Modeling and forecast of socio-economic processes
14. Economics of the agro-industrial complex
15. Labor economics
16. History of economic and sociological thought
17. Foreign experience
18. Discussion platform
19. Young researchers
20. Scientific reviews. Opinions.

Insert 3

Reviews of the journal "Economic and Social Changes: Facts, Trends, Forecast"

Author of the review	Date of the interview	Content
P.A. Vityaz, Academician, Head of the Administration of NAS of Belarus	September 2015	"The journals "Economic and Social Changes: Facts, Trends, Forecast", "Problems of territory's development", electronic journal "Territorial Development Issues"; the information-analytical bulletin "Public administration efficiency in the estimates of the population" founded and produced by the efforts of ISEDT RAS staff have become an intellectual platform for representatives of various scientific schools to exchange opinions on the economic and socio-political development of regions of Russia, former soviet states and other countries. ISEDT RAS periodicals in a short time have gained wide international recognition in the scientific world; this was due, among other things, to the fact that the editorial boards of these publications contain well-known foreign scientists".
V.M. Kalyasin, Chairperson, Vologda Oblast Federation of Trade Unions	December 2015	The journals "Problems of territory's development" and "Economic and Social Changes" are in demand among trade union members. The journals publish articles in which on the basis of deep scientific analysis the urgency and topicality of current socio-economic problems are assessed, and conceptual approaches to their solution are determined. The knowledge obtained allows us to take a more accurate position in negotiations with authorities and employers, protecting social and labor rights and interests of workers".
A.I. Tatarkin, RAS Academician	December 2015	"The importance of ISEDT RAS as a major center of economic and sociological research in the North-West of Russia is determined, among other facts, by the fact that the Institute publishes the journals "Problems of territory's development", "Economic and Social Changes: Facts, Trends, Forecast", and the electronic journal "Territorial Development Issues" and the bulletin "Public administration efficiency in the estimates of the population". The availability of full-text versions of publications of these editions in the Internet expands the circle of individuals interested in the findings of the research carried out at ISEDT RAS".
B.S. Pavlov, Doctor of Philosophy, Professor (Yekaterinburg)	February 2016	"In general, having looked through several issues, I can say that the Journal's layout, design, its links to RSCI, and its culture of communication with authors, etc. make a very favorable impression".
Yu M. Pasovets, Ph.D. in Sociology	February 2016	"The work of the editorial staff is organized at a high level: the editorial staff set the necessary requirements to achieve high quality of research publications in the Journal, make sure that the authors follow these requirements; therefore, I wish them only to maintain that level of work".
A.A. Kireeva, Ph.D. in Economics (Kazakhstan)	February 2016	"I would like to thank the editorial staff for their efficiency and responsiveness in their work with authors!"

Author of the review	Date of the interview	Content
J. Sapir, Doctor of Economics, Professor, RAS Foreign Member	February 2017	"A very good professional journal. There is a need to expand the scope of the Journal and to increase the number of foreign authors".
F.D. Larichkin, Doctor of Economics (Apatity)	February 2017	"The Journal's level is high enough, the main thing is not to reduce it!".
V.V. Lokosov, Doctor of Sociology, Professor (Moscow)	February 2017	"The Journal is popular, it has its readership".
N.V. Zvereva, Doctor of Economics, Professor (Moscow)	February 2017	"I think the Journal is very good! Good luck to all of you!"
O.A. Romanova, Doctor of Economics, Professor (Yekaterinburg)	February 2017	"One of the best domestic journals, I wish you success!".
V.A. Bilkov, Doctor of Agriculture (Vologda)	February 2017	"In my opinion, ISEDT RAS and, mainly, its editorial staff, managed to create one of the best journals in the field in terms of quality and design of the material published. Hence, I can only wish you to maintain such a high standard in the future".
O.S. Miroshnichenko, Doctor of Economics (Tyumen)	February 2017	"I Express my sincere gratitude for the higher academic culture, professional excellence, respectful and caring attitude to the authors, and a high quality of published materials!. In addition to professional pleasure that I get when I read the materials published in the Journal (many of the articles resonate with me as a reader, I agree with the authors' opinions), it also gives aesthetic pleasure; it is pleasant to handle it. I wish welfare and prosperity to the editorial staff of the Journal and to anyone who contributes to the publication of the Journal, to the increase in its ratings and various indicators!".
V.V. Voronov, Doctor of Sociology (Latvia)	February 2017	"The work being done is enormous (color graphics, design, reviewing, etc.). Therefore, there is only one suggestion: keep it up!".
E.A. Derunova, Ph.D. in Economics (Moscow)	February 2017	"The team of authors express sincere gratitude for high professionalism of the staff, for clear and systematically organized cooperation at all the stages from the moment of the first submission of the materials for review to sending the Journal and relevant documents after the publication of the article. At all the stages we felt the support and desire to help our team of authors, despite the fact that it is our first cooperation with the Journal's editorial staff. We wish you success and prosperity!"

Table 4. Respondents' answers to the survey question: "In your opinion, how high is the demand for different versions of the Journal"? (% of the total number of respondents)

Answers	2010	2011	2012	2013	2014	2015	2016	2016, +/– to 2015
Printed Russian								
In demand, very much in demand	93.6	90.5	90.3	87	90.7	93.5	88.8	– 4.8
Not much in demand, not in demand at all	3.3	5.7	5.4	10.6	9.3	6.6	11.2	+7.9
Online Russian								
In demand, very much in demand	90.4	93.4	90.3	92.9	97.1	97.5	98.3	+7.9
Not much in demand, not in demand at all	5.3	1.9	5.4	3.5	2.8	2.5	1.8	– 3.5
Printed English								
In demand, very much in demand	29.8	37.8	31.2	44.7	35.4	48.2	46.1	+16.3
Not much in demand, not in demand at all	68.1	55.7	62.4	47.1	64.7	51.8	53.8	– 14.3
Online English								
In demand, very much in demand	41.5	59.5	53.8	51.8	59.8	72.8	79.1	+37.6
Not much in demand, not in demand at all	47.9	34.9	38.8	41.2	40.2	27.3	21	– 26.9

Respondents regularly make suggestions that help the editorial staff to consider the needs of the Journal's receivers in building the policy of its promotion in the scientific space. ***Taking this opportunity, we would like to thank all the participants of the continuous monitoring for the sincere support they provide to our work, for their constructive criticism and valuable suggestions that help improve the content and institutional framework of the Journal.***

Opinions of our readers need no comment, however, we cannot ignore them, as they are one of the most important criteria in assessing our activities *(Insert 3)*.

Thus, a systematically organized approach to obtaining feedback from the Journal's readers, experts and authors makes a significant contribution to its further development both from the viewpoint of improving its content, and from the standpoint of its promotion in the scientific space. The results of the monitoring of expert assessments allow us to say that this work is carried out successfully and should be continued.

* * *

Summing up, we should note that to date, the Journal's editorial staff managed to solve some important problems in the development and promotion of the Journal at the national level and in the international information space. A sustainable system has been built that covers the full range of factors necessary to ensure the existence and competitiveness of the Journal. This system takes into account the depth and relevance of the scientific component of its content; systematically organized work with authors, reviewers and potential members of the editorial staff; contemporary trends in

the use of information content (particularly, the spread of innovative means of virtual environment); the ability to be informed about the key global trends in publishing, while maintaining adherence to the classic publishing traditions of Russian scientific journals.

With the growth of achievements of global science and development of technological progress, there arises an objective necessity to specify the branches of scientific knowledge. In the framework of this trend, ISEDT RAS publishes along with the journal "Economic and Social Changes: Facts, Trends, Forecast" a few others: "Problems of Territory's Development" (included in the VAK list), "Territorial Development Issues", "Social Space", "Young Economist". An important challenge facing the Institute is to promote these publications on the national and international level; this requires building a single ideological and organizational policy in this respect. The publishing experience accumulated by ISEDT RAS allows us to say with confidence that such a task is quite doable, and it will be another step in the strengthening of the scientific potential of Russia's regions.

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Mentality and Mentality-Driven Behavior Stereotypes: Theoretical and Methodological Foundations of the Research*

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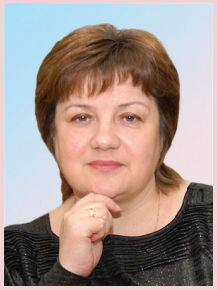

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Abstract. The paper summarizes and systematizes theoretical and methodological approaches to the study of the concept of "mentality". The authors review historical-philosophical, cultural-anthropological, psychological, ethnographic, socio-cultural and sociological, socio-economic and interdisciplinary approaches. Special attention is paid to the system approach that considers how mental characteristics are manifested. The paper presents the structural approach that focuses on individual continents of mentality and an approach to the study from the standpoint of the "level of the nature of mentality" (conceptual-semantic, values-and-target, and behavioral levels). The authors substantiate the necessity of using an interdisciplinary approach to the determination of mentality. This is due to the fact that this scientific category is widely used in different sciences (sociology, psychology, the humanities), which requires unified conceptual analytical methods. The authors reveal distinctive features according to which mentality can be classified; they include: 1) the level of analysis (individual, professional, social mentality); 2) territorial feature (urban/rural (provincial)); 3) the level of historical development (primitive/modern (civilized)). The following features are also highlighted as the criteria: the nature of manifestation (preliterate, literate and media-mentality); the degree of relationship to the world (sensuous/ideational); focus on the structural elements of mentality: on psychological characteristics (conscious/unconscious), normative characteristics, etc. It is shown that when mentality is considered through the prism of various traditions (research schools), then the attention is focused on its various components: thinking (American school), historical traditions (German school), sensuous component, social aspects of interaction between people (French school). The authors reveal the relation between mentality and the resulting behavior of people. This relationship can be characterized in terms of "whole–part" and "object–manifestation of the object". In the former case there are "behavioral components" of mentality such as: 1) consumption patterns (prestige, demonstrative behavior, on the one hand, or the psychology of the subsistence minimum on the other); 2) the norms of interaction between economic entities (equality/inequality in the interaction); 3) generally accepted stereotypes of relations between society and the individual (self-sufficiency or collective nature of dealing with problems).

Key words: mentality, structure of mentality, stages of evolution of mentality, behavior.

The study of mentality of the society and separate social groups, as well as the study of its influence on the behavior and modernization process is an important practical and scientific issue. Regarding the practical significance of the issue, it should be noted that mentality forms the foundations of national and cultural identity and contributes to the formation of life strategies and ways of self-realization, predetermines cultural differences and acts as a factor in intercultural misunderstanding. Deformation of the "mental basis" may be accompanied by the global identity crisis, different kinds of deviations (de-individualization and de-personalization), that is why the processes associated with the formation of the "mental field" require regulation [14, pp. 23–24]. It is no coincidence that these issues are given special attention at the federal level. Thus, at the meeting of the Valdai Discussion Club (September 19th, 2013), Vladimir Putin marked the ideological paradigm of Russia's development: "Russia's further development is impossible without spiritual, cultural and national self-determination, otherwise we will not be able to withstand external and internal challenges and succeed in global competition" [9].

The evolution of the concept of "mentality" has passed a number of stages which were different in terms of its utility and substantial fullness. There are three summarized stages.

At the *first* stage, the concept "mentality" is rarely used in the scientific literature as a whole. It is most widely used in philosophy (concepts such as "people's psyche", "national character", "ethnic awareness"). In scholastic philosophy the term "mentality" was first mentioned in the 14th century as a derivative from the adjective "mental" ("mens" and "mentis" – "mind" and "thinking" respectively) [27, pp. 99–110].

The *second* stage is characterized by the popularization of the study of mentality, active introduction of this term into scientific circulation due to the formation and development of the French historical school "Annals" and its application in social sciences. In the 1920–30-s mentality acted as an independent research subject and is used as a highly historical (L. Febvre [46] and M. Bloch [7]) and cultural and anthropological term (L. Lévy-Bruhl [30]) [20, pp. 55–78]. Later this concept becomes generally accepted and is applied in the studies of the non-material, spiritual sphere of human activity (T. Radbil', 2012 [38]).

Table 1. Examples of definitions of "mentality"

Author	Definition of mentality
Gershunskii B.S., Groshev I.V., Dubov I.G., Sonin V.A., Stefanenko T.G.	Mentality is something common for all people a specific group, which connects them and distinguishing them from the representatives of other groups.
Ivanova T.V.	Mentality is the expression of group consciousness in historical time and geographical space.
Duby G.	Mentality is a system of images and ideas different for various social groups and strata, which guides their behavior and expresses their vision of the world in general and their own place in this world.
Metelev A.V.	Mentality is a system of supra-individual, stable, sustainable and unconscious assumptions, beliefs, images and patterns of thinking which are behind many cultural phenomena and facts and are manifested in the patterns of thinking and behavior.
Mikeshina L.A.	Mentality includes unconscious views, beliefs, values, traditions, behavior and activities of different ethnic and social groups and strata with theoretical and ideological systems built over them.
Alefirenko N.F.	Mentality is a set of typical manifestations of specific (conscious and unconscious) perception of external and internal world in the categories of a native language; a specific manifestation of the national character, intellectual, moral and volitional qualities of a particular cultural and linguistic community.
Kalina N.F., Chernyi E.V., Shorkin A.D.	Mentality is a process of "secondary conversion" of the worldview through semiotic systems; the way a world model is manifested in different semiotic incarnations which form a universal system.
Gurevich A.Ya., Oborina D.V.	Mentality includes particular ways of reacting to the surrounding reality adopted in a particular community, or "group behavioral stereotypes".
Sources: compiled from [4; 10; 12, pp. 25–46; 13, pp. 75–89; 18, pp. 20–29; 19, pp. 48–59; 21, pp. 168–177; 24; 34, pp. 145–148; 35; 42, pp. 183–191].	

At the *third* stage (1990–s) associated with radical political and economic changes the concept of mentality is actively used in psychological, sociological and other human sciences [17], and is also regarded as an object of both research and management [39, pp. 89–102].

The scientific importance of studying mentality lies is the fact that this term has completely different interpretations and contains a significant resources for studying the influence of this phenomenon on social development [27, pp. 99–110; 49, pp. 251–262].

Analysis of scientific literature helps present some examples for illustrating the differences in the interpretation of mentality. In *Table 1*, they are arranged according to the principle "from abstract to specific": the first ones present more general characteristics (manifestation of group consciousness in historical time and space), then come more

Table 2. Approaches to studying mentality

Approach (authors)	The content of the approach
From the standpoint of various scientific disciplines	
Historical-philosophical and cultural-anthropological (Lévy-Bruhl L., Dashkovskii P.K., Berdyaev N.A. et al)	The emphasis is on common, typical features in human spiritual life based on national and ethnic aspects and historical eras. The study of mentality is due to the necessity of understanding historical events.
Socio-cultural and sociological (Panarin A.S., Yadov V.A. et al)	Study of the correlation between the consciousness of an individual and their belonging to a particular social group, between personality traits and their place in the society. Emphasis on specific features of mentality as a phenomenon of social groups, on analysis of socio-cultural features and values in different social communities. Study of changes in motivation-value sphere of a personality influenced by socio-cultural factors. Focus on the influence of the external environment on the individual's interior.
Socio-economic (Auzan A.A., Latov Yu.V., Novikov A.V., Kozhevnikov V.P.et al)	The study of economic values and behavioral standards characteristic of the representatives of certain social groups. The study of mentality in the framework of this approach implies analysis of attitude to work, participation in various forms of economic activity, study of consumption patterns. In the framework of this approach, mentality reflects economic consciousness. The change in population's mentality is considered as one of the factors in economic modernization.
From the standpoint of traditions (schools)	
Anglo-saxon (Mackinder H., Mahan A., Spykman N. et al)	The emphasis is on the thinking component. Mentality is characterized as mind, thinking, mindset, a cultural code connecting people. It is emphasized that mentality is "an individual's personal asset".
American (Kardiner A., Benedict R., Mead M., Lipton R. et al)	The emphasis is on the thinking which predetermines different types of behavior. Specific features of the national character manifested in behavior are taken into account. The model of a national-ethnic group which connects the features of the national culture common to its representatives is considered.
German (Wundt W., Lazarus M., Steinthal H., Burston A. et al)	Emphasis is on historical traditions determining character traits. When characterizing mentality attention is drawn to social behavior patterns in historical traditions. Every nation's way of life is driven by the customs prevailing in a country, which are determined by character traits.
French (Bloch M., Febvre Л., Le Goff J., Duby G., Vovelle M. et al)	In addition to the mental and sensual components, a significant role belongs to the social aspect (social relations between people). Under this approach, mentality is placed between the Conscious, structured (forms of social consciousness represented by morality, ideology, religion) and the Nonconscious (people's individual psyche).
From the standpoint of structural components	
Psychological (Ivanov V.N., Semigin G.Yu., Davydov A.P. et al)	Mentality is defined through psychological categories (needs, emotions, inclinations, motives, stereotypes, etc.), conscious and unconscious level of psychology of ethnic groups are distinguished.
Regulatory (Adrianov V.M., Pushkarev L., Pushkareva N. et al)	The emphasis is on the regulatory function of mentality associated with formation of social and cultural standards which help individuals or groups adapt to the world and contribute to the specific features of reacting to the phenomena of reality.
Descriptive (Vizgin V.P., Gurevich P.S., Shulman O.I. et al)	When describing mentality the authors distinguish mindsets and inclinations of individuals or social groups to particular perception of the world, attitudes, and patterns of behavior.
Genetic (Bekh V.P., Dodonov R.A. et al)	The authors consider the aspects revealing the origin of the phenomenon of "mentality". Attention is drawn to the genetic inheritance of information. Mentality is characterized as historical, ancestral memory.
Sources: compiled from [1, pp. 25–26; 2, pp. 47–55; 5; 6, pp. 3–10; 7; 8, pp. 201–231; 16, pp. 205–214; 17; 29; 32, pp. 25–30; 40, pp. 26–32; 45; 50; 52].	

meaningful, specifying the manifestation of this phenomenon in the behavior of various social groups: group behavior patterns, etc.

Based on analysis of the definitions of mentality, the authors make a conclusion about the breadth of its interpretation – from social thinking and value attitudes of population groups to the national character. Common features which the authors attribute to the essence of mentality are: way of thinking (mindset), worldview, system of values, peculiarities of mental life, national character, controller of normative attitude to the world, behavioral pattern, belonging to a particular social or national community. The common features help group the approaches to studying mentality: 1) from the standpoint of various scientific disciplines, 2) from the standpoint of traditions (schools), 3) from the standpoint of structural components (*Tab. 2*).

The described approaches to studying mentality confirm the inconsistency and diversity of this category [6, pp. 3–10], the impossibility of expressing the depth of emerging fundamental social ideological and research views by means and methods of any scientific area or school. With the evolution of this concept people understood the need for an interdisciplinary approach to studying this phenomenon because "we are dealing with a multi-dimensional, multi-stage reflexive transition of mentality content to culture content and vice versa, which results in the fact that the figurative mentality content becomes complicated" [43, p. 40]. Interdisciplinary research help get a real idea about the transformation of mentality, its objectification, of human impact on social dynamics [28]. For example, E.Ya. Tarshis highlights several scientific disciplines which are connected with the study of mentality such as history and historical anthropology, sociology, philosophy, linguistics, social psychology, etc.

The authors' purpose in the "interdisciplinary field" of mentality research lies, on the one hand, in determining the influence of mentality of the population in modernization process of socio-economic territory's development. Therefore, the research will be based on the socio-economic approach which attaches particular importance to studying the population's economic consciousness and mental barriers of inclusion of its socially vulnerable groups [51, pp. 29–47] for assessing their potential opportunities of inclusion in modernization processes of a regional community. This approach is justified by the growing awareness of the important historic role of

Table 3. Types of mentality depending on specific behavioral patterns

Type	Main characteristics	Behavioral patterns
Inbred	– Lack of in-depth perception of abstract forms – "Vague ideological beliefs", variability of attitudes and perceptions – Undervaluation of human life (no fear of death) – Perception of a threat to the near environment (connection with personal danger) – Prevalence of collective interests over individual ones – Concept of power based on physical and military capacity	– High vitality – Determination – Willingness to take risks – Fears, complexes and dissatisfaction due to contradictions without a unique solution
Noble	– Predominance of sensory ways of learning the world – Subtle perception and sublime view of the world – Idealism, desire for personal independence – Isolation from others, solitude – Fear of seeming weak – Contradiction between duties towards different people – Focus on monarchical form of government	– Demonstrative actions – Sophisticated manners and style of dress
Intel	– Development of scientific ways of learning the world – Desire to abstract, serious attitude to concepts – High importance of accumulation of information and generalization – High value of knowledge – Desire to participate in scientific communities, political alliances	– No ostentation – Disregard for comfort – High performance
Burgher	– Preference to materialized forms of world view – Desire for functionality – predominance of traditional values (family, health) – Fear of loss of social status – Focus on demographic forms of government	– High degree of efficiency – Rationality and thrift in all spheres of life
Source: compiled from [11, pp. 802–819].		

ways of people's perception and thinking. On the other hand, the variety of definitions of mentality, lack of uniform measurement techniques has led to the necessity of using sociological analysis, the methodological techniques of which [31] help identify respondents with mental characteristics of the Russian people, identify their socio-cultural values, etc.

The study of mentality is not limited by analysis of its structural components; it is also important to study its influence on human behavior. The need for such consideration is explained by the structure and hierarchical levels of mentality, among which are conceptual-semantic, value, and behavioral levels. In this case, mentality and behavior are correlated as "whole–part". At the behavioral level, mentality is considered from the standpoint of readiness to act in a certain way in accordance with the established attitudes (persistent features of

actions recurring in different situations). In addition, there is another approach where mentality and behavior are characterized from the standpoint of "object– object's externalization". It is considered appropriate to combine these approaches and consider both structural components and manifestation of mentality in behavior.

Depending on specific behavioral patterns the research literature distinguishes several types of mentality (*Tab. 3*).

The main features distinguishing the presented types of mentality are: *way of world view*, *depth of perception*, *prevalence of particular interests, standards if interaction between economic entities* (equality/inequality in interaction), *stereotypes of interrelations of society and individuals* (independent or collective nature of problem solution), *consumption patterns* (prestige, conspicuous behavior or psychology of subsistence minimum) [33, pp. 24–29].

In fact, one may say that mentality is a kind of manifestation of "dominant social ways of thinking and feeling, reflection of life in a particular environment" (Frumkina, 1999 [47]). In turn, social environment is formed on the basis of patterns of social practices which are established in the society and become social institutions. Thus, there is actually a two-way communication between institutions as social structures and individuals as carriers of mental models. Similar conclusions may be found, for example, in the work by P. Sztompka [56] and other researchers [3, pp. 3–7].

Given the correlation between mentality and the prevailing social institutions, the research literature distinguishes two main types of mentality – "Western" and "non-Western" which are different in parameters such as *world view* (holisticity and interrelatedness/analyticity and atomism), *dimensionality of the world* (continuity/discontinuity), *type of decision-making* (intuitive/rational). The characteristics of the defined mentality types emphasize that people with the western type of mentality are characterized by rational thinking and emphasis on parts rather than on the whole; in the second case, on the contrary, all aspects are considered as interrelated, tolerance for contradictions is more common. This results in the situation where rational, logical decisions are made by the "followers" of the Western culture and a contrary situation from those belonging to the non-Western culture (Buchtel, Norenzayan, 2009 [53]) [3, pp. 3–7]. In thus regard, the authors find interesting the research of scientists (S.G.

Kirdina, I.Yu. Alexandrov, 2012) [3], who proposed the Institutional Matrices Theory (X and Y) based on comparative analysis of countries. The nature of mentality types and institutional matrices dominant in different countries helped conclude that countries with the prevailing X-matrix[1] are characterized by the "Eastern" type of mentality, while countries with the Y-matrix are "Western". Accordingly, it is possible to suggest that there is correlation between the country's institutional order and the type of mentality predominant among the population. However, it should be mentioned that, in practice, the coexistence of X- and Y-institutional forms is widespread in social systems partly due to the fact that the dominance of institutions of the same type can generate systemic risks. For example, the predominance of the X-matrix institutions will lead to disinterest of market economy in production of public goods, the "every man for himself" – lifestyle, disregard of public interests in favor of private, and, consequently, to alienation of members of the society [26, p. 322]. Mentality is associated with the political, economic and ideological structure of the society. This is confirmed by a series of studies which present the results of evaluating the impact of institutions on interpersonal trust, as well as evidence of positive relations of trust as a structural component of mentality with economic growth (Guiso, Sapienza, Zingales; 2013 [54], Nunn, Wantchekon; 2011 [55]).

In recent years more and more works have been appearing which give arguments in favor of correlation between the cognitive model and the type of economy dominant in the society (Uskul et al., 2008 [58]; Kitayma, Uskul, 2011 [57]). The experience of developed countries which have made profound socio-economic transformations proves that their success was possible under one important condition – the results of

[1] X- and Y-matrices are institutional matrices, i.e. a system of economic, political and ideological institutions permanently coinciding. The X-matrix (previously called Eastern) is characterized by the following basic institutions: in economic sphere – institutions of redistributive economy based on obligatory mediation by a service centre, as well as right on their provision and use; in political sphere – institutions of unitary-centralized political order; in ideological sphere – predominance of collective, supra-personal values with priority placed on the "We" over the "I", i.e. communitarian ideology. It is suggested that the X-matrix is dominant is Russia, most Asian and Latin American countries. The Y-matrix (previously called Western) includes the following basic institutions: in economic sphere – institutions of market economy; in political sphere – federative political order; in ideological sphere – the dominant idea of individual, personal values, i.e. priority of "I" over "We.", or ideology of subsidiarity, meaning primacy of a personality, its rights and freedoms over the values of communities of a higher level, which, accordingly, have subsidiary character subordinate towards a personality. Preliminary studies revealed that the Y-matrix is dominant in the social structure of most countries in Europe, North America, Australia and New Zealand (see [26]).

reforms should reflect the interests of the majority of the population and be supported by them.

This thesis is also confirmed by the Russian practice. The transformation of the socio-economic system in the 1990-s, transition to market economy had a new semantic meaning for the population due to changes in ownership relations, rapid growth of cooperative and private enterprises, joint ventures, joint stock companies, deep restructuring in the nature and mechanisms of inclusion of a human in labor relations. All this made both the issues of new management skill formation and the problem of lifestyle in general, values, behavioral standards relevant (for more detail see 44, pp. 60–67). Only half the population (49%) had positive perceptions of the term "market", 67% – "private property" [23]. Fifteen years later (the same study was conducted by VTsIOM (Russian Public Opinion Research Center) in 2007) more than 2\3 of respondents gave positive feedback towards these terms concepts (66% – "market", 73% – "private property"). The attitude to "market" and "private property" was significantly worse in older age groups – among the respondents over 45. Thus, the concept of "market" stirs positive emotions among 73–78% among respondents over 45; 65% – among respondents aged 45–59; 45% – among respondents over 60; "private property" is regarded positively by 80–84%, 71% and 53% respectively. It should be noted that the older generation demonstrates the greatest distrust of new concepts in this matter, expressing their doubts about the improved quality of life during the transition to market economy and anxiety aver loss of a number of social guarantees. This is an example of how people fear everything new and resist to changes, which is undoubtedly transferred from their consciousness to their behavior, being a certain hindrance to social development.

Currently a similar situation can be observed, for example, in the population's estimates of privatization. The expectations of Russians from the new wave of state property transformation differ significantly from those in the 1990-s. 25 years ago, half of Russian citizens (51%) expected that privatization will help the country emerge from the economic crisis. Nowadays, only 19% of the population believe in this (the youth is more optimistic about it than people of retirement age: 33% of people aged 18–24 against 12% of people over 60). The research results show that 65% of people expect that current transformations will aggravate

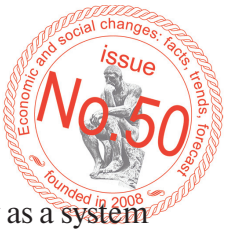
the issue of injustice related to income distribution, while 43% believe the opposite. According to VTsIOM experts, the new privatization program has almost no support from the Russian public; its implementation requires the support of the population [36].

This attitude to the country's transformation has reason behind it. For example, according to the social survey conducted by ISEDT RAS[2] in 2016 in the Northwestern Federal district, a significant share of people (46%) retain "team spirit" associated with the priority of public values over private ones, as well as preserving key traits of the Russian people (kindness, generosity, frankness). This conflicts with a new reality where market transformations require individualism and substitution of public interests with personal ones. The latter are gradually becoming an integral feature of the younger generation. Thus, the specified ISEDT RAS research reveals that young people are more likely to seek employment in the private sector with high incomes but without guarantees for the future rather than in the public sector with guaranteed, stable but low incomes. This may partly explain the fact that young people often give a positive evaluation of the reforms.

Despite their support from some population groups, there remain many challenges related to overcoming the violation of rights of socially vulnerable population groups (workplace quotas for disabled people, temporary disability insurance, etc.). 24% of respondents indicated the absence of such mechanisms, 44% – their poor performance. For example, in the Kaliningrad and Murmansk oblasts, people of retirement age noted that these mechanisms do not work well (51% and 47% respectively). In the Republic of Karelia, this opinion is shared by another socially vulnerable population group – disabled people (56%).

All of the above leads to a significant conclusion that it is necessary to take into account the population's mentality when pursuing the socio-economic development of territories. Strategic development should take into account the interests of all population categories and be focused on society consolidation and its confidence in the state. Therefore, studying mentality, its dynamics, its various components change rate, its impact

[2] Sociological survey in the framework of studying the population's sociocultural code in the Northwestern Federal district was conducted by ISEDT RAS in 2016 in 5 regions: the Vologda, Murmansk, Kaliningrad, Novgorod oblasts and the Republic of Karelia. The sampling amounted to 3101 people selected by sex, age, territory.



on social and economic transformation becomes a relevant research objective.

Russia's National Security Strategy [37] approved in 2015 stresses that one of the country's strategic goals is preservation of traditional moral values. Such values are: priority of the spiritual over the material, nationhood, family, creative work, national loyalty, rules of morality, humanism, mercy, justice, mutual aid, collectivism, historical unity of Russian peoples and historical continuity. Considering mentality as a system of sustainable values, beliefs and standards which govern the behavior of members of the society and express the historically established way of thinking determining the individuals' actions and interactions, the authors focus on the need to consider mentality as a factor in socio-economic transformations – at the stage of strategy development for socio-economic development of territories and during its implementation.

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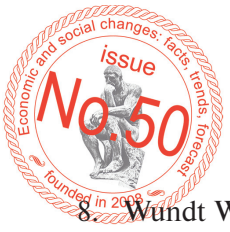

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Strategic Management of Key Development Potential of Split-Level Territorial Socio-Economic Systems*

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Abstract. The authors have elaborated methodological principles based on the nature of modern relations characterized by high degree of "financial" and "knowledge" economy integration, identified factors in the territory's economic development capacity (financial, labor, innovation). The choice is explained by the fact that scientific innovations in all socio-economic systems set the dynamics of their development regardless of their level of functioning; financial capacity is regarded as a prerequisite for expanding the territory's investment process which increases economic activity of business entities; employment potential of territorial social-economic systems (hereinafter TSES) is moderated by the level of innovation and investment which influence labor quality and efficiency. The authors also propose the idea defining the fundamental framework for strategic management of key development potential of split-level territorial socio-economic systems. The basic idea of the concept is that the development strategy of territorial socio-economic system is based on activation of key development potential of a particular territory, the transformation of which by using appropriate technology and competencies of new resources ensures the achievement of qualitative parameters of economic growth and the quality of life in terms of interest alignment of economic actors. The concept's methodological provisions are as follows: 1) the target of building the strategic TSES management system is the achievement of parameters of the country's national security and its regional projections; 2) the territory's development is based on its potential which is a combination of tangible and intangible resources, unique technologies and competencies determining the ability of a TSES to expand the reproduction process and ensuring its competitiveness; 3) the choice of the territory's development vector is determined on the basis of interest alignment of economic actors and split-level territorial socio-economic systems within a unified system of strategic planning in the Russian Federation; 4) the methodological tools for the development and implementation of strategic documents on different levels of management is based on the software-design approach which helps ensure the rational resource allocation to achieve the territory's development strategic objectives.

Key words: strategic management, territorial socio-economic system, economic development, territory's development potential, interest alignment, national security.

Over the past two decades, the role of strategic management in Russia, given the varied and multi-directional vectors of different socio-economic institutions, remains significant. However, despite the long period of its formation and development, the issue of strategic management such as its quality, still remains relevant. For this reason, the goals and objectives of strategies under development re main elusive and at times impossible to implement.

Currently, the system of strategic planning in Russia (including regional and municipal levels) is beginning to form on a new basis.

With the adoption of Federal law no. 172 "On strategic planning in the Russian Federation" in 2014 [9] the legal principles of strategic planning at the federal, regional and local levels were established together with the powers of the relevant federal and local authorities. However, practice shows that public authorities (mostly regional) and local governments have neither the expertise of quality strategic planning, nor technology for its implementation with the use of scientific techniques.

In the authors' opinion, one of the most common bottlenecks in most policies is lack of coordination interests of the interested parties (stakeholders) and the issue of determination of key potentials for economic development of territorial socio-economic systems (TSES).

In domestic research studies, a significant number of works is devoted to studying economic potential. Thus, B.M. Mochalov, V.N. Mosin, D.M. Kruk, L.I. Lopatnikov, A.M. Rumyantsev [6] consider economic potential as the total capacity of industries to produce industrial and agricultural products, carry out capital construction, transport cargo, and provide services to the population. B. Plyshevskii, A. Todoseichuk, Y. Lychkin, and A. Tsygichko identify economic potential with categories such as "resources", "investment", "investment resources", "national wealth", "facilities and resources". E. Gorbunov and E. Figurnov consider it as "economic power", "economic potential"; L. Samoukin, O. Kozlova consider it in relation to production relations characteristic of each socio-economic structure, which occur between individual employees, labor groups, and management authorities of an enterprise or an organization, economic sectors as a whole on the full use of their abilities to produce goods and services [6].

The authors consider economic potential as combined capabilities, capacities, unrealized hidden reserves of the economic system which amid the changing conditions can turn from opportunities to resources and be used for the purposes of the socio-economic system.

In the authors' view, the concept of TSES capacity development is closely connected with economic potential since the development of a territory without economy is impossible. Strategic management implies the selection of key components from all structural components of TSES development potential, the focus on which will help achieve maximum long-term results given the territory's limited resources. For example, A.A. Auzan states that if the exhaustion of the country's oil and gas resources takes place there will remain three basic possibilities of using competitive resources: military and technical, spatial, human potential [3]. From

the authors' point of view, the key TSES potentials are innovative, financial, and labor which in modern conditions provide quality economic growth.

I.M. Tenyakov who studies economic growth provides the following classification: "By interpretation of correlation between economic growth and economic development in the variety of concepts and schools of economic thought it is possible to distinguish two approaches which are: quantitative (linear) and qualitative (cyclically discrete)" [7]. Within the first approach, growth and development do not differ much and are characterized by mainly quantitative indicators (income growth, life expectancy, literacy rate, mortality reduction, etc.). Development is characterized by certain indicators, and its complexity of formalization necessitates the use of a large number of assessment indicators. In turn, economic growth is reduced mainly to income growth (including per capita income) in the long term. The authors focus on the continuous process of economic development and, consequently, on the ability to quantitatively measure and compare economic development parameters over a long historical period. This approach aims at obtaining statistical description of the process of economic development and growth, starting from the industrial revolution or even earlier [1]. Real per capita GDP is normally used for these purposes. It implies data commensurability in both one country for a hundred years or more, and between different countries. Qualitative development parameters recede into the background [7].

The issue of quality economic growth is currently one of the most acute. "With the introduction of the concept quality "economic growth" the contradiction between economic growth (quantity) and economic development (quality) disappeared. National and civilizational development parameters can also be reflected in the indicators of quality economic growth" [7]. The authors agree with this approach; more extensive application of "quality economic growth" will remove the debatable application of economic growth and development indicators in the system of strategic planning.

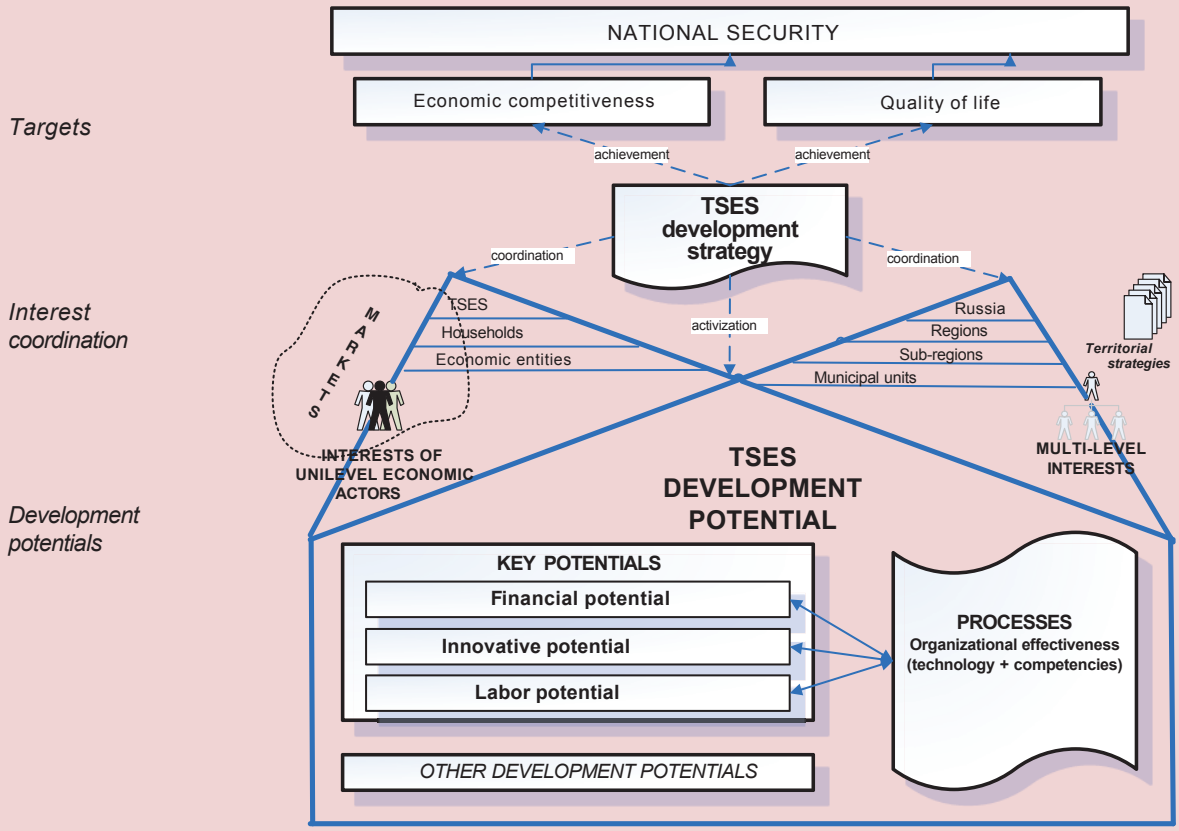
1these theoretical positions the authors adhering to the concept of continuous development and quality economic growth highlight a number of capabilities which are the most crucial in the structure of modern economic relations. Thus, given the rapid global technological development over the past 30 years, it can be predicted that scientific and technological innovations in all socio-economic systems will define the dynamics of their development regardless of their performance level. Financial capacity of territorial social-economic systems predetermine the capabilities of investment

process – the driver of economic activity of economic entities. Innovation and investment, in turn, are mediated by labor quality, its effectiveness is based on labor potential based on the quality of human capital.

Consideration of labor potential as the key one is explained by the fact that "the policy aimed at the development of regions and their inclusion in modernization processes hardly take into account the growth of human potential and the indicators characterizing its development are not used as indicators of public administration efficiency, the indicators of a viable state" [4].

The process of implementing these potentials, on the one hand, takes place within industrial relations and may be considered as resources; on the other hand, to ensure quality economic growth expanded reproduction is required, which in addition to the resources includes processes as regulators

Figure 1. Concept of strategic management of key TSES development potentials



of production relations. In other words, a set of financial, innovation and labor potential forms production capacity, which in modern conditions determines the development of both production and territorial socio-economic systems.

At the same time, the main scientific problem of strategic planning and management system formation at all economic levels is misunderstanding of the principles of strategic planning and its correlation with basic economic terms: market, potential, interests, resources etc. Quite often playing with economic terms takes place, confusion of definitions without systematic understanding of their correlation.

To solve this problem, the authors propose a concept of strategic management of key development potentials of multi-level TSES, which is a set of methodological principles about the nature of strategic management of TSES development processes, binding the territory's potential as the basis for its development and the interests of economic actors as the basis for coordinated development aimed at TSES development (*Fig. 1*).

The main idea of the concept: TSES development strategy is based on implementation of key development potentials of a particular territory, the transformation of which through the use of appropriate technology and competencies into new resources ensures the achievement of qualitative parameters of economic growth and the quality of life based on coordination of interests of TSES economic agents.

The methodological principles of the Concept of strategic management of key TSES development potentials are as follows.

Principle 1. The target of building the system TSES strategic management is to achieve parameters of the country's national security and its regional projections.

From the standpoint of strategizing, basic subjectivity belongs to "the state" (Federation, region) and local authorities which create conditions for the territory's sustainable development through a series of measures to ensure national security depending on the prevailing internal and external economic situation in the long term.

According to this, the main purpose of strategic planning is rational distribution of efforts and resources of a relevant TSES for ensuring sustainable socio-economic development and strengthening national security of both the country as a whole and its socio-economic parameters at the regional and local level.

The category of national security is defined by the National Security Strategy of the Russian Federation as the state of individual, social and state security from internal and external threats, which ensures

the implementation of constitutional rights and freedoms of the Russian citizens, decent quality of life and standard of living, sovereignty, independence, government and territorial integrity, sustainable social and economic development [8]. Together with the concept of national interests of the Russian Federation, national security belongs to the country level of TSES organization. However, its structural components (social, informational, environmental, economic, transport, energy and personal security) are projected on sub-national and local levels of territorial organization of the population.

Since the National Security Strategy sets out parameters for assessing the state of national security (life expectancy; per capita GDP; decile ratio; inflation; unemployment, etc.), regional and municipal strategies should also be reflected (with the possibility of influencing determinants). In practice, if multi-level concepts/strategies/programs are compared, first, they do not explicitly reflect national security evaluation indicators, and, second, there is no coherent system reflecting the targets of socio-economic development of territories.

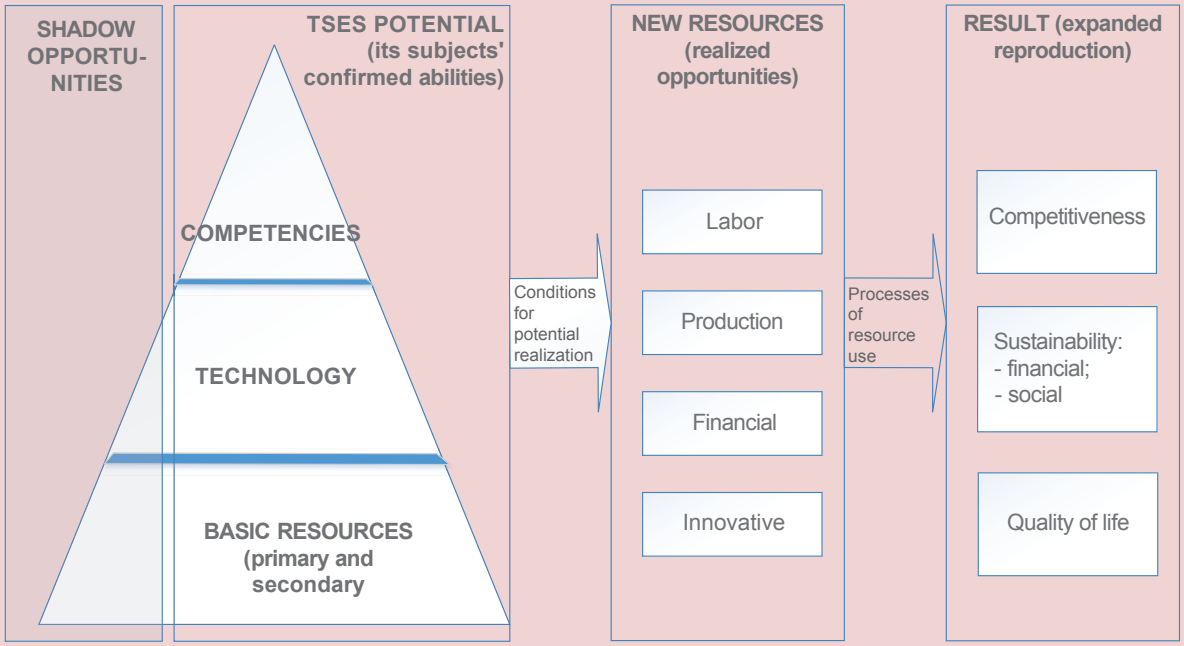
Principle 2. The basis for territory's development is its capacity, which is a combination of tangible and intangible resources, unique technologies and competencies in the economic system which determine the ability of TSES to expanded reproduction and ensure its competitiveness.

The basis of understanding the capacity of TSES lies in the resource-based approach originally applied in the theory of firms in terms of formation of stable competitive advantages [2]. A significant advantage of the resource-based approach for TSES is the opportunity to link the territory's potential with the principles of strategic management, namely, the selection and concentration of efforts on priority development areas which determine the project's competitive advantages. From this point of view, the TSES capacity is a set of tangible and intangible resources, technologies and competencies in the economic system which determine the ability of TSES to expanded reproduction and ensure its competitiveness (*Fig. 2*).

As can be seen, the basis of potential are basic resources, whish is a set of tangible and intangible assets used to meet social needs of the territory's economic agents. They can be either explicit (recorded, controlled) or shadow (unrecorded and uncontrolled).

However, the set of resources does not determine its ability to self-development and competitiveness in the long term. It is obvious that in modern conditions the main role in the formation of competitive advantages of both economic actors and territorial systems belongs to the ability to exploit their resources

Figure 2. Logical model of TSES potential transformation in the results of development



(availability of qualified personnel and high-performance equipment) rather than to the resources themselves (which in some cases do not even have much value).

Technology as a component of the system of TSES potential implementation is a set of organizational and production techniques and tools for transforming basic resources into new ones in their quantitative and qualitative terms. Competence is an important element of the system – is represents organizational and professional skills required to transform basic resources into new ones by using appropriate technologies.

In system interaction, all these elements are mediated by processes which influence the transformation of TSES potentials into qualitatively new resources.

The purpose for using resources is to ensure expanded reproduction of the system to achieve parameters of national security, social and financial sustainability and quality of life as an indicator of the territory's social development.

Principle 3. The choice of the territory's development vector is determined according to coordination of interests of economic actors and different TSES levels within a unified system of strategic planning in the Russian Federation.

Federal Law "On strategic planning in the Russian Federation" implies formation of a

three-level system of strategic documents. At the regional level, the following strategic documents are being developed: strategy for socio-economic development (hereinafter SED) of the region; region's SED forecast; long-term budget forecast of the region; region's medium-term SED forecast; action plan for the implementation of the region's SED strategy; regional state programs; regional scheme of territorial planning [9].

Such a large array of documents implies consideration of interests of various economic actors: enterprises, households, federal, regional and local authorities. Interests of economic agents are defined as formalized needs of economic actors for any good, which is the motivation for decisions and actions in economic or other activities. Interest realization is considered as satisfaction of interests through the use of goods, which leads to the change in the state as an actor itself and a TSES as a whole.

The main conflict of economic interests within the framework of all organizational and legal forms of management takes place in three areas: in property relations, management and income distribution.

It often happens that the set of municipal policies may in many positions be in conflict with the strategy of a constituent entity the Russian Federation, and the strategies of constituent entities – with federal strategies. Moreover, there are no effective mechanisms of coordination in the framework of public-private partnership strategies of major companies, including natural monopolies. They can act as strategic partners of various governance levels, and can focus on the use of certain resources, skills, and infrastructure, which is often not coordinated with the plans of other participants (stakeholders).

To solve the difficult problem of forming a unified system of strategic planning it is necessary to ensure the interaction of all levels of competitiveness of the national economy: macro-economic (management of economic system as a whole), meso- and micro-economic (interaction of enterprises, firms, and entire industries and households).

Meso- and micro-economic levels are focused on the market as the coordinator of interests of economic actors; long-term coordination of interests of different TSES levels is the main objective of territorial policies.

Such coordination is most effectively carried out through cooperation between regional and municipal executive authorities, representatives of business and expert community, where needs, interests and resources of the territory's major actors are identified. This issue is of fundamental importance in the system of territorial development strategic management because the results of studying and coordinating interests and ranking needs influence the

process of goal setting, and, consequently, the direction of TSES socio-economic development.

Priority of the country's national security parameters should become the main principle in this area with the greatest possible harmonization of interests within the country and individual economic actors. To develop interest coordination techniques it is important to understand that economic interests are implemented by setting goals and objectives which are expressed in performance indicators. Therefore, interaction between economic interests makes it possible to determine the extent and degree of their implementation for every participant in a particular program area.

Principle 4. Methodological techniques for the development and implementation of strategic documents at different governance levels are based on the program-project approach which ensures rational allocation of resources to achieve strategic objectives of territory's development.

The traditional approach to the development and implementation of territorial and sectoral programs is the program-target approach. Lately there have been opinions that domestic experience of using the program-target approach to TSES development management has significantly discredited the effectiveness of this technique, the use of which has not solved any major regional problems or changed at least one adverse regional situation [11]. Development of "carbon copy" programs, misunderstanding the essence of strategic documents, complex program implementation without reference to specific projects have led to the ineffectiveness of a significant number of sectoral and territorial programs.

The highlighted shortcomings help eliminate the program-project approach which implements the "program-project-plan" chain. At the level of strategic planning, the basic territory's development direction is specified, the level of objectives identifies the priorities for the territory's development in specific areas, the level of specific projects determines the required resources and appoints the responsible actors; at the level of specific activities conditions for interaction of participants are set. The structure of programs and projects depends on the specific areas, as well as on the main stakeholders' strategic documents at their disposal, which can be integrated into the strategy of a localized area if there is at least one point of intersection through priority functions.

Since 2016, the transition to project management has been formalized at the federal level. The Decision of the Russian Government adopted the Regulation on project activity in the Government of the

Russian Federation and approved the functional structure of project activity management system. Accordingly, state authorities of constituent entities of the Russian Federation are recommended to organize project activities following the Regulation approved by the Government Decision [5].

The program-project approach can also be applied for developing urgent territories' programs (programs of sub-regional development, inter-municipal development programs, etc.) which have different sources of financing projects.

Thus, the presented concept of development of key potentials of multi-level territorial systems has interconnected categories of economic theory, regional economy and territorial development strategic management techniques. The key potentials are innovative, financial, and labor, which ensure high-quality economic growth in modern conditions. Activation of key potentials through using appropriate technology and competencies into new resources ensures achievement of qualitative parameters of economic growth taking into account coordination of interests of economic actors in TSES.

This helps create the methodological basis for the development of documents on the long-term prospects of territories' development and develop a set of prompt tactical measures. Such documents must be linked to budget resources, specified in the action plan, be time-, performer- and fund-bound and aimed at meet strategic priorities of territory's development.

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What Capitalism Does Russia Need?: Methodological Guidelines of the "New Industrialization"

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Abstract. Modernization of the Russian economy should be carried out taking into consideration global trends and contradictions of the country's socio-economic development. The first trend is predetermined by the transition to the sixth technological mode: the creation and development of bio-, genetic and nanotechnology, quantum computers and new composite materials. Countries that missed the stage of preparation for the beginning of a new Kondratieff wave (the growth potential is laid in the first 15–20 years of the beginning of the cycle), will at best enter the stage of catching-up development. The second trend is defined by global competition for human capital and consists in the outflow of talented Russian youth to the West. Russia should develop a concept for the preservation and enhancement of human capital, which will create natural barriers against the loss of intellectual capital. The undervalued "live labor" forms the basis of strategic contradictions of Russia's socio-economic development between the declared policy of innovative development of the economy and a weak demand for innovation on the part of private enterprises. Cheap labor does not encourage the business to upgrade production technology, it increases the "gap" between the incomes of the "rich" and the "poor". Increasing social inequality increases the level of corruption. The paper analyzes existing approaches to the modernization of the Russian economy. The author supports the thesis that in the long term certain conditions should be created for a "technological breakthrough" based on the innovation-driven recovery of the sectors of

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industrial economy, reaching leading positions in the global production of quantum computers and increasing the export of information technology, transfer of innovative developments of the military-industrial complex in civil industries and a more comprehensive use of competitive advantages, which Russia still retains from the viewpoint of innovation development – human capital (creation of natural barriers against the "brain drain"). It is necessary to increase the share of state ownership and increase its management efficiency in industries that are critical for overcoming the de-industrialization of the Russian economy and achieving a "breakthrough" in the sixth technological mode. The increase in the cost of "live labor" and, as a consequence, the creation of conditions for expanded reproduction of labor force should be the imperative of a "new industrialization". Attracting investment (including foreign investment) and assessing its quality should be considered in the context of the created (or not created) opportunities aimed to increase the value of "live labor" and the number of domestic technologies of the sixth technological mode.

Key words: trends and contradictions, liberal concept of modernization, "new industrialization".

When elaborating a strategy for modernization of the Russian economy it is necessary to consider two interrelated global trends.

The first trend is predetermined by the start of a revolution in the technologically advanced countries, the revolution in the field of creation and development of new medical, bio, genetic- and nanotechnology, composite materials and quantum computers. The rising half of the next Kondratieff cycle will begin after 2018, and the potential for growth is developed in the first 15–20 years of the new wave. Historical experience shows that if a country skips the latent period, i.e. the preparation phase of the wave, then it skips the cycle itself, in the best case entering the mode of catching-up development [14, p. 30].

Having analyzed relevant historical data, A.G. Klepach and G.O. Kuranov point out that major scientific discoveries were made by young scientists about 30 years of age, and mostly those who had been fond of science at the age of 12–14. The formation of "mosaic consciousness" [2, p. 74], the foundations of which are laid in secondary school, when the ability to think and create is replaced by the ability to answer the list of prepared questions leads to the conclusion that "if education reform is delayed for another five years (and now it is not moving in the direction of creative thinking), then to the 2020s and even to the 2030s Russia will not raise a generation of young scientists capable to achieve real scientific and technological breakthrough" [14, p. 30].

The second trend is defined by global competition for human capital, which becomes a major factor in the strategic objectives of any country [18, p. 10].

In our opinion, this trend must be considered through the prism of events in Ukraine[1]: besides the obvious (geopolitical and economic) goals that the U.S. pursued (and is now pursuing as well), there is, as we see, an implicit goal arising out of a global competition for human capital and associated with the exhaustion of U.S. resources of the fifth technological mode. Creating technologies of the sixth mode requires new ideas and people capable of generating these ideas. And Russia is the country that possesses the necessary human resource.

Destabilization, deterioration of the economic situation in our country against the background of dubious reforms in the sphere of education and science should become the conditions for the outflow of talented youth to the West. The opposition to the implementation of this objective must be provided by a strategy for using human capital in Russia, and this strategy must be elaborated within the framework of the concept for modernization of the Russian economy.

It is obvious that the new economic policy of Russia should be based upon the understanding of these trends, and explicit and implicit goals of our Western "partners".

[1] We consider possible the scenario of development of events in Ukraine, according to which the economy will be brought to a complete collapse; the country will not receive loans from the West to the extent necessary and it will be thrown to the mercy of fate, or rather, to the mercy of Russia. It is obvious that Russia will not leave its brotherly people. And, instead of implementing projects on modernization of its economy, Russia will be forced to provide economic support in the face of very limited material and financial resources.

The strategy for modernization of the Russian economy should facilitate the resolution of a system-wide contradiction at the present stage of Russia's socio-economic development: it is the contradiction between the innovation development policy of the Russian economy declared at the state level and the weak demand for innovation on the part of industrial enterprises. It is known that if the entrepreneur is planning to use some new technology and equipment, then the costs of its use should be lower than labor costs. If cheap labor is available, then the expenses on technological renovation of production make no economic sense [4, p. 42]. ***Therefore, it is the undervalued "live labor" that is a natural obstacle for the innovation development of the Russian economy.***

It seems significant that the possibilities of increasing productivity through better utilization of employed workers has been exhausted. Researchers N.V. Orlova and S.K. Egiev point out that Russia ranked second in the world (after South Korea) according to the number of workhours per capita (985 hours per year) [19, p. 75]. Thus, the researchers conclude that low labor productivity is associated with the quality of investment rather than the quality of human capital.

Sufficiently high labor costs (expensive labor force) abroad initiated the development of a concept for workplace innovation as a resource for enhancing productivity [33]. It has been found that innovation in the workplace increase not only individual

productivity and performance efficiency of organizational activities [34], but also the level of effectiveness of the organization as a whole [31; 32].

An unresolved (not sufficiently smoothed) contradiction between "labor" and "capital" initiates an increase in social differentiation in Russia. According to some estimates, over the past two years, the gap between the incomes of 10% of the "poor" and 10% of the "rich" has increased and now exceeds 44 times, which is 10 times higher than the acceptable global standard of the International Labor Organization (ILO) [11].

Aggravating inequality increases the level of corruption (that depends on an ever-increasing status of participants of corruption schemes and on the size of a "reward" for services rendered). A comparative analysis of 129 countries shows [36] that income inequality increases the level of corruption through material and normative mechanisms. The rich have both greater motivation and more opportunities to engage in corruption, whereas the poor are more vulnerable to extortion.

The purpose of the present paper is to substantiate the methodological guidelines for modernization of the Russian economy, which should take into consideration global trends and contribute to the smoothing of contradictions.

Modernization of the Russian economy: the liberal view

In the article by A. Kudrin and E. Gurvich headlined "A new model of Russian economic growth" 15 most important tasks are set out that have to be addressed in order to build a "model for promoting growth". we consider the three tasks as systemically important. The first one is the radical reduction of the non-market sector that includes "public and quasi-public companies that are mainly guided by non-market motivation" [16, p. 29].

The second task, according to A. Kudrin and E. Gurvich, consists in carrying out further reforms in the public sector (getting rid of excess employment; increase in labor supply; prevention of faster wage increase compared to labor productivity growth).

The third task is to restore investor confidence in the macroeconomic stability of the Russian economy, and to the politics of institutional change. For example, it is noted that "it is important to maintain the trends that have been formed previously, particularly the borrowing of advanced technology. This path is recognized as the most effective way to increase productivity in the countries whose level of development is similar to that of our country" [16, p. 32].

Let us analyze these positions.

As for the role of the government in the economy, the position is quite clear: it is necessary to minimize the participation of the state in the economy, since the very "genetics" of public companies implies that budget allocations will always be spent inefficiently. It should be noted that the objective of reducing the state presence in the economy was formulated in the Concept for medium-term programs of development of Russia's

economy "Economics of growth" in the framework of the Stolypin club [15].

A. Kudrin and E. Gurvich in their work give references to the works of foreign researchers [29] that prove that performance indicators of the enterprises of state and municipal form of ownership are much worse than those of private enterprises; we consider these references not quite correct: the following example is provided: a World Bank Study of 79 thousand Russian enterprises for the period of 2003–2008.

One can also present findings of other international studies in which it is noted that the nature of relationship between the size of the public sector and the efficiency of innovation and modernization of the country is not clearly defined [35]. On the one hand, the studies carried out in the EU have shown that the economic situation in the countries with a smaller share of the public sector (public expenditure are less than 40% of GDP) is better than in the countries with a high (50%) and medium (40...50%) share of the public sector. On the other hand, innovation in the public sector is directly associated with economic prosperity: research and development in the public sector has a significant impact on the development of new products and processes and thus, indirectly contributes to economic growth and productivity [35, p. 21]. In this case, state-owned R&D is important in the support and stimulation of innovation in private firms [35, p. 32]. It is noted that in the public sector better results can be achieved at the expense of growing scale of production (economies of scale) [28, p. 24].

In order to improve the efficiency of the public sector a task is set out to rationalize public expenditure on R&D, strengthen cooperation between universities and industry (encouraging the establishment of science parks, promoting university patenting) [35, p. 6], which is relevant for Russia.

Proposals to reduce the state's share in the economy do not rely on the results of the analysis of profitability of Russian state-owned enterprises in recent years. The Bulletin of the analytical center under the Government of the Russian Federation [7] provides evidence of performance effectiveness of state companies: their share of revenue in the total revenue of the top 100 companies in recent years was increasing continuously: from 47% in 2009 to 51% in 2014. Moreover, the number of state-owned companies in the top 100 companies dropped from 31 to 28 for the same period. Overall, 28 companies with state participation in 2014 accounted for 67% of the revenues of all companies from the Expert RA top-100 ranking in the sectors under consideration, where state-owned companies were presented.

We agree with V.I. Rossinskii, who points out that "global economic experience clearly shows that in modern conditions the efficiency of the economy depends less on the form of ownership and more on the quality of management" [24, p. 61].

As for state-owned companies the emphasis should be placed on improving the quality of corporate governance, which ensures efficient cooperation between shareholders, the board of directors and senior management of the company. The problems of state corporate governance, in our opinion, are determined by the fact that the shareholders and the board of directors (mostly state representatives[2]) do not provide adequate control over the top management of state corporations. For example, in our opinion, this is connected with the lack of public information on the incomes of top managers of Russian state-owned companies. In recent years in other countries, the openness of strategic solutions, partnership with representatives of society and public opinion are considered important strategic elements [30] for determining the company's performance efficiency.

According to the results of research on the influence of the board of directors (BOD) on the financial performance of Russian companies it has been found that "contrary to the agent theory that advocates the maximum number of independent directors within BOD, for Russian companies it is important that BOD have executive directors, who would possess unique knowledge about the specifics of the company's functioning: "the share of executive directors in the composition of the Board" has a positive effect on the efficiency of the company" [10, p. 143]. Here the key characteristics affecting the efficiency of the company is the experience of the board of directors in this particular industry. Based on the foregoing, it is important to analyze the composition of the boards of directors of public companies (and introduce adjustments if necessary) for the purpose of increasing performance efficiency of the boards and companies in general.

In the framework of discussions about the degree of effectiveness of public or private business it is appropriate to recall a 2001 interview with Anatoly Chubais, which was not widely known and, therefore, did not cause relevant public feedback at the time [8].

"And we knew that every plant sold was a nail in the coffin of communism. Whether it was sold at a high or low price, whether it was given away free of charge or with extra payment – all this was a minor matter, it actually was... Privatization in Russia until 1997 was not an economic process at all. It aimed to solve the problems of an altogether different scale, which few understood then and even less so in the West. Privatization solved the main task of abolishing communism. We did solve this problem. We did it thoroughly", A. Chubais said in the interview.

Thus, the privatization of the early 1990, and, later, mortgaging auctions served as the basis for the transfer of state property into private hands and did not solve the problem

[2] For example, nine out of the twelve members of the Board of Directors of JSC Russian Railways, who were elected in 2016, are representatives of the Russian Government.

of increasing the efficiency of production. And the crisis of the late 1990s a striking confirmation to this. We agree with V.I. Rossinskii, "at the beginning of privatization, first of all, it is necessary to determine the limit of privatization, i.e. to highlight the part in the structure of productive forces that is in the public domain. The task is not very complex, because in this case we are speaking about productions that require the efforts of the whole society through long-term scientific research programs, training of qualified personnel and huge capital investments, i.e. the establishment and maintenance of such industries, which, in essence, are not feasible in the framework of private capital. This is evidenced by world experience" [24, p. 62].

The issue concerning ownership in Russia (and its "moral legitimacy") is not fully resolved, because at the time this boundary was not established (such a task was not intended to be implemented in principle). It is necessary to develop mechanisms which, consistently with international law, will make it impossible (or pointless) to make any claims like those of Yukos investors against the Russian Federation.

To solve the second problem, A. Kudrin and E. Gurvich propose the following measures:

– withdrawal of wage increase in the public sector, if this increase is not linked to the growth of productivity;

– optimizing the number of employees in the public sector;

– shifting from fighting unemployment (the extent of which is unlikely to be significant) to the struggle for competitiveness;

– increasing mobility and expanding the retraining of the workforce;

– improving migration management mechanisms in the interests of attracting the workers that the market needs;

– gradually raising the retirement age.

Researcher V.M. Serov in his study [26] proves that the simple reproduction of labor requires that each family should have on average 2.2 children. The minimum wage of a skilled worker should not be below 2.1 subsistence minimums, provided that both parents work. If the wage is below 2.1 subsistence minimums, the population (workers) will decline, and productive capital will not be able to function, it would be of no use.

If the state wants to have a healthy and well-educated generation of workers (and to achieve that, one of the parents must be on childcare leave over a long period of time) then the minimum wage should be equal to 4.2 subsistence minimums [26, p. 90]. We recall that we are talking about simple rather than expanded reproduction of labor force.

By restraining the growth of wages in the budget sector, the state restrains this growth in all sectors of the economy. This creates a vicious circle: 80% of the population spends 80% of their income on food, the remaining 20% do not allow making any major

purchases, i.e., the policy of containment of labor remuneration growth hinders the development of the consumer market and the economy in general [22, p.10].

In relation to labor productivity growth, we have already noted above that Russia ranks second in the world (after South Korea) according to the number of workhours per capita (985 hours per year) [19, p. 75]. Analysis of the wages of one of the largest categories of state employees – secondary school teachers – suggests that wage growth is ensured mainly by extensive methods (increasing the number of hours worked), i.e., the load of an average school teacher is substantially higher than the standard work rate for a teacher (18 hours).

Optimization measures applied to those employed in the public sector (essentially, reduction measures) are in a certain way contrary to the measure that provides for the expansion of retraining the workforce and that is offered by A. Kudrin and E. Gurvich. For example, the number of full-time faculty of state and municipal universities was continuously reducing – from 319.0 thousand in the 2011/12 academic year up to 255.8 thousand people in the 2015/16 academic year: 2012/13 academic year – 312.8 thousand people; 2013/14 – 288.2 thousand people; 2014/15 – 271.5 thousand people[3].

In accordance with the indicator "the number of students in tertiary education programs per faculty member" in the state program "Development of education" for 2013–2020, which by 2020 is expected to increase up to 13 people [21], it is possible that the number of teaching personnel in state universities will reduce to 184.9 thousand people by 2020, of which 150.5 thousand people will work full-time and 34.4 thousand people – at 0.5 and 0.25 of the rate [23, p. 184]. A reduction in the number of teaching personnel at state universities against the background of increased teaching load will in the long term have a negative impact on the quality of education. In this regard, it is doubtful that it would be possible to implement the concept of life-long learning, which is declared in the state program "Development of education" for 2013–2020.

The solution to the third problem – restoring investors' confidence in the macroeconomic stability of the Russian economy, and in the politics of institutional change – must be considered in the context of suggestions made by A. Kudrin at a closed meeting of the Presidium of the Economic Council held on May 25, 2016. According to A. Kudrin, the country needs, even if it will have to play a supporting role, to be embedded in international production chains. Otherwise it is impossible to fulfill a key condition to stimulate the Russian economy, which consists in attracting foreign

[3] *Rossiya v tsifrakh. 2016: krat. stat. sb.* [Russia in figures. 2016: a concise statistics collection]. Moscow, 2016. P. 148.

investments [17]. Of course, in order to "integrate into international production chains" on the sidelines, one can only borrow the technology. And in this sense, it is pointless to think about a "breakthrough" toward the sixth technological mode. In the 21at century Russia can not afford to slide back to the catching-up development.

The position of A. Kudrin and E. Gurvich is fundamentally different from what Vladimir Putin said in his Address to the Federal Assembly on December 01, 2016 [20]: "Colleagues, to move up to a higher development level in the economy and social sector **we need our own advanced research and scientific solutions** (*emphasis added*. E.R.). We must focus on the sectors where a powerful technological potential is accumulating for the future, that is, digital and other cross-cutting technologies that now determine all spheres of life. The countries that generate such technologies will get a lasting advantage and an opportunity to generate huge technological revenues. Those who fail to do this will be placed in a dependent and disadvantaged position. Cross-cutting technologies are technologies that can be applied in all sectors, such as digital, quantum, robotic, neural and other technologies".

As for attracting foreign investments that are considered almost the only cure-all solution for GDP growth [18; 27], we should answer the question: what kind of investment is it and what is their quality? Rosstat data lacks information on income by type of foreign investments after 2013[4]. The proportion of foreign direct investment in the Russian economy is small. The largest share in the structure of foreign investment was made by trade loans and other loans. This kind of "investments" is a disguised form of "capital flight" from Russia.

Kudrin's position arises out of the neglect of the systemic contradiction of the present stage of Russia's socio-economic development, which we formulated in the introduction: it is the contradiction between the policy of innovative development of the Russian economy declared at the state level and the weak demand for innovation on the part of industrial enterprises.

The transition from extensive economic model that implies increased exploitation by increasing the duration and intensity of labor, to intensive (innovative) development model must become a new imperative of economic policy. In this sense, we believe it is important that the government is willing to "share" inventions, patents and know-how with the business. About three thousand results of intellectual activity in all industrial sectors have undergone preparations for the transfer [6].

[4] The Rosstat collection "Russia in Figures" (2016) on p. 458 gives the following figures of the volume of direct foreign investment in Russian economy (mln US dollars): 2011 – 55,984; 2012 – 50,588; 2013 – 69,219; 2014 – 22,891. Based on these data, direct investment in 2014 decreased in three times compared to 2013. These data are contrary to the values given in the collection "Russia in Figures" (2014) on p. 468: foreign direct investment in 2011 amounted to 18,415 mln US dollars, in 2012 – 18,666 mln US dollars, in 2013 – 26,118 mln US dollars.

In our opinion, innovation is the "litmus test" that helps draw "dividing lines" between national-oriented and comprador capital. Where the search, design and implementation of innovation are carried out, where the development strategy is implemented, there is no place for speculative capital, there the business links its interests to the interests of employees and the country as a whole. Implementing innovation modernization strategy of the Russian economy will inevitably raise the issue of modernization of the banking sector, which should start functioning in new economic conditions – the search and financing of the projects contributing to the creation of products with high added value. Prior to the introduction of the sanctions, the majority of Russian banks implemented routine financial speculations: they took cheap loans in the West, which financed Russian industrial enterprises (of course, interest rates on the loans were much higher than those in the West). To some extent, the reason for this phenomenon lies in the current monetary policy (at least until recently it was so)[5].

Methodological landmarks of the "new industrialization": what capitalism does Russia need?

Development and implementation of a new model of economic growth – the concept of re-industrialization [3; 4; 5], "new industrialization" [25], neo-industrialization [9] – is due to the need to address threats to food, pharmaceutical and medical security, threats of the slowdown in economic growth due to the de-industrialization of the Russian economy, and threats to the reproduction of human capital. It seems to us that the concept of "new industrialization" most accurately reflects the goals and scope of reforms that need to be implemented in the Russian economy.

The development of the concept of "new industrialization" requires comprehensive study of the American experience of the times of the Great Depression, the experience of the People's Republic of China and domestic experience in the modern history of Russia (the crisis of 1998).

The Primakov–Maslyukov Government created the conditions for normalization of the macroeconomic environment for producers, and introduced measures to protect the domestic market. To some extent, the success of this government was due to idle production capacities and unemployed labor force, however it ensured the growth of investment in GDP from 12 to 16.5% [25, p. 21]. In 1999 there was a growth of investments in fixed capital, which amounted to 670,439 million rubles, of which 297,278 million rubles (44.3% of total investments) were invested in manufacturing industries[6].

[5] There emerges a change in the existing trend. For example, beginning from 2017, farmers will be able to take loans at 5% per annum.

[6] *Rossiiskii statisticheskii ezhegodnik. 2003: stat. sb.* [Russian statistical yearbook. 2003: statistics collection]. Moscow, 2003. P. 595.

Investments in fixed assets in 1998 amounted to 407,086 million rubles, of which 165,092 million rubles were invested in manufacturing industries (40.6% of total investment). Thus, there was not just an increase in investment activity but a change in the ratio of investment in manufacturing sectors to investment in industries that provide market and non-market services. At the same time the volume of foreign investment in industry in 1999 increased compared to 1998, against the background of general decline in the volume of foreign investments. The volume of foreign investments in 1998 was 11,773 million US dollars; 4,698 million US dollars (39.9% of the total amount of foreign investments) was invested in industry. In 1999, the volume of foreign investments fell to 9,560 million US dollars; 4,876 million US dollars (51.0% of the total volume of foreign investments) was invested in industry[7].

In modern conditions, the pressure of the sanctions creates conditions for import substitution, including a deep localization of production. But we still believe that "the best import substitution is the production of domestic products competitive both on the internal and foreign markets. Export capacity means the ability to compete, and compete with import as well. Such import substitution may be eligible for governmental support" [18, p.19].

Statements by E.M. Primakov at the meeting of the Mercury Club in January 2014 can be taken as the main methodological landmarks for the implementation of the concept of "new industrialization" [1].

The first thesis concerns the role of the state in building a new economy.

"Can we be sure that in modern Russia the market mechanism itself and without state participation is already able to provide growth and balance of the economy, and the low level of competition is sufficient to achieve technological progress? Definitely not. Of course, this does not mean eternal dominance of the state in the economy. But it is necessary in certain historical periods, and I believe that currently we are living in such a period. In addition, our neo-liberals take no notice of the lessons of the 2008–2009 crisis. It is known that the United States and the European Union increased the influence of the state on the economy during the crisis. This trend is maintained now".

The second thesis deals with the very essence of "new industrialization":

"... The neo-liberals, in fact, ignore the need to restore Russia's industries, primarily mechanical engineering, that were ruined in the 1990s. Abandoning re-industrialization is frequently regarded by them as a prerequisite for Russia's entry into the post-industrial stage. Meanwhile, the transition in the post-industrial economy in today's world does not imply moving away from traditional industries that, in addition, provide people with jobs. Of course, we are talking about providing them with modern equipment...

[7] *Ibidem*. P. 604.

Post-industrial society is more than just high-tech and the services sector. For instance, the post-industrial United States now restore the industries that were previously shifted to developing countries. I agree with the conclusion made by Valentina Matviyenko, Chairman of the Federation Council: "The country that aspires for leadership and ensures its own safety cannot focus only on 2–3 high-tech industries. Therefore, we are facing a greatest challenge – to take a worthy place in the new technological mode and, at the same time, to restore the industries of the old system on an innovation basis".

S.D. Bodrunov formulated "the developing economy paradigm", which is implemented in the framework of re-industrialization strategy. It is defined as the "restoration of the role and place of industry in the economy of the country as its basic component on the basis of a new technological mode by solving a set of economic, organizational and other tasks" [5, p. 8]. Particular attention should be paid to the complex of raw materials as a source of financial security for future re-industrialization, the processing aspect in this complex should be promoted. S.D. Bodrunov, R.S. Grinberg, and D.E. Sorokin point out that the problem lies not in the exaggerated magnitude of the commodity sector, but in the underdevelopment of processing industries [4, p. 21].

S.S. Gubanov's point of view is similar, it indicates that in order to do away with de-industrialization "it is necessary to link the mining industry with processing complexes, especially, with engineering. Their business connection is based on a vertically integrated property, and their form is cross-sector chains of production of end products with a high multiplier of value added" [9, p. 39].

"New industrialization" must be transformed into the program for the implementation of main directions of an emerging revolution associated with the development of bio-, nano- and genetic technology, creation of quantum computers and new composite materials, i.e. all that is the basis of a new (sixth) technological mode. The problem is how this strategic goal, as the main link in the current policy, could be addressed "immediately", without restoring the industrial economy [25, p. 19]. We agree with V.T. Ryazanov, who points out that "to try to "jump" into the sixth technological order, bypassing the fifth mode that is not developed in Russia and ignoring the degradation of the sphere of production means to build a policy based on illusions and utopian projects" [25, p. 19].

We consider the remark about the sixth technological mode to be critical. A different point of view on this issue was expressed by E. Kabolov, who noted that the structure of the Russian economy is currently far from a

post-industrial model[8]. In his view, Russia's entry in the 6th technological mode within the next 10 years requires "skipping" the 5th technological mode [12].

V.T. Ryazanov's viewpoint concerning a utopian nature of "skipping" a technological order is based on the fact that the majority of the innovations of the new mode are formed in the phase of the **dominance** of the previous mode. The fifth technological mode, defined usually as an information and communication technology mode, does not dominate the Russian economy. However, the level and results of fundamental research of Russian scientists in the Russian Academy of Sciences give reason to say that Russia is among the advanced countries in building computers that work on completely different physical principles (quantum) [13]. The positive dynamics in the development of advanced information technologies is evidenced by the increasing volume of their exports, which in 2015 amounted to 7 billion US dollars (defense industry – 14.5 billion, agricultural products – 16.2 billion) [20]. In this sense, becoming a leader in the production of quantum computers and increasing exports of information technology, Russia will be able to "skip" a technological order.

[8] In Russia the share of technology of the fifth order is approximately 10% (in the military-industrial complex and the aerospace industry), the share of the fourth order is over 50%, the third – about 30%. In the US, for example, the share of the fifth technological order is 60%, fourth – 20%. And about 5% falls on the sixth technological order.

It seems to us that it is possible for Russia to shift to the sixth technological mode within the next 10 years on the basis of innovative development of the military-industrial complex and technology transfer to civilian industries, if the country makes full use of human capital, a competitive advantage that Russian still possesses. Accordingly, it is necessary to develop a strategy to use this competitive advantage.

In order to create conditions for a more rapid development of the innovations of the sixth technological mode it is necessary to unite efforts with leading countries in the field of software and information management (India), and electronics and computer memory (China).

In his Address to the Federal Assembly on December 01, 2016 [20], Russian President Vladimir Putin proposed "launching a large-scale system-wide program to develop an economy of a new technological generation, the so-called digital economy. We will rely on Russian companies and Russian scientific, research and engineering centers to implement this program. Russia's national and technological independence, in fact, our future depend on this. We need to conduct an inventory to remove managerial, legal and any other barriers that hinder the advance of our business to existing and emerging high-tech markets. We must allocate sufficient financial resources for these projects, including by setting this task to the refurbished VEB (Bank for Development). We will need

skilled personnel, engineers and workers, who will be ready to fulfil next-generation tasks. This is why we are cooperating with businesses to create an up-to-date system of secondary vocational education and college and vocational school teacher training based on advanced international standards".

The fundamental question is: can the Russian economy in the conditions of multiculturalism implement the tasks set by the President of the Russian Federation? We share the view of S.S. Gubanov, who indicates that only the stage of capitalism that is not below the state corporate stage can meet the requirements of the new industrial revolution [9, p. 36]: "It is quite clear that a vertically integrated form of ownership should dominate, that multinational corporations should be the main link in reproduction, that value added (rather than profit) should be the target function of reproduction, that there should be a macroeconomic type of planning, consistent with the form of ownership".

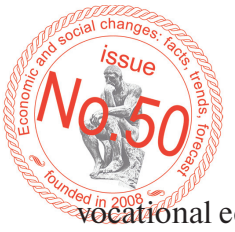
This goal can be achieved with the help of strategic nationalization of commanding heights of the economy. We agree with S.S. Gubanov that nationalization is not needed for the sake of nationalization itself. It is required in order to create a vertically integrated structure (of ownership) that will increase domestic production of the products with high value added on the basis of a strong and inseparable connection between production and industrial processing of raw materials and primary resources.

The increasing role of the state in the economy is due to the fact that state-owned enterprises should set the standards for the reproduction of labor force (from the level of the minimum wage to various aspects of social security of employees). The institutional framework for such standards should be based on the implementation of the proposal associated with the **transition to the hourly system for regulation of labor productivity and wages**, which involves the development of planning standards for hourly productivity of machines, jobs and employees. We view this proposal as systemically important in creating favorable conditions for expanded reproduction of the labor force.

Strategic nationalization of the commanding heights of the economy involves improving the quality of corporate governance in state-owned enterprises and fighting corruption at all levels. In the current socio-economic and political conditions, corruption should be seen as a threat to national security with all its consequences[9].

The volume of the present paper does not allow us to reveal the role of education and science in finding solutions to the issues of modernization of the Russian economy. Let us point out a most important aspect that sets the guidelines for further research. For example, with regard to higher and secondary

[9] Considering corruption as a threat to national security is due to the fact that corruption not just undermines the implementation of the principle of social justice, but, more importantly, it discredits power in general.



vocational education, the basic contradiction of socio-economic development, which we have formulated, determines the **contradiction** between the formation and the financing of an order for (primarily) technological areas of training that are in demand in the economy and funded by the government and the practical absence of participation of the business community in this process. In other words, staffing requirements of private enterprises are financed at the expense of taxpayers. In essence, this contradiction can be formulated as a contradiction between the social character of knowledge production and the private form of appropriation of the result (knowledge). In conditions of increasing the share of the government in the economy, the formation and financing of state order for personnel training seems reasonable and logical.

The lesser the participation of the state in certain industries, the greater should be the participation of private enterprises in personnel training. This includes the development of mechanisms for public-private partnership, establishment of target indicators of co-financing in the strategic perspective, direct participation of business in solving national problems (including through the establishment of endowment funds, etc.). Private enterprise must establish a kind of "sinking fund for human capital", which will be a source of funding of own staffing requirements. **Lack of desire or inability to invest in staff training should be the basis for the transfer of a part of or the entire property in favor of someone capable of implementing such investments.** Accordingly, a legal mechanism should be developed for regulating these procedures taking into account international experience.

Conclusion

We think that the contribution of the present study to the development of theoretical science consists in the justification of the following thesis: it is possible to provide intensive (innovative) development of the Russian economy only if there is a philosophical and sociological understanding of objective reality, identification of contradictions in socio-economic development, and ways to solve (smooth) them. On this basis, any decisions should be viewed through the prism of the extent to which they contribute to the elimination (smoothing) of a major contradiction in Russia's socio-economic development. This approach should be used in the development of the ways to upgrade education and science as the intellectual foundations of "breakthrough" toward the sixth technological mode.

The main conclusions of the study are as follows.

• Implementing the concept of "new industrialization" implies an increase in the share of state ownership and an increase in its management efficiency in industries that are critical for overcoming the deindustrialization of the Russian economy and "breakthrough" toward the sixth technological mode: creation

of vertically integrated structures in the chain "production of raw materials – industrial processing", which will ensure the increase of domestic production of products with high value added.

• Increasing the value of "live" work and, as a consequence, creation of conditions for expanded reproduction of labor force should become an imperative of innovative modernization of the Russian economy.

• Russia's "breakthrough" toward the sixth technological mode is possible to achieve if the country becomes a world leader in the production of quantum computers, increases exports of information technology, transfer of innovative developments of the military-industrial complex to civilian industries along with the most complete use of its competitive advantage such as human capital (creation of natural barriers against the "brain drain").

• It is necessary to ensure participation of private enterprise in the provision of the modernizing economy with finances and personnel. Private enterprises should establish a kind of "sinking fund for human capital", which will be a source of funding own staffing needs. Failure to invest in personnel training should become the basis for the transfer of the share or the whole property (based on a legal mechanism) in favor of someone capable of implementing such investments.

• Attracting investments (including foreign investments) and assessing their quality should be considered in the context of opportunities that are created (or not created) in order to increase the value of "live" labor and the number of domestic technologies of the sixth technological mode.

The above is the answer to the question: what capitalism does Russia need?

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Spatial and Logical Model of American Electorate Political Choice Formalization: Experience for Russia

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Abstract. The results of the 58th US presidential election held November 8th, 2016 turned out a big surprise for many people. Numerous public opinion polls in the USA on political loyalty conducted by various researchers from July to October, 2016, demonstrated a steady trend of an electoral advantage of the Democratic Party's nominee (H. Clinton). However, during election (November 8th, 2016) the Republican Party's nominee D. Trump won with 306 electoral votes against 232. Why did this happen? Experts, political analysts have different explanations of this choice of American voters. In this article, the author makes an attempt to conduct a simple statistical analysis of the results of American electorate political preferences using basic socio-economic categories such as "quality of life", "gross domestic product", "employment" and "crime". The hypothesis accepted as the basis for the author's arguments implies that the voters' political preferences greatly depend on the actual quality of people's lives, which is highly differentiated in the US states. With all the variety of conditions and lifestyles, regional peculiarities form a certain preferred attitude of citizens to the country's political future. In this regard, to prove this thesis the author analyzed statistical data on US states describing the results of the 58th presidential election and some indicators of the socio-economic development of these territories. Based on

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these data, the author designed a regression model of correlation of indicators "ratio of electoral votes for the Democratic Party's nominee to electoral votes for the Republican Party's nominee" and "American Human Development Index" (AHDI) which evaluates the generalized quality of life of citizens in different states. The author also considers the regression model of AHDI dependence on factors such as US gross domestic product. To confirm the logic the author attempts to establish a statistical link between the outcome of assessment of the US population's political preferences and the level of road accident rate as one of the indicators of the quality of life. The research results help conclude that electoral votes at the 58th US presidential election are of the protest nature, reflecting Americans' need for the global socio-economic changes. The article discusses the possible implications of D. Trump's presidency for the international community and the experience which can be drawn from political choice of American electorate for the Russian government.

Key words: 2016 US presidential election; election results; quality of life of the US states population; correlation-regression analysis; electorate political choice; protest nature of election.

Introduction. The U.S. presidential election is one of the key global events of 2016, the outcome of which can have a significant impact on both domestic and foreign policy of the country, and, in addition, exert influence on a planetary scale. The United States of America is a state that in the end of the 20th – beginning of the 21st century aspires to take the dominant position in the world. Gross domestic product (GDP) of the United States at par in 2015 amounted to 18,037 billion US dollars or about 24.4% of the total GDP of all countries of the world (73,891.9 billion US dollars) [26]. The U.S. itself and many other countries [33] have formed an opinion that, having the greatest economic, political, cultural and military influence in the world, the U.S. is currently the only superpower on the planet.

20 January 2017 the inauguration of the newly elected President of the United States was held; Donald Trump, the representative of the Republican Party, assumed office on that day. His victory in the presidential election (08.11.2016) was largely unexpected. During almost all the pre-election presidential race, public opinion polls in the United States registered the advantage of his rival, Hillary Clinton, the candidate from the Democratic Party [25; 27]. Why did this happen? What motivated this choice? Which states voted for Donald Trump, and which – for Hillary Clinton, and why? Does it implies actual change in politics, economy, and life style of the Americans? Will this event have any significant influence on other countries and peoples? This is a small part of the essential questions the answer to which the world will only get with time. As for today, it would be interesting to look for an answer to the following three crucial questions.

• Did the Americans voted for Trump in protest against the politics of the Democratic Party, which they are already tired of?

• Is this choice associated with the fact that U.S. citizens needs changes in both external and domestic policy?

• Were any spatial features of electoral behavior of residents of different states manifested during the election?

As the author was trying to find answers to these questions, he statistically tested the hypothesis that the *political preferences of the voters depend heavily on the actual satisfaction with the quality of people's life, this quality being highly differentiated across the states of the U.S.*

The aim of this study is to establish the presence of statistical dependence between the quality of life of the population in various U.S. states and the results of their electoral behavior.

The tasks set by the author were as follows:

• quantitative assessment of electoral preferences of citizens in different U.S. states by means of the indicator "Ratio of electoral votes cast for the Democratic candidate to electoral votes cast for the Republican candidate" *(% Democratic / % Republican)*;

• substantiation of choosing the *American Human Development Index (AHDI)* as a quantitative characteristic of the quality of life of U.S. citizens;

• finding a dependence between the results of electoral preferences of U.S. citizens and the quality of life (*% Democratic / % Republican*) = *f(AHDI)*, which is considered as the basic (source) dependence for the purposes of the present research;

• finding a second order (follow-up) dependence between the *American Human Development Index (AHDI)* and the factor that indirectly determines the basic foundations of the quality of life (gross domestic product of U.S. states) for the purpose of finding explanations for the dependency obtained;

• establishing a third order dependence between the *American Human Development Index (AHDI)* and road traffic accident rate, one of the practical manifestations of the quality of life in U.S. states;

• establishing statistical relationship between the results of political election and Human risk *HR*, a feature of road traffic accident rate;

• conducting similar research for databases on the election of 2000 and 2008, when a rival political party was the winner;

• clarifying the logic of the results obtained;

• formulating the research findings;

• formulating the conclusions that are important from the standpoint of experience for Russian authorities.

Quantitative assessment of electoral preferences of citizens in different U.S. states. Following the meeting of the Electoral College (December 19, 2016), the election results as of November 08, 2016 [31] were slightly adjusted. Two Republican electors from Texas did not vote for Donald Trump [22]; however, this did not affect the outcome

of the election. Based on the statistics of the distribution of electoral votes for each state it is possible to calculate the coefficient "Ratio of electoral votes cast for the Democratic candidate to electoral votes cast for the Republican candidate" (1):

$$\%\text{Democratic} / \%\text{Republican} = \frac{\%\text{ of electoral votes of the state cast for H. Clinton}}{\%\text{ of electoral votes of the state cast for D. Trump}}. \quad (1)$$

The figure (1) is a tool around which an ideology of further research will be built.

Votes cast for candidates from other parties (Gary Johnson from the Libertarian PartyJill Stein from the Green Party, Darrell Castle from the Constitution Party) and independent candidate Evan McMullin were excluded from the calculation.

The results [30; 31] of the quantitative assessment of electoral preferences of citizens in various U.S. states in the 2016 presidential election are presented in *Table 1*.

Note that the effective range of values of this index is defined as [0.32; 2.07]. The District of Columbia is eliminated from further consideration for the following key reason: an urban region may not be identical to a state due to geographical and socio-political reasons. That is why the value of the ratio *(% Democratic / % Republican)* for the District of Columbia is extremely high *(% Democratic / % Republican)* = 22.75 and statistically is a release point.

Thus, in various U.S. states the voters' preference of Democratic or Republican candidates differs considerably (almost in 7 times). For a number of U.S. states it is typical that the percentage of the votes cast for candidates from other parties (libertarian, green, constitution) is relatively high (10 to 28%).

Substantiation of choosing the *American Human Development Index (AHDI)* as a quantitative characteristic of the quality of life of U.S. citizens. It is almost impossible to evaluate the quality of life correctly; however, many researchers have attempted to do so [7; 15].

Today, the Human Development Index (HDI) is a generally recognized indicator for global assessment of the quality of life in various countries [3; 13]. However, each country usually uses its own analogue of HDI to carry out intra-country regional-spatial differentiation of the quality of life. For instance, the United States uses the *American Human Development Index (AHDI)* [28; 29], which essentially consists in a complex assessment of the quality of life taking into account average life expectancy, level of education and income.

Summarizing the statistics broken down by district, researchers from the Measure of America [29] defined the average estimated value of *AHDI* for each state in the United States *(Tab. 2)*. The same table presents a

Table 1. Results of the U.S. presidential election (2016)*

No.	U.S. state (constituent political entity of the United States of America)	Results of the U.S. presidential election, November 2016				
		% of votes cast for the candidate from U.S. leading parties		Sum of % of votes for the two strongest candidates (H. Clinton + D. Trump)	% of votes for other candidates	Ratio of the % of votes for candidates from the Democratic Party and Republican Party
		Democratic Party – H. Clinton	Republican Party – D. Trump			
1.	Alabama	34	62	96	4	0.55
2.	Alaska	37	51	88	12	0.73
3.	Arizona	45	48	93	7	0.94
4.	Arkansas	34	61	95	5	0.56
5.	California	62	32	94	6	1.94
6.	Colorado	48	43	91	9	1.12
7.	Connecticut	55	41	96	4	1.34
8.	Delaware	53	42	95	5	1.26
9.	District of Columbia	91	4	95	5	22.75
10.	Florida	47	49	96	4	0.96
11.	Georgia	45	51	96	4	0.88
12.	Hawaii	62	30	92	8	2.07
13.	Idaho	28	59	87	13	0.47
14.	Illinois	56	39	95	5	1.44
15.	Indiana	38	57	95	5	0.67
16.	Iowa	42	51	93	7	0.82
17.	Kansas	36	57	93	7	0.63
18.	Kentucky	33	63	96	4	0.52
19.	Louisiana	38	58	96	4	0.66
20.	Maine	48	45	93	7	1.07
21.	Maryland	48	45	93	7	1.07
22.	Massachusetts	60	33	93	7	1.82
23.	Michigan	47	48	95	5	0.98
24.	Minnesota	46	45	91	9	1.02
25.	Mississippi	40	58	98	2	0.69
26.	Missouri	38	57	95	5	0.67
27.	Montana	36	56	92	8	0.64
28.	Nebraska	34	59	93	7	0.58
29.	Nevada	48	46	94	6	1.04
30.	New Hampshire	47	47	94	6	1.00
31.	New Jersey	55	41	96	4	1.34
32.	New Mexico	48	40	88	12	1.20
33.	New York	59	36	95	5	1.64
34.	North Carolina	46	50	96	4	0.92
35.	North Dakota	27	63	90	10	0.43
36.	Ohio	43	51	94	6	0.84
37.	Oklahoma	29	65	94	6	0.45
38.	Oregon	50	39	89	11	1.28
39.	Pennsylvania	48	48	96	4	1.00
40.	Rhode Island	54	39	93	7	1.38
41.	South Carolina	41	55	96	4	0.75
42.	South Dakota	32	62	94	6	0.52
43.	Tennessee	35	61	96	4	0.57
44.	Texas	43	52	95	5	0.83
45.	Utah	27	45	72	28	0.60
46.	Vermont	57	30	87	13	1.90
47.	Virginia	50	44	94	6	1.14
48.	Washington	53	37	90	10	1.43
49.	West Virginia	26	68	94	6	0.38
50.	Wisconsin	46	47	93	7	0.98
51.	Wyoming	22	68	90	10	0.32

* Compiled with the use of: www.nytimes.com/elections/results/president [30; 31].

Table 2. Numerical values of the indicator of political preferences of American voters (2016) and various indicators of economic and social development in U.S. states*

No.	U.S. state (constituent political entity of the United States of America)	Numerical values of the indicator showing political preferences of American voters (2016) and various indicators of economic and social development in U.S. states			
		Electoral votes Coefficient Democratic Party / and Republican Party	American Human Development Index (AHDI) 2013–2014	Gross Domestic Product (GDP) 2014	Human Risk (HR), deaths/ 100 thousand people, 2014
1.	Alabama	0.55	4.04	36930	16.91
2.	Alaska	0.73	5.06	54582	9.91
3.	Arizona	0.94	4.89	38006	11.44
4.	Arkansas	0.56	3.91	37582	15.71
5.	California	1.94	5.40	50988	7.92
6.	Colorado	1.12	5.53	49768	9.11
7.	Connecticut	1.34	6.17	66716	6.89
8.	Delaware	1.26	5.22	45284	12.93
9.	District of Columbia	Not considered due to its territory being disproportionate to other states			
10.	Florida	0.96	4.82	42868	12.54
11.	Georgia	0.88	4.62	38835	11.53
12.	Hawaii	2.07	5.53	46466	6.69
13.	Idaho	0.47	4.50	37153	11.38
14.	Illinois	1.44	5.31	48508	7.17
15.	Indiana	0.67	4.56	40460	11.31
16.	Iowa	0.82	5.03	44421	10.33
17.	Kansas	0.63	4.96	46393	13.26
18.	Kentucky	0.52	4.02	37059	15.23
19.	Louisiana	0.66	4.12	41811	15.85
20.	Maine	1.07	4.93	41240	9.85
21.	Maryland	1.07	5.94	54036	7.4
22.	Massachusetts	1.82	6.16	59603	4.86
23.	Michigan	0.98	4.76	40940	9.09
24.	Minnesota	1.02	5.69	49133	6.62
25.	Mississippi	0.69	3.81	34139	20.27
26.	Missouri	0.67	4.60	41107	12.63
27.	Montana	0.64	4.54	40599	18.75
28.	Nebraska	0.58	5.11	48321	11.96
29.	Nevada	1.04	4.63	40490	10.21
30.	New Hampshire	1.00	5.73	53629	7.16
31.	New Jersey	1.34	6.12	57728	6.22
32.	New Mexico	1.20	4.52	36656	18.36
33.	New York	1.64	5.66	56683	5.26
34.	North Carolina	0.92	4.57	39365	12.91
35.	North Dakota	0.43	4.90	57900	18.27
36.	Ohio	0.84	4.71	42155	8.68
37.	Oklahoma	0.45	4.14	45117	17.25
38.	Oregon	1.28	4.86	41690	8.99
39.	Pennsylvania	1.00	5.07	47955	9.35
40.	Rhode Island	1.38	5.38	48023	4.93
41.	South Carolina	0.75	4.35	36860	17.05
42.	South Dakota	0.52	4.79	45966	15.94
43.	Tennessee	0.57	4.22	40233	14.69
44.	Texas	0.83	4.65	45755	13.12
45.	Utah	0.60	5.03	37644	8.70
46.	Vermont	1.90	5.31	47144	7.02
47.	Virginia	1.14	5.47	50105	8.44
48.	Washington	1.43	5.4	50357	6.54
49.	West Virginia	0.38	3.95	35778	14.70
50.	Wisconsin	0.98	5.16	44406	8.81
51.	Wyoming	0.32	4.83	56004	25.68

* Compiled with the use of: www.bea.gov/regional/about.cfm [24], www.measureofamerica.org/maps/ [28], http://www.nytimes.com/elections/results/president [30].

series of statistical data for each state in the United States, which will be used in the second stage of the research to establish the dependency of the second and third orders (later) between the *American Human Development Index (AHDI)* and factors that indirectly determine the basic foundations of the quality of life [24; 28; 30].

Finding a dependence between the results of electoral preferences of U.S. citizens and the quality of life *(% Democratic / % Republican) = f(AHDI)*, which is considered as the basic (source) dependence for the purposes of the present research. Statistical processing of the data in Table 2 was carried out with the use of the software package STATISTICA 6.0 for correlation and regression analysis. *Figure 1* provides a graphical representation of the model *(% Democratic / % Republican) = f(AHDI)*.

The statistical characteristics ($R^2 = 0.469$; F-test = 42.47; standard error of approximation = 0.313) of the model *(% Democratic / % Republican) = f (AHDI)* allow us to conclude that the quality of life significantly influences the electoral preferences of Americans. In the states where *AHDI* is relatively low *(AHDI < 4.5)*, the ratio of electoral votes for Clinton to votes for Trump did not exceed 0.8. On the contrary, in the states with a relatively high quality of life *(AHDI > 5.5)* the ratio *(% Democratic / % Republican)* was in the range from 1 to 2. Let us try with the help of correlation and

Figure 1. Graphical representation of the model *(% Democratic / % Republican) = f (AHDI)*

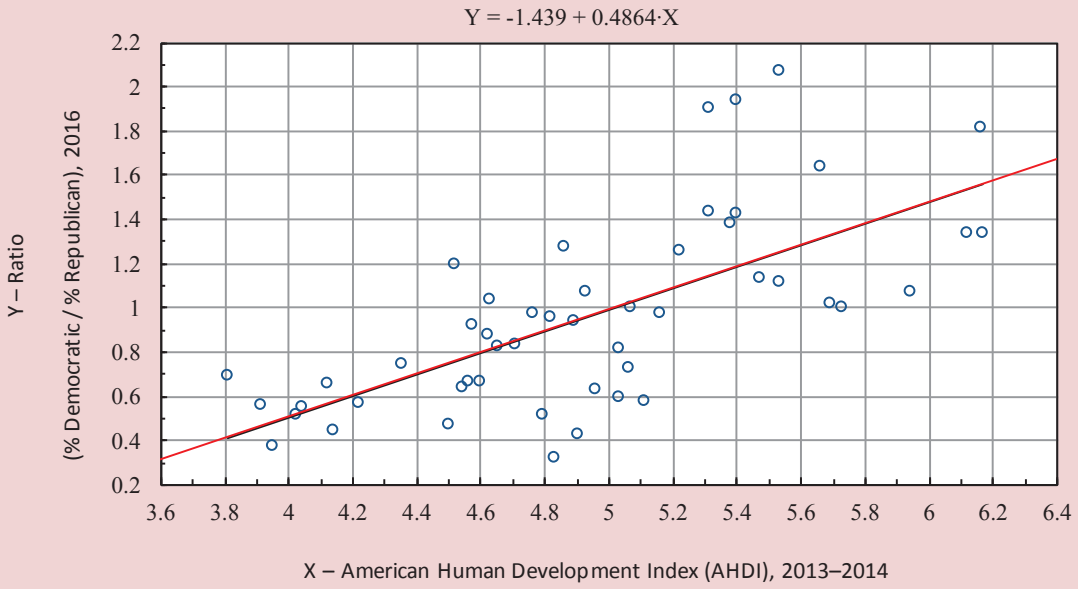
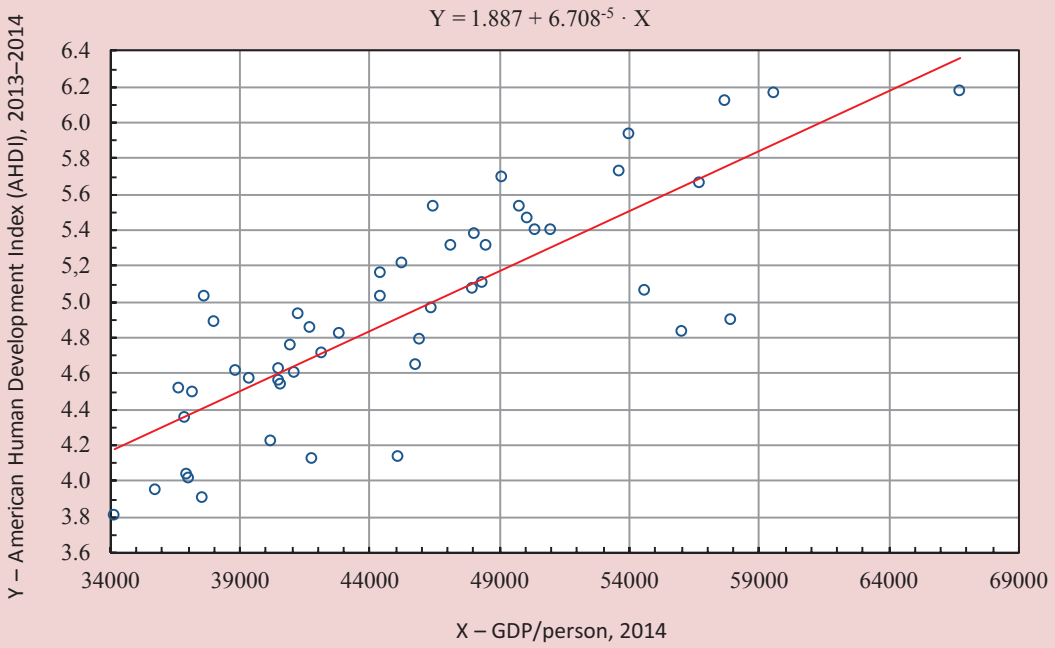


Figure 2. Graphic representation of the model *AHDI = f (GDP/person)*



regression analysis to understand whether *AHDI* in the United States is statistically related to gross domestic product per capita, a basic socio-economic feature of each state.

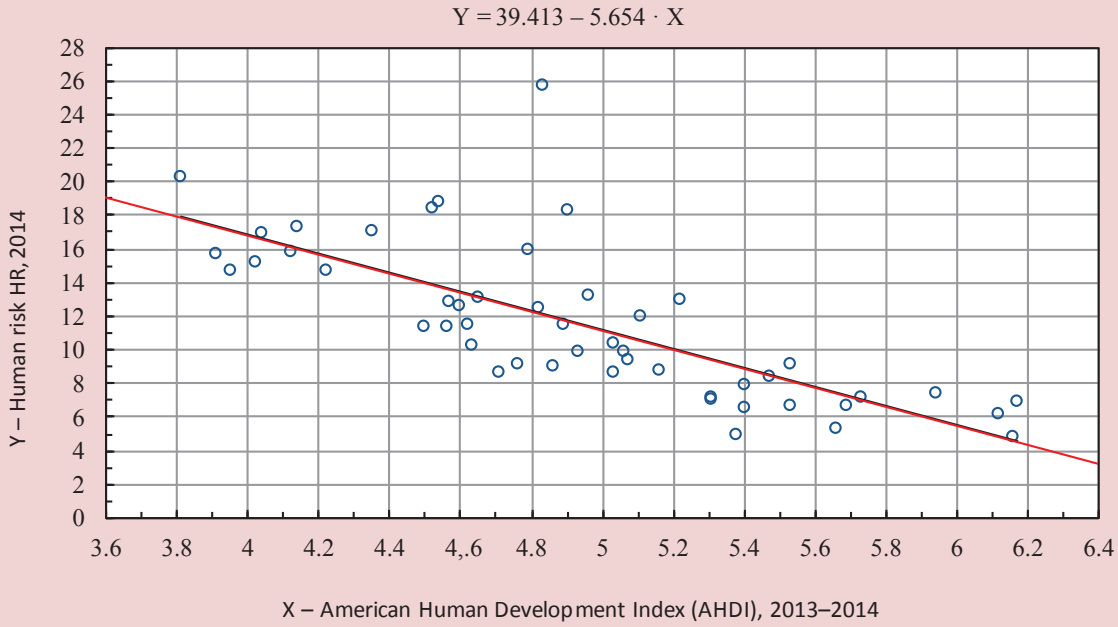
Finding a second order (follow-up) dependence between the *American Human Development Index (AHDI)* and the factor that indirectly determines the basic foundations of the quality of life (gross domestic product of U.S. states). Using the data from Table 2, we build a regression model *(Fig. 2)* of the relationship between data sets for U.S. states *AHDI* and the value of "GDP per capita" *AHDI = f(GDP/person)*.

The statistical characteristics of this model ($R^2 = 0.665$; F-test = 95.29; standard error of approximation = 0.351) demonstrate a strong statistical relationship between *AHDI* and the value of "GDP per capita".

Given the fact that *AHDI* is a comprehensive measure, such a high level of statistical relationship between the indicator "GDP per capita" and the human development index is quite unexpected.

Establishing a third order dependence between the *American Human Development Index (AHDI)* and road traffic accident rate, one of the practical manifestations of the quality of life in U.S. states. Road traffic accident rate is not the factor that determines *AHDI*, but it is closely linked to it. The value of "GDP per capita" largely determines the structure of the car fleet in a state from the standpoint of the price of cars and, as a

Figure 3. Graphical representation of the model of Human risk *HR = f (AHDI)*



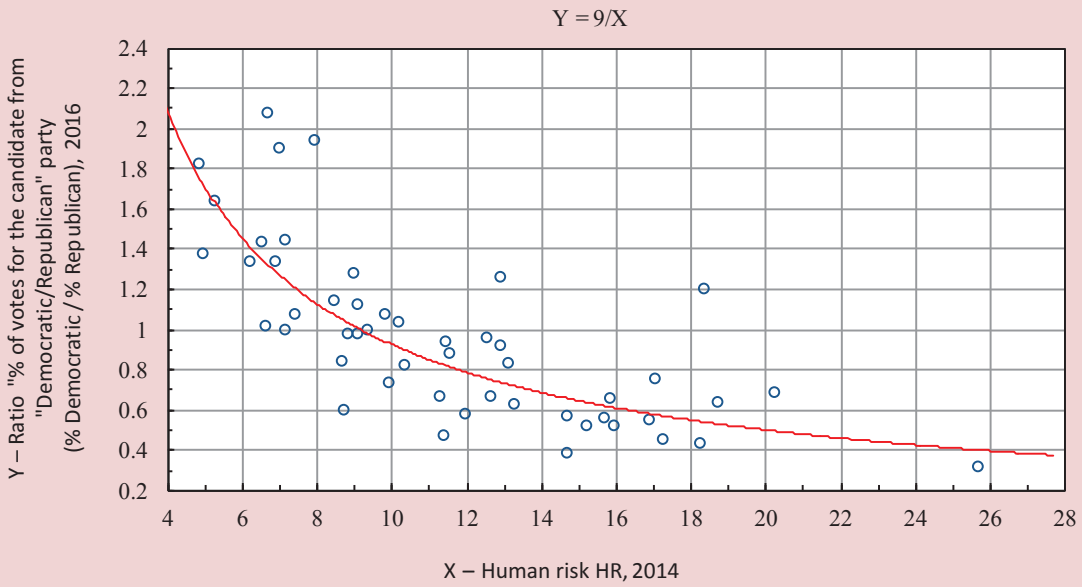
consequence, their quality and level of active, passive and post-accident security. In this regard, it is interesting to estimate the degree of statistical connection between the indicator of "Human risk HR", widely used in world practice for intercountry and interregional comparative assessment of road safety [11], and AHDI. *Figure 3* provides a graphical representation of the model *HR = f(AHDI)*, built according to the data as of 2014.

The statistical characteristics of this model ($R^2 = 0.556$; F-test = 60.04; standard error of approximation = 3.067) also suggest the presence of a sufficiently strong statistical relationship between road traffic accident rate and the quality of life.

In general, the relationship *HR = f(AHDI)* shown in Figure 3 can be interpreted as an illustration of the existence of a relationship between different aspects of human activity, including driving, which is very important for Americans, and the quality of life. It is therefore important to assess the presence or absence of the influence of the actual accident rate as one of the grounds for political dissatisfaction with the existing political scenario in the country.

Establishing the statistical relationship between the results of political election and Human risk HR, a feature of road traffic accident rate. With the two indirectly related models – model *(% Democratic /*

Figure 4. Graphic representation of the model (% Democratic / % Republican) = f(HR)



% Republican) = f(AHDI) and model *HR = f(AHDI)* it is possible to link these two models using the dependence *(% Democratic / % Republican)= f(HR)*. *Figure 4* provides a graphic representation of the model *(% Democratic / % Republican) = f(HR)*.

In this case, the approximation of the statistical data was carried out with the help of not the linear, but the reverse model, which is more suitable for experimental range. I must say that there is a certain sense in it, the essence of which lies in the fact that the linear perception of reality is not part of human nature. A normal human reaction to the deviation of the actual situation from the desired one (from an ideal picture of the world) is almost always non-linear [2].

The dependence presented in Figure 4 ($R^2 = 0.506$; F-test = 49.17; standard error of approximation = 0.302) helps us establish a strong statistical relationship between the actual road traffic accident rate in U.S. states and the political scenario in the 2016 U.S. presidential election.

Conducting similar research for databases on the election of 2000 and 2008, when a rival political party was the winner. One of the most important issues in this study is to understand how the results obtained according to the data on the 2016 U.S. presidential election 2016 correspond to the general long-term logic of the political process? It is important to understand how stable the patterns of voting behavior are in the time when the

Table 3. Numerical values of the indicator of political preferences of American voters (2000; 2008; 2016) and various indicators of economic and social development in U.S. states*

No.	U.S. state (constituent political entity of the United States of America)	Numerical values of the indicator showing political preferences of American voters (2000, 2008, 2016) and various indicators of economic and social development in U.S. states					
		2000 [35]		2008 [36]		2016 [30]	
		Ratio Democratic Party / Republican Party 2000	American Human Development Index (AHDI) 2000	Ratio Democratic Party / Republican Party 2008	American Human Development Index (AHDI) 2008	Ratio Democratic Party / Republican Party 2016	American Human Development Index (AHDI) 2016
1.	Alabama	0.75	3.94	0.65	3.92	0.55	4.04
2.	Alaska	0.47	4.95	0.64	5.24	0.73	5.06
3.	Arizona	0.88	4.59	0.85	4.75	0.94	4.89
4.	Arkansas	0.90	3.71	0.66	3.81	0.56	3.91
5.	California	1.26	5.09	1.65	5.39	1.94	5.40
6.	Colorado	0.82	5.30	1.20	5.44	1.12	5.53
7.	Connecticut	1.47	5.89	1.61	6.18	1.34	6.17
8.	Delaware	1.31	4.96	1.68	5.09	1.26	5.22
9.	District of Columbia	Not considered due to its territory being disproportionate to other states					
10.	Florida	1.00	4.63	1.06	4.81	0.96	4.82
11.	Georgia	0.78	4.45	1.11	4.63	0.88	4.62
12.	Hawaii	1.51	5.32	2.67	5.56	2.07	5.53
13.	Idaho	0.42	4.38	0.59	4.32	0.47	4.50
14.	Illinois	1.28	4.98	1.68	5.24	1.44	5.31
15.	Indiana	0.72	4.45	1.02	4.58	0.67	4.56
16.	Iowa	1.02	4.77	1.23	4.94	0.82	5.03
17.	Kansas	0.64	4.78	0.74	4.79	0.63	4.96
18.	Kentucky	0.73	3.89	0.72	4.06	0.52	4.02
19.	Louisiana	0.85	3.84	0.68	3.82	0.66	4.12
20.	Maine	1.11	4.69	1.45	4.68	1.07	4.93
21.	Maryland	1.43	5.46	1.72	5.74	1.07	5.94
22.	Massachusetts	1.88	5.76	1.72	6.02	1.82	6.16
23.	Michigan	1.11	4.88	1.39	4.94	0.98	4.76
24.	Minnesota	1.07	5.43	1.23	5.61	1.02	5.69
25.	Mississippi	0.71	3.54	0.77	3.55	0.69	3.81
26.	Missouri	0.94	4.37	1.00	4.49	0.67	4.60
27.	Montana	0.57	4.15	0.96	4.28	0.64	4.54
28.	Nebraska	0.53	4.78	0.74	4.91	0.58	5.11
29.	Nevada	0.94	4.41	1.28	4.47	1.04	4.63
30.	New Hampshire	0.98	5.47	1.20	5.63	1.00	5.73
31.	New Jersey	1.40	5.66	1.36	5.99	1.34	6.12
32.	New Mexico	1.00	4.31	1.36	4.29	1.20	4.52
33.	New York	1.71	5.28	1.75	5.62	1.64	5.66
34.	North Carolina	0.77	4.25	1.02	4.46	0.92	4.57
35.	North Dakota	0.54	4.39	0.85	4.79	0.43	4.90
36.	Ohio	0.92	4.68	1.09	4.68	0.84	4.71
37.	Oklahoma	0.63	3.97	0.52	3.93	0.45	4.14
38.	Oregon	1.00	4.72	1.43	4.75	1.28	4.86
39.	Pennsylvania	1.11	4.77	1.23	4.91	1.00	5.07
40.	Rhode Island	1.91	5.04	1.80	5.46	1.38	5.38
41.	South Carolina	0.72	4.05	0.83	4.19	0.75	4.35
42.	South Dakota	0.62	4.39	0.85	4.52	0.52	4.79
43.	Tennessee	0.92	4.00	0.74	4.08	0.57	4.22
44.	Texas	0.64	4.39	0.80	4.50	0.83	4.65
45.	Utah	0.39	4.71	0.55	4.72	0.60	5.03
46.	Vermont	1.24	5.00	2.23	5.24	1.90	5.31
47.	Virginia	0.85	5.01	1.15	5.39	1.14	5.47
48.	Washington	1.14	5.24	1.43	5.26	1.43	5.4
49.	West Virginia	0.88	3.63	0.75	3.82	0.38	3.95
50.	Wisconsin	1.00	4.95	1.33	5.07	0.98	5.16
51.	Wyoming	0.41	4.41	0.51	4.47	0.32	4.83

* Compiled with the use of: https://en.wikipedia.org/wiki/United_States_presidential_election,_2000 [35], https://en.wikipedia.org/wiki/United_States_presidential_election,_2008 [36], www.nytimes.com/elections/results/president [30; 31].

Figure 5. Graphic image of the model *(% Democratic / % Republican) = f(AHDI)*

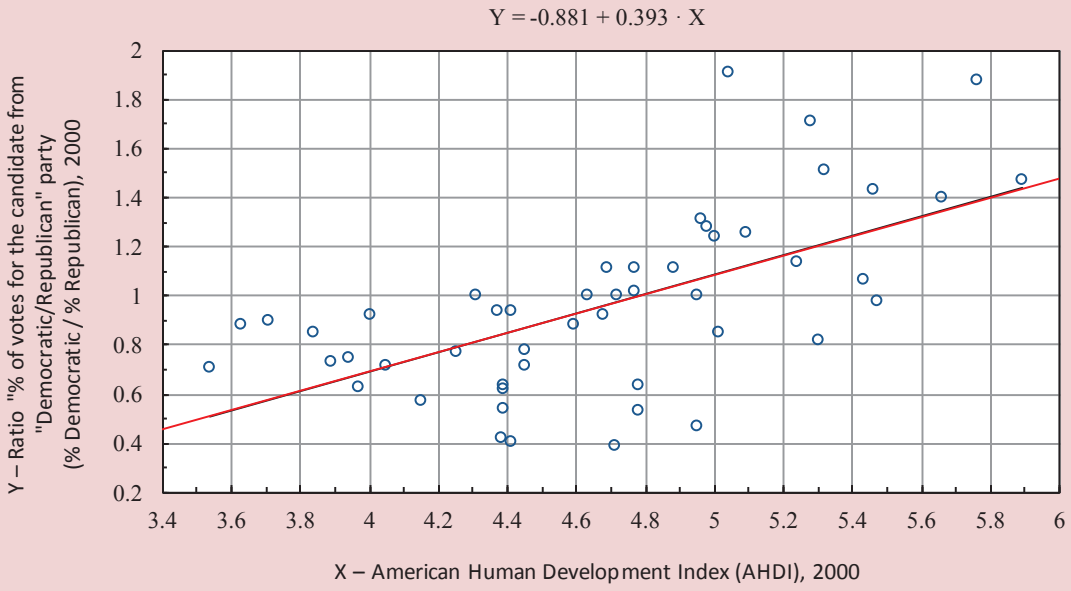


Figure 6. Graphic image of the model *(% Democratic / % Republican) = f(AHDI)*

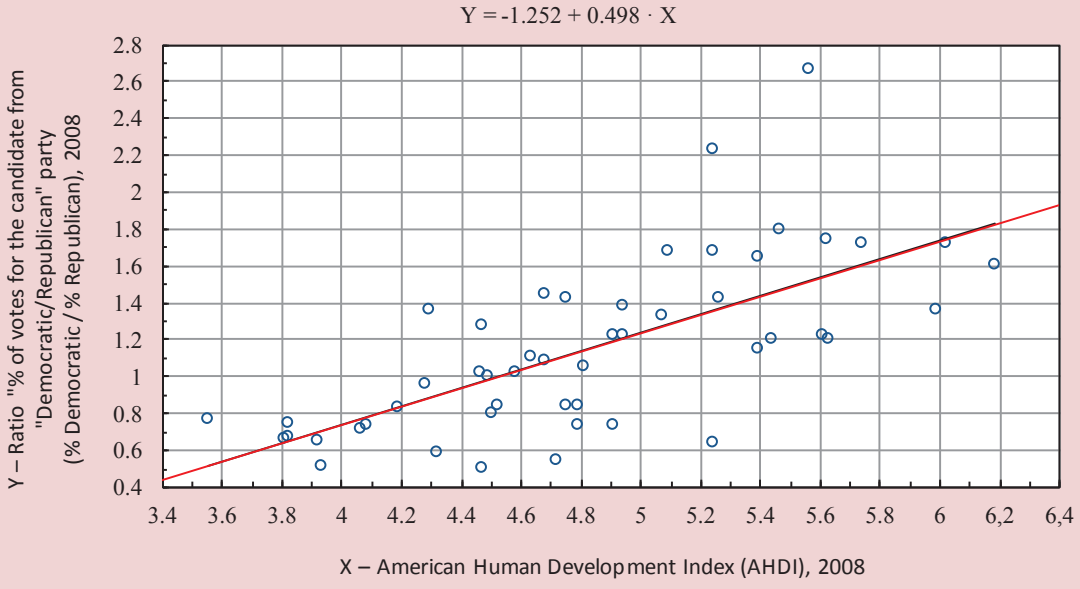


Table 4. Models *(% Democratic / % Republican) = f(AHDI)*

Years of presidential election in the U.S.	Model type *% Ratio = a + b · AHDI*	Values of model parameters and their meaning		
		a	*b*	Explanation of the physical meaning of parameter *b*
2000	*% Ratio = -0.88 + 0.39 · AHDI*	-0.88	0.39	*b* shows the degree of manifestation of the feature
2008	*% Ratio = -1.25 + 0.50 · AHDI*	-1.25	0.50	
2016	*% Ratio = -1.44 + 0.49 · AHDI*	-1.44	0.49	
Conclusion. During the presidential election in 2008 and 2016 the influence of *AHDI* on the outcome of the election was expressed to a greater extent than in 2000.				

representative of the rival political party is elected President? To answer this question, let us study the correlation between the value of AHDI and the relevant ratios *(% Democratic / % Republican)* in 2000 and 2008. This election is interesting mainly due to the change of representatives of various political parties in the position of President. In particular, in 2000, presidential power passed from the representative of the Democratic Party (Bill Clinton) to Republican George W. Bush; in 2008, the presidential election was again won by a Democrat (Barack Obama). *Table 3* shows the information necessary for the analysis.

Figures 5 and 6 show graphic images of the models *(% Democratic / % Republican) = f(AHDI)* defined according to the data as of 2000 and 2008. The dependencies corresponding to the election of *(Fig. 5)* and of 2008 *(Fig. 6)* are essentially identical to the counterpart based on the data as of 2016 (see Fig. 1). I.e., obviously, these dependencies are fairly stable and they reflect the underlying processes typical of American society. Besides, the statistical characteristics of the models *(% Democratic / % Republican) = f(AHDI)* defined according to the data as of 2000 and 2008 are virtually identical to their counterpart built according to the data as of 2016.

In this regard, it is necessary, at least in the first approximation, to understand the cause of this stability. *Table 4* shows for comparison the linear models *(% Democratic / % Republican) = f(AHDI)* that identify the processes under consideration.

We can see that for the models of 2008 and 2016 the value of parameter *b* in the model is virtually the same (0.50 and 0.49, respectively), which means that the transfer of power from the Republicans to the Democrats (2008) and from the Democrats to the Republicans (2016) equally depended on how well the current government promoted the quality of life of the population.

Discussion of research findings. The study carried out by the author helped identify the correlation relationships between the results of the 2016 U.S. presidential election and the characteristics of the *American Human Development Index* ($R^2 = 0.469$) and *Human*

Risk ($R^2 = 0.506$) for each state. The relationships show that *there is a statistical dependence between the quality of life in various U.S. states and the results of electoral behavior in these states.*

Considering the specifics of the models obtained, let us try and find the answers to the questions put earlier.

• Was voting for Donald Trump as President of the United States an element of the protest movement of Americans who are tired of politics of the Democratic Party? The dependence *(% Democratic / % Republican) = f(AHDI)* shown in Figure 1 proves that, most likely, there is a certain logic in this thesis. People voted for Hillary Clinton in those states where the quality of life is high *(AHDI > 5.2)*; electors from the states with a relatively low quality of life *(AHDI < 5.2)* voted for Donald Trump.

• Is this choice associated with the essential needs of the citizens of the United States in the changes in both external and domestic policy? It is easy and, at the same time, difficult to answer this question. On the one hand, according to the dialectical law of negation of the negation, this argument is quite legitimate. On the other hand, it is unclear how these sentiments can be assessed numerically. Probably, Trump's election theses about the necessity to turning the focus of attention of the federal authorities from foreign policy to domestic policy appealed to the population of those states in which the quality of life leaves much to be desired. It can be assumed that the voters expect the Republican Party not only to reverse the priorities from foreign policy to domestic policy, but also to introduce changes in the country, in particular, to improve the situation in those states where the quality of life is low.

• Were any spatial features of electoral behavior in different U.S. states manifested during the 2016 election? There were several such features. In particular, in nine states (about 18% of the total number of states) a large number (10%) of the votes were cast for a third candidate. This is one of the facts of negation of the candidates from the Democratic and Republican parties, i.e., in American politics the influence of the third force is gradually increasing. Another feature of the 2016 election is seen in an explicit confirmation of a theory of R. Kaplan [9] about the geographical aspect of economic and political preferences of voters. Residents of highly developed coastal areas are committed to a liberal democratic ideology, the inhabitants of continental regions of the country are more conservative and support the established norms of life. As a third feature we can recognized the existence of several states in which electoral behavior of the population differs significantly from the general trend, typical of most U.S. states. It is primarily the states of Hawaii and California, whose commitment to the values of the Democratic Party is much higher than could be expected in accordance with the model *(% Democratic / % Republican) = f(AHDI)* (see Fig. 1). The

opposite of these states, according to the specifics of electoral behavior are North Dakota, South Dakota, Wyoming and Nebraska (the states of the Midwest), which are characterized by a pronounced tendency to support the Republicans. If we compare these groups of states by the actual value of the ratio *(% Democratic / % Republican)*, then the difference is four times. This figure can be characterized as the level of significant differences between the fundamentals of the worldview of the population of various states. That is why, upon the election of Donald Trump President, in some areas of the country and particularly in the District of Columbia serious social unrest [34] was registered. A number of popular U.S. persons, mainly from the show business, declared they rejected the current political choice that the U.S. had made [21]. Perhaps, we jump to conclusions when we speak about a political split in the country; however, its initial signs were clearly manifested in the United States in November–December 2016.

Another important remark can be made while analyzing the data in Table 3, which presents the dynamics of the indicator *(% Democratic / % Republican)* in 2000–2016 in different states. Some of them (Alabama, Arkansas, Kentucky, Louisiana, Oklahoma, Tennessee, West Virginia) experienced a steady deterioration in the electoral attitude toward the policy of the Democratic Party, regardless of the activities of the President. It should be noted that these states, most of which belong geographically to the South of the country, are outsiders according to the quality of life.

Summarizing the results. The above models and reasoning can serve as the basis for building a spatial-logical model for formalizing the political choice of the American voter. The corresponding line of the behavioral choice of the voters in the U.S. can be described with the help of the following causal model (2).

Historical development of the United States as a nation – development of territorial space of the country by immigrants, often passionarians (according to L.N. Gumilev [6]), – formation of national demographic and cultural-historical features of behavior in the population of different states – gradual formation of regional clusters, the population in which acquires certain styles of worldview, roughly differentiated as conservative and innovative-mobile – emergence of traditions and rules of social and consumer behavior – implementation of commitment to these traditions in practice – comparison of the results of daily manifestation of assimilated life style to some desired subjective models – development of political culture – implementation of the ideology of this culture in the election. (2)

The model (2) that shows the formalization of political choice of the voter is not unique or typical only of the United States.

Such models that show the link between the influence of the quality of life in the territorial entities of any country and the outcome of agreement or disagreement with the policy of the ruling party in a more or less adequate form can be formalized for any other country in the world. The protest political movement almost always begins with a question: "Is there any chance to improve my life under the leadership of the country's ruling party"? Depending on the priority answer to this question the results of the next political election are generated. As for the U.S. in 2017, we can say: Americans are willing and waiting for change.

What did the first days of Donald Trump's presidency show? Undoubtedly, the U.S. presidential election is a global event that forms the so called "new reality". It stands to reason that Anatoly Chubais, who participated in the 47th World Economic Forum in Davos (January 17–20, 2017), described the psycho-emotional environment of the forum as "the horror of a global political catastrophe" [19]. It may be that Trump and his public behavior and promises do not correspond to the expectations and strategies of the world's political "elite", that the brightest representatives of this elite were confused even for the time required for the understanding of an event and selecting a new action strategy. At the same time there began a search for an external initiator of Trump's victory. The scandals around the attacks on the campaign headquarters of the U.S. Democratic Party, which allegedly involved Russian hackers, can serve as a telling example of such actions [18].

It is known that the potential of the actions of the newly elected President can almost always be judged by the initiatives of the first one hundred days of the presidency [17]. What did Donald Trump and his team do in the early days in power that was of importance? Without pretending to provide complete facts, I shall name the following. First, he formed his presidential Office. Second, he initiated a number of important developments in the foreign and domestic policy. Third, he made a number of bold statements that became landmarks in his strategy. While analyzing what happened in January–February 2017, analysts at RBC [16] point out that within six months in office, Trump has issued 15 decrees.

To date, key positions in the Trump Administration are determined: Rex W. Tillerson became secretary of state, Jeff Sessions – attorney general, James Mattis – secretary of defense, Mike Pompeo – director of the Central Intelligence Agency. The candidates for the positions of the secretary of transportation, education, health, and homeland security have been approved as well. Trump has proposed conservative Neil Gorsuch to the Supreme Court of the United States. Much attention was paid to the scandal concerning the resignation of Trump's national security advisor Michael Flynn, who met several times with Sergei Kislyak, the Russian Ambassador to the United States, in the summer of 2016 and was seen at the

celebration of the anniversary of the news agency Russia Today on December 10, 2015 in Moscow at the same table with Vladimir Putin [32].

The most important decisions that Trump adopted in domestic politics were the launch of the process of abolition of Obamacare – healthcare reform undertaken by his predecessor, Barack Obama, and the signing of the immigration act prohibiting entry into the United States to the citizens of seven countries (Syria, Iraq, Iran, Sudan, Libya, Somalia and Yemen).

The most important foreign policy actions undertaken by Trump and his administration include the meetings with the prime ministers of the United Kingdom, Japan, Canada and Israel, as well as the White House statement that Donald Trump expects Russia to give Crimea back to Ukraine and reduce violence in Ukraine.

It is also significant that Trump has publicly quarreled with leading American media such as The New York Times, CNN, ABC, NBC and The Washington Post, all of which informed the public about the contacts between the people from Trump's environment and the Russian Ambassador to the U.S. Sergei Kislyak.

And probably the most significant fact is Trump's request to the U.S. Congress concerning the allocation in March 2017 of additional 54 billion dollars to be added to the biggest military budget in the world (604.5 billion dollars) [1].

Experience for Russia. In the context of the results of the U.S. presidential election it is necessary to answer the two questions that are most important for Russia and Russians:

- What are the implications of the results of the U.S. presidential election in 2016 for the entire world politics and for Russia in particular?
- What key conclusions out of Trump's victory in the presidential race in the United States in 2016 must our leaders make? What circumstances need to be taken into account by the Russian authorities before the upcoming presidential election in Russia in 2018?

According to the untutored opinion of the author, Donald Trump, being a very extraordinary personality with extensive business experience, will try to transfer into reality the motto of his election campaign "Let's make America great again" through those practices and rules that worked quite successfully in his business career. Some superficial conclusions about his approach to doing things can be drawn from his numerous (24) books [20] that have self-explanatory names (e.g., "Never give up" or "The art to make deals"). In this regard, we can expect that Trump, realizing the notion of the need to restore his country to the greatness allegedly lost in recent years, would develop new rules in foreign policy, which would further increase monocentricity in the world in favor of the United States of America.

The possibility of such approaches can be proven by the fact that Mike Pompeo and James Mattis – obvious "hawks", i.e. advocates of a power approach to foreign political affairs according to the "hawks–doves" classification – were appointed to key positions [5; 10].

For Russia and its leadership, in the author's opinion, the effects of Donald Trump's presidency can be quite unexpected. Indeed, Trump has repeatedly declared his willingness to seek cooperation with the Kremlin. At the same time, it is not certain whether he considers cooperation as a search for mutually acceptable solutions, rather than for those that he sees as being advantageous for the United States.

With regard to the second essential question, there are wide opportunities for reflection on possible strategies for the next actions of our government for the coming year. Who could imagine a year before the U.S. presidential election that the outcome would be as it was on November 08, 2016? Even in September–October 2016, it seemed that Donald Trump had no serious reasons for being confident in his victory. Experts argue [14] that a large contribution to Trump's victory was made by experts from Cambridge Analytica specializing in the creation and dissemination of the so-called targeted advertising. This technology is based on gathering data about Internet users and creating a special, point-targeted advertising for them, including political advertising. However, it is unlikely that this modern method of information warfare would have worked if the American public would be satisfied with the policy, especially in domestic affairs, which was conducted by representatives of the U.S. Democratic Party. Another consideration is that the third law of dialectics – the law of negation of the negation – on the example of American political life clearly testifies that society demands a new quality of life, including that in the sphere of politics. Obviously, the lack of novelty in the practices of public life sooner or later creates an atmosphere that in our country was named "stagnation", and it is not the atmosphere that contributes to the development of civil society, economy, politics and the state in general. In this regard, a wake-up call for our government is the fact that in general the interest in political life on the part of Russian society is gradually decreasing. *Table 5* presents the data on voter turnout at the election to the State Duma of the Russian Federation of the 1st –7th convocations (1993–2016).

The data in Table 5 can be interpreted in different ways, but the fact remains: the results of the 2016 State Duma election turned out to be very controversial [8]. The leading role in the political life of the country belongs to the ruling party "United Russia", and remains such. But in 2007–2016 there was a considerable decrease in voter turnout (almost by a quarter compared to the election of 2007).

Table 5. Statistics on the election to the State Duma of the Russian Federation

Feature	Election to the State Duma of the Russian Federation of different convocations						
	I	II	III	IV	V	VI	VII
Date of election	12.12.1993	17.12.1995	19.12.1999	7.12.2003	2.12.2007	4.12.2011	18.09.2016
Voter turnout, %	54.81	64.76	61.85	55.75	63.71	60.21	47.88
% of the votes for the leading party	22.92	22.30	24.29	37.56	64.30	49.32	54.20
Leading party	LDPR	KPRF	KPRF	United Russia	United Russia	United Russia	United Russia
Leading party head	Vladimir Zhirinovsky	Gennady Zyuganov	Gennady Zyuganov	Boris Gryzlov	Vladimir Putin	Dmitry Medvedev	Dmitry Medvedev

It indicates the slowly emerging political apathy of citizens, the subconscious reluctance of Russians to share the joy of victory and, especially, the bitterness of failure with the government.

What do Russian authorities have to pay attention to in the context of the results of the 2016 U.S. presidential election? First of all, to the objective necessity of change. The change aimed to improve the quality of life of Russians.

Conclusion. Spatial-logical modeling of the formalization of the political choice of the voter in a democratic society is just one of the possible options for analyzing the forecast of future political events. It is not a cure-all and it does not provide accurate estimates. However, this tool can be used to study the dynamics of public sentiment along with other approaches to building the models for assessing the changes in socio-political life. The 2016 U.S. presidential election has shown this quite clearly.

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Theoretical and Methodological Approaches to Studying Social Reality

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Abstract. The processes occurring in Russia are pressing for the search for new infrastructure development and social development models. In the context of the ongoing crisis the government and the society must solve the common issue of qualitative changes in the life of the country, economic and social development. In this regard, studying social reality is becoming more relevant. The purpose for this research is to analyze the main approaches to the concept, nature and ways of forming social reality as the research object of social philosophy and sociology. Philosophical approaches to the nature and formation of social reality, which are based on works of European scholars of the 19-20th century, reflect the essence of this phenomenon in a number of ways. Modern world is characterized by an increasing importance of virtual reality, the opportunities of which are widely used for the formation of public

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Abstract. The article considers the issues concerning the inclusion of modern Russian youth in the processes of modernization; the study is based on the analysis of the results of a sociological research carried out using questionnaires. Modernization in the broadest theoretical terms is understood as a comprehensive and manageable process of renewal of the social system, its approximation to a qualitatively new state on the basis of deep civilizational changes with the aim of improving living conditions. In this case the specific and long-established features of the value system of specific regions are investigated as the most important resource of modernization projects. It is shown that there exists a system lag in the pace and quality of modernization processes in the regions of the Southern Federal District of Russia, as recorded in the statistics and responses of the representatives of the young generation of the macro region. The reason for this situation lies in the scale of alienation from the results of labor activity that are more clearly seen in the Southern Federal District than in Russia as a whole, and this is largely caused by the artificial (institutional) pumping of surplus value produced in its territory to other regions of the country. A large part of the added value obtained from the products and services produced in the district is not allocated to the development of its social infrastructure (in particular, education) and people's welfare. Under certain conditions, the project called "Modernization" could become a program image of the future of modern Russia; this idea is registered in the answers of modern students. But in reality, in many regions, modernization projects on the indicators vital for the population acquire a character of quasi-modernization or even de-modernization. This is reflected in the high migration request of students, which in the Southern Federal District is higher than that in the amount of respondents in Russia as a whole. Thus, there exist two phenomena, the social value of which consists largely in their focus on the future – youth and modernization. But the vectors of this orientation among modern Russian youth and modernization projects of the country are different, which requires adjustment of youth policy.

Key words: modernization, youth, students, social processes, region, federal district, Southern Federal District, values.

Modern Russia is currently going through a period of social transformation. There still is the issue of identification of changes taking place in the country. Is the period of rapid reforms correlated with progress or degradation? What is the purpose and the expected outcomes of reforms at the current stage? Projects such as "Market relations in 500 days" have passed away, the term "capitalism" has virtually disappeared from political rhetoric [10, p. 19], terms such as "civil society" and "social state" are less often used, and according to political rhetoric, we have already reached democracy.

All these issues are very acute for the whole society, especially for the youth as a social demographic group allocated "on the basis of age characteristics, specific features of social

status caused by socio-psychological qualities which are determined by the social system, culture, socialization patterns, education of the society; modern youth aged 14–16 to 25–30, whose proportion in the population amounts to 20%" [2, p. 147]. Young people can also be identified as a subject of social relations, which, according to E.M. Babosov, is in the process of formation and development of social, physiological, cultural and civic maturity adapted to the social statuses and roles which are characteristic of adults[1], and which, according to P. Bourdieu "has nothing" [3]. Indeed, having physical strength, turbulent energy due to age, but possessing no maturity or wisdom inherent in older generations, young people are future-oriented, they have nothing in this sense and have to establish their social status associated with having a family, profession and a sustainable position in the society. S.I. Ikonnikova and V.T. Lisovskii study youth as a generation which differs form other generations not only in age, but also in a set of goals, aspirations, beliefs, interests and values, shared experiences and attitude towards life [14]. Will the project entitled "modernization" become part of aspirations of modern Russian youth? Especially given that modern Russian youth is considered as not only as a "pro-Putin" generation [25, p. 103], but also as a generation of pragmatists [6; 28], rational egotists [33]; the goals of modernization should at least coincide with young people's ideas about their own purposes. Thus, it is necessary to explore young people's social well-being, their attitude to social reality in order to develop a complex of measures on modernization of the Russian society.

In order to solve this problem, it is first necessary to understand the essence of the term "modernization". Modernization primarily implies the transition from traditional agrarian society to secular, urban, and industrial. Thus, amid this understanding modernization is associated with a specific stage of historical development of a social system. But there is also a point of view which defines modernization as a continuous and endless process which accompanies the whole development of human history [20, p. 468] and is interpreted as a social system update and its approach to a qualitatively new state based on deep civilizational changes [21, p. 29]. In this sense, the concept "modernization" approaches the concepts "innovation", "reform" [37, p. 190] and is opposed to archaization.

The term "modernization" comes from the French word "modernizer, modern", which means "make modern"[2]. Thus,

[1] Babosov E.M. *Sotsiologiya. Entsiklopedicheskii slovar'* [Sociology. Encyclopedic dictionary]. Moscow: ISPI RAN, 2009. P. 265.

[2] I.V. Lekhin, F.N. Petrov (Eds.). *Kratkii slovar' inostrannykh slov* [Concise foreign dictionary]. 6th edition, revised and expanded. Moscow: Gosudarstvennoe izd-vo inostrannykh i natsional'nykh slovarei, 1951. P. 254.

modernization implies not all range of changes and improvements, but only those meeting "modern demands and tastes of modern age...[3] That is why even the classical sense of the term "modernization" does not identify it with "industrialization" and includes a wider range of social processes which can be seen both as a mechanism, condition and a kind of modernization purpose determining the benefits and costs of this process. For example, E. Durkheim interprets modernization as a process of social differentiation, M. Weber – as a process of rationalization, K. Marx – as a process of commodification[4], the theorists of evolutionism (structural functionalism) – as a process of social differentiation including political pluralism "with simultaneous integration, coordination, "organic" connection of differentiated elements" [39, p. 527].

There is also a point of view according to which "modernization... implies that knowledge is a decisive factor in the improvement of activities of economic entities, government authorities, social groups, and individuals" [37, p. 360].

According to Chinese researcher He Chuanqi, present-day modernization is a holistic socio-cultural process the main objective of which is "safety of the state and society and development of scenarios of further development to improve living conditions" [30, p. 7].

Several authors note the importance of the micro-social level of modernization processes in the society, which "affects individual choice and interpersonal relationships" [35, p. 61]. Social psychologists are looking for sources of modernization processes conditionalism in personal growth, i.e. in changes in "individual's personal, individual attitudes, motivations, orientations" [39, p. 528].

The idea about personal growth in the modernization theory is related to an important (and often politically biased) issue of what values and moral standards ensure the modernization process. There is a view according to which modernization is accompanied by replacement of traditional values which are hostile to social changes and economic growth. When developing this postulate, theorists of structural functionalism rely on the following principles: "a) the opposition of modern and traditional society which is viewed as an obstacle to economic development; b) the development through evolutionary stages very similar for all societies; c) the need of the third world countries to withdraw from tradition; d) a society of the Western type, (westernized society) is the preferred and more likely outcome"[5]. Terms such as "retarded", "catching-up" modernization are appearing.

[3] Ibid.

[4] A.O. Boronoev, I.F. Kefeli (Eds.). *Sotsiologiya: uchebnyi slovar'* [Sociology: learner's dictionary]. Saint Petersburg: BGTU, 2009. P. 72.

[5] Ibid.

Accordingly, amid this understanding, modernization is becoming a quite tough and tyrannical form of globalist projects such as westernization and americanization.

The criticism of such understanding of modernization led to the emergence of neo-modernist concepts of multicultural modernization, the theorists of which insist there is a possibility of transition from the traditional society to modern industrial given the specific features of a civilization [16; 19; 26; 31; 41]. As noted by I.V. Kutyreva, "there are no modernization laws in which all societies evolve the same way... As for social modernization, it should be noted that its basics lie not only in attitudes, but also in deeper levels, i.e. in the structures of the consciousness. Mentality serves as an underlying spiritual basis of social modernization" [20, pp. 468-469].

A number of researchers note that the withdrawal from traditional values accompanied by the deterioration of the population's moral and cultural characteristics causes family crisis, reproductive extinction and the aging of the nation [see, for example, 42, p. 462]. As noted above, indeed, the modernization processes are accompanied by growth of personal development and, consequently, a temporary decline in fertility, as observed in the modern period. The issue is how global this process is and whether it reveals itself in all forms of modernization. Thus, V.E. Bagdasaryan notes that amid the globalization scenario which is contrary to the civilizational identity of national communities, the decline in fertility is observed in the countries where the modernization process was carried out by relying on traditional values, no reproduction crisis is observed [1, pp. 11-18].

These reflections result in the re-interpretation of the correlation between the dichotomies "modern–traditional", "modernized–archaic", "modernization–archaization" from their simple opposition to a more complex analysis. Modern social systems are successfully operating on the basis of the existing traditional elements [40, pp. 170-185]; modernization and tradition are in a dialectical interaction, reinforcing each other, tradition also serves as factor in stabilization of modernization processes.

There is also a point of view that catching-up modernization is accompanied by archaization and crisis [13, pp. 41-42], and modernization processes are not irreversible and can be accompanied by periods of de-modernization and archaization (neo-archaism) [38, p. 3].

Putting forward the thesis of civilizational specific features and lack of unified laws and stages of modernization process development, researchers, wishing or not, pass from the consideration of the influence of time factor

on modernization processes to the space factor. Moreover, it is emphasized that regional modernization is not synonymous to national in miniature, just like modernization of a group of countries is not analogous to the upgrading of individual countries in miniature [30, p. 105]. According to N.V. Zubarevich, "modernization processes are faster where there are best conditions for innovation diffusion – higher population concentration and quality, a more developed infrastructure, smaller economic distance, and lower institutional barriers. The need for lowering all the three barriers of spatial development is obvious but they are long-term and sustainable in their nature" [12, p. 99].

The issue related to the system of values, the ratio of tradition and innovation also arises when researchers analyze the issue of modernization reform pace. For example, U. Beck and A. Giddens noted the high pace of change, which leads to the growing risks in the modern society [2; 5]. P. Sztompka writes about the trauma of social change [39, p. 472-492].

Ideas about the painfulness and risks of modernization arise the problem of benefits and costs, i.e. the PRICE of any social processes, including modernization. It would be logical in this context to raise the question of whether modernization is a controlled or a spontaneous process. For example, P. Sztompka believes that "modernization is not a manifestation, a gradual, spontaneous implementation of internal social trends, but a process directed and stimulated from the outside... Modernization can be defined as the approach of the society to a recognized model f modernity through conscious implementation of certain intentions, goals, and plans" [39, pp. 527-528]. The idea of balanced and controlled modernization is also being developed by He Chuanqi [30].

Quite controversial is the understanding of modernization through understanding the processes in the Russian society and their consequences for the modern stage of Russia's development. It is especially characteristic of the issues of goals, specific plans and strategies, management and modernization actors in a particular historical period and in a specific country – Russia.

Thus, Russian scientists have critically re-considered Russia's historical experience in the terminology of "accelerated" or forced modernization as "a goal-oriented form of development related to actualization of personal and group resources, re-consideration of the hierarchy of social values and preferences, inheritance of traditional forms of identity" [29, p. 8]. The experience of accelerated modernization in the Russian consciousness is allegedly associated "with material deprivation and rationing of social

goods according to their official status" [29, p. 22] and the consequence of this experience is group egotism which "inhibits the efforts of social consolidation of the society, establishment of an effective state and progress towards social modernization" [29, p. 3]. It turns out that as a result of forced modernization, controlled (as it should be), but imposed on the Russians by the government, Russians are the losers, tired and exhausted of social construction, they are the victims. But this is the mistake of the previous period; Russians are now in need of implementing their own opportunistic (consumer) interests, of care, rest, comfort, happiness. Group selfishness is justified, consumption needs are to be satisfied, they are related to consumption which without an appropriate system of values is transformed into petty bourgeoisie described in the 19th century by A.I. Herzen: "Bourgeoisie erases personalities, however, such "erased" people are more satisfied; wearing ordinary dresses, not tailor made, not quite fitted, but more people wear them. Bourgeoisie erases the beauty of the breed, but increases its welfare" [4, p. 36]. Under the influence of consumerism as a value in modern Russia the whole generation has been bought up, which is unlikely to be at the forefront of modernization.

In general, the development of theoretical ideas about modernization has led to its understanding as a contradictory and disputed process [20, p. 468]. Therefore only some researchers consider it part of the process of social development and assess it in a positive way [37, p. 190], and some are more negative towards it [42, p. 462].

What position is the Russian youth going to take today? Is it going to happen within a particular region or macro-region? In the context of this article the authors study students of the Southern Federal district. It should be noted that students play a very special role in the cohort of the younger generation. On the one hand, the main objective of students is to acquire education, which somewhat distances them from other objectives such as starting a family, for example. On the other hand, such remoteness determines the students' status position of an active subject of social relations which is future-oriented just like a modernization project. In the authors' view, participation in this project will help the youth form an image of the future. Acquiring quality education increases the opportunities of former students in terms of successful participation in the modernization process.

In order to reveal the specific features of challenges facing the youth of the Southern Federal district it is necessary to noted the main results of development of this Federal district for 2000–2012. The results have been calculated on the basis of program

"Sociocultural evolution of Russia and its regions" developed by the Center for Studying Socio-Cultural Changes at Institute of Philosophy of the Russian Academy of Sciences (supervisor: N.I. Lapin, L.A. Belyaeva) with the use of the research methodology of Center for Modernization at the Chinese Academy of Sciences. Data by region are calculated using the Modernization Information System (ISEDT RAS, Vologda) [for more detail see 7; 8; 17; 18; 23; 24; 34; 36].

All regions of the Southern Federal district are at the stage of initial modernization and are not included in the stage of secondary modernization. By 2012, the district ranks 4th among federal districts by sustainability of the modernization process, 6th – by final indicator of primary modernization, last – by final indicator of secondary and integrated modernization; the lagging of all indicators of primary and secondary modernization from the national average still remains. The District's modernization indicators are lover than the national average index of knowledge translation (91,8% against 93.6%), the economic quality (42.8% against 53.5%), much lower by index of innovation in knowledge (25.2% against 55.7%), integrated index of modernization sustainability (0.397 against 0.969). Although the value of the latter has increased from "below average" to "average". The difference in indicators of integrated modernization index by district and in the country as a whole is about 10% (59.1% and 67% respectively).

Five subjects of the Southern Federal District out of six are characterized by upward mobility of modernization states. Since 2008 the Rostov Oblast has been in at the stage of primary modernization ("maturity") and moved on to a higher level – from type 2 to type 3. Since 2005, Krasnodar Krai has also increased the quality of primary modernization process – the region has overcome the "pre-traditional" stage and moved on to the "below the median" phase, and in 2012 – to the "medium" stage. In 2011, three regions – the Astrakhan and Volgograd oblasts and the Republic of Adygea came out of retarded growth of primary modernization: the Astrakhan and Volgograd oblasts entered the "medium" stage and the Republic of Adygea moved from "pre-traditional" to the "below the median" stage. The Republic of Kalmykia is now at the stage of sustained stagnation of primary modernization – the lowest "pre-traditional" stage. Thus, there is a system lag of the pace and quality of modernization processes in the Southern Federal district [for more detail see 7; 8; 17].

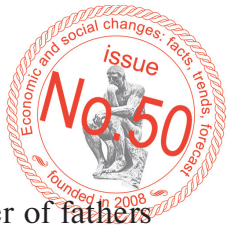
As for the **technological modernization component**, its essence consists in transition to new technological paradigms and connected with the state of education and

science in the region. In this context, it is important for the youth to assess the state of the educational system. Some answers to these questions became possible to obtain based on analysis of the results of the national initiative sociological research[6].

The educational environment is strategic in the knowledge society, the main capital of which is intelligence and the employee's personal resources. Among the answers to the question: "What about rich people... In Your opinion, how often do they gained wealth due to the following reasons?" was "good education". Students' responses are summarized in the final index. The index value for this option across the array amounted to 2.81 points, in Astrakhan – 2.85, in Volgograd – 2.82 (with the maximum possible value of 4 points). Answering the questions about the causes of poverty in Russia young people pointed to "poor quality of education they receive", the index value of which amounted to 1.99 points among all respondents (with the maximum possible value of 4 points). It seems to be not very much. But the value of this index among students of the two Russian cities is somewhat higher than the whole array, and makes up 2.04 points, being higher in Astrakhan than in Volgograd (2.08 against 2.01 points). The difference with the national average is small but the District is lagging behind in terms of modernization, especially in the knowledge innovation index.

When answering the question about the reasons which caused unfair treatment to them personally, 14.8% of students surveyed in Russia as a whole responded: "Your level of education", however, in the cities of the Southern Federal district this figure is somewhat larger and amounts to 17.8% (due to the answers of Astrakhan citizens:

[6] *Technical research* parameters: a specific sociological research "Students about social inequality and social justice" was initiated and conducted by the Russian Society of Sociologists (RSS). Research objects – students of Russia's higher educational establishments. Method of data collection – questionnaire. The total number of respondents 3964 people from 71 higher educational establishments in 26 Russian cities. The field research took place in April–May 2016. The full set of technical research parameters are presented at the official RSS website. The Southern Federal district includes Volgograd and Astrakhan. In Volgograd, 600 people were questioned (49.5% young women and 50.5% young men), in Astrakhan – 300people (57.2 and 42.8%). In Astrakhan and Volgograd, the research was carried out under the supervision and with participation of the authors. The research was of a scoping nature, the results may either be applied only to the sampling or be used as reference data. However, it appears that large sampling helps draw well-founded conclusions. Data processing was performed using the Vortex software complex (developed by D.V. Shkurin, Ph. D. in Sociology, Associate Professor at the Department for Applied Sociology, Ural Federal University named after the first President of Russia B.N. Yeltsin). Data analysis included the review of linear distributions and scaling. The scaling proposed for analysis was different: only with positive numbers, with positive and negative numbers. If the respondents have a positive view on the object within a given scale, their rating will be closer to the positive pole, i.e. it will have a numeric expression depending on the extent of a positive assessment. If negative assessment takes place the evaluation will shift to the negative pole taking a numeric expression depending on the extent of the negative assessment. In each case the maximum and minimum values of the scale are discussed separately. Such a scale is only viable if polar characteristics (antonyms) have clearly expressed positive or negative values, as, for example, a couple of properties "absolutely fair" – "absolutely unfair". In questions where the use of the "plus" and "minus" scale helps the respondent chose the desired response, scaling with positive numbers was used (as neutral in its expression), followed by assignment of distinct integers already at the stage of information processing.



21.8% against 13.8% respectively). Thus, the students are aware of the importance of education in modern times and the disadvantages of the regional educational system which reduce human potential of the region's youth. This is particularly evident in the medium-population city of Astrakhan compared to the million city of Volgograd. In fact, according to the studies, urban systems play an important role in economic growth and industrial development, and accordingly, the pace and outcome of regional modernization [30, p. 105].

Regional differences in human potential are also well recorded in answers to the question: "What is your parents' level of education?" (*Tab. 1*).

There are no significant differences in the cities of the Southern Federal district from the national results, but compared to the students' fathers in Volgograd, the number of fathers with primary education in Astrakhan is 4% greater and 10% greater among fathers with secondary technical education, but 20% less among those with higher education. The difference is less significant in the number of mothers with higher education and accounts for about 7% in favor of Volgograd. The number of mothers with higher education on average in the two cities of the Southern Federal district is almost 10% greater than that of fathers. There is no such difference among the citizens of Volgograd, but it is 14% among the residents of Astrakhan. In addition, among the whole number of respondents about 2% do not know what their mothers' education is, and 7% of respondents – their fathers' education. It should be noted that in Astrakhan, this figure is two times greater than in Volgograd.

Table 1. Students' answers to the question: "What is your parents' level of education?", % of respondents

Variants	Father			Mother		
	Russia	Astrakhan	Volgograd	Russia	Astrakhan	Volgograd
Primary, incomplete secondary	0.97	0.34	0.89	0.64	1.03	0.22
General secondary (high school)	6.68	7.48	5.56	5.68	14.79	5.71
Elementary vocational education, vocational education (vocational training schools)	11.55	12.24	8.67	9.26	8.9	7.47
Secondary technical education (technical school)	28.43	32.31	22.44	26.5	26.37	23.96
Incomplete higher education (3 course education in a higher educational establishment)	4.18	4.42	4.22	5.5	7.88	6.59
Higher education	38.58	31.63	51.11	48.38	45.55	52.31
Academic degree – post-graduate education, dissertation	2.17	1.36	1.56	2.11	1.71	1.76
I do not know	7.45	10.2	5.56	1.93	3.77	1.98

It can be concluded that the research results prove a certain lag of the educational system in the Federal district compared to the national average. The survey results are confirmed by statistical data.

As for the modernization **socio-economic component**, the index of economic quality indicates the region's ability to implement one of the functions of the socio-cultural entity amid modern challenges – life-sustaining (for more detail on the functions of a region as a socio-cultural entity see [22]), which is implemented in the population's labor activity. If, according to V.Ya. Emel'yanov, work is a source of progressive development on the basis of the law of user value expressing the excess labor results over its cost, where the user value refers to actual wealth, acquisition of values necessary for life and useful for the society [9, p. 36], the region's life-sustaining function is implemented with the social utility of labor results, their equal distribution among the region's population.

How fair is the distribution of labor results for the students? Or, in other words, how, in their opinion, socially useful are the labor results? The answers to the question about the reasons of personal richness in modern Russia are summarized into the index value, the maximum of which is 4 units, minimum – 0. Thus, "hard work" as the reason of personal richness gained 2.85 points in the whole array, on average in the two cities of the Southern Federal district it is slightly less and amounts to 2.74 points. The difference between the responses of the residents of Astrakhan and Volgograd in this case is not significant (Astrakhan – 2.7 points, Volgograd– 2.78 points). What is significant is that hard work as the cause of richness is not crucial, it is less important in the Southern Federal district than in Russia as a whole. This indicates the extent of alienation from the labor results which are more clearly apparent in the Southern Federal district than in Russia as a whole.

The extent of this process – alienation of labor results where labor becomes useless, forcing people to survive, rather than harmoniously and fully develop – is possible to identify on the basis of the results of students' answers to the question: "We are interested in your opinion on how fairly the representatives of different professions and retirees are paid for their work?" The answers are summarized in the index, the minimum value of which is "-1", maximum – "+1". The negative index value means that the students' responses are mostly negative, such as "are paid much less than deserved" and "are paid less than deserved"; a positive value – answers such as "are paid much more than they deserve" and "are paid more than they deserve". As can be assumed, ideally, the evaluation of labor of the representatives of various professions in the value of the final generalized index must tend to zero, i.e. when

the vast majority of respondents choose the option "are paid what they deserve". Only with such values labor is evaluated fairly.

As can be seen in students' assessments, none of the presented occupations is fairly paid (*Tab. 2*). The prevailing is the opinion that the representatives of these professions are paid less than they deserve. These include owners of small grocery stores, university professors, ordinary engineers at big plants, high qualification surgeons in city hospitals, street sweepers, factory workers, and doctors at the clinic. At the very social "bottom" is the work of a retiree with 40 year working experience. Only the evaluation of labor of an owner of a small grocery store is close to the "ideal" zero value.

Judging by the data array as a whole and for the Southern Federal district, federal ministers, average bureaucrats in local administration and managers of large factories are paid more than they deserve. When choosing between these professions, the values of the composite index are exponentially different: a federal minister is paid two times more than they deserve than an average bureaucrat in local administration, an average bureaucrat – respectively two times more than a big factory manager. Students' answers very well demonstrate their ideas about which population group has benefited most (unfairly) in recent decades during the reforms in modern Russia.

The responses of students in the Southern Federal district demonstrate a quite clear macro-regional profile of perceptions of social injustice – the least fairly paid in the macro-region are engineers, shop owners, professors, surgeons, doctors and street

Table 2. Students' answers to the question: "We are interested in your opinion on how fairly the representatives of different professions and retirees are paid for their work?", indices

Variants	Unit of administrative subdivision			
	Russia	Southern Federal district	Astrakhan	Volgograd
Federal Minister	0.626	0.640	0.567	0.714
Average bureaucrat in local administration	0.431	0.475	0.441	0.510
Big factory manager	0.209	0.202	0.191	0.191
Owner of a small grocery store	-0.036	-0.055	-0.068	-0.043
University professor	-0.322	-0.367	-0.374	-0.360
Average engineer at a big plant	-0.364	-0.384	-0.322	-0.447
High qualification surgeon in a city hospital	-0.398	-0.429	-0.405	-0.453
Street sweeper	-0.497	-0.481	-0.481	-0.498
Factory worker	-0.546	-0.549	-0.525	-0.573
Doctor at a clinic	-0.578	- 0.642	-0.601	-0.684
Retiree with 40 year working experience	-0.732	-0.730	-0.719	-0.741

sweepers. In Astrakhan, this category includes shop owners, professors, surgeons and doctors; in Volgograd – engineers, surgeons, factory workers, doctors, shop owners, professors and retirees. Thus, residents of Volgograd are more opinionated than those of Astrakhan.

According to students of the Southern Federal district, federal ministers and officials of the local administration are paid more than they deserve. The residents of Volgograd are more critical in their assessments of activities of the former, as well as of managers of large plants. The residents of Astrakhan mostly consider remuneration of big factory managers fair, compared to an average student in Volgograd or Russia as a whole, according to both, federal ministers' work results are somewhat better than those of local administration bureaucrats.

According to the assessment of remuneration fairness for seven out of the eleven represented socio-professional groups, students of the Southern Federal district are more critical than in Russia as a whole. This demonstrates the backwardness of the socio-economic modernization component in the macro-region caused by largely artificial (institutional) pumping of surplus value produced in its territory to other regions of the country.

Poor economic quality leads to backwardness of the **socio-cultural modernization component**, since a great part of the added value obtained from products and services generated in the area is not used for developing its social infrastructure and population's welfare.

Such unequal distribution of social benefits is reflected in the students' responses. From the students' answers to the question: "What feelings do you experience when you think about how budget revenues are allocated in our country?" – it is evident that negative emotions are 2.6 times more prevailing than positive (*Tab. 3*). Thus, by total responses, the students of the Southern Federal district have demonstrated more emotions than in the whole data array (176.7% against 168.6% of respondents), and 10.8% more negative emotions than positive. This is despite the fact that in the whole data array, the socially significant part of respondents (12.8% of respondents) missed the answer to this question. And again, in the Southern Federal district, this category is 3.2% smaller. Students of the Southern Federal district experience more irritation (mostly students from Astrakhan), bitterness (mostly students from Volgograd), pessimism (mostly students from Volgograd).

However, the human potential of Astrakhan residents, somewhat reduced due to their parents' education, is also reduced compared to the Volgograd residents by level of parental household income. Analysis of students'' answers to the question: "Which category does your family belong to by

Table 3. Students' answers to the question: "What feelings do you experience when you think about how budget revenues are allocated in our country?", % of respondents

Variants	Unit of administrative subdivision			
	Astrakhan	Volgograd	Southern Federal district	Russia
Irritation	36.47	32.63	34.55	29.38
Despair	27.82	29.81	28.81	27.13
Bitterness	23.31	25.59	24.45	22.41
Hope	22.56	22.77	22.66	21.72
Pessimism	19.17	20.42	19.79	17.70
Anger	14.29	15.02	14.65	14.81
Indifference	13.16	10.33	11.74	13.19
Composure	7.89	8.92	8.40	9.80
Optimism	5.26	7.28	6.27	5.64
Satisfaction	2.26	1.41	1.83	3.30
Other feelings	2.26	1.41	1.83	1.88
Happiness	1.88	1.41	1.64	1.65
Negative feelings	121.06	123.47	122.25	111.43
Positive feelings	39.85	41.79	40.82	42.11
Total	176.32	177.00	176.66	168.59
Missed	11.33	7.79	9.56	12.76

income level?" – demonstrates that among the residents of Astrakhan, there are 2% more poor families (3.4% against 1.1%), 7% more midi families (18.4% against 11.1%), but 5% less privileged families (45.24% against 50.11%) and 5% less wealthy families (24.5% against 29.9%). Accordingly, once again it is confirmed that the higher is the level of education, the higher the income level.

It is very difficult to analyze the **institutional and regulatory modernization components** using sociological techniques, as there are very few statistical indicators of social institutions activity, and the results of sociological research are quite difficult to interpret unambiguously. Among the students' answers to the question: "Have you in the past twelve months dealt with the manifestation of the injustice done to you personally? How often has it happened in the following situations?" – answers such as "when dealing with local officials" scored 1.1 in the final generalized index in the whole data array, whereas in the Southern Federal distract – 1.2. Thus, the profile of "personal injustice" in the Southern federal district officials are a greater tension factor than in Russia as a while, being greater in Astrakhan than in Volgograd (1.23 against 1.19 points). Assessment of labor remuneration of a federal minister and officials in local administration is also remembered as the most excessive and unfair.

The purpose for modernization is the country's security. One of the indicators of social institution effectiveness is the established order and laws for ensuring safety. However, according to the results of the survey among students, in general, breaking the law, crimes are considered a more important reason for gaining wealth than a reasonable lifestyle, talents and abilities, good health and strength, government policies encouraging entrepreneurship, favorable laws, luck and economic development (2.33 against 2.31; 2.30; 2.10; 2.26; 2.14 and 2.12 points respectively). In the Southern Federal district this list also includes proper family education because this factor as a source of wealth is estimated slightly lower than violations of the law and crimes (2.4 points against 2.3). Moreover, the violation of law as a source of wealth is estimated as a more significant one (critically realistic?) by the Volgograd residents (2.5 points against 2.3). In the Southern Federal district, violations of law, crimes are also complemented by involvement in criminal structures, which as the source of wealth is assessed by the students as a more significant one than in Russia as a whole (2.4 points against 2.2), and the same estimation by the Volgograd residents is higher than those in Astrakhan (2.5 points against 2.3).

Students of the Southern Federal district to a much lesser extent agreed with the statement: "In a just society, people always follow the laws even if they consider them wrong" (0.238 points against 0.172 with a maximum index value of 1), their number in Volgograd is less than in Astrakhan (0.155 against 0.189 points), as well as with the statement: "In a just society, all acute conflicts and contradictions are resolved in court" (0.313 points in the whole array against 0.304 points in the Southern Federal district, in Volgograd being more than in Astrakhan (0.36 points against 0.249). It can be assumed that Astrakhan residents are more inclined to resolve conflicts in interpersonal (primary) social relations, rather than in a formal institutional environment.

Young people were asked to rate how positive or negative are the feelings evoked by words and expressions in the context of their perception as principles of political programs. Indices related to these words and expressions were calculated: the number of negative responses was subtracted from the number of positive responses and divided by 100. Thus, if all answers are positive, the index value equals 1. Among these words, the most interesting is "modernization". This word evokes more positive feelings as the index value in Russia and the Southern Federal district is 0.64 and 0.63, respectively, though far from 1. Thus, under certain conditions, the project called "Modernization" could be the program image of modern Russia's future. But, as noted by V.A. Zimin, "nowadays... Russia's image of the future is rather blurred in the mass consciousness. It is fractured into

competing (and equally weakly supported by scientific and ideological argumentation) projects mostly reproducing either past domestic or foreign experience of solving modernization issues" [11, pp. 18–19]. According to E.I. Pashinina, "government recommendations and calls for modernization are not secured by material reinforcements; employers do not have sufficient motive and resources for implementing science-intensive advanced technologies, developing health- and environment-friendly industries" [32, p. 77]. A number of researchers emphasize that modernization projects in many regions are in fact becoming quasi-modernized [21, p. 31], and even de-modernized [15, p. 36] by indicators vital for the population.

It is known that the figures are silent by themselves, but they help have a different look at the world and see it through the eyes of other people, in this case, through the eyes of modern students. Their image of the world is not quite brightly colored: according to the results of the survey in general, each 4th respondent is willing to leave the country. In the Southern Federal district this figure is slightly higher due to the answers of Astrakhan residents, among which each 3rd declares their intention to live permanently in another country. The evaluation of the students' migration needs in the context of modernization assumes that most active want to leave the country, i.e. the vanguard of modernization. One of the main reasons lies in the fact that today's youth perceives labor remuneration distribution existing in Russia as unjust and illegitimate, which is a subjective factor in the deepening labor alienation, the objective reasons of which are the socio-economic issues: decline in production and standards of living, low workforce. In the Southern Federal district, these processes are expressed sharper exacerbated by the shortcomings of the regional educational system, which lowers the chances of survival and adaptation in the region's specific social environment, not to mention participation in modernization projects.

Thus, there are two phenomena the social value of which lies largely in their focus on the future – the youth and modernization. But modern Russian youth and modernization projects have different purposes, which requires the adjustment of the youth policy.

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Theoretical and Methodological Approaches to Studying Social Reality

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Abstract. The processes occurring in Russia are pressing for the search for new infrastructure development and social development models. In the context of the ongoing crisis the government and the society must solve the common issue of qualitative changes in the life of the country, economic and social development. In this regard, studying social reality is becoming more relevant. The purpose for this research is to analyze the main approaches to the concept, nature and ways of forming social reality as the research object of social philosophy and sociology. Philosophical approaches to the nature and formation of social reality, which are based on works of European scholars of the 19-20th century, reflect the essence of this phenomenon in a number of ways. Modern world is characterized by an increasing importance of virtual reality, the opportunities of which are widely used for the formation of public

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consciousness. According to analysis results, profound sociological study of social reality requires the use of achievements of all philosophical schools and approaches. Without their integration, the image of social reality will be one-sided, which will make in impossible to apply the research results for effective social management.

Key words: reality, social reality, virtual reality, structure of social reality, theoretical and methodological approaches.

The processes taking place in modern Russia and globally strongly demand new patterns of development of various societies. The regulation of these processes is possible with their research, implementation of effective public control, as well as communication between the object and subject of social management. Amid the ongoing crisis, the government and society should deal with their common objective of achieving qualitative changes in life in the country, its economy, its social, spiritual and cultural spheres [1, p. 100].

The dynamic nature and complexity of the modern world being filled with virtual elements providing unprecedented opportunities for constructing social reality, managing social processes, opening up new horizons for social opportunities and social progress, requires profound knowledge of the social reality confronting people as a result and goal of social activities [26, p. 5]. In this regard, a comprehensive study of social reality becomes a pressing issue for modern science – social philosophy and sociology.

The purpose for this study is to analyze the main approaches to the nature and definition of social reality and ways of its formation in the modern world.

The concept of social reality. The concept of "social reality" has recently been introduced in the everyday life of humanities and is mainly used in Russian social philosophy, sociology, and interdisciplinary research at the interface of these sciences. It was introduced into scientific discourse by the founder of phenomenological sociology Alfred Schütz in 1952. However, the term "social reality" in modern scientific literature has not yet been clearly defined and is quite often used by researchers as a synonym to terms such as "social being", "social life", "society", "social actuality" [32].

Social reality is everything created by man and is the objectified result of human subjective activities. Since the very inception of sociology as a science there have existed two opposite approaches to understanding the society: it is either conceptualized as the society developing according to objective laws, which, just like the laws of nature, may be the subject of scientific research of all human activities, or, conversely, is treated as a field of chaotic action of "natural forces" [23,

pp. 8–9]. As noted by G.V. Osipov, "social reality is not something given to humanity from the other world, but a product of their own activity. All the positive and negative characterizing social reality is the result of people's social activity... The laws of social development operate in objective reality which humanity has created" [23, p. 9].

In a narrower, sociological sense, social reality is a particular aspect, a feature of social life directly related to phenomena and processes of human interaction at various levels.

In the very narrow sense, social reality is a society not limited by any spheres of public life but present in forms of human interaction [20, p. 129].

The purpose of the term "social reality" is to transfer and fix the current state of sociality with transitional nature and communicative unpredictability, lack of social order and stability [12, p. 115].

For the philosophical understanding of reality it is important to consider it not only in static, time-specific state, but also in dynamics, revealing the mechanisms and determinants of its changes [10, p. 232].

In the philosophical science of the early and latest modern period it is possible to distinguish three ways of interpreting social reality.

1. The classical type of philosophizing (17–19th centuries) defines it as a transcendent reality.

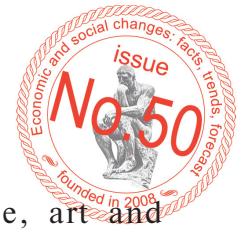
2. Phenomenological philosophy and sociology (E. Husserl, A. Schütz) considers it as an immanent reality.

The phenomenological approach to understanding the nature of social reality, which absolutizes its subjective aspect, is based on the philosophical theory of E. Husserl. According to the supporters of this concept, social reality in the society has no objective, independent existence, but is created in the course of collective communication between people and is a joint inner, spiritual experience of individuals.

3. Late classical philosophy (postmodernism) considers it as a virtual reality [19, p. 125].

The fundamental methodological requirement to every type of philosophizing is the possibility of acquiring true knowledge and liberation from delusion and distortion (illusion) of reality, the search for the source of illusory forms of reality.

Classical philosophy puts the exclusion of subjective characteristics of reality as a necessary condition for the adequate cognition process. At the same time, the model of classical science treats social reality as a primordial reality, i.e. as an object [7, p. 133]. Under this doctrine, the objective is opposed to the subjective (individual, apparent) and does not depend on the subject's will. The method of objective reality cognition is the observation over the external world and measurement



of its intrinsic parameters for establishing sustainable trends and patterns [24, p. 178].

Depending on the type of objectivity, there are three levels of existence:

– the level of objective reality;
– the level of subjective reality;
– the level of transcendent reality.

The first implies the properties and characteristics of existence which are not dependent on the object which perceives or feels it. These can be both natural and social objects [3, p. 167]. The second level is formed by objects objectified by people's consciousness and will – things, phenomena and processes of a derivative nature. According to M. Weber, it is called "enchanted reality", culture which embodies both spiritual and material values reflecting initial reality [6, p. 212]. However, being created by people, it can serve as an alien force imposed from the outside.

The third level includes transcendent objects beyond space and time, beyond perception and feeling, imperceptible through scientific knowledge or common sense (e.g., manifestations of religious zealousness).

Researchers highlight the main meanings of "social reality".

First, the ontological meaning, where it represents all objectively existing social phenomena and processes. It is important to consider that in modern society, there is a continuous process of transition from subjective to objective phenomena. Different ideas and images of science, art and religion, being objectified, become objective phenomena manifested in human activities in real life [15; 25].

Second, the epistemological meaning which is close to the concept of "life". In this case, it is understood as a spiritually and practically developed world of public relations from the perspective of both the objective, logical, essential, and accidental, subjective [10, p. 237].

In the modern period, ideas about the nature of social reality are changing. It no longer appears as a kind of a homogeneous structure which, with all its diversity and complexity, is determined by a common core or a driving force. The principle of methodological pluralism suggests that the nature of social reality, despite the fact that it contains some socio-cultural universals, is heterogeneous and structurally diverse [11].

The social and philosophical reflection of the nature of social reality uses different approaches and methods.

The anthropological approach considers a human as the main criterion of established models of communication and social constructs. It helps justify the micro-level of the research, examine the social intersubjective relations in the social system.

The sociocultural approach represents a view on the society as an expression of cultural and social unity.

The systemic-structural approach is characterized by holistic analysis and helps see the system of social life where all aspects are closely related to each other.

The activity approach provides the understanding that the meaning of concepts and ideas is generated by human activities and occurs as a result of the processes of objectification and desobjectification.

The functional approach to the study of social and cultural phenomena helps consider the functions of phenomena and processes as system units in relation to society as a holistic system.

The semiotic approach is significant as it represents social reality and the information society as systems symbolically generated by individuals, which are clearly expressed by different symbols and signs.

From the position of **the synergetic approach** it is important to study the patterns of evolution of complex dynamic systems and their self-management.

The phenomenological approach helps consider the analyzed objects and structures as "phenomena" or values constituted by activities of the human mind.

The existential approach may consider social reality as successive conditions [8, pp. 64–65].

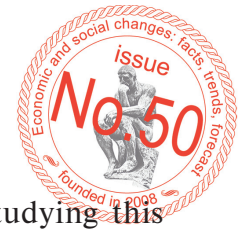
Social reality is a multi-dimensional phenomenon which is better conceptualized in the form of two intersecting continuums: subjective/objective and micro/macro. It is the objectification of people's subjective actions, along with being the unintended consequence aggregate actions of many individuals playing for their own hand [23, p. 17], the manifestation of human creative activities [22].

In the history of philosophy there have developed different theoretical approaches to issue of the sources of changes in social reality which can be reduced to two generalized positions. The first considers social changes as the objectification of spiritual meanings, consequences of cultural factor impact. In particular, M. Weber explained the emergence of capitalist economy by changes in religious and ethical attitudes. The second position is contained in the Marxist philosophy connecting the source of social changes with non-ideal factors, mainly with the contradictions between productive forces and production relations [10, p. 232].

The representatives of the positivism sociology almost identify reality with sociality, which is understood as an objective social structure or social functions.

Antipositivists trends in social philosophy are put forward by the representatives of the Frankfurt school in an attempt to overcome the distinction between subject and object in social cognition and social activity [9, p. 6].

The anthropological approach in understanding social reality emphasizes the role of culture and the individual's subjective world in shaping reality.



E. Husserl, P. Berger, T. Luckmann, and A. Schütz consider the construction of social reality as a process consisting of the formation of pre-scientific experience and scientific theories.

Modern researchers highlight the activity approach of reality construction and build relations between social existence and social reality [30, p.5].

The image of social reality is the product of meaning-making of many social actors. According to P. Berger and T. Luckmann, when communicating, social agents maintain social reality, its "pronunciation" [4]. In other words, the reality humans live in is not just their reality, their vision of the society; it is the vision formed in communication acts with others [2, p. 1624]. This thesis marks the withdrawal form the classical understanding of social reality as an objective entity independent from a human, as well as from defining communication as simple data transmission.

According to P. Bourdieu, the decisive role in the reproduction and objectification of a certain type of social reality belongs to *habitus* – "a system of dispositions generating and structuring agents' experience and ideas. It helps the agent spontaneously orientate themselves in the social space ...and react to events and situations" [5, p. 65].

In recent decades, the issue of social reality has been discussed in many scientific works, some of which contain philosophical analysis and deal with the issues of studying this phenomenon. Under informatization of the modern society, studying virtual reality, including its philosophical analysis, becomes increasingly relevant.

Some works are related to studying specific phenomena and properties of social reality. In particular, philosophers consider the following phenomena: trust, risk, myth, routine, mass fashion, social advertising and social psychology. The characteristic feature of social reality is its obvious and iconic nature.

The applied importance of research on design and simulation of social reality, mechanisms and ways of its formation. For example, the researchers study the role of game, success, fashion, social and political processes and manipulation practices.

The researchers study the manifestations of social reality which are: the Russian statehood, city and communication space.

Thus, the study of social reality in the Russian science, judging by the ratio of the number of studies, is mostly conducted by philosophers; social reality itself is the focus of social philosophy and sociology, though to a lesser extent.

The structure of social reality. Social reality is considered not only as the result and purpose of social actions, but also as an ideal construction helping people act in the society, i.e. social reality is constructed by a subject acquiring the form of idea.

It is a complex existence having different levels of interpenetrating elemental and structural organization. P. Bourdieu notes that the world "is presented as a highly structured reality" [5, p. 195].

Ideas about reality as a complex structure makes understanding and interpretation of the concept more difficult. Some researchers distinguish individuals, groups and communities as structural elements (P. Sztompka), interaction, relations, and people's attitudes; other – social systems consisting of ideal elements (beliefs, perceptions, etc.) [27, p. 108].

Theoretical approach of P. Sztompka suggests two levels of social reality: individuals and communities. The first are individuals, the second includes abstract social entities representing a specific social reality (society, culture, civilization, socio-economic formations) [31].

According to J. Habermas, an individual is inseparable from social reality and is in constant interaction with others, which in turn defines themselves: "The identity of my personal self is marked by collective identifications, the story of my life is included in complex life relations" [28, p. 14]. However, in the modern society, the human identity is their unity not only with the real world, but also with the virtual environment – the imagined, artificially created communities [13, p. 111].

The most common interpretation of virtual reality in the mass consciousness is its understanding as an artificial reality occurring in the interaction of human and computer. It is in this sense (the reflection of new possibilities of information technology) that the concept of virtual reality became popular in the 1980–s. From this point of view, virtual reality exists as the aggregate result of information technology impact. In the narrowest sense, virtual reality is defined as reality created by computer devices used for training or developing the reactions required from an individual in certain situations. More generally, it is accepted that computer virtual reality does not necessarily have to simulate the properties of a physical world, it can be conditional.

The socio-philosophical and sociological approaches to studying social reality. Sociological research of social reality is, as a rule, of empirical and socio- nominalistic character. The socio-philosophical approach helps establish the place of social reality in the structure of an integral world image, as well as define its significance. Social reality is conceptualized to a greater extent than it is cognized. This is the strong point of research in social philosophy. Their disadvantages include value overload leading to the fact that cognition results become suppressed by personal interests of specific social groups and individuals.

The main advantage of the sociological approach is the willingness to create images of social reality based on empirical materials rather than on speculative generalizations, therefore, the sociological images of the world have a high degree of accuracy [21, pp. 285–286]. At the same time, due to the variety of social phenomena the researchers are constantly forced to interrupt the empirical consideration and proceed to generalizations, which makes it impossible to construct a complete image of social reality within the sociological paradigm. The best result in studying social reality can be achieved through synthesis of these approaches.

The study of social reality raises the issue of the reliability of data supplied by the social sciences. Social indicators are tools for monitoring social reality, which provide the idea of its current state, transformations, development trends, and crisis phenomena.

Social indicators are currently widely used in the social science, both at the national and international levels. These mostly include official statistics.

Monitoring of social development and forecasting its trends are essential elements of social construction aimed at preventing the negative and creation of desirable consequences. The special nature of the measurement techniques of social reality depends on the complexity of the measured object which is a multi-dimensional subjective-objective phenomenon [23, p. 17].

The subjective-objective nature of social reality suggests that in addition to the objective part of social phenomena, which are traditionally paid considered by social statistics, individuals' and groups' subjective attitudes to these phenomena should also be recorded. That means that social indicators should not only give an idea about the objective living conditions (income, housing conditions, etc.), but also indicate people's attitude to them (satisfaction, expectations, changes, etc.). If the former mainly present quantitative characteristics of conditions of social change, capture the overall course of processes and are, as a rule, included in the so-called "social infrastructure", the latter indicate the qualitative characteristics of the ongoing changes from the point of view of implementation of social objectives.

Here is an example from the experience of the Institute of Socio-Economic Development of Territories of the Russian Academy of Sciences. The Institute regularly conducts public opinion monitoring[1], which reflects in detail the subjective part of social reality. Monitoring records: the population's estimates

[1] Monitoring has been conducted since 1996 every two months. 1.500 people aged 18 and over are surveyed in two cities – Vologda and Cherepovets, and 8 municipal districts (Babayevsky, Velikoustyugsky, Vozhegodsky, Gryazovetsky, Kirillovsky, Nikolsky, Tarnogsky, Sheksninsky). The sample representativeness is ensured by the following conditions: urban/rural differential ratio; the ratio between the population of settlements of different types (rural towns, small and medium-sized cities); the sex-age structure of the region's adult population. The survey technique is questionnaire survey by the respondents' place of residence. The aampling error does not exceed 3%.

Vologda Oblast population's evaluations of personal financial status and social well-being, in % of respondents

Variant	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Evaluations of patience												
Everything is not so bad, it is possible to live; it's difficult to live, but it is tolerable	71.7	70.6	74.1	78.1	71.8	71.3	74.8	76.5	79.3	80.8	78.4	78
It is no longer possible to put up with such a distressful situation	19.1	17.5	13.6	12.5	17.9	17.5	15.3	15.8	14.2	12.5	14.5	15.6
Index*	152.6	153.1	160.5	165.6	153.9	153.8	159.5	160.7	165.1	168.3	163.9	162.4
Evaluations of social sentiment												
Excellent mood, normal stable condition	58.0	59.3	63.6	67.0	53.0	62.1	63.1	67.3	68.6	69.4	68.6	68.0
I experience strain, irritation, fear and sadness	36.5	33.3	28.3	26.8	38.2	33.0	29.0	27.1	26.5	24.9	25.9	26.2
Index*	121.5	126.0	135.3	140.2	114.8	129.1	134.1	140.2	142.1	144.5	142.7	141.8
Evaluations of financial situation												
Good	9.2	14.9	14.7	14.3	9.0	8.1	9.6	10.1	10.5	11.2	7.8	9.3
Poor	36.6	23.3	22.2	24.0	32.8	32.9	29.8	27.4	28.2	28.1	31.2	32.6
Index*	72.6	91.6	92.5	90.3	76.2	75.2	79.8	82.7	82.3	83.1	76.6	76.7

* To calculate most indices (if something else is not specified) the share of negative answers is subtracted from the share of positive answers and then added 100 to avoid negative values. Thus, completely negative answers would give the aggregate index 0, positive – 200, the balance of both is expressed by the index value 100, which is , in fact, neutral.
Source: monitoring data of ISEDT RAS public opinion survey.

of the political and economic situation in the country/region; their perception of the most acute issues of modern life; assessment of their financial status; the level of consumption and consumer sentiment; social well-being and satisfaction with life; attitude to government policies; level of social trust in social and political institutions; degree of social tension and potential of social protest; social capital and civil society development capacity; evaluation of personal security and order; attitude towards media activities [18].

In particular, the oblast's residents are characterized by a rather weak wish for changes. The share of those who believe that "it is no longer possible to put up with such a distressful situation", has not exceeded 20% since 2005 (*Table*). People's attitudes remain stable: the respective index has not reduced since 2009 (ranging from 129 to 145).

However, the stability of social well-being does not mean that these social goals are achieved. Evaluations of financial situation in 2016 are low: almost one third of the

region's residents characterize it as "bad" (33%), and only one in ten have an opposite opinion (9%). During 2005–2016, the corresponding index does not reach the mark of 100 points.

The researchers note that in modern Russia, just like in many other countries, there has emerged and strengthened the civilization syndrome of "double reality" – "updated" and tailored to its recipient, the "second" reality is beneficial to the authorities because it helps avoid responsibility for the failure to solve the urgent problems and fulfil their obligations [1, p. 100].

The social reality of the USSR had a variety of imitation strategies: "stage lifestyle"; symbolic design; mythologization and simplification; ideological indoctrination [29, p. 292]. This also influenced the process of globalization of the modern world based on the development of industrial, information and social technologies. In order to manipulate public consciousness virtual technology replacing reality began to be used, which have been tested as computer models and helped make social relations simulated [19, p. 127].

The leading role in the formation of social reality belongs to media sources. Although the reconstruction of the world image is largely based on perceptions of reality, people most often deal with the reality of the second order – the media reality. Currently, the media provides a much wider access to learning social reality. This creates an impression that the media "ignore" the most important and urgent socio-economic issues [14, p. 23; 16; 17].

At the same time, mass media have a partial and selective impact on the society. According to the framing theory, the audience creates its own version of social reality and perception and action schemes, partly based on selectively processed media reports, but mostly – based on personal experience and interpersonal communication.

Thus, social reality is a complex and structured phenomenon, defining the essence of which is determined by the choice of particular philosophical approaches out of the whole variety. Therefore, to obtain meaningful results enabling their application for improving the efficiency of social management, the study of social reality must be based on the theoretical and methodological approaches developed by various philosophical schools. Without their integration, the image of social reality will be one-sided, which will not help apply the research results for effective social management.

The authors have defined the main trends in the study of social reality: its individual properties and phenomena (trust, risk, myth, mass fashion, routine, social advertising, social psychology); mechanisms and ways of its formation (game, success, fashion, social and political processes, manipulation practices); virtual reality, etc.

As established above, social reality is often studied in the framework of social philosophy, rather than sociology. The authors believe that improve sociological research the most appropriate would be to apply the activity based approach based primarily on an individual, reflecting their role in creating the "context" of their existence. It helps study the dynamic characteristics of objects and social mechanisms more effectively, evaluate social processes and describe the content of social reality.

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Introduction of Innovation Technology as a Factor in Environmental Modernization in Russian Arctic*

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Abstract. The paper considers the fundamentals of formation and realization of the modern Russian state environmental policy in the Arctic and analyzes environmental threats and challenges, including the impact of the mining and metallurgical complex on the environment. Coal industry and ferrous and nonferrous metallurgy are considered to be major producers and accumulators of waste. In the smelting of metals slags are formed, which are based on oxides. Sulfur oxides occupy one of the first places according to their negative impact on the environment. The present paper considers environmentally responsible business models in the Arctic, when the priority in management decisions is given to the issues of preserving nature and not just making profit. The main environmental issue is associated with the accumulation of waste in the places of concentration of objects of industry, transport, energy and social sphere in the confined spaces in those areas of the Arctic, where mineral deposits are exploited, raw materials are processed and transported. The industrial processing of secondary resources and recycling of sulfur in accordance with the principles of green production (recycling) are of special scientific interest. The authors propose the following innovative methods for solving the problems of ecological modernization in the Arctic zone of the Russian Federation: utilization of sulfur-containing waste, recycling of technogenic wastes; the paper also analyzes operational and physical-mechanical properties of sulfur-extended asphalt concrete and sulfur concrete, and the possibilities of production of a new generation of building materials and road surfaces. High consumer properties of sulfur-containing construction materials – low cost of raw materials, workability of sulfur concrete and mortar mixes, fast development of strength, resistance to radiation and other aggressive environments, high frost and water resistance – make them competitive with traditional building materials that often cannot withstand the difficult climatic conditions of the North. The use of sulfur-containing waste in various economic sectors in the Arctic zone will significantly reduce the cost of products and designs and will contribute to the solution of one of the most important tasks of our time – protection of the environment from industrial pollution.

Key words: strategic planning, innovation development, sulfur-containing waste, Arctic, waste treatment, recycling.

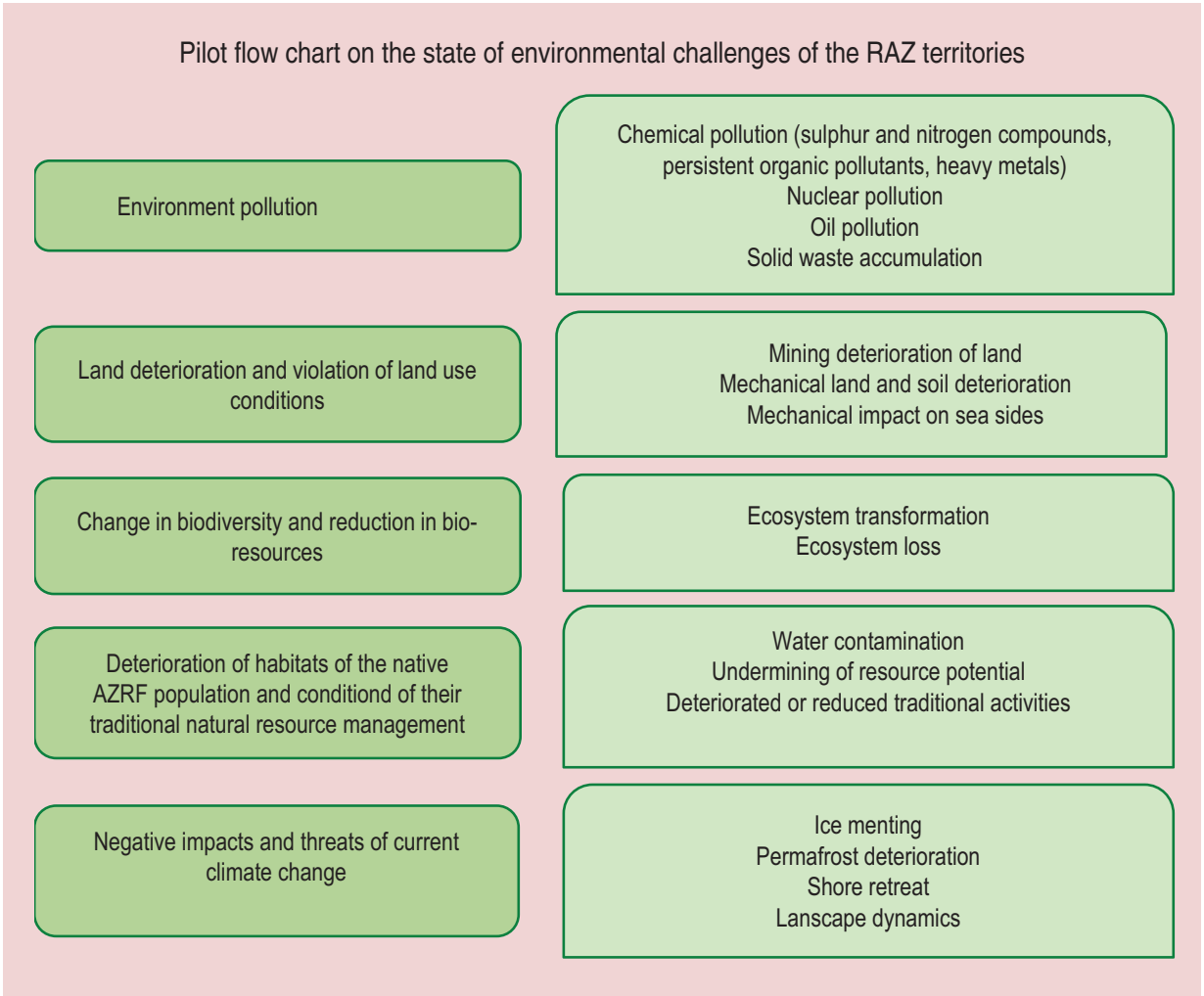
Currently, the priority of the state environmental policy in the Arctic is the conservation of unique Arctic ecosystems, decontamination, the study and protection of valuable natural areas and ecosystems from the negative impact of economic and other activities. The importance of studying and ensuring environmental safety for natural objects and ecosystems of the Arctic zone in Russia is stated in the Principles of State Policy of the Russian Federation in the Arctic for the period up to 2020 and further approved by the President of the Russian Federation September 18th, 2008 (Order no. 1969).

The authors consider the following environmental challenges and threats in the Russian Arctic Zone (RAZ): deteriorating pollution and environmental components

amid the increasing human-induced impact, accumulation of waste and pollutant burden through transboundary transfer, the risks and costs of natural resource development, high depreciation of fixed assets, global climate change and its impact on the distribution of permafrost zones, dangerous hydrometeorological, ice and other natural processes, the increased risk and damage from these processes, technological accidents *(Figure)*.

The priority "hot" spots and impact areas by location of environmental challenges directly in the Arctic natural areas characterized by presence of natural objects and ecosystems vulnerable to any human-induced impacts are the following (Strategic Action Plan – the Arctic Zone, 2009): in the Murmansk Oblast – Murmansk, Zapolyarny and Nikel; the Kola and Pechora bays in the Barents sea; the Gulf of Ob and the Yenisey Bay in the Kara sea; in

Pilot flow chart on the state of environmental challenges of the RAZ territories



the Yamalo-Nenets Autonomous district – the Yamburg and Urengoy deposits; in the Chukotka Autonomous district – the village of Pevek and the Bilibino complex. For the RAZ municipal units it is prior to identify environmental threats on their territory. The increased environmental risks are associated with the development of the marine and coastal economic activity and concentration of the defense and border infrastructure. On the Arctic coast, major cities and settlements are situated. It is prior to identify the environmental threats in "hot" spots located outside RAZ territory and having an adverse transboundary impact on the Arctic territories. The ecosystems of inland sea waters are most affected by humankind. The strongest human-induced impact on Arctic seas are focused on their shores, bays and in coastal waters. The main environmental problem associated with waste accumulation in sites where industrial, transport, energy and social objects are concentrated in confined Arctic spaces with mineral deposits and raw materials processing and transportation sites. It should be noted that the sources of environmental pollution, production and consumption wastes in the Arctic are mainly located in settlements, on industrial, defense, energy and transport sites. Significant amounts of pollutants were accumulated in the 1930–1980-s during the period of global intensive industrialization, large-scale mineral extraction which remains relevant nowadays.

The main negative changes in Arctic landscapes are associated with the following reasons:

– economic development which does not match the environmental capacity of the natural environment amid absence of adequate rehab measures;

– non-diversified range of using natural resources from territories with predominant extractive industries;

– increased natural-technological risks amid the development of alternative forms of land use (transportation, mineral extraction, fishing, traditional resource use).

Latest research of the Arctic has helped identify the territories with major changes and environmental destruction[1,2,3,4]. These negative processes are related to pollution of surface and coastal marine and river ecosystems with heavy metals, petroleum products, organic compounds of different origin, sulphur and nitrogen compounds, etc.,

[1] Evseev A.V., Krasovskaya T.M. Ekologo-geograficheskie osobennosti prirodnoi sredy raionov Krainego Severa Rossii [Environmental and geographical peculiarities of the Russian Far North]. Smolensk: SGU, 1996.

[2] Getsen M.V. (Ed.). Loginov A.V., Rubtsov A.I. et al. *Prirodnaya sreda tundry v usloviyakh otkrytoi razrabotki uglya: monografiya* [Tundra environment amid open coal mining: monograph]. Ministry of Natural Resources & Environmental Protection of the Komi Republic; Syktyvkar, 2005. 246 p.

[3] Krasovskaya T.M. *Prirodopol'zovanie Severa Rossii* [Natural resource management]. Moscow: Izd-vo LKI, 2008. 288 s.

[4] Dushkova D.O. *Mediko-ekologicheskoe sostoyanie promyshlennykh tsentrov Evropeiskogo Severa Rossii: avtoref. dis. ... kand. geogr. Nauk* [Medical and environmental condition of industrial centers of Russian European North: Ph.D. in Geography dissertation abstract]. Moscow, 2008. 22 p.

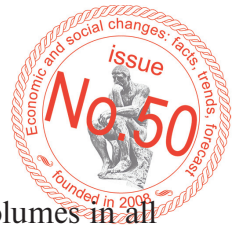
Table 1. Location of environmental challenges in RAZ

No.	Impact area	Sources of pollution
1.	West Kola	Non-ferrous metallurgy, mining
2.	Central Kola	Non-ferrous metallurgy, mining, nuclear power stations, transport
3.	Arkhangelsky	Pulp and paper, machine building, timber industry, heat power industry, transport
4.	Timan-Pechora	Hydrocarbon production and transportation
5.	Vorkuta	Mining, heat power industry, construction
6.	Novaya Zemlya	Military facilities (Specific Targeted Innovation Projects), flooding of nuclear facilities and other nuclear wastes
7.	Low-Ob	Hydrocarbon production and transportation
8.	Middle-Ob	Hydrocarbon production and transportation
9.	Norilsk	Non-ferrous metallurgy, mining
10.	Yana-Indigirka	Mining
11.	West-Chukotka	Mining, Nuclear power stations
12.	East-Chukotka	Mining

Sources: Krasovskaya T.M. *Prirodopol'zovanie Severa Rossii* [Natural resource management in the Russian North].Moscow: Izd-vo LKI, 2008. 288 p.
Evseev A.V., Krasovskaya T.M. *Novye podkhody k prirodopol'zovaniyu na Severe Rossi. Geografiya, obshchestvo, okruzhayushchaya sreda* [New approaches to natural resource management in the Russian North. Geography, society, environment]. A.N. Gennadiev, D.A. Krivolutskii (Eds.). Book 3: Natural resources, their management and conservation. Moscow: Gorodets, 2004.

mechanical soil deterioration, overgrazing on reindeer pastures. Crisis situations have developed in the West Kola, Central Kola and Norilsk districts, critical situations are observed in Arkhangelsky, Timan-Pechora, Novaya Zemlya, Vorkuta districts and tense – in the West and East Chukotka and in the Yana-Indigirka (near Deputatsky urban-type settlement) districts that are still developing. The situation in the Bilibinsky District is currently characterized as potentially adverse, but with probable accidents of different scale at nuclear power stations the situation can instantly be changed to catastrophic (this applies to nuclear power plants in the Kolsky district), which became the basis for the choice of this impact area.

Analysis of groups environmental threats has shown that chemical pollution leads to the formation of impact areas in the development centers of ferrous metallurgy, pulp and paper, extraction of hydrocarbon and other raw materials. Complex chemical and mechanical changes are often characteristic of the mining impact areas. Mechanical deterioration is predominant in gold and diamond mining, deer overgrazing, etc. Potential impact areas include areas radioactive risk zones. The most extensive impact areas were formed as a result of chemical pollution. In some cases, pollution level is quite high and exceeds the maximum permissible concentration (MPC), which has a negative impact on the environment.



However, it should be noted that although Russia's partners in the Arctic Council often use environmental issues as "soft" power tools to drive Russia out of the Arctic, evaluations of Russian experts [2, 8, 14] and international experts [17] show that the environment of the greater part of the Russian Arctic territory remains less polluted and relatively less deteriorated unlike many areas in the Northern hemisphere.

It is the environmental component that makes it possible to speak about responsible business models in the Arctic which grants priority in management decisions to environmental issues, rather than only profit-making. In fact, the economy of the Arctic is currently focused mainly on mineral resource extraction, which leads to the formation of impact areas with strong human-induced environmental destruction detrimental to both the prospects for preserving natural resources and the population's health and well-being including the indigenous inhabitants of the Arctic. It should be noted that the share of mining and processing enterprises, the functioning of which was accompanied by the formation of a significant amount of solid, liquid and gas wastes amounted to about 70% [3]. Just like in other industrial regions in Russia, these processes left a legacy of serious environmental damage and threats to public health.

The increasing production volumes in all regions of the Russian Arctic observed since the beginning of the 21st century and its long-term trends will undoubtedly lead to increased human-induced loading on the region's environment, which will be aggravated by the planned intensive oil and gas production development, geologic exploration and pipeline transportation. This requires the development of urgent measures to prevent the increasing environmental threats related to the expansion of economic activities in the Arctic regions and application of innovative methods of environmental modernization in the Russian Arctic zone for eliminating environmental damage.

The Arctic zone as one of the most fragile ecosystems on the planet is more vulnerable to climate change than other regions. It is distinguished by high vulnerability of the natural environment to human-induced impacts. The environment is in a critical condition, the ability of natural system self-recovery is extremely limited[5].

When evaluating the effectiveness of the evolutionary approach to the development of the Russian Arctic zone one should identify an annoying feature: the warming pace in the Arctic is two times higher than the global average. According to the Russian

[5] *Environment Indices Standard 17.4.2.03. Environmental protection. Soils. Soil passport.* Moscow: Standartinform, 2008. Available at: http://www.docs.cntd.ru/document/gost-17-4-2-03-86

Geographical Society and the UN Intergovernmental Panel on Climate Change (IPCC), the shrinking of sea ice and permafrost in the Arctic region amounts to about 1% per year. As a result, the area of the Arctic ice since 1978 to date has decreased by 8%, and the temperature of the permafrost upper layer has increased[6] by 3°C. If the warming trend remains the temperature is projected to rise by 6.4°C, the sea level – by 0.59 m, and the full loss of summer Arctic ocean ice is not in the distant future[7]. That is, the projected warming in the Arctic may mean lead to ambiguous (both positive and negative) consequences, and the development of specific economic sectors will inevitably be accompanied by the increasing human impact. Therefore, a special approach is required for issues related to the future resource development, environmental condition of some coastal areas in the Russian Arctic, permafrost melting – thermokarst, and infrastructure security (destruction of building footings, highway and railway embankments; airfield pavement; pipelines ruptures).

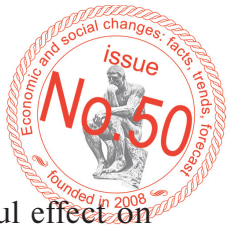
It should be noted that in recent decades, the accelerated warming process has demonstrated a huge reaction impulse from various interested parties which offering the most ambitious measures to "tame" the climate. The Paris Agreement is one of universal legally binding agreements on climate change which aims to strengthen the capacity for overcoming the effects of climate change. However, signing of the Agreement is a gesture of international solidarity which imposes no serious financial liabilities. However, the reduction of greenhouse gas emissions or low-carbon development is the scope of technologies which lead to lowest emissions of carbon dioxide (CO_2), sulfur dioxide (SO_2) and other gases. Under these circumstances, it should be noted that the Arctic is extremely vulnerable to human-induced impacts due to extreme climatic conditions and fragile ecosystems. It should be noted that environmental issues are particularly relevant in the areas adjacent to the Norilsk, Murmansk and Arkhangelsk oblasts[8].

The research of human-induced impacts of copper-nickel production at transpolar mining and smelting enterprise Norilsk Nickel JSC has helped make a conclusion that major environmental problems are related

[6] *Otsenochnyi doklad ob izmeneniyakh klimata i ikh posledstviyakh na territorii Rossiiskoi Federatsii* [Evaluation report on climate change and its consequences in Russia], Moscow: Rosgidromet, 2008. Available at: http://www.climate2008.igce.ru

[7] *Arktika kak indikator izmeneniya klimata v mire* [The Arctic as an indocator of global climate change]. Available at: http://www.rgo.ru/2010/04/arktika-kak-indikator-izmeneniya-klimata-v-mire

[8] *Kompleksnye klimaticheskie strategii dlya ustoichivogo razvitiya regionov rossiiskoi Arktiki v usloviyakh izmeneniya klimata (model'nyi primer Murmanskoi oblasti)*. [Complex climate strategies fro sustainable development of the Russian Arctic regions amid climate change (case study of the Murmansk oblast)]. Rezyume [Resume]. Moscow: Programma razvitiya OON v Rossii, Rossiiskii regional'nyi ekologicheskii tsentr, 2009.



to emissions of sulphur dioxide which create additional human-induced load on the adjacent and coastal ecosystems. Considering the effects of mining enterprises on the environment, it should be noted that the most predominant in terms of formation and accumulation of waste is coal, ferrous and non-ferrous metallurgy. During the roasting of copper, zinc, lead ores, concentrates and ores containing other metals solid residues are formed – calcine and off-gases which are large-scale industrial wastes. Gases contain sulfur dioxide and are highly toxic [16].

Wastes related to metallurgical processing are of several types. Metal smelting produces slag based on oxides, sulfur oxides are one of the major pollutants of environment. The global sulphur oxide emissions of steel industry amounts to 15% (more than a half is produced by non-ferrous metals) [15]. Ore mining generates solid wastes in the form of overburden and enclosing rocks, dead mine rocks, non-standard ores; enrichment of extracted raw materials – tailings of flotation and gravitation, leaching of mineral deposits. The processing of enriched raw materials into marketable products (concentrates) at mining enterprises generates various toxins, dust, cinders, sludges which, besides the elements characteristic of the processed raw materials, accumulate valuable components from charge-adjusting, coke or coal material. Sulfur oxides, as well acids (H_2SO_3 and H_2SO_4) formed when compounded in the atmosphere with water vapors have a harmful effect on human health, cause coniferous forest and fruit tree dieback and water acidification, and reduce crop yields. In addition, sulfur oxides are a cause of steel structure corrosion and destruction of various construction materials [5]. With the aim of reducing the huge economic damage caused by sulphur oxide emissions, in 1983, the UN Convection on reducing transboundary sulphur oxide transfers in Europe was signed. According to the Convention, the participating countries (including Russia) committed themselves to reducing sulfur compound emissions into the atmosphere by 30% by 1993 (compared to 1980). Russia has fulfilled its commitments.

Technological mining and metallurgy processes [1] – ore mining and smelting, copper and nickel production – are characterized by emissions of large amounts of sulphur dioxide (SO_2) – sulphur dioxide gas and heavy metal particles which together form human-induced sulfur-containing wastes (SCW). Therefore, modern techniques of industrial gaseous sulfur dioxide emission purification are of paramount importance.

The research results on human-induced impact of copper-nickel production with 30 types of emissions characteristic of non-ferrous metallurgy have showed that average annual sulfur emissions at enterprises of the A.P. Zvenyagin Norilsk Mining Concern, currently a Transpolar division of Norilsk Nickel Mining and Metallurgical Company

OJSC (Norilsk Nickel MC) are about 340–350 thousand tons per year at the Copper Plant, at the Nadezhda Metallurgical Plant – 420–430 thousand tons per year, at the Nickel Plant – 250–260 thousand tons per year [10, 11, 12].

Norilsk Nickel MMC accounts for 25% of Russian industrial sulfur emissions. The average monthly content of sulphur dioxide SO_2 in Norilsk is 50–60 times higher than the region's background pollution level. According to Rosstat, Norilsk ranks first in emissions in the atmosphere among the Russian cities. The level of emissions is not actually decreasing: in 2010, Norilsk Nickel MMC emitted 1.8 million tons of sulfur dioxide into the city's atmosphere, in 2013 – 1.9 million tons; in 2014 – 1.8 million tons, which is evidenced from the company's annual reports [8].

Data presented in *Table 2* demonstrate that copper-nickel production is characterized by emissions of large amounts of sulfur dioxide (SO_2) and particles of heavy metals into the atmosphere [9].

The share of an operating plant of Norilsk Nickel MMC JSC amounts to 25% of the total amount of industrial SO_2 emissions in Russia. In 2009, Norilsk Nickel emitted around 979 thousand tons of sulfur. Economic calculations have shown that for Norilsk Nickel MMC JSC recycling of off-gases to sulfuric acid is not profitable compared to their processing to elemental sulfur. In Norilsk, 350 days a year an increased level of air pollution with harmful substances is observed: in 80% the level exceeds MPC 5 times; 20% – 10 times, which evaluates the degree of pollution as "severe" and "very severe" [10, 12].

Given this negative situation in the region, at the beginning of 2015 which is a anniversary year for Norilsk Nickel MMC, a large-scale environmental project was adopted aimed at sulfur dioxide disposal, which is being implemented consistently. First, the technology capturing at least 90% of sulfur from off-gases will be tested at the Nadezhda Metallurgical Plant, then at the Copper Plant. The technology will help

Table 2. Characteristics of emissions of main polluting substances at the enterprises of Norilsk Nickel JSC in 2009, thousand tons

Main indicators	Polar division of Norilsk Nickel Mining Company OJSC	Kola MMC OJSC
Sulphur dioxide	1917.40	136.16
Solid substances	10.68	9.48
Nitrogen oxide	1.71	1.09
Emission load, total	1949.77	148.36

Source: http://ecodelo.org/3126-obrabatyvayushchie_proizvodstva-vozdeistvie_osnovnykh_vidov_ekonomicheskoi_i_drugoi_deyatelnost

produce about 600 thousand tons of sulfur a year; a year later, the facility with a capacity of 280 tons of sulfur per year will be installed at the Copper Plant.

Kola MMC OJSC, a Norilsk Nickel MMC subsidiary, founded November 16th, 1998, is the leading production complex in the Murmansk Oblast created on the basis of its oldest enterprises – Severonikel and Pechenganikel concerns located on the Kola Peninsula established in the 1930–40-s. One of the types of industrial waste in the Kola region is slag and sulfur emissions which are recovered in small amounts. It should be noted that when the pyrometallurgical method of copper production is applied the technological process consists of several stages of raw material processing to obtain the appropriate semi-products each containing sulfur wastes and emissions which during particular process operations are accumulated in tailing dumps on the territories of these enterprises. Although in recent years, the growth and development pace of a number of polluting industries has slowed down significantly, a great amount of sulphur waste is dumped at landfills and dumps, which means there is reason to believe that in the coming decades sulfur reserves will increase several times and will be localized in technogenic soils. At the same time, being an important mineral replenishment reserve, technogenic formations when stored cause environmental hazards.

Therefore, in countries where production of industrial sulfur exceeds the demand and there is a consistent trend of its overproduction, a new area has become widely applied: the use of sulfur binder and superhard synthetic materials (SSM) in road construction. These countries include Canada, the USA, Germany, Poland, Saudi Arabia, and several others. Shell PLC is one of the world's leading developers, suppliers and users of sulphur polymer bitumen. The technology of the affiliated company Shell Bitumen is successfully used in the USA, the UK, Ireland, France and the Netherlands. In recent years, multi-component fine-grained concretes, the effectiveness of which is connected with the possibility of widespread use of secondary raw materials. It means environmentally hazardous enterprises have a serious reason to start innovation-based eco-modernization[9].

Given the urgency of developing the scientific foundations for creating healthy environment, industrial refining of sulphur-containing waste (SCW) in accordance with the principles of eco-friendly production and implementation of innovative low-waste technological processes is of a particular interest. Changes in waste production and

[9] Federal Law Project "On Changes to some legislative acts of the Russian Federation (in terms of regulating environmental remedial actions, including those related to former economic activity". Available at: http://www.mnr.gov.ru

consumption are new to the Russian system of environment protection state regulation; they have already become widespread in the EU countries and in the United States. Their transfer to Russia may be considered as one of the most successful foreign experiences.

Special academic interest according to the principles of eco-friendly production (recycling) is attributed to industrial processing of secondary resources, i.e. the issue of sulphur recycling is raised. The so-called "Sulphur environmental project" adopted by Norilsk Nickel MMC implies the medium term reduction in sulphur dioxide emissions from the current 1.8 million tons to 1.4–1.5 million tons due to the introduction of a new gas purification technology which helps capture at least 90% of sulfur. Sulfur dioxide will be used by Nornikel MMC to produce about 1 million tons of elementary sulphur per year[10]. However, according to experts, selling 1 million tons of sulphur (more than 30% of the total domestic sulfur consumption in Russia) would be vary difficult for Norilsk Nickel MMC. This means that sulphur will be stored indefinitely at warehouses and storage facilities.

On the other hand, production of industrial sulfur currently exceeds the demand and there is a stable trend to its overproduction. A highly effective but rather difficult task is also noteworthy: the reducing number of sulphur deposits with the use of innovative technological processes when, as a result of the technological cycle a certain product is produced. For this purpose it is necessary to use a powerful economic lever such as creation of conditions under which the accumulated sulfur waste becomes a material resource which is converted on the basis of innovative technologies into high-quality sulphur concrete, sulphur bitumen concrete and sulphur composites for special purposes. It will significantly expand the area of application of sulfur and sulfur waste as well as their degree of utilization – the use of sulfur binder and sulfur-containing construction materials (SCCM) in road construction. High consumer properties of sulfur-containing construction materials – low cost of raw materials, technological effectiveness of sulphur concrete and mortar mixtures, fast strength gain, resistance to radiation and other aggressive environments, high freeze-thaw and water resistance – make them competitive compared to traditional construction materials which often can not withstand severe Northern climate. The specific feature of SCCM strength gain can be used for concreting at low temperatures, significantly reducing the period of repair works amid current production where the traditional construction materials have short service life, are inefficient and expensive, and require frequent repairs.

[10] Available at: http://www.izvestia.ru/news/586779#ixzz45vHSUG7R

Undoubtedly, production waste processing for environmental improvement is an indicator of eco-efficiency progress. Such a positive economic resource is confirmed by the experience of Northern European countries[11] which already use 50–70% of production and consumption waste. These countries include Canada, the USA, Norway, and Finland.

That is why it would be more real and meaningful to address the issue of the development of Northern areas by creating and applying unique technologies in the interests of economic development of the Arctic, Northern peoples and their socio-economic issues for developing infrastructure and construction in rough environment.

The development of the Arctic and the plans for the strategic development of the Northern coastal territories to ensure the national security of the Russian Federation for the period up to 2020[12], imply the renovation and construction of terminals supporting the Northeast Passage (NEP). The NEP coastal infrastructure and major ports located along it – Igarka, Dudinka, Dikson, Tiksi, Pevek, Port Providence, according to most Russian experts, do not meet either current or future needs of their operation. Therefore, one should begin with creating specialized production facilities which will enable the application of highly corrosive construction compounds containing sulfur and sulfur-containing waste, significantly improve the technology and reduce the period of construction works, increase serviceability of structures, significantly reduce energy and labor costs, involve large-scale technology-related raw materials in the construction process thus solving both technological and environmental problems.

It is obvious that the particular features of the Northern Arctic ports under construction and new projected transshipping complexes in the Russian Arctic zone in connection with the development of hydrocarbon deposits including on the continental shelf, will require the use of new modified protective anti-corrosion construction materials. Many sites of construction and repair works can widely use sulphur concrete and sulphur asphalt, the amounts of which will depend strictly on the delivery capacity. In addition, the modified SCCM will find application in various structures: arrays of all types used in fencing or waterfront structures, cubes, tetrapods and shaped wave-suppression structures.

Thus, the most important economic preconditions for the management of SCCM production and use in construction and road construction in Northern Russian regions are, on the one hand, extensive resource base of raw materials in the form of industrial sulfur, sulfur-containing waste (SCW) of

[11] *Ekologicheskaya programma dlya Evropy* [Environment for Europe]. Available at: http://www.base.consultant.ru/cons/cgi/online.cgi?req=doc;base=INT;n=16073

[12] Available at: http://www.fb.ru/article/162045/osvoenie-arktiki-rossiey-istoriya-strategiya-osvoeniya-arktiki

industrial production, sulfide ores and, on the other hand, the strong need of the national economy for new cost-effective, durable, chemically resistant materials for use in severe climate and aggressive environments instead of expensive materials based on portland cement.

Since Norilsk Nickel MCC started to invest heavily in modernization of production ("Sulphur project" on capturing sulfur dioxide and elemental sulfur production), then, according to the authors, it is possible to solve the problems of complex large-scale development of innovative technologies for sulfur industrial waste processing and obtaining durable, chemical-resistant sulfur-containing materials (SCM) which are currently important and increasingly demanded in connection with the development of the Arctic coastal regions and which solve technological and environmental issues and challenges of the economic security in the Arctic.

SCCM production management should be implemented on the basis of ther already existing enterprises (concrete batching plants, concrete products plants) which is cost-effective and limited only by modernization of plants. Such enterprises already have the infrastructure for acceptance, shipping and storage of raw materials and products. Technological upgrading of equipment and use of new technologies at the Norilsk Nickel Cement Plant is currently being completed, which will improve products' competitiveness. Setting up pilot SCCM production at this plant or at construction materials plant will contribute to the solution of a number of topical environmental issues including the problem of complex processing of bulk industrial waste and by-products (SCW, tailings from processing plants, slag, ash, etc.), and substantial dump reduction. Physical properties of sulfur-containing materials (SCM) indicate the need for their use in water engineering, wastewater disposal and water distribution (dewatering). However, a significant drawback of Sulphur concretes is low heat resistance which is not relevant for hydraulic concrete always used under temperature conditions of air and water environment.

Hydraulic structures include dams, reservoirs, hydro power plants, channels and ports. To build these structures it is potentially possible to use sulfur concrete. Sulfur concrete in marine hydraulic structures may be preferable to cement concrete because of its high anti-corrosion properties.

Significant amounts of sulphur are required in the process of impregnation of parts and structures made of traditional construction materials to gain durability. The introduction of this method provides a high economic impact by prolonging the service life of concrete and especially wooden structures.

Sulfur concrete contains neither portland cement, nor water and quickly shrinks during cooling, which makes it suitable for severe environment of the Arctic. It is perfect for using in manufacturing marine connecting pipes, weights for gas and oil pipelines and in cases when pipelines are located in extreme environment. Water resistance, ability to solidify under water, fast strength gain during the period of mixture cooling, as well as low cost of raw materials determines high demand for modified sulfur-containing construction materials (SCCM) in hydraulic engineering. Thus, the most appropriate would be to apply composite sulphur concrete for emergency repair work to prevent water filtration under pressure.

The use of SCW significantly reduces the cost of products and structures made of sulfur concrete, expands the raw material base of production of construction materials due to rational use of by-products, and contributes he solution of one the major challenges of our time –protection of the environment from industrial pollution.

In connection with the environmental purification of coastal areas and islands of the Arctic zone nuclear and toxic waste storage containers are in demand. Disposal of nuclear waste and nuclear reactors of Russian submarines, according to experts from different countries working on the program of the Arctic monitoring and assessment, cause local nuclear contamination[13]. However, their negative impact is only observed at the Russian territory. The main reason is the poor technical condition of special storage facilities of the Northern Fleet. There is an increasing risk of toxic waste input from chemical and nuclear waste disposal sites on Novaya Zemlya, from waste ponds at Norilsk Nickel containing sulphates, chlorides, copper, nickel and other toxic substances.

According to E.V. Korolev [6], specific properties of sulphur polymer compounds including low natural radioactivity background, protective properties against electromagnetic and ionizing radiation provide opportunities for using industrial sulfur made of special compounds based on sulfur binder. This is one of the most promising areas: anti-corrosion structural elements may be produced (nuclear and toxic waste disposal containers, shielding elements). The produced materials [15] are high-strength, frost- and freeze-thaw-resistant. The proposed technology provides reliable joint action of sulphur concrete with concrete surfaces with the similarity of their deformation properties due to high bond (more than 1.7 MPa).

Sulphur concrete can also be effectively used in "hot" technology in devices of individual structural elements of hydraulic

[13] *Ochistka Zemli Fransa-Iosifa* [Franz Josef Land purification]. Available at: http://www.barentsobserver.com/cppage.823336-116321.htm

structures with the replacement of traditional materials [11].

In this context, new objectives of modernization of the North and higher risks of introduction of low-waste technologies are not only significant environmentally, but also economically efficient. One should start with the integration of modern technologies (tailing environmental and resource saving waste disposal technology) in the production process, where one of the main objectives is to develop rational waste disposal methods, as well as into practical implementation of innovative products of sulfur-containing material production [7].

Merging off-gas purification and elemental sulfur production technologies with sulfur-containing materials production technologies would be significant. The implementation of such a large-scale program amid severe Arctic environment and remoteness of industrial facilities from major transportation hubs would solve many problems of the Arctic zone road construction materials supply.

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Small Towns in the Spatial Structure of Regional Population Distribution*

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Abstract. The article discusses the role of small towns in the spatial structure of the regional population. The purpose for the study is to assess the irregularity of spatial distribution of urban population in the Sverdlovsk Oblast and substantiate the prospects for regional distribution system dynamics by using the methods of mathematical modeling. The author analyzes various domestic and foreign theoretical and methodological approaches to analyzing spatial disparities in deployment of economic potential and human capital throughout regions and countries. The author's approach is to apply the methodological tools of Zipf's law, which proved its effectiveness during the study of urban population dynamics in the works of both foreign and domestic scholars, to study trends and prospects for demographic development in the Sverdlovsk Oblast. The research has helped reveal actual and ideal Zipf's distribution for towns of the Sverdlovsk Oblast during 1989–2015. Based on the methodology the author calculates the values of optimal population in the towns of the Sverdlovsk Oblast in each period and concludes that over the past 25 years the deviation of actual distribution from Zipf's distribution has decreased. It has been revealed that the largest city of the region – Yekaterinburg, has already exhausted the opportunities for increasing the number of its residents. It has also been proved that small towns are population donors for

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the growth of medium and large towns in the Sverdlovsk Oblast not only in the current period, but also in the future. The specified role of small towns in the spatial distribution of urban population in the region is one of the factors generating intense intraregional migration flows. The author concludes that the regional policy of attracting population to medium and large towns of the region and restraining of the expansion of Yekaterinburg considering continuous depopulation of small towns. The obtained results may be used by the experts for justifying measures on management of the region's socio-demographic and spatial development.

Key words: small towns, population, spatial distribution, Zipf's law, socio-demographic development, development disparities, Sverdlovsk Oblast.

Introduction

The development of the distribution system and active urbanization processes in the world have led to the formation of both large and small settlements of the urban type. Nowadays small and medium-sized towns play a significant role in the social development, being the custodians of the cultural heritage and national coloring of the country. In Russia, small towns include settlements with a population of 10,000-50,000 people with non-agricultural specialization of the economy (industry, trade, service industries). Small towns make up about 2/3 of all cities in the country, and the population in them totals 16,600,000 people accounting for 16% of the urban population of the country. In addition to it, 38,200,000 people of the rural population are also in the area of influence of small towns, because most small towns being the centers of municipalities take on the role of socio-cultural centers as well [2]. Thus, the socio-economic situation of small towns largely determines the development level of the country in general (especially its Siberian and Far Eastern parts) and the social and economic well-being of its citizens.

Most of small towns were formed as administrative, socio-cultural or manufacturing centers and have remained that way till this very day. At the same time, despite their central role in the binding of economic space of Russia, imbalances in the development of small and medium-sized towns on the one hand and large cities on the other hand have been increasing. These imbalances are associated not only with differences in the economic capacity of cities of different types, but also with the contradictions of demographic development. While the population of large cities is considerably increasing, the population of small and medium-sized towns is declining rapidly. The following common reasons for such dynamics have been noted: objective socio-demographic and economic processes, as well as agglomeration processes that contribute to the population shift to large, more developed and attractive cities, which possess a well-developed amenity infrastructure and provide

wider opportunities for labor and social realization of an individual [6, p. 15; 9, p. 15-16; 1]. However, we believe that the reasons here are somewhat deeper. In this regard, the aim of the study is to represent the model of the spatial distribution of the population in the region, including an assessment of its unevenness, the definition of the role of small towns in the spatial structure of the population distribution, and substantiation of further population changes in small towns.

The study of the spatial distribution of the population and its certain groups was conducted by both foreign and domestic researchers. Thus, U. Isard proposes to assess the evenness/unevenness of the population distribution, calculating the coefficient of localization, which reflects the relative degree of concentration of a certain group of the population in comparison with any other parameter of the national economy. It provides the possibility of comparing the percentage distribution of the two parameters in the regional profile. The value of the coefficient can range from 0 to 1. For example, if the distribution of a given population group exactly coincides with the distribution of the base value, then the coefficient will be equal to 0; if the entire population is concentrated in one (small) area, then the ratio will be close to 1 [3, p. 212-213].

Other localization coefficients are the coefficients of geographic association, concentration of population, redistribution, as well as indices of dissimilarity, segregation and centralization, their descriptions are provided by U. Izard as exemplified by American studies *(Tab. 1)*.

In national studies, the issue of spatial distribution of the population is investigated, for example, in the context of agglomeration processes. As defined by Yu.S. Selyaeva, agglomeration is a complex, spatially localized, dynamically developing socio-

Table 1. Types of coefficients of localization

Name of coefficient	Author	Distributions compared
Coefficient of geographic association	P.S. Florence	Shares of manufacturing employment by states: industry *i* versus industry *j*
Coefficient of concentration of population	E.M. Hoover	Shares by states: population versus area
Coefficient of redistribution	E.M. Hoover, P.S. Florence	Shares of population or employment in selected manufacturing industries: year *b* versus year *a*
Coefficient of deviation	E.M. Hoover	Shares of population by states: white versus Negro
Coefficient of urbanization	E.M. Hoover	Shares by cities: employment in individual industry versus total population
Index of dissimilarity	O.D. Duncan	Shares of workers by areas: occupation group A versus occupation group B
Index of segregation	O.D. Duncan	Shares of workers by areas: specific occupation group versus all other occupation groups
Index of centralization	O.D. Duncan	Shares by census tracts: specific occupation group versus all occupation groups (alternatively, employment in a given industry versus all industry)
Cit. ex.: [3, p. 217-218].		

economic system. Its formation assumes providing positive outcomes not only by attracting investments in the development of urban economy as integral economic system, increase in tax capacity and increase in efficiency of budgetary expenditures, but also through quantitative and qualitative enlargement of the regional markets [8], arising as a result of concentration of the population within the territory of agglomeration.

A key criterion for determining the presence and depth of the agglomeration process is the ratio of the population in the structural elements of agglomeration, for example:

– the coefficient of development of agglomeration proposed by P. M. Polyan [5] depends on the size of the urban population of the agglomeration, the number of cities and urban-type settlements and their share in the total population of the agglomeration;

– index of agglomeration developed by Central Research and Design Institute for Urban Development of the Russian Academy of Architecture and Building Sciences represents the ratio of urban population in the external zone to the urban population of the whole agglomeration [5].

However, this approach is limited only by the territory of the agglomeration, and does not allow one to study the spatial distribution of the population in the region in general. In our view, an effective tool to accomplish this task is Zipf's law, which is an empirical regularity in the distribution of cities and demonstrates high stability. According to the law, the size of a city is inversely proportional to its rank. The law was first discovered to describe the distribution in ranking of cities by the German physicist Felix Auerbach in his work "The Law of population concentration" in 1913 and it was named after the American linguist George Zipf, who in 1949 promoted this regularity, proposing to use it for the first time to describe the distribution of economic power and social status [20, p. 484-490].

N. Moura and M. Ribeiro define Zipf's law as demonstration of complex systems dynamics: "Demographic distribution of individuals over the earth's surface having sharp peaks of population concentration in cities alternating with relatively large spreads where population density is much lower, follows power law of typical dynamics of complex system" [18]. The use of this tool is quite a popular method of foreign urban studies and their results confirm the validity of Zipf's law for different countries [11, 13, 19].

The study of urban settlement in the Russian Federation in accordance with Zipf's law [10] showed that:

– most small towns and medium-sized cities in Russia lie above the ideal Zipf curve, therefore the expected trend is the continued population decline due to migration to large cities;

– 7 cities with population exceeding one million people (Moscow, Saint Petersburg, Novosibirsk, Yekaterinburg, Nizhny Novgorod,

Kazan, Samara), which are below the ideal Zipf curve, have a significant reserve for the population growth and expect population growth due to the migration inflow, thus allowing them to compensate for the natural decline in their population;

– there are risks of depopulation of the first city in rank (Moscow), since the second largest city (St. Petersburg) and the subsequent major cities are lagging behind the ideal Zipf curve due to the labor demand decrease and increase in costs of living, including chiefly purchasing and renting housing.

Studying implementation of Zipf's law in the cities of Russia, S.N. Rastvortseva and I.V. Manaeva come to the conclusion that, in general, this law covers small towns (8,600-15,300 people) and large cities (66,700 – 331,000 people). In the sampling of cities with population exceeding 100,000 people, Zipf's law does not cover cities over 1,000,000 people (except for Saint Petersburg) [7].

Our scientific work gives a model of the spatial distribution of the population in the Sverdlovsk Oblast and determines the role of small towns in the system of settlement of this area. The relevance of this issue is confirmed by the approved Strategy of socio-economic development of the Sverdlovsk Oblast up to 2030 (Law of the Sverdlovsk Oblast of December 15, 2015), according to which one of the main tasks is the balanced development of municipal settlements (that are formed mostly around small towns) located on the territory of the Sverdlovsk Oblast, including a decrease of differentiation in the quality of life in municipal settlements located on the territory of the Sverdlovsk Oblast, the strengthening of intra-regional connectivity of the territory of Sverdlovsk Oblast, promotion of effective interaction between the centers of the emerging agglomerations (municipal formation "The City of Yekaterinburg", the city of Nizhny Tagil, Serov urban district) and adjacent municipal settlements, the development of an integrated polycentric planning and socio-economic system. The possibility of solving these problems is determined, among other things, by demographic processes occurring throughout the territories of the oblast, since it is they who largely determine the quality of life of the population, on the one hand, and the spatial structure of the region (connectivity, agglomeration of territories), on the other hand.

The application of Zipf's law for analyzing population dynamics in the cities of the Sverdlovsk Oblast will allow one to consider the prospects for the transformation of the regional settling system and to provide strategic directions on socio-economic and spatial policy, particularly concerning the issues of maintenance and improvement of unique capacities of small towns in the Sverdlovsk Oblast.

Data and methods

Data. The studies are based on the data about the population base of cities and urban-type settlements in the Sverdlovsk Oblast

according to the results of population censuses carried out in 1989, 2002, 2010 and the estimated population as at 1 January 2015[1].

The sample included 73 settlements, among which in 2015:

- over 1,000,000 people – 1 city (Yekaterinburg);
- from 250,000 to 1,000,000 people – 1 city (Nizhny Tagil);
- from 100,000 to 250,000 people – 2 cities (Kamensk-Uralsky, Pervouralsk);
- from 50,000 to 100,000 people – 8 cities;
- from 10,000 to 50,000 people – 33 settlements (including 3 urban-type settlements);
- less than 10,000 people – 28 settlements (including 5 cities).

Methods. Zipf's law is a statistical regularity of the size distribution of cities in a country and is well approximated by a Pareto distribution. The meaningful treatment of the law is the following: the probability that the city size is larger than S is proportional to 1/S and the proportionality factor is equal to β. If β = -1, then the largest city is twice as big as the second largest one, and three times as big as the third largest city, and so on. As a result, in regression:

$$\ln(S_i) = \alpha + \beta \ln(R_i) + \varepsilon_i ,$$

where $\ln(S_i)$ is the logarithm of the population of the i-th city, and $\ln(R_i)$ is the logarithm of the counting number of the i-th city in the descending sequence, the coefficient β is equal to -1 [4].

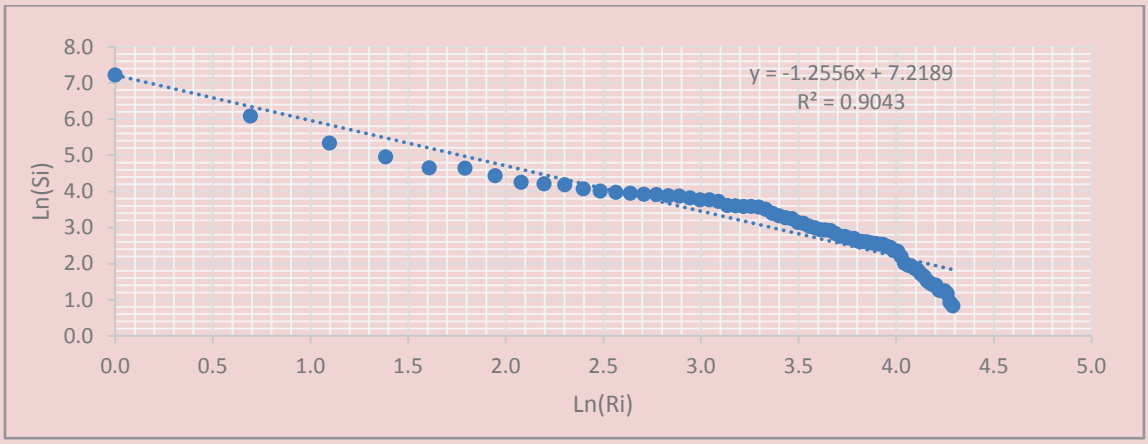
Thus, cities below the ideal Zipf curve are characterized by a shortage of population, and those located above it are the cities with surplus population. The regressions were used to calculate the "ideal" population size and estimate its surplus/shortage in a particular city.

Results and discussion

According to the territorial body of the Federal State Statistics Service in the Sverdlovsk Oblast, from 1989 until 2015 the total urban population in the region has been reduced from 40,113,000 to 36,489,000 (by 9 p.p.). The population decline was noted in all urban-type settlements of the Sverdlovsk Oblast, with the exception of the cities of the emerging agglomeration "Big Yekaterinburg": Yekaterinburg, Verkhnyaya Pyshma, Sredneuralsk, Aramil, which have the population increase by an average 14 p.p. Due to the redistribution of the urban population in the region, the number of towns with population less than 10,000 people has increased from 18 to 28, the number of small towns with a population of 10,000-50,000 people has reduced from 39 to 33 and the number of medium and large cities with population over 50,000 people has also decreased from 16 to 12. And the flow of the population, as it had been noted above, was carried out mainly to Yekaterinburg and its satellite cities, as well as outside the Sverdlovsk Oblast.

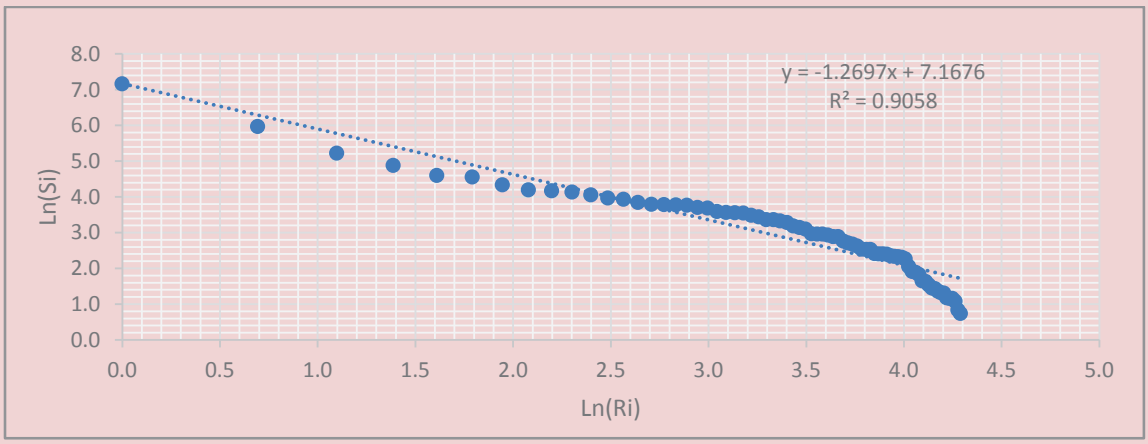
[1] *City population. Population Statistics for Countries, Administrative Areas, Cities and Agglomerations – Interactive Maps and Charts.* Available at: http://www.citypopulation.de/php/russia-sverdlovsk.php (accessed 26.05.16).

Figure 1. The Zipf distribution for cities and urban-type settlements in the Sverdlovsk Oblast as of January 12, 1989



Source: City population. Population Statistics for Countries, Administrative Areas, Cities and Agglomerations – Interactive Maps and Charts. Available at: http://www.citypopulation.de/php/russia-sverdlovsk.php (accessed 26.05.16)

Figure 2. The Zipf distribution for cities and urban-type settlements in the Sverdlovsk Oblast as of October 9, 2002



Source: City population. Population Statistics for Countries, Administrative Areas, Cities and Agglomerations – Interactive Maps and Charts. Available at: http://www.citypopulation.de/php/russia-sverdlovsk.php (accessed 26.05.16).

According to the data on the population in cities and urban-type settlements of the Sverdlovsk Oblast, the Zipf distribution over four periods *(Fig. 1–4)* was constructed. The regressions indicated in these figures make it possible to calculate the population optimum for each of the settlements included in the study and to quantify the surplus or shortage of the population in various years *(Tab. 2)*. It should be noted that the years 2010 and 2015

Table 2. Actual population and population optimum in the cities and urban-type settlements in the Sverdlovsk Oblast, thousand people

Name of the settlement	1989			Name of the settlement	2002			Name of the settlement	2015		
	Actual population	Population optimum	Shortage/ surplus		Actual population	Population optimum	Shortage/ surplus		Actual population	Population optimum	Shortage/ surplus
Yekaterinburg	1364.6	1365.0	-0.4	Yekaterinburg	1293.5	1296.7	-3.2	Yekaterinburg	1428.0	1257.4	170.6
Nizhny Tagil	439.5	571.7	-132.2	Nizhny Tagil	390.5	537.8	-147.3	Nizhny Tagil	356.8	515.4	-158.7
Kamensk-Uralskii	207.8	343.6	-135.8	Kamensk-Uralskii	186.2	321.4	-135.2	Kamensk-Uralskii	170.9	305.9	-135.0
Pervouralsk	142.2	239.4	-97.2	Pervouralsk	132.3	223.1	-90.8	Pervouralsk	125.5	211.3	-85.8
Novouralsk	104.9	180.9	-76.1	Serov	99.8	168.0	-68.2	Serov	98.0	158.6	-60.5
Serov	104.1	143.9	-39.8	Novouralsk	95.4	133.3	-37.9	Novouralsk	82.6	125.4	-42.8
Asbest	84.5	118.6	-34.1	Asbest	76.3	109.6	-33.3	Asbest	66.1	102.8	-36.7
Polevskoi	70.6	100.3	-29.6	Polevskoi	66.8	92.5	-25.8	Verkhnyaya Pyshma	65.8	86.6	-20.8
Krasnoturinsk	67.3	86.5	-19.2	Krasnoturinsk	64.9	79.7	-14.8	Polevskoi	62.7	74.4	-11.7
Revda	65.8	75.8	-10.0	Revda	62.7	69.7	-7.0	Revda	62.2	65.0	-2.8
Lesnoi	58.5	67.2	-8.8	Verkhnyaya Pyshma	58.0	61.7	-3.7	Krasnoturinsk	58.6	57.5	1.1
Verkhnyaya Salda	55.2	60.3	-5.0	Lesnoi	53.2	55.3	-2.1	Berezovskii	56.1	51.4	4.6
Verkhnyaya Pyshma	53.1	54.5	-1.4	Verkhnyaya Salda	51.2	49.9	1.3	Lesnoi	49.3	46.4	3.0
Irbit	51.7	49.7	2.0	Berezovskii	46.7	45.5	1.3	Verkhnyaya Salda	43.9	42.2	1.7
Tavda	50.7	45.5	5.1	Kachkanar	44.7	41.6	3.0	Kachkanar	40.0	38.6	1.5
Alapaevsk	50.1	42.0	8.1	Alapaevsk	44.3	38.4	5.9	Krasnoufimsk	39.3	35.5	3.8
Kachkanar	48.3	38.9	9.3	Krasnoufimsk	43.6	35.5	8.1	Alapaevsk	37.9	32.8	5.0
Berezovskii	47.9	36.2	11.7	Irbit	43.3	33.0	10.3	Rezh	37.7	30.5	7.2
Krasnoufimsk	45.6	33.8	11.8	Tavda	40.7	30.8	9.8	Irbit	37.7	28.5	9.2
Rezh	43.4	31.7	11.7	Rezh	39.9	28.9	11.0	Sukhoi Log	34.2	26.6	7.6
Kushva	43.1	29.9	13.2	Sukhoi Log	36.4	27.2	9.2	Tavda	34.1	25.0	9.1
Artemovskii	41.2	28.2	13.1	Kushva	35.6	25.6	9.9	Artemovskii	31.2	23.6	7.6
Karpinsk	37.0	26.6	10.3	Artemovskii	35.0	24.2	10.8	Bogdanovich	29.4	22.3	7.2
Sukhoi Log	36.6	25.2	11.3	Severoural'sk	34.7	22.9	11.7	Kushva	29.1	21.1	8.1
Severoural'sk	36.1	24.0	12.1	Bogdanovich	32.9	21.8	11.1	Karpinsk	27.6	20.0	7.6
Bogdanovich	36.0	22.8	13.2	Karpinsk	31.2	20.7	10.5	Zarechnyi	27.6	19.0	8.6
Krasnouralsk	35.3	21.8	13.5	Krasnoural'sk	29.0	19.7	9.2	Severoural'sk	27.1	18.1	9.0
Kamyshlov	33.5	20.8	12.7	Kamyshlov	28.9	18.9	10.1	Kamyshlov	26.6	17.3	9.3
Nevyansk	29.8	19.9	9.9	Zarechnyi	27.9	18.0	9.9	Nevyansk	23.8	16.5	7.2
Zarechnyi	27.7	19.1	8.6	Nevyansk	26.6	17.3	9.4	Krasnouralsk	23.5	15.8	7.7
Nizhnyaya Tura	26.3	18.3	8.0	Nizhnyaya Tura	24.2	16.6	7.7	Sredneuralsk	22.0	15.2	6.8
Kirovgrad	25.6	17.6	8.0	Kirovgrad	23.2	15.9	7.3	Sysert	21.0	14.6	6.4
Turinsk	23.2	16.9	6.3	Sysert	22.2	15.3	6.8	Nizhnyaya Tura	20.8	14.0	6.8
Sysert	22.5	16.3	6.2	Sredneuralsk	19.6	14.7	4.8	Kirovgrad	20.3	13.5	6.8
Nizhnyaya Salda	20.9	15.7	5.2	Ivdel'	19.3	14.2	5.1	Nizhnyaya Salda	17.4	13.0	4.4
Talitsa	19.9	15.2	4.7	Turinsk	19.3	13.7	5.6	Turinsk	17.3	12.5	4.8

Ivdel'	19.0	14.7	4.4	Talitsa	18.9	13.2	5.6	Ivdel'	16.4	12.1	4.3
Sredneuralsk	18.8	14.2	4.6	Nizhnyaya Salda	18.1	12.8	5.3	Reftinskii	16.2	11.7	4.5
Degtyarsk	18.4	13.7	4.7	Reftinskii	18.0	12.4	5.6	Talitsa	16.1	11.3	4.8
Reftinskii	17.1	13.3	3.8	Degtyarsk	15.9	12.0	3.9	Degtyarsk	16.0	10.9	5.1
Arti	15.8	12.9	2.9	Aramil	15.1	11.6	3.5	Aramil	14.8	10.6	4.2
Novaya Lyalya	15.7	12.5	3.2	Novaya Lyalya	14.6	11.3	3.3	Arti	12.9	10.3	2.6
Nizhnie Sergi	14.9	12.1	2.8	Arti	13.8	10.9	2.9	Beloyarsky	12.1	10.0	2.1
Volchansk	14.8	11.8	3.0	Beloyarsky	12.6	10.6	2.0	Novaya Lyalya	12.1	9.7	2.4
Beloyarsky	13.7	11.5	2.2	Verkhny Tagil	12.6	10.3	2.2	Verkhny Tagil	11.4	9.4	2.0
Aramil	13.6	11.2	2.4	Nizhnie Sergi	12.6	10.0	2.5	Bisert'	9.8	9.1	0.7
Verkhnyaya Tura	13.6	10.9	2.7	Bisert'	11.3	9.8	1.5	Pyshma	9.8	8.9	0.9
Verkhny Tagil	13.1	10.6	2.6	Verkhnyaya Sinyachikha	11.1	9.5	1.6	Verkhnyaya Sinyachikha	9.8	8.6	1.1
Mikhaylovsk	12.9	10.3	2.6	Verkhnyaya Tura	11.1	9.3	1.8	Nizhnie Sergi	9.6	8.4	1.1
Malysheva	12.7	10.0	2.6	Volchansk	11.0	9.0	2.0	Malysheva	9.4	8.2	1.2
Bisert'	12.6	9.8	2.8	Mikhaylovsk	10.5	8.8	1.7	Volchansk	9.4	8.0	1.4
Verkhnyaya Sinyachikha	12.0	9.6	2.4	Sosva	10.3	8.6	1.8	Mikhaylovsk	9.3	7.8	1.5
Pyshma	11.5	9.3	2.2	Pyshma	10.3	8.4	1.9	Verkhnyaya Tura	9.2	7.6	1.6
Svobodnyi	10.6	9.1	1.5	Malysheva	10.1	8.2	1.9	Verkhoturye	8.7	7.4	1.3
Sosva	10.4	8.9	1.5	Svobodnyi	9.7	8.0	1.7	Sosva	8.7	7.2	1.4
Verkhoturye	9.0	8.7	0.3	Verkhoturye	7.8	7.8	0.0	Svobodnyi	8.4	7.1	1.3
Verkhniye Sergi	7.5	8.5	-1.0	Shalya	6.8	7.6	-0.8	Shalya	6.5	6.9	-0.4
Shalya	7.1	8.3	-1.2	Verkhniye Sergi	6.6	7.5	-0.8	Verkhniye Sergi	5.9	6.8	-0.9
Tugulym	6.9	8.2	-1.3	Tugulym	6.2	7.3	-1.1	Tugulym	5.8	6.6	-0.8
Verkh-Neivinskii	6.5	8.0	-1.4	Verkh-Neivinskii	5.2	7.2	-1.9	Verkh-Neivinskii	5.2	6.5	-1.3
Gornouralskii	6.2	7.8	-1.7	Achit	5.1	7.0	-1.9	Verkhnee Dubrovo	5.0	6.3	-1.4
Achit	5.6	7.7	-2.1	Verkhnee Dubrovo	4.7	6.9	-2.2	Achit	5.0	6.2	-1.2
Verkhnee Dubrovo	5.2	7.5	-2.3	Gornouralskii	4.3	6.7	-2.5	Martyush	4.0	6.1	-2.1
Martyush	4.6	7.4	-2.8	Martyush	4.2	6.6	-2.4	Druzhinino	3.7	6.0	-2.2
Atig	4.3	7.2	-2.9	Atig	3.9	6.5	-2.6	Gornouralskii	3.7	5.8	-2.2
Makhnevo	4.1	7.1	-3.0	Makhnevo	3.8	6.3	-2.6	Pelym	3.3	5.7	-2.5
Pelym	4.1	7.0	-2.9	Pelym	3.7	6.2	-2.5	Makhnevo	3.2	5.6	-2.4
Staroutkinsk	3.6	6.8	-3.3	Staroutkinsk	3.2	6.1	-2.9	Atig	3.2	5.5	-2.3
Gari	3.5	6.7	-3.2	Gari	3.2	6.0	-2.8	Staroutkinsk	3.1	5.4	-2.3
Pionerskii	3.5	6.6	-3.1	Pionerskii	3.2	5.9	-2.7	Pionerskii	3.0	5.3	-2.3
Druzhinino	3.2	6.5	-3.2	Druzhinino	2.9	5.8	-2.8	Uralskii	2.4	5.2	-2.8
Uralskii	2.5	6.4	-3.8	Uralskii	2.3	5.7	-3.4	Gari	2.2	5.1	-2.9
Natal'insk	2.3	6.2	-3.9	Natalinsk	2.1	5.6	-3.5	Natalinsk	1.6	5.0	-3.4
Total	**4011.3**	**4372.7**	**-361.4**		**3706.6**	**4072.7**	**-366.2**		**3648.9**	**3858.5**	**-209.6**

have a similar picture of the distribution of urban population across the territory of the Sverdlovsk Oblast with a certain tendency to increase, for this reason the figures for 2010 are not presented.

As can be seen in *Fig. 1*, in 1989 the location of the urban population in the territory of the Sverdlovsk Oblast had significant deviations from the Zipf distribution. For cities with a population of 10,000-50,000 people the average deviation was 24.9%; for cities with a population of over 50,000 people – 30.5%. This is due to the fact that strict regulation of internal migration prevented the free movement of the population and did not allow one to smooth out interterritorial differences in socio-demographic development.

The transition to the market mechanisms in the 1990s was characterized by polarization of socio-demographic development of the cities of the Sverdlovsk Oblast.

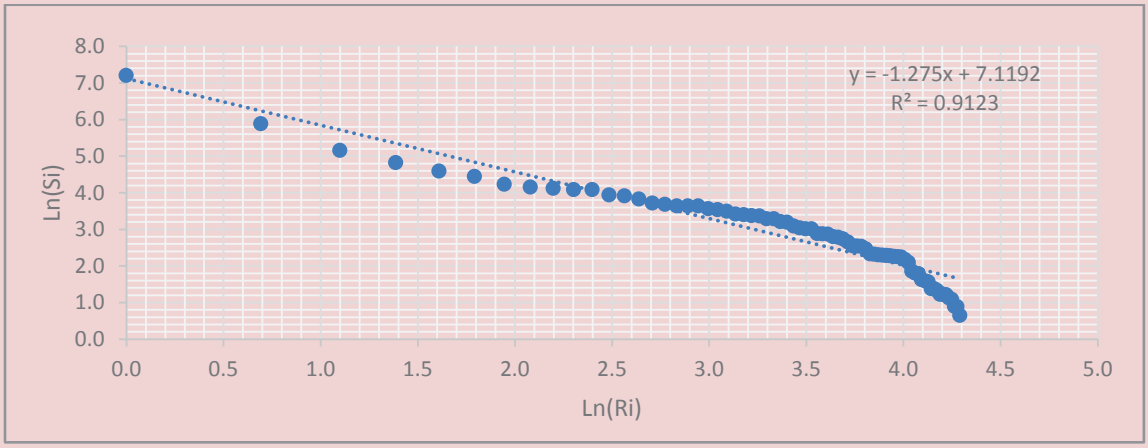
As can be seen in *Figure 2*, the deviation from Zipf's law has also increased toward population shortage in large and medium-sized cities (with population over 50,000 people), averaging 32% (or 568,000 people in total), and toward reduction in the surplus population in small towns (10,000-50,000 people), accounting for an average of 24%(or 239,600 in total). At the same time, it should be noted that the movement of the population during this period has resulted in reduction in surplus/ shortage of the population (in 55 settlements), as well as in its increase (in 19 settlements).

The period of 2010-2015 (*Fig. 3–4*) is characterized by a further decrease in the polarization of socio-demographic development and by the approximation of the population distribution in the cities of the Sverdlovsk Oblast to the Zipf distribution.

However, one should note two facts concerning the spatial distribution of the urban population across the territory of the Sverdlovsk Oblast as at the beginning of 2015. Firstly, a large population increase in Yekaterinburg has led to its big surplus from the point of view of the population distribution in the region. Secondly, towns (with the exception of the satellite cities of Yekaterinburg) are characterized by the reduction of surplus population. However, though this surplus is still quite significant (188,500 people), it can be freely absorbed by the medium and large cities, which are in need of 554,800 people. Thus, it can be concluded that the population movement from small towns to medium and large cities will continue in the near term and make the spatial distribution of the population in the region closer to Zipf's law.

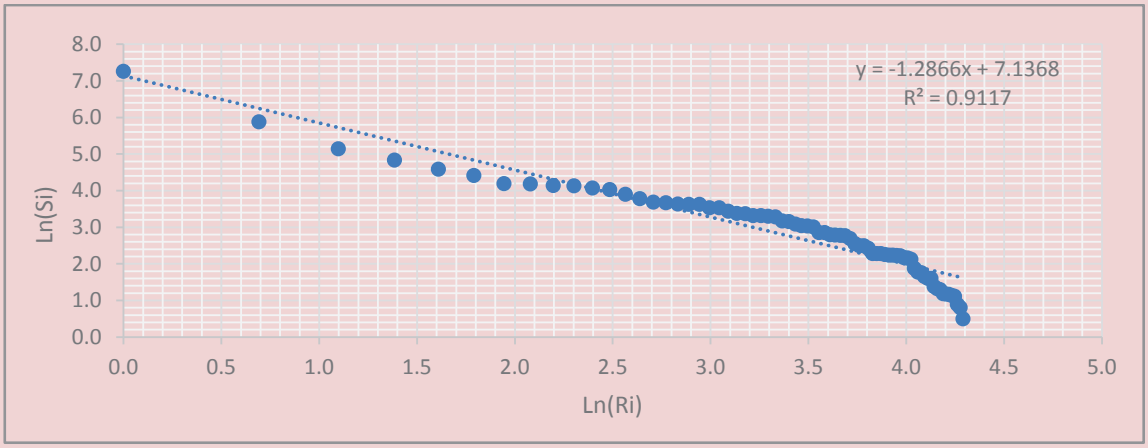
Our calculations are confirmed by the findings of other researchers [12, 14, 15, 16, 17] about the spatial distribution of the population being a complex system, tending to some balanced condition (the Zipf distribution), and having the ability to return to it after disasters of different nature (including artificial barriers to the free movement of the population).

Figure 3. The Zipf distribution for cities and urban-type settlements in the Sverdlovsk Oblast as of October 14, 2010



Source: City population. Population Statistics for Countries, Administrative Areas, Cities and Agglomerations – Interactive Maps and Charts. Available at: http://www.citypopulation.de/php/russia-sverdlovsk.php(accessed 26.05.16).

Figure 4. The Zipf distribution for cities and urban-type settlements in the Sverdlovsk Oblast as of January 1, 2015



Source: City population. Population Statistics for Countries, Administrative Areas, Cities and Agglomerations – Interactive Maps and Charts. Available at: http://www.citypopulation.de/php/russia-sverdlovsk.php(accessed 26.05.16).

In comparison with the trend lines indicated in *Figures 1–4*, the value of the free term and the module of regression coefficient increased during the survey period, which corresponds to the rotation of the trend line in a clockwise direction and its upward movement, and it means the acceleration of the population distribution unevenness and the reduction of the population of small and medium cities. This

fact corresponds to the current nationwide trend of advanced growth of larger cities, while the share of the population living in cities with smaller population is significantly reducing [10]. Therefore, in the near term small towns will remain the source of human capital for medium and large cities. However, it should be noted that Yekaterinburg has already exhausted the opportunities for increasing its population size. Hence, a well-thought-out policy of the regional authorities is needed to regulate the population migration and to increase the attractiveness of the cities (except Yekaterinburg), which could take the surplus population from small towns.

Conclusion

The spatial structure of the population distribution in the region is a dynamic system that undergoes changes under the influence of demographic and socio-economic factors towards a certain equilibrium state. Numerous foreign and domestic studies have proved that this equilibrium state is determined by Zipf's law and is revealed in many countries of the world. This allows one to make solid conclusions on the trends, factors and prospects for the development of the settlement systems surveyed.

Our study presents the results of the analysis of the spatial distribution in the cities of the Sverdlovsk Oblast. The data obtained for 1989, 2002, 2010 and 2015 show that in general the distribution of the urban population throughout the region follows Zipf's law, and moreover, in the course of time the actual distribution gradually shifts towards the ideal Zipf distribution.

It is also determined that large and medium-sized cities are characterized by shortage of the population, and small cities - by its surplus. It should be noted that as a result of the population redistribution in the cities of the region, there is a reduction in the positive or negative deviation of the population of the studied cities from the "optimal" one, i.e. corresponding to Zipf's law.

Therefore, not only socio-economic factors (imbalances in economic and socio-cultural potential) are the reasons for the population decline in small towns and the population growth in large cities, but also the desire of a spatial structure of the population as a dynamic self-organizing system to a more balanced state. In this situation, small and medium-sized cities are donors of human capital for large cities of the region. Moreover, this trend is expected to continue in the near future and it should be taken into account while developing a regional socio-economic policy as regards the preservation and development of the potential of small towns in the Sverdlovsk Oblast.

In addition, we should emphasize that Yekaterinburg, the largest city of the region, with a population of about 1.5 million people under the existing system of resettlement has already exhausted its opportunities to increase the number of residents without prejudice to the other territories of the Sverdlovsk Oblast.

This fact has to be taken into consideration by regional authorities that should focus on improving the attractiveness of other cities in the region (large and in particular small and medium) in order to stimulate the movement of area residents and external migrants thus to increase stability and balance of the spatial structure of the population distribution.

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Prospects for Regional Development of Industrial Tourism in View of the Analysis of the Main Economic Indicators of Russian Tourism Industry

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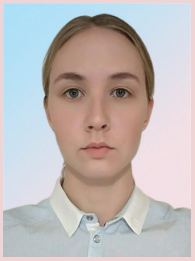

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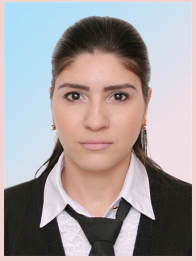

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Abstract. The development of tourism industry at the regional level is relevant for all the subjects of the Russian Federation. The issue is especially acute in those of them that do not have rich cultural-historical heritage and unique natural-climatic conditions. In particular, these areas include highly urbanized industrial regions of the country, which at present do not make an effective use of their potential for the development of domestic and inbound tourism. The subject of the research in this paper is tourist activity in federal districts of the Russian Federation. The purpose of the paper is to analyze the volume of tourist services in the Russian Federation and to substantiate the development of industrial tourism in the regions for the purpose of attracting additional tourist flows. The study uses the system approach, the basic scientific methods of analysis and synthesis, deduction and induction, and statistical analysis methods. One of the innovations in the tourism business of the Russian Federation could be the organization and conducting of excursions to the enterprises of the country not only for official delegations and business partners, but also for ordinary tourists. The article highlights the opportunities and threats for the development of industrial tourism in the Russian Federation. As a result of the statistical analysis of economic indicators of tourism industry development for 2011–2015, the authors identify a decline in the growth rate of the volume of tourist services. The lack of new tourist offerings reduces opportunities for growth. In this case the authors find it appropriate to promote a new type of domestic tourism associated with visiting industrial enterprises. The development of industrial tourism provides the regional economy with the multiplier effect including the stimulating effect on the activity of related sectors, and promotes import substitution in tourism. Main provisions of the present paper, due to their their universal character, can be used in educational process by educational institutions; they can also be recommended for use by the authorities in order to promote regional tourism.

Key words: industrial tourism, enterprise, SWOT analysis, region, analytics.

Introduction. Domestic tourism, just like many other industries, is currently experiencing all phases of systemic economic crisis. However, due to the present economic situation in Russia, the anti-Russian sanctions, foreign currency appreciation, the priorities of Russian people began to shift in favor of domestic tourism. The study of the related issues by domestic experts has revealed a number of interesting trends and acute problems. In particular, they are indicated by E.F. Gontareva and D.A. Ruban [6], T.N. Grigorenko and L.N. Kaz'mina [7], T.V. Uskova, V.K. Egorov and E.G. Leonidova [19]. In recent years, tourism has tried to improve the efficiency of activities by attracting local tourist and recreation resources, which is recorded in the Federal target program "Development of domestic and inbound tourism in the Russian Federation (2011–2018)"[1]. However,

[1] Federal target program no. 644 "Development of domestic and inbound tourism in the Russian Federation (2011–2018) dated August 08, 2011.

it should be stated that a major problem of tourism import substitution is to fully meet the population's needs for tourist services. This is related not only to weak promotion of tourism products, poor quality of highway network, high cost of hotel services, poorly organized leisure time, public catering issues, etc., but also lack of the necessary amount of really interesting, innovative tourist offers.

The purpose for this article is to conduct statistical analysis of the amount of tourist services in the Russian Federation and justify the development of a new type of tourism for regions which do not possess rich cultural and historical heritage and unique natural and climatic conditions in order to attract tourist flows. The following objectives are addressed: 1) conceptual generalization of industrial tourism; 2) analysis of tourist service market, which is necessary to substantiate the need for market supply diversification; 3) analysis of strengths and weaknesses in the development of industrial tourism in Russian regions. The relevance of the author's view on the issue of industrial tourism development is that both sufficient resource base in the regions and objective need for the development of industrial tourism in connection with the situation on tourist service market is considered as a significant background, which also defines the originality of the analysis.

Industrial tourism as a new area of local tourism. In the past few years, tourism market trends are associated with the increasing domestic regional tourism amid the declining external outbound tourism, which is generally a favorable factor in the industry. The country's government and the Ministry of Culture of the Russian Federation, following this trend proposy to introduce incentive programs and activities to promote tourism development in the regions. President V. Putin at the meeting of the State Council on the development of tourism in the Russian Federation in 2015 announced a list of instructions for tourist service extension, resort facilities inventory, attraction of tourists to tourist sites during the "low season" and resorts promotion in the national and international media[2].

In the 21st century, tourism industry worldwide began to explore new types of tourist services. This is related to the fact that many modern tourists are no longer satisfied with the standard range of services and the variety of tours provided by travel agencies. Tourists are currently trying to combine a holiday with participation in educational and business programs for acquiring deep, useful and comprehensive knowledge about the places where they spend their vacation, resort treatment, scientific conferences, etc.

[2] State Council Presidium meeting. Available at: http://www.kremlin.ru/events/state-council/50138

In particular, in Russia, the territories for such pastime, as a rule, include the Black sea coast, Lake Baikal, Karelia, cities of the Golden ring and other famous tourist places, in this case the list of travel offers has not included major industrial cities with rich cultural and historical heritage and lack of unique natural-climatic features for a long time. To date, many Russians believe that tourism should be developed away from the industry. However, foreign experience suggests the opposite, they were searching for new unique tourist offers, developing popular tourist itineraries in which special role is given to industrial enterprises. In the authors' view, industrial tourism in Russian regions has enormous potential for development, so it is necessary to interest public authorities and travel agencies in promoting it.

In mass consciousness, the concept "tourism" is often associated with the natural environment; therefore a phrase such as "industrial tourism" does not seem quite usual and appropriate. At the same time, it is worth noting that in recent years, people are taking interest not only in unique eco-friendly areas with beautiful landscapes, but also, oddly enough, in industrial facilities. Given the growing popularity of short-term tourist routes among Russians, it can be stated that industrial tourism should be given a special place in the list of tourist products offered by travel agencies. Industrial tourism is associated with excursions and regular tours at the country's advanced operating or former industrial enterprises. American companies are considered the founders of this type of tourism. It is well known that in 1866, *Jack Daniel's* gave the first guided tour, after which industrial tourism became publicly recognition in many foreign countries. It is currently widely distributed. For example, in Shanghai (China) *Shanghai Volkswagen Automobile Co.*(car manufacturing), *Shanghai Baosteel Group Corporation* (steel manufacturing), *Shanghai TOTOLE Food Co., LTD.* (food processing) are open for public tours, as well as a number of innovative industrial platforms ("gardens")[3], etc. Another example is the well-known *Coca Cola* centre in Atlanta (USA). One of the authors has had an opportunity of getting acquainted with its operation. Visitors are invited to not only to learn about the history of the company and its technology, but also get acquainted with the product range and even try out all the world-known varieties (several dozens) of this famous drink. It is important to note that the center is not an isolated museum; it is closely integrated into the city's tourist infrastructure. Despite being popular and having many visitors, the center promotes group tours for schoolchildren.

[3] Availableat:http://www.topchinatravel.com/shanghai/where-to-do-industrial-tour-in-shanghai.htm

First of all, the authors systematize ideas about industrial tourism in works of foreign and domestic researchers. Conceptualization of industrial tourism is presented in the work of an Australian expert E.A. Frew [24], where he point to the need for a wide interpretation; he states that this type of tourism requires special management approaches because it involves a combination of tourist and industrial activities. The attractiveness of industrial tourism facilities, as shown by the experience of Taiwan, is related to its really interesting features, security and a possibility of external access [29]. A. Otgaar identified three preconditions sufficient to interest enterprise owners in participating in industrial tourism. These include a sufficient number of tourists, a possibility of production co-branding (co-franchising), capacity of industrial tourism product [30]. According to the study of a group of Serbian experts, the issues of industrial tourism development can be related to lack of support of the local population, the need for a complex infrastructure, the questionable authenticity of display objects [25]. It is interesting to note that industrial tourism is considered not only as a tool of activity diversification of the existing enterprises, but also as a rehabilitation means of territories of industrial decline. In particular, P. Bujok et al. [22] give a successful example of a metallurgical plant in Vítkovice (Czech Republic), the involvement of which in the tourist activity creates the preconditions for the area's economic recovery. However, the most striking example of this kind of situation is, of course, the Ruhr district in Germany, where the use the closing or closed mining and steel enterprises for tourism purposes brought the region back to sustainable development, as evidenced by a recent study [23]. In particular, tourists can visit mines and factories. On the one hand, it looks like a kind of an attraction, but on the other hand – we are talking about the visitors' introduction to industrial heritage which is as well important for patriotic education, as well as a more holistic perception of the Ruhr area. It is important to understand that industrial tourism changes the cultural landscape of the latter. Industrial sites become valuable heritage sites, and the region itself is perceived as culturally significant, modern and innovative.

At the same time, G.-J. Hospers initially expressed skepticism concerning the role of industrial tourism in the EU economic recovery [26]. A number of experts note the special role of tourism in industrial society heritage conservation. Thus, F. Bran and G. Manea [21] point to the need for full assessment of such heritage so that subsequent management actions do not lead to its partial loss. The development plan of the Limburg province in Belgium analyzed in the article

by M. Jonsen-Verbeke is noteworthy [28]. The purpose for this plan is to transform economy from industrial to post-industrial based on tourism for gaining the necessary sustainability. The industrial tourism research experience in China analyzed by Y. Jia deserves special attention [27]. In particular, the mentioned work develops the idea of the need to produce a truly unique tourism product, particular features of which are related to production peculiarities and their re-consideration with their introduction in tourism. Moreover, Chinese science refers to the so-called experience tourism which aims to provide the tourist' involvement in production process.

Among Russian experts there are those who provided the theoretical rationale for tourism development. They are S.K. Volkov and I.A. Morozova [3], A.P. Garnov and O.V. Krasnobaeva [5], A.V. Medyanik and S.V. Tarabanovskaya [12], N. V. Pogorelova [14] and G.V. Struzberg [17]. According to S.K. Volkov who analyzed the German experience, the development of this type of activity is closely related to regional marketing strategies taking into account the stakeholders' interests [4]. Industrial tourism itineraries in the Orenburg Oblast were proposed by G.V. Struzberg and L.V. Dokashenko [16]. The potential of this type of activity in Primorsky Krai was studied by T.N. Belent'eva and Y.S. Naruta [2], by R.V. Kadyrov – in the Republic of Tatarstan [9], by A.A. Kosyakova –in the Vologda Oblast [11]. According to G.S. Dmitriev [8], M.V. Koreshkov and S.E. Derevnina [10], Yu. Nikulina [13], this type of tourism is quite capable of providing the industry with highly qualified personnel, as well as establishing the link between production and education. In addition, personnel are provided with additional motivation, which is especially important in the Russian context. S.A. Sklyarenko et al. demonstrate how stand-by enterprises of a particular industry (in this case, the sugar industry) can be used for industrial tourism purposes, which promotes transition to post-industrial economy [15]. N.I. Timofeev using the example of shipbuilding cluster in Saint Petersburg successfully demonstrated the contribution of industrial tourism to improving the territory's welfare [18]. He notes that this type of activity promotes innovative production activity.

Summarizing the above, the authors note that industrial tourism has two forms. First, it implies the involvement of operating enterprises in tourism, which implies guided tours, museums, exhibitions, and open events. In this case, industrial tourism gets closer to business tourism implying visits by official delegations and business partners ,

with educational tourism (visits of students and pupils), knowledge (urban, excursion) tourism (visits by local residents and non-local tourists), event tourism (visits of open events). The positive consequences are diversification of activities of both enterprises and tourism industry, promotion of industrial regional brand (and information about a particular enterprise), training of highly qualified personnel, etc. Secondly, industrial tourism implies the involvement of closed, stand-by and abandoned enterprises. In this case, it gets closer to historical, cultural, adventure and extreme tourism, convention and exhibition activity, if the latter uses the facilities and/or infrastructure of the previously existing production facilities. It should be noted that modern classification of extreme tourism presented by M.A. Akimova and D.A. Ruban implies the categorization of industrial tourism as one of the areas of extreme tourism [1], although, of course, we are talking about a narrow interpretation of the former. However, the design of abandoned industrial enterprises, as well as underground structures and mines are of great interest to people interested in extreme pastime, and their number is increasing. If safety is ensured, a particular type of extreme activity may become popular and even profitable. The positive effects of the second type of industrial tourism include diversification of tourism industry, conservation of industrial heritage, territory's economic and social recovery, etc.

Of course, mass development of industrial tourism contributes to the transformation of the region's social space. It is not just about a new activity, partial economic recovery, new jobs, preservation of industrial heritage, etc. In fact, mass development of industrial tourism changes the cultural landscape as it has been discussed above on the example of the Ruhr district. This is explained by the fact that this activity implies the transition to sustainable development in the post-industrial world. The territory is considered (by both tourists and local population), on the one hand, as particularly valuable (tourism development means acquisition of valuable objects as socially significant heritage), and on the other hand, as actively "cultivated". This happens even in cases where industrial tourism is based on the existing production facilities. In other words, it provides integration of production activities with the social life and cultural environment. It can be assumed that such integration should not only promote qualitative change in the attitude of inhabitants towards operating companies in their region, but ultimately shape the image of involvement in innovation development, which is particularly important for building a new type of economy.

Table 1. Dynamics and specialization of operators in the Russian Federation

Year	Number of tour operators	Share of domestic tourism, %	Share of international inbound and outbound tourism, %	Share of international inbound tourism, %
2011	4718	34.1	53.7	12.2
2012	4685	35.9	53.1	11.0
2013	4608	50.1	45.3	4.6
2014	4275	59.2	37.2	3.6
2015	4202	60.1	33.4	6.5

Source: compiled and calculated by the authors from: Federal State Statistics Service. Available at: https://fedstat.ru/indicator/37253.do

Analysis of main indicators of tourist business in Russia. On order to judge the regional development prospects of industrial tourism in Russia, it is first necessary to analyze the main economic indicators of domestic tourism. It is important for understanding how modern trends promote or, conversely, hinder the establishment of this particular type of activity. Market trends forming the structure of tour operator business have led to the fact that during 2011–2015, the share of tour operators involved in international tourism fell by more than a third in international inbound and outbound tourism and almost by a half in international tourism *(Tab. 1)*, which indicates the reduced number of external tourists. At the same time, the share of tour operators in domestic tourism during the same period increased by approximately 2/3. The identified structural changes cannot be related only to a 516 unit (or 10.9%) decrease in the total number of operators during 2011–2015. On the contrary, it can be concluded that there is system refocus of tour operators on domestic tourism, which generally corresponds to the national import substitution policy. In the Russian market there remain the most competitive tour operators who managed to refocus on domestic tourism.

The analysis of dynamics of the amount of tourist services during 2011–2015 in Russia suggests a positive trend: active growth by 7% and 20% in 2012 and 2013 respectively compared to the previous period which slowed down in 2014 and amounted to 1% and increased by 7% in 2015 relative to 2014 *(Tab. 2)*.

In general, during the period under study, the amount of tourist services in Russia in nominal currency units increased by 40%, however, given the price increase index it can be stated that there is a decline in this indicator by more than 10%. In the context of federal districts, the dynamics of tourist services is more uneven with its growing

Table 2. Amount and dynamics of tourist services by Federal district, billion rubles

Federal district	2011	2012	2013	2014	2015	Growth rate, %	Price increase index in 2011–2015
Russia	112.8	121.5	145.8	147.5	158.3	40.3	1.51
Central	33.2	32.3	44.2	40.3	43.7	31.6	
Northwestern	13.1	14.9	17.5	17.8	16.3	24.4	
Southern	6.9	7.9	8.6	9.9	11.8	71.0	
North Caucasian	6.2	5.9	4.5	4.6	5.0	-19.4	
Volga	16.5	20.0	24.8	26.4	26.7	61.8	
Ural	16.6	17.6	19.8	22.3	24.6	48.2	
Siberian	15.5	17.2	19.4	18.8	18.0	16.1	
Far Eastern	4.8	5.8	6.8	7.1	7.4	54.2	

Source: compiled and calculated by the authors from: Federal State Statistics Service Official website. Available at: http://http://www.gks.ru

trend. The positive dynamics during the whole period under study are observed in all districts, except the North Caucasian (the Crimean Federal district was not considered due to lack of statistical data for 2011–2013). Considering inflation, the actual increase in the amount of tourist services is observed only in the Southern, Volga and Far Eastern federal districts. For objective reasons (exceptionally rich natural and climatic resources and convenient geographical position in relation to the country's most populous areas) the leader among them is the Southern Federal district. Federal districts such as Central, Northwestern, Ural, Siberian, demonstrate the growing amount if tourist services in nominal currency units, although in real terms there is a decrease in the analyzed indicator.

Statistical data analysis concludes that there is an actual decline in the rate of tourist services growth in most federal districts of the Russian Federation. The reason for this situation, in the authors' opinion, is explained by the population's declining purchasing power (especially in 2014–2015), rather than by market deterioration.

When considering the total amount of travel, hotel and resort services, the overall situation in Russia is better than that considered by separate tourist services (*Tab. 3*). Given the growth rate of tourist services amounts presented in Table 2, and comparing them with the results obtained in Table 3, it is possible to see the greatest increase in hotel and resort services in the Northwestern, Southern, North Caucasian and Siberian federal districts.

Table 3. Amount and dynamics of tourist, hotel and resort services by federal district in 2011–2015, billion rubles

Federal district	2011	2015	Growth rate, %	Price increase index in 2011–2015
Russia	306.9	457.8	49.2	1.51
Central	92.9	120.2	29.4	
Northwestern	35.0	48.9	39.7	
Southern	37.3	68.8	84.5	
North Caucasian	20.5	28.1	37.1	
Volga	43.3	66.4	53.3	
Ural	33.2	46.8	41.0	
Siberian	30.9	39.0	26.2	
Far Eastern	13.7	20.3	48.2	
Source: compiled and calculated by the authors from: Federal State Statistics Service Official website. Available at: http://http://www.gks.ru				

The authors believe that such dynamics may be caused by both re-focus of consumer demand on domestic tourist services and intensive infrastructure development in these districts. It should be noted that given the inflation, the actual increase of in the amount of tourist, hotel and resort services is observed only in the Southern and Volga federal districts.

Successful tourism development depends on a number of factors, among which is the economic situation in the country, consumer preferences, etc. [20]. Important factors, as can be seen, are the region's possibilities and its tourism potential, as well as the number of new supplies in the tourist service market. In particular, the issue of tourism development at the regional level is of particular relevance for the regions without rich cultural and historical heritage and unique natural and climatic conditions. Such territories include highly industrial regions which currently underuse its tourism potential for the development of domestic and inbound tourism. The authors provide a detailed argumentation of one of the solutions to this problem.

Opportunities and obstacles for successful industrial tourism development. To analyze the potential of tourism development in Russian regions the authors conducted SWOT-analysis widely used both in Russia and foreign abroad for analyzing an industry or a new product. The use of this method helps evaluate the strengths, weaknesses, opportunities and threats of a certain activity, in this case – industrial tourism. The results presented in *Table 4* can be used in the development strategy of industrial tourism as a new phenomena on tourist service market.

Table 4. SWOT-analysis matrix for industrial tourism

Strengths	Opportunities
– A new type of tourism on tourist market – A cost-effective and competitive type of tourism – A sufficient number of industrial facilities for displaying in the country's regions – Components of knowledge, educational and business tourism contributing to an increase in the level of knowledge of the local population and tourists about their own country and the region – The interest of local population in the development and promotion of new types of tourism – Increased domestic and inbound tourist flow to Russian regions	– An opportunity to promote an enterprise's end products, including through market expansion – Strengthening the image of an economic entity and municipal formation – Attracting potential workforce through field trips from educational institutions in the framework of vocational guidance – An additional source of income for cooperating companies associated with guided tours, souvenir sale, hotel services, catering, transport support, etc. – Increasing interest of foreign tourists in the Russian regions – Increased business activity – Promotion of a region as innovative successful – Recovery of territories of industrial decline – Creation of new jobs – Preservation of industrial heritage
Weaknesses	**Threats**
– Lack of entities' tourist image – Lack of marketing events aimed to promote new tourist products – Industrial tourism is a non-mass type of tourism – Unwillingness of companies' management to take in tourists reduces the availability of industrial facilities – Additional costs of establishing an enterprise's museum, of souvenir products – Insufficiently qualified personnel of host companies, including the low level of knowledge of foreign languages – No legislation, state and regional programs supporting industrial tourism development – Lack of knowledge about public interest in the knowledge types of tourism and the corresponding demand	– Poor condition of display objects – Declining tourism demand due to low management level of field trips to enterprises; – Underdeveloped complementary services (in particular, tour guides with knowledge of foreign languages) – Tough competition from other types of tourism – Disruption of production cycles of the existing enterprises – Security issues – Trade secret infringement
Source: compiled by the authors.	

The opportunities of industrial tourism are determined by the level of potential of the tourism sector in general which is closely related to the economic welfare of the country, regions and specific businesses. In the authors' view, in order to strengthen the development of industrial tourism in the Russian regions, the following objectives should be met:

1. *Improving the system of organizing field tours to industrial facilities of the existing production*. The Russian Federation currently lacks a unified information and consulting center which would give full information about manufacturing companies willing to host tourist groups. When elaborating a particular itinerary to an economic entity, it is necessary to clearly regulate the time of visit, develop a master class with tourist participation in manufacturing specific products, develop game modules (competitive contests), prepare a guide, and give tourists souvenirs made at the enterprise. Financial costs when organizing tourist itineraries to the existing facilities are usually insignificant because there is no need to create facilities and resources for hosting visitors and demonstrating the production process.

2. *Upgrading domestic enterprises for hosting tourists at their premises.* Currently, in Russian regions enterprises of national art crafts are the man to engage in constructive dialogue in the sphere of production and tourism. Conversely, major industrial enterprises with interesting technological support and innovation processes remain aloof from the possibility of raising their own tourist attractiveness. In the Russian context, in contrast to the foreign experience, businesses do not demonstrate openness and hospitality to outsiders. To some extent this is explained by the fact that some economic entities use security briefing or the permit system. However, it should be noted that the principle of openness of the production process to tourist groups can improve the company's reputation. As a rule, such economic entities have a more presentable image showing its visitors the workplace cleanliness, the application of modern technological equipment.

3. *Developing tourist brand in industrial regions*. A recognizable regional brand greatly simplifies the objective of establishing and promoting industrial tourism. The region's exclusive opportunities may include certain products manufactured in its territory. As a rule, the region's brand and products are interrelated – the products promote the region, the regional brand promotes sales of these products on the regional market. Thus, both Russian regions and should benefit from creating a brand or a logo, which would build up a positive opinion about the region and its manufactured products.

4. *Establishing interactive corporate museums at an enterprise.* A museum which reflects all the important facts from the life cycle of an enterprise is an integral part of its image. Many major industrial enterprises in the Russian Federation have retained their production base. It is worth noting that collecting unique and original exhibits causes significant difficulties for museum founders. Among different types of museums the most popular tourist destination in our days is interactive museums which amaze all its visitors. Their characteristic features are topics understandable to people of all ages and occupations and the possibility of tourists' interaction with the presented industrial exhibits. The main purpose of corporate museums is to justify the need economic entities for the society in general.

Industrial tourism development has a number of side effects in addition to the above mentioned. The first is the territories' increased investment attractiveness. It is common knowledge that it is provided not only by the real success of the regional economy, but also by its positioning in the information space. Industrial tourism opens a new channel for the distribution of positive information about the manufacturing sector in the region. Second, integration of tourist activities. The fact is that in the described economic conditions, the diversification of activities is a vital objective for local tourism. It can be solved not only by making a considerable effort to develop certain types of tourism, but also by stimulating some types of tourism by others. The authors have already noted the relations between industrial, business, educational and other types of tourism. Here are two examples. The use of premises and facilities of the previously existing or partially reorganized companies helps expand the exhibition activity, which acts as a business tourism development driver. This increases investment attractiveness of the territory and stimulates the development of industrial production. In fact, this kind of "chain" has already been implemented in the industrial zone of Rostov-on-Don. The second example is related to abandoned underground facilities. Their use by extreme loving tourists represents the essence of spelestology – one of the types of extreme tourism. Therefore, we are talking about the "natural" integration of two types of tourism (industrial and extreme), where the development of one means the emergence of the other. In addition, they are closely connected to sports and adventure tourism. From the point of view of the tourism industry, this implies diversification through the specified integration, several activities provide more opportunities (including in economic terms) than one.

Industrial tourism resource base dynamics. Clearly, the development of industrial tourism requires an adequate resource base. The authors consider it on the example of two regions – the Vologda and Rostov oblasts. They have rich tourist potential but are not included in the list of the country's most important destinations. In order to increase their attractiveness it is necessary to diversify tourist services, which can be done with the help of industrial tourism development.

In both regions under review, the number of enterprises and organizations in recent years has risen steadily *(Tab. 5)*. This indicates certain expansion of regional economies as a whole. It is even more important than the increased number of industrial enterprises, as new industrial enterprises are introduced slowly and rarely, whereas tourists' interest should be stimulated constantly. In the mass consciousness, economy is primarily associated with manufacturing (even if it is actually not true), that is why its expansion is perceived as the success of the production sector. As follows from the presented data, this clearly should take place in the case of the Vologda and Rostov regions.

Both oblasts have a well-developed industrial base, though different. The Vologda Oblast is well known for its steel production in Cherepovets, while in the Rostov Oblast production is less-sized. However, local machine building and construction enterprises, etc. are widely known. Consequently, there are specific industrial facilities potentially attractive to tourists. Thus, no problems with transport accessibility as these facilities are usually located in large and medium-sized cities. Moreover, the experience of Rostov-on-Don, with popular tours on the so-called "retro-train" and the Museum of railway equipment, shows that transport itself can be an excellent addition to industrial tourism. This is due to the fact that the history of transport development in cities was initially associated with their industrial development; and industrial and transport heritage are inseparable. The trip on the

Table 5. Dynamics of the number of enterprises and organizations in the Vologda and Rostov oblasts

Region	Number of enterprises and organizations, units			
	2012	2013	2014	2015
Vologda Oblast	40316	42148	43302	45435
Rostov Oblast	87457	88144	89473	91701
Source: *Federal State Statistics Service Official website*. Available at: http://http://www.gks.ru				

"retro-train" and similar attractions stimulate interest in machinery, which is important for generating demand for industrial tourism, and their combination with industrial tours will diversify and make the latter more exciting.

It is quite obvious that for industrial tourism development the socio-economic situation of the regions is very important. On the one hand, they should be industry-focused and position themselves in the media. On the other hand, these regions should really play a significant role in the country's industrial development. Both these conditions are present in the Vologda and Rostov oblasts (in the first case – metallurgical production, in the second – production of agriculture equipment), even if their fame as agricultural regions eliminates their industrial focus.

Both regions already offer industrial tourism services. Thus, in Cherepovets, there is a Museum of steel industry, in Rostov-on-Don – the Rostselmash plant organizes tours for everyone. Analysis of this and other experience attracts attention to the following. More interesting are tours characterized as high-tech. Another key to tourists' interest is a possibility to not just passively observe, but also to participate. A modern tourist finds in more important to examine the exhibits and pay attention to the guide's explanations and do something by themselves, rather than deeply understand how production works. All this means, firstly, that there is a need to device a kind of attraction and, second, that it is important to involve experts in tourism management instead of trying to develop industrial tourism by themselves. This is the way to achieve such a positive effect as in the Ruhr district.

Conclusion. Summing up, it can be noted that statistical analysis has showed a decline in the real amount of tourist services in Russia in 2011–2015, lack of new tourist offers reduces opportunities for increasing the indicator. It should be noted that every Russian region seeks to develop its own regional model of tourism development by diversifying the range of tourist services, one of which, in particular, can be industrial tourism. Work on enhancing its development is currently carried out in every Russian region at an early stage. The difficulty of promoting such a specific tourism product is associated with the feature of industrial tourism which focuses on the enterprise's production process.

It is also important to note the following. When analyzing the development prospects for certain types of tourism not widely known in individual countries and regions, experts rely on the current resource base. This approach is determined by traditional predominance of the "geographical" approach to understanding tourism in domestic science. However, the reference to the modern

literature clearly indicates the relevance of the "sociological" or, more correctly speaking, "socio-economic" approach based on prerequisites associated with the demand for this type of tourism and objective prerequisites prevailing in the tourist service market. The present study attempts to use this approach; the results indicate its effectiveness. Industrial tourism development prospects in some Russian regions are related not only to the availability of appropriate facilities, but also to the fact that adequate state of tourist service market is only possible to achieve through diversifying tourist services, including through the development of industrial tourism.

It is certain that most Russian industrial regions are potentially interesting to tourists, so a steady stream of relevant market offers for industrial tourism will generate demand. Therefore, new tourist services on the Russian market will help increase tourist flows to the regions.

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Building an Integral Measure of the Quality of Life of Constituent Entities of the Russian Federation Using the Principal Component Analysis*

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Abstract. Social policy just like any other type of policy is an element of the management system. For effective social policy it is necessary to know the trends and quantitative characteristics of social development dynamics. The purpose for the research is to build an objective composite index to measure and compare the quality of life in constituent entities of the Russian Federation. Such an index is particularly useful in Russia which is undergoing the process of transformations amid increasing social and economic inequality. Objective complex assessment of the quality of life can play a major role in reducing such inequality in Russia. The author implements the algorithm of building a latent integral characteristic of system quality change based on statistical indicators for a series of sequential observations on the basis of principal components analysis given the measurement noise (SNR-based algorithm). As opposed to the classic principal components analysis where the information capacity of the calculated integral characteristic set a priori and is provided by selecting a number of principal components, in the proposed algorithm the information capacity is estimated a posteriori, based on variance criteria and the selected signal-to-noise ratio characterizing data variability. When building an

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objective indicator of the quality of life the author uses methods of multivariate analysis and the signal detection theory. With the use of the proposed algorithm the author builds integral indicators of the quality of life of constituent entities of the Russian Federation in 2007–2014. It is concluded that an objective approach is required when building the integral index of the quality of life for the subjects of the Russian Federation. The proposed algorithm is resistant to the changes in input data. The method can be used for assessing the quality of life in the territorial units of any level and for calculating integral estimates of the quality change in any poorly formalized system.

Keywords: integral index, measurement error, quality of life, development, principal components analysis, measurement error.

Introduction

Despite a rather solid record of research, thus far there has not been developed any generally accepted definition of "quality of life", any approach to its diagnosis based on reliable, verifiable and reproducible information base that helps take into account the specific features of socio-economic system functioning. This circumstance in fact is an obstacle to the development of an effective state regional policy. Meanwhile, a science-based methodology for integrated assessment of the population's quality of life in Russian regions should be considered as an effective tool for identifying social issues, determining priority areas and the scope and mechanisms of state support aimed at narrowing the gaps in the standards of living and improving the quality of life in Russian regions.

In the early 1970-s, the UN Economic and Social Council (CESNU) after generalizing the experts' proposals – sociologists', demographers', economists', environmentalists', etc. – prepared a strategy paper for further development of mankind with one of the key provisions being the focus on "the quality of life". The previously applied economic-centrist approach, where ideas about the successful development of the society were limited to the comparison of economic growth parameters and the population's financial status, has now been recognized as not quite correct, as there is no direct dependence between macroeconomic indicators and the level of life satisfaction and the quality of life. Economic growth does not eliminate automatically excessive social differentiation, poverty, crime, unemployment, but tends to reinforce these problems.

In modern socio-economic concepts the quality of life is a criterion of progressive socio-economic social changes, the main objective of social development. In 2004, Russian President in his Address to the Federal Assembly for the first time defined the quality of life as a target criterion of the socio-economic development of Russia[1]. Since then,

[1] Presidential Address to the Federal Assembly, dated May, 26, 2004. Available at: http://www.consultant.ru/document/cons_doc_LAW_47851 (Accessed: 13.06.2016).

the problem of measuring and evaluating the quality of life of the Russian population has become one of the practical problems. In subsequent years, top government officials[2] in their speeches have repeatedly[3] stressed the importance of focusing the socio-economic policy on improving the population's quality of life. Today, the priorities and targets of the government policy in social and economic development are determined by "Main activities of the Government of the Russian Federation for the period up to 2018"[4]. This document states that "the Government will ... ensure sustainable dynamic **improvement of the quality of life** of the Russian population".

When compiling system quality integrated indicators, the variables presumably determining the latent quality indicator are aggregated according to the weights of variables in the designated figure. There are several approaches to compiling integrated indicators. The subjective approach (an approach "with the teacher") uses expert evaluations or the results of sociological research to determine the importance of indicators. The objective approach (the approach "without a teacher") defines the weight coefficients of indicators without using human preferences to assess the situation, but applies the chosen formal method.

Compilation of integrated indicators includes several stages where a decision must be made: selection of the range of indicators, methods of preliminary processing, method of data aggregation (additive or multiplicative), weight coefficients. However, the main objection of opponents of integrated indicators is the subjective nature of determining the weights. Obviously, the measurement of categories of social existence by subjective indicators should be treated with extreme caution. Presidential election in the United States and Austria in autumn 2016, with all opinion polls and expert evaluations showing a compelling advantage of the losing candidate, clearly demonstrate the limited applicability of such methods.

International organizations are continuously working on the improvement of methods of compiling integral indicators [19–22]. In 2008, Organisation for Economic Co-operation and Development (OECD) in cooperation with Joint Research Centre European Commission prepared a handbook [11] which was the result of many years of research in this area [19–22, 24] presenting to

[2] Poslanie Prezidenta RF Dmitriya Medvedeva Federal'nomu Sobraniyu Rossiiskoi Federatsii [D. *Medvedev's Presidential Address to the Federal Assembly]. Rossiiskaya gazeta,* 2009. November, 13, 2009. Federal issue no. 5038 (214). Available at: https://rg.ru/2009/11/13/poslanie-tekst.html (Accessed: 13.06.2016).

3 *Poslanie Prezidenta Vladimira Putina Federal'nomu Sobraniyu RF ot 12 dekabrya 2012 goda* [V. Putin's Presidential Address to the Federal Assembly, dated December 12, 2012]. Available at: КонсультантПлюс, contact@consultant.ru(Accessed: 13.06.2016).

[4] Osnovnye napravleniya deyatel'nosti Pravitel'stva Rossiiskoi Federatsii na period do 2018 goda [Main activities of the Government of the Russian Federation for the period up to 2018]. New edition. Approved by the *Government of the Russian Federation May 14, 2015. Sistema GARANT* [Garant system]. Available at: http://base.garant.ru/70309020/#ixzz4FKawUiEh (дата обращения: 13.06.2016).

a wide range of stakeholders a set of technical concepts helping researchers form composite indicators. The author chooses the linear convolution of indicators as the main method of data aggregation, and factor analysis as the main tool for compiling composite indicators. The integral indicator value in this case is determined by significant weights of the selected main factors after rotation [15, 19, 20]. This technique is an alternative to the method of compiling the integral index as a projection on the first principal component [1, 2, 14, 15, 18, 23, 25]. De facto, it is the linear convolution as a way of aggregation and a multidimensional analysis for determining the weights of indicators that become standard when compiling integrated indicators.

Unfortunately, Russian researchers do not use methods of multivariate analysis for compiling integrated indicators of the quality of life. The most well-known methods for evaluating the quality of life performed in the all-Russian Research Institute for Technical Aesthetics (VNIITE), Institute for Macro-economic Research (IMEI) and the Central Economics and Mathematics Institute at the Russian Academy of Sciences (TsEMI RAS).

In the framework of the method proposed by IMEI experts, the assessment of the quality of life includes indicators of material and social security and environmental conditions. Nine indicators are used, which are first unified (moved into the interval [0, 1] according to the principle: "the more the better") in accordance with the methodology adopted by the UN in compiling the Human Development Index (HDI), and then participate in a linear convolution with equal weights [12, 13]. The VNIITE indicator of the quality of life consists of separate objective and subjective indicators [6]. The values of variables are selected from data of Rosstat and public opinion polls VtSIOM data, etc.). The list of indicators is not fixed. Indicators are unified and linear convolution is calculated. The weights are determined by experts or researchers arbitrarily. The techniques have limited applicability because of the subjectivity of choice of variables and weight coefficients.

The formal approach to the assessment of the quality of life developed in TsEMI RAS under the supervision of S.A. Aivazyan [1, 2] is more popular. The choice of variables in this technique is carefully substantiated; the weights in the linear convolution are determined by the algorithm based on Principal Component Analysis (PCA).

But it should be noted that the method of determining weight coefficients using multivariate analysis (factor analysis and PCA) can not be applied to compare objects' characteristics in real-time mode, as even with fixed methods of factor extraction and rotation methods, multivariate analysis for different system observations defines the structure of main components and main factors differently, which makes comparison meaningless [7]. In the following works [3,

4, 10], the integrated index is based on the method of S.A. Aivazyan [1, 2]. Unfortunately, integrated characteristics compiled in [3, 4, 10] are not resistant to changes in indicators by year, so they cannot be considered quality.

The problem of calculating integrated system characteristics

Consider the compilation of the integrated system assessment of the *m* object for which there are tables of *n* object descriptions for a set of observations $t = 1, \ldots, p$ – matrix with m×n radius $A^t = \{a_{ij}\}_{i,j=1}^{n,m}$. Numerical characteristics of the system have been subjected to pre-unification – putting the variable values on the interval [0, 1] according to the principle: "the more, the better". For each t^{th} point the vector of integrated indicators is:

$$q^t = A^t \cdot w^t, \quad (1)$$

where $q^t = \langle q_1^t, q_2^t, \ldots, q_m^t \rangle^T$ – vector of integrated indicators of t[th] point,

$w^t = \langle w_1^t, w_2^t, \ldots, w_m^t \rangle^T$ – weight vector of all indicators for t^{th} point,

A^t – the pre-processed data matrix for t^{th} point.

To compile the system quality integrated indicator it is required to find out the weights of w^t indicators for each time point. For a fixed *t* an integrated assessment is often recorded for each of the object numbered *i* in the form of additive data convolution with some weights:

$$q_i = \sum_{j=1}^{n} w_j \cdot a_{ij}, \quad i = 1, 2, \ldots m. \quad (2)$$

Methods of multivariate analysis help estimate the weight coefficients (2) without using subjective information. The basic is an assumption that the most informative for estimating the integrated characteristics are variables showing the greatest variability. Coefficients of the first principle component or factor weights after rotation serve as weight coefficients. The principal component analysis does not formally require the use of rotation, but to ease the interpretation of components it is recommended to use varimax rotation as a standard approach [17], which increases large and reduces small values of factor weights. When calculating the integrated indicator after rotation, significant loads of the selected factors are involved in determining weight coefficients, insignificant ones are zeroed [15, 20].

Integrated system characteristics with data measurement noise

The researchers' dissatisfaction with the quality of compiled integrated indicators is based not only on methodological problems of compilation, but also on insufficient data quality. Nevertheless, statistical data containing inherent errors currently represent the best estimates of real values existing in social systems[5] [19].

Obtaining accurate object's characteristics based on a single measurement with inevitable

[5] Human Development Reports. 1990–2014. *United Nations Development Programme,* 1990-2014. Available at: http://hdr.undp.org/en/reports/ (Accessed: 13.06.2016).

unknown error is impossible. However, the calculation of an unknown characteristic by a series of such measurements is quite possible. In particular, this objective is successfully being solved by astrophotometry which defines basic numerical parameters of astronomical objects not by a single observation (image), but by **a series** of noisy images. Using main ideas underlying astrophotometry the author reviews the compilation of integrated characteristics of the complex system quality change as a solution to the problem of valid signal detection in a series of observations, which contains a description of the unknown parameter.

Any measurement, including statistical, is inevitably related to the accuracy of the measuring device, therefore the measuring result unavoidably contains a random inherent error. The compilation of integrated characteristics of system quality change can be considered as an objective of separating a valid signal against the background noise with multiple implementations of the measured process. This task is similar to the problem of digital image restoration corrupted by additive white Gaussian noise. PCA helps highlight the structure in the multidimensional data array which has been successfully used for image recognition and noise suppression.

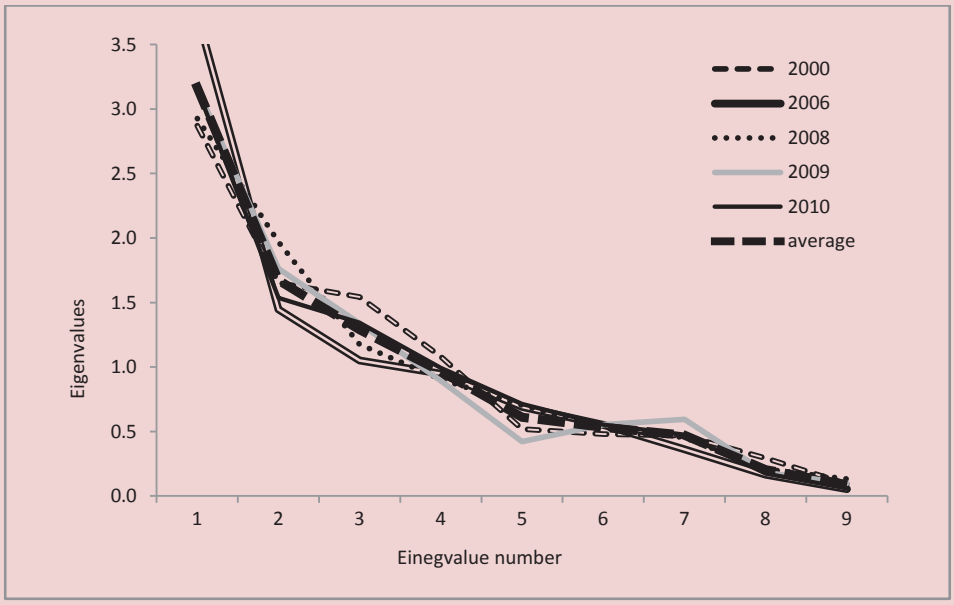
Quantitative characteristics of a particular system functionally associated with its structural characteristics and working conditions depend on signal-to-noise ratio. This ratio is often used to quantify the efficiency of signal detection in optoelectronic, automatic television systems, means of control and diagnostics, etc.

SNR – **signal-to-noise ratio** – the ratio of a signal (or rather, a sum of signal and noise) to noise. The value can be calculated either as a dimensionless ratio of signal amplitude to noise amplitude $SNR = A_s / A_n$, or in decibels $SNR\,(dB) = 20 \cdot \log_{10}(A_s / A_n)$. This value most fully describes the signal reproduction quality in television systems, mobile communication systems, and astrophotometry. In statistics, the inverse value is a variation coefficient describing data variability.

The choice of the threshold value of the signal-to-noise ratio which helps distinguish the signal against the background noise is justified in [8]. Modern technical systems (and a human eye) distinguish signal from noise if the level of the system's SNR is about 7 dB (in dimensionless units – 2.2). This threshold value is used in photometry of low-intensity objects: when signals from dim stars are recorded it is necessary that SNR exceeds 2.2. This SNRE value = 2.2 will be used further in this work as a threshold value, although it is possible to consider a bi higher values. The author notes that this value corresponds to the 45% or less variation coefficient.

Any result obtained on the basis of statistical data will contain a random inherent error – standard deviation. The transition to a different time point means changes in data,

Figure 1. Eigenvalues of covariance matrix of variables for different observation points



which, amid the unchanging system structure are caused by both changes in the situation and random errors. PCA based on different eigenvector and values different for every time point describes the unchanging structure of the system. Consequently, the eigenvalues and eigenvectors will serve as a signal which needs to be detected from noisy data according to available implementations. The assumption that input data variation of eigenvalues have a common trend is illustrated in *Figure 1* which presents the eigenvalues arranged in descending order for different observations.

The average value of the values under review clearly demonstrates the trend (signal) and its random deviation. It is the value averaging that is used in astrophotography for noise suppression. The averaging is based on assumptions that the nature of noise is completely random. Consequently, random deviations from actual data values will continue to decline as the number of observations increases.

Averaging for eigenvectors cannot be used as they are detected by PCA defined accurate to its direction, in contrast with the eigenvalues determined uniquely. The average factor weight value of variables depends on vector direction and cannot uniquely characterize the signal. Therefore, based on eigenvectors calculated for different observations (arranged in descending order of eigenvalues) it is necessary to coordinate the directions of eigenvectors to identify random

and non-random components of these vectors and determine coordinate values of non-random variables.

The author does not consider a non-random (i.e. significant) contribution of a variable in the structure of the main component as a greater value of the rotation weight factor, like in factor analysis, but the **invariance** of factor weight disturbances (for different observations), the peculiar feature of which is the value of signal-to-noise ratio determined by the ratio of the average value of a variable (signal) and standard deviation (noise). If this ratio is above the threshold value, the variable is considered non-random and significant. If this ratio is not fulfilled, the variable characterizes the noise component of the signal and is not further considered. To check this condition it is necessary to coordinate the directions of eigenvectors based on a criterion. After determining the significant variables they, just like in factor analysis, will be involved in further observation, the insignificant variables are zeroed. A detailed description of the algorithm is presented in [7, 8].

Calculation of integrated indicators of the quality of life

The author illustrates the algorithm for calculating the integrated indicators of the quality of life in constituent entities of the Russian Federation. The choice of variables and dividing them into blocks are beyond the considered discussion. Therefore the author can use the list of variables (*Tab. 1*) from the study by M.A. Isakin [5]. The integral indicator of the quality of life is calculated on the basis of three systems of indicators reflecting the integrated categories of the quality of life: the level of population's welfare, population quality and social quality. The model of the integrated indicator of the quality of life was developed by professor S.A. Aivazyan [1, 2]. The author has used a permanent set of 36 variables [5] for a long time. The author replaces the missing publicly unavailable data with similar to them (highlighted in *Table 1*). For example, variables 36 and 37 replaced the missing variable "number of suicides per 100.000 people". All variable values are taken from Rosstat reference books[6].

[6] Regiony Rossii. Sotsial'no-ekonomicheskie pokazateli, 2015 (2008–2014): stat. sb. [Russian regions. Socio-economic indicators, 2015 (2008–2014): statistics book]. *Federal State Statistics Service*. Available at: http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/publications/catalog/doc_1138623506156. (Accessed: 10.02.2016).

Trud i zanyatost' v Rossii, 2015 (2009, 2011, 2013): stat. sb. [Labor and employment in Russia, 2015 (2009, 2011, 2013): statistics book]. *Federal State Statistics Service*. Available at: http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/publications/catalog/doc_1139916801766, (accessed: 10.02.2016).

Demograficheskii ezhegodnik Rossii, 2015 (2008-2014): stat. sb. [Demographic yearbook of Russia, 2015 (2008–2014): statistics book]. *Federal State Statistics Service*. Available at: http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/publications/catalog/doc_1137674209312. (Accessed: 10.02.2016).

Table 1. Variables for calculating the integrated indices of the quality of life

Block 1: Population's welfare	
1	Pre capita GDP–living wage ratio, units
2	Per capita income purchasing power relative to living wage, %
3	Share of people with incomes below living wage, %
4	The ratio of average income of the richest 20% to the poorest 20% (R\P 20)
5	Number of cars per 1 000 people
6	Share of families on waiting lists for housing, %
7	Total area of housing resources per resident (m^2/10 people)
8	Share of dilapidated housing, %
9	Public road density (km/10,000 km^2)
Block 2: Population quality	
10	Life expectancy at birth, years
11	Mortality rate, infant (per 1,000 live births)
12	Population growth rate, per 1,000 people
13	Deaths caused by communicable, parasitic diseases and TB per 100,000 people
14	Deaths caused by neoplasms per 100,000 people
15	Deaths caused by cardiovascular diseases per 100,000 people
16	Deaths caused by respiratory diseases per 100,000 people
17	Deaths caused by digestive system diseases per 100,000 people
18	Incidence of injuries, intoxication and other external causes per 100,000 people
19	Number of disabled people per 1,000 people
20	Incidence of congenital anomalies per 1,000 people
21	Specialists with higher education employed in economy, %
22	Labor force productivity (GRP per average annual number of employed in economy, thousand rubles/person)
23	Graduates from higher and vocational educational institutions per 1,000 people
Block 3: Social quality	
24	Unemployment, %
25	Employers engaged in harmful and hazardous working conditions in the average annual number of employed in economy, %
26	Number of employees injured at work resulting in death or loss of earning capacity for 1 or more days per 1,000 employees
27	Net migration per 10,000 people
28	Intentional homicides per 100,000 people
29	Incidence of intentional infliction of grievous bodily harm per 100,000 people
30	Incidence of rape per 100,000 people
31	Incidence of robbery and theft per 100,000 people
32	Incidence of larceny or embezzlement per 100,000 people
33	Number of registered with drug and substance abuse per 100,000 people
34	Number of registered with alcohol abuse per 100,000 people
35	Number of infected with TB per 100,000 people
36	Mortality from external causes per 100,000 people
37	Number of people with mental disorders per 100,000 people

Missing data imputation is a vulnerable point of the integral characteristics calculation technique. A number of observations largely eliminate this problem. Single missing values are restored by linear interpolation of the available neighboring values; if indicators for a number of years are missing they are supplemented by their average values by federal okrug to which the reporting entity of the Russian Federation belongs.

Further, the set of input variables is unified by the following rules. If the initial indicator is related to the analyzed integral quality feature by uniform dependence, their putting to the interval [0, 1] will transform the variables x_{ij} for each time point of observation according to the rule:

$$a_{ij} = s_j + (-1)^{s_j} \cdot \frac{x_{ij} - m_j}{M_j - m_j},$$

where $s_j = 0$ if the optimal value of the j^{th} index is maximum and $s_j = 1$ if the optimum value of j^{th} index is minimal, m_j – minimum value of the j^{th} index for the whole sample (global minimum), M_j – maximum value of j^{th} index for the whole sample (global maximum).

In case where there is another optimal (not minimum or maximum) index value, the following formula is used:

$$a_{ij} = \left(1 - \frac{\left|x_{ij} - x_j^{opt}\right|}{\max\left((M_j - x_j^{opt}), (x_j^{opt} - m_j)\right)}\right)$$

Among the listed variables, variables 1, 2, 5, 7, 9, 10, 12, 21, 22, 23 are related to the calculated characteristic by the monotonic increasing dependence, when the optimal j^{th} value is maximum. The remaining indicators, except for variable 27, the optimal index value is minimal. For variable 27 "net migration" $x_j^{opt} = 0$, j=27. The value corresponds to the situation where the number of migrants from the region coincides with the number of entrants which, according to the author, is a precondition for a better quality of life in the region.

Table 2 shows the determination of empirical eigenvalues as the average value of eigenvalues of standardized data covariance matrix for different observations of the first block.

The determination of the 3rd empirical principal components obtained by determining significant and insignificant variables of homonymous principal components, is presented in *Table 3*. It is necessary to maximize the sum SNR for all variables, which is calculated as the ratio of the calculated average value of factor weights to standard deviation.

All together, 9 options need to be considered, which maximize the calculated SNR for each variable. If the signs of the first variable are identical, the average value of factor weights is maximum and the variation of their values is minimal, consequently, SNR for the variable is maximum. In this case there

Table 2. Determination of empirical eigenvalues for Block 1

Observation	Eigenvalues								
	1	2	3	4	5	6	7	8	9
2007	3.38	2.02	1.03	0.87	0.61	0.48	0.30	0.27	0.04
2008	3.41	2.07	0.95	0.87	0.65	0.48	0.29	0.22	0.05
2009	3.24	2.08	0.97	0.89	0.66	0.55	0.32	0.28	0.03
2010	3.25	1.98	1.14	0.82	0.67	0.49	0.33	0.29	0.03
2011	3.26	2.03	1.25	0.73	0.57	0.52	0.35	0.25	0.04
2012	3.30	2.00	1.30	0.73	0.60	0.48	0.34	0.21	0.03
2013	3.42	2.00	1.21	0.77	0.59	0.50	0.27	0.21	0.03
2014	3.43	2.15	1.27	0.65	0.51	0.47	0.28	0.20	0.03
Empirical eigenvalues	***3.34***	***2.04***	***1.14***	***0.79***	***0.61***	***0.50***	***0.31***	***0.24***	***0.03***

Table 3. Determination of the 3rd empirical principal component from Block 1

Coordination of directions of the 1st variable									
3	Variables								
Principal component	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
2007	-0.07	-0.10	0.26	0.38	0.08	-0.21	0.67	-0.28	-0.44
2008	-0.05	0.19	0.04	-0.14	-0.33	-0.18	-0.41	0.20	0.77
2009	-0.16	0.22	0.19	-0.06	-0.49	-0.20	-0.24	0.04	0.74
2010	-0.17	0.22	0.24	-0.06	-0.37	-0.25	-0.14	0.16	0.79
2011	-0.24	0.18	0.31	0.07	-0.23	-0.20	0.00	0.21	0.82
2012	-0.25	0.18	0.28	0.07	-0.40	-0.23	-0.03	0.17	0.76
2013	-0.20	0.17	0.20	0.01	-0.47	-0.17	-0.03	0.12	0.79
2014	-0.30	0.14	0.18	0.00	-0.38	-0.22	0.04	0.18	0.79
Average, m	-0.18	0.15	**0.21**	0.03	-0.32	**-0.21**	-0.02	0.10	0.63
Standard deviation, s	0.09	0.10	0.08	0.16	0.18	0.03	0.32	0.16	0.43
SNR	2.10	1.47	**2.51**	0.22	1.76	**7.94**	0.06	0.61	1.45
	Sum of SNR by line								18.13
	Sum of SNR of the current variables								10.45
Coordination of directions of the 2nd variable									
3	Variables								
Principal component	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
2007	0.07	0.10	-0.26	-0.38	-0.08	0.21	-0.67	0.28	0.44
2008	-0.05	0.19	0.04	-0.14	-0.33	-0.18	-0.41	0.20	0.77
2009	-0.16	0.22	0.19	-0.06	-0.49	-0.20	-0.24	0.04	0.74
2010	-0.17	0.22	0.24	-0.06	-0.37	-0.25	-0.14	0.16	0.79
2011	-0.24	0.18	0.31	0.07	-0.23	-0.20	0.00	0.21	0.82
2012	-0.25	0.18	0.28	0.07	-0.40	-0.23	-0.03	0.17	0.76
2013	-0.20	0.17	0.20	0.01	-0.47	-0.17	-0.03	0.12	0.79
2014	-0.30	0.14	0.18	0.00	-0.38	-0.22	0.04	0.18	0.79
Average, m	-0.16	**0.18**	0.15	-0.06	**-0.35**	-0.15	-0.19	**0.17**	**0.74**
Standard deviation, s	0.12	0.04	0.18	0.15	0.13	0.15	0.25	0.07	0.12
SNR	1.36	**4.33**	0.79	0.41	**2.60**	1.03	0.75	**2.44**	**6.00**
	Sum of SNR by line								19.70
	Sum of SNR of the current variables								15.37

are two current variables for which SNR is not less than the threshold 2.2 SNR value, namely variables x_3, x_6. The sum of ratios of these variables equals 10.45. If the signs of the second variable are identical (as well as 5th, 8th, and 9th), the sum od SNRs calculated for the applicable variables will equal 15.35. This option gives the maximum sum of the calculated SNR values of the existing variables. Thus, this empirical principal component (EPC) contains four operating (important) variables (highlighted dark in Table 3): x_2, x_5 x_8, x_9. Factor weights of these variables in EPC are determined by average weights by year, other EPC variables are zeroed (just like in factor analysis).

After defining all empirical principal components there is the issue of their quantity. PNA usually uses a traditional concept of dispersion informational value which determines the number of principal components l used for calculating the integrated characteristics.

$$\gamma_\sigma = \frac{\lambda_1 + \lambda_2 + ... + \lambda_l}{\lambda_1 + \lambda_2 + ... + \lambda_n} \geq \theta, \qquad (3)$$

where λ_i – i^{th} eigenvalue of covariance matrix, θ – threshold of informational value set a priori (typically 55%). The number of selected principal components should implement the ratio (3). Approaches to assessing the number of principal components according to the required proportion of dispersion explained is always formally applicable, but implicitly they assume that there is no distinction between "signal" and "noise" and any pre-specified accuracy makes sense. When dividing data into useful signal and noise the specified accuracy loses its meaning and it is necessary to re-define the concept of informational value. Similar to dispersion informational value according to (3) it is possible to determine SNR informational value for the selected empirical principal components N:

$$\gamma_{SNR} = \frac{S_{11} + S_{12} + ... + S_{1N}}{S_{21} + S_{22} + ... + S_{2N}}, \qquad (4)$$

where S_{1k} – sum of SNR values of the operating variables of k^{th} EPC, S_{2k} –sum of SNR of all variables of k^{th} EPC. In contrast to dispersion informational value, SNR informational value cannot logically reach 100%. The informational value of the selected system of features is determined by dispersion and SNR informational values:

$$\gamma = \gamma_\sigma \cdot \gamma_{SNR}. \qquad (5)$$

The number of EPCs for calculating the composite index should maximize the informational value of the obtained solution, defined by (5).

Table 4 shows all normalized (multiplied by the square root of a corresponding empirical eigenvalue) and direction-coordinated EPC of Block 1. The target weights vector is determined by summing homogeneous variables of the number of empirical principal components chosen according to (5).

Table 4. Empirical principal components of Block 1

EPC №	Empirical eigenvalues	Variables								
		1	2	3	4	5	6	7	8	9
1	3.34	0.8	0.9	0.82	-0.75	0.53		0.38	0.31	
2	2.04	-0.27	-0.31		0.43	0.43	0.64	0.64	0.64	
3	1.14		0.19			-0.37			0.18	0.79
4	0.79			0.31						
5	0.61								0.34	
6	0.5					0.43			-0.26	
7	0.31	0.35	-0.12	-0.24						0.19
8	0.24				0.26			-0.2	0.12	
9	0.03		0.14	-0.08	0.08					
Weights vector		0.88	0.79	0.81	0.02	1.02	0.64	0.83	1.33	0.98

Table 5. Determination of informational value of the integrated index of Blok 1: population's welfare

	Number of EPCs								
	1	2	3	4	5	6	7	8	9
Sum of SNRs of the k^{th} EPC	102.2	57.6	19.7	11.3	7.9	10.7	20.9	16.5	100.5
Sum of operating SNRs of the k^{th} EPC	101.4	55	15.4	4.2	3.4	4.9	16.5	10.8	95.7
Accumulated contribution, SNR informational value	0.99	0.98	0.96	0.92	0.9	0.88	0.87	0.86	0.88
Empirical eigenvalues	3.34	2.04	1.14	0.79	0.6	0.5	0.31	0.24	0.03
Accumulated contribution , dispersion informational value	0.37	0.6	0.72	0.81	0.9	0.94	0.97	1	1
Total informational value	0.37	0.58	0.69	0.75	0.8	0.82	0.85	0.85	0.88

Table 5 gives an example of determining the informational value of the integrated index of Block 1. When considering all 9 EPCs informational value is maximum and equals approximately 88%. Therefore, to calculate the integrated index of this block it is necessary to use all of EPCs. The more variables describe the system, the smaller their relative number involved in the compilation of the composite index. The author selects 11 EPCs out of 14 for Block 2, 10 EPCs out of 14 for Block 3. (In another case, 21 EPCs were selected in the system described y 51 variables).

The weight of blocks is determined in proportion to the calculated operating SNR values of this block (*Tab. 6*), which is similar to that of the proportional strength of the received signal. Block 3 "Social quality", which contains 14 variables is less important than Block 1 "population's welfare", which

has 9 variables. Block 2 "Population quality", which includes 14 variables is the most significant. The significance of population quality is higher than that of population's welfare and social quality.

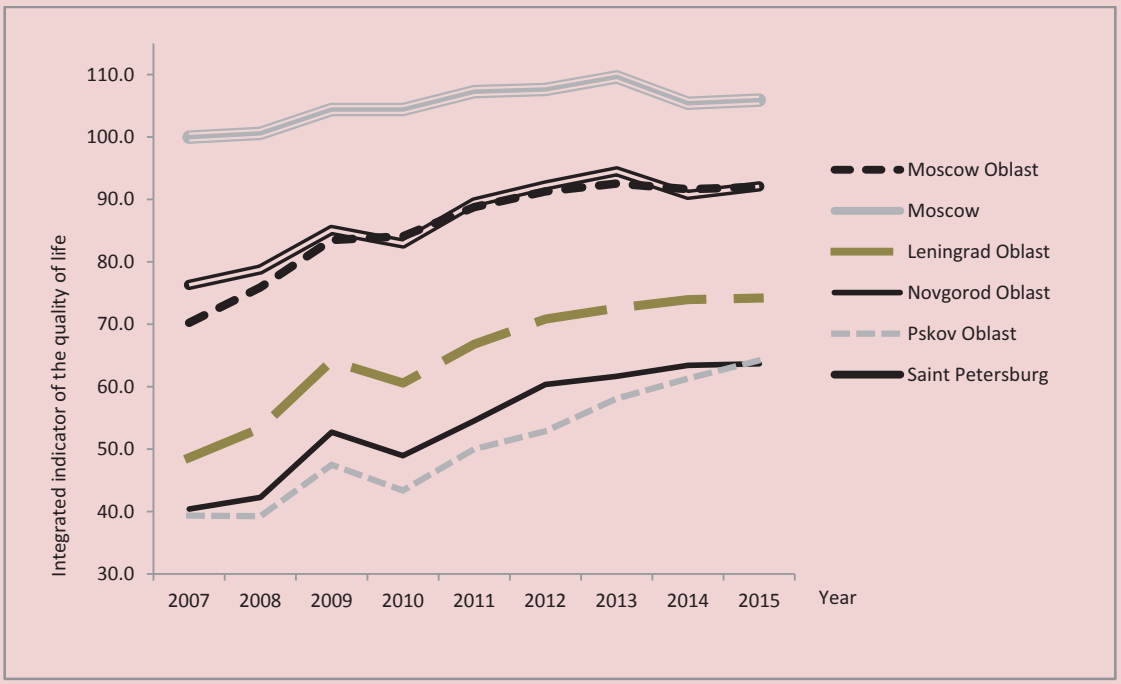
Table 6. Block weights

Block	1	2	3
Sum of operating SNRs	307.4	397.7	254.3
Block's weight	0.32	0.41	0.27

Appendix provides the calculated integrated indices of the quality of life of constituent entities of the Russian Federation in 2007–2014 taking into account the block weights defined in Table 6. The author presents forecast values for 2015. The values of the integrated index according to the international practice are normalized relative to values of 2007. The "zero" value has minimum value of the integrated index of the quality of life (IIQL) for 2007 (for Republic of Tuva), 100 is the maximum IIQL value in 2007 (for Moscow). Different Federal districts (FD) are highlighted.

Figure 2 demonstrates the consistency of the technique: it shows changes in the calculated IIQL for some constituent entities of the Russian Federation. The ratio of the calculated characteristics matches the expected figure: Moscow shows indisputable

Figure 2. Integrated characteristics of the quality of life of some constituent entities of the Russian Federation for 2007–2015



and inaccessible leadership, Saint-Petersburg and the Moscow Oblast are almost equal in terms of the quality of life, but differ significantly with the capital city, Novgorod and Pskov are the outsiders (not only among the mentioned subjects, but in Russia generally).

Consistently, the highest IIQL indices on the entire interval of observations are demonstrated by regions of the North Caucasian Federal district. It should be noted that 20 indices out of 37 reflect human physiological well-being, which explains (together with the peculiarities of national statistics) the outstanding figures in the republics of North Ossetia, Ingushetia, Chechnya, Dagestan, etc. In these regions risk of illnesses, deaths or criminal violence is lower; the population is not much involved in the process of social production. Life expectancy in Ingushetia is the highest in Russia and, in particular, it is 10 years higher than in the Novgorod Oblast. Taking into account this fact, low GRP and high level of unemployment in the regions of the North Caucasian Federal district do not seem very significant when evaluating IIQL – it is more preferable to live longer and work less rather than vice-versa.

Table 7 shows the average rating for the whole observation period for groups of leaders and outsiders by IIQL. These groups vary slightly by year. The leaders are Moscow, Saint Petersburg, republics of the North Caucasian Federal district, the Khanty-Mansi and Yamalo-Nenets Autonomous okrugs, Republic of Tatarstan, and some southern regions: the Belgorod, Voronezh, Rostov oblasts, and Stavropol Krai. The last on this list are mostly the regions of the Siberian and Far Eastern Federal districts – 14 entities out of 20 listed, two from the Northwestern Federal district (the Novgorod and Pskov oblasts) and the Volga Federal district (Mari El Republic and Perm Krai). The very last position is permanently occupied by the Republic of Tuva.

Table 8 presents the characteristics of the calculated indices of the quality of life for the whole observation period and the forecast for 2015. The highest differentiation in the quality of life is observed in the Siberian (dispersion coefficient – 29.3) and the Far Eastern Federal districts (dispersion coefficient – 22) with predominant resource-based economy, the lowest – in the North Caucasian Federal district (dispersion coefficient – 7.8). In all Federal districts, the average value of the integrated index of the quality of life during the period under review increased (which is also confirmed by subjective feelings), and differentiation decreased.

However, the differentiation of constituent entities remains significant (*Tab. 8*), and to overcome it is required to make right management decisions.

It is interesting to compare the obtained IIQL values with the results obtained in

Table 7. Leaders and outsiders by integrated index of the quality of life for 2007–2015

No.	RF constituent entity	Average rating	RF constituent entity	Average rating
1	Moscow	1.00	Khabarovsk Krai	63.67
2	Republic of North Ossetia-Alania	2.56	Novgorod Oblast	65.67
3	Saint Petersburg	3.78	Ivanovo Oblast	66.00
4	Belgorod Oblast	4.33	Republic of Khakassia	67.00
5	Moscow Oblast	5.78	Primorsky Krai	67.33
6	Republic of Ingushetia	7.67	Magadan Oblast	68.22
7	Kabardino-Balkar Republic	7.67	Altai Krai	68.44
8	Republic of Tatarstan	8.44	Mari El Republic	69.89
9	Khanty–Mansi Autonomous Okrug – Yugra	8.56	Perm Krai	70.67
10	Yamalo-Nenets Autonomous Okrug	9.11	Kurgan Oblast	71.56
11	Krasnodar Krai	11.44	Pskov Oblast	71.78
12	Chechen Republic	11.56	Kemerovo Oblast	75.33
13	Karachay-Cherkess Republic	13.78	Zabaykalsky Krai	77.11
14	Stavropol Krai	14.78	Republic of Buryatia	77.44
15	Republic of Adygea	15.11	Chukotka Autonomous Okrug	78.33
16	Republic of Dagestan	15.44	Amur Oblast	78.44
17	Lipetsk Oblast	17.00	Republic of Altai	78.56
18	Murmanks Oblast	17.44	Irkutsk Oblast	79.11
19	Voronezh Oblast	19.89	Jewish Autonomous Oblast	82.00
20	Rostov Oblast	20.22	Republic of Tuva	83.00

Table 8. Characteristics of indices of the quality of life by federal districts

Federal district	The whole observation period			2014		
	Average value	Standard deviation	Dispersion coefficient, %	Average value	Standard deviation	Dispersion coefficient, %
Central	69.6	13.8	19.9	76	11.4	15
Northwestern	63.9	12.5	19.6	71.1	8.6	12
Southern	68.4	10.6	15.4	74.9	9.3	12.5
North Caucasian	79.4	6.2	7.8	84	5.4	6.4
Volga	64.2	9.6	15	69.5	7	10.1
Ural	68.6	11.6	17	72.4	12.2	16.8
Siberian	49.8	14.5	29.2	55.2	12.2	22.2
Far Eastern	52.3	11.5	22	59.3	9.7	16.4
Russia	**64**	**14.8**	**23.2**	**69.8**	**12.6**	**18.1**

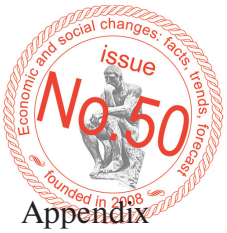
[10], where IIQL for 2012 was calculated using the method proposed by S.A. Aivazyan. The authors of [10] believe that "rating compiled using this method helps determine the socio-economic policy priorities at the regional level". However, careful examination of the obtained results is puzzling. Stavropol ranks 76th, which is close to Tuva with higher rating – 75. The Leningrad oblast with a 63 rating is located between Zabaykalsky Krai region (62), Sakhalin (64), Kalmykia (65) and Yakutia (66). The neighboring Novgorod and Pskov oblasts with the similar situation have a dramatic gap in estimates: 29 for Novgorod and 53 Pskov. Among the regions of the Northwestern Federal district the Leningrad oblast ranks last. Assessments of constituent entities of the Northwestern Federal district seem extremely doubtful; the integrated characteristic cannot be called reliable, it is impossible to correctly "determine the socio-economic policy priorities at the regional level" on its basis.

The source of poor quality of the calculated characteristics may be, in particular, initial data precision which is not taken into account by the traditional method of principal components. The integrated index presented in the current study of resilient relative to input data and is free from gross errors similar to those described above.

Conclusion

The paper reviews the compilation of latent integrated characteristics of changes in the quality system based on recorded statistical measurements. Based on the algorithm of compiling integrated characteristics with identifying non-random components of principal components which characterize the structure of the reviewed system the author identifies the integrated index of the quality of life in constituent entities of the Russian Federation in 2007–2014. During the period under review, the quality of life in all regions improved, the differentiation within the districts decreased. However, the differentiation of constituent entities and federal districts in Russia remains high and in order to overcome it, it is necessary to make right management decisions.

The proposed method can be used to calculate integrated estimates of changes in the quality of any socio-economic system, including calculation of the integrated assessment of the quality of life of constituent entities and municipal formations of the Russian Federation. The results of applying the method of compiling integrated characteristics of quality system changes should be further analyzed using broad social system measurement base recorded by Rosstat, rather than ion terms of a limited set of qualitative input variables.



Appendix

Integrated indices of the quality of life in constituent entities of the Russian Federation in 2007–2014 (estimates for 2015)

No.	RF constituent entity	2007	2008	2009	2010	2011	2012	2013	2014	2015
1	2	3	4	5	6	7	8	9	10	11
1	Belgorod Oblast	75.9	79.3	83.7	83.8	86.5	92.0	93.3	93.7	94.8
2	Bryansk Oblast	51.1	53.0	59.9	57.4	60.8	64.8	65.6	66.1	66.4
3	Vladimir Oblast	50.3	54.9	61.2	60.3	63.8	66.3	68.0	65.6	65.0
4	Voronezh Oblast	63.9	65.4	68.9	67.9	73.5	79.5	80.3	80.6	79.6
5	Ivanovo Oblast	44.3	49.7	51.4	49.8	54.5	58.4	61.5	61.5	60.1
6	Kaluga Oblast	56.9	60.3	65.9	64.6	70.5	72.7	73.4	74.6	75.0
7	Kostroma Oblast	53.0	54.2	58.7	58.2	60.0	65.9	68.6	68.9	70.4
8	Kursk Oblast	55.9	60.8	66.3	68.3	69.8	75.7	78.2	76.6	77.8
9	Lipetsk Oblast	66.7	66.4	71.4	71.5	75.3	78.9	81.5	82.3	81.0
10	Moscow Oblast	70.2	75.9	83.5	84.1	88.8	91.3	92.5	91.6	92.0
11	Oryol Oblast	57.2	62.7	66.4	63.4	69.9	72.5	75.7	75.1	76.3
12	Ryazan Oblast	57.1	62.4	67.8	66.8	71.7	73.4	77.4	75.7	75.8
13	Smolensk Oblast	45.1	50.2	56.3	55.0	61.0	64.2	68.8	69.5	71.2
14	Tambov Oblast	58.8	62.0	65.3	65.2	68.0	69.8	74.7	72.1	73.3
15	Tver Oblast	42.3	46.0	52.9	50.4	56.4	61.2	64.8	63.7	65.6
16	Tula Oblast	44.0	49.4	58.0	58.0	63.8	67.0	66.6	68.4	68.1
17	Yaroslaavl Oblast	54.7	59.8	66.4	63.6	68.2	69.6	71.9	77.2	77.6
18	Moscow	**100.0**	100.6	104.4	104.4	107.3	107.6	109.7	105.4	105.9
19	Republic of Karelia	48.9	52.5	57.2	53.0	59.2	61.9	66.3	63.8	65.8
20	Komi Republic	49.8	52.8	56.9	55.3	61.3	64.4	67.6	67.8	70.4
21	Arkhangelsk Oblast	49.3	53.0	59.0	54.5	60.2	63.1	63.5	65.6	66.4
22	Nenets Autonomous Okrug	38.0	50.7	55.1	50.9	57.3	66.5	62.9	71.5	68.6
23	Vologda Oblast	53.6	54.9	57.2	52.1	58.6	63.3	66.7	69.1	71.6
24	Kaliningrad Oblast	60.3	61.5	69.4	70.0	76.5	80.2	81.1	77.7	79.3
25	Leningrad Oblast	48.6	53.4	64.1	60.6	66.8	70.8	72.6	73.9	74.2
26	Murmansk Oblast	67.2	68.3	73.2	75.8	74.5	77.7	82.6	77.5	79.0
27	Novgorod Oblast	40.4	42.3	52.7	49.0	54.5	60.3	61.7	63.4	63.7
28	Pskov Oblast	39.4	39.2	47.5	43.4	50.0	52.9	58.1	61.3	64.2
29	Saint Petersburg	76.3	78.8	85.1	83.0	89.5	92.3	94.5	90.7	92.1
30	Republic of Adygea	60.8	64.9	72.9	71.1	79.3	83.2	85.4	84.9	83.5
31	Republic of Kalmykia	47.6	51.2	56.4	49.4	57.7	61.2	62.5	62.4	62.4
32	Krasnodar Krai	67.8	71.2	78.6	76.3	77.4	82.5	86.3	84.9	85.3
33	Astrakhan Oblast	47.3	51.2	57.2	54.8	59.9	63.3	67.9	67.7	69.2
34	Volgograd Oblast	59.9	61.5	63.2	62.6	64.8	65.7	69.1	70.9	72.6
35	Rostov Oblast	63.1	66.2	71.6	70.1	71.8	76.1	78.8	78.5	80.6
36	Republic of Dagestan	68.8	71.0	72.4	73.0	77.4	79.2	78.6	81.3	82.5
37	Republic of Ingushetia	81.3	86.2	83.8	81.6	81.4	84.7	86.6	80.2	83.0
38	Kabardino-Balkar Republic	76.2	82.3	81.4	79.5	81.3	84.2	85.8	84.6	87.3
39	Karachay-Cherkess Republic	69.2	72.9	76.5	74.9	76.6	79.0	82.2	82.1	84.4
40	Republic of North Ossetia-Alania	83.6	81.7	86.3	87.5	88.5	93.4	94.1	95.7	96.7
41	Chechen Republic	74.6	77.9	80.4	81.9	79.4	78.7	81.6	83.0	79.6

End of Appendix

42	Stavropol Krai	67.4	69.3	72.4	74.6	77.0	80.9	85.3	80.8	81.2
43	Republic of Bashkortostan	64.0	66.4	69.1	67.4	71.3	73.3	75.1	72.2	72.6
44	Mari El Republic	41.8	43.2	52.3	47.3	51.2	54.5	57.7	61.4	61.6
45	Republic of Mordovia	61.0	64.0	66.3	65.5	67.7	69.8	71.6	72.3	71.7
46	Republic of Tatarstan	72.1	74.8	78.0	78.0	81.6	86.0	87.2	85.2	86.4
47	Udmurt Republic	47.8	51.5	57.3	57.8	61.7	66.0	68.1	63.1	64.3
48	Chuvash Republic	47.0	50.2	57.0	52.8	57.7	61.5	62.6	63.9	64.8
49	Perm Krai	40.4	44.5	48.2	46.6	51.8	56.5	60.4	60.4	62.2
50	Kirov Oblast	46.8	49.3	55.4	51.5	56.0	59.1	61.6	64.2	64.3
51	Nizhny Novgorod Oblast	52.2	57.1	63.5	62.6	68.2	71.6	75.3	74.6	74.4
52	Orenburg Oblast	52.6	53.7	58.6	58.5	61.1	63.4	65.6	63.7	63.5
53	Penza Oblast	61.5	64.1	69.4	67.8	72.7	78.1	78.2	75.1	75.5
54	Samara Oblast	64.9	64.8	64.4	65.3	69.1	72.5	71.8	73.8	72.3
55	Saratov Oblast	59.8	63.0	65.4	65.9	67.7	71.0	73.8	73.4	73.8
56	Ulyanovsk Oblast	57.5	61.3	65.4	63.1	66.6	71.9	70.7	70.2	69.9
57	Kurgan Oblast	44.6	45.7	49.7	48.0	51.9	54.1	56.1	54.2	54.2
58	Sverdlovsk Oblast	57.6	58.8	60.7	62.2	64.1	66.8	70.9	71.3	72.2
59	Tumen Oblast	64.0	66.4	66.6	70.2	75.1	78.5	73.4	71.6	69.2
60	Khanty–Mansi Autonomous Okrug – Yugra	74.1	76.5	79.0	78.1	81.3	84.8	86.6	85.2	86.4
61	Yamalo-Nenets Autonomous Okrug	71.1	76.2	80.9	78.3	79.1	81.1	85.9	86.5	89.0
62	Chelyabinsk Oblast	56.4	58.7	61.6	60.6	63.1	64.5	68.0	65.9	68.2
63	Altai Republic	37.8	38.6	40.4	39.4	45.3	48.4	48.3	49.6	49.4
64	Republic of Buryatia	37.3	37.9	42.5	42.8	45.3	48.9	54.9	50.7	52.4
65	Tuva Republic	**0**	6.7	9.8	8.1	14.8	14.0	20.5	24.9	26.8
66	Republic of Khakassia	47.7	48.8	50.5	50.8	52.4	53.3	59.0	60.2	63.1
67	Altai Krai	46.3	49.3	51.8	48.2	53.2	54.8	58.6	55.6	56.0
68	Zabaykalsky Krai	34.8	37.3	45.7	40.0	46.0	48.6	50.3	54.7	55.7
69	Krasnoyarsk Krai	52.7	53.6	55.2	55.5	59.2	61.2	63.1	63.3	64.7
70	Irkutsk Oblast	38.4	39.4	39.2	38.4	41.2	453	46.2	46.5	48.2
71	Kemerovo Oblast	38.8	41.9	45.3	39.8	46.2	49.1	53.1	53.2	57.0
72	Novosibirsk Oblast	52.5	57.1	61.0	61.7	65.2	67.3	69.5	69.1	69.3
73	Omsk Oblast	53.6	57.9	61.3	61.9	67.3	68.2	66.1	64.2	63.1
74	Tomsk Oblast	61.3	61.1	61.8	63.7	68.2	70.2	72.6	70.5	71.1
75	Sakha (Yakutia) Republic	55.9	54.0	57.7	55.8	60.8	64.3	67.0	69.7	70.9
76	Kamchatka Krai	59.2	62.3	66.4	63.1	64.8	69.0	71.9	71.1	73.2
77	Primorsky Krai	41.4	45.1	51.9	50.9	52.6	57.7	58.9	61.4	63.2
78	Khabarovsk Krai	44.2	45.9	52.5	52.1	54.6	60.0	63.3	60.9	63.8
79	Amur Oblast	35.6	33.9	38.6	36.6	39.9	45.5	52.8	55.5	58.2
80	Magadan Oblast	40.6	38.6	50.5	48.9	57.3	57.8	64.1	60.4	61.3
81	Sakhalin Oblast	45.2	47.0	51.0	51.4	55.6	58.2	64.5	64.2	66.1
82	Jewish Autonomous Oblast	26.3	32.3	34.6	31.2	31.8	38.0	42.2	39.4	44.1
83	Chukotka Autonomous Okrug	32.2	40.7	44.1	34.2	48.7	47.8	45.8	51.1	52.0

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Regional Budget for 2017–2019: Surplus or Economic Growth?

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Abstract. At the end of 2016, the Vologda Oblast approved its budget for 2017–2019. At first glance, its parameters are quite optimistic if we recall that from 2009 to 2015 the budget was significantly unbalanced. The planned annual surplus of 2.5 billion rubles is planned in the upcoming budget cycle. The budget surplus exceeding this sum was registered only in 2004. These projections are not based on the expected sustained economic growth, but on the terms of agreements with the Ministry of Finance of the Russian Federation on the allocation of financial assistance to the oblast in the form of budget loans. The forecast of socio-economic development elaborated by the Vologda Oblast Government retains low growth rates of all macroeconomic indicators; due to this fact it is unlikely that sufficient financial resources could be generated: the average annual growth rate of the budget's own revenues will not reach even 4%. The positive balance of the treasury is expected to be reached with the help of fiscal consolidation: the amount of government spending as a share of gross regional product will decrease to 9% to 2020 against 13% on average over the period of 2005–2016. As for the sphere of debt policy, the forthcoming three-year period raises quite a few critical issues compared to previous years. The oblast will need to return 55 billion rubles of loans. In the conditions when the budget's own funds are growing slowly, the regional authorities are most likely to resort to new borrowings in the form of expensive commercial loans, because due to a high imbalance of the federal budget, Russian Government reduces the provision of cheap budget loans to the regions. The paper presents the results

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of the analysis of the Law on the Vologda Oblast budget for 2017–2019, the main purpose of which was to identify priorities of budgetary policy. Our study reveals the defects of the current system of budget planning, as well as the results of the analysis of a traditional approach to forecasting budget revenues and expenditures according to the indicators set out by the RF Ministry of Finance, rather than an approach to substantive issues of economic growth. It is shown that in modern conditions this method does not allow regional government authorities to forecast accurately and plan the revenues and expenditures of their budgets, and to ensure their balance. The study shows the dependence of the quality of budget planning upon a system of macroeconomic indicators such as gross domestic product, investments in fixed capital, inflation and monetary incomes of the population. The main conclusion of the study is that the three-year budget primarily reflects the achievement of simulated stabilization. In our opinion, the objectives of fiscal policy when forming regional budgets should be set out under the active influence on territorial development. But this requires the implementation of internal reserves of increasing the revenue potential of the regions. The present paper marks the initial steps in this direction.

Key words: budget planning, economic growth, regional budget, surplus, loans, debt burden, intergovernmental fiscal policy.

Introduction

Budget planning is an important part of public administration system. In the current critical economic situation it is important that budget policy priorities should not only solve current problems but also focus on achieving longer-term goals of sustainable economic development. That is why more and more attention in budgetary process is given to long-range planning.

According to experts [6, 7], long-term budget planning helps gain certain advantages. First, it ensures the continuity and predictability of budgetary and tax policy, which is important for the real economy. Second, it helps make more accurate and consistent decisions regarding the priorities of budget and tax policy. Third, it increases the transparency of budgetary process, there emerges a legal basis for the conclusion of multi-year government contracts, which creates prerequisites for a more efficient use of budget funds. In addition, long-term planning promotes coordination of work of various departments of the executive branch.

According to the World Bank, more than two thirds of all countries use various modifications of multi-year budgeting: a study published in 2013 [23], suggests that within three years after the introduction of medium-term planning the level of budget deficits was reduced to 2.6% of GDP, compared with a three-year period prior to its implementation.

In the Russian Federation the task of transition to long-term budget planning was set by the President of the Russian Federation in 2004 [8]. For the first time, a three-year federal budget was adopted in 2007, but in 2009, in connection with the outbreak of the global financial crisis, the Russian Government temporarily abandoned the scheme and returned to a one-year budget.

Later, in 2015, amid the slump in oil prices that determined the impossibility of adequate forecasting of budget revenues, a decision was made to prepare the federal and, subsequently, regional budget for one year.

From 2017 onward, the Russian Federation and its constituent entities return to the practice of budget planning over a three-year period.

Scenario conditions for the formation of the regional budget and its basic parameters

The formation of regional budgets is based on the government's main financial plan – the federal budget, which is not only a key source of funding for socio-economic development of the country, but also a tool for inter-territorial redistribution of national funds.

The forecast of socio-economic development of the country prepared by the Government of the Russian Federation [22], which was the basis for the preparation of the federal budget, contains no prospects for a quick economic recovery, providing minimal growth for GDP, domestic investment and consumer demand amid low oil prices and the weakening of the national currency *(Tab. 1)*.

Inertial trends in the macroeconomic indicators will not help generate the necessary sources of expenditure financing, as evidenced by the forecast parameters of the federal budget [13] that provide for an annual reduction in revenue relative to GDP *(Tab. 2)*.

Proving his theory of economic growth, John Keynes, a prominent English scientist and proponent of state regulation of the economy, stated: "the government should increase spending to boost production and employment, to pursue an active investment policy" [5]. The currently weak revenue base limits the possibility of using the Keynesian model in Russia. On the contrary, the content of the expenditure part of the federal budget indicates that for the period ahead, the task is set to consolidate the budget by reducing government spending to 16% of GDP in 2019, compared with 19% of GDP in 2016.

Experts from the Center for Macroeconomic Analysis and Short-Term Forecasting called intergovernmental relations with the subjects of the Russian Federation the "bottleneck" of the federal budget. The amount of financial aid to the regions will

Table 1. Main indicators of the forecast of socio-economic development of the Russian Federation for 2017–2019

Indicators	Fact			Forecast		
	2014	2015	2016	2017	2018	2019
Oil price, US dollars/Barrel	97.6	51.2	41.7	40.0	40.0	40.0
GDP*	100.7	97.2	99.8	100.6	101.7	102.1
Investment in fixed capital*	97.3	91.6	97.7	99.5	100.9	101.6
Retail trade turnover*	102.5	90.0	94.8	100.6	101.1	101.8
Real disposable monetary incomes of the population*	99.2	95.7	94.1	100.2	100.5	100.8
US dollar exchange rate, ruble/US dollar.	38.4	61.0	67.0	67.5	68.7	71.1
* In comparable prices, % of the previous year.						

Table 2. Main parameters of the federal budget for 2017–2019, billion rubles

Parameters	Fact			Forecast		
	2014	2015	2016	2017	2018	2019
Revenues	14497	13659	13460	13488	14209	14845
In % of GDP	*18.3*	*16.4*	*15.7*	*15.5*	*15.2*	*15.0*
Expenditures	14832	15620	16416	16241	16040	15987
In % of GDP	*18.7*	*18.8*	*19.1*	*18.7*	*17.4*	*16.2*
- transfers to regional budgets	1671	1617	1578	1533	1513	1443
In % of GDP	*2.1*	*1.9*	*1.8*	*1.8*	*1.6*	*1.4*
Deficit	-335	-1961	-2956	-2753	-2011	-1142
In % of GDP	*0.4*	*2.4*	*3.4*	*3.2*	*2.2*	*1.2*
Source: [13]; Federal Treasury [16]; Rosstat [18]; author's calculations.						

annually decline both in nominal terms and as a share of GDP, which could lead to a regional wave of budget crises [19].

According to some experts, draft federal budgets in recent years reflect flaws in economic policy and represent good wishes in the absence of real conditions for their implementation [1, 3].

The principle of fiscal consolidation underlying the 2017–2019 federal budget is reflected in the basic parameters of budgets of Russian Federation constituent entities, including the budget of the Vologda Oblast.

When forming the budget, the government proceeded from the basic directions of budgetary, tax and debt policy of the Vologda Oblast in 2017 and for the planning period of 2018 and 2019 [10], the content of which helps identify three key priorities for the next budget cycle:

1. Strengthening and increasing the revenue base of the budget, creating favorable conditions for business development.

2. Ensuring the balance of the regional budget.

3. Decreasing the debt burden on the regional budget and diversifying the debt structure.

To what extent does the budget approved by the oblast law [9] corresponds to the implementation of such tasks? We shall try and answer this question in analyzing the budget parameters.

Despite negative dynamics of the regional budget revenues, it is planned to achieve its annual surplus, which is expected to be achieved through cost reductions: already in 2017 the expenditure part of the budget decreased by 4.3 billion rubles, or 8.4% *(Tab. 3)*.

In the next three years it is expected to increase tax and non-tax (hereinafter – own) revenues of the regional budget by five billion rubles, but this increase is levelled off by an equivalent amount of reducing gratuitous transfers from the federal budget that will determine the overall decrease in the revenues.

In our opinion, the planned increase in the own revenues may be overly optimistic.

Table 3. Main parameters of the regional budget of the Vologda Oblast in 2016–2019

Parameters	2016, fact	2017, plan		2018, plan		2019, plan		2019 to 2016, %
		Mln rub.	To 2016, %	Mln rub.	To 2017, %	Mln rub.	To 2018, %	
Revenues	55518	50379	90.7	49228	97.7	53696	109.1	96.7
- tax and non-tax	43722	43112	98.6	44054	102.2	48699	110.5	111.4
- intergovernmental transfers	9970	7063	70.8	5174	73.2	4996	96.6	50.1
Expenditures	50695	46413	91.6	47567	102.5	51840	109.0	102.3
Surplus	4823	3966	82.2	1661	41.9	1856	111.7	38.5
Sources: [9]; [16]; author's calculations.								

Table 4. Main indicators of the forecast of socio-economic development in the Vologda Oblast in 2017–2019, in comparable prices, percentage of the previous year

Indicators	Fact		2016, estimate	Forecast		
	2014	2015		2017	2018	2019
GRP	103.0	101.0	100.2	100.8	101.5	101.7
Industrial production index	103.7	102.6	99.1*	101.6	102.0	102.5
Investments in fixed capital	99.0	90.4	97.4	96.8	98.0	98.9
Retail trade turnover	102.0	90.3	92.8*	102.5	102.5	103.7
Real monetary incomes of the population	102.4	98.4	100.2	100.8	101.4	101.8
Real average wages	98.3	88.3	97.6	97.8	97.8	98.1
Consumer price index	112.0	112.0	105.0*	105.4	105.0	104.7
* Vologdastat factual data.						

It is necessary top take into account that the budget parameters are set in the current expression, without adjustments for price index, and the main macro-economic parameters [11], acting as a foundation for the tax base of the budget are given in real terms, that is, in comparable prices *(Tab. 4)*. It is for a reason that against the backdrop of stagnating GDP dynamics, industrial production, domestic consumption and a long-term decline in investment activity, the budget envisages a growth in revenues by 11.4%.

The realistic planning of budget revenues was impossible due to the absence of correlation between the macroeconomic and budget indicators.

Regional budget revenues

Calculations show that in the years 2017–2019 the real[1] collection of the budget's own revenues will not reach the level of 2016 *(Fig. 1)*.

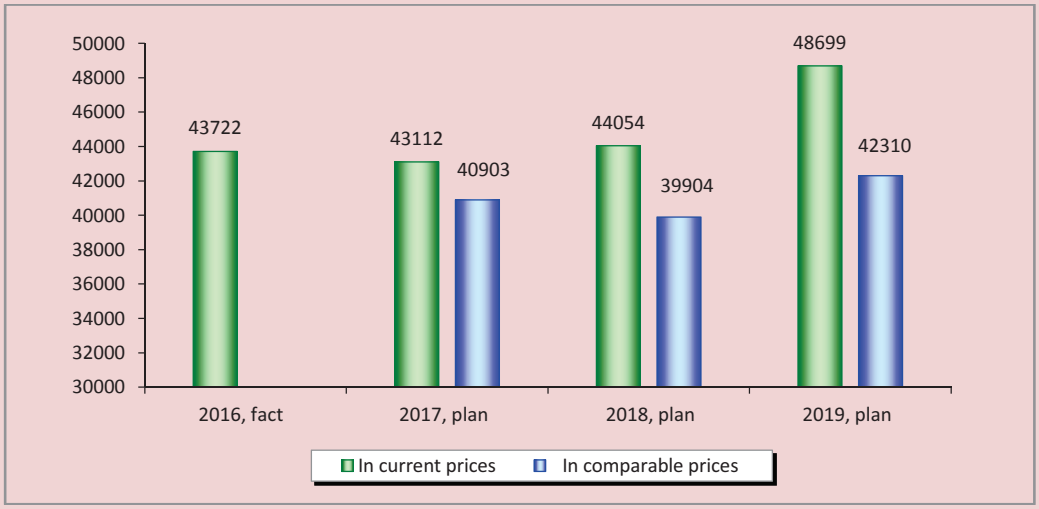
The decrease in the revenues will affect almost all the main components of local revenue sources. At that, the mobilization of income tax will be reduced not only in real but also in nominal terms *(Fig. 2)*.

A major factor in the reduction of receipts of profit tax is the legislative changes providing for the centralization of 1% of income tax receipts in the federal budget[2]; as a result, the

[1] The paper refers to indicators expressed in constant prices of the base year of 2016 as "real data".

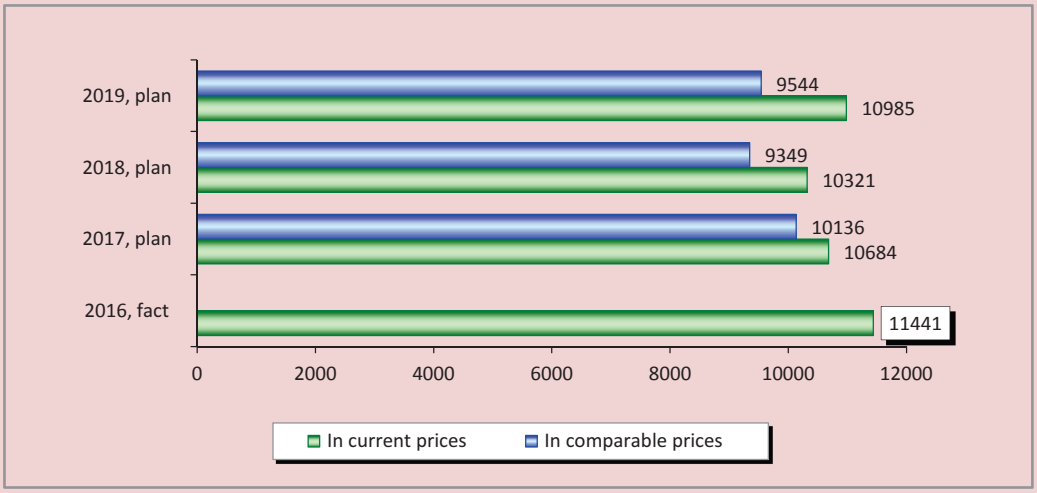
[2] Federal law dated November 30, 2016 No. 401-FZ "On amendments to parts one and two of the Tax Code of the Russian Federation and certain legislative acts of the Russian Federation".

Figure 1. Own revenues in the regional budget of the Vologda Oblast in 2016–2019, million rubles



Sources: data [9]; [11]; [16]; author's calculations.

Figure 2. Profit tax proceeds in the regional budget of the Vologda Oblast in 2016–2019, million rubles



Sources: data [9]; [11]; [16]; author's calculations.

tax will be received by regional budgets at the rate of 17% instead of an earlier rate of 18%. According to the Department of Finance, this will reduce the regional budget revenues by 1.9 billion rubles. According to estimations by the Accounts Chamber of the Russian Federation, in 2017–2019, budgets of Russian regions in general will miss 378 billion rubles, or about 20% of profit tax proceeds [12].

Thus, instead of developing comprehensive measures for overcoming the crisis of sub-federal budgets, federal authorities make

decisions that not always help reallocate revenue sources, which actually means a deterioration of the financial situation in the regions.

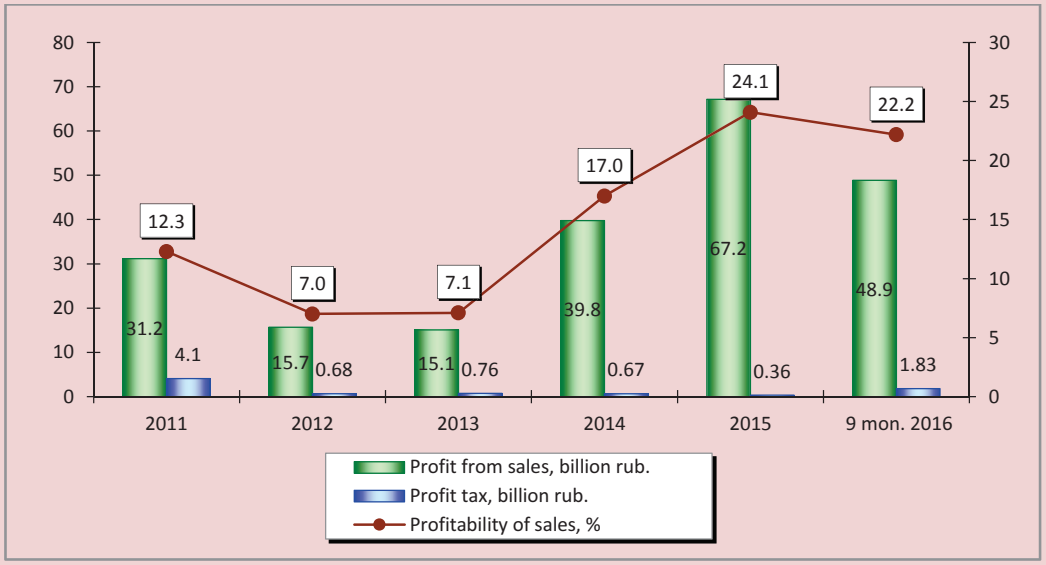
Moreover, when in 2012 the taxation of large business within a consolidated taxpayers group (CTG) was introduced, the oblast authorities were actually deprived of access to the financial performance of the largest taxpayers in the regional budget – PAO Severstal and JSC FosAgro-Cherepovets. As a result, starting from 2014, the profit of these companies that generate 60% of the total profit of large and medium organizations is not included in the forecast of socio-economic development of the oblast, this fact prevents from establishing a link between macroeconomic and budget forecasting. For instance, in the regional budget for 2017–2019, the aggregate profit of organizations is set at the figure of 44.3 billion rubles. According to rough estimates, profit tax in the regional budget (at a rate of 17%) should amount to 7.5 billion rubles, and the proceeds of the tax are forecast in the amount of 32 billion rubles, i.e. four times more.

In the upcoming three-year period it is planned that PAO Severstal will provide 2.5 billion rubles, or 23% of the total amount of profit tax proceeds. At that, the adopted forecast is based on the actual profitability of sales in 2014–2016. However, evidence shows that profitability does not always provide a sufficient economic basis for the planning of budget revenues: for example, in 2012–2015, with an increase in return on sales of PAO Severstal, the deductions of profit tax, by contrast, were decreasing continuously *(Fig. 3)*.

Undoubtedly, profit from sales is one of the main factors in the formation of profit for tax purposes; however, existing legislative mechanisms for the administration of the profits of the largest taxpayers make it possible to use multiple channels for its optimization. Thus, according to the financial statements of PAO Severstal for 2015, profit before tax amounted to 44.3 billion rubles. According to calculations, the Vologda Oblast budget could receive eight billion rubles of profit tax from this sum. In fact, the calculated amount of the payment amounted to only five million rubles. The fact is that in accordance with current legislation, profit tax is not calculated from the profit before tax but from the taxable profit, the calculation of which is based on different, compared to profit before tax, approaches to the recognition of different types of profits and expenses. According to ISEDT RAS research findings, in practice, the quite complicated rules for determining the tax base often lead to substantial losses of budget revenues [4, 21].

As we see it, the expectations concerning another main source of regional budget revenues – individual income tax – can also turn out inflated, which is associated with a fall in the growth rate of the tax base on the background of advancing increase in inflation *(Tab. 5)*.

Figure 3. Financial performance of the sales and proceeds of profit tax of PAO Severstal in the regional budget of the Vologda Oblast in 2011–2016



Source: financial statements of PAO Severstal [15]; Federal Tax Service [17]; author's calculations.

Table 5. Tax indicators and individual income tax receipts in the regional budget of the Vologda Oblast in 2016–2019

Indicators	2016, fact	2017, plan	2018, plan	2019, plan	2019 to 2016, %
Tax indicators					
Consumer price index, %	105.0	105.4	105.0	104.7	115.9
Real average monthly wage, %	97.6*	97.8	97.8	98.1	93.8
Individual income tax proceeds, million rubles					
In current prices	12709	12851	13214	13613	107.1
In comparable prices		12193	11969	11827	93.1
Sources: [9]; [11]; [16]; author's calculations.					

The strong increase can observed only in relation to property taxes *(Tab. 6)*, but it is due not to economic growth, but to changes in fiscal regulation of these taxes. In 2016, the Vologda Oblast shifted to the calculation of property tax on the basis of cadastral value of real estate objects, and in the forecast period it is planned to increase tax rates for property tax for natural monopolies gradually.

The dynamic growth of property taxes will determine the change in the structure of tax revenues: by the end of the forecast period, property payments will be a key catalyst for tax revenues, while profit tax will lose this function completely *(Fig. 4)*.

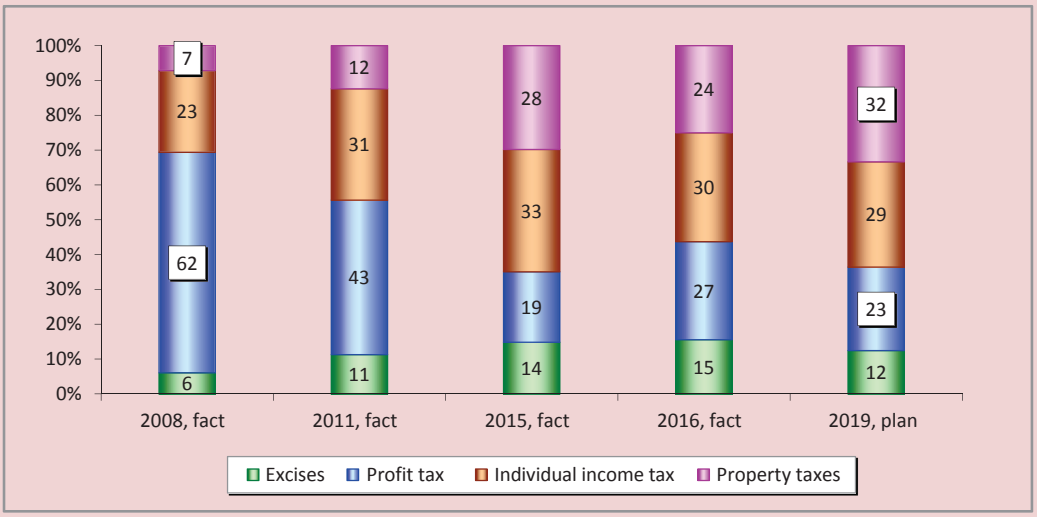
The increase in the importance of property taxes is certainly a positive trend, as their proceeds are stable, unlike profit tax, which

Table 6. Property tax proceeds in the regional budget of the Vologda Oblast in 2016–2019, million rubles

Indicators	2016, fact	2017, plan	2018, plan	2019, plan	2019 to 2016, %
Total - in current prices	10267.7	11117.6	12067.5	15164.9	147.7
- in comparable prices		10548.0	10930.7	13175.4	128.3
Corporate property tax - in current prices	8952.3	9772.8	10592.3	13373.9	149.4
- in comparable prices		9272.1	9594.5	11619.4	129.8
Rates for natural monopolies, %	1.3	1.6	1.9	2.2	+0.9 p.p.
Rates for organizations applying special regimes of taxation*, %	0.5	1.0	1.5	2.0	+1.5 p.p.

* Simplified taxation and unified tax on imputed income.
Sources: [9]; [11]; [16]; author's calculations.

Figure 4. Structure of main tax revenues of the regional budget of the Vologda Oblast in 2008–2019, %



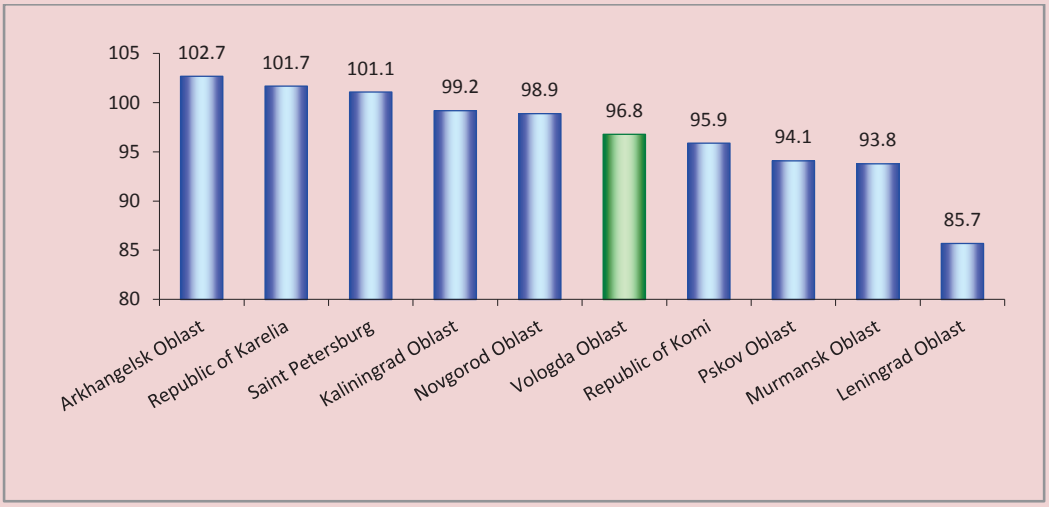
Sources: [9]; [16]; author's calculations.

depends on market fluctuations. In aggregate, property taxes and individual income tax will generate 60% of own revenue sources, which is equivalent to the share of profit tax proceeds in 2008.

In accordance with the approved budgets, in two thirds of the regions of the North-western Federal District by 2020, proceeds of real own revenues will be below the level of 2016 *(Fig. 5)*.

Negative or insignificant rates of mobilization of own revenue sources indicate the presence of lingering problems in the economy of Russia's constituent entities and, consequently, threats to continuous increase in revenue potential.

Figure 5. Proceeds of own revenues in the regional budgets of constituent entities of the Northwestern Federal District in comparable prices, 2019 to 2016, %



Sources: laws of constituent entities of the Northwestern Federal District on the regional budget for 2017–2019; [16]; author's calculations.

Regional budget expenditures

In 2017–2018 nominal spending is expected to decrease in comparison with the level of 2016. In 2019, budget expenditures will grow slightly, but in real terms it will be lower than that of 2016 by 5.7 billion rubles, or 11% *(Fig. 6)*.

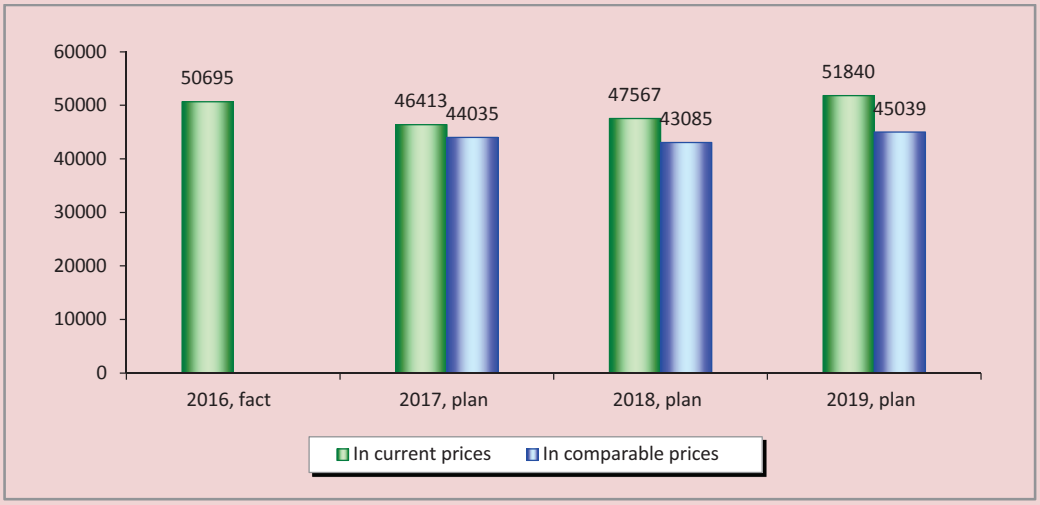
An economic indicator such as the share of expenditures in GRP reflects most objectively the restriction orientation of the budget *(Fig. 7)*.

The data in the figure show that in the planned period the amount of expenditures as a share of GRP is expected to decline to 9% versus 11–16% in previous years. This indicates the narrowing of possibilities for using the budget as a tool to accelerate economic growth.

An aggregate nominal growth of expenditures in 2019 will be achieved through the increase in management costs and payments aimed to service public debt, that is, at the expense of non-productive costs. In all other directions it is planned to reduce funding, which will affect mostly the provision of support to economic branches and municipal infrastructure *(Tab. 7)*.

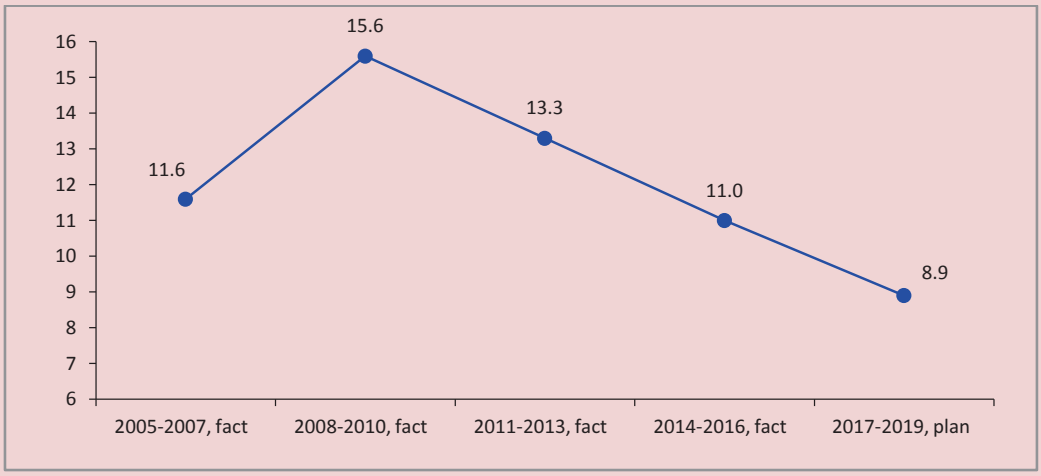
It is necessary to explain the fact of changing the amount of expenditures on health care and social policy. The fact is that in the course of introducing amendments to the budget classification, the expenditures on compulsory health insurance of non-working population were moved from the section "Healthcare" to the section "Social policy". In fact, it does not mean the reduction or

Figure 6. Expenditures of the regional budget of the Vologda Oblast in 2016–2019, million rubles



Sources: [9]; [11]; [16]; author's calculations.

Figure 7. Proportion of expenditures of the regional budget of the Vologda Oblast in GRP in 2005–2019, %



Sources: [9]; [11]; [16]; [18]; author's calculations.

increase in funding, but a simple redistribution of budgetary funds.

Budget sequestration will not affect the section "National matters". For instance, in 2017, when the general expenses of the regional budget fell by 8.4% growth in expenditures for this section will be 7% due to the increased funding of regional bodies of executive power, judicial, financial systems and other management costs. In 2019, expenditures will exceed the level in 2016 as well *(Tab. 8)*.

Table 7. Dynamics of expenditures of the regional budget of the Vologda Oblast in 2016–2019

Expenditures	2016, fact	2017, plan		2018, plan		2019, plan		
	Mln rub.	Mln rub.	To 2016, %	Mln rub.	To 2017, %	Mln rub.	To 2018, %	To 2016, %
Total	50695	46413	91.6	47567	102.5	51840	109.0	102.2
National matters	2388	2555	107.0	2450	95.9	2549	104.0	106.7
National economy	*9104*	*7703*	*84.6*	*7471*	*97.0*	*8337*	*111.6*	*91.6*
Housing and utilities	1632	820	50.2	283	34.5	286	101.1	17.5
Social services, total	*33639*	*31648*	*94.1*	*32448*	*102.5*	*32086*	*98.9*	*95.4*
- education	11220	11082	98.8	10785	97.3	10725	99.4	95.6
- culture	571	619	108.4	553	89.3	515	93.2	90.2
- healthcare	8579	3150	36.7	2961	94.0	2806	94.8	32.7
- social policy	13063	16644	127.4	17864	107.3	17890	100.1	137.0
Interest payments	1370	1229	89.7	1411	114.8	1515	107.4	110.6
Intergovernmental transfers	16121	12811	79.5	12082	94.3	11701	96.8	72.6
Sources: [9]; [16]; author's caiculations.								

Table 8. Expenditures of the regional budget of the Vologda Oblast under the section "National matters" in 2016–2019, million rubles

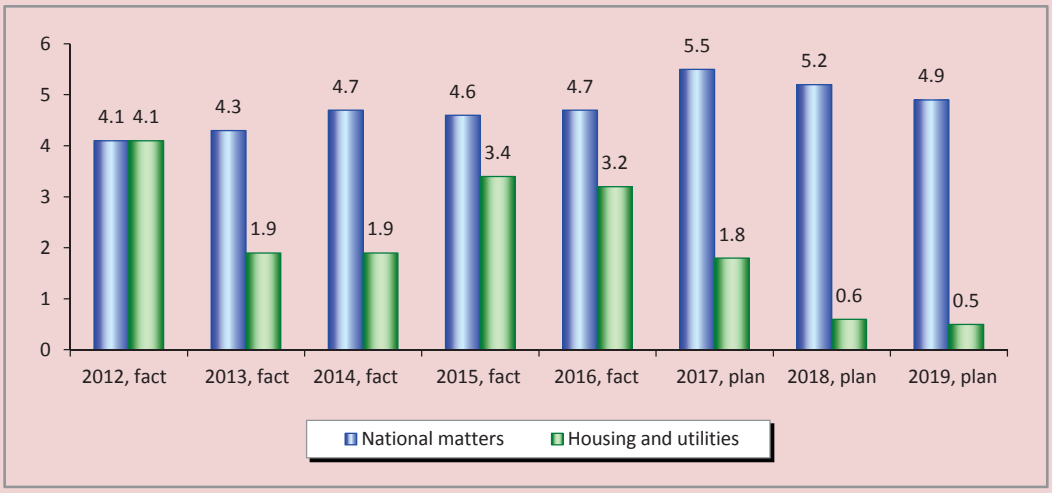
Expenditures	2016, fact	2017, plan	To 2016, %	2019, plan	To 2016, %
Total	2387.7	2554.6	107.0	2549.0	106.8
Governor	5.95	5.5	92.4	5.3	88.3
Legislative authorities	235.4	244.4	103.8	226.2	96.2
Executive authorities	263.3	282.0	107.1	271.1	103.0
Judicial system	206.0	220.2	106.9	215.1	104.4
Financial authorities and financial supervisory agencies	196.3	213.6	108.8	215.1	110.0
Election	127.5	56.8	44.5	157.2	123.3
Other issues	1352.9	1432.2	105.9	1362.2	100.7
Sources: [9]; [16]; author's calculations.					

The expenditures of the regional budget under this section exceed the funding of several important areas. For example, if in 2012 the share of expenditures on administration and that on housing and utilities in the amount of the expenditure part of the budget were equal, then in 2016 they had a contrasting trend: the proportion of administration expenditures has increased, and the share of financial support to housing and utilities has decreased. In the forward-looking budget cycle, on average less than 1% of budget expenditures will be spent ono housing and utilities, and more than 5% – on administration *(Fig. 8)*.

Such imbalances in the distribution of budget funds indicate the need for a more careful choice of priorities of budgetary policy and also the reserves for possible optimization of expenditures.

Convincing evidence of compliance with the principle of budget consolidation in the formation of the financial plan of the region is its investment component.

Figure 8. Proportion of expenditures on the sections "General national expenses" and "Housing and utilities" in the total expenditures of the regional budget of the Vologda Oblast in 2012–2019, %



Sources: [9]; [16]; author's calculations.

In conditions of acute shortage of financial resources the need for the implementation of this principle forces the government of the oblast to cut budget investments, in other words, the budget of development. Note that after the adoption of the May decrees of the President of the Russian Federation in 2012, capital investments were selected as the primary source of funds for the execution of these decrees. In 2012–2016, budget investments decreased by 50%. In the forecast period the trend of continuous reduction of the development budget will continue: in 2019, its share in the expenditures will be 2.5% versus 8% in 2011 *(Fig. 9)*.

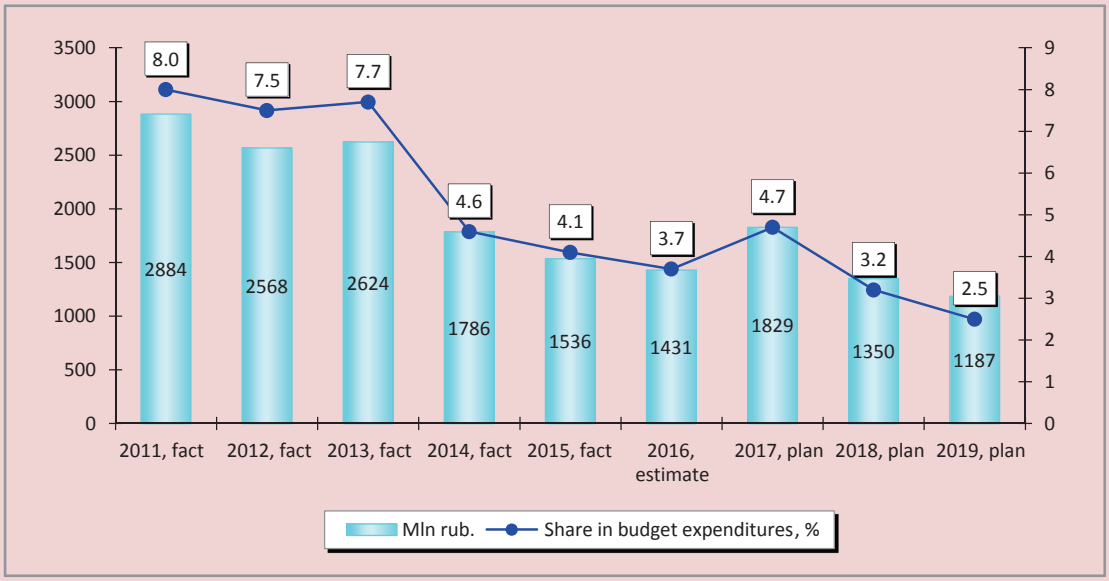
We can conclude that in the short term virtually the entire regional budget will be directed toward financing priority needs. This does not meet the task of increasing the share of investment expenditures set out in the "Main directions of budgetary policy", creating long-term risks for investors and for the future socio-economic development of the oblast. It stands to reason that the decline in the volume of investments in the fixed capital of the Vologda Oblast that began in 2013 was prolonged until 2026[3].

The growing socialization of the regional budget has not led to a measurable increase in the standard of living of Vologda residents *(Tab. 9)*.

In the forecast period, the share of expenditures on the salaries of the personnel

[3] Resolution of the Government of the Vologda Oblast from November 30, 2015 No. 1022 "About the forecast of socio-economic development of the Vologda Oblast for the long term of 2016–2030".

Figure 9. Expenditures* of the regional budget of the Vologda Oblast on capital investments in 2011–2019



*To ensure comparability, the expenditures are given excluding non-repayable receipts.
Sources: [9]; [16]; author's calculations.

Table 9. Main types of social expenditures* of the regional budget of the Vologda Oblast and the level of poverty in 2015–2019

Indicatiors	2015, fact	2016, estimate	2017, plan	2018, plan	2019, plan
Payments to staff of government agencies and public institutions, mln rub.	2407.0	2645.5	2666.8	2691.1	2691.1
Social payments, mln rub.	9743.3	13646.6	13785.7	14573.3	14574.1
Total	12150.3	16292.1	16452.5	17264.4	17265.2
Share in total budget expenditures, %	*25.3*	*32.1*	*35.4*	*36.3*	*33.3*
Population with incomes below the subsistence level, thousand people	167.7	175.7	171.8	170.3	165.3
In % of total population	*14.1*	*14.8*	*14.5*	*14.4*	*14.0*

*Excluding intergovernmental transfers to the budgets of municipal formations.
Sources: Department of Finance of the Vologda Oblast [14]; [11]; author's calculations.

of public institutions and on social payments will increase to an average of 35% versus 25% in 2015, and the average annual number of citizens with incomes below the subsistence level will be 169 thousand people, or 14.3% of the total population. Thus, poverty rate will be higher than 2015.

Considering the expenditure side of the regional budget, we cannot ignore its program component. Starting in 2015, more than 90% of expenditures is planned to be allocated for the implementation of government programs (GP) of the Vologda Oblast, which can be grouped into three areas *(Tab. 10)*.

Table 10. Planned expenditures of the regional budget of the Vologda Oblast on the implementation of government programs in 2016–2019

Program	2016	2017	2018	2019	2019 to 2016, %
Program expenditures, total	48309.3	44000.8	44740.9	45186.8	93.5
Human development and improving the quality of life					
Social support	11311.5	10262.7	10886.1	10885.3	96.2
Development of education	10731.9	10612.4	10445.1	10445.1	97.3
Healthcare development	8272.0	8299.6	8269.8	8267.5	99.9
Provision of affordable housing	1533.0	1142.5	1459.5	1234.8	80.5
Other	1731.6	2572.1	2542.4	2517.7	145.4
Total	33580.0	32889.3	33602.9	33350.4	99.3
Proportion in program expenditures, %	69.5	74.7	75.1	73.8	+4.3 p.p.
Increase the sustainability and modernization of priority sectors of the economy					
Development of the transport system	5440.3	4538.1	4641.1	5334.1	98.0
Development of the agro-industrial complex and consumer market	3275.2	2149.7	2129.6	2108.6	64.4
Economic development	1037.8	334.1	162.6	162.6	15.7
Support and development of small and medium enterprises	166.9	91.1	91.1	91.1	54.6
Other	818.4	954.6	961.6	969.5	118.5
Total	10738.6	8067.6	7986.0	8665.9	80.7
Proportion in program expenditures, %	22.2	18.3	17.8	19.2	-3 p.p.
Improving the public administration system					
Improving public administration	189.3	200.8	201.1	201.1	106.2
Management of regional finances	3087.8	2827.1	2951.0	2969.5	96.2
Total	3277.1	3027.9	3152.1	3170.6	96.8
Proportion in program expenditures, %	6.8	6.9	7.0	7.0	+0.2 p.p.
Source: compiled by the author according to [9]; [14].					

The analysis of the dynamics and structure of program expenditures shows that they will retain a social orientation: more than 70% of program funding will be allocated for the development of human capital.

However, the improvement of living conditions of Vologda residents, rightly claimed as a priority when forming the budget, is impossible without a more or less stable economic growth. However, reducing the funding of programs in the economy will be the most significant – more than 19%. For example, the expenditures on the GP "Economic development in the Vologda Oblast for 2014–2020"[4] will be reduced by 84% compared to the level of 2016. This approach to the formation of financial resources that are clearly insufficient is contrary to the goals of creating conditions for sustainability and increasing the pace of economic development of the region outlined in the program.

It should be emphasized that only in 2017, out of 8 billion rubles of the total amount of allocations for the implementation of economic recovery programs, 2 billion rubles,

[4] Approved by Resolution 1111 of the oblast Government of October 28, 2013.

or a quarter, were intended for financing the activities of state institutions and managerial functions in the branches of national economy.

Given a general reduction in program funding by 6.5%, the expenditures on public administration programs will decrease by 3.2%. The amount of funds allocated to the GP "Management of regional finance in the Vologda Oblast for 2015–2020"[5] will be an average of 3 billion rubles annually, which will exceed the planned allocations for educational, health, transport and social support programs. Noteworthy is the lack of consistency between the allocation of expenditures and the goals of the program. For example, the aim of the subprogram "Ensuring the balance of the regional budget" is to ensure the execution of the budget based on the principles of long-term balance and stability, and the entire amount of expenditures under this subprogram is planned to be used to maintain the Committee for Information Technology and Telecommunications. In general, about half of program funding will be directed toward servicing public debt and the maintenance of the Department of Finance of the oblast.

It is possible that during the execution of the budget the expenditures will undergo structural changes; however, at the stage of formation and approval of the main financial plan, the structure of allocations does not show that the region's economic development is its priority, and, consequently, the creation of conditions for business development and strengthening the revenue base of the budget seems unlikely.

Debt policy

Unfortunately, there remains a complicated issue of public debt, although in 2016, for the first time since 2009, it was possible to reduce the absolute amount of debt by 3.2 billion rubles and to ease the debt burden of the regional budget to 71% versus 90–105% in the previous periods *(Fig. 10)*.

By 2020 it is planned to reduce debt liabilities by the 7.5 billion rubles; however, the debt burden will remain substantial, amounting to almost half of the volume of own revenues of the budget.

In 2016 the debt burden was decreased mainly with the help of loans obtained by the oblast in the amount of 20.7 billion rubles from the federal budget in 2014–2016 for the substitution of commercial loans.

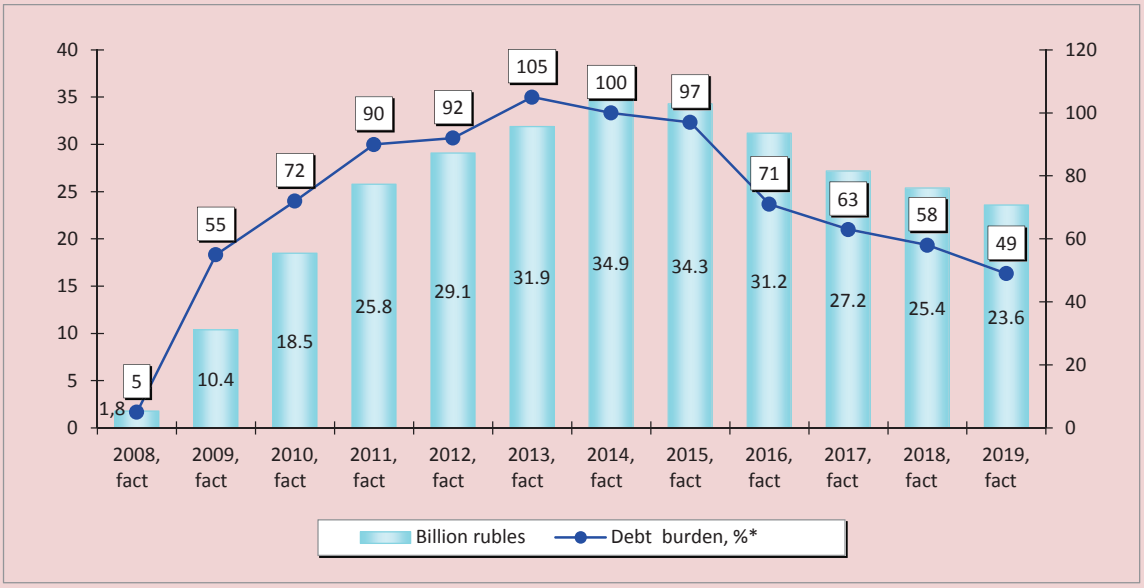
Large-scale financial assistance in 2016 determined the change in the structure of public debt in favor of budget loans *(Fig. 11)*.

At the same time, in the forecast period, commercial borrowings[6] that are expensive from the point of view of their servicing will be the main tool of the debt policy in the region. Figure 11 shows that in 2018 they will regain a dominant role in the structure of public debt; and in 2019, almost 90% of the debt will be represented by the market component.

[5] Approved by Resolution 990 of the oblast Government of November 05, 2014.

[6] According to the Department of Finance of the Vologda Oblast, in 2016 the weighted average rate on commercial loans received by the regional budget was 11.6% versus 0.1% for the loans from the federal budget

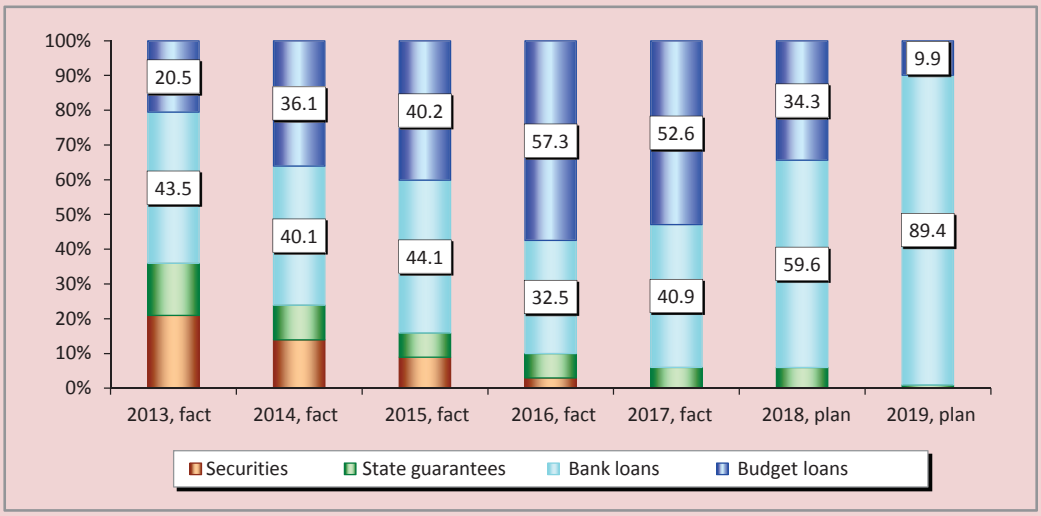
Figure 10. Public debt of the regional budget of the Vologda Oblast in 2008–2019



* Debt burden is calculated as the ratio of debt to own revenues of the budget.

Sources: [9]; [14]; [16]; author's calculations.

Figure 11. Structure of public debt of the regional budget of the Vologda Oblast in 2013–2019, %



Sources: [9]; [14]; author's calculations.

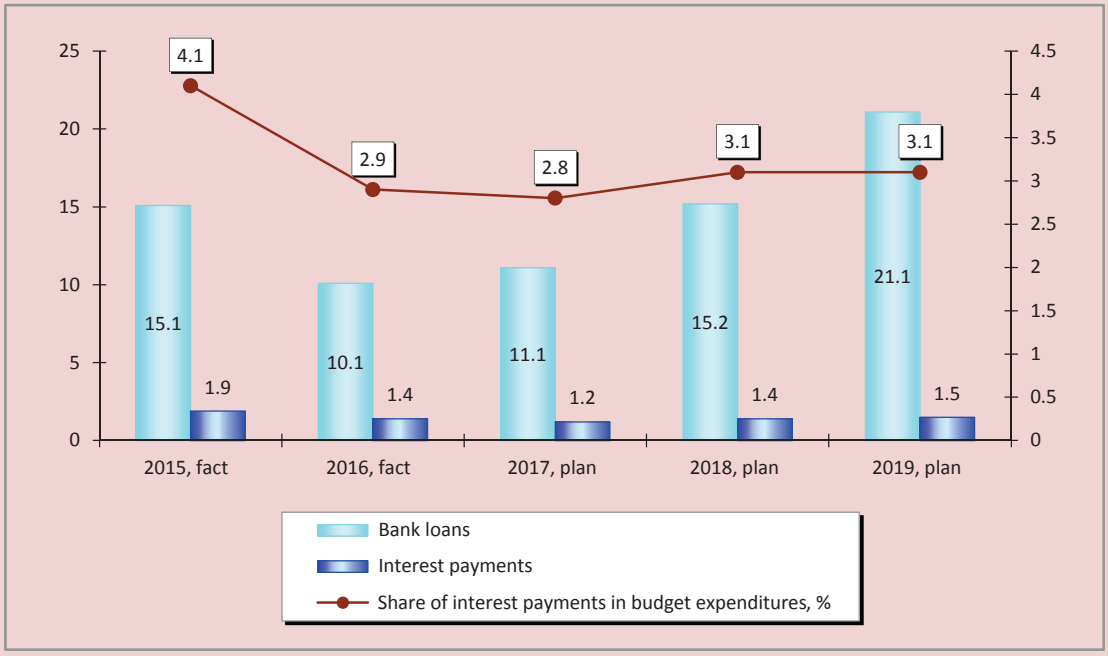
Naturally, the expansion of bank lending will lead to a growth of unproductive expenditures of the budget in the form of interest payments *(Fig. 12)*.

The volume of commercial loans in the debt structure will grow each year and it will increase twice in comparison with the volume of 2016. The cost of their servicing in 2018 will start growing again, reaching 3% of the budget expenditures. The level of interest payments will not exceed the standard of 15% set by the Budget Code of the Russian Federation. At the same time, the need to service the debt will cause a significant reduction in the funds that could be used in critical areas of life of Vologda residents: the volume of interest expenditures will exceed the combined allocations on the housing and utilities sector, transport system, environment, cultural activity and sports.

During 2017–2019, the Vologda Oblast is to ensure the repayment of the debt on the previously borrowed funds in the amount of 29.2 billion rubles: 10.7 billion rubles of market borrowings and 18.5 billion rubles of budget borrowings. New bank loans will be used as the main source of repayment, with the help of which it is planned to pay two thirds of the debts *(Tab. 11)*.

In addition to the loans received from the federal budget for the refinancing of market borrowings, it will be necessary to repay annually 9 billion rubles of loans issued by

Figure 12. Bank loans and interest payments of the regional budget of the Vologda Oblast in 2015–2019, billion rubles



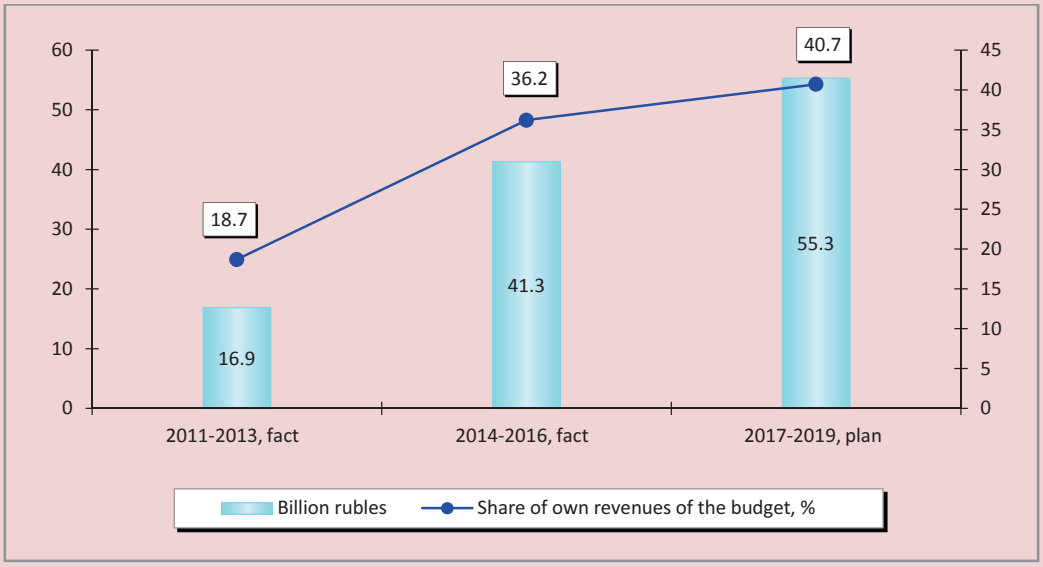
Sources: [9]; [14]; author's calculations.

Table 11. Planned sources of repayment of loans from the regional budget of the Vologda Oblast in 2017–2019, million rubles

Indicators	2017	2018	2019	Total for 2017–2019
Repayment of loans				
Total	14312.4	7281.5	7586.2	29180.1
- bank	6852.9	1716.2	1209.4	9778.5
- budget	6539.5	5565.3	6376.8	18481.6
- oblast securities	920.0	0	0	920.0
Repayment sources				
Own revenues	6484.7	1512.0	415.7	8412.4
Proportion in the amount of return, %	*45.3*	*20.8*	*5.5*	*28.8*
Bank loans	7827.7	5769.5	7170.5	20767.7
Proportion in the amount of return, %	*54.7*	*79.2*	*94.5*	*71.2*

Source: compiled by the author with the use of [9]; [14]; author's calculations.

Figure 13. Repayment of loans from the regional budget of the Vologda Oblast



Sources: [9]; [16]; author's calculations.

the territorial directorate of the Federal Treasury to cover temporary cash gaps arising during the execution of the budget. Taking into account these loans, the total amount of refunds for 2017–2019 will increase to 55.3 billion rubles, which considerably exceeds the indicators of previous years and which will be equivalent to more than 40% of the volume of own revenues of the regional budget *(Fig. 13)*.

Large-scale expenditures on returning the loans will be the main risks for sustainable

financing of the adopted expenditure commitments and for achieving the planned balance of the regional budget.

These data indicate that, if the agreements with the Ministry of Finance of the Russian Federation on the allocation of budget loans to the region are not prolonged, then it seems highly improbable that the government of the Vologda Oblast will find a solution to the problems of debt policy in terms of diversifying the debt structure and reducing the share of market debt.

Conclusions and suggestions

The regional budget of the Vologda Oblast in 2017–2019 has some conservative features. Its parameters are adapted to the surplus and do not fully consider the possible impact of the budget on the growth of the regional economy. The main priorities of budgetary policy will be as follows: further optimization of costs allocated primarily to the national economy and infrastructure; winding down the budget of development; resumption of a trend interrupted 2016 that aimed to escalate market borrowing and the return to the debt funding of expenditures.

Taking these facts into consideration, it will be very difficult to implement key objectives of fiscal policy in the short term. Perhaps, it will be possible to achieve a balanced budget, but not at the expense of economic growth, but because of the need to comply with the conditions set out by the Ministry of Finance of the Russian Federation with regard to receiving additional financial aid, which will require sequestration of expenditures.

Noting the defects of the budget, we point out that the constant lack of resources in regional budgets due to the destruction of the economic base of the majority of constituent entities of the Russian Federation in the course of market reforms has become a primary issue of budget federalism. In the actual absence of points of growth in most territories the reserves for internal optimization are almost exhausted. It is obvious that without altering the super-centralized budget model the problem of self-sufficiency of Russian regions can not be solved.

It is important to point out that the issues of finding the quickest solution to the problem of tax reallocation between the center and the subjects in favor of the latter are being considered only at the level of the Federation Council. In particular, it is proposed by V. Vasiliev, Deputy Chairman of the Committee on Economic Policy, who offers to amend the rules of distribution of federal budget subsidies, which would take into account industrial, socio-demographic and infrastructural features of regions [2].

We agree with the opinion of V. Vasiliev and add that the revenue potential of the territories can be enhanced with the help of the following measures:

1. Reforming individual income taxation by establishing graded rates, primarily in respect of super-profits. According to ISEDT RAS calculations, the introduction of progressive taxation only in respect of Russian billionaires will help double individual income tax receipts in regional budgets [20].

2. Maintaining the procedure of distribution of excises on alcoholic production that was in force until 2017. According to the Department of Finance of the Vologda Oblast, if a centralized system for distributing these types of excise taxes is adopted, then the regional budget will not receive the revenues amounting to 1.8 billion rubles.

3. The introduction of a standard that would limit the amount of previous years' losses that could be written off when calculating profit tax (for example, not more than 30% of the taxable profit). According to our calculations, the losses of profit tax due to the write-off of the losses increased from 95 billion rubles in 2011 to 190 billion rubles in 2015.

4. The tightening of tax administration for consolidated groups of taxpayers up to their liquidation in case of repeated absence of taxable profits.

5. The abolition of federal benefits for regional and local taxes. According to ISEDT RAS calculations, the revenues that the regional budget of the Vologda Oblast did not receive due to the shortfalls of corporate property tax alone as a result of preferences granted in accordance with federal legislation increased from 0.3 billion rubles in 2014 to 1.1 billion rubles in 2015, nearly in four times.

6. The reimbursement of expenses of regional budgets for the implementation of the decrees of the President of the Russian Federation from May 07, 2012.

7. The increase in federal budget allocations on granting budget loans to the regions in order to substitute the market debt in the amount of not less than 50% of its sum, or maintaining the amount of these allocations at the level of 2016.

8. Taking steps to recover the receivables of chief administrators of budget funds. According to the Federal Treasury, at the beginning of 2016, the receivables of sub-federal budgets amounted to more than a trillion rubles (in the Vologda Oblast – 1.9 billion rubles).

9. Legislating the procedure for the distribution of intergovernmental transfers to the subjects of the Russian Federation from the federal budget, which must be distributed prior to the drafting of regional budgets. Annual failure to comply with the proposed procedure leads to the disruption of the budget process in the regions. As a result, the untimely distributed and received transfers are returned to the federal budget in accordance with the budget legislation. By the end of 2016, regions returned 42 billion rubles of unused subsidies and subventions, which is two times more than in the previous year (the returns in the Vologda Oblast increased from 43 to 156 million rubles).

10. Boosting the recovery of debts on payments to the budget. According to the Federal Tax Service, as of January 1, 2017, a possible debt on taxes and fees (excluding penalties and interest) that can be recovered in the consolidated regional budgets amounted to 537.5 billion rubles, and in the Vologda Oblast it is 2.9 billion rubles.

Along with the use of above-mentioned reserves, Russian authorities should move to comprehensive activities aimed to stabilize regional budgets, the key activities, in our opinion, should be as follows: equal distribution of tax revenues by levels of the budget; revision of revenue and expenditure powers of constituent entities of the Russian Federation; revision of economic policy in relation to the largest high-yield taxpayers to determine their contribution to the development of the country. Only then can the budget become a real, and not declarative, instrument of state control aimed at an active restructuring of the economy and the standard of living of Russians.

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Studying the Youth Lifestyle with an Approach to Order and Security

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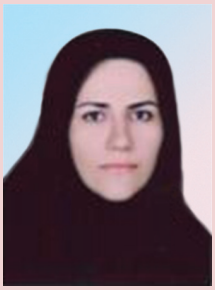

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Abstract. Social security is among the essential indicators of the human community foundation, both based on the social conventions and the normative approaches. The main objective of the present study is the survey of the relationship between the modern life styles and the youths' risky behaviors. The data required for the present study have been collected through the use of questionnaire and based on a surveying method. The questions are all formulated based on the study theoretical framework and the study hypotheses. The study population includes the youngsters ranging in age from 18 to 35 years of age from the city of Abadeh (Iran) from among which a total number of 286 individuals were selected as the study sample volume and they were asked to answer the questions in the questionnaires. In this study, 44.8% of the sample population were female and 55.2% were male. 44.8% of respondents were less than

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25 years, 34.7% of respondents were 25 to 30 years old and 20.5% of respondents were older than 30 years. Also, 61.9% of respondents were single and 38.1% were married. The results of the current study indicated that there is no statistically significant difference between the employment and marital status and risk taking. But there was found a significant difference between gender and risk-taking. The main hypothesis proposed in the present study deals with the survey of the relationship between youngsters' modern life styles and risk-taking (risky driving) and according to the results obtained in the present study it was observed that the religiosity (R=0.423), entertainment-centeredness (R=0.222), adventurousness (R=0.180), cultural consumerism (R=0.204), socialism (communitarianism) (R=0.293) indices were in a statistically significant relationship with risk-taking in a 99% confidence level; but the indices such as aestheticism (R=0.073) and health-seeking (R=0.031) were not found in a statistically significant relationship with risk-taking in the youths.

Keywords: Lifestyle; Order and security; Risk-seeking; Youth.

Introduction

One of the important, complicated and novel concepts in the today's world and of a great use in political, social and economic discussions is the subject of security. Security and safety are the most fundamental human needs [1]. The individual's subjective and objective security depends on the social security and it is enumerated as one of the underlying and vital scales in safeguarding and preserving the essential values generally accepted by the society [2]. Barry Buzan was the first person who put forth social topics in a codified manner. Buzan classifies social security into five categories: military, political, economic, social and bioenvironmental security. In Buzan's idea, because the social security is proposed within a terrestrial territory it is of a secondary importance in respect to the national security [3]. What is focused on by the national security experts as social security, societal security and socialized security has also been indicated to be implying the necessity for the existence of security and safety regarding the society. Because societal security is not so much common an expression, there is sought aid from the term social security to elaborate on such a concept [4]. One of the social security indicators is the safety and security on the roads and the streets. The security and safety on road depends highly on the way the road users make use of it while driving their own vehicles. The driver's behavior has been recognized as the main factor in the occurrence of the road incidents in Iran and in the global level. 90% to 95% of the road accidents in Iran have been found to be related to the human factor and particularly the driver's behavior [5]. After the industrial revolution, the vehicles and automobiles were considered and introduced as being the indices of civilization and driving was rendered necessary for satisfying various life needs. In Iran, road accidents are the

first reason behind deaths and mortalities in the age group below 40 years of age and over 71% of the total mortalities in such an age group is connected to the traffic accidents; this has caused the human factor, amongst four reasons of human, road, vehicle and the environment, to be considered as the most significant reason behind the occurrence of the accidents in Iran [6]. In this regard, many of the researchers believe that driving and the contingent risk of accident should be looked for in the individuals' life context since behaviors selected and exhibited by the individual while driving is a reflection of the way s/he lives, thus driving can be linked to the other behaviors demonstrated by the individuals. Life style can be defined as the system of the positive and negative choices made by an individual within the structural limits. Life style possesses two positive and negative (healthy and risky) aspects.

A great many of the researches indicate that the individuals choosing the healthy life style exhibit less risky behaviors. Cockerham believes that "life style is a collective pattern of the healthy behaviors based on the people's choices and corresponding to their life situations". These choices are effective on the people's health-related behaviors" [7]. Since the city of Abadeh is situated along the highway connecting the two provinces of Isfahan and Fars and more importantly it is located along the path connecting the northern provinces to the southern ones; learning about the youngsters' life styles is necessary therein because such a life style is of a great influence on their driving style and, especially, risky driving. Particularly, because, besides safeguarding the citizens' safety, according to the special situation of the city, it is expected that the passengers and travelers choosing this route and the city for taking their trips or the ones who enter the city will find it more peaceful and convenient.

Literature review

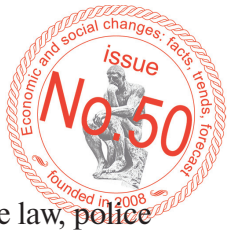
Abaneh (1994) in an article evaluated the driving behavior and the effects thereof on the traffic in the city of Accra, Ghana, and realized that the drivers play a significant role in the occurrence of traffic-related problems on the urban roads. Wallace (2003) in a study dealt with the survey of the external visual factors' role on the drivers' distraction when driving their own automobiles and came to the conclusion that the quality and the way the external factors such as the signs and billboards positioned along the roads, for example if in an irregular and confusing manner, can be a cause of the drivers' distraction [8]. Shakeri Niya and Mohammad Pour, (2009), has come to the conclusion that there is a significant relationship between mental health, aggression, personality type and driving habits in the drivers [6]. Share Pour et al. (2010) consider gender as the most important factor in analyzing the driving accidents and they indicate that the accident rates and the tendency for highly risky driving is in a lower level in women in respect to the men [7]. Ferdowsi and Ahmadi, (2010)

in an article dealt with the comparison of the psychological factors such as precision, aggressiveness, personality and the time to react in the randomly and non-randomly selected women drivers, randomly selected women and men drivers and also the non-randomly selected women and men drivers [9]. But Ahmadi, (2011) in an article has come to the conclusion that there is no significant relationship between the two male and female genders regarding the aspects such as driving violations and the driving violation rates are very high for both of the genders [10]. In a study conducted by Gorjiyan et al. (2014) choosing the risky life style has been found to be the contributing factor in the occurrence of the driving accidents [11]. Garrusi et al. (2014) found out that there is an inverse and significant correlation in an intermediate level between the various attitudes regarding the driving regulations and both of the driving behaviors aspects. There was also found an inverse and significant relationship between some of the personality characteristics and intentional mistakes. The relationship between internal non-control perception and driving violations was also found to be negative [12].

Theoretical framework

Driving behavior is a conduct which is chosen by the driver in the form of a pattern of driving on the road [13]. In the social definition paradigm (super-structuralism) in contrast to the other two important sociological paradigms, that are the social reality paradigm and the social behavior paradigm, the actors and the way the social reality is constructed by them, also the definitions and the interpretations made by them of the situations are emphasized and, generally, there is offered a creative image of the actors. From the school of symbolic mutual interaction perspective as one of the schools in social definition paradigm, the human beings play an active role in socialization process.

In the opinion of such a school's experts, socialization is not a unilateral process during the course of which the actors merely turn into someone more of information receivers, rather the actors do not fully accept whatever they acquire in such a social instructional process due to reasons such as their capability to think and rethink and, instead, they interfere in and manipulate the process based on the temporal and spatial expediencies and situations [14]. Social supervision (social control) is, in fact, a term used to point to the socialization process expansion. Such an inspection and control refers to the methods and the tools which are being applied in the society in order to make the individuals adapt to the expectations of a special society or group of the social control mechanisms [15]. There are various classifications presented in this regard: 1. formal and informal mechanisms, 2. internal and external mechanisms, 3. value, affective, economical, harsh and supernatural mechanisms, 4. remote and near (adjacent) control [16]. Internalization of the driving norms and regulations and keeping bound to



them is usually carried out in a bilateral and constant process and the drivers should not be seen as a sole receiver and implementer in internalizing such norms and putting them into practical use, rather they should be considered as active participants. Regarding the contents of such norms, they are considered as enacting and executing parties who deal with the temporal and spatial aspects of the norms and regulations enforcement in a continuous process and they also deal with the interpretation and giving meaning to such regulations and then try to internalize or not internalize the new norms and regulations, to preserve or not preserve the previously internalized norms and also adhering to or not observing such internalized norms.

Some of the researches adopting a psychological approach have shown that the driving behavior is comprised of three cognitive (incorrect evaluation of the danger such as wrong estimation), affective (including the affective needs and deficiencies such as personality immaturities, seeking for supremacy, challenge and competitiveness, risk-taking) and sensory-motor or behavioral (performance error or slips) aspects. Also, some of the studies have pointed to the relationship between the life style and the driver's behavior. Some others have underlined the social attitudes and variables which are posited from a sociological attitude and are therefore expressive of the individual's propensities, perceptions and feelings while driving in an interaction with the others such as their standpoint in respect to the law, police and violation and also aggressiveness, social satisfaction and having an understanding of the national and religious identity; and, finally, some of the other studies have made a reference to the structural and background factors which are linked to the socio-economic variables from the sociological points of view and also they have been found to be associated with the variables related to the environment and the driver's role such as the driver's age, gender, education level, marital status and so forth [17].

The theory of external or direct control is in conjunction with the theory of making reasonable choices. Homens considers the mutual social action as an economical exchange because he is of the belief that the individuals think of the advantages and disadvantages and the consequences of the actions they are intending to accomplish and the choice of performing an action occurs when the individual evaluates the outcomes as being positive and prosperous. Being committed to the society objectives and values based on the internal control deters the individuals from getting engaged in the offensive and criminal behavior through feelings of guilt, culpability and shame [18]. Behravan classifies the factors effective on the highly risky driving behavior into three categories:

- Firstly, the additive factors including the social needs (the theory of the needs and the symbolic mutual interactions), aggressive

driving behavior (the theory of aggression and failure), fatalism (neutralization theory) and illegality (the theory of external social control).

• Secondly, the reductive factors including the legality (the internal social control), the sense of religious and national identity (symbolic mutual interaction), life satisfaction (the theory of justifiable social action), type of the attitudes towards the police (symbolic mutual interaction), the contingency of being caught and punished (reasonable action).

• Thirdly, the basic controller factors (the theory of normative weakness) [17].

Life situations reduce the choices opportunities. Life situations are mostly the very individuals' socio-economical statuses. Therefore, some of the people have more choices and options in contrast to the others. According to the stress put by Bordio on the importance of the structure, any concept of the healthy style is in need of paying particular attention to the opportunities. The life opportunities influence the life styles in two ways [15]: 1) socio-economical and 2) perceptive boundaries which are derived from socialization and gaining experience of a certain social environment. The choices made by the actors and operators in structural areas lead to the regeneration of the social structures. According to what is put by Bordio, the choices made by the actors as regarding the transportation and traffic and other fields are all suggestive of the various classes' tastes and verves revealed within the framework of a certain life style; such a zeal and taste is rooted in the manners [7]. On the other hand, highly risky driving among the youth (according to the Geizer's theory) is indicative of a certain type of life which should not be considered as necessarily healthy [19]. Healthy life style is one of the aspects of the life style and it is comprised of self-selected forms of consumerism such as certain choices regarding food type, clothing, countenance, automobile, forms of leisure time activities and so on; in the meantime, Cockerham moves well beyond such items and enumerates the very decisions made concerning the type of the food to be consumed, fastening the seatbelt, individual hygiene, brushing and so forth as part of the healthy life style. In his idea, the choices related to the health, are placed within an area of the structural situations. To put it differently, the choices can be corroborated or constrained by the individual's life opportunities. He knows the healthy life style as a system of choices made by the individual according to his or her social status and life opportunities (situations) are considered by him as the social structural forms within which the people live. In Cockerham's mind, life style is a collection of the positive (healthy) choices made by the individual in the structural areas. Making choices which is connected to the topic of functionality, as Cockerham states, takes place within the structural areas such as age, gender, marital status and socio-economical bases [15].

Research hypotheses

1. It seems that there is a significant difference between employment, marital status, gender and risk-taking in youth

2. It seems that there is a significant relationship between education, parental and individual income and risk-taking in youth

3. It seems that there is a significant relationship between modern life style characteristics of youth and their risk-taking

Defining the concepts

Background variables include gender, employment status and marital status, education level, parents' income rate and the individual's income rate.

The independent variable in the present study is the youngsters' life style. The indices of interest in this concept are religiosity, aestheticism, recreation-centeredness, adventurousness, cultural consumerism, socialism and seeking for health. The items, including participation in appealing to God, dirge ceremonies and birthday jubilation, group praying, going to mosque, visiting the fellows of the graves, saying prayers have been inquired in the religiosity index. In aestheticism, items such as putting on beautiful and fashionable and extraordinary garments, purchasing cosmetics and body products, listening to the pop music, watching romantic and satellite TV movies, listening to the music and CDs have been the focus of the inquiries. In the recreation-centeredness index items such as driving after drinking alcoholic drinks, the use of sedatives, smoking cigar and taking psychotropic pills, taking part in parties, being a member of clubs and staying out of the home and in the adventurousness index items such as looking attractive, acquiring a feeling of authority, gaining peacefulness, driving purposelessly and roaming around and driving with friends and in cultural consumerism index items such as the use of internet, visiting museums and theaters, listening to classical music, playing musical instruments, watching social films, reading romantic literary works going to cafes and in socialism index items such as paying attention to the global peace issues, human rights, bioenvironmental problems and political discussions and debates and in health-seeking index items such as playing sports, having interests in group sports, going to the stadiums, doing individual physical activities, physical education activities were investigated. The dependent variable in the current study is adventurousness which includes items such as making use of mobile phones while driving, driving with higher speeds, entering the no-crossing streets, not fastening the seatbelt, being careless about the driving signs, the use of audio CDs when driving, disallowed overtake, not observing the legal distance, fast overtake and coming upon another car abruptly.

Methodology

The data required for the present study have been collected through the use of questionnaire and based on a surveying method. Sampling was multistage random

sampling. The study population includes the youngsters ranging in age from 18 to 35 years of age from the city of Abadeh (Iran) from among which a total number of 286 individuals were selected as the study sample volume and they were asked to answer the questions in the questionnaires. The questions are all formulated based on the study theoretical framework and the study hypotheses. The questions validity rates have been computed based on Cronbach's alpha scale and they are as follow: for religiosity it has been estimated to be equal to 0.93, for aestheticism it is 0.85, for recreation-centeredness it is calculated to be 0.81, for adventurousness a validity rate of 0.89 was obtained and for cultural consumerism it is computed to be equal to 0.85 and for socialism it is equal to 0.78, for seeking health it is 0.85 and for the dependent variable, risk taking, it is estimated to be equal to 0.92. Data were analyzed by using SPSS software and t-test and regression statistics was used to examine the research hypothesis.

Results

In this study, 44.8% of the sample population were female and 55.2% were male. 44.8% of respondents were less than 25 years, 34.7% of respondents were 25 to 30 years old and 20.5% of respondents were older than 30 years. Also, 61.9% of respondents were single and 38.1% were married.

The first hypothesis test: It seems that there is a significant difference between employment, marital status, gender and risk-taking in youth

According to the T *(Table 1)* (1.8) and its significance level (0.073), the difference between the averages of the unemployed and the employed was not significant and the hypothesis was rejected. According to the T (6.702) and its significance level (0.000), the difference between the averages of the female and male was significant, and this hypothesis was confirmed. Also, according to the T (0.085) and its significance level (0.932), the difference between the averages of the single and married was not significant and the hypothesis was rejected.

The second hypothesis test: It seems that there is a significant relationship between education, parental and individual income and risk-taking in youth

Table 1. The mean differences test between variables of employment, gender, marital status and risk-taking

		Abundance	Mean	Standard deviation	Standard error	t	sig
Employment	Unemployed	165	39.806	9.391	0.731	1.800	0.073
	Employed	102	37.686	9.288	0.918		
Marital	Female	119	42.974	8.610	8.610	6.702	0.000
	Male	148	35.797	8.767	8.767		
Gender	Single	165	38.957	9.248	0.719	0.085	0.932
	Married	102	39.058	9.657	0.956		

The results showed that, the education variable had a 4.2% *(Table 2)* correlation with risk-taking. Based on values of F=0.460 and sig=0.498, there was no significant relationship between the two variables.

Parental income had no correlation with risk-taking variable, also there was no significant relationship between the two variables (F=0.000 and sig=0.997). Individual income had correlation with risk-taking variable, but based on values of F=0.328 and sig=0.567, there was no significant relationship between the two variables.

The third hypothesis test: It seems that there is a significant relationship between modern life style characteristics of youth and their risk-taking

The results showed that, religion-oriented had a 42.3% *(Table 3)* correlation with risk-taking. According to the values of F=57.699 and sig=0.000, there was a significant relationship between religion-oriented and risk-taking (p<0.01). The aestheticism had a 7.3% correlation with risk-taking, also there was no significant relationship between the two variables (F=1.420 and sig=0.233).

Entertainment-oriented had a 22.2% correlation with risk-taking. According to the values of F=13.732 and sig=0.000, there was a significant relationship between entertainment-oriented and risk-taking (p<0.01). The adventurous had a 18% correlation with risk-taking, also there was a significant relationship between adventurous and risk-taking (F=8.857 and sig=0.003) (p<0.01). Cultural consumption variable had a 20.4% correlation with risk-taking. According to the values of F=11.496 and sig=0.001, there was a significant relationship between the two variables. (p<0.01).

Society-oriented variable had a 29.3% correlation with risk-taking variable. According to the values of F=24.884 and sig=0.000, there was a significant relationship between

Table 2. Bivariate regression analysis between education, parental income, individual income and risk-taking

Items	R	R^2	R^2ad	t	sig	F
Education	0.042	0.002	-0.002	0.679	0.498	0.460
Parental income	0.000	0.000	-0.004	0.574	0.997	0.000
Individual income	0.035	0.001	-0.003	0.004	0.567	0.328

Table 3: Bivariate regression analysis between the indices of modern lifestyle and risk-taking

Items	R	R^2	R^2ad	t	sig	F
Religion-oriented	0.423	0.179	0.176	7.590	0.000	57.699
Aestheticism	0.073	0.005	0.002	1.195	0.233	1.429
Entertainment-oriented	0.222	0.049	0.046	-3.706	0.000	13.732
Adventurous	0.180	0.032	0.029	-2.976	0.003	8.857
Cultural consumption	0.204	0.042	0.038	3.391	0.001	11.496
Society-oriented	0.293	0.076	0.082	4.988	0.000	24.884
Health-seeking	0.031	0.001	-0.003	0.511	0.610	0.261

society-oriented and risk-taking ($p<0.01$). Health-seeking variables had a 3.1 % correlation with risk-taking, also there was no significant relationship between the two variables ($F=0.261$ and $sig=0.610$), and the hypothesis was rejected.

Conclusion

Social security is among the essential indicators of the human community foundation, both based on the social conventions and the normative approaches. The approaches in the first set consider the social security as being a result of the social contracts and conventions between the human beings and the proponents of the second approach know it as an outcome of the normative, cultural structures which are of a determinative influence on the individual well beyond the individual's own power. If the human beings in a society break the contracts and the collective conventions or if they are found violating the normative orders they are said to have damaged the social security depending on the importance and value given to the related conventions and norms. According to the idea that the technology has become an integral part of the human social life and also that an array of certain values, norms, personal experiences, beliefs and habits can be effective on its application and also because it has been known to make social and cultural changes in the societies, the risk-taking rate (highly risky driving behavior) based on the type of the behavior shown can be different in a comparison between the developed countries and the developing countries and the various cities in Iran. Of course, due to the lack of having access to the comparable information for the entire cases of the highly risky driving behavior and also as a result of the differences in the assessment scales adopted by the current study we only sufficed to the survey of the relationship between background demographic factors and the life style with the highly risky driving behavior. According to the importance of the mechanization process and its penetration into every aspect of the people's daily lives and the effects it has on the people's lives and the significance of driving and highly risky driving behavior, the current study is seeking to find an answer to the question that whether there is a relationship between the life style and the risk-taking behavior (highly risky driving behavior)? The investigation of the results obtained herein indicated that there is no significant difference between the employment and risk-taking and the hypothesis was rejected, consequently. Also, there was found a statistically significant mean difference between the gender and the risk-taking and thus the hypothesis was confirmed. These findings are corresponding with the results obtained in the studies which dealt with the evaluation of the gender differences and highly risky driving behavior; for instance, the research performed by Haghshenas et al. (2008) [13], Share Pour et al. (2010) [7] and Cockerham (2004) [15] confirmed the existence of a significant

difference between the gender and the highly risky driving behavior. There was no significant mean difference shown between the marital status and the risk-taking and the hypothesis was accordingly rejected. The findings obtained herein are all contradicting the results obtained in the studies undertaken by Younesian and Moradi who indicated that there was a relationship between the marital status and risk-taking. The results of the bivariate regression analyses demonstrated that there was no significant relationship found between the individual's income and the risk-taking behavior and the hypothesis should be correspondingly rejected. This finding is not consistent with the results obtained in the studies conducted by Younesian and Moradi (2005) who indicated that the relationship between the drivers' performance and their education level and the model of the car used by them has been statistically significant and they also have been found to be conforming to the results obtained in the studies carried out by Haghshenas (2008) [13].

The main hypothesis proposed in the current study was the survey of the relationship between the youths' modern life style and their risk-taking and based on the results obtained it can be observed that the indices of religiosity (R=0.423), recreation-centeredness (R=0.222), adventurousness (R=0.180), cultural consumerism (R=0.204), socialism (R=0.293) are in a significant relationship with the risk-taking in a 99% confidence level; but the indices of aestheticism (R=0.073) and seeking for health (R=0.031) are not in a statistically significant relationship with the risk-taking. These findings have been found to be corresponding with the findings obtained in the studies performed by the other scientists and scholars, as a specimen, Cockerham (2005) showed that there is a direct relationship between the alcohol consumption and smoking marijuana with driving behavior in the adolescents [19]. In this regard, Beg points out that the men who spent less time for recreation and leisure time activities were less involved in accidents or the men who had a lower rate of alcoholic drinks consumption in contrast to the women of the same age also showed a lesser rate of road accidents.

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Domestic Tourism Development in a Region

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Abstract. Tourism is a sector which has a significant impact on the socio-economic development of territories. This type of national economic activity is characterized by a multiplier effect, generating incomes in related economic sectors. Among all types of tourism, the key role belongs to domestic tourism as the main source of income from tourist activities. Russian regions, domestic tourism is poorly developed due to imperfect infrastructure of the sector, lack of correlation between prices for tourism products and their quality, and lack of qualified personnel. In recent years, external factors are of particular significance for this sector; they include turbulent geopolitical situation in some countries, crisis phenomena in the economy, ban on travelling to popular foreign resorts for Russian citizens. The issues of domestic tourism development are reflected in works by D.R. Makeeva, E.V. Semenova, N.V. Maslova, L.I. Chernikova, G.R. Faizov. The purpose for the research is to study directions for domestic tourism development in the region taking into account the influence of external factors. The author uses scientific methods of comparison, generalization, analysis, synthesis, PEST-analysis, and the method of expert survey. Statistical data analysis helped reveal the reduction in the number of Russians' tourist trips and a simultaneously increasing demand for hotel services in the country. It has been revealed that the currently available tourism potential helps develop a wide range of types of domestic tourism. The reasons hindering domestic tourism development are lack of tourism products in the region which would attract domestic tourists; inadequate tourist infrastructure and the population's lack of funds for tourist trips. In conclusion, based PEST-analysis, the author specifies directions which ensure efficient domestic tourism development in the region, taking into account the economic and geopolitical situation.

Key words: tourism, domestic tourism, region, economy.

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Introduction. Russian regions, the economy of which is dominated by single industry, face an urgent task of searching for internal sources of development. Of particular relevance to the territory is the development of industries that have a multiplicative effect, i.e. a positive effect on related sectors of the economy, creating new jobs, increasing mobility of the population, as well as making more contribution to the budgets of all levels, providing economic growth of the territory. Tourism can be considered as a sector having similar characteristics. According to the World Tourism Organization, this area accounts for 9.8% of world gross domestic product and every 11th workplace [18; 20]. The tourism industry induces the development of up to 32 contiguous sectors of the economy. In addition, it helps diversify the economy while improving the sustainability of socio-economic systems. It should be noted that the development of this industry does not exclude the traditional way of development of the productive sector of the economy (mechanical engineering, manufacturing, oil and gas sector, etc.), and promotes more efficient use of existing capacity in the region, in particular, tourism resources.

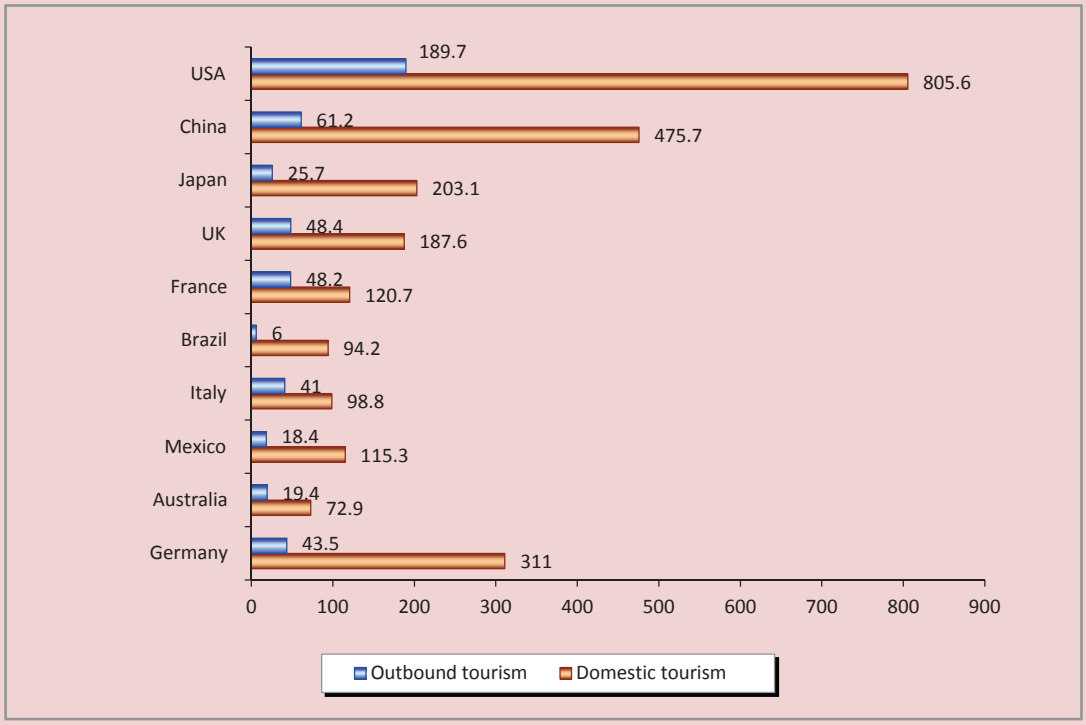
In 2014–2016 the structure of tourist market of the Russian Federation went through major changes associated with the reduction in outbound tourist flow due to a significant depreciation of the national currency, the impact of the economic crisis, long-term ban on the sale of tours for Russians in the leading outbound destinations (Turkey and Egypt) and also due to the turbulent geopolitical situation in the world. This led to the reduction in the demand of Russians for foreign destinations and increased interest in spending holidays within the country.

In the Russian Federation, domestic tourism that involves the movement of citizens within the country for tourism purposes, is not developed fully. Meanwhile, in the economies of foreign countries (USA, China, Japan, etc.) it provides up to 80% of cash income broken down by types of tourism *(Fig. 1)*.

Thus, the relevance of this research is due to the contradiction between high socio-economic importance of domestic tourism and the low level of its development in the regions of Russia under modern economic conditions. The aim of the research is to find scientific substantiation for the efforts that will promote the development of domestic tourism in the region taking into account the influence of external factors. To achieve the goal, the author reviewed existing approaches to the concept of "domestic tourism", analyzed the development of this sphere in Russian regions and determined the influence of external factors on it.

Research methods. Methodological approaches to the research are based on scientific methods such as comparison, generalization, analysis, synthesis, PEST-analysis and expert survey. The information base of the research contains the works of domestic and foreign economists in the

Figure 1. Tourism expenditures of residents and international tourists in 2015, billion US dollars [17; 20]



field of methodological and practical issues of managing tourism development, taking into account regional specifics. The issues of regional development are highlighted in the works of the following scientists: A.G. Granberg, S.Yu. Glazyev, R.S. Grinberg and others [2; 10; 12]. Theoretical and practical approaches to tourism development are widely discussed in the works of foreign scientists, who with regard to domestic tourism consider the importance of its development for the economy of the territory and focusing on its problems [19; 21]. The impact of tourism on the economy at the regional level is studied by domestic scientists T.N. Grigorenko, L.N. Kaz'mina, V.I. Kruzhalin, K.V. Kruzhalin, N.V. Shabalina, T.V. Uskova and others [1; 3; 6; 11; 13-15; 19; 21]. Domestic tourism development was studied by D.R. Makeeva, E.V. Semenova, N.V. Maslova, L.I. Chernikova, G.R. Faizova and other scientists [7; 9; 6]. The analysis of the above mentioned works allows the author to conclude that the ways of stimulating domestic tourism development at the regional level have not been studied sufficiently. Furthermore, they do not show the correlation between domestic tourism and regional development clearly.

Research findings. Despite the wide use of the term "domestic tourism", it still has no universally accepted definition that takes into account and includes all of its features. According to federal law "About the bases of tourism in the Russian Federation" No. 132 dated November 24, 1996, domestic tourism is defined as the tourism within the territory of the Russian Federation that concerns persons who are permanent residents of the Russian Federation. V.A. Kvartal'nov offers to understand domestic tourism as temporary departure of citizens of the country with their permanent residence within the national borders of the same country for vacation, satisfaction of cognitive interests, sports and other tourism purposes [4].

These definitions specify the subjects of domestic tourism and their purpose and emphasize its territorial aspect; however, they do not take into account its economic and social impact on the territories development. Although it is known that domestic tourism is more important for the economy of the region than inbound and outbound tourism, since production and consumption of tourist product in the region encourages local producers to expand production of goods and services and promotes the growth of final consumption, thereby increasing the volume of gross regional product. In addition to creating new jobs and satisfying the needs of the population in recreation, knowledge, etc., the social function of domestic tourism is to develop human potential in the region. Thus, the tourism infrastructure, including a network of accommodation, catering, entertainment, recreation and sports, helps to relieve mental and emotional tension, improve the health of residents of both the region and the country as a whole.

In order to ensure socio-economic development in the regions characterized by a decrease in macroeconomic indicators, it is necessary to search for and substantiate the internal sources of economic growth. In view of the above, it should be noted that domestic tourism can be considered as a driver of economic growth, because on the basis of existing resources it produces the tourist product, the consumption of which by tourists helps develop the region's economy. The approach considered here does not contradict the existing areas of research on domestic tourism and provides an opportunity to complement the essence of the phenomenon, reflecting its role in the socio-economic development of the region.

Analysis of statistical information suggests that the new economic conditions led to lower demand for tours to foreign countries among Russian tourists. Thus, the total number of outbound tourist trips in 2015 compared to 2014 has decreased by almost 20% *(Tab. 1)*.

For the period from 2010 to 2015 there has been an increase in the number of Russians staying in hotels and other accommodation facilities (boarding houses, camps, campsites, etc.) in all federal districts of the Russian Federation *(Tab. 2)*.

Table 1. Countries with the highest number of arrivals of Russian tourists

Country	Number of trips, thousand		Dynamics	Ranking according to the number of trips	
	2014	2015	%	2014	2015
Finland	4 283	3 067	-28.4	1	4
Turkey	4 216	3 460	-17.9	2	2
Kazakhstan	3 330	3 125	-6.2	3	3
Abkhazia	3 282	3 824	16.5	4	1
Egypt	2 880	2 244	-22.1	5	5
Ukraine	2 558	1 657	-35.2	6	6
Estonia	1 775	1 477	-16.8	7	7
China	1 731	1 284	-25.8	8	9
Poland	1 608	1 322	-17.8	9	8
Germany	1 435	1 111	-22.6	10	10
Thailand	1 250	675	-46.0	11	13
Greece	1 165	634	-45.6	12	16
Spain	1 140	693	-39.2	13	12
Italy	994	662	-33.4	14	14
Lithuania	798	743	-6.9	15	11
UAE	737	472	-35.9	16	19
Azerbaijan	734	584	-20.4	17	17
Cyprus	670	550	-17.9	18	18
Bulgaria	559	413	-26.1	19	20
Georgia	532	651	22.3	20	15
France	521	408	-21.7	21	21
Czech Republic	513	361	-29.7	22	22
Latvia	404	312	-22.8	23	24
Israel	361	299	-17.2	24	25
South Ossetia	358	Less than 321	Less than -10.3	25	Less than 25
Vietnam	352	321	-8.8	26	23
Other countries	5 088	4 041	-20.6	X	X

Source: Ovcharova L.N. (Ed.*). Naselenie Rossii v 2016 godu: dokhody, raskhody i sotsial'noe samochuvstvie. Monitoring NIU VShE. Iyul' 2016* [Russia's population in 2016: incomes, expenditures, and social well-being. HSE monitoring. July 2016]. Moscow: NIU VShE, 2016.

Table 2. Number of Russian staying in collective accommodation facilities, thousand people

Territory	2010	2011	2012	2013	2014	2015	2015 to 2010, %
Russian Federation	27166.7	29310.2	31798.4	32560.6	33798.5	43656.9	161
Central Federal District	7759.5	8303.2	9029.3	9418.3	9660.9	11921.4	154
Southern Federal District	3434.2	3472.3	3651.4	3681.5	4809.4	6846.8	199
Volga Federal District	4460.2	4914.2	5635.0	5850.9	5707.1	6777.1	152
Northwestern Federal District	3546.0	3936.0	4051.2	4051.9	4209.1	5415.1	153
Siberian Federal District	3138.8	3402.1	3608.7	3867.3	3519.8	4485.0	143
Ural Federal District	2201.0	2543.7	2987.6	2979.2	2784.4	3054.6	139
Far Eastern Federal District	1607.9	1698.0	1760.9	1609.0	1518.9	2028.6	126
Crimean Federal District	-	-	-	-	442.1	1825.1	413
North Caucasian Federal District	1019.2	1040.6	1074.4	1102.5	1146.7	1303.2	128

Source: Federal State Statistics Service.

So, the value of this indicator in the Southern Federal District increased almost twice due to the growth of the exchange rate of the national currency and the closure of major recreation destinations – Turkey and Egypt. It should be noted that in 2014–2015, thanks to the accession of the Republic of Crimea to the Russian Federation, the number of guests in accommodation facilities increased fourfold. These data show the growing demand of Russian citizens for hotel services, which, among other things, is due to the interest in domestic tourism resources.

According to experts of the Higher School of Economics, cheaper travel within the country and the transition to saving strategies can be a growth factor in the market of domestic tourism [8].

One of the regions most favorable for the development of tourism and attracting domestic tourists is the Northwestern Federal District (NWFD) that concentrates cultural, historical and natural resources that serve as the basis for the creation of diverse tourism products. It has the largest number of monuments of culture and nature protected by UNESCO *(Tab. 3)*.

In addition, as of 2014, the federal district ranks second in Russia after the Central Federal District by number of cultural heritage objects. Tourism resources of the Northwestern Federal District are important in developing cultural, historical, environmental, event, rural, and other types of tourism, which attracts domestic tourists as well.

However, the currently available potential is not efficient. Thus, the analysis of sales of the tours shows that in 2010 and 2015 the proportion of tours sold by travel agencies of the NWFD in the regions of the Russian Federation is not high *(Tab. 4)*. For example, in 2015 the value of this index amounted to 32% of the total volume of tours.

Table 3. UNESCO list of world cultural heritage sites located in the Northwestern Federal District

Site	Location	Year of inclusion in the list	Number of the site in the list
Historic center of Saint Petersburg and related groups of monuments	Saint Petersburg	1990	540
Architectural ensemble of the Kizhi Pogost	Republic of Karelia	1990	544
Historic monuments of Novgorod and surroundings	Novgorod Oblast	1992	604
Cultural and Historic Ensemble of the Solovetsky Islands	Arkhangelsk Oblast	1992	632
Virgin Komi forests	Republic of Komi	1995	719
Ensemble of the Ferapontov monastery	Vologda Oblast	2000	982
Curonian Spit	Kaliningrad Oblast (together with Lithuania)	2003	994
Struve Geodetic Arc	Leningrad Obast	2005	1187
Source: Official website of UNESCO. Available at: http://whc.unesco.org/ (accessed 01.08.2016).			

Table 4. Number of tours sold by travel agencies of the NWFD, thousand units

Number of tours	2010	2011	2012	2013	2014	2015	2015 to 2010, %
Total	545.4	626.4	790.3	1029.1	496.6	156.2	28.6
Including tours within Russia	115.2	89.8	141.3	143.4	147.0	49.5	43.0
Tours to other countries	383.8	468.2	616.1	834.0	284.8	102.8	26.8
Source: Federal State Statistics Service.							

Table 5. Number of collective accommodation facilities in the NWFD, units

Territory	2010	2011	2012	2013	2014	2015	2015 to 2010, %
Northwestern Federal District	1454	1532	1893	1504	1556	1942	133.6
Saint Petersburg	360	382	434	382	389	412	114.4
Leningrad Oblast	265	322	393	253	269	274	103.4
Kaliningrad Oblast	57	57	81	109	109	201	352.6
Vologda Oblast	145	142	171	131	120	200	137.9
Republic of Karelia	105	125	149	129	133	182	173.3
Arkhangelsk Oblast	124	120	142	112	145	166	133.9
Murmansk Oblast	136	127	183	118	119	143	105.1
Republic of Komi	97	76	97	86	87	132	136.1
Novgorod Oblast	92	97	135	110	111	126	137.0
Pskov Oblast	73	84	108	74	74	106	145.2
Sources: *Rossiiskii statisticheskii ezhegodnik: stat. sb.*[Russian statistics yearbook: statistics collection]. Moscow: Rosstat, 2015. 728 p.; *Kul'tura, turizm i otdykh v Pskovskoi oblasti. 2015: stat. sb.* [Culture, tourism and recreation in the Pskov Oblast: statistics collection]. Pskov, 2015. P. 34.							

The number of collective accommodation facilities (CAF) in this region is increasing. Between 2010 and 2015, it grew by nearly 34% *(Tab. 5)*. The growth of this indicator was observed in all constituent entities of the Northwestern Federal district: in the Kaliningrad Oblast alone – in 3.5 times. This trend is due to the interest on the part of representatives of hotel business in the construction of new facilities.

At the same time, as shown by the analysis of utilization rate of CAF, their occupancy rate in the Northwestern Federal District is quite low – 0.36 *(Tab. 6)*. At that, during the analyzed period, the value of this indicator in the Arkhangelsk, Pskov, Leningrad and Murmansk oblasts and in the Komi Republic decreased.

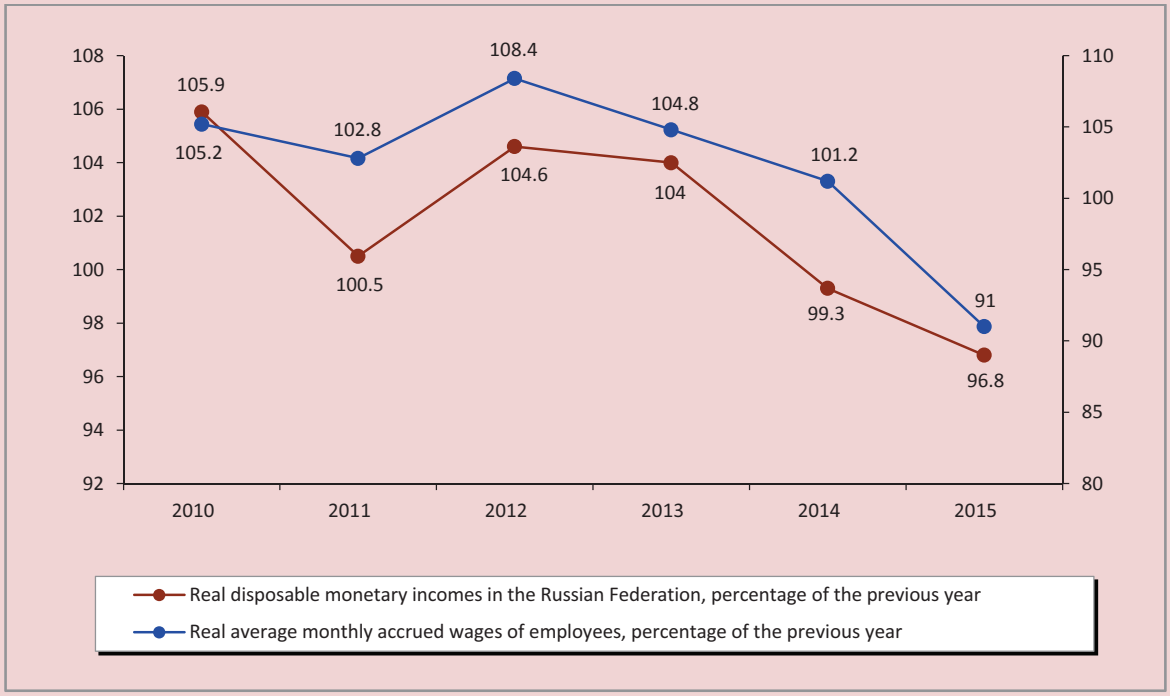
This can be explained by the fact that the hotel market is characterized by high competition from the entities providing accommodation services, and a lack of tourist product capable to satisfy consumers and, thus, attract the tourist to stay at the hotel or similar accommodation facility. In the majority of NWFD subjects tourism companies offer similar tours that are based only on sightseeing.

Table 6. Utilization rate of hotels and similar accommodation facilities in the NWFD

Territory	2010	2012	2013	2014	2015	2015 to 2010, %
Saint Petersburg	0.39	0.44	0.37	0.35	0.49	125.6
Northwestern Federal District	0.33	0.36	0.33	0.30	0.36	109.1
Novgorod Oblast	0.33	0.30	0.28	0.28	0.33	100.0
Arkhangelsk Oblast	0.43	0.37	0.25	0.33	0.33	76.7
Kaliningrad Oblast	0.15	0.34	0.33	0.20	0.32	213.3
Republic of Karelia	0.29	0.29	0.29	0.27	0.30	103.4
Republic of Komi	0.31	0.38	0.41	0.33	0.30	96.8
Pskov Oblast	0.32	0.32	0.27	0.19	0.26	81.3
Leningrad Oblast	0.27	0.29	0.28	0.20	0.25	92.6
Murmansk Oblast	0.28	0.26	0.32	0.25	0.25	89.3
Vologda Oblast	0.16	0.18	0.23	0.22	0.23	143.8

Source: *Kul'tura, turizm i otdykh v Pskovskoi oblasti. 2015: stat. sb.* [Culture, tourism and recreation in the Pskov Oblast: statistics collection]. Pskov, 2015. P. 36.

Figure 2. Dynamics of indicators characterizing the standard of living in the Russian Federation



Source: Federal State Statistics Service of the Russian Federation. Available at:www.gks.ru/free_doc/new_site/population/trud/sr-zarplata/t5.doc; http://www.gks.ru/free_doc/new_site/population/urov/urov_12kv.htm

In addition, the growing demand of the population of the Russian Federation for the services of accommodation facilities is hampered by the reduction in people's real income and wages. During 2012–2015 these indices showed a declining trend *(Fig. 2)*.

Another problem of tourism development in the region is the fact that the infrastructure does not comply with world standards of quality and service. For example, only half of roads (53.3%) in the NWFD have high quality surfacing *(Tab. 7)*. This fact reduces the accessibility of domestic tourists to the region's sights.

In many constituent entities of the Russian Federation there is no system of classification of hotels, beaches, ski facilities and other tourist facilities, that affects the quality of services provided. Meanwhile, the classification of hotel enterprises is one of the most important mechanisms in managing the quality of services, as it gives an opportunity to estimate objectively the level of services and confirm their safety for consumers [5].

Thus, the development of domestic tourism in the Russian Federation in general and in the Northwestern Federal District in particular has its problems. Among all the subjects of the Northwestern Federal District, the Vologda Oblast is characterized by high cultural and historical potential, which provides favorable conditions for the development of a wide range of tourism activities.

The analysis of the impact of external factors on the development of this sector of the tourist market was carried out with the use of PEST analysis, which was based on the

Table 7. Some indicators of the quality of roads for 2015

Territory	Total length of roads, km	Proportion of public roads with improved surface* to the total length of public hard-surface roads, %
Northwestern Federal District	142 080.9	53.3
Saint Petersburg	3 412.1	92.5
Murmansk Oblast	3 523.4	77.8
Kaliningrad Oblast	8 671.8	70.5
Republic of Komi	7 595.3	68.2
Leningrad Oblast	22 286.9	61.4
Novgorod Oblast	14 877.6	55.3
Republic of Karelia	10 761.8	50.5
Pskov Oblast	22 773.7	43.5
Vologda Oblast	28 531.8	42.7
Arkhangelsk Oblast	19 646.5	33.9

* Roads with improved surfacing are roads with the following types of surface: cement concrete, asphalt concrete, crushed stone and gravel, treated with cementitious substances.
Source: Federal State Statistics Service. Available at: http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/enterprise/transport/

aggregation of the expert survey results. The group of experts included specialists from the Department of Culture and Tourism of the Vologda Oblast, representatives of the agencies involved in the development of tours within the region, scientific staff of ISEDT RAS, representatives of higher educational institutions of the Vologda Oblast, who study the current state, trends and prospects of tourism development.

Table 8 contains the results of PEST analysis, which are represented as a ranked series of the most important factors, including political (Policy), economic (Economy), social (Society) and technological (Technology) aspects of the external environment affecting the development of domestic tourism in the Vologda Oblast in the short, medium and long term.

Conclusion. PEST analysis conducted by the author shows that economic and technological factors will have the greatest influence on the development of domestic tourism in the short and long term. In this

Table 8. Ranking of the most important environmental factors influencing the development of domestic tourism in the Vologda Oblast

Factor	Impact ratio 1*	Impact ratio 2*
Political and legal factors		
Policy documents on tourism development	4.6	4.8
Improvement of legislative base in the sphere of tourism	5.1	5.1
International state of affairs	5.8	4.1
Economic factors		
People's income levels	8.8	8.8
Inflation level	9.0	8.0
People's purchasing power	9.3	8.3
Financial condition of tourism organizations	6.8	6.5
Availability of loans for entrepreneurs	5.1	4.8
Social factors		
Tourists' age and sex	6.6	6.0
Level of education and training of tourism industry staff	8.0	8.3
Tendency toward splitting the vacation period	4.5	4.6
Population of the country	4.6	4.5
Technological factors		
E-commerce, online booking	9.0	9.5
Development of cellular communication and the Internet, Wi-Fi expansion	7.5	7.8
Development of payment systems, the use of mobile payments in the field of tourism	6.6	7.8
Innovation technology in the tourism industry (transport, communications, automated control systems, etc.).	8.8	9.6

*Impact ratio 1 – influence of factors in the short term and medium term (2016 – 2020);
*Impact ratio 2 – influence of factors in the long term (2021 – 2030).
Source: compiled by the author.

regard, the makes the following suggestions, the implementation of which will facilitate the most effective development of this market segment in particular and regional development in general.

Major tasks during the implementation of conceptual aspects of development of internal tourism are as follows.

1. Development of priority internal tourism product; in this case, it can be done with the use of e-commerce, online booking systems and innovation solutions. This will help increase the competitiveness of the tourist product of the region and to differentiate it among similar products of competitors.

Competitive tourist products should be formed should be based on the development of tourism activities that increase the flow of domestic tourists. For example, such types of tourism include event tourism.

2. Promotion of demand for domestic tourism product or service based on the current and future needs of the population and the compliance of this product or service with the requirements of potential consumers.

It is possible to implement this direction through the use of marketing approach, in particular, target marketing, which involves the development of a specific tourist product for a specific segment of consumers. First, regional tourism administrations need to conduct marketing research on a continuous basis in order to identify consumer preferences of potential tourists and the subsequent segmentation of the market of domestic tourism services. Second, it is advisable to develop an information campaign to promote tourist resources of the region and people's desire to travel within the country. Third, in order to improve the quality of services, regional standards of hospitality can be formed, which will enable the region to create the image and reputation of a "hospitable territory" in the eyes of tourists and local population. The creation of such a code can be assigned to scientific or educational organization in the region.

3. Formation of an affordable supply of quality domestic tourist product on the basis of currently available and prospective tourism resources of the region. When implementing this direction, local authorities must carry out the policy aimed to improve the relations with the subjects of the tourism industry, this policy should include the following measures:

- provision of tax benefits;
- provision of guarantees when obtaining loans;
- inclusion of travel agencies in regional projects on tourism development.

Thus, the results of this study identify the most effective areas of development of domestic tourism in the region taking into account economic turbulence. These results can be used by regional authorities in developing appropriate programs.

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Agricultural Consulting in the System of Innovative Agriculture Development of the North

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Abstract. The formation and development of agricultural consulting in Northern and Arctic territories requires consideration of peculiarities of agriculture functioning. The article reviews the essence and specific features of agricultural consulting services. The author presents her definition of the relevant service, justifies the socio-economic background of the agricultural consulting system, explains the key role of this system in innovation development and transfer in the agricultural sector. The article studies the regional features of formation of information-consulting service in the agricultural sector of the Komi Republic influenced by types of agricultural structures, human and scientific-educational potential, innovative activity of agricultural enterprises and private farms. The author analyzes current activities of consulting services and factors constraining its development. To increase the coverage of the information-consulting service for agricultural producers and rural population, disseminate innovation for medium and small agricultural structures, the author has developed directions of the agricultural consulting system development and suggested the scheme of location and maintenance of inter-municipal agricultural consulting centers, their provision with specialist and financial resources. The article reviews the functions of the home office and inter-municipal consulting services. It justifies priority directions of participation of agricultural consulting services in the development and transfer of

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innovation to agricultural production. The research results can be used by the Ministry of Agriculture and Food of the Komi Republic for establishing agricultural consulting services at the regional and municipal levels, as well as implementing measures for increasing innovation activity of agricultural enterprises and private farms of Northern regions.

Key words: agricultural consulting, prerequisites for demand for consulting services, innovative development, peculiarities of formation, state and directions of agricultural consulting development, Komi Republic.

A strategy for innovation development of the agricultural sector is crucial in the modern world. Innovation development is impossible without an innovation system in the agricultural sector and its key link – agricultural consulting. Advisory services that interact closely with other actors of the innovation system are an effective tool in the development and transfer of innovation in the agricultural sector. World experience shows that about 60–80% of agricultural producers are able to master innovation with the help of agricultural consultation services [8].

When establishing a system for agricultural counselling, it is necessary to consider specific features of agricultural development in different regions, these features being shaped by natural, geographic and socio-economic conditions and factors. It may not be the same for all regions. If the models, according to which agricultural consultation is organized in regions with developed agriculture, are simply put to use in the North and Arctic without any relevant adjustments, they will not produce positive results. In these territories, due to peculiarities of their agriculture, hunting and fishing, the formation and development of agricultural consultation system will be considerably different.

In this regard, it is a very important task to develop the ways of formation and development of agricultural consultation system for northern and Arctic areas with difficult conditions for agricultural production. The author examines the development of information and advisory services in the Republic of Komi from the perspective of enhancing the role of agricultural consultation in enhancing innovation activity in agriculture.

According to scholars, consultation dates back hundreds of years – it existed in Mesopotamia, Egypt, Greece and Phoenicia. In its developed form, consulting as a process of providing farmers with advisory services, was formed in the West in the 1950s –60s. The main reason for establishing this kind of service was the crisis of agriculture that could not develop efficiently on its own, without state support [p. 40].

According to the Food and Agriculture Organization of the United Nations (FAO), agricultural advisory services are successfully developing in 113 countries and employing more than 550 thousand specialists [15]. Russia is one of the first countries where agricultural consulting originated. Consulting service went through a long way of development; its basic steps are associated with the development of agricultural science and education. Reviewing the history of development of information and advisory service (IAS) in pre-revolutionary Russia, the Dutch scientist A.W. Van Den Ban said: "It seems that at that time Russia had the most advanced IAS in the world" [17].

In 1913, the Russian agricultural consultation system employed nine thousand specialists. Their main task was to provide assistance to peasants who had their own farmsteads.

The first theoretical and practical developments in agricultural consultancy (social agriculture) are associated with the name of an outstanding Russian scholar A.V. Chayanov. He believed that rural consultancy must promote the acceleration and rationalization of spontaneously occurring evolution in agriculture toward better compliance with the changing conditions. According to A.V. Chayanov, the rural consultant may be called organizer and facilitator of the ongoing agricultural development. Willing to create a new agriculture, the consultant creates a new human culture, a new national consciousness [10, p. 14]. The ideas of A.V. Chayanov, the founder of scientific approaches to agricultural advisory services, are widely used throughout the world.

Unfortunately, the development of this sphere in our country was interrupted for many years. It was only in 1993 that the Ministry of Agriculture and Food of the Russian Federation began to restore the information and advisory service.

The most important works of foreign researchers on the theory and methodology of consulting include the works of A.V. van Den Ban, H. Hawkins [18], J. Christensen, D. Pedersen, B. Jacobsen [12], V. Hoffman [14] and others. Significant contribution to the development of scientific bases for agricultural consultancy system in the post-Soviet period was made by domestic agricultural economists. Some definitions of consulting are given in the *table*.

Consulting is the interaction between the consultant and the client aimed to solve problems and implement changes that bring benefit to agricultural producers. The users of advisory services are agricultural and agri-food organizations, peasant (farm) enterprises, rural population (owners of private subsidiary plots, gardeners and vegetable growers), public authorities in agriculture and local government.

Defining the term "agricultural consulting"

Authors, source	Definition
G.M. Demishkevich [2, p. 14]	Agricultural consulting comprises the work of consultants providing professional advisory services and helping rural producers and households in implementing the goals and objectives by allocating different problems, identifying and using new possibilities, introducing changes and training.
V.V. Kozlov [3, p. 77]	Counselling is a special kind of information, design and training activities related to the elaboration of solutions and decision-making, in the prosecco of which consultants provide methodological and practical support to clients, encourage them to take appropriate and decisive action to eliminate any current or emerging issues.
I.M. Mikhailenko [5, p. 16]	Extract of relevant information from the system of available knowledge and databases, this information is the combination of these information sources, it is the essence of information and advisory support to clients.
Organizational and economic aspects… [7, p. 15]	We define the system for agricultural consulting as a set of interrelated and interacting structural elements (actors) involved in the task of providing advisory support to agricultural producers and rural population, functionally integrated into a single system, which is based on agricultural consultation centers at the federal, regional and district levels.
Cit. ex.: M.Ya. Veselovskii [1, p. 7]	According to John Russell, agricultural consultation service can be defined as a representation of the knowledge and skills required by farmers in the adoption and application of more efficient practices in crop and livestock production with the aim of increasing productivity and improving the standard of living.
Cit. ex.: Consulting in agro-business … [4, p. 94-95]	K.N. Fisher believes that the service for consulting and training farmers aims to transfer information and practical skills for the purpose of a more efficient use of available resources.
K.E. Khilek [9, c. 89]	Information and advisory service in agriculture is seen as a form of governmental participation in the development and transformation of rural areas.
L.E. Greiner, R.O. Metzger [13, p. 37]	Management consulting is an advisory service working under contract and providing services to organizations by specially trained and qualified persons who help the customer organization to identify management problems, analyze them, make recommendations to address these problems and contribute, if necessary, the implementation of solutions.
F. Steele [16, p. 9]	I understand consultation process as any form of assistance in relation to the content, process or structure of the tasks or series of tasks in which consultants themselves are not responsible for the execution of the task but help those who are responsible for it.
A.W. Van Den Ban, H.S. Hawkins [18, p.10]	Agricultural advisory service is a conscious use of information in order to help people develop a correct opinion and perform the appropriate action.

In modern conditions, agricultural consulting system is the main tool for the transfer of innovation from its manufacturers to agricultural consumers. Advisory service helps disseminate information about innovation via printed media, the Internet, radio and television, and by organizing training events. Consultants share new knowledge and technology on the experimental fields and farms and implement innovation projects in agricultural production.

Summarizing existing definitions of agricultural consulting, taking into account its role in boosting innovation, we can give the following definition. Agricultural consulting is the work of consultants to provide services required by agricultural producers and rural population in order to master new knowledge, technology, innovation in breeding, genetics and marketing, organizational, economic and socio-ecological innovation and to gain economic, social and environmental benefits.

The need for agricultural consulting system is due to the following reasons.

1. Shortage of qualified specialists in the agricultural sector and their outflow from it. If at the end of the 1980s in the Republic of Komi there were an average of 11 specialists with higher education and 28 specialists with secondary vocational education per farm, then currently, one agricultural enterprise has only three experts with higher education and four with secondary vocational education. Before the market reforms, one in five specialists working in agriculture had higher and secondary vocational education. Among the specialists with higher education, 36% were engineers, 57% – agronomists, 45% – livestock experts, 41% – vets, 67% – economists. Experts actually performed the role of consultants as carriers of information about innovation solutions, provided practical assistance on their implementation in crop and livestock production. In the pre-reform period, 84% of managers of agricultural enterprises had higher education, 16% – secondary education. As for today, the figures are 45 and 34%, respectively. The proportion of managers with higher and secondary vocational education comprises 21%. An especially low level of education is found among the heads and specialists of agricultural enterprises and peasant-farm enterprises in rural periphery. At the same time, 36% of specialists at agricultural enterprises and only 8% of middle managers have higher professional education.

2. Deterioration of resource potential and the need for innovative modernization in agriculture. Fixed assets in the majority of rural areas of the republic are worn by 70–80%. In the agricultural sector, drainage reclamation is destroyed, fertilization fell sharply, which lead to exceeding removal of nutrients from the soil compared to their application.

Only 10% of agri-food organizations implement innovation. Most of them, like farms, apply mostly primitive methods and technology, use outdated varieties of plants and breeds of cattle, and implement inefficient forms of organization and management. The state of affairs concerning innovative processes is most critical in agricultural organizations of peripheral areas. A questionnaire survey[1]

[1] The survey covered almost three-quarters of all managers and specialists of agricultural enterprises and peasant farms. The share of managers with higher education accounted for 55%, with secondary vocational education – 48%. Common features of the sample suggests that the findings objectively reflect the processes and problems of innovation development.

conducted in 2014 has shown the following results broken down by areas: breeding and genetic innovation – "very poor" (24.9%), "poor" (33.3%), "average" (41.8%); innovation in technology and equipment – "poor" (20.2%), "average" (60.7%), "good" (19.1%); organizational-economic and managerial innovation – "very poor" (32.6%), "poor" (38.3%), "average" (29.1%).

The situation concerning the development of innovation in other regions of the European North is quite the same. In the Vologda Oblast only 7.7% of agricultural enterprises annually implemented new technology, 9.6% used progressive equipment, 21.2% used improved plant varieties, hybrids and poultry crosses [11, p. 55].

3. Uncertainty and a rapidly changing external and internal environment (accession to the WTO, sanctions, economic crises, high inflation, continuously changing legal framework).

4. Decreasing efficiency of efforts on the part of agro-industrial complex management authorities in spreading scientific knowledge and implementing innovation. In the pre-reform period, the Ministry of Agriculture of the Republic of Komi had a special unit that provided linkages with innovation and research institutes and agricultural enterprises, promoted scientific achievements and best practices. The ministry funded the actions on innovation activities in the framework of the plan on the introduction of scientific achievements and best practices and provided agricultural enterprises with targeted state support.

5. Difficulties experienced by rural producers in obtaining information on breeding and genetic, technological, organizational-economic, marketing and socio-environmental innovation and on advanced production experience.

6. Poorly developed agricultural innovation infrastructure. To date, agriculture lacks a scientific and production association, experimental-production farms under research institutes are in a state of deterioration, there are no centers for innovation technology, industrial parks and business incubators in the research and education sector.

In the current socio-economic situation, agricultural consultation system is an effective tool for providing various services to agricultural producers and rural population, for distribution of knowledge, development of innovation and enhancement of production efficiency.

Currently, agricultural consultation system in Russia functions at the federal, regional and district (inter-district) levels. Qualified advisory services are provided to agricultural producers and rural residents in 60 constituent entities of Russia, where there are 73 regional and more than half a thousand district organizations providing agricultural advisory support. An analysis of organizational-legal

forms of the regional centers for agricultural consultation suggests the predominance of state institutions (47%). The proportion of advisory centers under educational institutions is 35%, advisory non-profit organizations – 8%, private consulting organizations – 7%, and advisory organizations in agricultural management bodies – 3%.

Advisory service is least developed in the Northern and Arctic territories with extreme conditions for agricultural production and agricultural specifics. Of the six regions of the European North, agricultural consultation centers have been established only in Karelia Republic and Komi Republic.

In the North the formation of agricultural consulting system has its own characteristics. Here, the agricultural sector occupies a dominant position in the economy. Its share in the Republic of Komi accounts for 1.4% of gross regional product, 0.4% of fixed capital investment, 1.2% of the average annual number of people employed in the economy. The structure of agriculture is dominated by dairy and beef cattle breeding, poultry, swine and reindeer herding. The share of animal husbandry accounts for 68%, crop production – 32% of total production.

In the total volume of gross agricultural output in 2015, the share of agricultural enterprises accounted for 61%, households – 34%, peasant (farm) enterprises – 5%. In rural areas, except for Syktyvdnisky District (suburb of Syktyvkar), there are no large agricultural companies. The prevailing share in the production of potatoes (92%) and vegetables (79%) is concentrated in personal subsidiary plots, gardening and horticulture. Households of the population account for over half (51%) of the volume of cattle meat produced.

Of great importance in the formation and development of the agricultural consultancy system is the availability of scientific and educational potential that can interact with advisory service, and the extent of promotion of innovation activity in the agri-food sector. The Komi Republic has significant scientific potential. The following institutes engage in providing scientific support to agriculture: Agriculture Research Institute of the Komi Republic, Institutes for Biology, Physiology, Chemistry, Socio-Economic and Energy Problems of the North and Vylgort Research and Experimental Biological Station of the Komi Science Center, Ural Branch of RAS, Research Institute "Komimeliovodhozproekt", two educational institutions – Institute for Retraining and Advanced Training of Agricultural Workers and Syktyvkar Forest Institute. Research on the development of the agricultural sector is carried out by 51 employees, including 25 Ph.D.'s and 10 doctors of science, of which five are doctors of biology, two – doctors of agriculture, two – doctors of economics, one – doctor of veterinary science. The Ph.D.'s include six – in biology and five – in agriculture, five – in economics and two – in chemistry, one – in engineering and one – in geography.

With the help of agricultural consultation systems, scientific organizations can disseminate information about innovation through printed media, video, demonstration events; they can also carry out advisory support to consulting specialists in the implementation of innovation, development, examination and evaluation of efficiency of innovation projects. The joint work of the specialists of information and advisory services and the scientists may be directed toward using highly productive new varieties of plants, new breeds and types of cattle and fowl, innovative technology in crop production, dairy and beef cattle breeding and reindeer herding, and also toward the elaboration of concepts and programs for sustainable development of the agricultural sector and rural areas at the regional and municipal levels.

In the Komi Republic in March 2003, a national information and advisory center was created as a structural subdivision of the Institute for Retraining and Advanced Training of Agricultural Workers. The staff of the center (the composition of which ranged from two to three persons) combined consulting with teaching work, which reduced the quality and quantity of the services rendered. From April 2013 onward, an information and advisory department of the Ministry of Agriculture of the Republic of Komi. There is no agricultural advisory support at the municipal level. This restrains the access of residents, especially in remote areas, to information and advisory services.

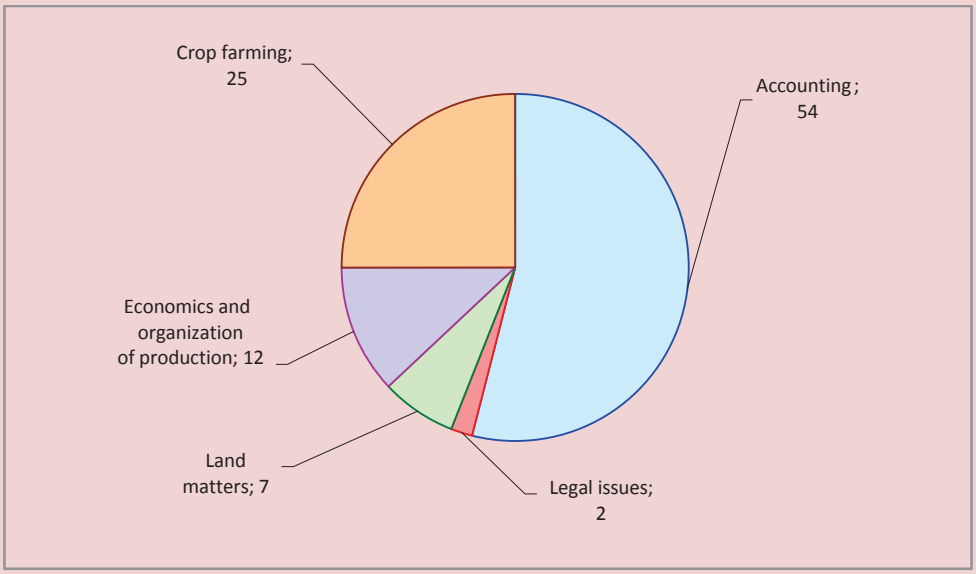
The service now employs six expert consultants, including an agronomist, a livestock specialist, two economists, an accountant and a lawyer. All of them have higher education and are equipped with computers. The center does not have its own vehicles, so the administration of the Head of the Komi Republic provides the center employees with cars when they need to visit farms and districts of the republic. The advisory service has neither its own office, nor tools and equipment for technological purposes.

The agricultural advisory service receives funding from the budget of the Republic of Komi. The federal budget does not allocate funds for advisory services provided to agricultural producers and rural population. The service also does not have any extra-budgetary sources of financing.

The number of advisory services provided by the information and advisory department to agricultural producers and rural population in 2013–2015 increased by 74%, to individual farms and gardeners – in 6.3 times. In 2015, the advisory service rendered 595 services or about 100 services per consulting specialist. The main users of the services are peasant farm enterprises and agricultural companies. Their share accounted for 48 and 28% of advisory services.

The analysis shows that the services in the field of accounting and crop production enjoy the greatest demand *(Fig. 1)*.

Figure 1. Structure of advisory services provided by the information and advisory department of the Republic of Komi in 2015, %



Source: data of the information and advisory department.

So far, the specialist consultants have prepared and published six methodological and reference titles on the state support of agricultural producers and on taxation – for peasant farm enterprises, individual entrepreneurs and agricultural enterprises; they also published titles on technology of fodder production, housing and feeding of cows, organization and technology of beef cattle breeding, greenhouse business – for small farms.

For the purpose of studying the current state and problems of information and advisory support to the agricultural sector and in order to improve the work in this area, the author conducted a survey among the managers and specialists of agricultural enterprises and peasant (farm) enterprises in 2014. All in all, 18 managers and 20 specialists from 18 farms and 42 heads of peasant farms participated in the survey. The sociological survey covered 82% of agricultural enterprises and 79% of peasant (farm) enterprises in the republic.

The analysis of the survey results shows the following:

– it was mainly the managers of medium and small enterprises and farm households who filled in the questionnaires; as for the heads of large agricultural enterprises, virtually none of them were interested in this survey: apparently, they did not require advisory support provided by the service;

– the respondents receive most of the information (almost half of it) from the experts of the Ministry of Agriculture of the Komi Republic, from district and town departments of agriculture, at seminars, meetings and training courses; almost 2/3 of the respondents did not seek information at research and educational institutions, with regard to which suggestions were made about improving the quality of services rendered;

– of the greatest interest among agricultural producers is the information on the demand for agricultural products and their prices on local and regional markets, prices of resources and equipment, new technology, breeding and genetic innovation and current normative-legal acts; the respondents agree to pay for advisory services on the implementation of innovation, development of business plans, economic development strategies, development and evaluation of innovation investment projects, assistance in solving specific problems;

– in the course of the sociological survey, preference was given to consulting in the economy, because the visits of experts from the advisory service to agricultural enterprises and peasant farms require considerable financial and time costs;

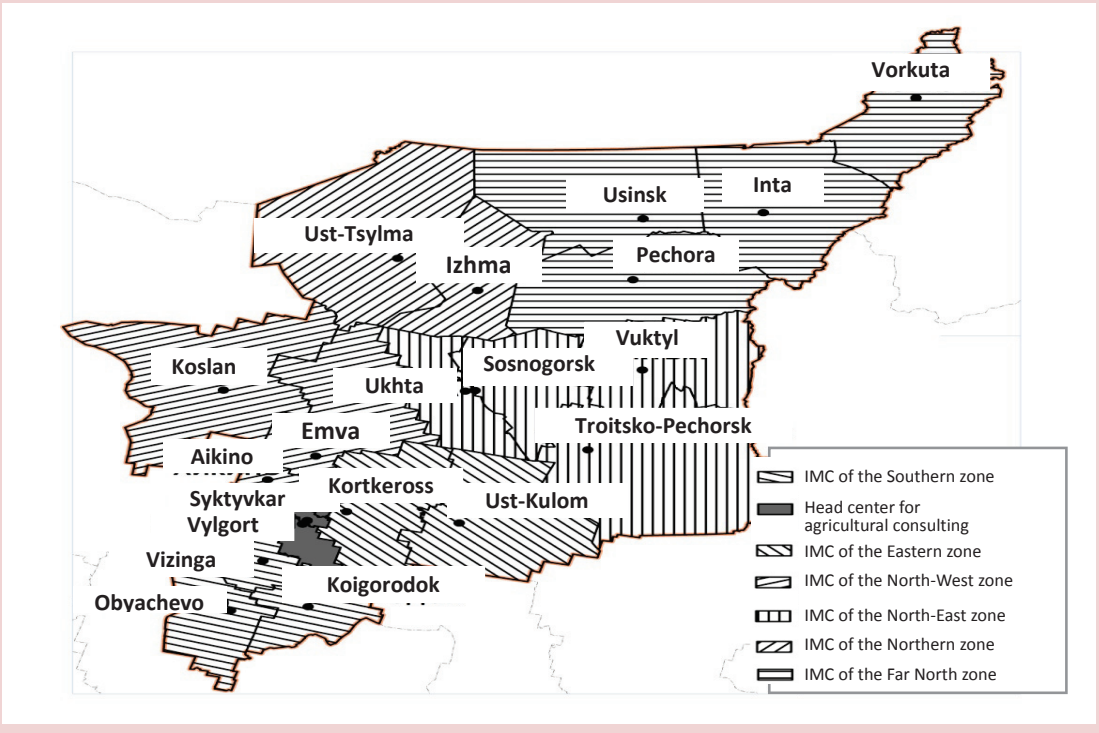
– when studying promising organizational forms of information and advisory services, the respondents gave preference to the services that are part of the Ministry of Agriculture of the Republic of Komi and to municipal departments of agriculture.

Assessment of the current state of agricultural consultation in the Republic of Komi shows that here the advisory service is at an early stage of its development. It does not promote innovative developments in production, nor does it summarize and disseminate advanced production experience. The service has no effect on the formation of contracts to conduct applied research. It has no close ties either with the authorities that govern and support regional agriculture, or with scientific and educational institutions.

The main factors constraining the development of advisory and innovation activity are as follows: absence of a special federal law "About agricultural advisory support"; lack of consultants specializing in land relations, mechanization in manufacturing automation, IT-technology, performance evaluation of business plans and innovation projects, financial management, and marketing; lack of information and advisory services at the municipal level, which does not help ensure the availability of advisory services to agricultural producers and rural population; lack of financial support for agricultural consultancy from the federal budget; low effective demand among agricultural producers for advisory services in the field of innovation and advanced production experience. Similar restrictions on the development of advisory support are found in agriculture of the Vologda Oblast [6].

Taking into account regional specifics of agricultural production in the republic, it is impractical to create an information and advisory service in each municipality. It is really necessary to create inter-municipal centers (IMC) for advisory support *(Fig. 2)*. For the southern zone, it is proposed to establish an IMC in the village of Vizinga and its impact will extend to Sysolsky, Koygorodsky and Priluzsky districts; for the Eastern zone – in the village of Kortkeross (for providing the services to Kortkerossky and Ust-Kulomsky districts); for the North-West zone – in the town of Emva (for providing the services to Knyazhpogostsky, Ust-Vymsky and Udorsky districts); for the Northern zone – in the village of Izhma (Izhemsky and Ust-Tsilemsky districts); for the North-East zone – in the town of Ukhta (urban district of Ukhta, Sosnogorsky, Vuktylsky and Troitsko-Pechorsky municipal districts); for the Far North zone – in the town of Pechora (for providing the services to the Pechora municipal district, urban districts of Usinsk, Inta and Vorkuta). The services of a regional (head) center for agricultural advisory support will be in demand among agricultural producers, owners of private subsidiary plots and gardeners in suburban Syktyvdinsky Rural District.

Figure 2. Layout and maintenance of agricultural advisory support centers in the Republic of Komi



The head center in the regional agricultural consulting system performs the following functions: it works closely with federal agencies for agricultural consulting, provides inter-municipal advisory centers with information about advanced technology, new varieties of crops and breeds of animals, marketing innovation and innovation projects, creates plans for the development of innovation and participates in their implementation, prepares proposals for regional and municipal bodies governing the AIC concerning the development of applied scientific research, conducts seminars and workshops for agricultural producers together with employees of scientific and educational institutions on advanced technology, prepares methodological and reference literature on innovation, establishes links between agricultural producers and workers of scientific and educational institutions in solving problems arising in agricultural production, participates in organizing exhibitions, demonstration fields and farms to promote new technology and best practices.

The principal activities of municipal advisory centers involve advisory support to agricultural producers and population, economic analysis of performance of agricultural enterprises and peasant farms, helping them to develop business plans, establish linkages with rural administrations in providing advisory support to the residents.

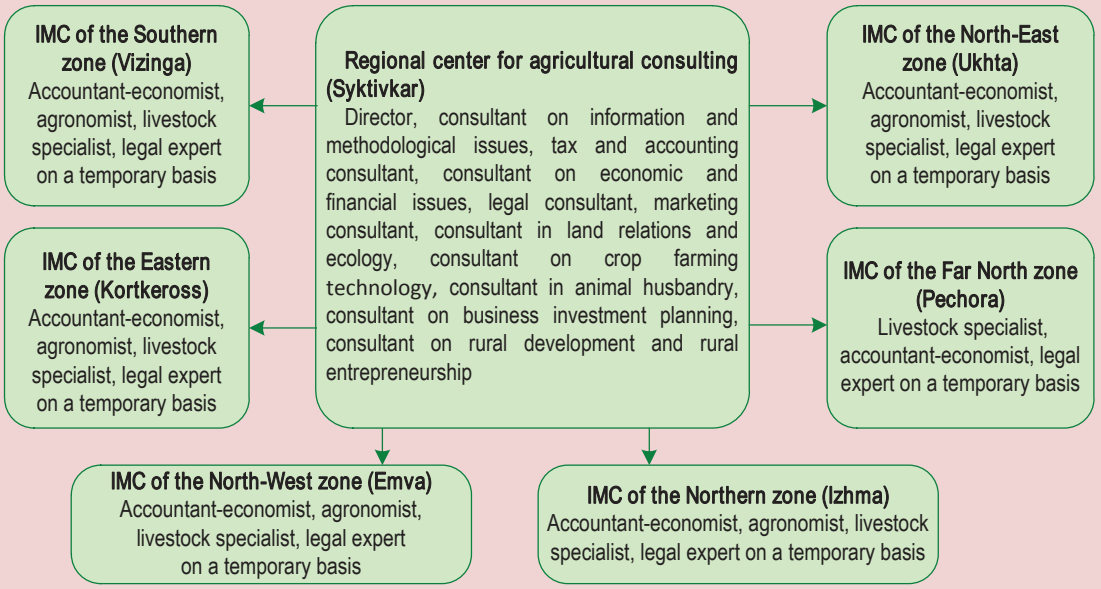
Application of the new regional structure of agricultural consultation will help increase the coverage of agricultural producers and rural population with information and advisory support, make advisory support and dissemination of innovation available to small and medium forms of agrarian structures, provide rural residents of peripheral areas with an opportunity to ask for information and advisory services, increase the level of coordination and integration of the service with agricultural science, education and rural producers.

The study of organizational forms of agricultural consulting abroad and in our country indicates that different models for organizing such services are used. For the Republic of Komi it is necessary to keep agricultural consulting service within the system of AIC management for the period of its establishment. As it is developed, it will be advisable to establish an autonomous institution.

In order to develop agricultural advisory support system, it will be necessary to provide it with specialist consultants. Staffing scheme is shown in *Figure 3*.

The formation of the proposed agricultural advisory support system will require considerable increase in funding – 5-fold compared to the level of 2015. Funding for the services of agricultural advisory support from the state budget is allowed without any restrictions of the WTO, since it is part

Figure 3. Structure and composition of agricultural advisory support service in the Republic of Komi



of the "green basket". The introduction of beneficial paid individual services is advisable when the process of formation and further development of agricultural consultation has been completed and the conditions for sustainable development of the agricultural sector have been created.

Expanding the access to information and advisory services for agricultural producers and rural population will require involvement of rural administrations. Their heads can help organize information corners in the libraries, on the premises of rural administrations, they can also provide the facilities where rural residents can meet with consultants who came from agricultural advisory centers, promote the establishment of links between owners of private subsidiary plots and family farms and consulting centers, and build basic farms where best practice in the field of agriculture can be demonstrated.

In order to develop innovation activities, regional agricultural consultation service will have to strengthen its ties with the research and educational sector. The service may provide research organizations with proposals on applied research that is in demand among agricultural producers, form a database on innovation projects, inform potential consumers: agri-food enterprises and peasant farmers about them, help with the formation of innovation projects, recommend investors

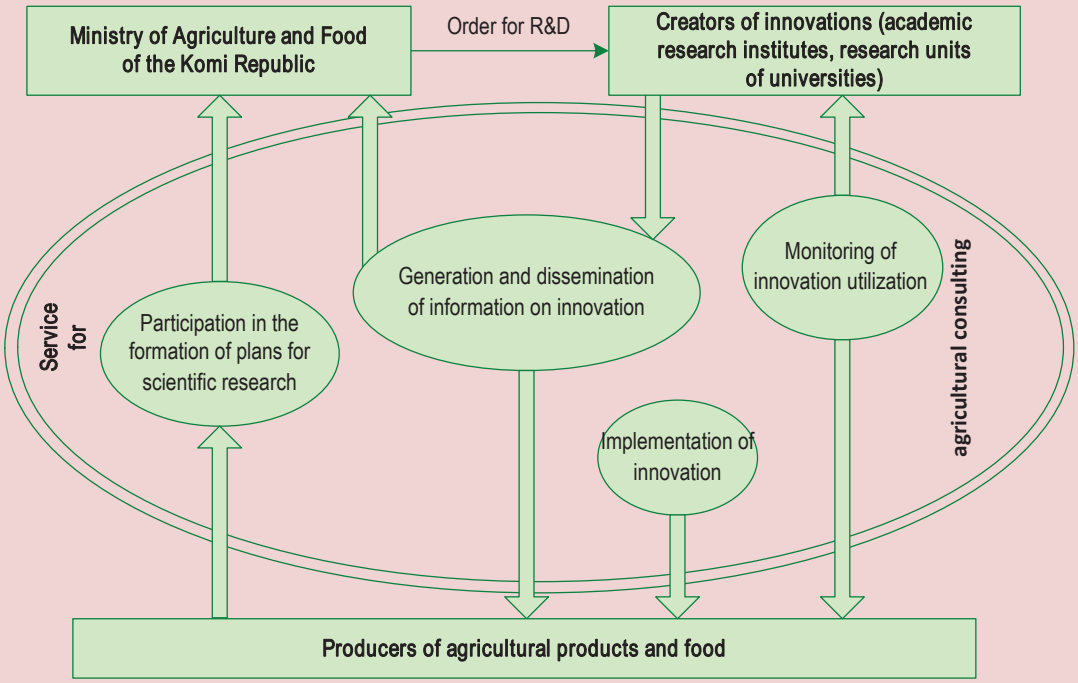
for their implementation. Priority areas for participation of agricultural consultation service in the development and transfer of innovation in agricultural production are shown in *Figure 4*.

The proposed measures aimed to form inter-municipal centers, provide the agricultural consultation service with specialists and funding, improve the forms of interaction of the service with scientific and educational institutions, increase its role in the development and transfer of innovation will provide an opportunity to boost innovation activity in agriculture of the Republic of Komi.

Having studied the formation, current state and development of agricultural advisory support in the Northern region, the author makes several conclusions and suggestions.

1. The article provides the author's definition of advisory support in agriculture as a kind of consulting activities to provide services required by agricultural producers and rural population for the development of new knowledge, new technology, intensive resource saving technology, breeding and genetics, marketing, organizational, economic and socio-environmental innovation with the aim of obtaining economic, social and environmental benefits.

Figure 4. Participation of regional agricultural consultation service in the development of innovation



2. The need to establish an agricultural consulting system is due to the deficit and the outflow of qualified personnel from the industry, insufficient efforts on the part of agribusiness management bodies to spread scientific knowledge and develop innovation, difficulties experienced by small and medium agricultural entities in obtaining information about innovation technology and its introduction in agricultural production, uncertain and constantly changing external and internal environment, and underdeveloped agricultural infrastructure.

3. Formation and functioning of agricultural advisory support in areas of the North and the Arctic has its own specifics due to natural, socio-economic factors prevailing types of agricultural structures, staffing of the agricultural sector and its provision with scientific-educational potential, innovation activity of agricultural enterprises and peasant farms.

4. Agricultural advisory support in the Republic of Komi is at an early stage of its development. The main activities of the service are connected with consulting, organization of training events and publication of informational materials. Advisory service is not engaged in the promotion and implementation of innovation technology, not involved in the formation of plans of applied research, it has not established close cooperation with the management authorities of regional agriculture, and with the research and education sector.

5. The analysis of work of agricultural advisory support service helped identify the factors restraining its development: lack of development of agricultural consultation system at the municipal level; lack of consultants with the necessary qualifications; inadequate financial support; lack of a legal framework governing the work of advisory services; lack of close ties between regional advisory services and scientific and educational institutions.

6. The paper substantiates the areas of development of agricultural advisory services associated with the formation of intermunicipal consultation centers, staffing of the services, improvement of interaction between agricultural consultation services and innovation system actors.

The developed model of formation of agricultural advisory support system on the example of the Komi Republic focused on increasing the coverage of agricultural producers and rural information with information and advisory services, dissemination of innovations for small and medium forms of agrarian structures, improvement of coordination between the service and agricultural science and education will find application in other regions of the Northern zone and the Arctic.

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Review of the Collective Monograph

"Atlas of Modernization of Russia and Its Regions: Socio-Economic and Socio-Cultural Trends and Issues"

Compiler and executive editor: RAS Corresponding Member N.I. Lapin.
Moscow: Ves' Mir, 2016. 360 p.

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The problem of modernization became especially popular in the West in the 1960s and it was picked up in Russia in the 1990s. In both cases mostly the ideologized understanding of modernization prevailed as the achievement of an "exemplary" state of society, where the criterion was "the path traveled by the West" [2, p. 17], with a focus on achieving an efficient, competitive economy through the latest innovations in technology. The approach was very soon acknowledged as limited, and more in-depth and comprehensive understanding of modernization was needed due to such insufficient technical explanation. The publication of "Atlas of Modernization of Russia and Its Regions: Socio-Economic and Socio-Cultural Trends and Issues" duly helped understand modern scientific problems of modernization from fundamentally new semantic point of view.

The analytical and problem-based atlas is a scientific work of authors, showing the findings of the research carried out by the authors for the past ten years. As conceived by its compiler and executive editor N.I. Lapin, the edition is an "experience of the

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spatial systematization of different processes and conditions, problems and trends of modernization of Russian regions and Russia in general" [1, p. 6]. The choice of such original way of research presentation in the form of an atlas was determined by a great number of complex multidimensional concepts oversaturated with current problems that are not yet well understood.

The edition does not represent an atlas in its ordinary sense, i.e. a collection of maps or images used for illustrative purposes, though it does contain many colored maps, graphs and analytical tables illustrating trends and problems of modernization in 2000-2012. The atlas includes unique materials based on Russian and international statistics and sociological research and it enables readers to compare trends and problems of modernization in seven federal districts of the Russian Federation and its regions, to determine strategic goals and objectives of their development and to make necessary administrative decisions and just as importantly, to give directions for further research.

Regarding the present edition it is reasonable to speak of broad philosophical, epistemological understanding of an atlas "as a spatial systematic presentation of data about the subjects of inquiry and significant for its cognition" [1, p. 6]. Furthermore, the information and conclusions presented in the atlas are of a great practical importance and may be used for efficiency increase of activity of all actors of modernization. It should be noted that editions of that kind are rarely published, and in the context of modernization problems of Russian regions and Russia in general, such fundamental and comprehensive spatial systematization is performed for the first time.

Introductory theoretical and methodological part consists of two chapters and gives a general characterization of modernization, its components and trends, and socio-cultural challenges faced by Russian modernization. It also sets the ideological and structural unity of the research thus ensuring its conceptual integrity. A peculiar feature of the atlas is that the modernization in Russia of today is presented holistically as a multidimensional process of civilization; on the one hand it is considered in the framework of global modernization, on the other, it describes its specific features in various federal districts and constituent entities of the Russian Federation. N.I. Lapin does not only consider modernization as a process of transition from traditional to modern society, he develops a broader understanding of modernization as a global process of civilization, requiring its integrated understanding and measurement.

Novelty and originality of the author's approach to the understanding of modernization is that it is considered beyond its ideological interpretations as "the totality of changes that people (individuals and collective entities and communities) perform on their own or they have to choose new ways of influence on the objects of their activity and on their living

conditions with the aim to improve their life" [1, p. 15]. Thus, modernization is considered from a new angle of modernization research is being set, in which it is viewed as a process having not only civilizational but common cultural and all-human significance as well. N.I. Lapin emphasizes that the main functions of modernization are "ensuring the security of the community (country) and improving the well-being and the quality of life of people and the entire population" [1, p. 16], therefore it is of vital importance to every person and every socio-cultural community.

The first chapter gives a brief description of technological, socio-economic, socio-cultural and institutional-regulatory component of modernization, showing their main features and contradictions at the present stage of social development and describing the tools to obtain indicators and indices of modernization. The tools of the Center for Modernization Research of Chinese Academy of Sciences, used as a basis for the study, made it possible to measure at each stage the levels of modernization of Russian regions and federal districts. Having adapted the tools of Chinese scientists to the Russian realities RAS Institute of Philosophy constructed a comprehensive typology of phases of modernization (types) in the unity of the stages of modernization, their levels and phases in each region. With the help of the typology the dynamics of the current state of modernization degree of the regions, their hierarchy and clusterization is revealed. Since the structure of the indicators made it possible to measure, first and foremost, the processes of socio-economic and socio-cultural modernization and only indirectly to judge the technical, technological and institutional-regulatory components of it, the authors of the atlas focus on analyzing the processes, problems and tendencies of particular socio-economic and socio-cultural modernization of Russian regions and Russia in general.

The key ideological premise, uniting the authors, consists in affirming the integral nature of modernization, the interconnectedness of all its components. If, however, "this or that component is not sufficiently represented, or, on the contrary, dominates the others, complex modernization can turn into partial quasi-modernization" [1, p. 25].

The atlas gives a characteristic of the industrial and informational stages of modernization from the viewpoint of a comprehensive understanding of the process as a unity of technical, technological, socio-economic, socio-cultural and institutional-regulatory components; it also shows that in the modern world both stages are simultaneously being performed on a global scale: 90 developing countries are carrying out the industrial stage, and about 40 developed countries are at the informational stage. In a number of countries, to which Russia belongs as well, both stages of modernization are taking place simultaneously, each is in its phase and prevails in different regions of the country. At the current stage

of history a priority task for most countries, including Russia is to continue and complete the stage of industrialization, because at the beginning of the 21st century Russia ceased being one of the industrialized countries. According to N.I. Lapin, with the start of the new century, "it posed a challenge of restoring the industrial base of the manufacturing industry and the entire economy, and the need for modernization of the society on the whole became acute as a way of solving the fundamental problem of modern Russia, that is the problem of a new civilizational choice" [1, p. 33].

For understanding modern civilizational processes the atlas raises a very important issue of uneven modernization, it is emphasized that in the 21st century the process will increase, and "the competition between countries will be extremely tough" [1, p. 19]. The growing problem is also evidenced by the migration from the less developed countries to the more developed ones and by numerous attempts of certain civilizations to impose their ways of development on others. All these facts confirm that in the globalizing world the price of evasion from modernization is too high, and its primary goal is to ensure the security of the country and state sovereignty.

The atlas represents and summarizes numerous data giving evidence to the fact that "in Russia irregularity of modernization spread between the second informational stage and the first industrial one is 2.5 times more than that of the other countries" [1, p. 17]. This fundamental circumstance for understanding development prospects of Russia has been poorly studied for various reasons for a long time, including absence of safe measuring tools. In this respect the present edition comes as a deep present-day stage in scientific understanding of the problem and in working up the strategies of regional development. The existence of significant differences between the states of modernization of macroregions represents a problem that creates real socio-political risks, especially dangerous for the border constituent entities of the Russian Federation, which are 28 out of 85, as socio-economic and socio-cultural differences between territories pave the way for increase of national separatist sentiments. A scientific approach to the analysis of this problem is needed, assuming a differentiation between the contradictions caused by the problems of Russian society, and ethno-confessional, cultural features rooted in the historical and cultural diversity of Russia. As N.I. Lapin fairly says "social contradictions should be resolved, and cultural characteristics, on the contrary, should be taken into consideration and used as one of the resources for the successful modernization of Russia both as state and civilization" [1, p. 44].

The process of modernization depends on the course made by the country, its historical trends and the real state of the country, contemporary values of the population, but it is also important for all socio-cultural communities, therefore, ignoring or opposing

its processes can lead to social stagnation and degradation. According to N.I. Lapin, a targeted impact of the state and other political forces plays a huge role in the implementation of modernization, because if spontaneously developed the modernization process "loses its necessary complexity and becomes fragmentary, unbalanced, dysfunctional and is often accompanied by revolutionary upheavals" [1, p. 19].

In the second chapter, devoted to the analysis of the socio-cultural challenges of modernization, L.A. Belyaeva notes that some of the problems of Russian society are systemic in nature and can be perceived either as challenges or as a development potential "depending on how well these problems are understood, and if a society could translate them into political, social and economic decisions and determine purposes and steps" [1, p. 45]. Analyzing the impact on the spatial modernization as one of such challenges, the author shows that mass consciousness always correlated the effectiveness of Russian government officials work with the territory expansion, giving significant and diverse natural resources that always played a key role in the development of the country and its recovery from crises. In accordance with the World Bank research data, citing in the atlas, Russia's natural resources per capita are 2.2 times more than in the U.S., 5.2 times more than in Germany, 3.4 times more than in France. But at the same time there is a considerable (fivefold) lag between Russia and other countries by man-made wealth, and even more significant is the gap between the indicators characterizing intangible capital, such as the level and quality of education, medical care, the effectiveness of governance institutions, the provision of public services, etc.

The analysis of comparative studies of resource-rich countries shows the direct correlation between higher per capita incomes, living standards, the level of social development and the quality of the institutional environment. Therefore, one of the most urgent issues for Russia is "shifting from the exploitation of natural resources to high-tech manufacturing and information technology and becoming competitive in comparison with the world developed countries in these spheres" [1, p. 48], as well as a significant reforming of the institutional environment and management system. It will allow one to use vast Russian territory and its natural resources as a powerful factor of the country's modernization.

Chapter 2 deals extensively with a comparative analysis of certain characteristics of human capital. It shows that sufficient quantitative and qualitative parameters of human potential are essential to meet the challenges of modernization throughout the vast territory of the country. The author pays attention to such issues as "population and depopulation in Russia and its regions, resettlement system and mass displacement, inconsistency of urbanization occurring as a forced chaotic process rather than a factor

and consequence of modernization, and ruralization of some territories" [1, p. 51].

Considering the structuring of modern Russian society by living standard of the population, the composition of the formed social stratum, and the presence of middle class in the society as a definite challenge to modernize, Belyaeva notes that her analysis "must be carried out in the context of the tasks of development and stimulation of economic activity of the population and the opening of channels of social mobility, especially for young people" [1, p. 68]. It may be seen from the research that a social stratification of the employed population has developed in Russia, featurung the industrial stage of development with some elements of preindustrial and post-industrial economies. Social layers, not belonging to the elite, but with cultural capital, professional and adapted to the changes, make up about 50% of the employed population in total, it is they who can "nominate not only the participants but also the organizers of the modernization process" [1, p. 84].

The main content of the atlas is a spatial mapping of trends and issues of modernization in seven federal districts of the Russian Federation presented in seven chapters. Many chapters give a brief sketch of ethnic, religious and territorial administrative history of a federal district, therefore enhancing to a better understanding of current processes. The semantic unity of the chapters is provided by the analysis of main components of modernization - technical and technological, socio-economic, socio-cultural and institutional and regulatory components. To characterize the processes of modernization in these spheres the atlas relies on Russian and international statistics and opinion polls of some regions of these federal districts. The authors show the hierarchical differentiation of constituent entities and federal districts of the Russian Federation according to the state of their modernization, the dynamics of the current state (type) of modernization, which are illustrated in each Chapter with a set of relevant diagrammatic maps; the contradictions concerning the development modernization of the regions are considered from low states to higher ones. The atlas examines the directions and phases of the proposed modernization strategy, shows the possibility of practical application of research results in the documents of strategic planning of Russia and its regions.

The undoubted merit of the scientific work is that it justifies the humanistic vector of Russian modernization. The national monitoring results of "The Values and Interests of the Population of Russia", cited in the atlas, demonstrate that the majority of the country's population (77%) are committed to humanistic values and it is the real humanism that comes as the initial value landmark of the way of life, that is the dream of the vast majority of Russians as a fair and worthy way of life. This position is held by N.I. Lapin, believing that "it is not only about the values of indices, but it's about the increase in the socio-cultural efficiency of modernization,

and particularly, in raising the standard of living and improving the quality of life of the population" [1, p. 303]. To fulfill the need to live in the civilization of real humanism, "the entire population of the country should take an active part in promoting the humanistic orientation of Russian modernization and the phased implementation of a strategy integrating its industrial and informational stage" [ibidem].

In conclusion, I would like to note that the studies of the team of authors under the leadership of N.I. Lapin led to the publication of the edition which is highly appreciated, it presents a unique information that outlines the multidimensional modernization processes in Russia and its regions. The book is full of new ideas, with beautiful language; it is easy to read with great interest and demonstrates both scientific novelty and practical relevance. The atlas may achieve a wide readership, as its information and ideas are interesting and useful to scientists, teachers, graduate students and students, officials, and a much wider range of readers - to all interested in the evolution of modern Russia.

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Dear readers!

In the fiftieth issue of the journal "Economic and Social Changes: Facts, Trends, Forecast" we publish the geography and a complete list of authors who contributed their papers to the Journal over the period from 2008 to 2016.

The editorial staff express sincere gratitude to all the authors who send the manuscripts of their articles: it is you who fill in its content and only thanks to you the journal has found its niche in the scientific world!

Geography of the Journal's authors*

Numbers on the map mark the republics, krais, oblasts, cities of federal importance:

35 – Vologda Oblast – 454
77 – Moscow – 115
11 – Komi Republic – 102
51 – Murmansk Oblast – 82
78 – Saint Petersburg – 39
66 – Sverdlovsk Oblast – 39
10 – Republic of Karelia – 37
29 – Arkhangelsk Oblast – 21
02 – Republic of Bashkortostan – 12
81 – Perm Krai – 12
72 – Tyumen Oblast – 9
86 – Khanty–Mansi Autonomous Okrug – 7
13 – Mordovia – 5
24 – Krasnoyarsk Krai – 5
25 – Primorsky Krai – 5
54 – Novosibirsk Oblast – 5
70 – Tomsk Oblast – 5
34 – Volgograd Oblast – 4
42 – Kemerovo Oblast – 3
44 – Kostroma Oblast – 4
50 – Moscow Oblast – 3
60 – Pskov Oblast – 3
61 – Rostov Oblast – 3
63 – Samara Oblast – 3
05 – Republic of Dagestan – 2
15 – North Ossetia-Alania – 2
16 – Republic of Tatarstan – 2
23 – Krasnodar Krai – 2
31 – Belgorod Oblast – 2
73 – Ulyanovsk Oblast – 2
82 – Republic of Crimea – 2
09 – Karachay-Cherkessia – 1
14 – Republic of Sakha (Yakutia) – 1
18 – Republic of Udmurtia – 1
26 – Stavropol Krai – 1
28 – Amur Oblast – 1
39 – Kaliningrad Oblast – 1
46 – Kursk Oblast – 1
64 – Saratov Oblast – 1
74 – Chelyabinsk Oblast – 1

Number of scientific papers broken down by cities

City	Number of articles	Khanty-Mansiysk	7	Naberezhnye Chelny	2	Sochi	1
Vologda	443	Murmansk	6	Belgorod	2	Tomsk	1
Moscow	115	Saransk	5	Ulyanovsk	2	Pyatigorsk	1
Syktyvkar	101	Novosibirsk	5	Simferopol	2	Cherkessk	1
Apatity	76	Krasnoyarsk	5	Makhachkala	2	Blagoveshchensk	1
Saint Petersburg	39	Vladivostok	5	Vladikavkaz	2	Yakutsk	1
Yekaterinburg	39	Volgograd	4	Helsinki (Finland)	2	Wuhan (PRC)	1
Minsk (Belarus)	38	Seversk	4	Paris(France)	2	Changsha (PRC)	1
Petrozavodsk	37	Kolomna	4	Taranto (Italy)	2	Shangdong (PRC)	1
Nanchang (PRC)	28	Pskov	3	Kursk	1	Kiev (Ukraine)	1
Arkhangelsk	21	Kostroma	3	Kaliningrad	1	Baku (Azerbaijan)	1
Ufa	15	Chaykovsky	3	Usinsk	1	Krakow (Poland)	1
Cherepovets	11	Samara	3	Izhevsk	1	Vilnius (Lithuania)	1
Perm	9	RostovonDon	3	Saratov	1	Prague (Czech Republic)	1
Tyumen	9	Kemerovo	3	Magnitogorsk	1	Daugavpils (Latvia)	1
		Almaty (Kazakhstan)	3	Krasnodar	1		

* Territories, the residents of which published their papers in the Journal (including authors who published more than one article), are highlighted in green. The legend contains regions and the number of papers from each constituent entity of the Russian Federation (regions are ranked by the number of papers).

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