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ECONOMIC AND SOCIAL CHANGES: FACTS, TRENDS, FORECAST

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

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

Founder: Vologda Research Center of the Russian Academy of Sciences

Federal State Budgetary Institution of Science Vologda Research Center of the Russian Academy of Sciences (VolRC 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 VolRC 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 – Memorandum of agreement is signed with Alexander's Institute at the Helsinki University (Finland, 2008).

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

2010 – Cooperation agreement is signed with 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 agreements are signed with Jiangxi Academy of Social Sciences (China, 2014), National Academy of Sciences SM TsSaiSI (Belarus, 2014). Protocols of intent are signed with the Academy of Social Sciences Jiangxi Mao Zhiyong (China, 2014), National Institute of Languages and Civilizations (France, Jean Verkey, 2014).

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

2016 – Cooperation agreements are signed with EHESS Ecole des Hautes Etudes en Sciences Sociales (Paris, France, 2016), Institute of Philosophy, Sociology and Law of NAS RA (Yerevan, Armenia, 2016), Yerevan Northern University (Armenia, 2016), Yerevan State University (Armenia, 2016). Protocols of intentions are signed with Academy of Social Sciences in province Jiangxi (China, 2016).

CONTENT

EDITORIAL

SOCIO-ECONOMIC DEVELOPMENT STRATEGY

REGIONAL ECONOMY

INNOVATION DEVELOPMENT

PUBLIC FINANCE

CRITICAL ECONOMIC ISSUES

ENVIRONMENTAL ECONOMICS

DISCUSSION PLATFORM

FOREIGN EXPERIENCE

SOCIAL DEVELOPMENT

PUBLIC OPINION MONITORING

EDITORIAL

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The Problem of Civilizational Choice and Its Reflection in the Key Documents Defining the Present and Future of Russia

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Abstract. Due to the approach of 2024, when, under the current Constitution of the Russian Federation, Vladimir Putin will not be able to run for President, conceptual issues related to the results of the country's development in the 21st century and, most importantly, its prospects for the coming decades, are becoming more acute. One of these issues (determined, among other things, by the specifics of the modern historical stage of development of the world civilization as a whole) consists in the problem of civilizational self-determination, which, in fact, has been discussed by the scientific community in our country since the collapse of the Soviet Union. This problem is connected with the lack of strategic goal-setting as one of the key functions of public administration; such a situation has a lot of negative implications for the population and national development as a whole: from the lingering unresolved social problems (poverty, inequality, etc.) to the regular delays in the implementation of national projects and execution of specific

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orders of the head of state. In addition, according to the results of federal and regional studies, Russian society does not have a distinct cultural and value-based vector of development; moreover, against the background of the relentless need to increase the standard of living and achieve social justice, Russian society is increasingly becoming a consumer society with all its key shortcomings such as obsession with the material component of life, the desire to achieve personal success, ignoring the historically established norms of morality, etc. In the context of the issue of civilizational choice becoming more important as well as a wide range of problems caused by its absence, we analyze the Constitution of the Russian Federation and the National Security Strategy of the Russian Federation – the key federal documents that reflect basic principles of the existing dynamics and future prospects of national development. We come to the conclusion that the ruling elites do not work to form the spiritual and moral foundations of Russian society; consequently, the goals they set are focused on solving material problems only, which makes public administration similar to corporate governance. This poses one of the key threats to national security and national development and makes it necessary to hold a broad discussion initiated primarily by the government and aimed to consider practical possibilities and prospects for the implementation of the basic principles of the social state contained in the Constitution of the Russian Federation.

Key words: civilizational choice, Constitution of the Russian Federation, National Security Strategy of the Russian Federation, President, Russian society.

Social development goals cannot be set without a simple and clear system of values and a simple and clear understanding of justice. An economic breakthrough cannot be planned without fundamentally substantiated mecha-nisms for its implementation. Nevertheless, we are trying hard to do it – trying to do it without a guiding ideology. But any society that is not bound by a set of indisputable truths for the vast majority of its members will inevitably collapse. And we do have an ideology; it is simply an ideology of survival, enough not to die, and absolutely not enough to move forward with confidence[1].

Today, we are witnessing a new paradigm, which is called "postmodernity". **The essence of this concept consists in the designation of a new state of civilization, culture, ideology, politics, economy... Postmodernity forces us to take a fresh look at everything – including international politics.** Yesterday we used such concepts as "progress", "state sovereignty", "logic of history", "progressive development", etc. At the dawn of the 21st century, we see that progress in one area can be easily combined with regression in another within the same society; that there are countries without sovereignty; and history sometimes deviates from its ostensibly obvious course by 180 degrees[2].

A number of urgent circumstances force us to address more frequently the issues related to the progressive movement of Russia on the path of market transformation. On the one hand, the historical period of postmodernism, characterized by the rapid pace of scientific and technological progress, turbulence of socio-political processes and the erosion of the system of centuries-old cultural and moral norms and

[1] Noskovich O. From survival to development. Russia must change its ideological paradigm. *Nezavisimaya gazeta,* 2019, April 17. Available at: http://www.ng.ru/ideas/2019-04-17/5_7559_survival.html

[2] Dugin A. Geopolitics of postmodernity. Available at: https://www.geopolitica.ru/article/geopolitika-postmoderna#.UQP3djWlfp8/

values, leaves no time for a "sluggish start" and makes the key participants of geopolitical competition find answers to the following questions as quickly as possible: where and at what speed they are moving? How do they see their future? What future will they create for the world civilization as a whole?

On the other hand, the historical moment of time that our country is experiencing today brings the same issues to the fore. It is no secret that almost all the achievements of modern Russia, including relative stability of the political and economic situation in the country, as well as improvement of its international status in the foreign arena, are the merit of Russian President Vladimir Putin. The President has been ruling the country using the "hands-on" approach for almost 20 years; he is the "main arbiter" who balances the interests of various families, clans and groups in the ruling elite; and only he has a sacred connection with the "deep people". It is possible to treat the decisions of the head of state in different ways, but it is impossible to deny that V. Putin is a person of historical scale for our country.

In 2024, when, according to the current Constitution of the Russian Federation, V. Putin will not be able to nominate his candidacy for President of the Russian Federation, a new stage of Russian history will begin, and it is very difficult to predict what it will be for our country. Will Russia still be a "besieged fortress"? What will our "foreign partners" do, having repeatedly failed in their attempts to weaken Russia and to make it look like "universal evil" in the course of the last 20 years? Will the successor of the current President have a "unique" feature, which, according to experts, characterize V. Putin personally and which facilitates "confidential communication and interaction of the supreme ruler with the citizens" – "the ability to hear and understand the people, to see through it, to the full depth, and to act accordingly?"[3] Will not the growing contradictions between the elite and the general population give rise to a purposeful policy of the collective West to destroy the Russian statehood from within, as it was in the late 1980s – early 1990s?

> What will happen to us after the end of Putin's term? The people will be drawn to a fundamental historical choice. Even if we are waved aside, it is our duty to force our way through and say "yes" or "no" to our future. The people cannot be denied this opportunity to decide – we are approaching a critical point in our history[4].

Even if by 2024 the political system of the country undergoes significant changes, after which Vladimir Putin will still have full power[5], the above questions will not lose their relevance, they will only be delayed for a fairly limited period of time (at least by historical standards).

Multi-variant scenarios of the future of Russia, one of which will soon become real, bring to the fore the task of setting strategic goals of national development at a qualitatively different and deeper level than overcoming poverty, increasing life expectancy and improving housing conditions. These and other guidelines,

[3] Surkov V.Yu. Vladimir Putin's long state. *Nezavisimaya gazeta*, 2019, February 11. Available at: http://www.ng.ru/ideas/2019-02-11/5_7503_surkov.html

[4] Dugin A.G. The most important event of the future. *Gazeta "Zavtra",* 2019, May 16. Available at: http://zavtra.ru/blogs/samoe_vazhnoe_sobitie_budushego

[5] According to some experts, significant constitutional changes may occur in the country before 2024: the Federation Council will be replaced by the State Council, which "will be endowed with full power" and which will be headed by Vladimir Putin. The State Council, in particular, will choose the President of the Russian Federation, who will have only representative functions. According to some estimates, D.A. Medvedev can take this post (source: Uglanov A. And Medvedev will be President, after all? *Argumenty nedeli*, 2018, no. 12, March 29)

reflected in the May Decree of the President and in the national projects, despite their importance, are only instrumental. They are unable to take public discourse and state goal-setting beyond the value coordinates of the "consumer society"; consequently, they support the situation in the country in which society exists only for the sake of "buying a new mobile phone every six months" or "in order to consume more yogurt today than yesterday"[6].

> The Constitution bans official state ideology. What is ideology? It is a goal. The state must have a goal and the Russian people must have a goal. And in the Constitution contains the official ban: there is no goal.
>
> Accordingly, what does our state exist for? The Constitution does not contain an answer to this question. It is written that Russia is a social state, but it is only a statement; but what does it exist for in reality? To buy a new mobile phone every six months? To consume more yogurt today than yesterday..?
>
> There is no goal-setting; thus, there are quite a few problems: alcoholism, a sense of loss... Because the whole nation, the whole civilization have no goal, and it is directly written in the Constitution[7].

"Over the years of reforms, – as sociologists wrote back in 2013, – our citizens have become immersed in their problems, and the state has estranged itself from the sphere of goal-setting aimed at development of the nation; thus, Russians gradually began to lose their "big goal" vibes. But these vibes allowed them to do seemingly impossible deeds – it is enough to remember the industrialization of the country, the restoration of its economy after the Great Patriotic War, a breakthrough into space and many other deeds than the Russians are still fairly proud of..."[8].

> Having lost our patriotism and national pride and dignity connected with it, we will lose ourselves as the people capable of great achievements[9].

"Loss of personal connection with Russia", "loss of civilizational features", "loss of passionarity" – these are the threats that scientists warned about at the beginning of V. Putin's third presidential term.

How much has changed since then? The key trends that characterize modern Russian society are the growing need for change and the growth of self-sufficiency, which have been observed since 2014 after the emotional rise caused by the events of the "Crimean Spring" was faced with another "round" of the economic crisis of 2014–2015. In the period from 2014 to 2018, the proportion of Russians who perceive stability as "preservation of stagnation and crisis phenomena"[10], increased from 30 to 56%, **that is, today this point of view is shared by more than half of the inhabitants of our country**. Almost half of Russians (46% according to the data as of 2016) believe that in their lives they can do without the help of the state; according to researchers, this fact is "a serious social support for a stable and sustainable condition and development, which is especially important in the current socio-

[6] Starikov N.V. On amending the Constitution. Available at: https://www.youtube.com/watch?v=-krK3elaezA

[7] *Ibidem*.

[8] Gorshkov M.K., Krumm R., Tikhonova N.E. (Eds.). *What Russians Dream About: Ideal and Reality.* Moscow: Ves' Mir, 2013. 400 рю

[9] Putin V.V. Russia at the turn of the millennium. *Nezavisimaya gazeta*, 1999, December 30. Available at: http://www.ng.ru/politics/1999-12-30/4_millenium.html

[10] Petukhov V.V. Dynamics of social sentiment of Russians and the formation of request for changes. *Sotsis,* 2018, no. 11, p. 43.

political situation in which Russia has to face new serious political, economic and socio-cultural challenges"[11].

However, in the pursuit of personal success, "self-sufficient" Russians have to cross the line that distinguishes human society from the aggregation of individuals: more than half of them (54%) are guided by the belief that "the modern world is cruel and in order to succeed in life, sometimes you have to step over moral principles and norms"[12]. With such an attitude toward the world, oneself, and other people, it is not surprising that almost half of the "self-sufficient" (47%) say that in the modern world "many moral norms are already outdated", while 42% prefer to decide what is good and what is bad in this world ("morality is the sphere of one's private life, and the state should not interfere in it").

"Experts note that half of the Russian society lives without any obvious purpose, in the absence of an embodied image of the future as such", and then a natural question arises, which we find difficult to disagree with: **"What does the revival of the country begin with: the achievement of the goals related to increasing consumption for themselves and their families, or the goals related to creative, professional and spiritual growth? Realizing that the bias in favor of the former is a reflection of the objective and unresolved social issues of citizens, it is impossible not to understand that net consumption as the dominant life goal leads society along the path that has no future"[13].**

Thus, the growing "self-sufficiency" in the Russian society testifies to the growing variety of material benefits of a modern civilization (which is quite natural in the conditions of science and technology progress) and to the growing abilities, knowledge, and skills to use these new and more versatile goods and services (that is also quite natural, given the gradual change of generations and the coming of age of the so-called Generation Z – people who were born after 1996, they are characterized by "individualism, practicality, technological advancement, self-confidence, etc."[14]).

However, society is not a collection of individuals, but, above all, the social relations that develop between them. And in this sense, the utility of life goals and values of the general population raises serious concerns about the fact whether the vector of the movement of modern Russian society is correct.

It should be noted that this state of Russian society is a consequence of "instrumental" goal-setting. "In the conditions of abandonment of former social ideals and the collapse of the newly proclaimed ones, there began the process of self-destruction of the nation through its fragmentation due to the reduction of national interest to the parochial and family levels"[15].

In addition to other functions (economic, political, etc.), any state (and especially a social state, according to the Constitution of the Russian Federation) performs a social function, which consists not only in the development of the social sphere (health, education, culture) and ensuring a decent standard of living of citizens, but also in ensuring solidarity in society, cooperation of various segments of society, and implementation of the principle of social justice.

[11] IS RAS information and analytical summary, 2014–2016.

[12] Gorshkov M.K., Sedova N.N. "Self-sufficient" Russians and their life priorities. *Sotsis,* 2015, no. 12, pp. 4–16.

[13] Karacharovsky V.V., Shkaratan O.I. Different goals of one society. *Sotsis,* 2019, no. 1, p. 15.

[14] Stillman D. *Gen Z @ Work: How the Next Generation Is Transforming the Workplace*. Translated from English by Yu. Kondukov. Moscow: Mann, Ivanov i Ferber, 2018. 272 p

[15] Noskovich O. From survival to development. Russia must change its ideological paradigm. *Nezavisimaya gazeta,* 2019, April 17. Available at: http://www.ng.ru/ideas/2019-04-17/5_7559_survival.html

Public administration without evaluation-based reflection has no chance of self-improvement and development. The quality, as well as the success of public administration, cannot be assessed without an appeal to any value. The result of public administration, outside the value context of the goals, is not in itself a characteristic of quality. Depending on the targets, the same result can be evaluated in exactly the opposite way. For example, Russian privatization: when considering it from the standpoint of material expectations and interests of the majority of society – it is an absolute failure; while within the framework of the goal to achieve a rapid transition (at any cost) to a market economy – it is quite an effective management operation[16].

Therefore, neither the goal-setting nor the measurement of the effectiveness of public administration according to the classical "cost – benefit" principle, which can work quite successfully in business, is not correct, because it cannot ensure the "viability of the country"[17].

From this point of view, it is necessary to look once again[18] at the National Security Strategy – "the basic document of strategic planning that defines national interests and strategic national priorities of the Russian Federation" (Paragraph 1) and is "the basis for the formation and implementation of the state policy in the sphere of ensuring national security of the Russian Federation" (Paragraph 4).

This document identifies the following strategic national priorities (Paragraph 31):

1) defense of the country;
2) state and public security;
3) improving the quality of life of Russian citizens;
4) economic growth;
5) science, technology and education;
6) health;
7) culture;
8) ecology of living systems and environmental management;
9) strategic stability and equitable strategic partnership.

"Preservation and enhancement of **traditional Russian spiritual and moral values as the basis of Russian society**" is a "**strategic goal for ensuring national security in the field of culture**" (Paragraph 76). At the same time, the Strategy states that "traditional Russian spiritual and moral values include **the priority of the spiritual over the material**, protection of human life, human rights and freedoms, family, creative work, service to the Homeland, **standards of morality, humanism, mercy, justice, mutual assistance, collectivism**, historical unity of the peoples of Russia, the continuity of the history of our Homeland" (Paragraph 78).

Based on this, there arise the following natural questions:

1. Does the trend of the growing "self-sufficiency", which we discussed above, correspond to **"traditional Russian spiritual and moral values", which form the "basis of Russian society"**?

2. What is the **"cultural sovereignty of the Russian Federation"** (Paragraph 82), if Russian society is more like American "consumer

[16] Sulakshin S.S. The quality and success of public policies and management. In: Seriya *"Politicheskaya aksiologiya"*. Moscow: Nauchnyi ekspert, 2012. P. 23.

[17] The main criterion of public administration efficiency according to S. Sulakshin (source: Sulakshin S.S. The quality and success of public policies and management. In: *Seriya "Politicheskaya aksiologiya"*. Moscow: Nauchnyi ekspert, 2012. Pp. 6, 12.)

[18] In January 2016 (immediately after V. Putin signed the new National Security Strategy on December 31, 2015), we analyzed this document (source: Ilyin V.A. National Security Strategy 2015 – a step towards the new phase of Russia's development. *Ekonomicheskie i sotsial'nye peremeny: fakty, tendentsii, prognoz,* 2016, no. 1 (43), pp. 9-25). However, at that time we were interested in the socio-economic aspect of the question: to what extent does the National Security Strategy of the Russian Federation can be implemented under the current course of economic and social policy pursued by Dmitry Medvedev's Government?

society": every year there are more and more people who are ready to neglect moral principles for the sake of achieving their personal success without experiencing any remorse and quite rationally explaining it with some new conditions of life and the "obsolescence" of classical life values?

3. Is "external cultural and information expansion" **the only** threat to "national security in the field of culture" (p. 79)[19]; **or does the reason lie in the fact that over the past 20 years poverty, low standard of living and social stratification consistently occupy the top lines in the list of the most acute problems of concern to the population (which explains and in some sense justifies the "preoccupation of Russian society with the material component of life"[20])?**

4. Are measures such as "providing support to the study of the Russian language"; "ensuring national, religious, and racial tolerance"; "patriotic education of citizens"; "improving the facilities and equipment of cultural organizations, creating conditions for leisure activities"; "promoting domestic cultural and educational tourism"; "strengthening state control over cultural heritage sites" and many other measures contained in the National Security Strategy (pp. 81–82) **sufficient to preserve the "cultural sovereignty of the Russian Federation"? Or should we talk about something that was not included in the National Security Strategy: the formation of a "culture of wealth" – overcoming the "aggressive demonstration of material superiority and consumer opportunities, accompanied by complete disregard for the previously unshakable moral norms"[21]? Regardless of citizenship, nationality, religion, etc., that is, among the Russian population, as well.**

As we can see, the main points of the National Security Strategy are purely instrumental. **The Strategy does not cover a wide range of issues related to evaluation-based reflection and the specifics of goal-setting as a function of public administration.** Perhaps this is why, following the ruling elites, many young state managers in our country "at best know how to manage corporations or non-governmental organizations; they really do not know how the logic of the state differs from the logic of a corporation"[22]...

Perhaps that is why, once again, the implementation of the election promises of the President is going on very slowly: for the six months prior to summarizing the first results of the implementation of national projects (as Vladimir Putin stated in his Address to the Federal Assembly of the Russian Federation in 2019) "only two of the nine national goals outlined in the new the May Decree of the President show at least some movement forward, and it is not enough. Three goals still do not have any indicators for monitoring their implementation; there are indicators for two goals, but the current situation is not clear. As for two more goals, there is actually a backward movement in their implementation"[23].

[19] Paragraph 79 of the National Security Strategy states: "Threats to national security in the field of culture are the erosion of traditional Russian spiritual and moral values and the weakening of the unity of the multi-ethnic people of the Russian Federation through external cultural and information expansion (including the spread of low-quality products of mass culture), the promotion of permissiveness and violence, racial, national and religious intolerance, as well as the reduction of the role of the Russian language in the world, the quality of its teaching in Russia and abroad, attempts to falsify Russian and world history, unlawful encroachment on cultural objects

[20] Balatsky E.V., Ekimova N.A. Economic determinants of the psychological state of society. *Monitoring VTsIOM*, 2008, no. 2, pp. 18–25.

[21] Zarubina N.N. The culture of wealth in the discourse of inequality: specifics of modern Russia. *Obshchestvennye nauki i sovremennost'*, 2012, no. 6.

[22] Hazin M. Beware! Political scientists. *Gazeta "Zavtra",* 2019, May 2. Available at: http://zavtra.ru/blogs/ostorozhno_politologi

[23] Bashkatova A. A failure of the national scale. *Nezavisimaya gazeta,* 2019, May 20.

One of the markers actively and almost univer-sally used by the "new rich" is **their demonstrative permissiveness as a constant desire to test the strength of existing social norms, when the rich emphasized their exceptionalism by doing what is prohibited and acting according to the principle: "It is forbidden to everyone but not to me"...**

The individualism of the rich is manifested in the fact that **the owners of the greatest fortunes obtain a legitimate opportunity not to reckon with society...**Modern global capital is not opposed by the "global trade union", and thus it can be stated that the two main social poles of capitalist society – labor and capital – were separated from each other...

After the first decade of the 21st century, not only the economic, but also the social and even spatial gap between the rich and poor has increased... In the conditions when society is disintegrating, rich social groups **no longer need to find excuse for their actions.** The rich continue to live their lives and increase their wealth even during the global financial crisis, **often with the direct support of the state.**

The discourse of inequality is shifting toward the demonstration of prestigious models of everyday life, while the problems of the legitimacy of wealth and its responsibility to society are attracting less attention. Therefore, it seems unrealistic to hope that getting used to wealth will lead to the growth in the level of culture; i.e. demonstration will become less aggressive, and efforts to legitimize will increase, as well as social responsibility[24].

In the end, as the year 2024 is getting closer, the question about the 24-years of Putin and his team ruling the country is coming to the fore. And here we should note that, despite the overcoming of the negative consequences of the "turbulent" 1990s and Russia's return to the ranks of key participants in geopolitical competition, the goals that the President set for the long term in 1999 have not been achieved yet.

Let us recall that in the article headlined *Russia at the Turn of the Millennium* Vladimir Putin identified three fundamental grounds (three "chances for the future"), with which he links the fate of Russia in the 21st century. They are "the Russian idea", "the strong state" and "effective economy".

Chances for a decent future:

(A) the Russian idea. Fruitful creative work, which our Homeland needs so much, is impossible in a society that is in a state of division and internal disunity, in a society where the main social strata and political forces adhere to different basic values and fundamental ideological guidelines.

(B) the strong state. We are at a stage when even the most accurate economic and social policy fails due to the weakness of the state power and governing bodies. The key to the revival and rise of Russia now lies in the state and political sphere. Russia needs and should have a strong state power.

(C) effective economy. ... Russia needs to form a holistic system of state regulation of the economy and the social sphere. We are not talking about returning to the system of policy planning and management, where the all-pervading state regulated all aspects of the work of each enterprise from top to bottom. It is about making the Russian state an effective coordinator of the country's economic and social forces, building a balance of their interests, determining the optimal goals and parameters of social development, creating conditions and mechanisms for their achievement»[25].

[24] Zarubina N.N. The culture of wealth in the discourse of inequality: specifics of modern Russia. *Obshchestvennye nauki i sovremennost'*, 2012, no. 6.

[25] Putin V.V. Russia at the turn of the millennium. *Nezavisimaya gazeta*, 1999, December 30. Available at: http://www.ng.ru/politics/1999-12-30/4_millenium.html

I am personally convinced that the collapse of the Soviet Union and, more broadly, of all Soviet life was a phenomenon to a certain extent internal rather than external. We somehow forgot that the USSR actually collapsed at the peak of its military and industrial might, or rather, on a stagnant slide from it. And that collapse, perceived by many citizens with enthusiasm, passed under the stormy and prolonged applause.

I remember well the final chord of the great August standing around the White House; I myself defended democracy there. So, after all the troubles people flowed to the metro station "Ulitsa 1905 goda" to go home. What happy faces the passengers had, what unity was felt! Indeed, all of these people: workers of the neighboring enterprises, of which there were many from the western industrial zone, students, scientists and bureaucrats – **all thought they had slain the dragon together, beheaded the Hydra of totalitarianism, and saved democracy. Probably, neither before nor after did I see such bright and clear faces.** The overthrow of "sovok", if judged by all these sentiments, was neither a conspiracy nor a coup – it was genuinely the deed of the people. Although, of course, the plot, coup and betrayal were there; but without popular support or, rather, people's live participation, nothing would happen[26].

However, to date:

1. "The Russian idea" has not been formulated. Patriotism, which the President spoke about as a "unifying idea" that has no alternative and cannot have one[27] is only a shell that can be filled with completely different content. In particular, there is no doubt that such events as the Revolution of 1917 and the collapse of the USSR in 1991 took place largely on the patriotic motivation – from the sincere belief of people that they are doing a good thing for the country.

We should also point out that even today, that is, 19 years after the beginning of V. Putin's first presidential term, scientists note that "the current political and economic structure of our society **is in transition** between the one that emerged spontaneously in the early 1990s as a result of revolutionary changes and the one that will be formed after these changes and their implications have been finally understood. The duration and difficulty of this transition will depend on how quickly we understand what we are and what we want. Thus we will find the social ideal of the world order and implement it in practice"[28].

2. Today the phrase "Strong state" can be applied, perhaps, only in relation to the Russian army; this fact is fully consistent with the ideas of the head of state about patriotism (and, consequently, about the "unifying idea"): "To me, the words "army" and "patriotism" mean the same thing"[29].

At the same time, while restoring its geopolitical status, Russia has acquired a wide range of external enemies, international sanctions and anti-Russian sentiments actively spreading in Europe and the United States; as for Russia's domestic political life, only the President himself still has a relatively high level of trust (more than 50%), while all other state and non-governmental institutions have the trust of less than half of the population *(Tab. 1)*.

[26] Voevodina T. What did the Soviet people lack in the Soviet Union? *Literaturnaya gazeta*. Available at: http://lgz.ru/article/-33-6521-26-08-2015/chego-sovkam-v-sovke-ne-khvatalo/

[27] V. Putin's speech at the meeting with the core group of the Leaders Club, February 3, 2016. *Official Website of the RF President*. Available at: http://www.kremlin.ru/events/president/news/51263

[28] Noskovich O. Russia can combine the advantages of two types of world order. *Nezavisimaya gazeta*, 2019, June 5. Available at: http://www.ng.ru/ideas/2019-06-05/5_7591_ideas2.html

[29] V. Putin's speech at the meeting with public representatives on patriotic education for young people, September 12, 2012. *Official Website of the RF President*. Available at: http://www.kremlin.ru/events/president/news/16470

Table 1. The level of trust in Russia's non-governmental structures and institutions
(answer: "I trust completely and mostly"; % of respondents)

Answer	V. Putin's first presidential term (annual average estimate for 2000–2003)	V. Putin's second presidential term (annual average estimate for 2004–2007)	D. Medvedev's presidential term (annual average estimate for 2008–2011)	V. Putin's third presidential term (annual average estimate for 2012–2017)	Annual average estimate for 2018–2019	Dynamics of annual average estimates (+/-), 2018–2019 to 2000–2003
*Level of trust over 50%**						
RF President	58.2	58.6	56.0	55.3	57.2	-1
Level of trust from 40 to 50%						
Church	42.6	44.3	47.8	44.7	48.9	+6
Prosecutor's Office	28.9	31.9	36.8	39.5	45.6	+17
Army	33.8	27.8	35.0	39.6	44.7	+11
RF Government	39.3	39.3	51.7	45.5	44.5	+5
Federal Security Service	32.6	33.4	37.5	38.5	43.4	+11
Court	30.9	33.9	37.4	39.1	43.2	+12
Police	26.0	27.0	33.6	37.2	42.8	+17
Level of trust from 30 to 40%						
Federation Council	27.9	31.7	39.3	37.4	34.9	+7
Vologda Oblast Administration	28.6	35.3	40.3	36.6	34.7	+6
Local governments	-	-	35.9	32.9	33.5	-
Trade unions	26.0	27.6	31.0	27.4	32.3	+6
Scientific organizations**	-	-	-	-	32.2	-
State Duma	22.5	27.6	35.3	33.1	31.4	+9
Level of trust lower than 30%						
*Civic Chamber of the Russian Federation **	-	-	-	31.2	29.3	-
Mass media	29.1	29.1	30.5	28.0	28.7	0
*Non-governmental organizations**	-	-	27.5	25.5	27.2	-
*Civic Chamber of the Vologda Oblast **	-	-	-	28.1	27.1	-
Directors, CEOs	20.1	23.8	24.5	23.0	23.4	+3
Political parties, movements	12.9	17.2	23.1	19.5	21.9	+9
Banks and entrepreneurs	13.9	20.5	22.2	19.4	19.4	+6
I don't trust anyone	24.5	25.9	24.5	26.0	25.9	+1

* Average annual estimate for 2018–2019.
** Answer options "Civic Chamber of the Russian Federation" and "Civic Chamber of the Vologda Oblast" were included in the list in 2010; answer options "Non-governmental organizations" and "Local governments" – in 2006, answer option "Scientific organizations" – in 2018.
Source: VoIRC RAS public opinion monitoring.

3. The effectiveness of the Russian economy can be seen if we compare the situation today with the period of the "turbulent" 1990s. However, no less obvious is the fact that during the post-Soviet period, the Russian economy was largely transformed into a "service economy" that implements the interests of "major companies of global markets" rather than national interests[30]. In many ways, therefore, our lagging behind is still our "main threat" and "main enemy", which

[30] Betelin V.V. Russia needs to abandon the "economy of services" and shift to the "economy of industrial production". *Ekonomist,* 2019, no. 2, p. 7.

Table 2. The structure of the most pressing issues that Russians are concerned about* (% of respondents)

1999	2000	2008	2012	2018	2019
Low standard of living, poverty (57.1%)	**Low standard of living, poverty (50.8%)**	**Inflation (56.3%)**	**Inflation (55.3%)**	**Low standard of living, poverty (53.7%)**	**Inflation (57.5%)**
Inflation (54%)	**Inflation (44.7%)**	**Low standard of living, poverty (41.4%)**	**Low standard of living, poverty (43.2%)**	**Inflation (51.1%)**	**Low standard of living, poverty (57.4%)**
Layoff, unemployment (43.7%)	**High crime rate, vulnerability to crime, hooliganism (36.9%)**	**Housing problem, low availability of housing (36.3%)**	**Stratification of society into "poor" and "rich" (37.5%)**	**Stratification of society into "poor" and "rich" (35.9%)**	**Stratification of society into "poor" and "rich" (33.2%)**
Economic instability, enterprises shutting down (39.6%)	Social insecurity of citizens (34.4%)	Stratification of society into "poor" and "rich" (31.4%)	Housing problem, low availability of housing (28.6%)	Housing problem, low availability of housing (23.5%)	Housing problem, low availability of housing (23.4%)
High crime rate, vulnerability to crime, hooliganism (33.4%)	Layoff, unemployment (32.1%)	High crime rate, vulnerability to crime, hooliganism (28.4)	Growth of alcoholism (27.3%)	Political instability (23.1%)	Corruption, bribery (22.1%)

* Ranked according to the data as of 2019. In total, the survey includes 23 issues; the Table presents the five most relevant of them.
Source: VolRC RAS public opinion monitoring.

"will inevitably increase if we do not reverse the situation"[31], and the level of poverty and inequality in the country is many times higher than the official statistics, as evidenced by many experts[32]; it is clearly reflected in the structure of the most pressing issues that Russians are concerned about *(Tab. 2)*.

Once again, let us turn to V. Putin's article *Russia at the Turn of the Millennium*, in which he writes the following: "Achieving the necessary dynamics of growth is not only an economic issue. **It is also a political and, in a certain sense, ideological issue. More precisely, it is an ideological, spiritual, and moral issue.** And the last aspect at the present stage seems to me particularly important from the point of view of the consolidation of Russian society"[33]. This thesis remains relevant today, 20 years later; **however, "the ideological, spiritual and moral issue", as we see, is not considered either in the Constitution that actually imposes a ban on ideology, nor in the National Security Strategy that reduces it to the status of one of the subjects of a highly specialized social sector "Culture"**.

The absence of the question concerning civilizational choice in the system of goal-setting of the current government and the absence of a specific request of the state to scientists and socio-political figures to define and clearly formulate the vector of development of the country lead to the fact that the topic of civilizational self-determination remains only the subject of broad discussions and does not go beyond theoretical reflection in scientific articles, at public forums, etc.

[31] Presidential Address to the Federal Assembly of the Russian Federation, March 1, 2018. *Official website of the RF President*. Available at http://www.kremlin.ru/events/president/news/56957

[32] See, for example: Chuikov A. Exorcist Golikova will drive the poor out of the country (an interview with professor V.N. Bobkov, head of the laboratory for research on the standard of living and quality of life at RAS Institute of Socio-Economic Studies of Population). *Argumenty nedeli*, 2019, February 7; Istratov V. What kind of revenue growth will please us? *Ekspert,* 2018, no. 14, April 2; Zubarevich N.V. Program "Reflection" (Public Television of Russia (PTR Channel), aired February 14, 2019. Available at: https://otr-online.ru/programmy/segodnya-v-rossii/natalya-zubarevich-35709.html

[33] Putin V.V. Russia at the turn of the millennium. *Nezavisimaya gazeta*, 1999, December 30. Available at: http://www.ng.ru/politics/1999-12-30/4_millenium.html

Responsible politicians and unbiased intellectuals are aware that **the politics and economy of modern Russia are in dire need of a new solid ideological basis.** This fact is universally acknowledged; we can provide countless bright and accurate descriptions of the dismal state of affairs in connection with the inefficiency of public administration. However, at the same time there is **not the slightest suggestion of a deeply thought-out complex of philosophical and economic ideas that can unite the entire Russian society and inspire it to new achievements**[34].

Since the collapse of the Soviet Union, scientists pointed out (and continue to do so) that Russia is developing spontaneously, without a goal and vector[35], and this is not worthy either of our history or our international influence on the solution of global issues of the future. Nevertheless, so far, practical implementation of the discussions about the civilizational choice remains an unfulfilled task.

According to experts, at the last historical stage of social development there were, in fact, two successful projects: "Western" and "Red"[36]. In the Western project, the basic principle of economic activity is gaining profit, which is based on the constant satisfaction of one's own interest. In this case the ideal of justice is implemented through the equality of free individuals, formalized in a society of equal opportunities, in which the inevitable socio-economic inequality is perceived as a consequence of the natural inequality of human abilities... Indeed, the strong and successful support such an ideal of justice; the weak and losers are loyal to this ideal due to the fact that the produced material good is enough for providing them with gratuitous assistance.

In the social structure of the Red project, the domination of private interest is subordinated to the public interest, and the ideal of justice is implemented in equal ownership of public wealth and equal access to the good produced [37].

In order to achieve harmonization of the social structure and effective use of the preserved human potential, there is only one means – to implement a new, socially oriented cycle of institutional and structural reforms[38].

"Our society has a unique experience of implementing both Red and Western projects; thus it can be quite ready to accept and combine the advantages of both"[39]. However, the priority, of course, should be made in favor of the Red project and the social state, "because this project acts in the interests of the entire population of Russia (as well as other countries) rather than any narrow group" and because it corresponds to "humanistic modernization"[40], which, in fact, was mentioned by scientists throughout the post-Soviet period.

[34] Noskovich O. From survival to development. Russia must change its ideological paradigm. *Nezavisimaya gazeta,* 2019, April 17. Available at. http://www.ng.ru/ideas/2019-04-17/5_7559_survival.html

[35] See, for example: Yadov V.A. Russia as a transforming society (the summary of a long-standing discussion of sociologists). *Obshchestvo i ekonomika,* 1999, no. 10–11, pp. 45–55; Golenkova Z.T., Igitkhanyan E.D. A person in changing society. Social and group preferences. *Obshchestvo i pravo,* 2003, no. 1, pp. 152–169.

[36] Noskovich O. From survival to development. Russia must change its ideological paradigm. *Nezavisimaya gazeta,* 2019, April 17. Available at. http://www.ng.ru/ideas/2019-04-17/5_7559_survival.html

[37] *Ibidem*.

[38] Zaslavskaya T.I. To the tenth anniversary of the international symposium "Where is Russia Going?" In: Zaslavskaya T.I. (Ed.). *What Has Russia Arrived At? The Results of Social Transformation*. Moscow: MVShSEN, 2003. Pp. 12–15.

[39] Noskovich O. From survival to development. Russia must change its ideological paradigm. *Nezavisimaya gazeta,* 2019, April 17. Available at: http://www.ng.ru/ideas/2019-04-17/5_7559_survival.html

[40] Lapin N.I. Hybrid transition and a demand for "modernization for all". *Vestnik Instituta sotsiologii*, 2018, vol. 9, no. 4.

In fact, post-postmodernity understands globalization as **the accentuation of social (rather than individual) uniqueness within the global social space.** Classic examples are Japan, South Korea, Singapore, Hong Kong, etc. All of them are present in the globalizing space **while remaining deeply national societies that preserve primarily their culture and identity,** although they absorb the inevitable elements of global culture[41].

Only the so-called Red project is able to reflect fully the need of Russian society for social justice, which has mental, cultural and historical grounds and is a consequence of the social inequality that has not been reduced over the past 20 years. And only the Red project has prospects for the future, because, on the one hand, Western civilization is increasingly becoming conflict-ridden and cannot cope with the global challenges of tomorrow; on the other hand, the Red project contains the foundations of humanism, which, according to many scientists, will be the foundation of the next historical era – post-postmodernity.

* * *

Thus, the question concerning the civilizational choice of Russia has been and remains relevant since the collapse of the Soviet Union and "the disruption of progressive development of the Russian state and society"[42]. It appears from time to time in the political rhetoric of the President, but it is not sufficiently reflected in the Constitution and the National Security Strategy of the Russian Federation – the key documents that determine the present and future of our country. At the same time, as we approach the year 2024 that inevitably arouses the need to summarize the 24-year period of V. Putin's presidency, the task of civilizational self-determination is becoming increasingly acute, since it is becoming increasingly clear that the absence of a vector of development, involving the priority implementation of national interests, leads to the emergence of many factors that impede the development of the country and pose a threat to its national security: such factors are the failure of the Government to fulfill the instructions of the head of state, the lingering extreme inequality and a high level of poverty (which the broad strata of the population feel despite any changes in the methods used by Rosstat), the distrust that society feels toward the ruling elites and that is increasingly turning into estrangement of Russians from political and public life...

"Transition to **humanistically active** participation of the state in creating conditions for a decent life and free development of all members of society as a new historical stage of evolution[43]" is complicated by the fact that Russian elites prefer to integrate into the Western world both materially and ideologically, while ignoring national interests, and the fact that the leader of the Western world (the U.S.) has always felt as if it were the hegemon of the world order and treated other countries exclusively as vassals or promising areas for its own enrichment.

[41] Fursov A.I. What will replace postmodernism. *Information resource Smionline*. Available at: http://so-l.ru/news/y/2013_07_15_chto_pridet_na_smenu_postmodernizmu

[42] Toshchenko Zh.T. *Phantoms of Russian Society*. Moscow: Tsentr sotsial'nogo prognozirovaniya i marketinga, 2015. Part 1. Pp. 14–15.

[43] Lapin N.I. Materials of the speech at the round table in the editor's office of the journal *Voprosy filosofii* (March 2019).

Post-Soviet elites consider themselves to be part of the Western world and global capitalism; this feeling is an important factor in their determination to move closer to the United States in the civilizational and ideological sense. The process of convergence is facilitated by the fact that tangible assets are placed in the West and by the fact that the families of the Russian elite live in the West. In such a case, Russia's national interests are ignored[44].

Largely due to the above, the National Security Strategy is filled with formulations of instrumental content; and the Constitution of the Russian Federation shows "an obvious contradiction: on the one hand, the principle of the social state is an institutional fact, as real as the Constitution as a whole, which has the maximum normative status of the basic law for members of society as citizens. But, on the other hand, the constitutional principle we are studying is far from its meaningful implementation in many spheres of the state itself, civil society and in the daily life of its citizens"[45].

"Experts note that the most important thing consists in the fact that the elites and society lack the understanding of the need to form a new social contract between the government and society; and they lack the understanding of the role of social policy in its implementation"[46]. And if the primary need of Russian society to raise the standard of living and improve the quality of life, to overcome poverty and inequality is understandable and in some sense justified by the long-term relevance of these problems due to the ineffective policy of the Government, then the absence of the issue concerning civilizational self-determination in the political agenda of the ruling elites and in the key documents that determine **the foundations of existence and strategic guidelines for the development of Russia in the coming decades** raises serious concerns about the success of its transition to a new historical stage, on which V. Putin "will have no influence"[47].

[44] Bartosh A. America relies on proxy wars. *Nezavisimaya gazeta,* 2019, June 10. Available at: http://www.ng.ru/armies/2019-06-10/8_7595_proxywar.html

[45] *Ibidem*.

[46] Tikhonova N.E. Social policy in modern Russia: new system-wide challenges. *Social Sciences and Contemporary World*, 2019, no. 2.

[47] Dugin A. Putin or Super-Putin. *Izborsk Club*. Available at: https://izborsk-club.ru/16492

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Localization of Foreign Production as a Tool to Develop the Export Base of the Russian Federation*

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Abstract. The relevance of our paper lies in the fact that in the conditions of the "new normality" of the world economy and amid international competition and protectionist measures, developed partner countries of Russia replace imports with localization of production. The main idea and goal of the paper is to substantiate the essence of the strategy of localization of foreign production for various stages of geo-economic development and the implications for the national economy. Its scientific novelty consists in the fact that it develops theoretical provisions that identify motives for the use of the strategy of foreign production localization by host economies at various stages of geo-economic development; the paper also classifies and assesses possible effects that a country obtains in the process of localization (on the example of Russia). We use the following research methods: analysis of localization experience of different groups of countries; synthesis of the experience of localization of foreign production in Russia in terms of using the institutional framework to promote localization and systematization of localization effects based on the analysis of the opinions of its participants and content analysis of press releases about their activities (companies included in the rating of major companies operating in Russia, and the list of special investment contracts); statistical analysis of the relative scale and some effects of localization; and analysis of the regulatory framework. The analysis has revealed that in the context of global challenges for foreign companies the localization of production in Russia, involving exports, becomes a way to preserve their positions in the Russian market. It provides the Russian economy with a number of positive effects, both quantitative (growth of investments, production and export volumes, tax revenues, and the number of jobs) and qualitative (inflow of technologies and specialists; import substitution, contribution to the revival of manufacturing; diversification of production and exports; training of local specialists, development of local production of components; improving the competitiveness of products produced in Russia and the image of Russian territories and participating companies). The results allow us to move toward the formation of a comprehensive vision in assessing the impact of the institutional factor on the foreign economic activity of territories.

Key words: localization of foreign production, localization motives, export-oriented localization, positive effects of localization, expanding production and export, technologies and brands, institutional support of localization, import substitution.

Introduction

In the context of global challenges facing the world economy, which include a slowdown in its growth, drop in oil prices, exchange rates fluctuations, international trade and technological competition, and protectionist restrictions (sanctions, additional tariff restrictions), the countries that export goods to the Russian market experience a decrease in the volume of supplies. For example, the ratio of the volume of imports in 2014–2017 from Germany, The Netherlands, Italy, the United States, the Republic of Korea, Japan, France and the UK, taken together, to the volume of 2009–2013 was[1] 3 to 4. Given the interest of foreign partners in their presence on the Russian market, and due to the policy of import substitution implemented in the country, import supplies are replaced by the localization of foreign production in the Russian territory, i.e. trade exports to Russia are transformed into production investments in the Russian Federation. Although Russian exports in 2017–2018 increased 1.6-fold (exceeding the

[1] Calculated with the use of: Customs statistics of foreign trade. Federal Customs Service of Russia. Available at: http://stat.customs.ru/apex/f?p=201:7:2316567836921543::NO (accessed: 21.02.2019).

value of 2015) and provided the maximum level of balance observed earlier), its high-tech component remains low and comprises 6.5% of total exports, although exports of machinery and equipment increased by 16%[2] in 2017. In the context of stimulating non-resource exports in the Russian economy, localized production in some cases becomes export-based. Thus, in the Russian strategy for development of exports, for example the automotive industry, until 2025 it takes into account, among other things, the prospects for the production of car models designed for the international market (within the framework of foreign production localized in Russia). The goal of our paper is to substantiate the essence of the strategy for localization of foreign production for various stages of geo-economic development and the resulting effects on the national economy. Achievement of this goal assumes the implementation of the following tasks:

– to develop the localization theory in relation to the motives of host and investing countries in the localization of foreign production;

– to develop a model for representing potential effects of localization on the host economy;

– to assess these effects partially on examples from the Russian economy.

Finding solutions to these tasks provides for a research methodology that involves the following: analysis of theoretical and analytical literature on localization; analysis of the experience of localization of developing and developed countries; generalization of localization experience, including the experience of using the institutional framework to stimulate export-oriented localization, based on the analysis of opinions and practices of its participants; analysis of the extent of localization and systematization of its effects on the host economy based on the analysis of the activities of the largest representative offices of foreign companies operating in Russia (selected from the "Expert" rating) and other foreign companies (selected from the list of special investment contracts) on the basis of content analysis of press releases; statistical analysis of the relative scale and some effects of export-oriented localization.

The scientific novelty and significance of our work are as follows: we develop theoretical positions on the motives for the use of the strategy of localization of foreign production by host economies of different levels in the context of global challenges; we also develop a model for potential effects obtained by the country in the process of localization; in addition, we carry out selective assessment of these effects on the example of the Russian economy.

Theoretical bases of localization of foreign production

Localization refers to the placement of foreign production in the country (under the leadership of the parent foreign company), using raw materials and/or components and labor force of the host country. The localization process involves several stages: the presence of the coming counterparty only as exporter; minimal relocation of production and functions; transfer of key functions [1, pp. 64–65]. V.B. Kondrat'ev notes that production localization may have the following goals related to the development of the national economy: creating new jobs and stimulating business, forming high-tech industries, and ensuring long-term growth [2, p. 67].

It seems that it is possible to identify the motives of host economies (taking into account the level and priority needs of their development) in the context of trends (including challenges) in the world economic development.

[2] Compiled with the use of: *Ibidem*.

According to the analysis, in the context of the growing international division of labor since the second half of the 20th century, the incoming contractor was interested in the access to raw materials and low labor costs. Developing countries found it important to intensify their economic development and raise their technological level and competitiveness through investment *(Tab. 1)*. In 1985–2015, in Japanese firms, the share of production moved to developing and other countries increased from less than 1/20 to 1/4 [3, p. 21]. The number of cars produced in foreign branches of German companies exceeded their production rate in Germany since 2010, and the ratio was 9.5 to 5.7 million units in 2015 [4, pp. 89-91]. China represents the most striking example of the host country. For example, China bought the first high-speed trains from Germany, then they were produced with German participation in China, and then China began to produce and export its own high-speed trains.

Another case is the experience of developed countries, such as the United States. As a result of the internationalization of production, by the time of the beginning of today's recession of the world economy, the country lost part of its industrial base; this fact affected its socio-economic well-being, and reshoring became relevant. In general, in 2008–2009, the countries of the world, both developing and developed, implemented more than a hundred projects within the framework of the localization course, and the United States ranked second in this regard [2, p. 67].

Russia has a special type of localization, when global challenges in the development of world economic relations, largely induced by the global recession, lead to increased international competition and protectionist sentiments (sanctions, additional trade duties). Their impact on national economies was expressed in increasing import dependence and limiting foreign economic relations with developed countries, which caused the need (for example, in Russia) for import substitution and the formation of prerequisites for optimal integration into the international division of labor, among other things, through localization. The selected stages of global economic development and their inherent motives of localization are presented in *Table 1*.

An important point is the export orientation of foreign direct investment (FDI). There is a common situation when a certain share of exports belongs to imported components, especially in small economies and in the sectors that are highly integrated

Table 1. Motives for localization of foreign production

Period	Stage of world development	Host countries	Motive
Since the second half of the 20th century	Intensive production and investment internationalization	Developing	Need for investment and technology for host countries; access to raw materials and low labor costs for investor countries
Since 2008	"The great recession" ("the new normality")	Developed	Return of the productions taken out abroad in connection with the need to locate the process of production closer to the place of consumption; this is also done to reduce expenses on labor remuneration at the expense of automation
Since the mid-2010s	Development of advanced production technologies and growth of protectionist sentiments	Affected by sanctions and protectionist restrictions (in particular, Russia)	Import substitution, including export-oriented import substitution for host countries; maintaining positions in developed markets for investor countries
Source: own compilations.			

into the world economy (e.g. electronics) [5, p. 17]. Moreover, in foreign literature there is even the concept of export-oriented FDI (T.T. Nguyen-Huu, M. Nguyen-Khac). In the framework of (conventional) vertical FDI multinational (MNCs) produce intermediate goods to be exported back to the investor country or other countries for the assembly of final products. In the case of export-oriented FDI multinational corporations produce finished goods to serve end users in third countries. For example, Samsung's representative office in Vietnam is the country's largest exporter (18% of exports); Intel's production in Vietnam provides up to 4/5 of the world's volume of semiconductor chips [6, pp. 2-23]. In the structure of sales of foreign FDI affiliates of Japanese MNCs, exports to third countries (excluding the country of localization) comprise 36.1% (for comparison: exports to Japan – 9.4%) [3, p. 24]. It is noted that developing countries often position themselves as "export platforms" [7, p. 29]. So, as A.J. Hagan and J.C. Rogers emphasize, in the 20th century, during the period of active industrialization, Asian economies chose a model based on the promotion of exports. The primary criterion for the choice of foreign investments was their ability to organize exports [8]. The example of Norway, Brazil and Kazakhstan is provided; their course of localization requirements is aimed at creating domestic technological leaders – a potential base for further development of the market that leads to exports, as well. Often, the purpose of localization requirements is to harness some training and innovation processes in order to facilitate the development of new products (including those with export potential) [9, p. 53]. Research works based on econometric analysis conclude that the presence of companies with foreign investments has a favorable relationship with the costs of local enterprises entering international markets [10, p. 115].

However, researchers note that localization has a number of disadvantages for the host economy:

– strong competition effect [7, p. 23]; for instance, T.T. Nguyen-Huu and M. Nguyen-Khac note that it was typical of foreign export-oriented firms in Vietnam in 2000–2012 [6, p. 23], and this effect even exceeded the effect of direct demand for local resources);

– price increase;

– in some cases, foreign producers move only low- and medium-tech production to the host country, while high-tech links remain in the investor country [11, p. 5]. Thus, the analysis on the example of ECOWAS relations with the EU shows that the multinational presence in the ECOWAS region corresponds to an increase in exports (from ECOWAS to the EU) of primary sector goods, a decrease in exports of intermediate goods and has no effect on exports of finished goods [12, p. 128]. In addition, the difficulties of localization also include the fact that foreign companies require their usual level of management, developed service of their products and its proximity to the places of operation [13, p. 188].

Nevertheless, we should pay attention to the positive effects. Thus, in the case of the food industry (2018), we note that the strategies of foreign MNCs in Russia are characterized by great flexibility, which gave them the opportunity to reduce the undesirable impact of sanctions on them; and direct their procurement policy toward the development of local production [14, p. 42]. In general, the processing industries of foreign and joint property have a positive trend of increasing the level of localization [15, p. 53].

Table 2. Distribution of special investment contracts with the participation of localized foreign production, broken down by types of industry

Production of machines: – combines, tractors – metal-cutting machines	Production of vehicles: – automobiles (2) – trucks (2) – light motor vehicles (2)
Production of equipment: – pump installation – components for aircraft industry – components for wind power (2)	Pharmaceutical industry: – medicines for the treatment of cardiovascular, cancer and other diseases – innovative insulin
Compiled with the use of the source: List of special investment contracts. Ministry of Industry and Trade. 17.11.2018. available at: http://minpromtorg.gov.ru/ (accessed: 29.1.2019); websites of companies; press releases in the media.	

Thus, localization of production from abroad is very common. Both investing and receiving countries have motives for it. We can identify several trends in localization process with different motives and directions. An important point is the export orientation of FDI. At the same time, localization entails both positive effects and risks for the host economy. In total, the positive effects appear insufficiently studied; there is no systematic representation in this regard.

Localization in Russia: institutional environment

In the context of global challenges (recession of the world economy, global technological and economic competition, increased protectionism), the Russian economy finds itself in difficult conditions: it has to optimize participation in the international division of labor, in particular, reduce import dependence, technical and technological backwardness, develop production, including diversified production, provide export guarantees, create new jobs and increase budget revenues. Under these conditions, the policy of import substitution and promotion of non-commodity exports was chosen.

In terms of the conditions for attracting foreign production potential, the Russian economy is attractive for developed countries (costs are lower), although it may be inferior to neighboring economies: for example, China, where the cost of labor is low; Kazakhstan, where VAT is lower; Belarus, which is geographically closer to the European market. But still foreign companies are stimulated by the desire to maintain their position in the large and developed Russian market in the conditions of reducing Russian imports from developed countries.

One of the state tools to promote localization for large projects is a special investment contract (SPIC, No. 488-FZ of December 31, 2014 "On industrial policy in the Russian Federation"), which provides that an investor who invests a sufficient amount of funding in the organization of production, supports it for a certain period and receiving in return benefits (preferences) and a guarantee of stability. At present, Russia has already concluded almost a dozen SPICs with companies with foreign participation *(Tab. 2)*. Conceptually, SPIC is a tool to promote export activities [16, p. 75].

SPICs are concluded by companies from G7 countries (Germany, Japan, UK, France, USA) and other developed European countries (Denmark, Spain), as well as the Republic of Korea.

Naturally, localization requirements create limiting conditions for the presence of foreign companies in the Russian market. According to foreign companies, it is not easy to find suppliers of the necessary quality components

in the required quantity due to the fact that foreign manufacturers have their own specific models of components. For example, in 2017, Schaeffler – the world's leading supplier of systems for industry and automotive equipment – considered the possibility of cooperation with 700 local (Russian) suppliers, but only a small part of them could meet the requirements for the company's plant in Ulyanovsk[3]. Besides, enterprises are not always able to find funds for investments in such amounts as are necessary for SPIC. At the same time, it was decided to optimize the SPIC tool: on the one hand, to strengthen the selection criteria (to increase the validity period and the required minimum investment), on the other hand to increase benefits[4]. However, these requirements serve to protect domestic producers from excessive competition. Naturally, localization forms of a smaller scale also contribute to import substitution (for example, A.M. Volkov gives a number of examples from the Nordic countries [17].

According to the opinion of representatives of Russian "engineering" representative offices of German companies in the Sverdlovsk Oblast (voiced at the 2018 conference on Russian-German economic cooperation), the potential for development of Russian-German industrial cooperation lies in the presentation of investment needs and advantages of Russian territories and in the constructive presentation of the opportunities of German business in the part related to the provision of capital, relevant technologies to interested Russian companies and training their employees. According to scientific literature, clearly defined criteria for localization can be one of the incentives for foreign companies to participate in the localization of production in Russia [18, p. 30].

As shown by the review and analysis of cases of export-oriented localization of foreign production, the products they produce in Russia are more often sent to neighboring countries, primarily to partner countries in the Customs Union; this fact indicates the positive impact of the removal (reduction) of trade barriers and harmonization of infrastructure and customs and economic regulation within the EAEU. As noted by representatives of Russian divisions of foreign companies, it helps optimize business and commodity flows[5].

The places for localization of foreign production are often focused on the availability of sites with complete infrastructure for the location of production. Thus, the production of Mercedes-Benz is created in the Industrial Park "Esipovo" (Moscow Oblast) [19, p. 87], the German company WIKA opened the production of metrological equipment in the Industrial Park "Indigo" in 2017 (minpromtorg.gov.ru. 27.09.17), BMW plans to carry out localization of production in an industrial park with the use of privileges of the special economic zone in the Kaliningrad Oblast (*Rossiiskaya gazeta*, 15.02.18). Twelve industrial parks and one SEZ were established in the Kaluga Oblast; this fact, together with the establishment of agencies and funds to attract foreign and Russian investors was an important factor in attracting foreign companies and contributed to the adaptation of the cluster model (a cluster of automotive industry, a cluster of pharmaceuticals and biotechnology were established) [20, pp. 82-85]). In the Sverdlovsk Oblast, where production cooperation with German companies is represented actively, the companies Uralchimplast and Huettenes-

[3] *Rossiiskaya gazeta*. 23.5.2018 (Special no.110).

[4] *Vedomosti*. 19.12.17. Available at: https://www.vedomosti.ru/auto/articles/2018/02/15/751031-bmw-zavoda-rossii (accessed 10.10.18).

[5] Reiter T. Fast, profitable, reliable (interviews with Emerson, Danfoss, etc.) *Promyshlenno-stroitel'noe obozrenie,* 2015, no. 165. Available at: http://stroypuls.ru/pso/2015/165-iyul-2015/96357/ (accessed: 25.3.2019).

Albertus Chemische Werke GmbH carried out the localization of joint production of non-stick coating for the foundry industry of the companies in the Chemical Park "Tagil" in 2016 (mvs.midrual.ru, 20.07.2017). The choice of special supporting infrastructure demonstrates the effectiveness of its incentives. Geographically export-oriented localized foreign production covers a number of Russian regions; this fact indicates a certain distribution of production attractiveness among the Russian territories.

Assessing the contribution of localization to the development of the Russian production and export base

It is important to consider what effects the localization of foreign production brings, including the effects for Russian exports; i.e. whether this localization of foreign production in Russia is to some extent export-oriented. The *Figure* shows a model of possible effects arising in the course of response to global challenges in terms of promoting localization. For the purposes of the analysis, we took the rating of major Russian companies in terms of sales (the rating was built by the analytical center "Expert") for 2017; the rating takes into account the representative offices of foreign companies. Since the subject of the study is export-oriented localization, then we chose the following companies from the rating:

– foreign companies that have representative offices in Russia;

– those that have not only sales, but also production offices;

– those carrying out or planning to carry out export (from Russia) of the production made in Russia .

Let us consider the effects highlighted in the Figure in more detail.

Quantitative effects:

1. Investment (growth of investments) in the manufacturing industry, since production localization often refers to this industry. Thus, the total investment broken down by SPICs concluded with foreign companies, presented on the website of the Ministry of Industry and Trade (minpromtorg.gov.ru) (all SPICs from Table 2, excluding two SPICs for the production of motor vehicles, for which there is no data), account for 3.9% of total investment in fixed assets in manufacturing in Russia as a whole[6].

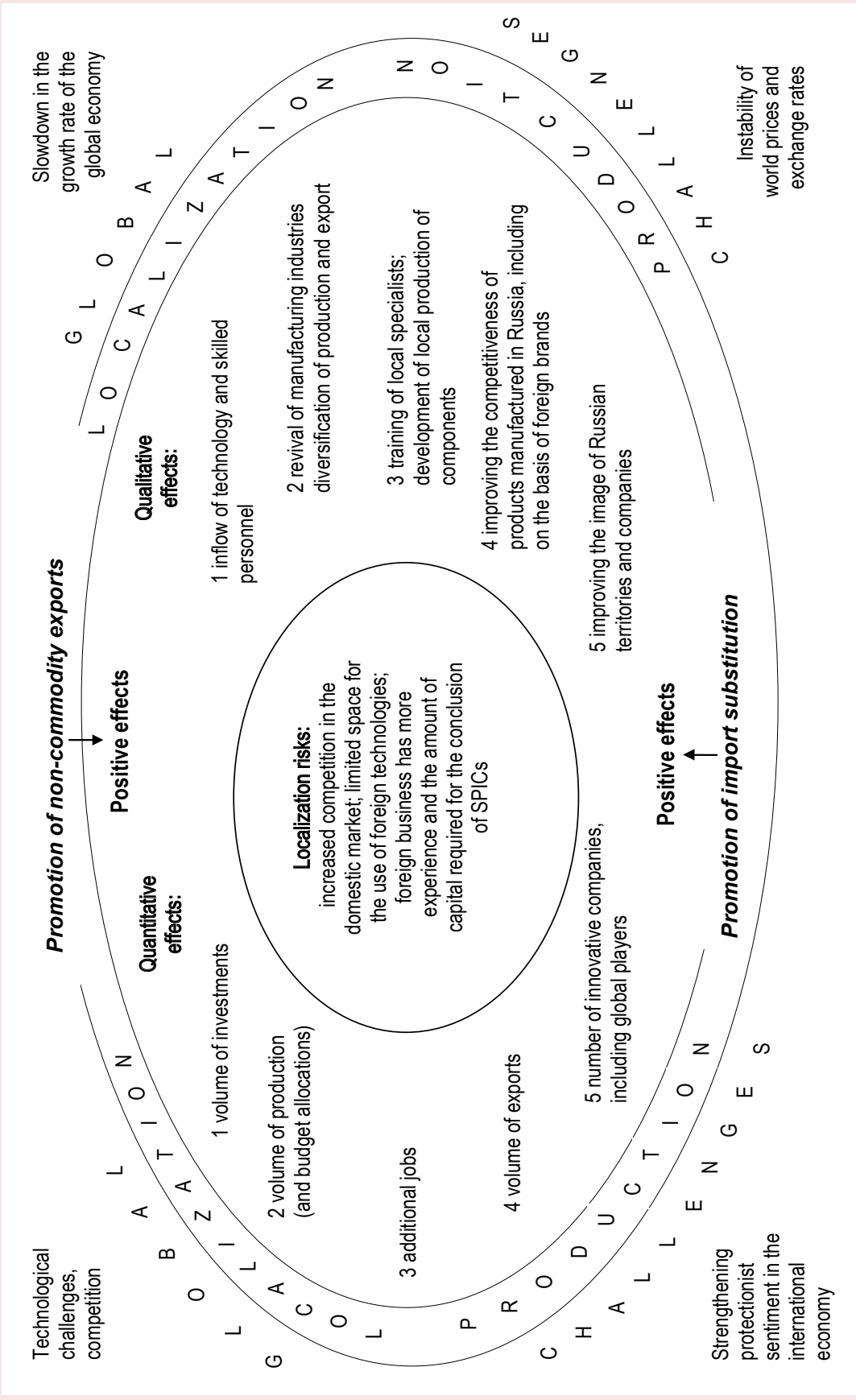
2. Investments contribute to the development of production output. Analysis of the companies shows that in the rating of 400 major companies in Russia in terms of sales ("Expert-400")[7], there are about fifty (58) representative offices of foreign companies. Among these companies, about three dozen (32 companies for which there is information in the media about the presence of production offices in Russia and about their exports; the information on exports from Russia for companies in the rating was taken from Internet press releases: from newspapers, websites of companies and authorities, and information agencies) carried out or considered the option of localization, which also involves exports, or 8.3% of their total number. The calculation according to the data of "Expert-400" shows that the representative offices of these companies provide 4.4% of the total sales of products of all companies in the rating. Revenues to the budget are provided accordingly.

3. These industries create additional jobs. Data on the number of employees in the representative offices of these companies in the rating are given only for four cases: in three cases (production representative offices) it is an average of 3.4 thousand people; in the case of a

[6] Calculated with the use of: *Regions of Russia. Socio-Economic Indicators. 2018.* Rosstat. Moscow, 2018. Table. 11.7.

[7] Expert-400. Rating of the largest companies in Russia as of the end of 2017. AC "Expert". 29.10.2018. Available at: http://www.acexpert.ru/table/2018/ekspert-400/?table=27880 (accessed 1.2.2019).

A model of possible effects of localization of foreign production in the host countries



trade representative office, it is significantly (in 2.5 times) higher than the average rating (while (according to the company's website) half of its products sold in Russia is produced in Russia).

4. Thus, the conditions under which foreign companies find it more profitable to move production to Russia than to import goods into it also stimulate exports from Russia: more than half of the foreign companies the representative offices of which were included in the rating and which have (or organize) production in Russia with the participation of foreign technologies, carried out exports exported from Russia or were going to do it. Some of these companies (7) are among the top 200 largest exporters in Russia[8].

According to the review of media sources, some of the companies represented in the "Expert-400" are still planning to export from Russia or have started to export in recent years: for example, KIA, Samsung (washing machines), Hyundai (SPIC), Sanofi (SPIC), Sony Electronics (krasnews.com. 10.02.2015; websites of the companies; vestifinance.ru. 25.12.2018; *Rossiiskaya gazeta Special*, no. 110, 23.05.2018.; *Kommersant.* 29.08.2016). Some companies have already established exports: for example, Nokian Tyres, Procter&Gamble, Volkswagen, Toyota) (*Vedomosti.* 19.10.2017; *TASS*. 01.06.2017; *Rossiiskaya gazeta*. 20.7.2018; *Vedomosti*. 19.10.2017). Some companies are planning to increase exports. For instance, KAMAZ planned (in 2017) to triple exports in the course of five years; it was assumed that 1/2 of the deliveries will be trucks with Mercedes-Benz cabins and components (*Vedomosti*. 17.07.2017); etc. *(see Insert)*.

SPICs, foreign companies – the contractors which are not in the top 400, also for the most part provide for an opportunity to carry out export deliveries (for example, with Mazda-Sollers, VILO RUS, Hamilton-Nauka, Isuzu Sollers, for the construction of Ulyanovsk machine-tool plant, for the production of components for wind power (jointly with Vestas), etc.), or they are already carrying out exports (with Claas) (*TASS*. 03.09.2016; *Kommersant*. 19.07.2018 (no. 126); ulgov.ru. 30.09.2016; *Kommersant (Samara)*. 20.02.2018. (no. 31); minpromtorg.gov.ru. 13.10.2017; websites of the companies) (see Insert).

It should be noted that the planned adjustment of the SPIC tool, version SPIC 2.0, in addition to increasing the lower threshold of investment and provision of subsidies, guarantees and benefits and increasing the duration of contracts as well as expansion of the list of industries, differs from the previous version in one more aspect: it gives investors a preference in their shipment of part of the products (not less than 15%) for export (*Expert Online*. 22.6.2018). This corresponds to the Decree of the President of the Russian Federation "On national goals and strategic objectives of the Russian Federation for the period up to 2024" dated May 7, 2018 No. 204, which sets the task of creating a high-performance export-oriented sector, primarily in the manufacturing industry and agriculture. According to V.S. Osmakov, Deputy Minister of Industry and Trade, exports currently serve as a key criterion for the competitiveness of projects (*Kommersant,* no. 237, 20.12.201, p. 9). If we take the share of 15% as a hypothetical benchmark for assessing the possible exports of companies from the Rating-400, potentially related to export-oriented localization, then their total exports, taking into account the production volume given in the rating, according to our calculations, could amount to 2.4% of all-Russian exports. And these are products of the manufacturing industry.

[8] Rating of the largest exporters of Russia as of 2017. AC "Expert". Available at: http://expert.ru/dossier/story/rating200/ (accessed: 25.03.19).

Examples of obtained and possible positive effects from localization (production output, innovation, export, jobs)

Daimler (including Mercedes-Benz) (SPIC): for a full cycle production to be established in the Moscow Oblast, it was assumed that the planned capacity would be 20 thousand cars (and about a thousand jobs), for the joint production of cabins with KAMAZ (of the most modern generation) – up to 55 thousand cabins (part of them is supposed to be used for export);

Hyundai: the plant in Saint Petersburg has more than two thousand jobs and the capacity of 200 thousand vehicles (SPIC assumes the export of 1/10);

AvtoVAZ (with the participation of Renault): in 2016 shipped 17.3 thousand cars and vehicle sets abroad;

Isuzu-Sollers (SPIC): it is planned to launch a production with the capacity of 47.5 thousand vehicles. The new medium-duty truck, according to experts, will also be exported;

Toyota (branch in Russia): the design production capacity was increased to 100 thousand vehicles by 2016. Export to Kazakhstan has been carried out since 2012. Deliveries to Kazakhstan and Belarus increased by 70% in eight months of 2017.

Nokian Tyres (branch in Russia): 2/3 of the products are exported;

SPICs on the organization of production of machine tools (with "DMG MORI") and wind power plants (with Vestas) assume exports of a certain share of production;

Claas (combines and tractors, SPIC): most of the components are supplied to Germany, and some combines – to the CIS;

Procter&Gamble (branch in Russia): about 1/4 of the products produced at a plant in the Tula Oblast are exported;

Samsung Electronics (branch in Russia) started exporting washing machines to Europe (20 countries) in 2016;

In general, Russia ranked 8th in the export of washing machines in 2015;

In the exports of cigarettes, localized production accounted for 3/4 in the 1st half of 2015.

Source: Internet press releases from newspapers, websites of represented companies and authorities, news agencies (REGNUM. 20.06.2017; Vestifinance.ru. 25.12.2018; *Vedomosti*. 15.08.2017, 19.10.2017, 26.08.2015; *Kommersant*. 24.05.2018, 19.07.2018 (no. 126); *Kommersant* (Samara). 20.02.2018 (no. 31), 29.05.2018 (no. 91); ulgov.ru. 30.9.2016; *TASS*. 1.6.2017; *Rossiiskaya gazeta*. 24.11.2016).

Table 3. Imports of goods (selectively), for which localized productions are established, basic dynamics (for 2013, according to value), times

Commodity group	2014	2015	2016	2017
Television receivers	0.83	0.41	0.35	0.48
Cars	0.77	0.38	0.36	0.39
Pumps and compressors	0.84	0.55	0.32	0.44
Railway rolling stock	0.57	0.14	0.13	0.20
Calculated with the use of the source: *Russian Statistics Yearbook*. Rosstat. 2018. Tab. 25.19; 2016. Tab. 26.22.				

Table 4. Growth of industries (selectively), for which there is localization, after the recession of 2014–2015, basic dynamics (by 2013, according to value), times*

Commodity group	2014	2015	2016	2017
Tractors	0.88	0.72	0.83	0.96
Cars	0.88	0.63	0.58	0.70
Trucks	0.74	0.62	0.67	0.79
Combine harvesters	0.95	0.76	1.05	1.31
Washing machines	1.00	0.90	1.03	1.15
* For reference: for washing machines, the value as of 2012 – 0.87 – is also significant. Calculation source: *Russian Statistics Yearbook*. Rosstat. 2018. Tab. 16.36-38; 2016. Tab. 14.47-49.				

Qualitative effects:

1. Foreign companies that localize their production in Russia provide an inflow of technologies and highly qualified specialists as carriers of relevant skills. Thus, this applies to the cases of SPIC that involve the development of production that have no analogues in Russia, such as pharmaceutical products (Sanofi-Aventis: the first production of full-cycle insulin), and wind energy (Vestas and VINDAR-RUS) (minpromtorg.gov.ru. 17.11.2018).

2. The cases of localization, promoting import substitution, contribute to the revival of Russian manufacturing industries and, thus, to the improvement of the sectoral structure of production and exports (diversification and increase in the degree of processing). Almost all foreign companies that are engaged in the localization, carry out exports or plan to do it and that are included in the Expert-400 Rating and Expert-200 (exports) Rating refer to the manufacturing industry; in 5 cases the share of non-commodities export is almost 100%, The branches include the automotive industry (KIA, Hyundai, Renault, Nissan, BMW, Volvo, Toyota, Volkswagen, Mercedes-Benz), manufacture of machinery and equipment, including electronics (Siemens, LG Electronics, Samsung Electronics, Sony Electronics), tobacco industry, household chemicals (Procter&Gamble, Henkel), pharmaceuticals (Sanofi), production of tyres (Nokian Tyres), cosmetics and perfumes (L'Oreal and L'Etoile); food industry (Nestle, Danon), seed industry (Syngenta), packaging (Tetra Pak), household goods (IKEA, Leroy Merlin). Many of these companies use advanced (innovative) technologies.

SPICs with foreign companies *(Tab. 2)*, which were concluded since 2016, contribute to the creation and/or modernization of those productions that are designed to solve the problem of import substitution due to a decrease in their volumes: for instance, in 2015, the output of tractors was 1.5 times lower than in 2005, the output of metal-cutting machines – 1.9 times lower than in 2002[9], etc. For a number of goods for which localized production was created, imports have decreased since 2015 *(Tab. 3)*. At the same time, for a number of goods for which localized production was created, output has been growing, recovering from the recession of 2014–2015 *(Tab. 4)*.

3. Positive impact of localization consists in the fact that, taking into account the requirements for localization, foreign enterprises are interested in the establishment and development of Russian component production and in the training of local technical and engineering specialists. For example, pilot projects have been launched to connect Russian small and medium-sized enterprises (SMEs) to the supply chains of German corporations, in particular VILO RUS and GEA Refrigeration RUS (equipment for the energy and oil and gas industries). This enables SMEs to benefit from the "dividends" of the success factors of large international business [21, p. 908].

4. Participation of foreign technologies and internationally recognized and widely known brands increases the competitiveness of products produced in Russia with their use and facilitates Russia's entry in the world market. For example, Renault played an important role in the export success of AvtoVAZ (*Vedomosti*. 15.08.2017) (see Insert). With global brands, localized foreign productions often have a significant share in Russian exports in the corresponding position, for example, washing machines, cigarettes (*Rossiiskaya gazeta*. 24.11.16; *Vedomosti*. 26.8.2015) (see Insert).

[9] *Russian Statistics Yearbook. 2010–2018.* Moscow: Rosstat, 2010–2018. Chapter: "Mining and processing industries...".

5. Russian companies that are involved in the value chains of foreign localized production get an opportunity to hire specialists who have gained experience in such industries; thus the companies themselves improve their skills and image. The image of the region that hosts localized production is also improving.

Risks. However, it should be noted that there exist both external and internal risks. Thus, the unfavorable foreign economic climate of Russia, associated with the introduction of sanctions by foreign countries, has an adverse impact on localization. This limits the possibility of attracting technology and investment, and industrial cooperation opportunities, as well. In addition, the area in which foreign technologies are used is limited to specific localizing industries and thus the spread of the modernization effect is limited. As noted in the literature, foreign companies in Russia were in no hurry to invest in the expansion of production, in the creation of a network of research centers and in the development of a network of companies that supply components for the automotive industry. One of the reasons consists in the low output per model. For example, if in China and Brazil the output is 60 thousand units, then in Russia – 27 thousand units [1, pp. 64-65]). In addition, part of the value added effect goes to foreign companies. Therefore, despite the importance of localization, it is still relevant to implement domestic entrepreneurial and managerial potential, capital and technology.

Also, as it was noted in the analysis of the theoretical foundations of localization, domestic producers can find themselves in a situation of increased competition [7, p. 23; 6, p. 23]; in such a situation, the costs and self-costs of foreign companies are reduced, they obtain a national status for their products, and the quality standards of their products are higher and their brands are more famous, which allows foreign investors to claim a certain share of the market in the host country. In addition, given the presence of large companies abroad and the high exchange rate, foreign business is more likely to enter into SPICs and obtain guarantees and preferences from the government. Although Russian business also enjoys preferential targeted lending and special conditions in technology parks and special economic zones, the development of large companies-leaders in the high-tech sector, including leading global players, remains an urgent task.

Conclusion

Thus, the localization strategy at different stages of global economic development has different motivation. If under the influence of intensive internationalization (from the second half of the 20th century) the motive consisted in the need of host developing countries for investment and technology and the desire of developed countries to obtain raw materials and labor at low costs, then at the stage of the current global recession, developed countries are seeking to return the withdrawn productions against the background of new technologies. In Russia, localization began to spread, on the one hand, due to the desire of MNCs to maintain their positions in the markets in an economic recession, on the other hand, under the impact of domestic government measures for import substitution (for example, SPIC). The development of export by localized companies is stimulated by measures of the host economy aimed to develop non-commodity exports.

In Russia, SPIC acts as an important incentive tool and one of the largest forms of localization of foreign production and provides for the fact that the investor, who gives obligations, including export obligations, receives benefits and a guarantee of stability. Investors are also attracted to sites with ready

infrastructure, in particular industrial parks and SEZs, where benefits are provided. According to the analysis of the SPICs, the rating of major Russian companies that takes into account the representation of foreign companies, and information from the press, we see that in the conditions of stimulating import substitution and supporting non-commodity exports, examples of localization are also cases of export-oriented import substitution.

At the same time, localization has a number of positive effects. The quantitative effects are as follows: growing investments and tax revenues, production and export volumes; creating new jobs. The qualitative effects include the inflow of technologies and specialists, import substitution, contribution to the revival of the Russian manufacturing industry, improvement of the sectoral structure of production and export, training of local specialists, development of local production of components, increasing the competitiveness of products produced in Russia, improvement of the image of Russian territories and participating Russian companies.

At the same time, there are certain restrictions on obtaining positive effects and risks associated with an unfavorable external economic climate, limited distribution of the modernization effect and obtaining the effect of value added, as well as competition for domestic producers. The issue concerning the development of national Russian companies on the basis of the implementation of domestic entrepreneurial and managerial potential, capital and technology remains relevant.

Thus, in theoretical terms, the contribution consists in the development of theoretical provisions substantiating the motives for the use of the strategy for localization of foreign production by the host economies at various stages of world economic development from the middle of the 20th century to the present, as well as in the systematization of the effects obtained by the country in the process of localization, and their assessment on the example of Russia. In practical terms, the results can be used in assessing the effects of localization at different levels: federal, regional levels and the level of individual projects.

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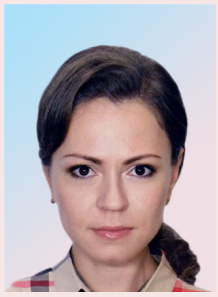
Strategic Classification of Regions According to the Level of Financial Self-Sufficiency



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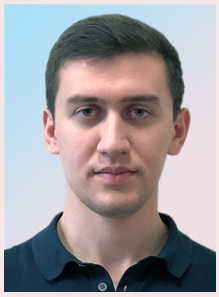

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Abstract. In the context of highly uneven regional development, subnational and federal governments are facing an extremely important task of elaborating and implementing the strategy for development of Russia's constituent entities. In this regard the research on financial self-sufficiency of regions as a driver of resource security of strategic development becomes an urgent issue. The goals of our study include building a typology of regions according to the level of financial self-sufficiency and identifying strategizing features for individual groups of regions. Cluster analysis, principal component analysis and panel data analysis are used to achieve the goals. In order to build sustainable groups, we form a system of 18 indicators of financial self-sufficiency of regions; we carry out cluster analysis on its basis; after that, we identify three groups of regions: leaders, average performers, and outsiders. This classification of regions can be considered stable, since the composition of the groups has not changed over time. We carry out the principal component analysis using our set of indicators of financial self-sufficiency and

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identify three generalizing factors that characterize the budgetary security of the regions, the potential of regional and municipal taxes, and the tax burden on the economy. We carry out modeling with the use of panel regression and analyze the influence of each factor on financial self-sufficiency in each group of regions. The resulting classification has significant scientific prospects regarding the formation of a general strategizing methodology for regions with different levels of financial self-sufficiency. The strategic classification can be used by regional authorities to form regional and sectoral development strategies.

Key words: region, strategy, classification, budget security, financial independence, regional development.

Introduction

Regional development in a federal state is very specific and multifaceted issue. Each region is a system with a set of unique features: geographical location, climatic conditions, availability of natural, human and institutional resources. Thus, it is quite natural that regions differ in terms of socio-economic development and, accordingly, the distribution of economic growth factors in them is uneven. Differentiation of socio-economic development in regions causes their difference in the level of financial self-sufficiency. In the framework of the formation of the development strategy, the level of financial self-sufficiency is a determining indicator of resource security in a region. This indicator determines the overall development of a territorial entity; therefore, in accordance with the level of budgetary security, it is possible to apply certain approaches to the development of the strategy in the regions. Consequently, studying the level of financial self-sufficiency and the importance of this factor in the formation of regional development strategies is an important research area.

The goal of the present study is to build sustainable groups of regions according to the level of their financial self-sufficiency and to identify the features of strategizing in them.

Within the framework of this goal, we formulate the following major objectives of our study:

1) to analyze approaches to the definition of financial self-sufficiency of the region;

2) to create a system of statistical indicators to assess financial self-sufficiency;

3) to analyze the dynamics of main indicators of financial self-sufficiency in federal districts and in Russia as a whole;

4) to classify the regions according to the level of financial self-sufficiency and to check the stability of the groups in time;

5) to determine the reasons for the current level of financial self-sufficiency using principal component analysis and panel data regression.

Novelty of the study consists in the development of a methodology for identifying the features of strategizing for regions with different levels of financial self-sufficiency; this will help substantiate current fiscal policy in Russia's regions in order to improve their fiscal capacity and economic security.

Achieving financial self-sufficiency of individual constituent entities is an important task for a federal state; this task is implemented through a competent fiscal policy and effective intergovernmental fiscal relations. Theoretical foundations for increasing the efficiency of interaction of budgets of different levels are analyzed in the framework of fiscal federalism that represents a vertical hierarchy of the public sector, distribution of income and expenditure between different levels of government (federal, regional, municipal) and the system

of intergovernmental transfers [1]. Scientific works link the achievement of financial self-sufficiency to fiscal decentralization – one of the main principles of fiscal federalism [2]. Classical theories of fiscal federalism highlight a number of advantages of a decentralized management system. Martinez-Vazquez and McNab [3], Oates [4], Thiessen [5], Musgrave [6] highlight an opportunity to improve the efficiency of provision of public goods as the key argument in favor of decentralization. Another advantage of fiscal decentralization is the increase in horizontal and vertical fiscal competition, which in turn can limit the size of the public sector and its predatory incentives [7]. In addition, in the presence of strong democratic institutions (transparent elections, the rule of law, and an effective parliamentary system), fiscal decentralization can improve the accountability of regional authorities and enhance the quality of administration [8]. Organizations such as the World Bank encourage decentralization as an important administration reform [9]. However, under certain conditions, fiscal decentralization can have a negative effect [10]. Excessive decentralization can lead to greater inequality in the socio-economic development of regions, because competitive advantages are distributed unevenly form the start, and because initially strong regions accumulate significant wealth. Therefore, the absence of a centralized equalizing policy can lead poor regions to bankruptcy [11]. Therefore, achieving financial self-sufficiency should be backed by strategic development that takes into account national and regional values, interests and priorities [12] and ensures effective interaction between federal and subnational governments.

Financial potential plays an important role in assessing financial self-sufficiency of a region [13]. This indicator is often used for assessing the investment attractiveness of a region. In particular, such a method for assessing the investment potential is used by Expert-RA rating agency. In the methodology for assessing investment attractiveness of a region, financial potential characterizes the volume of the tax base, profitability of enterprises, and people's incomes [13]. Having reviewed domestic scientific works, we distinguish a number of definitions of financial potential of a region. For example, V.N. Leksin and A.N. Shvetsov define financial potential as the total capacity of the region's own financial resources [15]. This definition characterizes the region's finances as a resource for development, but does not reveal in detail the components of the indicator. According to A.G. Atayev, financial potential is "total financial opportunities that are converted into financial resources"[1]. Y.A. Bulatova defines financial potential as a resource base for the implementation of regional development strategy: "It is a set of financial resources accumulated, attracted and formed as a result of economic activity; these resources are at the disposal of economic agents and promote the achievement of strategic goals of socio-economic development of the region" [16].

Research methodology

To achieve the goals and objectives of the study, we used various methods of analysis such as cluster analysis, principal component analysis (hereinafter –PCA), and panel data analysis.

We used cluster analysis to implement the main idea, i.e. to build stable groups of regions.

Cluster analysis is used in historical, marketing, medical, philological, and economic

[1] Ataeva A.G. *Mekhanizm formirovaniya finansovoi samostoyatel'nosti munitsipal'nykh obrazovanii: dis. ... kand. ekon. nauk : 08.00.10. 2011* [The Mechanism to Form Financial Self-Sufficiency of Municipalities: Candidate of Sciences (Economics) Dissertation]. 411 p.

research. The popularity of cluster analysis methods in economic research is due to the strengthening of differentiation processes in socio-economic development, and also due to the interdependence of political and economic processes.

Having reviewed Russian scientific works, we prove that the methods we use are effective and the results we obtain are substantiated [17].

Foreign researchers use cluster analysis methods extensively as well. A. Repkine [18] identifies clusters of Asian countries on the basis of a set of economic indicators. F. Krontaler groups German regions into clusters and determines their level of economic potential [19].

Cluster analysis is a method of classification analysis. The main purpose of this method is to arrange a set of objects into homogeneous groups (clusters). Within each cluster, there should be "similar" objects, and the objects of other clusters should be as distinct as possible. The advantage of cluster analysis is that it allows us to group the objects according to a number of features, rather than a single feature.

The sustainability of the typological groups of regions implies that their composition remains the same over time. In our study, the clustering of regions was carried out in the period from 2008 to 2015.

In order to work out recommendations related to the strategy for development of each group of regions, it is necessary to find out the reasons for the corresponding level of financial self-sufficiency. Thus, with the help of the principal component analysis, the space of financial self-sufficiency factors under consideration can be narrowed down to a small number of generalizing factors.

"The principal components are new auxiliary variables whose values are linear combinations of the initial variables, and these values are calculated after the principal component analysis has been conducted"[2]. The principal components are interpreted according to the following scheme: the direction of the impact of variables on the increase in the values of latent factors is determined [20].

During the final stage of the analysis, panel regression on the main components is constructed. Panel data (hereinafter – PD) are two-dimensional arrays. One of the dimensions is "spatial", by economic units (i=1,...N), the other is time dimension (t=1,...T). PD have two indices (i, t), where the index i refers to the same economic unit [21].

PD have an important advantage over, for example, a single time series or a single sample. It consists in the fact that "panel data take into account and analyze individual differences between sample units; in particular, they explain why a particular sample unit behaves differently at different time intervals" [22].

PD allow us to obtain more effective assessments. This is possible because PD is characterized by a large number of observations, which increases the number of degrees of freedom and reduces the multicollinearity of factors by taking into account individual differences [23, 24].

As a result, we obtained the values of principal components for each region for the analyzed time period of 2008–2015 within each cluster and constructed a panel regression. We use the indicator "Ratio of gratuitous receipts to own income" as a dependent variable; it fully characterizes the level of financial self-sufficiency.

[2] Bulatova Yu.I. Financial capacity of the region: content and structures. *Vestnik Sankt-Peterburgskogo universiteta=Saint Petersburg University Bulletin,* 2010, no. 3, pp. 94-97. (In Russian).

Research results

1. Forming a system of indicators for the research.

In order to classify regions into stable typological groups, a system of indicators was proposed. It is based on the following assumptions: a key opportunity for the region to achieve financial self-sufficiency consists in the amount of financial capacity components in the region and the conditions conducive to enhancing financial capacity in the form of tax revenues. As a result, a system of indicators was formed, which includes 30 indicators (see *Appendix*).

We conducted a multicollinearity test and eliminated correlated variables (correlation coefficient is above 0.8); thus, the following indicators remain available:

– the share of tax revenues in the consolidated budget system (hereinafter – CBS) of the Russian Federation, in % (X1);

– the amount of subsidies to equalize budget security (hereinafter – SEBS) relative to tax revenues, in % (X2);

– the level of coverage of the costs of Russia's CBS by its tax revenues, in % (X3);

– the level of coverage of the costs of Russia's CBS by its gratuitous receipts (X4);

– the level of coverage of expenses of the consolidated budget by its tax and non-tax revenues, in % (X5);

– the ratio of gratuitous receipts to the income of Russia's CBS (X6);

– employment rate (X7);

– the share of overdue accounts payable (X8);

– the share of population with incomes below the subsistence level, in % (X9);

– the level of taxation of turnover of organizations (X10);

– the level of taxation of assets of organizations (X11);

– total regional tax burden, % of GRP (X12);

– tax burden of the stage of production – the share of "other taxes on production" in GRP (X13);

– potential of individual property tax (X14);

– potential of transport tax (X15);

– potential of land tax (X16);

– the number of small enterprises, including micro-enterprises (X17);

– the number of enterprises and organizations in the calendar year (X18).

This system of indicators allows us to analyze the strengths and weaknesses of Russia's constituent entities through interregional comparisons and monitoring for individual regions.

The study has revealed a high degree of regional differences in the indicators of financial self-sufficiency under consideration. To study the variation of the analyzed indicators we used mean and median values, variation coefficient, maximum and minimum values *(Tab. 1)*.

The national average level of coverage of the costs of Russia's CBS by its tax revenues as a whole is 61.4%. The variation coefficient equal to 28.2% reflects the degree of uniformity of the population under consideration. If the variation is greater than 33%, then the average value is considered fictitious and cannot be trusted. According to the indicator "Coverage of the costs of Russia's CBS by its gratuitous receipts", we note a high degree of heterogeneity of Russian regions; the variation coefficient amounted to 63.6% in 2015. The average value of 27.7% does not reflect the real national level in Russia, because there are regions that cover more than half of their expenses with the help of gratuitous receipts. Such regions include, first of all, those within the North Caucasian

Table 1. Degree of regional differences in the analyzed indicators of financial self-sufficiency

	Coverage of the costs of Russia's CBS by its tax revenues, in %	Coverage of the costs of Russia's CBS by its gratuitous receipts	Amount of SEBS relative to tax revenues, in %
Average value	61.4	27.7	29.2
Median	66.4	23.1	7.6
Variation coefficient	28.2	63.6	177.8
Maximum	96.5	82.5	251.6
Minimum	12.8	2.4	0
Source: own compilation.			

Federal District. The maximum value of the analyzed indicator – 82.5% – is observed in the Chechen Republic. The next indicator – the amount of SEBS relative to tax revenues – has the strongest variation, which is 177.8%. Such regions as the Moscow, Leningrad, Yaroslavl, Samara, Sverdlovsk, Tyumen, Sakhalin oblasts and the Republic of Tatarstan have a zero amount of SEBS. At the same time, Kamchatka Krai, the republics of Tuva, Dagestan, Ingushetia, and Karachay-Cherkess, Chechen and Altai republics have a very high amount of SEBS relative to taxes; it is more than 100%. The maximum value is 251.6% in the Republic of Tuva.

Next, let us analyze the dynamics of the main indicators of financial self-sufficiency. The share of tax revenues in Russia's CBS for 2008–2015 increased from 70.8 to 74.4% in Russia as a whole *(Fig. 1)*. At the same time, it should be noted that the minimum share of taxes in the revenues of Russia's CBS was observed in 2009 (63.64%), which is due to a sharp economic downturn caused by the global financial crisis.

The shares of tax revenues of CBS in the Ural and Central federal districts significantly exceed the national average – 80 and 84%, respectively. Since 2012, the share of tax revenues in the Northwestern Federal District increased from 74 to 79% and also exceeded the national average level.

The lowest share of tax revenues of CBS – 36% – is observed in the North Caucasian Federal District; it is more than two times lower than the national average.

The extent to which the expenses of Russia's CBS were covered by its tax revenues in 2008–2015 had unstable dynamics: it fell by 10% (from 70.18 to 60.28%) in the period after a recession in the crisis year of 2009; then there was an annual growth to the pre-crisis level (69.52%) till 2012; then – the next decline – to 67.75% in 2013 and after that – the subsequent growth (by 5.35%) to 73.1% in 2015 *(Fig. 2)*.

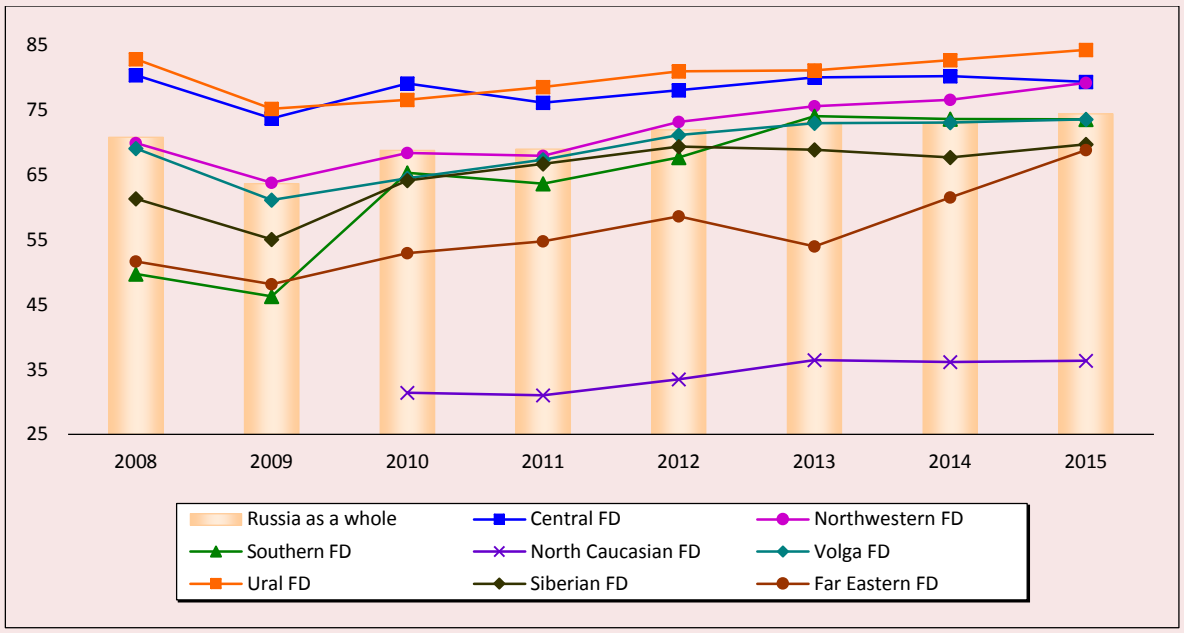
According to the data as of 2015, the highest coverage of expenses of CBS by its tax revenues is observed in the Central and Ural federal districts – 81.9 and 83.7%, respectively.

During 2008–2015, the financial stability of the Northwestern Federal District was significantly strengthened – the degree of coverage of expenses of its CBS by its tax revenues increased by 10% – from 67.93 to 78% – and exceeded the national average.

In the Southern Federal District, the extent of coverage of expenses of CBS by its tax revenues increased significantly. Having declined (by 7%) to a minimum (43.52%) in the crisis year of 2009, the coverage of expenses by tax revenues increased in subsequent years by 15% – to 68.2% in 2015.

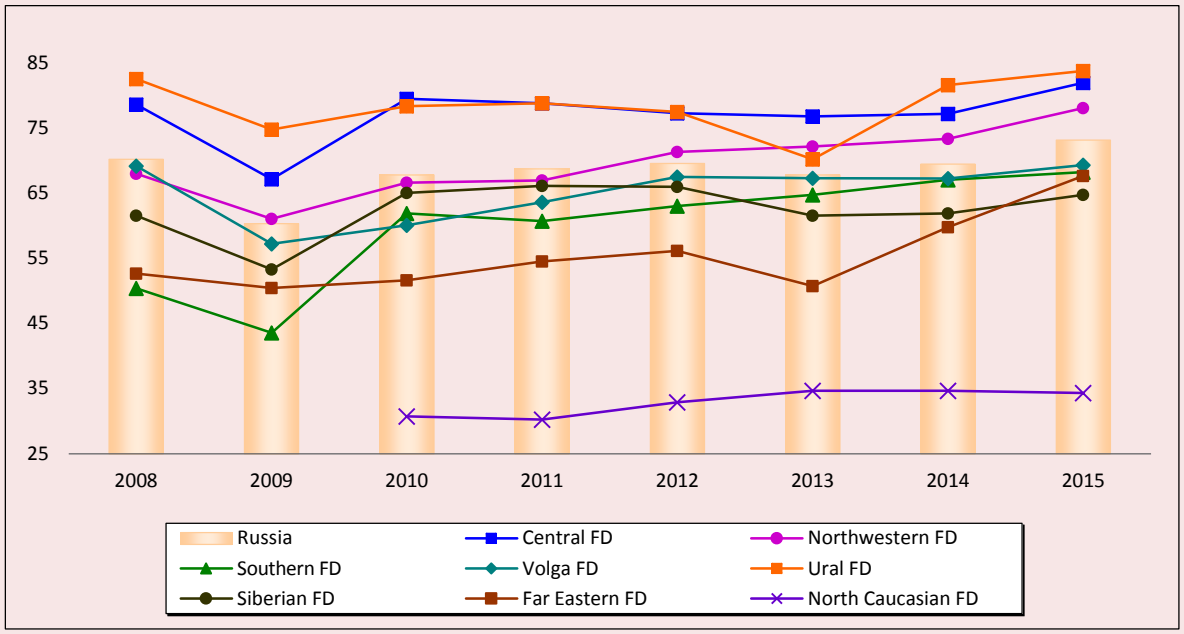
The coverage of expenses of CBS by tax revenues in the Siberian and Volga federal districts is slightly lower than the national average – 64.7% and 69.3% against 73%, respectively. It is only in 2015 that the Far Eastern Federal District joined this group of regions.

Figure 1. The share of tax revenues in Russia's CBS, %



Source: Treasury of the Russian Federation. Consolidated budgets of constituent entities of the Russian Federation and budgets of territorial state extra-budgetary funds. Available at: http://www.roskazna.ru/ispolnenie-byudzhetov/konsolidirovannye-byudzhety-subektov/

Figure 2. The extent of coverage of expenses of Russia's CBS by its tax revenues, %



Source: Treasury of the Russian Federation. Consolidated budgets of constituent entities of the Russian Federation and budgets of territorial state extra-budgetary funds. Available at: http://www.roskazna.ru/ispolnenie-byudzhetov/konsolidirovannye-byudzhety-subektov/

The degree of coverage of expenses of CBS by its tax revenues in the North Caucasus Federal District remains low. Despite the increase in this indicator from 30.74% in 2008 to 34.3% in 2015, this indicator is more than two times lower than the national average.

In 2008–2015, the extent of coverage of expenses of Russia's CBS by its tax and non-tax revenues increased from 78.59% to 80.44%, which led to a reduction in the level of coverage of CBS expenses by its gratuitous receipts from 19.25% to 17.75%, respectively.

The highest level of coverage of CBS expenses by tax and non-tax revenues is observed in the Central (91.64%), Ural (90.1%) and Northwestern (86.39%) federal districts. The level of coverage of CBS costs by gratuitous receipts in these regions is minimal: 11.59%, 9.21% and 12%, respectively.

About 3/4 of CBS expenses is covered by tax and non-tax revenues in the Volga, Far Eastern and Southern federal districts.

Significant progress in ensuring the financial sustainability of CBS took place in the Southern FD. The extent of covering the expenses of CBS by tax and non-tax revenues after the crisis year of 2009 increased 1.5-fold from 49.24% (minimum value) to 73.61% in 2015, while the dependence of CBS on gratuitous receipts decreased more than twofold – from 44.8% to 19.17%, respectively.

In the Siberian Federal District, significant changes in the level of coverage of CBS expenses by its tax and non-tax revenues, as well as gratuitous receipts, were observed in 2008–2015. The maximum level of coverage of expenses by gratuitous receipts corresponds to the crisis year of 2009 – 35.27%; in the same year, the minimum level of coverage of expenses by tax and non-tax revenues was observed – 60.51%.

More than half of expenses of CBS in the North Caucasian Federal District are covered by gratuitous receipts: in 2010–2015, the extent of coverage decreased from 62.54% to 56.77%. At the same time, the level of coverage of CBS expenses by tax and non-tax revenues increased from 35.28 to 37.45%.

Statistical analysis of financial self-sufficiency of the regions shows a high differentiation of the regions according to the indicators under consideration. In this regard, the approaches to the formation of development strategies for each region, depending on the level of financial and resource security should be different. Cluster analysis allows us to identify groups of regions with different levels of financial self-sufficiency.

2. Results of the cluster analysis.

To build sustainable groups, cluster analysis uses k-means clustering. In the framework of the first experiment on the formation of stable groups, we decided to divide the set of regions into three groups. The plot of k-means illustrates the mean values for the selected indicators within each cluster. It can be noted that when divided into three classes, the means have virtually no coincidence. However, in Figure 4, we can see that as the number of clusters to be split increases to four, the averages match. This indicates a fuzzy classification.

The cluster analysis was carried out in a system of 18 indicators characterizing the financial self-sufficiency of regions of the Russian Federation for the 2008–2015 period. Thus, according to the level of financial self-sufficiency, the regions are distributed as follows:

- leaders – the first cluster;
- average performers – the second cluster;
- outsiders – the third cluster.

Stable groups were formed during the cluster analysis. This means that the leaders, average performers and outsiders have maintained their level of financial self-sufficiency. The average percentage of discrepancy between the

Figure 3. Plot of means for each cluster taking into account the division into three groups

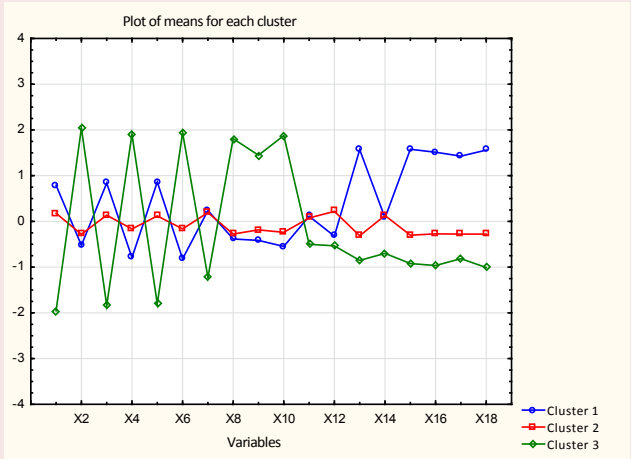
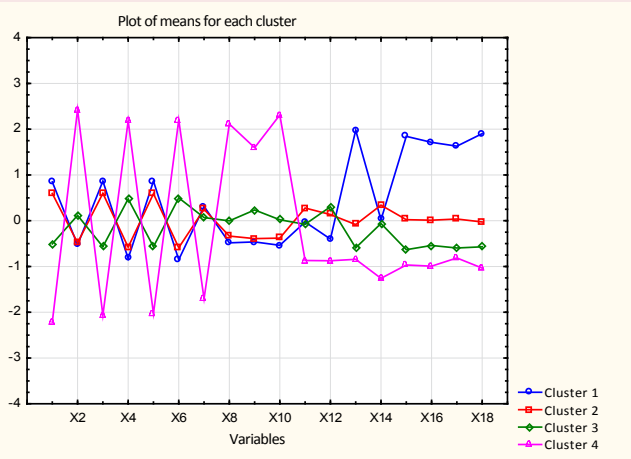


Figure 4. Plot of means for each cluster taking into account the division into four groups



classifications observed in 2008 and 2015 is 6.4%, which is an acceptable value in the formation of stable groups.

In the course of the comparative analysis of the discrepancy, we can distinguish a number of regions that have moved from one cluster to another. Thus, the Voronezh, Leningrad and Irkutsk oblasts moved from the second cluster to the first; the Republic of Adygea moved from the third cluster to the second. In the regions under consideration, there is a tendency toward improving the indicators of financial self-sufficiency, which certainly indicates the economic development of these regions. There are also examples of deterioration of the economic situation in the period under review: Kamchatka Krai moved from the second cluster to the third.

As a result of clustering using k-means clustering, we grouped the regions into three clusters according to the level of financial self-sufficiency. The first cluster includes 16 regions that belong to resource-based regions and traditionally developed economic centers. The regions in the first cluster are characterized by a high level of budget security and high financial self-sufficiency (X1-X6). For the regions under consideration, tax revenues are the main item in the structure of revenues of the consolidated budget of the subject of the Russian Federation (CBS) (X1) and account for an average of 77.6%. The dependence of the budgets of the constituent entities on the subsidies aimed at equalizing budget security (X2) is at a low level, which indicates the high financial self-sufficiency of the regional budgets. In turn, gratuitous receipts account for 15.5% (X6) of all revenues of Russia's CBS for the group under consideration, and they cover the expenses of Russia's CBS (X4) by 14.7%, which is primarily due to the implementation of economic and social development programs in the regions. The average level of coverage of expenses of the consolidated budget of the region by tax and non-tax revenues (X5) for the first cluster is 81.2%; of which tax revenues cover 74.6% of expenses of Russia's CBS (X3). The regions of the cluster under consideration can be called economic leaders of Russia. In many ways, these subjects are the engines of growth of the country's economy as a whole. High budget security in these regions is caused, of course,

by the developed economy and the presence of competitive advantages (resources, capital, infrastructure, etc.).

The second cluster consists of 50 regions with a rather heterogeneous specialization. From the point of view of location, these regions are distributed very unevenly; thus, in this case it is very difficult to characterize them from the territorial perspective. Tax revenues (X1) account for about 67.3% of all CBS revenues, while gratuitous receipts (X6) account for 27.3% of budget revenues in the group. Considering such an indicator as the amount of SEBS relative to tax revenues (X2), we form an ambiguous opinion. On the one hand, this cluster contains regions, the value of which is minimal (Sakhalin Oblast, Yaroslavl Oblast, Kaluga Oblast); on the other hand, it has regions with subsidized budgets (Chukotka Autonomous Okrug, the Republic of Sakha, etc.). It should be noted that the probable reason why developed regions find themselves in the second cluster is a strong gap in the coverage of expenses of CBS by its tax revenues. For example, tax revenues in the Kaluga Oblast account for 68% of its expenses, while tax revenues account for about 78% of all CBS revenues. In the second cluster, the consolidated budget expenditures are covered mainly by own revenues (X5); of which tax revenues (X3) account for 62.3%. Gratuitous receipts (X4) cover 25.6% of all expenses of CBS in the second cluster. Having lower rates of economic and social development than the national average, these regions had significant production capacity in the past and belonged to the developed regions.

If the first cluster includes leaders, then the third cluster includes outsiders, or subsidized regions. The third cluster consists of eleven regions located mainly in the North Caucasian Federal District; it also contains underdeveloped agricultural regions of the Far Eastern and Siberian federal districts. A specific feature of the regions within the third cluster is the strong dependence of their economies on gratuitous receipts from the federal budget and, accordingly, the low level of budget security. Gratuitous receipts (X6) make up the bulk of revenues of CBS and account for 65.1% of the revenues. Tax revenues of CBS (X1) make only 31.3% in the group under consideration. The regions of the analyzed cluster are highly subsidized, the amount of SEBS relative to tax revenues (X2) is 137.6% on average, and in some regions, such as the Republic of Ingushetia and the Republic of Tuva, this figure exceeds tax revenues more than twice. The expenses of the consolidated budget of the regions within the second cluster are covered by gratuitous receipts (X4) by 61.8%. Tax and non-tax revenues of CBS cover 32.8% of regional budget expenditures (X5), of which tax revenues cover 29.4% (X3). The current dependence of the regions on gratuitous receipts is primarily due to their low level of economic and social development. The economy of an underdeveloped region is characterized by a state of stagnation, it has distinctive features: an undiversified sectoral structure of the industry, weak investment attractiveness, low intensity of economic activity, and weak social policy. The availability of capital and the ability to service debt for business in these conditions becomes a difficult task; in this regard, overdue accounts payable (X8) in these regions is 35.3%. This economic situation certainly affects social development in the regions of the analyzed cluster. Employment rate (X7) is below the national average (65.3%) and is 58.2%; and the share of the population with incomes below the subsistence level (X9) is almost twice as high (23.2%) as the national average.

Now let us consider those regions that had to be excluded in order to achieve more uniform results of the analysis. We excluded Moscow, Saint Petersburg, and the Moscow Oblast. It should be noted that these regions are the undisputed leaders of economic development and have a diversified economy. In this regard, the financial self-sufficiency of these regions is at a very high level.

3. The results of the principal component analysis.

The implementation of the principal component analysis on the initial set of financial self-sufficiency indicators allows us to identify three factors, the share of the explained variance of which exceeds 75%, which is a reliable result [20].

The group determining the first factor (F1) consists of indicators characterizing budget security of the regions, as well as indicators of social security *(Table 2)*. This principal component is closely related to the following indicators:

– the share of tax revenues in the consolidated budget system (hereinafter – CBS) of the Russian Federation, in % (X1);

– the amount of subsidies to equalize budget security (hereinafter – SEBS) relative to tax revenues, in % (X2);

– coverage of the costs of Russia's CBS by its tax revenues, in % (X3);

– the level of coverage of the costs of Russia's CBS by its gratuitous receipts (X4);

– the level of coverage of expenses of the consolidated budget by its tax and non-tax revenues, in % (X5);

– the ratio of gratuitous receipts to the income of Russia's CBS (X6);

– employment rate (X7);

– the share of overdue accounts payable (X8);

– the share of population with incomes below the subsistence level, in % (X9);

– the level of taxation of turnover of organizations (X10).

The second principal component (F2) includes regions that characterize the potential of regional and municipal taxes (tax resource of the region). The component under consideration is related to the following indicators:

– potential of individual property tax (X14);

– potential of transport tax (X15);

– potential of land tax (X16);

– the number of small enterprises, including micro-enterprises (X17);

– the number of enterprises and organizations in the calendar year (X18).

The third principal component (F3), which can be called "Tax burden on the economy", is closely related to the following indicators:

– the level of taxation of assets of organizations (X11);

– total regional tax burden, % of GRP (X12);

– tax burden of the stage of production (X13).

Table 2. The groups of indicators that are closely associated with the converted main components

Groups corresponding to principal components	Initial indicators included in the group
I	X1, X2, X3, X4, X5, X6, X7, X8, X9, X10
II	X14, X15, X16, X18
III	X11, X12, X13
Source: own compilation on the basis of the factor loading matrix.	

The values of each component were found for each region of the Russian Federation for the 2008–2015 period.

The results of panel regression modeling to identify the reasons for the corresponding level of financial self-sufficiency can be reflected in the form of a summary table *(Tab. 3)*. The Table presents the results of panel regression with fixed effects, because the specification test with the use of the Hausman test supports this model [24].

The model with fixed effects is used if the analyzed sample is actually a general population, as in our case (for the analysis we use almost all regions of Russia). Unobservable variables that do not change over time (geographical conditions, economic specialization of the region, etc.) are simulated by including a fixed effect in the model. In this regard, before estimating the regression equation, the time-mean value is subtracted from each variable and the usual least squares method is subsequently used.

The explained variable (Y) is the ratio of gratuitous receipts to own revenues of Russia's CBS. This indicator characterizes the financial self-sufficiency of the region best of all, since the share of gratuitous receipts shows how much the regional budget depends on the federal budget.

In accordance with the results of the panel regression modeling, the financial self-sufficiency of leader regions is positively influenced by the factor characterizing the tax resources of the region (F2). The obtained results are explained, first of all, by the economic well-being of the regions within the first cluster. As a rule, such regions have a rich tax base, which provides for a high potential of regional and local taxes. In addition, the growth of financial self-sufficiency is due to the reduction in the tax burden on the economy of the region (F3). The reduction in this factor will help concentrate more financial resources in regional budgets and use these resources for the implementation of the goals and objectives of regional strategies. The budget security factor (F1) proved insignificant for the considered group of regions. This result can be explained by the low share of gratuitous receipts in the revenue structure of Russia's CBS.

The budget security factor (F1) has the greatest impact on the financial self-sufficiency of average performers. Despite their economic potential, the considered group of regions is highly dependent on gratuitous receipts from the federal budget. Accordingly, the growth of budget security is positively associated with financial self-sufficiency. The increase in the tax resource of the region (F2) has a negative impact on the variable under consideration. For the regions of the second cluster, the importance of the potential of regional and municipal taxes is at an extremely low level,

Table 3. Panel regression results of for leaders, average performers and outsiders

	Y – ratio of gratuitous receipts to own revenues		
	Leaders	Average performers	Outsiders
F1 – Budget security	0.12	-4.0***	-34.60*
F2 – Tax resource of the region	-1.9***	1.87**	49.12**
F3 – Tax burden	1.48***	0.56	20.10**
N – number of observations (N = t×n, where t – number of years, n – number of regions)	128	400	88
Determination coefficient R^2	0.18	0.17	0.31
Source: own compilation. ***, **, * – significance at the level of 0.1%, 1% and 5%, respectively.			

the main share of CBS revenues is formed by federal taxes and gratuitous receipts. The tax burden factor (F3) is insignificant for average performers.

For outsiders, the budget security factor (F1) has a positive impact on financial self-sufficiency. The analyzed group of regions depends most on gratuitous receipts and has a rather weak economy. Budget security of these regions is formed mainly through subsidies and other intergovernmental transfers from the federal budget. As well as for average performers, for the regions of the third cluster, the factor characterizing tax resources (F2) has a negative impact on financial self-sufficiency. As in the previous case, this is primarily due to the low level of economic development of regions in the group under consideration. The tax burden factor (F3) has a negative impact on the financial self-sufficiency of outsider regions. In underdeveloped regions, when the tax burden increases, there is a major risk of the business moving into the shadow economy; this results in a decrease in tax collection. Accordingly, in order to increase financial self-sufficiency in the framework of the development strategy, it is necessary to find methods to reduce the tax burden on the economy of the region.

Discussion and conclusions

The analysis of financial self-sufficiency and the construction of a stable classification of regions can be carried out in various ways. Cluster analysis is one of the most popular methods in this regard. The main advantages of this method are as follows: it identifies the links between the objects of the population with a large volume of objects under study; and it allows us to classify objects on a number of features rather than on a single one. K-means clustering was used to build stable groups of regions according to the level of financial self-sufficiency. In order to reduce the dimension of the space of features under consideration, the principal component analysis was used, as well as the analysis of panel regressions on the selected factors in each group of regions.

The proposed classification of regions allows us to apply different approaches to the formation of development strategies for regions with a certain level of financial self-sufficiency. The development strategy for leaders will be provided by financial resources, and one of the key priorities may be to diversify the structure of the economy. Average performers should focus on their current competitive advantages in the process of elaboration and implementation of the development strategy. At the same time, outsiders should implement the strategy in conditions of severe resource constraints. Obviously, it is impossible to achieve equality between the leaders and outsiders in the near future; therefore, when elaborating a development strategy for underdeveloped regions, it is necessary to analyze the factors affecting the quality of life in them. Priorities, goals and objectives should take into account regional specifics and contribute to improving the quality of life as effectively as possible.

The formation of a strategic and sustainable classification of regions and the analysis of factors affecting the level of financial self-sufficiency allow us to prepare the basis for scientific research on the formation of certain approaches to strategizing for each group of regions. Undoubtedly, each region should have its own unique strategy; however, similar principles can be used in the development of strategic tools to improve financial self-sufficiency in different regions.

Determining the methods for analyzing the priorities, competitive advantages and resource availability is the most important direction for those research works that form the basis for effective practical actions.

Theoretical relevance of our study lies in the fact that the regions' classification technique we propose expands current provisions of the general economic theory because it develops mechanisms for state regulation of fiscal policy of regions; the technique also expands the general theory of strategy in terms of planning, management and implementation of the strategy for the regions that differ in the level of financial self-sufficiency.

The findings and recommendations we have obtained can be used and applied in the work of executive authorities when they elaborate regional strategies and long-term development programs. The proposed tools (panel regression on the principal components) help identify strategizing features for different types of regions according to the level of financial self-sufficiency.

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Appendix

System of indicators of financial self-sufficiency of the region

Indicator	Indicator code	Goal of introducing the indicator	Calculation
The share of tax revenues in Russia's CBS, in %	X1	Characterizes the provision of the regional budget with own tax revenues	Ratio of tax revenues to all revenues of Russia's CBS
The amount of subsidies to equalize budget security (SEBS) relative to tax revenues, in %	X2	Shows the dependence of CBS on SEBS	Ratio of SEBS to the tax revenues of Russia's CBS
The level of coverage of the costs of Russia's CBS by its tax revenues, in %	X3	Reflects the degree of sufficiency of tax revenues to cover expenses of Russia's CBS	Ratio of tax revenues to expenses of Russia's CBS
The level of coverage of the costs of Russia's CBS by its gratuitous receipts	X4	Shows the importance of gratuitous receipts for the regional budget	Ratio of gratuitous receipts to the expenses of Russia's CBS
The level of coverage of expenses of the consolidated budget by its tax and non-tax revenues, in %	X5	Shows the degree of sufficiency of own revenues to cover the expenditure powers of Russia's CBS	Ratio of all income to the expenses of Russia's CBS
The ratio of gratuitous receipts to the income of Russia's CBS	X6	Characterizes the provision of the regional budget with own revenues	Ratio of gratuitous receipts to the revenues of Russia's CBS
Employment rate	X7	Characterizes the share of the population employed in the economy of the region	
The share of overdue accounts payable	X8	Shows the level of efficiency of business activity in a constituent entity of the Russian Federation	
The share of population with incomes below the subsistence level, in %	X9	Reflects the standard of living in the region	
Cash income (average per capita), rubles	X10	Characterizes the standard of living in the Russian Federation	
Investments in fixed capital per capita, thousand rubles	X11	Reflects the investment attractiveness of a constituent entity of the Russian Federation	
The volume of mineral extraction per capita, thousand rubles	X12	The importance of mining industry for a constituent entity of the Russian Federation	
Agricultural output per capita, thousand rubles	X13	The importance of agriculture for a constituent entity of the Russian Federation	
Manufacturing output per capita, thousand rubles	X14	The importance of manufacturing for a constituent entity of the Russian Federation	
Retail trade turnover per capita, thousand rubles	X15	The importance of retail trade for a constituent entity of the Russian Federation	
Employment rate in agriculture	X16	Characterizes the share of employed in agriculture in a constituent entity of the Russian Federation	

End of Appendix

Indicator	Indicator code	Goal of introducing the indicator	Calculation
Employment rate in mineral extraction	X17	Characterizes the share of employment in mining in a constituent entity of the Russian Federation	
Employment rate in manufacturing	X18	Characterizes the share of employed in manufacturing in the a constituent entity of the Russian Federation	
Employment rate in wholesale and retail trade	X19	Characterizes the share of employed in retail trade in a constituent entity of the Russian Federation	
The number of enterprises and organizations per calendar year, thousand units	X20	Assessment of entrepreneurial activity in a constituent entity of the Russian Federation	
Turnover of organizations per capita, thousand rubles	X21	Cost estimation of efficiency of business activity in a constituent entity of the Russian Federation	
Number of small enterprises, including microenterprises	X22	Assessment of the level of small business activity in a constituent entity of the Russian Federation	
Turnover of small enterprises	X23	Valuation of the effectiveness of the small business in a constituent entity of the Russian Federation	
The level of taxation of turnover of organizations	X24	Characterizes the level of tax burden on the turnover of organizations in a constituent entity of the Russian Federation	Ratio of the amount of excise and VAT revenues in Russia's CBS to the turnover of organizations
The level of taxation of assets of organizations	X25	Characterizes the level of tax burden on the assets of an organization	Ratio of the amount of property tax to the value of the property of organizations
Total regional tax burden, % of GRP	X26	Shows the level of tax burden on the economy of a constituent entity of the Russian Federation	Ratio of tax revenues of Russia's CBS to GRP
Tax burden on enterprises at the production stage	X27	Characterizes the level of tax burden on enterprises at the stage of production in the region	Ratio of other taxes on production to the GRP of a constituent entity of the Russian Federation
Potential of individual property tax	X28	Assessment of the importance of municipal tax in the economy of a constituent entity of the Russian Federation	Ratio of individual property tax to the GRP of a constituent entity of the Russian Federation
Transport tax potential	X29	Assessment of the importance of transport tax in the economy of a constituent entity of the Russian Federation	
Land tax potential	X30	Assessment of the importance of municipal tax in the economy of a constituent entity of the Russian Federation	Ratio of land tax to the GRP of of a constituent entity of the Russian Federation

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The Development of Small Innovative Business in the Industrial, Scientific and Educational Sector in Russia

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Abstract. The successful functioning of the system of transformation of scientific and technical knowledge into a market product largely depends on the level of development of small innovative business. The organization paradigm of small innovative enterprises (SIE) in Russia does not yet correspond to the content of the modern world economy. At the same time, a serious problem is the gap between the proclamation of the need to increase the contribution of SIE to the economy and the actual practice. The relevant issues are the revitalization of the existing enterprises of this type, rather than the creation of new SIEs. To develop the support areas for their formation it is necessary to appropriately diagnose and assess the evolution of SIE in both industrial and research-educational sector of the country. This determines the relevance of the topic and the purpose of the research. During statistics analysis, data of Rosstat and HSE were supplemented with data from the Scientific Research Institute – Federal Research Centre for

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Projects Evaluation and Consulting Services (SRI FRCEC), as well as data from author surveys. The study reveals that the level of SIE development is insufficient to ensure economic security and does not meet the needs of the current stage of the country's economic development. It is revealed that in small enterprises, innovative activity along with financial and personnel issues, is hampered by management problems associated with the fact that the management of manufacturing process of innovative products requires a certain competence and the shift of the company's management resources from current activities. In view of this, the author proposes a model of SIE development management based on the implementation of the project management mechanism in conjunction with "SIE infrastructure", ensuring the formation of SIE and strengthening its position in the market. We present the results of practical testing of this approach on real research objects, which provided the launch of 33 innovative projects during 2010–2017.

Key words: innovation, small business, small innovative enterprise, industry, development.

Introduction

The need to accelerate the pace of economic development in Russia, as well as ensuring a structural maneuver in industrial manufacturing and income generation against the background of reduced revenues generated by fuel and material sector requires a more complex structure of production and its efficient functioning. These processes are linked to technological change and innovation in real economy. Of course, the key role belongs to large research and technological corporations that determine the country's technological image. However, it should be borne in mind that the results of functioning of industrial systems depend on the quality of development of all "layers" of business: large, medium and small.

The size of an enterprise affects its organizational and management structure, determines the weaknesses and prerequisites for innovation. For example, large enterprises, possessing significant funds, have an opportunity to expand their activities by diversifying their products, including through R&D and marketing research. A flexible and simple structure helps small enterprises to react quickly to changes of the competitive environment and provide high mobility in introducing non-capital-intensive innovations.

On the one hand, the level of companies' innovative activity increases in proportion to their size: "from 2.1% (in companies with up to 50 people) and 6.1% (50–99 people.) to 69.5% (5,000–9,999 people.) and 83.7% (10,000 and more)" [1]. On the other hand, it is necessary to keep in mind the "qualitative" differences in the innovation focus of large and small enterprises. For example, 70 out of top 100 major industrial companies in Russia (with the number of employees over 7.5 thousand people) carry out activities in oil and gas production, oil refining, energy, metallurgy, diamond mining and processing, ore mining, production of mineral fertilizers, etc. [2]. It can be assumed that technological innovations in these enterprises producing downstream products (medium-tech or low-tech) are aimed at ensuring their production process, rather than at producing innovative products for their subsequent implementation on the market. However, innovative products of small enterprises are characterized by a high level of novelty: about 80% of their goods (works, services) are connected with real production renewal [3].

The efficiency of small business in the field of innovation is evidenced by foreign statistics, which provides information that small innovative enterprises (SIE) create 2.5 times

more innovations per employee and their implementation is carried out 1 year faster than among big businesses, with the cost of 75% less [4].

Moreover, foreign experience proves the possibility of evolution of small innovative enterprises into large businesses. Thus, in the 1970s, one of small enterprises in the US invented a microprocessor, which led to the rapid development of electronics. As a result, major international corporations such as Apple Computers, Compaq, Intel, Lotus, Microsoft, Sun Microsystems grew from small innovative enterprises.

In the national innovation system (NIS), small innovative enterprises act as "experimentalists" and "pioneers", taking the risks of implementing new developments. Such enterprises provide the transfer of knowledge and technology from the scientific and educational sector to business, transfer the solution of innovative tasks of large enterprises to outsourcing. At the same time, they ensure the interaction of NIS elements. Small innovative enterprises influence the qualitative characteristics of the national innovation system.

Taking all this into account, it is necessary to emphasize that the problem of small business formation and development is an important aspect of the country's modern technological structure development.

The Strategy for small and medium enterprises (SMEs) development in Russia has the following goal: "the development of small and medium businesses as a factor in innovative development and improvement of the sectoral structure of economy, on the one hand, on the other hand, social development and ensuring a consistently high level of employment" [5]. An increase in the share of SMEs in GDP from 20% to 40% by 2030 is a key goal. The achievement of this indicator is ensured through the allocation of two target groups of SMEs within the Strategy: "mass" and "high-tech" – "exports-oriented enterprises, enterprises in manufacturing and services, fast-growing enterprises ("gazelles"), which introduce innovations and solve the problem of diversification of economy and increase its competitiveness" [5].

In order to engage small enterprises in the system of target transformation of industries and their transfer to the innovative development path it is necessary to deepen and expand scientific ideas about the forms and methods of running small innovative business and the tools of its state support that can ensure the solution of objectives.

Meanwhile, the issues of developing the theoretic and practical tools for SIE development are underdeveloped. The paradigm of small innovative enterprises in Russia does not yet correspond to the content of the modern global economy characterized by a high share of SIE in the greatest share of GDP production (from 40 to 80%), as well as in industrial exports of innovative products (for example, in Germany and The Netherlands, this share is about 40%, in Italy – 20–25%) [6].

Due to the growing complexity of the global economic and national economic systems, an important objective is to accelerate the development of small innovative enterprises. At the same time, a serious problem hindering the solution of this problem is the gap between the need to form small enterprises in science and technology, increasing their contribution to the economy and the real practice of SIE; between the expansion of state support for such companies and the efficiency of the created infrastructure to support SIE. This determines the need to find effective tools and mechanisms to ensure the rapid development of small innovative enterprises and their subsequent consolidation in the market.

Theoretical aspects of innovative entrepreneurship

Entrepreneurship is "an objectively necessary element of modern socio-economic systems; the development of this institution has a positive impact on the labor market as a result of creating new jobs and increasing the demand for labor" [7].

Entrepreneurship was studied by prominent scholars such as P. Drucker, W. Sombart, J.S. Mill, R. Cantillon, A. Smith, J.-B. Say, J. Schumpeter etc. [7]. Summarizing the views of researchers on the understanding of the nature of the studied category, we can conclude that in the classic sense, entrepreneurship (business) is understood as an activity focused on generating income.

Such an approach is also fixed in the Russian legislation. According to the Civil Code of the Russian Federation, business is "an independent activity carried out at one's own risk, aimed at systematic income generation from the use of property, sale of goods, performance of work or provision of services by people registered according the procedure established by law" [8].

In the economic literature there are two models of entrepreneurship: classic (traditional, reproductive) and innovative. One of the main differences between these models is their degree of risk.

Along with the functions performed by classic small business, innovative entrepreneurship carries out specific functions, in particular, the acceleration of innovative processes and, as a consequence, scientific and technological progress; economic restructuring, etc.

J. Schumpeter was one of the first to introduce a close relationship between entrepreneurship and technological innovation, finding new combinations of production factors. He associated entrepreneurial ability with innovation: "The goal of an entrepreneur is to reform and revolutionize production methods through the introduction of inventions, and more generally – through the use of new technological opportunities for production of fundamentally new goods or production of old goods using a new method, through opening a new source of raw materials or a new market of finished products – up to reorganizing the former industry and creating a new one..." [9].

P. Drucker stressed that "innovation is a special tool of entrepreneurship" used to maximize the income received by an entrepreneur [10].

In modern scientific literature, innovative entrepreneurship is generally referred to as the process of creating and commercializing innovations in products/services that meet new needs and create new market niches.

As it was shown earlier, the organizational form of implementing innovative entrepreneurship is often a small enterprise.

Various interpretations of a small innovative enterprise are given in the scientific and practical literature [11, 12, 13, 14, 15, 16, 17, 18, 19 et al.]. Moreover, in domestic and foreign practice, the following varieties of such enterprises are distinguished: high technology firm, start-up, explerent firm, innovative enterprise, knowledge-based firm, etc. Of course, there are certain differences between them[1], but all of them are united by the fact that the main activity of such enterprises is aimed at creating, promoting new products or improving the existing ones.

According to the Oslo Manual, "an innovative firm is a firm which has introduced some innovations during the observation period" [17].

The Russian legislation refers to such enterprises as those whose activity focuses on "practical implementation of results of intellectual activity" [20].

[1] As part of this work, we do not cover them.

Thus, the analysis of scientific and practical literature shows that there is no universal definition of a small innovative enterprise. Moreover, in foreign practice, to classify an enterprise as a SIE, various quantitative parameters, directly and indirectly characterizing the innovation activity are used (volume of innovative products produced, number of patents obtained, R&D costs, etc.).

According to the Rosstat methodology, innovative activity of a company is one that "had completed innovation over the past three years, i.e. introduced into the market new or technologically changed and improved products, services or methods of their production (transfer), implemented new or significantly improved production processes new or significantly improved ways of marketing, organizational and management changes" [21].

The Russian legislation defines the following features of classifying the company as a small business: "...average number of employees for the previous calendar year... should not exceed... 100 people for small enterprises (among small enterprises, micro-enterprises up to 15 people are distinguished)..., from 100 to 250 people for medium enterprises. The income... received from business activities for the previous calendar year... must not exceed the limit values.... For small enterprises – 800 million RUB (for micro-enterprises – 120 million RUB; for medium enterprises – 2 billion RUB)" [22].

The category of domestic small innovative enterprise can include legal entities and individual entrepreneurs who meet the conditions of innovation activity defined by Rosstat, and criteria for small business established by the Russian legislation.

In this context, we can give the following definition of SIE: a small innovative enterprise is an organization with or without the establishment of a legal entity, which in the past three years completed innovations and which refers to a small business according to quantitative criteria.

The analysis of domestic and foreign experience helps identify direct and indirect ways of establishing SIE (*Tab. 1*). Direct ways include the establishment of a MIP by industrial (the theory of "market pressure") and education (the theory of "technological shock") sectors. Along with direct ways of establishing SIE indirect stimulation of their development can be distinguished, which is achieved through innovative infrastructure and large orders by large enterprises for small businesses to develop and produce innovative products.

Direct ways of establishing SIE are the most common in domestic economy. As for establishing SIE by the research-and-education sector, the key role in this process belongs to Federal Law no. 217-FZ adopted in 2009 [23], according to which universities and research institutions were granted the right to register small enterprises

Table 1. Ways and initiators of SIE establishment

Ways to establish SIE	Initiator of SIE establishment
Direct	*Research-and-education sector*
	- research-and-education institution
	- individual developer/development team
	Manufacturing sector
	- major enterprise
	- small/medium enterprise (goes into the category of SIE)
	- SIE
Indirect	Innovation infrastructure organizations
	Major enterprise (as a customer)

independently for the implementation of results of their intellectual activity.

Thus, small innovative business in the country was expanded through the establishment of SIE at research-and0education institutions (SIE at REI), which expanded state support for this sector.

In order to manage the development of SIE and assess its state support measures, appropriate diagnostics and analysis of the performance of this type of business is required. However, the scientific literature presents the results of analysis of trends in the functioning of either SIE in the manufacturing sector or SIE at REI. From our point of view, to form a complete image of SIE development in the country it is necessary to conduct a comprehensive analysis of small innovative enterprises in both sectors.

Methodological framework for assessing the development of small innovative business

Statistical monitoring of innovation activities of small businesses has been conducted in the country since 1999. Surveys are conducted every two years (odd years). For this purpose, a special form of statistical observation no. 2-MP innovation "Information on technological innovation of small enterprises" [24] was developed. The observation object is legal entities – small businesses engaged in economic activity in manufacturing and power generation. It is noteworthy that the study of indicators characterizing innovative activity of small enterprises is carried out without taking into account micro-enterprises[2]. At the same time, 84% of small manufacturing enterprises are micro-enterprises. Moreover, 5.6% of individual entrepreneurs operate in manufacturing, but the accounting of their innovation activity is not carried out. As follows from the definition above, both these categories can be attributed to small innovative business if they meet the established criteria.

The Rosstat survey on innovation covers an insignificant number of small business entities relative to the total number. At the same time, data on innovation activity of small enterprises are published by Rosstat to a limited extent. At the website of this service[3] only three indicators characterizing the activities of small enterprises in the creation and implementation of R&D are presented: level of innovation activity; volume of innovative products; cost of technological innovation. More information on innovation activities of SIE in the industrial sector can be obtained from HSE publications[4].

Another source of statistical data for analyzing small business innovations in the country is data of the monitoring study of SIE activities at universities and budget research organizations conducted by Scientific Research Institute – Federal Research Centre for Projects Evaluation and Consulting Services (SRI FRCEC)[5]. According to the orders of the Ministry of Education and Science of Russia [25, 26], SRI FRCEC forms a quarterly Register of notices on establishment of business companies and business partnerships for further submission of data to the tax administrations. Moreover, the list of SIE at REI is included in the Unified register of small and medium businesses [20] introduced in 2016.

[2] Exclusion of microenterprises from statistical surveys on innovation is a global practice (for example, surveys are conducted in the US, Japan, EU countries). However, it should be taken into account that the size of micro-enterprises varies in different countries: for example, in Russia the number of employees at such enterprises should not exceed 15, in the EU and Japan the threshold level is 10 employees, in the US – 5.

[3] Rosstat. Available at: http://www.gks.ru.

[4] HSE statistics books. Available at: https://www.hse.ru/org/hse/primarydata.

[5] Republican Research Scientific-Consulting Center for Expertise. Available at: https://mip.extech.ru

The monitoring study of activities of SIE at REI is carried out on the basis of questionnaires of their founders. For this purpose, two questionnaires have been developed: "Evaluation of the mechanism for practical application of REI through SIE establishment by educational and research institutions" and "Information on SIE activities". The data provide an idea of the problems and benefits of creating SIE, as well as characterize the results of intellectual activity, revenues, profit, personnel support, and investment. Details of statistical observations are reflected at SRI FRCEC website and in publications, in particular, in "Expertise and innovation".

The analysis shows that information on the innovation activities collected by Rosstat and SRI FRCEC covers various groups of small enterprises (*Tab. 2*). Rosstat does not assess the innovation activities of micro-enterprises, and the average number of employees of SIE at REI is 3–4 people. [27]. Moreover, Rosstat survey only covers SIE in manufacturing.

Thus, the innovative activity of a number of small businesses studied by SRI FRCEC and Rosstat only intersect to a very small extent. Based on data published by both services, we determine the following statistical indicators for the analysis of innovation activities of SIE at REI and in manufacturing (*Tab. 3*).

Table 2. Parameters of statistical observations over SIE activity

Parameter	Rosstat	SRI FRCEC
Year of the beginning of observation	1999	2014
Type of statistical observations	Selective	Unbroken
Period of observation	Every 2 years (odd years)	Yearly
Category of surveyed enterprises	Small enterprises	Micro- and small enterprises
Types of economic activities of the surveyed enterprises	Industry and energy	All types of economic activity
Type of innovation	Technological innovations	All types of innovations

Table 3. List of statistical indicators for analysis

No.	Indicator	Measurement unit	SIE	SIE at REI
General sector characteristics				
	Number of enterprises	units	+	+
	Number of employees	People	+	+
	Level of innovation activity	%	+	-
	Distribution of enterprises by type of economic activity	-	+	-
	Distribution of enterprises in priority areas of research, technics and technology in Russia	-	-	+
Resource support for innovative activity				
	Cost of innovation	RUB	+	-
	Structure of innovation cost	-	+	-
	Attraction of investments for innovations development	RUB	+	+
Results of innovative activities				
	Revenues from innovation	RUB	+	+
	Shipped innovative goods, works and services of enterprises per RUB of innovation cost	RUB	+	-
Other				
	Sources of innovation	-	+	+
	Consumers of innovative products	-	+	+
+ - availability of data for analysis.				

Moreover, survey data from organizations in both sectors can be used to obtain additional information for analysis on a number of parameters such as the enterprise innovation management system.

SIE activities in manufacturing

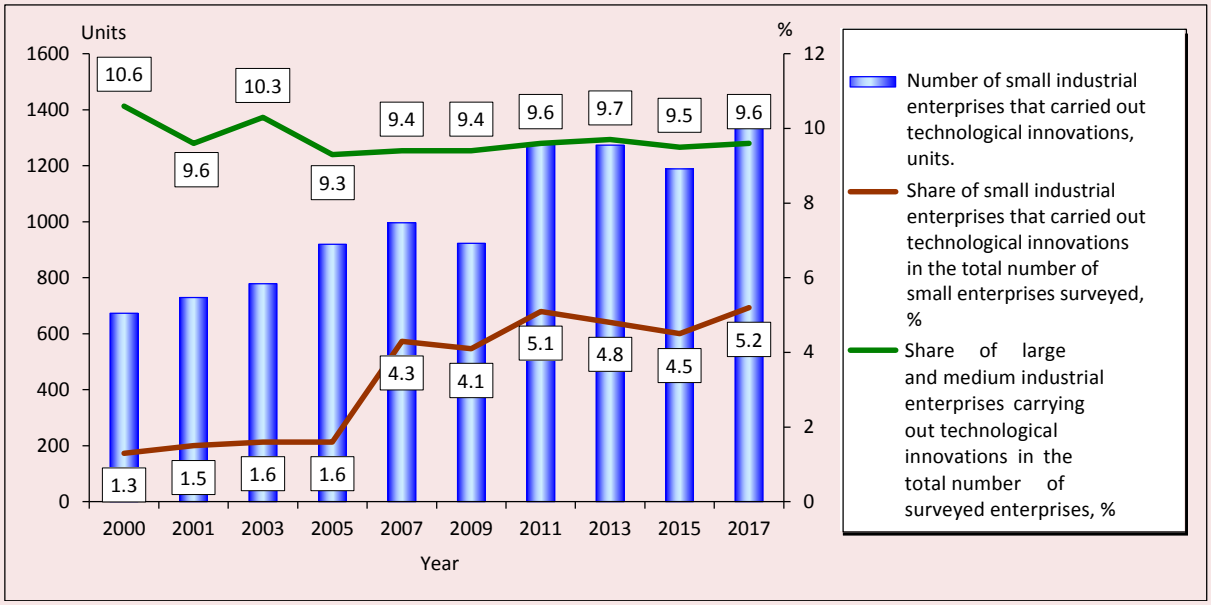
According to Rosstat, in 2017 technological innovations in the country were carried out by 1,437 small enterprises, the average number of their employees amounted to 70.75 thousand people[6] [28].

Throughout the period of statistical surveys, the level of innovation activity of small businesses remains low until: it did not exceed 1.6% (*Fig. 1*) until 2005. The highest growth rate (2.7 percentage points) was observed in 2007 (4.3%). This is partly due to the exclusion of micro-enterprises [22] from the surveyed sampling according to Federal Law. Over the next 10 years, the indicator grew by 0.9 percentage points to its maximum value in 2017 (5.2%).

The branches of industrial production in small business are characterized by low innovation activity. The exception is the high-tech sector (*Fig. 2*). Manufacturers of computers, electronic and optical products (19.2%); medicines and materials for medical purposes (16.8%) reached the highest value of the indicator. The outsiders are textiles (2.1%); clothing (2.7%), wood processing (3%), leather and leather goods (3.4%), water supply and disposal (2.1%) and production and distribution of electricity, gas and water (2.4%).

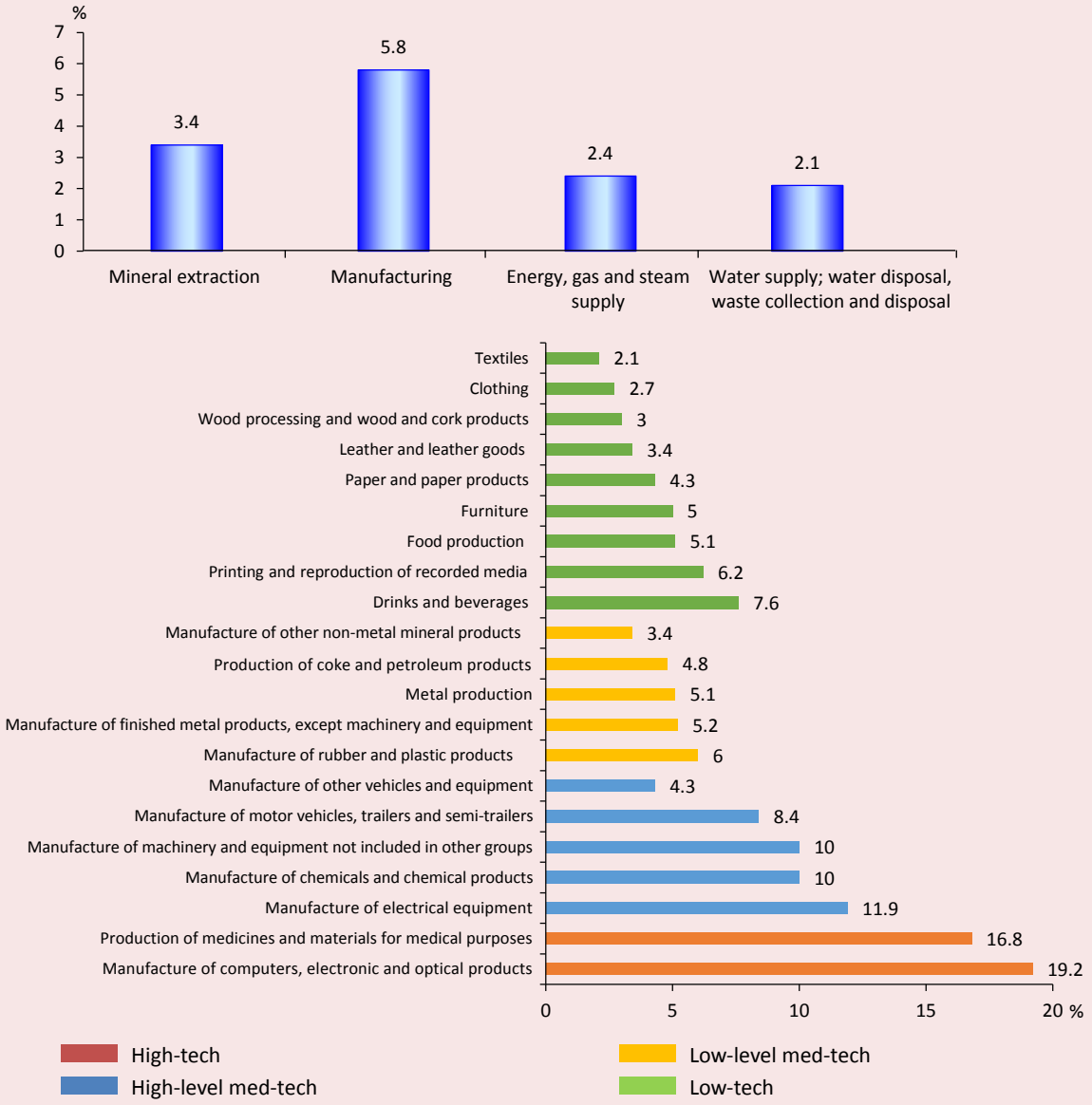
Innovation activity directly depends on the company's costs of its development. Analysis of performance of this type of costs of small enterprises shows that during 2000–2017, they increased almost four times in comparable prices (*Fig. 3*). However, in 2017, their absolute volume in current prices was only 19.22 bln RUB [29]. *To compare,* the same indicator of large and medium enterprises amounted to 1 404,98 bln RUB [29], i.e. 73 times more.

Figure 1. Innovative activity of Russian industrial enterprises [29]



[6] Excluding external part-timers.

Figure 2. Innovative activity of small industrial enterprises by type of economic activity in 2017 [29]

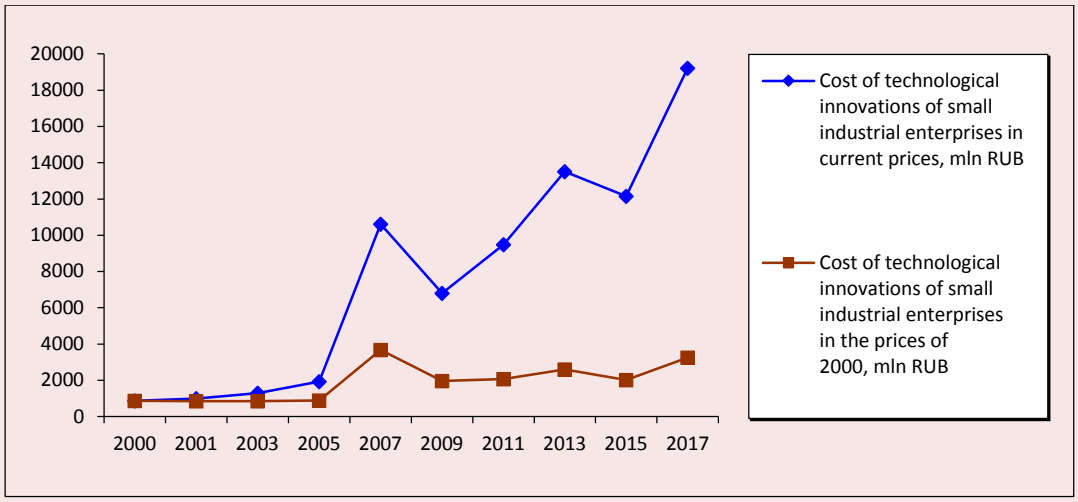


Small enterprises are extremely "sensitive" to the overall economic situation in the country, which is reflected in their costs of innovation. Thus, after the peak growth of costs in 2007, they fell by 53%[7] in 2009 due to the impact of the 2008 crisis. The sanctions in 2014 and the consequent adverse consequences for the country's economy also reduced the indicator in 2015 by 22%[8] compared to 2013.

In 2017, relative to 2015 there was an increase in the costs of innovation. The study of the indicator in the context of economic activities of enterprises indicates that its growth was achieved due to a significant increase in investment in innovative activities of enterprises engaged in mineral extraction (4.6 times growth[9]), production of paper and paper products (4), production and distribution of

[7] In fixed prices of 2000.
[8] In fixed prices of 2000.
[9] In current prices.

Figure 3. Performance of costs of technological innovations of small industrial enterprises, mln [29, 30, 31]



electricity, gas and water (2.8), wood processing (2.6), production of other non-metal mineral products (1.9) and chemical production (1.7 times) [29]. The costs were mostly increased by low-tech and low-level medium-tech companies. This is probably due to the need to modernize production base, which led to purchase of new equipment and machinery. These items account for the largest share (41.9%) of costs of technological innovation at small enterprises (*Fig. 4*). The smallest share (0.2%) accounts for training of personnel engaged in development, implementation, promotion of innovations, and marketing research (0.4%). We emphasize that this approach does not meet modern technological development and indirectly affects innovation efficiency.

Low costs of innovation at small enterprises is due to their limited financial capabilities [32]. Judging by the data in the works [30, 33, 34], the main investor in their activity is enterprises themselves. Almost 70% of their own funds accounts for technological innovations [30]. Loans account for only 14.4% (of which only 2.7% are received on concessional terms) [30]. Budget financing accounts for even less – 8.5% (of which only 0.8% are funds of budgets of the country's constituent entities and local budgets) [30].

The study [35] shows that there is no positive dynamics in the sphere of investment processes of industrial enterprises.

The absolute volume of innovative products in small business for 2000–2017 increased more than fivefold (*Tab. 4*). In 2017, it amounted to 37.5 bln RUB in current prices [28]. Although the indicator is growing in absolute terms, in relative terms it has been decreasing after 2013. It is noteworthy that in the same period this indicator decreased by 2 percentage points at large enterprises, while at small enterprises – by 0.48 percentage points – to 1.59% in 2017.

However, there are divergent trends in different activities. According to statistics, enterprises the highest share of costs technological innovations produce more innovative products that average. The highest indicator values are demonstrated by enterprises engaged in high-tech sectors (6.8%), including production of electronic components, radio, television and communications equipment

Figure 4. Structure of costs of innovative activity at SIE in 2017 [28]

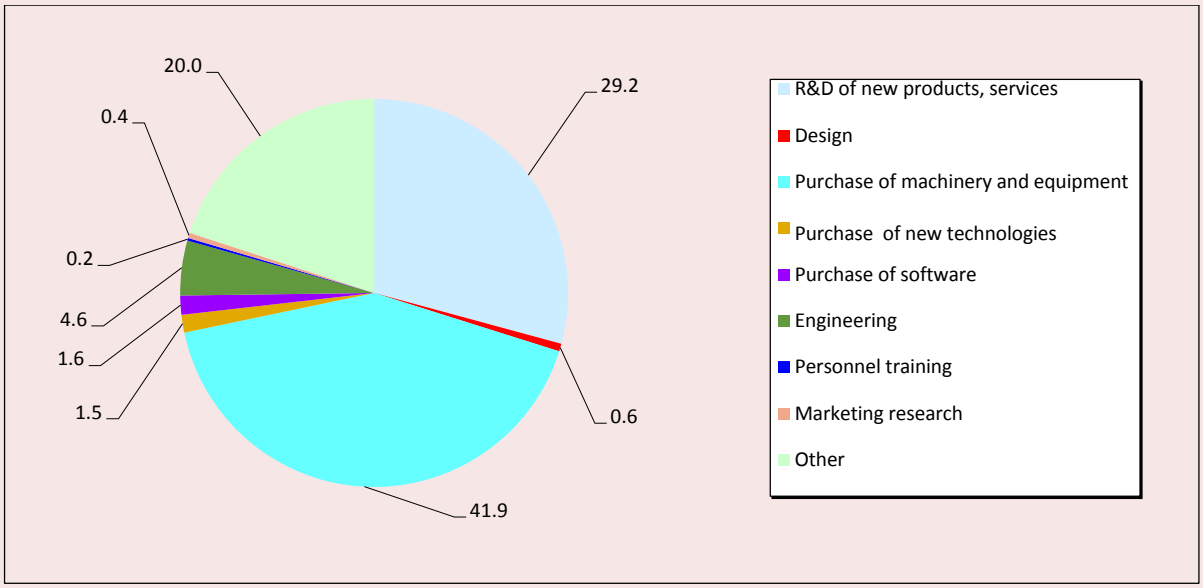


Table 4. Performance of volume of innovative goods, works and services at industrial enterprises [28, 29]

Indicator	Year									
	2000	2001	2003	2005	2007	2009	2011	2013	2015	2017
Volume of shipped innovative goods, works, services at small enterprises in current prices, bln RUB	0.93	1.08	1.12	3.10	12.64	10.21	16.39	27.13	31.27	37.5
Volume of shipped innovative goods, performed works, services at small enterprises in fixed prices of 2000, bln RUB	0.19	0.19	0.15	0.3	0.92	0.62	0.76	1.10	1.10	1.2
Share of innovative goods, works, services in total volume of goods shipped, works performed, services at small enterprises, %	0.15	0.15	0.13	0.07	0.03	1.38	1.48	2.07	1.64	1.59
Share of innovative goods, works, services in total volume of goods shipped, works performed, services at large and medium enterprises, %	4.4	n/a	n/a	5.0	5.5	5.0	6.3	9.2	8.4	7.2
Volume of shipped innovative goods, works, services at small enterprises per ruble of costs for technological innovations, RUB	1.1	1.1	0.9	1.6	1.2	1.5	1.7	2.0	2.6	1.95
Volume of shipped innovative goods, works, services of large and medium enterprises per ruble of costs of technological innovations	3.1	n/a	n/a	4.3	4.4	2.4	3.9	4.1	3.2	3.0

(8.9%), and medical equipment and devices (8.8%) [3]. In the EU countries, this figure is over 60% [36].

The return on costs of technological innovations expressed in volume of shipped innovative goods, works and services per ruble of cost of technological innovations has almost doubled: from 1.1 rubles in 2000 to 1.95 rubles in 2017. This indirectly indicates an increase in resource management efficiency. However, in 2017, there is a decrease in this indicator relative to the level of 2013 and 2015. It reached its maximum in the analyzed period in 2015 – 2.6 rubles. But still its values are slightly inferior to values of large and medium businesses, while the cost-effectiveness of R&D of small innovative enterprises in the US, according to the National Science Foundation, is four times higher than that of large companies [37].

Consumers of SIE products are mainly other small industrial enterprises, large enterprises, less often products are sold to the consumer market. The share of public procurement is extremely small – about 5% [29].

According to [38], more than 60% of small innovative enterprises developed innovations on their own; another 16.4% – with the involvement of third parties; 5.8% – through changing products developed by other organizations. Our research shows [39] that enterprises have accumulated, yet not materialized developments, whose commercialization is a necessary condition for starting the transition from an extensive to innovative type of enterprise development.

Along with the logistical, financial and marketing problems, lack of personnel is also an acute issue for SIE [35]. And it is often associated with lack of innovative managers who can ensure commercialization of the enterprise's existing developments [32, 40], which is expressed in the presence of management problems.

According to the results of analysis of data which we obtained through surveys[10] of innovations at small enterprises [40, 41, 42, 43], we can conclude that the majority of them does not have a strategic plan, including the areas of innovative development. There are no departments or employees responsible for innovations in the structure of enterprises; intellectual property management is not organized. Only a third of enterprises have a system which stimulates inventive and innovation activity. This suggests that issues related to intensification of innovation activities are not yet among top priorities of surveyed managers. The management methods in this direction are used very poorly. The activity on realization of innovative potential is a single manifestation, rather than a strategic direction of enterprise development.

Activities of SIE established at educational institutions

The Register of notices on establishment of business companies and partnerships [44] as of January 21, 2019 contains data on establishment of 2,890 SIE, 531 of them (18%) are excluded from the Register. In authorized capital of SIE their founders introduced the right to commercialize more than 3.1 thousand results of intellectual activity.

The largest number of SIE was registered in 2011 (526), the smallest – in 2018 (84; *Fig. 5*). It is noteworthy that the scale of establishment of SIE after 2011 steadily decreases. This may indicate the exhaustion of research and technological developments of universities with sufficient potential for commercialization in the Russian conditions.

[10] The survey results formed a database with copyright incorporation certificates at the Federal Service of Intellectual Property: no. 2012620336; no. 2012620526.

Figure 5. Scale of establishment of economic partnerships in research and education [44]

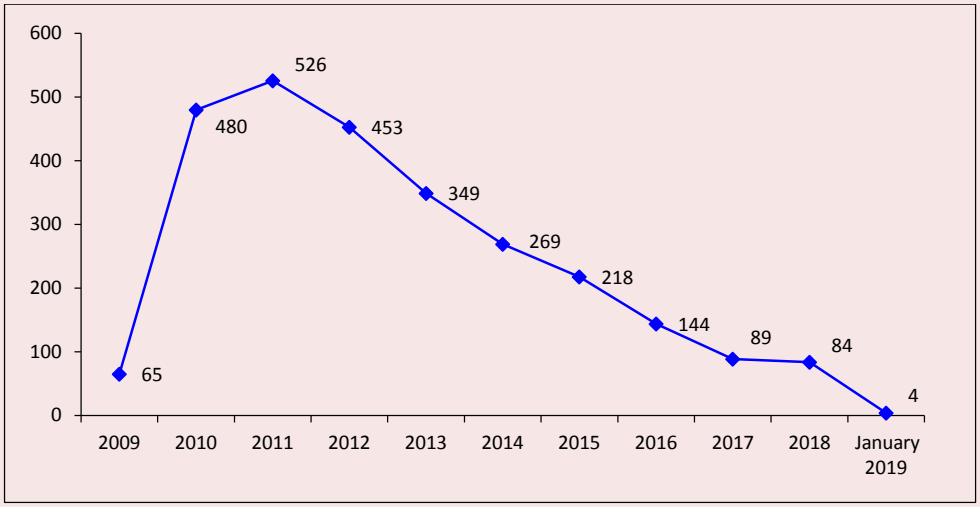


Table 5. Distribution of small enterprises by federal districts (FD) [29, 44, 45]

Territory	Number of small enterprises *, units [1)]	Number of SIE established according to Federal Law no. 217, % [1)]		Level of innovation activity of industrial SIE, % [2)]
		units	%	
Russia	222755	2890	100	5,2
Including:				
Central FD	80845	826	28.57	5.8
Volga FD	40982	190	18.39	5.2
North-West FD	28886	109	11.64	5.5
Siberian FD	22415	531	20.3	5.6
Ural FD	18056	336	7.6	4.6
South FD	17182	92	6.56	4.4
Far-East FD	10058	587	3.77	2.6
North Caucasian FD	4331	220	3.17	2.9
* Legal entities, excluding micro-enterprises. [1)] – data as of January 2019. [2)] – data for 2017.				

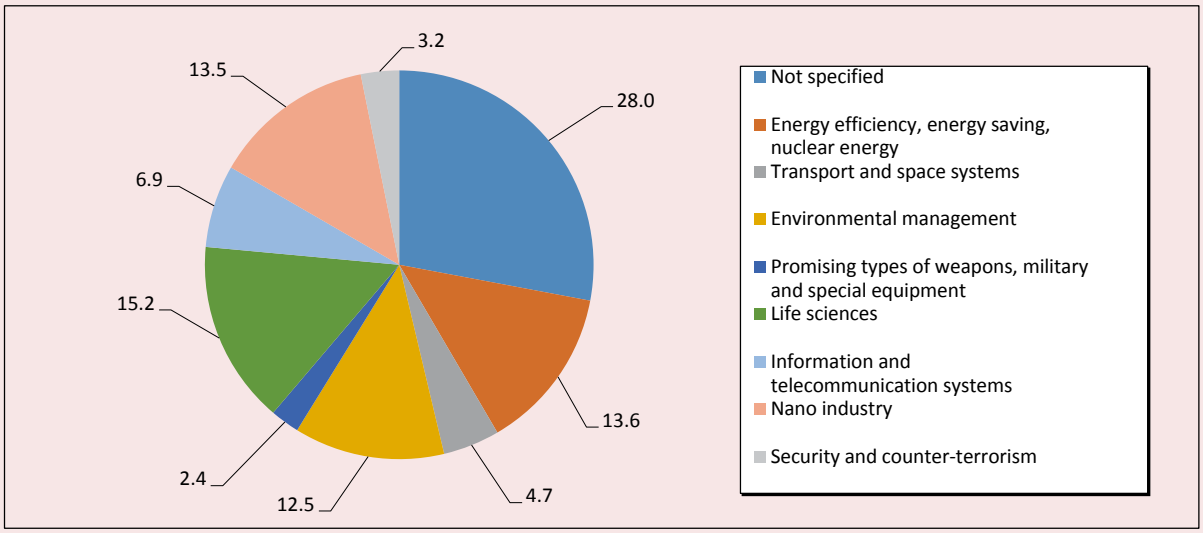
Quarterly analysis of SIE registration data [44] shows that the largest number of them is created in the fourth quarter, which may indirectly indicate the registration of fictitious SIE for reporting to correspond to certain performance indicators.

About 70% of small innovative enterprises are established in research-and-education institutions of three federal districts (*Tab. 5*): Central (28.6% of the total number of SIE at REI), Siberian (20%) and Volga (18%).

The main benefits from establishing SIE, according to their founders, are: "increasing the prestige of an institution (4.22 out of 5 points[11]); introducing to the market those REI promising for the commercialization (4.17); improving the position of an institution in the rankings by increasing relevant indicators", etc. [27].

[11] 5 points means full agreement with the statement in the questionnaire and compliance with the validity of the influence of this factor (Source: Turko T.I., Fedorkov V.F., Odintsova N.N., Fakhurdinov O.V., Timokhin A.A. Activities of small innovative enterprises in education and science. *Innovation and Expertise: research works by SRI FRCEC.* Moscow: FGBUN NII RINKTsE, 2018. Issue 1, pp. 8–21.

Figure 6. Distribution of SIE at REI in priority areas of science, technology and engineering in Russia, % [48]



As for the level of innovation activity of SIE at REI, hypothetically it should equal 100% since all enterprises created according to Federal Law no. 217 should be aimed at commercialization of intellectual property. In fact, judging by the results of the research [46], about 10% of such SIE are focused on innovation.

The work by SRI FRCEC experts [47] presents the structure of distribution of SIE at REI by priority directions of science, technology and engineering in Russia (*Fig. 6*). Figure 6 demonstrates that the largest number of enterprises carry out activities in energy efficiency, energy saving, nuclear energy (13.6% of SIE at REI), environmental management (12.5%), bio-sciences (15.2%), nano-systems (13.55%), a third of enterprises did not specify their profile.

As of the end of 2016, the number of employees[12] of SIE at REI amounted to 8,729 people[13] [27]. In the same year, 80% of SIE in science and education had an annual revenue of up to 1 mln rubles, of which 60% – zero revenue, 5% – up to 100,000 rubles [27].

The structure of customers of SIE products/services which demonstrated non-zero revenues was as follows: the vast majority – 62.7% – accounted for enterprises, 11% – SIE founders, 4.1% – federal budget, 0.8% – budget of Russia's entities [27]. Another 22.1% of products/services were sold in the consumer market.

According to the survey [27], only 11% of SIE attracted funding. The structure of these funds by source is as follows: 62.5% – loans and borrowings, 29.6% –fund resources[14], 5.5% – budget funds (in the form of subsidies,

[12] Including external part-timers and people working under the civil right contracts.

[13] Data are presented on 2,521 SIE, which makes 88% of their total number at research-and-education institutions in the country (Source: Turko T.I., Fedorkov V.F., Odintsova N.N., Fakhurdinov O.V., Timokhin A.A. Activities of small innovative enterprises in education and science. *Innovation and Expertise: research works by SRI FRCEC*. Moscow: FGBUN NII RINKTsE, 2018. Issue 1, pp. 8–21.

[14] Such as Innovation Promotion Fund etc.

budget loans), 2.5% – funds of the founder. Consequently, most of the resources comes from loans and borrowings. The total amount of funding in 2016 comprised 2.8 bln rubles. However, only 3% of surveyed enterprises used this source of financing [27].

SIE at REI, as well as industrial SIE face an acute problem of staffing. According to the questionnaire survey of founders of SIE at REI, "the greatest obstacles to establishing a new SIE are as follows: the load on the teaching staff and employment of researchers prevents them from engaging in commercialization of results of intellectual activity (RIA) (3.75 out of 5 points[15]); evaluation and legal protection of RIA require organizational and financial costs and efforts (3.67); there is not enough initiative from people ready to lead SIE (3.62); authors of RIA are not always interested in their commercialization through the mechanism of SIE establishment (3.46); the established SIE require constant consulting, organizational support (3.37)", etc. [27].

The main reasons impeding commercialization of RIA through the mechanism of SIE highlighted by their heads are the following: lack of state preferences of SIE (3.91 out of 5 points); universities and research institutions lack business skills for successful establishment of SIE (3.87). Moreover, heads of SIE note lack of information about market prospects [49]. Thus, the problem of management for small innovative enterprises at scientific and educational institutions is also extremely acute and is not resolved with the existing support infrastructure.

[15] 5 points means full agreement with the statement in the questionnaire and compliance with the validity of the influence of this factor (Source: Turko T.I., Fedorkov V.F., Odintsova N.N., Fakhurdinov O.V., Timokhin A.A. Activities of small innovative enterprises in education and science. *Innovation and Expertise: research works by SRI FRCEC*. Moscow: FGBUN NII RINKTsE, 2018. Issue 1, pp. 8–21.

Performance of small innovative business development: conclusions according to analysis results

According to analysis results based on available statistical and survey data the following conclusions can be drawn.

1. The scale of innovation by small enterprises operating in industrial and research-and-education sector of Russia is insignificant.

2. In quantitative terms, the dynamics of the number of SIE at REI decreases annually, which indicates a decline in the pace of this process. The number of industrial SIE demonstrates an upward trend during the period under review. Periods of decrease in their number correlate with crisis situations in the country's economy.

3. A significant disadvantage of small innovative business development is its high territorial concentration. About 70% of SIE are established in research-and-education institutions of three federal districts: Central (28.6% of the total number of SIE at REI), Siberian (20%) and Volga (18%). These districts also demonstrate the highest level of innovation activity of industrial SIE.

4. In the sectoral context, innovative activity of small enterprises is unevenness and strongly polarized.

5. Quantitative parameters characterizing innovative activity of industrial SIE are higher than those of SIE at REI. On average, one industrial SIE accounts for 49 people, the average revenue per SIE is 26.1 thousand rubles. Similar indicators are for SIE at REI – 3–4 people and 12.7 thousand rubles, respectively. However, if we compare the average revenue and average number of employees at an enterprises, it turns out that SIE at REI work with greater efficiency.

6. More than 60% of SIE at REI operate with zero revenue, which is extremely

inefficient from the point of view of market economy. In industry, the company with zero revenue will fail because its content will be devoid of economic sense, and SIE at REI will remain in demand in such a situation since it can be used for reporting. As a rule, the key motive for innovation of an industrial SIE is competition, while for SIE at REI it is good reporting as well (which, in fact, also serves as an indirect competitive advantage, yet in the environment of other universities and research institutions, rather that in the innovation market).

7. The resource capacity of SIE in both sectors is a major factor limiting the development of innovative activity.

8. The innovation efficiency of small enterprises remains low.

9. The key problems, along with lack of financial, technical and technological resources, are management issues due to the lack of a established system of management of development processes of innovative production and a low level of innovative management. An important factor is lack of financial opportunities for staff expansion to establish a sector responsible for innovation development (the existing personnel is loaded with the current work related to the industrial/academic/research process).

Thus, our analysis shows that there are similar problems in the development of SIE in both sectors of economy. The innovative activity of Russian small enterprises is extremely low, which only suggests their low potential and brings forward the search for ways to activate the existing enterprises, rather than establishing new ones.

SIE management problems and solutions

The analytical part of the article states that to help small enterprises become innovative it is critical to address management problems due to lack of their own competencies and difficulties caused by the distraction of management resources of the company from the current activities.

It should be noted that the circumstances for implementing innovation management have significant similarities with the conditions of the project activities [40, 50]. The efficiency of active implementation of the project approach in the management system at enterprises is confirmed by both foreign experience and experience of large enterprises. In the latter case, in order to apply the approach under review project offices are created, which are structures that support the implementation of innovative project management processes. However, small enterprises do not have such an opportunity. Therefore, the article proposes the implementation of the project approach at an enterprise with the involvement of resources of innovation infrastructure organizations (*Fig. 7*).

The developed model is primarily focused on the final stages of the innovation process, where the elements of project management associated with the design and formulation of objectives are already solved. That is, it is aimed directly at commercializing the existing results of intellectual activity.

A distinctive feature of the model is that it accounts for the division of the project processes into those aimed at obtaining an innovative product and those aimed at managing processes of its development from the stage of initiation to implementation on the market. The model includes experimentally selected methods and tools for project implementation management at real research facilities, which are taken over by the organization of innovative infrastructure (*Tab. 6*).

The chosen methods and tools correspond to the objectives to be solved addressed within the framework of the project approach in the

Figure 7. Model of interaction in the application of project approach in a small innovative enterprise with attracting resources from organizations of innovative infrastructure

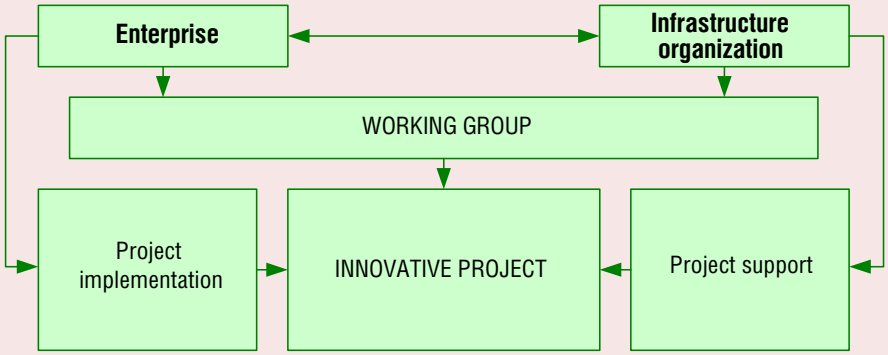


Table 6. Methodological support for project management at enterprises with the participation of organization of innovative infrastructure [50]

Function of project management	Method and tools
Initiation	Technological audit
	Identification and description of technological potential (proposals) and /or technological needs (requests)
	Market research
	Assessment of availability of fixed assets and necessary space for the project
	Assessment of availability of necessary employees (number and their qualifications, experience in bringing innovative products to the market)
	Registration of intellectual property rights
	Search for project financing sources
Planning	Development of the project implementation schedule
	Development of production plan and sales plan
	Development of financial plan (budgeting)
	Identification and assessment of possible types and sources of risks, development of measures to reduce them
	Development of proposals for the formation of a team of qualified experts (management, engineering and technical personnel, marketing experts) necessary for the implementation of the innovative project. Development of a scheme to attract specialists
	Development of organizational structure of the management system
	Development of a business plan
Execution	Attracting investment for the implementation of an innovative project
	Finding partners for the project
	Providing methodological and information support to project participants
	Support of innovative project
Coordination of project implementation	Preparation of records of meetings, working groups, memorandums of agreement
	Redirection of clients to partner organisations
Control	Development of project reporting for different management levels
	Monitoring of the current state of the project and management reporting
	Monitoring the communication system functioning
Completion	Registration of intellectual property rights
	Preparation of research-and-technical report on project implementation
	Preparation of financial statements

Table 7. Evaluation of project approach efficiency using the developed model (case study of some research objects)

Indicator	Indicator value they year before applying project approach	Year of project implementation				
		1st	2nd	3rd	4th	5th
OAO Optimekh. Project: Serial production of modular block containers for installation of technological equipment for water purification, sewage and operation in adverse climatic conditions (initial stage: single production)						
Share of innovative products in total revenues, %	10	30.9	55.0	56.8	59	60
Number of newly created and (or) modernized high-performance jobs, people	2	3	4	5	8	10
Number of completed R&D which entered the commercialization stage	1	0	0	0	0	0
Number of objects of intellectual property owned by the company, the cumulative result, units	0	1	1	1	1	1
OOO Oktava-Plus. Project: Import-substituting planting module for growing green crops by flow hydroponics in automated seedling complexes (initial stage: small-scale production)						
Share of innovative products in total revenues, %	9.3	16.6	28.2	40.6	45	50
Number of newly created and (or) modernized high-performance jobs, people	10	5	3	3	4	4
Number of completed R&D which entered the commercialization stage	1	0	0	0	0	0
Number of objects of intellectual property owned by the company, the cumulative result, units	1	2	2	2	2	2

implementation of innovative projects at small and micro-enterprises of both industrial and research-and-education sectors.

When implementing the model, it is advisable to use special techniques, such as RTTN-IRC technological audit, EBN quality system; the format of information presentation (when searching for partners through technology transfer networks) should be standardized, compatible with the EEN format.

The positive experience in implementing this approach obtained in the framework of Technology Transfer and Commercialization Center at VolRC RAS and small business. Some results of testing the proposed model are presented in *Table 7*.

The implementation of the model at small and medium enterprises in the North-West Federal District ensured the launch of 33 innovative projects during 2010–2017.

Conclusion

In general, we can conclude that the sector of generation and implementation of small business innovations is extremely small, developing slowly and fragmentally. Despite the high importance and significant impact of these enterprises on the formation of an effective national innovation system, their development is insufficient to ensure economic security and does not meet the needs of the current stage of economic development in the country. Therefore, promotion and support for SIE activities should be expanded. At the same time, new mechanisms are required to stimulate the establishment and support for the development of small innovative enterprises, taking into account the current issues hindering their development. Issues related to establishing new SIE and intensifying innovative activities at existing enterprises should come to the fore. One of these areas is assistance in solving management problems at SIE. In view of this, a model of implementation of project management with the involvement of resources from innovation infrastructure organizations has been developed and practically applied at enterprises. The implementation of the model helps develop small innovative enterprises and strengthen their position in the innovation market.

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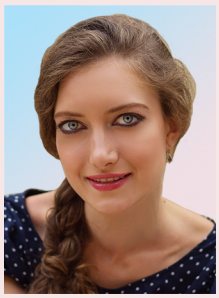
Budgets of Regional Centers in the North-West: Tools for Modernization or Survival?*



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Abstract. The paper opens a series of studies on the development of regional administrative centers. We put forward a hypothesizes that the budgetary policy regarding regional centers does not correspond to their current budget condition and is not focused on such development that would turn cities into the pillars of the balanced and harmonious spatial development of Russia. In this regard, the goal of the study is to conduct a comprehensive analysis of the budget system and the conditions of its functioning in regional administrative centers. We use economic and mathematical methods and reveal that the changes in geopolitical and geo-economic conditions in Russia had a negative impact on the budget systems of regional centers; it was manifested in the predominance of financial assistance in the structure of total revenues, in the stable dynamics of imbalance and in a decrease in the level of budget security of the population. We use official data of Rosstat and the Federal Treasury to find out key trends in the development of regional centers of the North-West of Russia since 2011. We conclude that the budgets of regional centers are trying to survive and are not ready to implement social transformation and promote economic growth. Based on this, we define major development directions for regional centers. The materials of the paper can be of use in the educational sphere, in the study of financial and economic disciplines; they

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can also be used by scientists as a basis for further research and by management bodies of various levels to substantiate management decisions. Further research will be devoted to the study of the effectiveness of management of the budget of the regional center, the level of debt burden and the state of intergovernmental fiscal relations.

Key words: territorial systems, economic growth, sustainable development, municipal entities, city, regional center, differentiation, budget security, periphery.

Introduction to the topic

In the context of globalization, political sanctions, and the transformation of the socio-economic system of Russia, it becomes extremely urgent to promote sustainable national and regional development and to minimize intraregional barriers to growth. One of such barriers is the aggravation of the issues of dynamic development of cities; they are considered by foreign science and practice as the drivers of national growth and the elements in the structuring of the territory, society and economy [1-5]. The need to create such a driving force for the country was mentioned by Russian President Vladimir Putin in his Address to the Federal Assembly back in 2018[1].

However, unlike foreign cities, the development of which since the middle ages was mainly influenced by market forces and served to meet the growing needs of society and production, Russian cities had a different growth trajectory. In a command and administrative economy, their formation and development took place within the framework of the general map of population distribution. It often imposed restrictions on new industrial construction in some cities, which caused inertia in industrial development and reduced the possibility of its progressive transformation. Consequently, since the mid-1980s, the Soviet city, as a rule, was not an independent participant in the development of the state, and functioned only as an element of its administrative-territorial organization. This meant that the emergence of other cities as points of growth, except Moscow, was impossible.

After the collapse of the Soviet Union, Russia's position in the geopolitical and geo-economic system changed, and it required a revision of its spatial development, the Strategy[2] for which began to be developed only in June 2014. However, from the point of view of administrative and territorial division, the Strategy approved in 2019 dealt largely with urban agglomerations with a population of more than 500 thousand people, and rural settlements. At the same time, this approach reduces the scope of state regulation because it does not consider a whole range of types of cities.

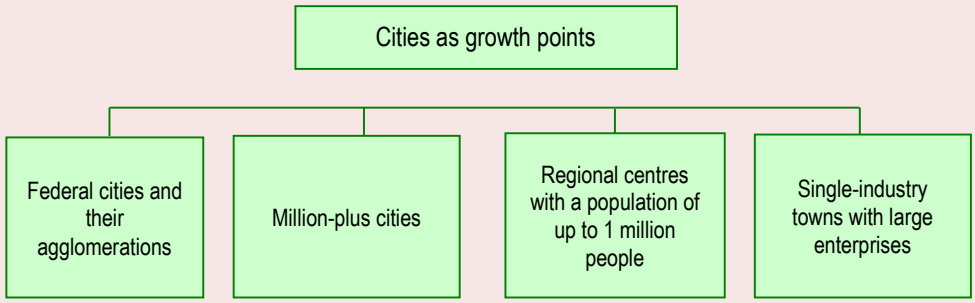
With regard to urban typology, we think that the approach of N.V. Zubarevich to the study of cities as points of growth is the most complete and justified.

According to this approach, there are four types of cities in Russia, which are formed and continue to develop under the influence of institutional, economic, social and other factors *(Figure 1)*. Thus, against the background of federal capitals and million-plus cities, the administrative capitals of regions with a population of 200 thousand people are

[1] Presidential Address to the Federal Assembly. Available at: http://kremlin.ru/events/president/news/56957

[2] On approving the strategy for spatial development of the Russian Federation for the period till 2025: Resolution of the Government of the Russian Federation of February 13, 2009 No. 207-r.

Figure 1. Types of cities – points of growth in modern Russia



Source: compiled with the use of [6].

developing to a greater extent due to the influence of the status factor, as well as the concentration of economic and human resources in them. Historically, since 1991, regional capitals found themselves in the most advantageous position due to the ongoing process of decentralization and distribution of economic and political resources in favor of constituent entities of the Russian Federation. The bulk of highly paid jobs was concentrated in regional capitals; as a result, they received a noticeable increase in wages relative to the regional average. However, in the mid-1990s, when the political vector changed to centralization and the budgetary resources were being increasingly transferred to higher levels of government (it is still going on today), the so-called agglomeration effect came to the fore. It should be noted that the effect of scale on territorial development is studied in the works of both domestic [7–9] and foreign scientists [10–13]. For example, M. Fujita, P. Krugman and F.J. Venables [12] have repeatedly argued that the role of development and modernization centers belongs to cities to varying degrees and with different quality of growth.

After the municipal and inter-budget reforms carried out in Russia, not all of its cities were ready to compete for human and economic resources, and therefore they could not increase neither human capital, nor financial and economic potential [14]. According to the study of Rosstat database on municipalities for 2017, we can conclude that the provision of budget revenues per capita is below average in 53 out of 82 administrative centers of Russia. Moreover, the Russian model of intergovernmental fiscal relations is built in such a way that the supposed objective advantages of development of regional centers have become a reason not only for narrowing the instruments for obtaining financial support for them, but also to cut some of the revenue sources in order to equalize the budgetary provision of the peripheral territories of the region.

Therefore, in recent years, the wider scientific community turns its attention to studying the drivers of development of the so-called cities with "administrative resources" that are not federal cities and that have a population of up to one million people. At the same time, an important methodological and practical problem lies in the need to improve the effectiveness of management and the use of cities' potential in order to strengthen their budget security.

In view of the above, our study will be based on the *hypothesis* that the budget policy pursued in relation to regional centers does not correspond to their budget condition and is not focused on such development that that would turn cities into the pillars of the balanced and harmonious spatial development of Russia. In this regard, the *goal* of the study is to conduct a comprehensive analysis of the budget system and the conditions of its functioning in regional administrative centers.

Analysis of the state of budget systems in regional centers in the North-West of Russia

Among the variety of Russian cities we have chosen regional centers of the Northwestern Federal District (NWFD) of the Russian Federation as the *object* of our study. Our choice is reasonable, because this macroregion occupies about 10% of the country's territory (it ranks 4th among federal districts), contains 10% of the population and produces 10% of the total GRP. Mainly, it is an industrially oriented territory with a developed infrastructure and a significant mineral resource base; all this determines its important competitive advantage. The greatest contribution to the formation of the GRP of the NWFD is made by the city of Saint Petersburg (42.3%), followed by the Leningrad, Vologda, Arkhangelsk oblasts and the Republic of Komi; they provide up to 40% of the total gross product of the NWFD.

It should be noted that the system of municipal entities of the Northwestern Federal District includes 40 urban districts, 159 municipal districts and 1,497 urban and rural settlements. Eleven regional centers accumulate 36% of the population, 30% of industrial production, 33% of retail turnover, 27% of profit of organizations, 23% of capital investments, and 30% of people employed in the economy. Let us clarify that, in order to achieve objective comparability of the data, we have chosen the administrative centers of NWFD regions (excluding the city of federal importance of Saint Petersburg, the Leningrad Oblast, whose authorities are located in Saint Petersburg, and Nenets Autonomous Okrug) as the object of our research.

The influence of the status of the regional center is especially noticeable in the clearly outstripping growth of incomes of its population in comparison with the regional average. *Table 1* shows that during the period under consideration the average wages of residents of regional centers of the Northwestern Federal District exceeded the regional average. As of the end of 2018, the largest gap – by almost a third –was observed in Kaliningrad, while wages in Syktyvkar were lower than the regional average by 8.1%. This state of affairs in the regional center of the Republic of Komi is explained by the fact that it is not the main donor of the Republic's budget, since more than 70% of the region's oil is produced in the towns of Usinsk (where average wages exceed 70 thousand rubles per capita) and Vorkuta (over 60 thousand rubles per capita).

Let us now analyze the state of budget systems; in this regard we should note that the revenues of administrative centers of the Northwestern Federal District have increased by an average of 5% since 2011, i.e. at a lower rate than in the urban districts (UD) of Russia (6.7%) in general. In 2012 and 2015, the dynamics were negative *(Tab. 2)*.

In general, the dynamics of total revenues of the budget system of Russian cities is determined by tax revenues. In the analyzed period, the nominal growth rate of tax revenues of regional centers in the Northwestern Federal District was low despite its volatile dynamics. At the same time, real growth occurred only in Murmansk: +35% in 2011–2018, due to the growth of taxes on gross income and property *(Fig. 2)*.

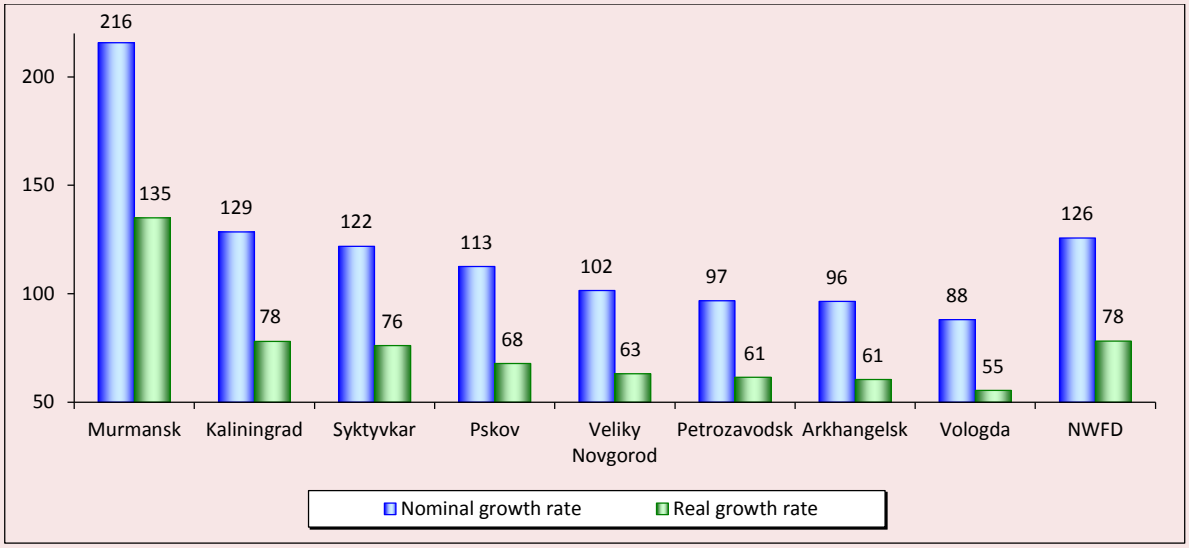
Table 1. Comparing average wages in the regional center and average wages in the region

Russia's constituent entity / city or town	2011	2012	2013	2014	2015	2016	2017	2018	Average for 2011–2018	2018 to 2011, %
Kaliningrad Oblast	19911	21526	25104	26639	28262	29451	30580	32634	26763	163.9
Kaliningrad	35241	38166	40129	41553	38137	36016	38686	42450	38797	120.5
Ratio to the regional average, %	177.0	177.3	159.9	156.0	134.9	122.3	126.5	130.1		
Novgorod Oblast	18637	21297	23494	25225	26346	27914	29311	31275	25437	167.8
Veliky Novgorod	31937	36280	38356	38512	36426	34698	36640	39619	36558	124.1
Ratio to the regional average, %	171.4	170.4	163.3	152.7	138.3	124.3	125.0	126.7		
Pskov Oblast	15721	18203	19743	21004	21553	22399	23659	26868	21144	170.9
Pskov	29333	33007	34009	34360	31322	28850	30539	32869	31786	112.1
Ratio to the regional average, %	186.6	181.3	172.3	163.6	145.3	128.8	129.1	122.3		
Murmansk Oblast	32342	36188	40225	43378	45989	48986	51932	57582	44578	178.0
Murmansk	52445	57058	60563	61993	60955	58174	61262	68497	60118	130.6
Ratio to the regional average, %	162.2	157.7	150.6	142.9	132.5	118.8	118.0	119.0		
Republic of Karelia	22174	24796	27503	29371	30704	33061	34434	38977	30128	175.8
Petrozavodsk	36470	40483	43024	43206	40729	38656	41234	46232	41254	126.8
Ratio to the regional average, %	164.5	163.3	156.4	147.1	132.7	116.9	119.7	118.6		
Vologda Oblast	20250	22649	25127	26749	27445	29303	31651	35545	27340	175.5
Vologda	23395	26330	29095	30812	30843	33722	35997	39705	31237	169.7
Ratio to the regional average, %	165.1	159.5	151.9	142.8	128.9	115.7	113.7	111.7		
Arkhangelsk Oblast	24611	28531	32465	35572	38300	40790	42950	48100	36415	195.4
Arkhangelsk	40090	43770	47446	48258	45571	43194	45098	50420	45481	125.8
Ratio to the regional average, %	162.9	153.4	146.1	135.7	119.0	105.9	105.0	104.8		
Repjblic of Komi	28897	33971	37717	40222	41365	43662	45689	50186	40214	173.7
Syktyvkar	40695	43596	47015	48020	45042	42146	44181	46115	44601	113.3
Ratio to the regional average, %	140.8	128.3	124.7	119.4	108.9	96.5	96.7	91.9		
Source: own calculations with the use of Rosstat data.										

Table 2. Dynamics of aggregate revenues of the budgets of regional centers (RC) of the NWFD

Indicators	2011	2012	2013	2014	2015	2016	2017	2018	2018 to 2011, %
Murmansk									
Million rubles	8551	8569	9261	9723	11076	11455	11970	14262	166.8
Growth rate, %	125.0	100.2	108.1	105.0	113.9	103.4	104.5	119.1	109.9 on average
Syktyvkar									
Million rubles	4658	5702	5658	6568	6278	7175	6873	7678	164.8
Growth rate, %	115.1	122.4	99.2	115.3	96.2	114.4	95.8	111.7	108.8 on average
Vologda									
Million rubles	5818	5606	6639	7361	7025	6102	6495	7902	135.8
Growth rate, %	113.2	96.4	118.4	110.9	95.4	86.9	106.4	121.7	106.2 on average
Pskov									
Million rubles	3638	3004	3191	4113	3461	4368	3839	4666	128.3
Growth rate, %	133.1	82.7	106.2	128.9	84.1	126.2	87.9	121.5	108.8 on average
Arkhangelsk									
Million rubles	7376	7053	7986	7433	7813	7939	8286	9166	124.3
Growth rate, %	103.1	95.6	113.2	93.1	105.1	101.6	104.4	110.6	103.3 on average
Veliky Novgorod									
Million rubles	4643	4327	4551	4697	4473	5207	5691	5718	123.2
Growth rate, %	108.8	93.2	105.2	103.2	95.2	116.4	109.3	100.5	104.0 on average
Kaliningrad									
Million rubles	11521	12299	13074	14789	12632	11054	12831	13925	120.9
Growth rate, %	99.5	106.8	106.3	113.1	85.4	87.5	116.1	108.5	102.9 on average
Petrozavodsk									
Million rubles	6376	5107	4961	4913	4491	5102	5129	5717	89.7
Growth rate, %	113.1	80.1	97.1	99.0	91.4	113.6	100.5	111.5	100.8 on average
Total for RC of NWFD									
Million rubles	52581	51668	55321	59599	57250	58402	61113	69033	131.3
Growth rate, %	110.9	98.3	107.1	107.6	96.1	102.0	104.6	113.0	105.0 on average
Total for UD of Russia									
Million rubles	1453.3	1510.6	1619.5	1689.9	1684.2	1743.8	1851.8	2135.2	146.9
Growth rate, %	113.3	103.9	107.2	104.3	99.7	103.5	106.2	115.3	106.7 on average
Source: own calculations according to the reports of the Federal Treasury of Russia; reports on the execution of budgets of urban districts; Rosstat.									

Figure 2. Growth rate of tax revenues of the budgets of regional centers in the Northwestern Federal District in 2011–2018 (in conditions comparable to 2018), %



Source: own calculations according to the reports on the execution of budgets of urban districts, reports of the Federal Treasury of Russia, Rosstat, and the Federal Tax Service of Russia.

As the study shows, due to the uneven development of the production capacity of administrative centers, even within the same federal district, there is a twofold difference in the level of per capita tax revenues between the highest-income city (Murmansk) and the lowest-income city (Petrozavodsk) *(Tab. 3)*.

In the period under consideration, there was an increase in the extent of negative structural transformation of budget revenues of urban districts; it was due to the fact that gratuitous receipts exceeded tax revenues *(Fig. 3)*.

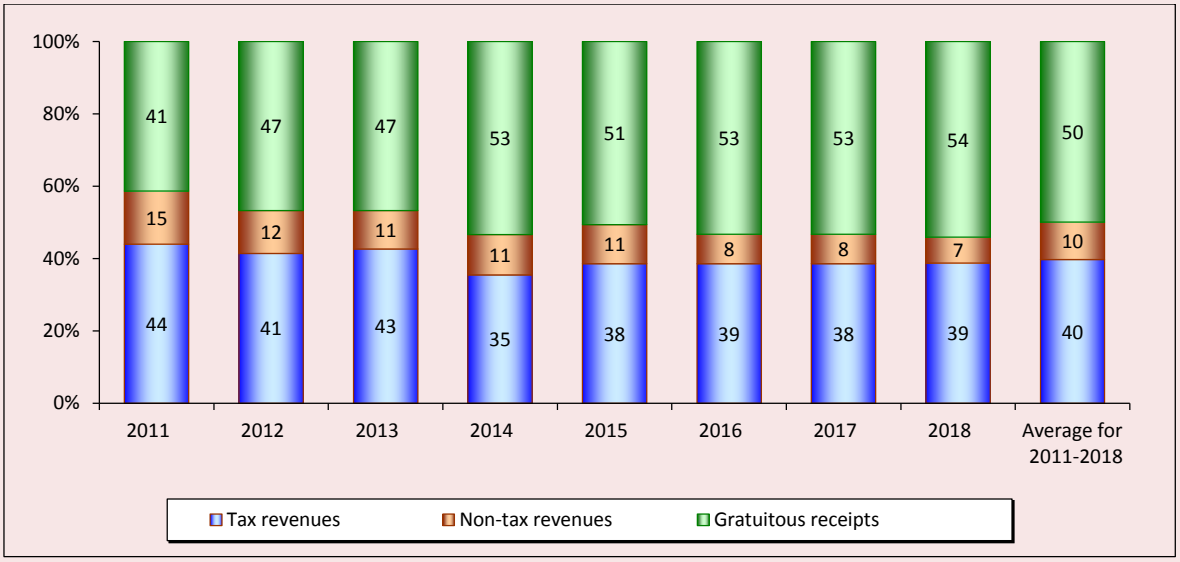
The volatile dynamics of tax revenues were mainly due to unstable revenues generated

Table 3. The share of regional centers in the formation of tax revenues of the consolidated budgets of the NWFD regions

Subject	Total tax revenues received in 2011–2018, million RUB	% of tax revenues of the consolidated budgets of NWFD regions	Tax revenues per capita in 2018, thousand RUB
Murmansk	43126	10.2	27.8
Kaliningrad	47550	16.3	14.1
Arkhangelsk	28249	6.4	10.9
Syktyvkar	18398	3.9	9.9
Vologda	18225	4.7	8.2
Veliky Novgorod	11606	6.4	7.4
Pskov	11141	8.3	7.1
Petrozavodsk	14281	7.9	6.9
Regional centers of the NWFD	192576	7.6	12.0

Source: own calculations according to the reports of the Federal Treasury of Russia; reports on the execution of budgets of urban districts; Rosstat, and the Federal Tax Service of Russia.

Figure 3. Structure of revenues of the budgets of NWFD regional centers, %



Source: own calculations according to the reports of the Federal Treasury of Russia; reports on the execution of budgets of urban districts; Rosstat, and the Federal Tax Service of Russia.

from individual income tax, the main component of the revenues of the budgets of urban districts. Murmansk, Kaliningrad, Pskov and Arkhangelsk showed an increase in the collection of this tax. The strongest drop in the tax was observed in Vologda and Veliky Novgorod – by 21 and 27%, respectively *(Tab. 4)*.

The decisive factor in the reduction of individual income tax receipts consisted in the adjustment of budget legislation[3], which was affected by the mechanism of redistribution of taxes according to the levels of the budget system. Thus, standard deductions of this tax to the budgets of urban districts were reduced from 30% in 2011 to 20% in 2012–2013 and to 15% in the period from 2014. However, we should point out that the minimum standard of 15% for individual income tax payments to the budgets of cities was established not in all the Northwestern regions, so in the territorial context there was a significant gap in the dynamics of tax revenues.

In the context of the policy of intergovernmental fiscal alignment, the budget systems of the vast majority of urban districts within the NWFD were characterized by a decrease in their own tax and non-tax revenues, although on average the coefficient of provision with own revenues exceeded the average coefficient for urban districts of the country *(Tab. 5)*. For example, in the capital cities of the Novgorod and Vologda oblasts, which had the best indicators of provision with own revenues in 2011, there was a decrease from 91 to 64% and from 80 to 65%, respectively.

Own revenues of the city budgets of the NWFD decreased in real terms by 30% against a nominal 10% growth. In Veliky Novgorod,

[3] On amending certain legal acts of the Russian Federation: Federal Law of November 30, 2011 No. 361-FZ (as amended on December 29, 2017); On amending the Budget Code of the Russian Federation and separate legal acts of the Russian Federation: Federal Law of July 23, 2013 No. 252-FZ.

Table 4. Receipts of individual income tax in the budgets of the regional centers of the Northwestern Federal District

Indicators	2011	2012	2013	2014	2015	2016	2017	2018	2018 to 2011
Murmansk									
Million RUB	3102	3273	3597	2886	3116	3378	3649	4128	133%
% of taxes	82	83	72	64	60	55	53	53	-29.3 p.p.
Kaliningrad									
Million RUB	2793	3165	2906	2931	2916	3120	3276	3688	132%
% of taxes	68	55	46	51	49	53	53	52	-16.2 p.p.
Pskov									
Million RUB	882	914	898	900	878	920	997	1065	121%
% of taxes	67	68	66	65	64	66	66	64	-2.7 p.p.
Arkhangelsk									
Million RUB	2690	2609	2826	2618	2654	2264	2861	3068	114%
% of taxes	67	80	81	79	76	73	78	79	12.2 p.p.
Syktyvkar									
Million RUB	1354	1555	1744	1252	1263	1135	1193	1356	100%
% of taxes	64	65	68	60	58	54	55	55	-9.7 p.p.
Petrozavodsk									
Million RUB	1568	1311	1466	1121	1093	1144	1169	1354	86%
% of taxes	79	77	76	70	67	65	63	63	-15.9 p.p.
Vologda									
Million RUB	1850	997	1092	873	988	900	982	1468	79%
% of taxes	62	45	46	46	51	44	46	56	-6.2 p.p.
Veliky Novgorod									
Million RUB	1069	807	900	699	674	711	729	785	73%
% of taxes	65	57	61	51	49	53	52	52	-13.2 p.p.
Total for regional centers of the NWFD									
Million RUB	15309	14630	15429	13281	13852	13572	14856	16911	111%
% of taxes	70	67	63	61	59	57	58	59	-10.5 p.p.
Total for urban districts of Russia									
Million RUB	361947	376909	420282	337001	338602	353027	374821	440319	122%
% of taxes	64	67	68	61	61	60	59	58	-5.9 p.p.

Source: own calculations according to the reports of the Federal Treasury of Russia; reports on the execution of budgets of urban districts; Rosstat, and the Federal Tax Service of Russia.

Vologda, and Petrozavodsk, the reduction in the revenues adjusted for inflation was 43–57%. The growth of real revenues was observed only in Murmansk *(Fig. 4)*.

The reduction in the budget revenues, the growing imbalance between the receipt and expenditure of budget funds in the period under consideration led to a significant deficit in the budget systems of urban districts. In some years, the amount of the deficit exceeded the limits set by the Budget Code (10% in the volume of own revenues). At the end of 2018, the budgets of Petrozavodsk and Vologda experienced the greatest deficit; Murmansk and Veliky Novgorod managed to achieve balance *(Tab. 6)*.

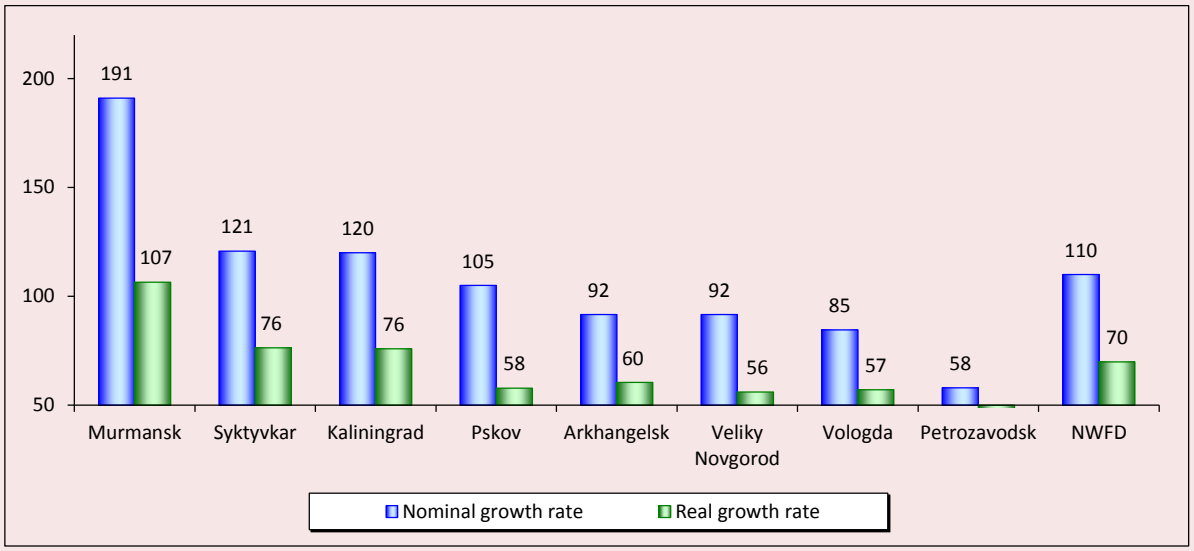
The works [14–19] confirm that the opportunities for modernization of the economy and the social sphere are growing with the strengthening of the budget security of the territories. However, the analysis has revealed an extremely unstable level of security of urban budgets since 2012; due to this fact it is not possible to promote the economic growth of cities *(Fig. 5)*.

Table 5. The coefficient of provision of the budgets of regional centers of the NWFD with own revenues, %*

Urban district	2011	2012	2013	2014	2015	2016	2017	2018	Absolute deviation, 2018 to 2011
Murmansk	0.73	0.80	0.83	0.82	0.85	0.92	0.93	0.93	0.20
Kaliningrad	0.57	0.66	0.65	0.64	0.60	0.82	0.78	0.80	0.23
Syktyvkar	0.66	0.73	0.64	0.65	0.76	0.58	0.73	0.78	0.12
Arkhangelsk	0.78	0.78	0.69	0.86	0.85	0.71	0.83	0.77	0.00
Petrozavodsk	0.78	0.71	0.71	0.78	0.85	0.74	0.85	0.77	-0.01
Vologda	0.80	0.64	0.66	0.72	0.76	0.70	0.63	0.65	-0.15
Veliky Novgorod	0.91	0.65	0.65	0.78	0.80	0.57	0.53	0.64	-0.27
Pskov	0.50	0.63	0.61	0.53	0.67	0.50	0.62	0.53	0.03
For regional centers of the NWFD	0.71	0.70	0.68	0.72	0.77	0.69	0.74	0.73	0.02
For urban districts of Russia	0.62	0.63	0.63	0.63	0.63	0.64	0.63	0.63	0.01

* The coefficient is calculated as the ratio of tax and non-tax revenues to expenses excluding subventions from the federal budget.
Source: own calculations according to the reports of the Federal Treasury of Russia; reports on the execution of budgets of urban districts; Rosstat.

Figure 4. Growth rates of own revenues of the budgets of regional centers of the Nortwestern Federal District, %



Source: own calculations according to the reports of the Federal Treasury of Russia; reports on the execution of budgets of urban districts; Rosstat.

With regard to income security of residents of administrative centers of the North-West, we can point out that the greatest rise in incomes in the period under consideration was observed in Murmansk (incomes grew from 28 to 48.7 thousand rubles per person), Syktyvkar (from 18.3 to 29.4 thousand rubles per person) and Kaliningrad (from 26.6 to 29.3 thousand rubles per person). Residents' incomes were low in Pskov (incomes grew from 17.8 to 22.2 thousand rubles per person), Petrozavodsk (incomes decreased from 24.0 to 18.4 thousand rubles per person) and Vologda (incomes grew from 18.6 to 24.8 thousand rubles per person) *(Tab. 7)*.

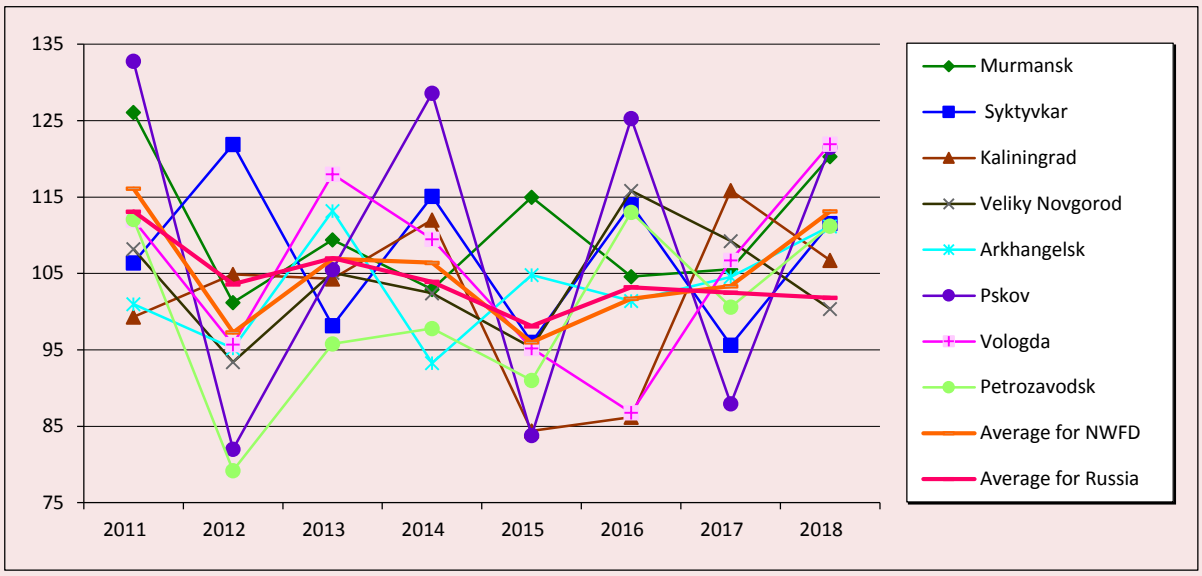
As for expenditures, the nominal expenditures of the budgets of urban districts increased by 25%; however, according to our

Table 6. The ratio of the deficit to the volume of own revenues of the budgets of regional centers of the NWFD, %*

Urban district	2011	2012	2013	2014	2015	2016	2017	2018
Petrozavodsk	-3.7	0.1	-20.9	-12.8	-12.3	-9.4	-2.1	-3.8
Vologda	-8.2	-16.7	-16.3	-8.0	-11.1	-8.2	-9.3	-2.4
Syktyvkar	-5.1	14.1	-12.1	-11.0	-9.1	-16.9	-3.1	-0.7
Arkhangelsk	11.2	6.9	5.8	5.3	2.2	7.0	0.0	-0.3
Veliky Novgorod	12.7	-19.2	-13.1	-9.4	-11.0	-8.7	-1.4	0.4
Murmansk	1.9	-5.1	-5.6	-9.6	-3.7	0.3	-0.4	0.7
Pskov	-11.3	-8.2	-8.8	-2.7	-0.05	-0.3	-4.3	1.2
Kaliningrad	-26.5	-7.3	-4.3	9.0	-31.7	-6.3	0.7	4.2

* Values with the sign «-» mean deficit, with the sign «+» – surplus.
Source: own calculations according to the reports of the Federal Treasury of Russia; reports on the execution of budgets of urban districts; Rosstat.

Figure 5. Dynamics of revenue-based budget security of regional centers of the NWFD per capita, in % to the previous year



Source: own calculations according to the reports of the Federal Treasury of Russia; reports on the execution of budgets of urban districts; Rosstat.

calculations, the inflationary impairment of budget expenditures for the analyzed period amounted to 23% *(Fig. 6)*.

The provision of the population of the capital cities of NWFD regions with budget expenditures per capita exceeded the average level for the cities of the country by 1.7 times, but this was achieved due to high indicators in Murmansk, Syktyvkar and Kaliningrad *(Tab. 8)*.

In other cities, per capita provision with expenditures was generally lower than the average for urban districts; that is, we can in some way talk about the shortage of public services provided to the population of these cities.

Summary

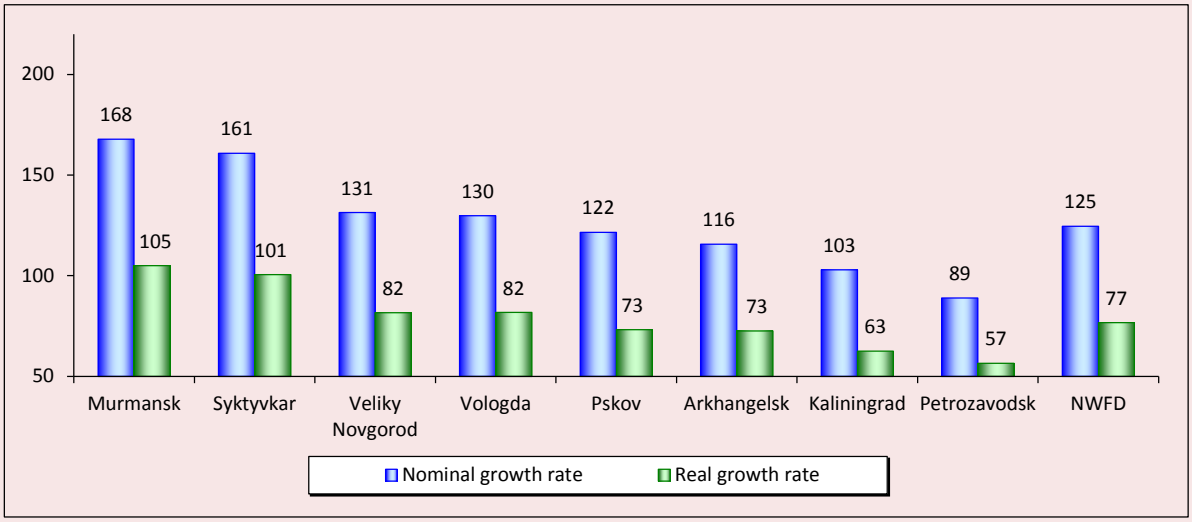
In conclusion, let us list the results of our study of the budget systems of regional centers of the NWFD.

Table 7. Per capita budget revenues in the regional centers of the NWFD

Urban district	2011	2012	2013	2014	2015	2016	2017	2018	2018 to 2011	Average for 2011–2018
Murmansk	28.0	28.3	31.0	31.9	36.7	38.4	40.5	48.7	174.1	35.4
Syktyvkar	18.3	22.3	21.9	25.2	24.2	27.6	26.4	29.4	160.9	24.4
Kaliningrad	26.6	27.9	29.1	32.6	27.5	23.7	27.5	29.3	110.2	28.0
Arkhangelsk	20.7	19.7	22.3	20.8	21.8	22.1	23.1	25.68	124.1	22.0
Veliky Novgorod	21.1	19.7	20.7	21.2	20.2	23.4	25.6	25.66	121.6	22.2
Vologda	18.6	17.8	21.0	23.0	21.9	19.0	20.3	24.8	133.1	20.8
Petrozavodsk	24.0	19.0	18.2	17.8	16.2	18.3	18.4	20.5	85.3	19.0
Pskov	17.8	14.6	15.4	19.8	16.6	20.8	18.3	22.2	124.9	18.2
Average for regional centers of the NWFD	22.4	21.8	23.3	24.8	23.8	24.2	25.0	28.3	126.3	24.2
Average for Russia	13.8	14.3	15.3	15.9	15.6	16.1	16.5	16.8	121.7	15.5

Source: own calculations according to the reports of the Federal Treasury of Russia; reports on the execution of budgets of urban districts; Rosstat.

Figure 6. Dynamics of expenditures of the budgets of regional centers of the NWFD, billion rubles



Source: own calculations according to the reports of the Federal Treasury of Russia; reports on the execution of budgets of urban districts; Rosstat.

First, we have revealed a strengthening of the extremely negative trend of exceeding financial assistance over tax revenues in the budgets of regional capitals, which is caused by a reduction in their own revenues by 30% in real terms for 2011–2018.

Second, we have proved that the inflationary impairment of budget expenditures of regional centers of the NWFD in 2011–2018 amounted to 23%; as a result, the level of budget security for expenditures fell below 25 thousand rubles per person in a number of cities (Vologda, Petrozavodsk, Pskov).

Third, we have revealed a decrease in the fiscal function of individual income tax due to the changes in the current intergovern-

Table 8. Dynamics of expenditure budget provision per capita in the regional centers of the NWFD

Urban district	2011	2012	2013	2014	2015	2016	2017	2018	2018 to 2011	Average for 2011–2018
Murmansk	27.7	29.1	32.0	33.5	37.5	38.3	40.6	48.5	175.2	35.9
Syktyvkar	19.0	20.9	23.5	26.6	25.2	29.3	26.7	29.5	155.2	25.1
Kaliningrad	30.5	29.0	29.9	31.2	32.4	24.6	27.4	28.6	93.9	29.2
Arkhangelsk	22.3	20.5	23.1	21.4	22.1	23.0	22.8	25.7	115.4	22.6
Veliky Novgorod	19.8	21.4	21.9	22.0	21.1	24.1	25.7	25.6	129.4	22.7
Vologda	19.7	19.3	22.6	23.8	22.9	19.7	21.1	25.0	127.0	21.8
Pskov	18.7	15.2	16.1	20.0	16.6	20.8	18.6	22.1	118.4	18.5
Petrozavodsk	24.6	19.0	20.4	19.0	17.3	19.1	18.6	20.8	84.6	19.9
Average for regional centers of the NWFD	23.5	22.5	24.4	25.3	25.3	24.9	25.2	28.3	120.2	24.9
Average for Russia	14.1	14.6	15.7	16.2	16.0	16.2	16.4	16.6	117.7	15.7

Source: own calculations according to the reports of the Federal Treasury of Russia; reports on the execution of budgets of urban districts; Rosstat.

mental fiscal policy; it has had a decisive impact on the stability and balance of the budgets of regional centers of the NWFD.

Fourth, in the period under consideration there is a tendency toward improving the balance of budget systems of urban districts of the NWFD. The budgets of Murmansk and Veliky Novgorod should be recognized as the most balanced budgets by the end of 2018.

These trends lead to the conclusion that the budgets of the regional centers are still in a state of survival, and they do not serve the purpose of achieving economic growth of the territories and improving the quality of life of the population. Such a frontier state requires special attention to regional centers on the part of the state. In this case, it is necessary to do the following:

• upgrade the lifestyle of the population of regional centers by stimulating the development of legal small business and the growth of the middle class;

• provide regional centers with the sources of financial resources for development, which is possible only when intergovernmental fiscal relations are adjusted; in particular, it concerns the proportions of the distribution of taxes between the levels of the budget system;

• create an enabling institutional environment to attract investment that will create new jobs and improve the social environment of regional centers.

Without finding a radical solution to the urgent problems, regional capitals will not be able to raise the standard of living and improve the quality of life of the population; therefore they will not concentrate human resources on their territories and will not increase their own economic base.

It is for a reason that many experts argue that with the help of appropriate state regulation Russian cities should be brought to an independent level of market relations and integrated into the world economy. At the same time, we should note that the results and achievements of the city in the formation and implementation of economic potential and in political influence on the world stage largely depend on the ability of local governments to use the achievements of science, production and culture in their territory, as well as to combine trade, industrial and infrastructure functions.

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Taxation of Digital Services: Theory, International Practice and Domestic Prerequisites

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Abstract. Reforming corporate taxation taking into account customer value creation concept is a necessary stage in the transformation of the Russian tax system. It will help make it just and efficient in the context of the digital economy in which major IT corporations gain super profits from the use of big data and provision of digital services, the cost of which largely depends on the participation of customers. The goals of the present research are as follows: to substantiate theoretical prerequisites for increasing the tax burden on the companies that use big data as a factor of production, to identify trends and patterns in the modern stage of reforming the taxation of revenues resulting from the provision of digital services in foreign countries, and to substantiate the presence of potential for its application in Russia. In the course of our research we identify features of big data as a factor of production; they demonstrate the need for a special approach to the taxation of income from its use and are important for the identification of the object of taxation. In the light of the European tax reform aimed to create a fair and effective tax system in the digital economy we make an overview of the current practice of introducing digital services tax in the EU member states; we also consider some polemical provisions that require further research. Having analyzed the financial performance and tax burden of the largest IT companies Yandex N.V. and Mail.Ru Group for 2013–2018, we reveal the trend of outstripping growth of gross income and profit in comparison with the amount of tax paid. We also find out that the structure of income is dominated by the items falling under digital services taxation, as well as factors contributing to the reduction of the tax burden. We conclude that Russia has the potential to introduce digital services tax in the medium term.

Key words: digital services tax, big data, digital capital, digital rent, customer value creation, GAFA tax, Google tax, multinational IT company.

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Introduction

The digital economy is changing the structure of capital as a factor of production, and the sources of wealth accumulation are changing along with it. "Digital capital not only replaces different types of human labor, but also reproduces itself easily and cheaply at minimal costs of other factors. Through integration of existing sources of labor and capital and creation of new products, services and business models, new "digital" technologies displace labor and material and intellectual capital" [1, p. 11]. A striking example of this effect can be found in the displacement of small producers and traders from local markets while the network of digital platforms in the field of the Internet of things is expanding.

The digital economy enhances the market concentration, monopoly power and revenues (among other things through government subsidies and tax incentives) of IT companies and companies in other industries in which digitalization becomes a competitive advantage. In 2018, 50% of the world's major companies gained their revenues from the use of big data. The volume of the global big data market will increase fourfold by 2025 compared to 2015 and will amount to 90 billion USD[1].

The theory and practice of taxation of new sources of income and wealth lags far behind the pace of development of the digital economy. On the one hand, traditional and well-developed rent taxation instruments (here we mean digital rent) are quite applicable in the context of digitalization. On the other hand, the specific object of taxation – revenue from the use of big data and a wide range of possible taxpayers engaged in the processing of personal data and content – require special tax structures that help assess objectively, as well as remove fairly and effectively part of the digital rent, without slowing down the pace of economic development. Thus, the agenda of the thirteenth G20 Summit raised fundamental questions about "how the digital economy generates value; when value is created; and how it is possible to report and collect taxes fairly and effectively, without impeding innovation"[2] (Buenos Aires, 2018).

In view of the above, the hypothesis of our study is based on the statement that corporate taxation reform, taking into account the concept of customer value creation, is a necessary step in the transformation of the Russian tax system to ensure its fairness and efficiency in the digital economy, allowing the largest IT corporations to gain super profits from the use of big data as a factor of production and from the provision of digital services, the cost of which largely depends on the participation of users.

The problem of reforming the taxation of digital services is caused by the fact that neither theoretical studies nor world practice has an adequate generally recognized tool (tax), which provides for imposing fair tax burden on the revenue derived from the provision of digital services:

1) the modern international system of value added taxation levies taxes on the revenue generated from the sales of services rendered in electronic form, according to the European model (depending on the segment in which the services are provided at the place of the main activity of the buyer or at the place of the buyer's location) or the New Zealand model (at the place of actual consumption of services). In Russia, VAT is levied according

[1] Abdrakhmanova G.I., Vishnevskii K.O., Volkova G.L., Gokhberg L.M. et al. *Digital Economy Indicators: 2018: Statistics Collection*. National. Research University "Higher School of Economics". Moscow: HSE, 2018. P. 242.

[2] *Overview of Argentina's G20 Presidency 2018: Building Consensus for Fair and Sustainable Development. 01.12.2017*. Available at: http://www.g20.utoronto.ca/2018/2018-Overview-en.html

to the European model since 2017 if foreign organizations provide services in electronic form. Since 2019, the Federal Tax Service of Russia has tightened the regulations regarding mandatory registration of foreign organizations. However, the current procedure for taxation of Russian e-service providers, involving a number of exemptions from payment in order to stimulate the domestic IT industry, is often used by transnational companies to optimize the tax burden, which allows them to reduce the effective tax rate. According to the calculation of the actual effective rate of VAT levied on foreign and Russian IT companies providing services in the field of digital content, the increase in the profitability of their activities by 1 % entails a 0.1525% decrease in the VAT accrued for payment to the budget [2];

2) the modern international corporate taxation system involves taxation of income in countries where business creates value. However, this principle is not effective in relation to those business models for which value creation depends in part on the involvement and participation of customers who may be located in another country. This makes it necessary to transform the corporate taxation system taking into account customer value creation. However, this is a long-term perspective, the effective implementation of which is possible only in countries that apply the rules of consolidated income taxation to transnational companies. As we know, Russia has a moratorium on the creation of consolidated groups of taxpayers, even within the country.

In this regard, the so-called GAFA tax – an indirect tax on the income from certain types of digital activities – is the only possible tool that Russia can use to form a fair tax burden on transnational organizations that provide services in electronic form. GAFA tax is currently being discussed in the EU countries; our paper considers it as well. In case of its adoption in Russia, it can make the distribution of tax revenues between Russia's constituent entities more fair, depending on where the profit from digital services is generated (taking into account the location of the customer when receiving the service).

The proposed model of GAFA tax in European countries can be integrated into Russian tax legislation, which is formed in the image and largely in the likeness of the European. However, this initiative has not received wide coverage in Russia. Currently, much attention is paid only to streamlining the procedure of VAT collection from digital services, the so-called Google tax. Our study draws the attention of the scientific community, tax authorities and other interested groups to the discussion on reforming the taxation of revenues generated from the provision of digital services in the context of customer value creation; this circumstance determines practical importance of the present research.

The goals of our study are as follows: to substantiate theoretical prerequisites for increasing the tax burden on IT companies that use big data as a factor of production, to identify trends and patterns inherent in the modern stage of reforming corporate taxation of revenues generated from the provision of digital services in the context of customer value creation, and to substantiate the presence of the potential for its application in Russia.

Research data and methodology

Theoretical and methodological basis of our research is formed by the works of D.S. Lvov [3], S.A. Kimel'man [4], E.A. Kuklina [5], S.V. Chernyavsky [6], V.V. Ponkratov [7] and other economists engaged in the study of rent taxation of natural resources [8]. The phenomenon of "digital" rent is used in the works by T.N.

Yudina [9]. The initial information base of the study consisted of the publications in foreign scientific literature on optimal taxation in the digital economy, taking into account the following features: large network effects, bilateral platforms, collection and use of personal data, and erasing the boundaries for economic activity [10-15]; the works on international taxation by a team of authors supervised by M.R. Pinskaya [16], and as a number of publications on the taxation of operations for the provision of electronic services [17-19].

However, according to the analysis of the above mentioned works of Russian scientists, it is concluded that the improvement of taxation of digital business in the context of customer value creation is not given enough attention. In modern scientific literature, the range of issues related to taxation, including the allocation and identification of the object of taxation (property, turnover or profit), determination of taxpayer category (business (corporation), digital rentier, consumer of digital services) and the moment of the obligation to pay the tax (when certain scale of activity is achieved), is recognized as one of the most relevant [20, p. 124]. However, we could not find examples of research on improving the taxation of major IT-holdings' revenues generated from the processing of big data in the context of customer value creation, and examples of research on modern foreign taxation practice in this field. We agree with researcher A.N. Kozyrev who points out that "while the debate on the digital economy is dominated by discussion of its opportunities, prospects, new forms of business based on digital platforms and blockchain technology, we can say that the issues concerning taxation and those related to the creation and destruction of value remain in the background, even though they affect the interests of all economic entities, including the population, business and the state"[3]. Our study is devoted to filling these gaps, and this is what constitutes its scientific relevance.

To achieve the goal that we set out in the paper, we use general scientific research methods (analysis and synthesis, comparison, analogy), methods of vertical and horizontal economic analysis of organizational performance in the following stages:

– we substantiate the need to increase tax burden on the recipients of digital rent on the basis of clarifying the content of the category of "big data" as a factor of production in the digital economy;

– we consider the initiatives and experience of foreign countries in the introduction of GAFA tax and its analogues;

– we analyze incomes and tax burden of major Russian IT companies (Yandex N.V. and Mail.Ru Group) to assess the prerequisites for using the experience of foreign countries in the taxation of digital services in Russia.

Resolutions of EU member states on the improvement of corporate taxation in the digital economy, retrieved from official websites of their authorities, and public financial state-ments of Yandex N.V. and Mail.Ru Group were used as information base in our study. Data on financial performance are presented in accordance with the management reporting of companies, and therefore may differ from the data based on IFRS. Some indicators of corporate financial performance for 2018 were converted to euros at the rate of 74.81 calculated as an arithmetic mean of the nominal exchange rate of the euro to the ruble at the end of each quarter of 2018 (70.56; 72.99; 76.23; 79.46)[4].

[3] Kozyrev A.N. Cost and taxation in the digital economy: a report at the Academic Council of CEMI RAS, May 16, 2017. Available at: https://medium.com/cemi-ras

[4] Data of the Central Bank of the Russian Federation – the ruble exchange rate. Available at: https://www.cbr.ru/statistics/?PrtId=svs

To carry out a comparative analysis of the tax burden on IT companies Yandex N.V. and Mail.Ru Group we calculated the effective tax rate as the ratio of profit tax to profit before tax in the current year.

Research results

Big data as a special factor of production in the digital economy

Big data has three defining properties: volume, velocity (speed of data processing and obtaining a result) and variety; additional properties of big data are as follows: veracity, viability, value (value and economic feasibility of processing), variability, and visualization. In all cases, these properties emphasize that the defining feature is not only the physical volume of big data, but also other properties that are essential for understanding the complexity of the task of their processing and analysis. These characteristics, as well as the basic properties of information, in our opinion, determine some features of big data as a factor of production:

1) it is a secondary resource, the result of processing and analysis of huge volumes of primary diverse, structured and unstructured information, including personal data;

2) it has the property of self-growth – primary information emerges every minute, is being continuously accumulated, structured and processed, which leads to the emergence of a new information product that can bring a specific profit. At the same time, for most owners, primary data or content created by them is a non-economic good that has little use and exchange value (with the exception of media personalities, bloggers and other individuals with a certain level of publicity). In contrast, big data is an economic good of a productive nature with high use and exchange value;

3) it has zero marginal resource costs due to voluntary, mandatory and conditionally gratuitous (if you do not take into account the fact that the owner of the data is able to use the functionality of the digital platform, which transmits and places its data) nature of obtaining ("producing") primary and personal data from individuals; as well as relatively low marginal costs of accumulation, processing and dissemination of big data;

4) it is universal, because with proper processing and analysis, big data can be useful and in demand in different production and non-production areas, which allows us to conclude that the demand for big data does not depend much on the demand in the markets of final goods and services compared to other factors of production;

5) it is inexhaustible and indestructible (preservation of properties in the process of consumption) and can bring income to the owner many times (most often in the form of an intangible asset);

6) it is partially interchangeable with other factors of production, is highly mobile and easy to replicate, which leads to the existence of stable demand in the market of final goods and services;

7) it produces specific income – information differential rent II associated with obtaining additional profit when using information products and services that have increased their value (usefulness) as a result of additional investments. The classic sources of big data are the Internet of things and social media, which have an opportunity to receive monopoly information rent in the form of fixed surplus income. In contrast to differential rent, monopoly information rent is stable, fixed and is obtained by the owners of particularly valuable and rare information resources [21]. Moreover, modern scientific community starts using such concepts as information-and-digital capital (big data and tools for their processing and analysis) and digital rent received by digital platforms due to the possession of the exclusive right to use unique and valuable information and digital capital [22].

These features allow owners of big data, as part of digital capital – a key factor of production in the digital economy, to be highly competitive and receive huge revenues in the form of digital rents, due to the monopoly power that arose as a result of the coverage of a large number of customers. At the same time, the dominant position of technology companies is most often explained by their leading position in the market and by the conservatism or habit of customers, for whom the transition to other digital platforms (services) is fraught with time expenditure and with the loss of data and contacts, and sometimes even impossible, for example, if corporate business (communication) is conducted on a certain platform. The limited number of consumers on the planet and their physical ability (due to time constraints) to use digital products is becoming one of the main factors impeding the entry of new actors on the market, along with the usual barriers typical of the markets in which competition is imperfect. The ability to access the data of as many customers as possible is a key factor in business competitiveness. Customers themselves "become a natural resource, the access to which (in the conditions of sovereign countries) can and should be provided on a fee-paying basis, just like the access to any natural monopoly" [1, p. 13]. We think that the payment in the form of a mandatory tax, which will be an instrument of redistribution of dividends of the digital economy, is the only one that is adequate to the scale of income received.

Initiatives of foreign countries to introduce GAFA tax

Currently, "the data economy exists not only unregulated, but untaxed, and it's probably no surprise that in a time of massive market capitalizations (based in many cases on accumulated data held by companies) state budgets are dying"[5]. The effective income tax rate for digital business models ranges from 10% to 25%. On average, the income of digital business models is taxed at the rate of 10.2%, and the income of traditional business models – at the rate of 22%[6]. Therefore, the introduction of an additional tax on the use of personal data is currently being actively discussed in the EU.

In January 2013, France considered an initiative to levy an Internet tax on the collection of personal data – the "raw material" of the digital economy – by Facebook, Google, Amazon and other technology companies. It was proposed that tax rates would be based on the number of users an Internet firm tracked, to be verified by outside auditors[7]. The specific elements of the tax were not made available to the general public, but the discussion reached the EU and OECD levels. Certain alternatives were proposed back in 2017: an equalizing tax on the turnover of digital companies in the form of an independent tax or that integrated in a corporate income tax; an autonomous tax on digital transactions; a tax on the income derived from the provision of digital services or advertising[8].

In March 2018, the European Commission, as part of the reform of fair taxation of the digital economy, proposed an initiative to introduce a tax on the turnover of major digital companies called GAFA (Google,

[5] Caulfield M. A *State Sales Tax on Personal Data. 14.09.2017.* Available at: https://hapgood.us/2017/09/14/a-state-sales-tax-on-personal-data/

[6] *PWC and ZEW. Digital Tax Index. 2017.* 14 p. Available at: https://www.pwc.de/de/industrielle-produktion/executive-summary-digitaliiserungsindex-en.pdf

[7] Pfanner E. France Proposes an Internet Tax. *The New York Times.* Available at: https://www.nytimes.com/2013/01/21/business/global/21iht-datatax21.html?pagewanted=all&_r=1&

[8] EU.COM(2017)547final/Brussels,21.9.2017.Available at: https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2017:0547:FIN:PT:PDF

Apple, Facebook, Amazon) tax. It is proposed to introduce this tax at the rate of 3% of the income received from activities in which users play an important role in creating value and which is most difficult to take into account in accordance with the current tax rules:

– placing user-oriented advertising on the digital interface;

– providing users with a multi-faceted digital interface that allows them to find other users and interact with them, and which facilitates the provision of basic supplies of goods or services directly between users;

– transferring the data about users and the data collected and generated from user actions via digital interfaces.

Digital services, the users of which do not make a significant contribution to the creation of their value, are considered non-taxable. For example, communication services or payments via the Internet, e-commerce services, services for the supply of digital content with distribution rights, services for the collection and use of data by businesses for internal purposes, some investment and crowdfunding services, and others.

GAFA tax payers are companies whose annual turnover exceeds 750 million euros and whose revenues in the EU exceed 50 million euros. These criteria are met by 120–150 companies (technological giants, half of which are American, a quarter –Asian and a quarter – European). It is planned to create a digital portal (One-Stop-Shop), which will monitor the compliance of companies with the requirements. Under the proposed tax system, one member state would be responsible for identifying the taxpayer, collecting the tax and distributing it as needed in other member states according to the number of users in each country. At a rate of 3%, this tax will allow EU member states to collect five billion euros per year, of which France is planning to receive 500 million[9].

Two objectives of the tax are officially declared. The first one is to impose a fair tax burden on digital business giants that use legitimate ways of tax optimizing within the EU, for example, such as the IP-Box regime [23]. The second objective is to avoid the concentration of wealth in the hands of digital giants, which embed into value chains as subjects of infrastructure and eventually implement the so-called disruptive scenario of digital transformation of the market, involving the capture of the chain by displacing small and medium-sized players.

At the same time, it is emphasized that GAFA tax is a temporary measure and it will exist before the adoption of unified rules of corporate taxation of digital activities in the EU. These rules are developed taking into account the concept of customer value creation, in the framework of which the above listed incomes will be taxed within the framework of a single corporate tax.

The initiative does not find enough supporters in the European Council. During the discussions in early December 2018, it was proposed to tax only the income from Internet advertising and to postpone the date of adoption of the tax to January 1, 2021, if the common rules of corporate taxation of digital activities in the EU and OECD are not adopted by this date. But even in its cut-down version, the draft tax was not supported by Ireland, Denmark, Sweden and Finland, and its discussion

[9] Commission Europeenne. Directive du conseil concernant le systéme commun de taxe sur les services numériques applicable aux produits tirés de la fourniture de certains services numériques. Bruxelles, le 21.3.2018 COM(2018) 148 final. Available at: https://ec.europa.eu/taxation_customs/sites/taxation/files/proposal_common_system_digital_services_tax_21032018_fr.pdf

was postponed to March 2019, despite the statements of a number of countries (France, UK) about their readiness to adopt the tax in 2019, even in the absence of a European-wide consensus.

In 2018, the UK held an open discussion on the taxation of corporate income in the digital economy and considers it necessary to introduce an additional tax on digital business, for which the collection of data on users results from a broader and more active interaction with the business than just the formation of an operational database of customers. There are four channels within which users themselves become participants of the value chain: content creation, deep and long-term interaction with the digital platform, network and external effects from the participation of a large number of users, and the contribution of users to the brand[10].

In March 2019, France announced a bill that introduces a tax on digital services beginning from January 1, 2019. In France, the tax is to be paid by companies with a global turnover on their digital activities of 750 million euros or more and by those making a turnover of over 25 million euros in France. The rate is differentiated depending on the turnover, and the maximum value is 5%. The tax on digital giants will affect a total of about thirty groups, most of which are foreign. GAFA tax amounts paid will reduce the taxable profit on corporate income tax. This reform will help reduce the base corporate tax rate from 33.3% to 25% for all companies by 2022[11].

The budget of Italy for 2019 introduces a similar indirect tax on companies whose domestic turnover exceeds 5.5 million euros at the rate of 3%. The tax base is formed by the amount of revenue obtained from digital services (net of value added tax)[12].

Thus, vigorous tax competition between countries for the income from major taxpayers in the digital sphere leads to the promotion of a tax on digital services. In order to develop an effective and equitable international taxation of income from the provision of digital services, it is necessary to do the following:

1) recognize user participation as an important value factor in certain types of business;

2) develop a method for measuring user participation;

3) determine the system of criteria for classifying companies as payers in the business group;

4) grant the jurisdictions, in which users are located, the right to tax non-resident companies without permanent establishment;

5) develop a method for determining the share of these companies' profits created by users, which should be distributed among the countries by the jurisdiction entitled to levy the tax[13].

According to the study, developed countries are actively discussing the development of a new tax structure that will improve the fairness and efficiency of corporate taxation in the digital economy, in which Russia is not yet involved, although its economy possesses the tax potential in this field.

[10] GOV.UK. Corporate tax and the digital economy: position paper. Closed consultation. 13.03.2018. Available at: https://www.gov.uk/government/consultations/corporate-tax-and-the-digital-economy-position-paper

[11] Taxation: the outlines of the GAFA tax revealed. 06.03.2019. Available at: https://www.gouvernement.fr/en/taxation-the-outlines-of-the-gafa-tax-revealed

[12] Italy introduces new digital services tax. Available at: https://taxinsights.ey.com/archive/archive-news/italy-introduces-new-digital-services-tax.aspx

[13] GOV.UK. Corporate tax and the digital economy: position paper. Closed consultation. 13.03.2018. Available at: https://www.gov.uk/government/consultations/corporate-tax-and-the-digital-economy-position-paper

Table 1. Dynamics and revenue structure of Yandex N.V. and Mail.Ru Group (mln RUB)

Indicator	2013	2014	2015	2016	2017	2018	Growth rate, %
Yandex N.V.							
Revenue, including:	39502	50767	59792	75925	94054	127657	323
– revenue from the sale of online advertising;	38848	50147	58210	72579	87400	102737	264
proportion of revenue from Internet advertising in the total revenue	98.3	98.8	97.4	95.6	92.9	80.5	-
– other revenue	654	620	1582	3346	6654	24920	3810
Mail.Ru Group							
Revenue	31165	32708	37986	43285	56789	75260	241.5
– revenue from the sale of online advertising;	11486	12257	14630	18772	22975	31853	277.3
proportion of revenue from Internet advertising in the total revenue	42.4	37.5	38.5	43.4	40.5	42.3	-
– other revenue	19679	20451	23356	24513	33814	43407	220.6
Compiled with the use of annual and quarterly reports for 2014–2018.Yandex N.V. Available at: https://yandex.ru/company/prospectus; Mail.Ru Group. Available at: https://corp.mail.ru/ru/investors/reports/							

Analyzing financial performance and tax burden of the largest Internet companies of the Russian-speaking network segment

Mail.Ru Group and Yandex N.V. are the largest IT holdings that own Russian-language social media and messengers, Internet search engines and other products that allow them to generate big data about customers and use them to obtain revenue. As of December 2018, they rank first and second in the Top 10 holdings in terms of audience coverage in Russia (12–64 years): Mail.Ru Group covers 49,080 thousand people, Yandex N.V. – 48,727 thousand people on average per month[14].

The companies are represented in Russia by their branches: Yandex LLC and Mail.Ru LLC, being residents of other countries (respectively, the Netherlands and the British Virgin Islands). It is not possible to assess the performance of the branches in Russia due to the lack of publicly available financial reporting data. In this regard, we will use the information of the consolidated statements of the holdings, according to which their revenue is growing rapidly every year.

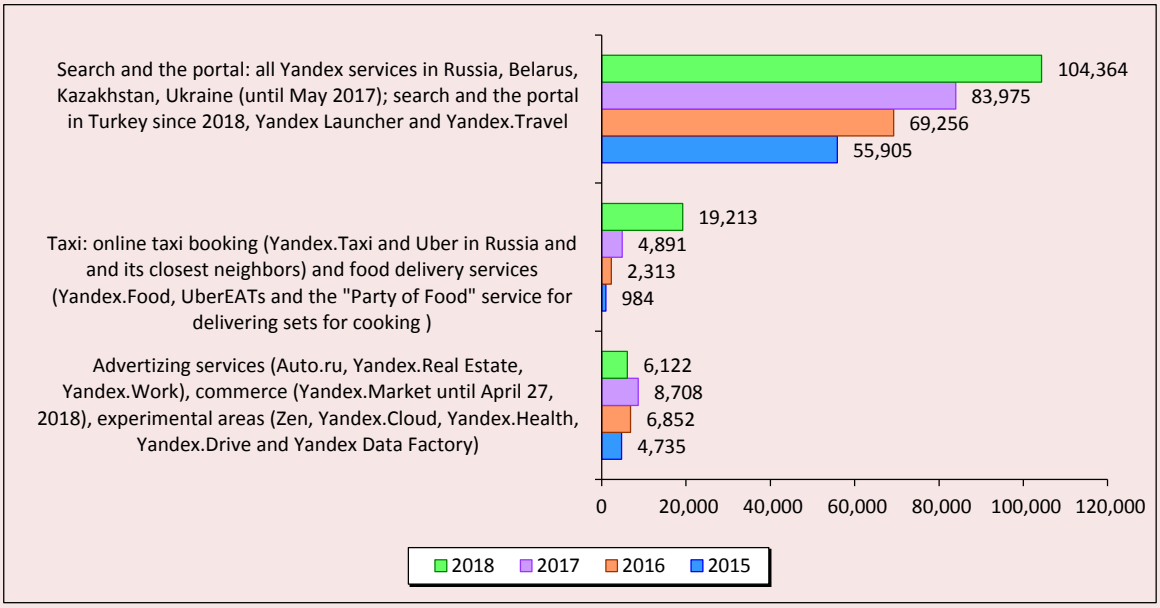
According to *Table 1*, in 2013–2018, the consolidated revenue of Yandex N.V. increased more than threefold (323%). In 2018, the growth compared to 2017 amounted to 136% – up to 127,657 million rubles (1,707 million euros).

Mail.Ru Group increased by 2.5 times (241.5 %) during the analyzed period and the company's revenue at the end of 2018 was 52,397 million rubles less than the same indicator for Yandex N.V. In 2018, the growth compared to 2017 amounted to 133% – up to 75,260 million rubles (1,006 million euros).

Thus, the holdings' turnover significantly exceeds the minimum threshold at which GAFA tax is planned to be levied in the EU (750 million euros worldwide). However, since holdings receive the main part of their revenue in Russia and in a number of its close neighbors, GAFA tax, if introduced in the EU, will not affect them.

[14] WEB-Index: Audience of Internet projects. Study results: Desktop, December 2018, Russia 0+. Available at: https://mediascope.net/data/

Figure 1. Revenue of Yandex N.V., broken down by service segments, mln rubles



Source: Yandex N.V. annual and quarterly reports for 2014–2018. Available at: https://yandex.ru/company/prospectus; Mail.Ru Group annual and quarterly reports for 2014–2018. Available at: https://corp.mail.ru/ru/investors/reports/

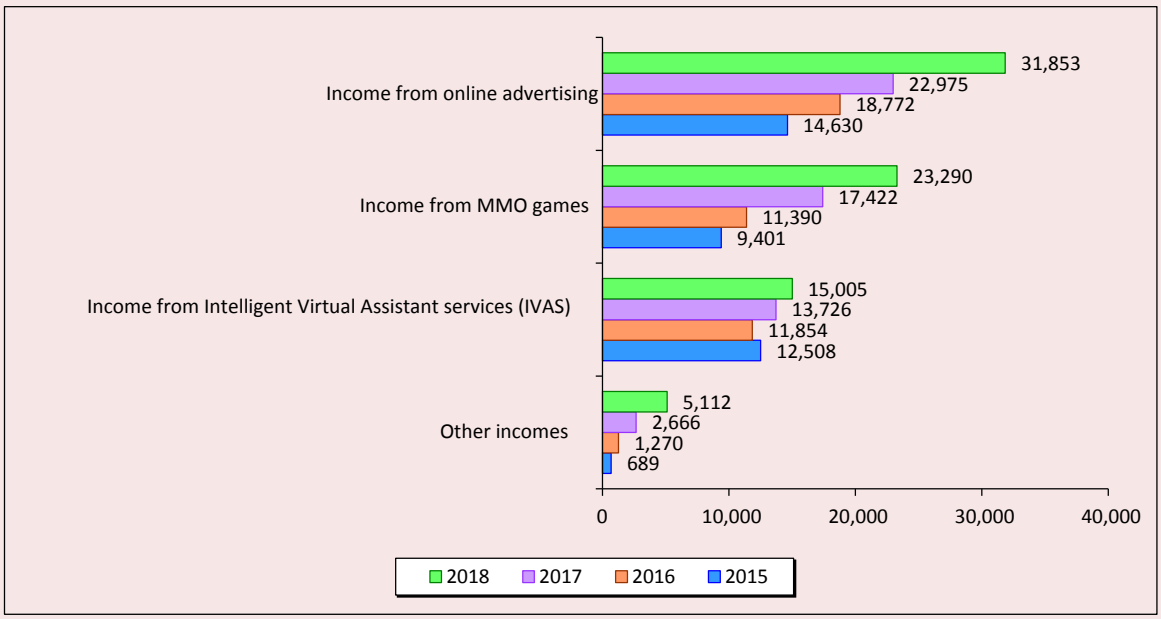
Online advertising, the revenue from the sale of which is growing annually, is the main source of income of IT holdings for the period under consideration. During the period under consideration, the share of advertising revenue of Yandex N.V. decreased by 15% against the background of the growth in other revenues from booking a taxi online, advertising, food delivery and experimental activities; nevertheless, it still brings more than 80% of revenue *(Fig. 1)*.

According to Figure 1, while the share of revenues from Yandex search and portal in 2018 remained significant, there was a rapid increase in other revenues from booking a taxi online and food delivery services. For the period 2015–2018, they increased 19.5-fold and amounted to a record 19,213 million rubles by the end of 2018. For comparison, revenues generated by the search and the portal increased only 1.9-fold. In fact, Yandex N.V. has entered the most profitable market of services, on which it initially participated only as a platform for online advertising. At the same time, the entry of digital platform services for booking a taxi online into the market of commercial passenger transportation has significantly transformed it, turning it into an oligopoly by consolidating and displacing small and medium-sized competitors. Thus, at the end of 2018, the taxi market in Moscow is represented by four major players: Yandex.Taxi – 56.5%, Citymobil – 24.5%, Gett – 9.4%, Vezyot – 5.3% of the total number of passenger traffic[15]. Yandex.Taxi is the leader on the Russian market of taxi services, and its share is estimated at 50%.

Revenues from other Yandex services and experimental fields are not growing so much. In 2018, there was an increase in the revenues from Yandex.Drive service launched this year; the revenues from the sale of devices also increased.

[15] Baulin A. Dear children: Yandex.Taxi spent a quarter of a billion to relaunch the car seat. FORBES. 12.02.2019. Available at: https://www.forbes.ru/tehnologii/372215-dorogie-deti-yandekstaksi-potratil-chetvert-milliarda-na-perezapusk-avtokresla

Figure 2. Revenue of Mail.Ru Group, broken down by segments of rendered services, mln rubles



Source: Yandex N.V. annual and quarterly reports for 2014–2018. Available at: https://yandex.ru/company/prospectus; Mail. Ru Group annual and quarterly reports for 2014–2018. Available at: https://corp.mail.ru/ru/investors/reports/

Sale of online advertising brings three times less income to Mail.Ru Group compared to Yandex N.V. and averages 40% of its total value. The company considers the following areas as priority for 2019: promoting content consumption, expanding the advertising network and increasing the effectiveness of advertising through continuous development, new innovative advertising products, attracting new types of advertisers, such as small and medium-sized businesses and offline retailers[16].

Except advertising Mail.Ru Group receives revenues mainly from MMO games (massively multiplayer online game, MMO, MMOG) – network computer (or console) games, which engage a large number of players simultaneously: Hustle Castle, War Robots, Warface, etc.) and from the sales of virtual services in social networks (Vkontakte, Odnoklassniki) *(Fig. 2)*.

According to Figure 2, the revenue of Mail. Ru Group generated by MMO games increased 2.5-fold in 2015–2018. Warface Console, the most successful online game as of the end of 2018, ranked third among the free games according to Sony PS4 version for the United States and became widespread in Germany and Japan. Revenue from the sale of virtual services (IVAS) for the analyzed period increased by 20%, which is due mainly to new mobile products. In social media, this category of revenue is reduced. However, gross income from social media is growing rapidly. Since 2014, in which Mail.Ru Group gained control over *Vkontakte* social media, gross revenues generated by it increased fourfold in four years. Over the next three–four years, the holding expects a doubling of revenues from *Vkontakte*.

In addition, Mail.Ru the Group is actively developing markets for food delivery (Delivery Club and ZakaZaka), advertising (Youla mobile marketplace), cartography (MAPS.ME), retail

[16] Mail.Ru Group Limited Audited IFRS results for FY 2018. 01.03.2019. Available at: https://corp.mail.ru/en/press/releases/10381/

Table 2. Dynamics of indicators of profit and profit tax of Yandex N.V. and Mail.Ru Group (mln rub.)

Indicator	2013	2014	2015	2016	2017	2018	Growth rate, %
Yandex N.V.							
Profit before tax	16713	22475	13596	11107	13582	54464	325.9
Corporate income tax	3239	5455	3917	4324	4926	8603	265.6
Net profit	13474	17020	9679	6783	8656	45861	340
Effective tax rate	19.4	24.3	28.8	38.9	36.3	15.8	-
Mail.Ru Group							
Profit before tax	14492	14558	12597	14319	16362	16710	115.3
Corporate income tax	3253	3079	2753	3410	3111	2611	80.3
Net profit	11239	11479	9844	10909	13251	14099	125.4
Effective tax rate (according to management reporting statements)	22.4	21.1	21.9	23.8	19.0	15.6	-
Compiled according to Yandex N.V. annual and quarterly reports for 2014–2018. Available at: https://yandex.ru/company/prospectus; and Mail.Ru Group annual and quarterly reports for 2014–2018. Available at: https://corp.mail.ru/ru/investors/reports/							

trade (Pandao international marketplace, in the future – AliExpress Russia), online education (GeekBrains), etc. For instance, in 2018, Delivery Club (mobile and desktop platform for food delivery) entered into a partnership with McDonald's and KFC and is now the only platform in Russia, which has all the largest franchises for fast food restaurants.

Leadership positions in the market of online services and a wide range of activities allows holdings to increase profits annually and achieve high profitability *(Tab. 2)*.

According to Table 2, Yandex N.V. has higher rate of profit growth. The activity of the holding was most profitable in 2018. Its net profit increased by 430% compared to 2017 and amounted to 45.9 billion rubles (660.1 million US dollars), and net profit margin – by 35.9%. Of these, 27.5 billion rubles were obtained from Yandex market[17]. Growth rate of net profit obtained by Mail.Ru Group for the entire period under consideration amounted to 125.4%, and 106.4% in 2018 compared to 2017.

At the same time, profit tax in both holdings for the analyzed period increased with less progression than the amount of taxable profit. The effective tax rate on the holdings' profit was the highest in 2016 (for Yandex N.V. – 38.9%; for Mail.Ru Group – 23.8%) and decreased in 2018, respectively, to 15.8% and 15.6%, despite the rapid growth of their revenue and net profit.

When assessing this dynamics, we should take into account that, as a rule, consolidated financial statements of holdings contain not only the amounts of taxes actually paid, but also the reserves formed to neutralize possible tax risks. Tax benefits on uncertain tax positions for profit tax are recognized in the financial statements only if there is a high probability that they will be confirmed by the tax authorities during the audit, including the resolution of relevant appeals or legal proceedings. So, according to Yandex N.V. its high value of the effective tax rate in 2016 is due to the impact of certain reserves recognized on the results of tax audits of previous years. Without these, the effective

[17] On April 27, 2018, Yandex and Sberbank established a joint venture based on the Yandex.Market platform. From this date under the equity method, the share of the financial results of Yandex.Market is reflected as part of other incomes. Financial results excluding Yandex.Market results exclude Yandex.Market results, profit from deconsolidation, and the share of Yandex in the net profit of Yandex.Market after deconsolidation.

tax rate according to the holding's estimates would be as follows: in 2015 – 22.7%, in 2016 – 23.4%, in 2017 – 24.3%, that is, 8–10% less than the officially declared values.

In addition, effective tax rate reflects the gross tax burden on the profits of holdings, taking into account corporate tax rates in different countries of operation. For instance, Mail.Ru Group, its subsidiaries and affiliates, which are residents of the British Virgin Islands, are exempt from corporate income tax and capital gains tax. The holding's subsidiaries and related companies registered in other countries are taxed at the following rates: 12.5% – in Cyprus; 20%, 15% or 5% (dividends) – in Russia; 25% – in The Netherlands; 35% – in the United States. Yandex N.V. has higher tax burden compared to Mail.Ru Group, due to the residence in The Netherlands with a base income tax rate of 25%.

The amount of the effective tax rate is also significantly affected by the non-taxable capital gains – the income of holdings from the sale of shares. Thus, the effective tax rate on Yandex N.V. decreased by 2.8% in 2013 due to the receipt of non-taxable profit from the sale of Yandex.Money in July 2013. In 2016, Mail.Ru Group received non-taxable one-time income due to the withdrawal of HeadHunter; in 2014 – due to the withdrawal of Qiwi and the acquisition of shares of *Vkontakte*. This explains the reduction in the effective rate due to the constant profit tax with a significant increase in profit before tax.

In this regard, it is possible to judge the fairness of taxation of holdings on the basis of the effective tax rate only with a certain degree of conditionality. At the same time, the above-described facts allow us to assume that the actual tax burden on the profit of holdings is significantly less than it is stated in the consolidated financial statements.

This conclusion is supported by some well-known facts from the practice of taxation of income of holdings in Russia. Thus, a significant reduction in the tax burden on activities of Mail.Ru Group took place in 2016–2017 in connection with the positive result of the holding's litigation with the Federal Tax Service of Russia, which allowed the company to apply VAT exemption in respect of the profit generated by MMO games and the sales of virtual services in social media[18]. At the same time, the prices for services exempted from VAT were not lowered. This allowed the holding to receive an additional profit of about 342 million rubles from online games in the 4th quarter of 2016 and to increase the share of income from the IVAS community by 17.6% in 2017.

The incorporation of IT holdings abroad is explained by their senior management as a necessary measure to attract foreign investment rather than to optimize the taxes paid; nevertheless the tax burden on their activities in connection with this fact is significantly reduced. So, according to its own estimates, Mail.Ru Group generates most of its taxable profit and income tax expenses in Russia; as for profit and loss before tax (income from shares, revaluation of fair value, profit and loss in foreign currency, etc.) – in other jurisdictions in which they are usually not subject to tax.

The tax potential of companies can be estimated with the help of basic calculations of GAFA tax according to the scheme proposed by the EU at a rate of 3% of turnover, not including other incomes, which are usually generated from start-ups. In 2018, revenues of Yandex N.V. generated from the search, portal, booking a taxi online and online food ordering

[18] London Stock Exchange. Mail.Ru Group receives confirmation from Russian tax authorities that IVAS revenues are eligible for VAT exemption. 28.07.2017. Available at: https://www.londonstockexchange.com/exchange/news/market-news/market-news-detail/MAIL/13275329.html

made up 123,577 million rubles, the notional amount of tax on which would have amounted to 3,707.31 million rubles; revenues of Mail.Ru Group generated from online advertising, MMO games and the sale of services in social networks amounted to 70,148 million rubles, the notional amount of tax would have been 2104.44.

A limited list of objects and payers will help avoid a significant impact of GAFA tax on the prices of digital services for the population. In particular, taxation covers a very limited list of advertising and intermediary services, the cost of which is created by the user of the digital interface rather than by its owner who receives income from their provision to third parties. In this regard, digital companies interested in attracting as many users as possible will retain free access to their digital interfaces for the latter. That is, the introduction of the tax will not affect the prices of services for users of digital interfaces that create value. For example, the probability of introducing fees for the registration and use of social networks or email services for users is almost zero. On the contrary, companies will continue to offer related free services, for example cloud data storage and others, in an effort to attract users. However, it is likely that GAFA tax payers, taking advantage of their dominant position, will raise prices for taxable services for third-party advertisers, for organizations that purchase data generated from user actions, etc. In this case, there will be a rise in the prices for advertising and intermediary services provided by the owner of digital interfaces to third parties. The result may be either a reduction in demand for taxable services or a partial shift of the tax burden on the end users of third-party products and services (not necessarily digital). The extent to which the burden will be shifted will depend on the specifics and market conditions, the firm's market share, prevailing type of competition (price or non-price), the price elasticity of demand for products and services, and other factors. In this regard, the impact of digital services tax on the prices will not be as directly proportional and unambiguous as, for example, the impact of VAT on services provided in electronic form (in Russia, the so-called Google tax). Assessing the effects of GAFA tax requires further research.

Thus, Russia has the potential to introduce a similar tax. However, in our view, it can be done in a medium-term perspective. Currently, it is advisable for tax specialists to intensify the research to develop the key theoretical aspects of the formation of fair taxation in the digital economy, and for the tax authorities – to assess the effective tax burden on major Russian and foreign IT-holdings that provide digital services that fall under the tax.

Conclusion

Summarizing the above, we note that the study allowed us to obtain a number of results containing the increment of scientific knowledge:

1) we have defined the features of big data as a factor of production in the digital economy (secondary nature; self-growth; economic benefit of production with high use and exchange value, zero marginal resource costs, as well as relatively low marginal costs of accumulation, processing and distribution; universality; inexhaustibility, preservation of properties in the process of consumption and the possibility of multiple usage to gain income; partial interchangeability with other factors of production, high mobility and ease of replication; specific income – information differential rent II, monopoly information rent, digital rent), which demonstrate the need for

a special approach to the taxation of income from this factor of production and which are important for the identification of the object of taxation;

2) we have considered the discussion within the framework of the European tax reform on the creation of a fair and effective tax system in the digital economy, including its polemical provisions, and the current practice on the introduction of a tax on digital services in the EU member states; this brings new data on foreign practice and helps attract the attention of Russian researchers to the problems of tax transformation in the digital economy;

3) we have considered the activities of Yandex N.V. and Mail.Ru Group and identified the tendency of outstripping growth of gross income and profit in comparison with the amount of corporate income tax they pay; we have also found that the structure of income is dominated by the items that fall under the tax on digital services; we have identified factors contributing to the reduction of the effective tax rate on profits of IT-holdings, which in conditions of high profitability of their activities proves the violation of justice in the distribution of the tax burden between the digital and non-digital spheres of the economy.

Our contribution consists in the fact that we substantiate the need to increase the tax burden on the activities of major IT corporations in Russia, which have the ability to extract super profits from the processing of big data and the provision of digital services, by reforming the taxation of income in accordance with the concept of customer value creation.

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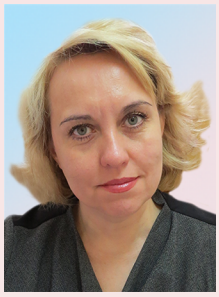
Conflicts in Protected Natural Areas of the Arctic Region: Identifying, Analyzing and Finding the Solutions*



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Abstract. The increased attention paid by the state and the public to the Russian Arctic in recent years has led to a new round of its economic development. Nevertheless, major features of the Arctic nature are its vulnerability and the difficulty of recovery after anthropogenic impacts. This fact, as well as the exceptional climatic, ecological and cultural significance of the nature of the Russian Arctic, predetermines the need for its careful protection and for preservation of its fragile ecological balance. The defining role in these processes belongs to protected natural areas (PNS). Our paper emphasizes that one of the main barriers to the development of the network of protected natural areas both in Russia as a whole and in its Arctic territories consists in numerous conflict situations and disputes related to the organization and existence of protected areas. In the framework of the study, we develop a universal algorithm for analyzing the conflicts related to the establishment and functioning of protected areas. The proposed algorithm was tested on the example of the Arkhangelsk Oblast – the largest region in the European part of the Russian Arctic. Using content analysis, systematization, expert survey and general scientific research methods, we identify 58 conflict situations in 35 currently functioning protected areas and in two protected areas that are planned to be created in the region; we classify the situations according to the parties, subject and phase of the conflict. On the basis of this work, we formulate a set of specific recommendations to address, prevent and reduce the number of conflicts in the protected areas of the Arkhangelsk Oblast.

Key words: protected natural areas, conflict, Arkhangelsk Oblast, Russian Arctic.

Introduction

Protected natural areas are an indispensable tool for the conservation of natural areas with high environmental, cultural, aesthetic, scientific and recreational value. According to the Convention on Biological Diversity ratified in our country, the share of protected areas in the total area by 2020 should be at least 17% of land and 10% of marine areas. As of 2016 in the Russian Federation, protected areas of the land part with inland waters comprised slightly more than 11% of the total area of the country. In the regional context, only ten subjects of the Russian Federation have reached and exceeded the international standard: they are the city of Sevastopol, the republics of Sakha (Yakutia), Kabardino-Balkaria, Altai, Karachay-Cherkessia, Ingushetia, Chechnya, North Ossetia-Alania, Primorsky Krai and the Astrakhan Oblast. As we can see, this list contains only one Arctic subject of the Russian Federation – the Republic of Sakha (Yakutia). Meanwhile, the Arctic regions, whose nature is unique and most vulnerable to human impacts, have a longer period of restoration of disturbed natural landscapes.

Scientists agree that the Arctic is an ecological filter and "weather kitchen" for the whole planet [1]. Arctic ice plays a huge role in the reflection of solar radiation, thus contributing to the cooling of the atmosphere and the formation of the Earth's climate. If there were no ice cover in the Arctic, the temperature in this macroregion would increase by more than 40°C [2]. As a result, most of our planet would become uninhabitable due to extremely high temperatures. The nature of the Arctic is not only of major climatic importance, but also forms the basis of the life of its indigenous peoples. Environmental issues are most acute for them due to fact that they entail the risks of destruction of the native habitat, original culture, worldview and traditional crafts (reindeer herding, fishing, gathering berries and mushrooms, etc.). From this point of view, the development of a network of protected areas in the Russian Arctic is of critical importance for maintaining ecological balance, biodiversity and cultural traditions not only in our country but throughout the world.

In our opinion, one of the most important reasons for the insufficient development of the network of protected areas both in the Arctic macroregion and in the country as a whole consists not so much in the problem of substantiating the uniqueness of natural and cultural attractions that need to be preserved, as in the clash of interests of different parties. It should be remembered that the establishment and operation of protected areas affects the interests of many actors: the local population, authorities at various levels, entrepreneurs, environmental organizations and others. As a rule, they have a multidirectional nature, which leads to the emergence of various kinds of disputes and conflicts. As a result, unresolved disputes often cause negative implications for protected areas and for nature in general:

1. The establishment of new protected areas is delayed or significantly stretched in time. Dvinsko-Pinezhsky Reserve, which was planned to be established in the Arkhangelsk Oblast for more than ten years, is a telling example in this regard. Initially, the heads of districts, regional and district deputies opposed the establishment of the Reserve. They said they feared that if protected areas are established, it would lead to the closure of a number of forest industry enterprises, reduce tax revenues and increase unemployment. The heads of timber companies also expressed a negative attitude toward the idea of creating a new reserve, as they did not want to lose their rental base. The compromise was reached only after several years of negotiations, as a result of which a protocol was signed on the coordination of the boundaries of Dvinsko-Pinezhsky Reserve. However, the process of creating a new protected area has not yet been completed.

2. The size of protected areas is reduced. Another protected area planned to be created in the Arkhangelsk Oblast and located on the Solovetsky archipelago is forced to exclude part of the sea area from its intended boundaries. The reason for this was the conflict with the local population and representatives of Arkhangelsk algae-processing plant, which carries out industrial extraction of algae (kelp and fucus) in this area; the management of the plant said the inclusion of the sea area in the protected area would reduce the raw material base of the enterprise, reduce its output and lead to a reduction in the number of jobs.

3. The efficiency of protected areas is reduced. Thus, when creating the National Park (NP) "Onega Pomorie" in the Arkhangelsk Oblast, the interests of the local population and economic entities (fishing collective farm "Zarya", fishing collective farm named after Kalinin) were not taken into account. As a result, the boundaries of the Park included the water area where the local population was fishing for centuries, and fishing collective farms engaged in industrial fishing. Since the establishment of the National Park, these activities have been banned, thus leaving many residents without an important source of income, and the fishing collective farms had to reduce their catches. This decision also led to a decrease in the availability of fresh fish products in nearby large cities. Disregard for the opinion of the local population concerning the formation of the borders and the regime of the National Park provoked numerous violations, including poaching, which greatly reduces the efficiency of the functioning of this protected area.

All of the above explains the high importance and relevance of the present study and predetermines its goal, which consists in developing and testing a universal algorithm for analyzing conflict situations arising in the course of establishment and functioning of protected areas on the example of one of the Arctic regions of Russia.

Research methodology

Despite the high relevance of the study of conflict and controversial situations in protected natural areas, the vast majority of modern studies of both Russian and foreign scientists in the field of protected areas are devoted to the problems of conservation of natural complexes, study of natural processes in the biosphere and control over the changes in its condition, as well as environmental education and tourism development (A.A. Tishkov [3, 4], N.A. Sobolev [5], E.M. Lapteva [6], D.V. Panchenko [7]; researchers from the Institute of Biology of Komi Science Center of the Ural Branch of RAS [8]; I.A. Lavrinenko, O.V. Lavrinenko, N.M. Nikolaeva, S.A. Uvarov [9], N. Dudley, M. Hockings, S. Stolton, [10], S.V. Degteva, V.I. Ponomarev, S.W. Eisenman, V. Dushenkov [11], J. Siitonen, R. Penttilä, H. Kotiranta [12], O.P. Tikkanen, I.A. Chernyakova [13], K.J. Wendland, M. Baumann, D.J. Lewis, A. Sieber, V.C. Radeloff [14], M. Elbakidze, P. Angelstam, [15], S.K. Juvonen, A. Kuhmonen, T. Opdahl, O. Höjer [16], J. Mikkola, B. Storrank, T. Lindholm [17], etc.).

At the same time, a very limited number of researchers deal with the problems of studying and solving conflict situations related to the creation and functioning of protected areas. The most authoritative national scientists in this field include N.A. Alekseenko, A.V. Drozdov, A.A. Medvedev, A.A. Tishkov, E.A. Belonovskaya, A.N. Krenke, N.G. Tsarevskaya, and others. N.A. Alekseenko, A.V. Drozdov, and A.A. Medvedev carry out the mapping of nature management conflicts in protected areas of the Moscow and Kaluga oblasts. These authors propose a classification of conflicts depending on the following features: source, object of conflict, form, degree of complexity, manifestation, dynamics, duration of development, intensity, nature of the boundaries of the conflict. In our study carried out under the supervision of N.A. Alekseeva, we emphasize the special importance and relevance of the research, which today is the most systematic and in-depth work on the study of conflicts in protected natural areas.

M.P. Kuznetsov and S.A. Pegov analyze in detail the socio-economic conflicts on the territory of Valdaysky National Park and offer main ways to resolve them [18]. The authors pay special attention to the flaws in the legal framework governing economic activity in the protected areas, as well as the flaws in the territorial structure of the Park, as the main causes of many conflicts.

A broad view of conflicts in protected natural areas and their typology is presented in the works of RAS Institute of Geography (A.A. Tishkova, E.A. Belonovskaya, A.N. Krenke, N.G. Tsarevskaya). The authors have developed a classification of conflicts in protected areas depending on two features: scale (local, regional and global conflicts) and objectives (conflicts of values, infrastructure conflicts, conflicts related to the regulation of different types of economic activity). They also propose an original concept of the conflict of values in the consumption of goods produced by natural ecosystems.

As we can see from the presented review, the problem of identifying and analyzing conflict situations in protected natural areas is studied insufficiently. To date, there is no single algorithm to detect and structure a conflict, thus there is no key to its successful solution. In addition, there are no studies on the systematization of conflicts in protected areas of the Arctic regions of Russia, where nature conservation is of great ecological and cultural importance. Our present study is aimed at addressing these gaps.

Currently, scientific literature contains dozens of different definitions of such a complex and ambiguous concept as conflict, none of which can be accepted as universal [19]. The use of a definition depends largely

on the characteristics of the studied objects and phenomena. From the point of view of the objectives of the study, we propose to understand the conflict as the confrontation of subjects who are carriers of antagonistic values, interests and goals, in which at least one side perceives the actions of the other as a threat to its interests.

Like any complex object, the conflict is characterized by a certain structure. The main structural elements of the conflict include: 1) the parties to the conflict – the subjects who are carriers of antagonistic values; 2) the subject of the conflict – the object of the real or ideal world, which is the reason why the conflict occurs; 3) the image of the conflict situation – the display of the subject of the conflict in the minds of the subjects of conflict interaction; 4) the motives of the conflict – internal motivating forces that push the subjects of interaction to the conflict (motives appear in the form of needs, interests, goals, ideals, beliefs); 5) the actions of the parties of the conflict – together they form a conflict interaction, without them the conflict could not exist; 6) the conditions of the conflict – factors or circumstances that determine its characteristics and the possibility of occurrence [19, 20].

The dynamics of the conflict predetermine the presence of four stages in its development:

- Stage 1 – the emergence of a conflict situation. This stage presupposes the emergence of a conflict occurring at an unconscious level, at least for one of the parties.
- Stage 2 – awareness of the conflict. At this stage, the parties perceive the conditions of the conflict and are aware of their participation in it.
- Stage 3 – conflict actions. The stage of open conflict, when the parties show antipathy to each other and give negative assessments.
- Stage 4 – the end of the conflict. At this stage, there is a choice of strategy and style of behavior in the conflict and ways to resolve it. It is important to note that the conflict may come to an impasse and not be resolved, but may have a full (satisfaction of both parties to the conflict) or partial (subjective satisfaction of at least one of the parties to the conflict) resolution.

An algorithm for analyzing conflict situations arising in the course of establishment and functioning of protected areas

In order to identify, structure and classify conflicts in protected areas in a particular area or region, we propose a generic algorithm for analyzing conflict situations arising in the course of establishment and functioning of protected areas, based on the collection and processing of extensive empirical material.

In selecting the sources of information for the analysis of conflicts in protected areas, we are guided by the following principles:

1. The principle of complexity. This principle assumes that the selected sources of information should reflect the diversity of views of all the main parties to the conflict, as well as the most knowledgeable and competent external observers. In addition, obtaining information for the analysis of conflict situations in protected areas should be based on both literary and sociological research methods.
2. The principle of openness. According to this principle, the information used should not represent state and commercial secrets and for the most part should be freely available (in printed materials, on Internet sites).
3. The principle of cost. The principle is to minimize the financial, labor and time costs required to collect information for the analysis of conflicts in protected areas. Guided by this principle, we deliberately refused to conduct mass sociological research that requires significant financial and time investments in their organization and processing of the information received.

Thus, the proposed algorithm for the analysis of conflict situations arising in the course of establishment and functioning of protected areas of the region includes six main stages.

The first stage is the formation of a database of protected natural areas located in the region. At this stage, of official documents (laws, regulations, agreements, etc.) are analyzed so as to collect information on the number of protected areas, their category, location, and features of the protection regime.

The second stage implies conducting a content analysis of publications in the media on conflict situations in the establishment and functioning of protected areas in the region. This stage allows us not only to identify a significant part of the conflicts, but also to determine the frequency of mentioning the most relevant and resonant of them, to identify the main participants (parties) of the conflict, their main motives, and the subject of the conflict situation.

At the third stage, official requests are prepared and sent to the local authorities of the territory in which the protected areas are located, with a request to report on existing conflicts, disputes and disagreements related to the establishment and operation of the protected areas. This stage is of great importance due to the following: 1) often local governments act as a party to the conflict, which helps get information firsthand; 2) if local self-government bodies are not a party to the conflict in the protected area, they, nevertheless, are in close "proximity" to the conflict situation: they receive and register appeals from local residents and economic entities; 3) the process of sending official requests to local self-government bodies is characterized by minimal financial, time and labor costs. Standard applications can be sent via a special form on the official website of local governments or via e-mail. According to the Federal Law "On the procedure of consideration of appeals of citizens of the Russian Federation" dated May 2, 2006 No. 59-FZ, the requests are considered by local authorities within 30 days from the date of their registration, which makes it possible to get the information in a month.

During the fourth stage, experts are selected and interviewed in order to identify conflicts related to the creation and operation of protected areas. The selection of experts should take into account the principle of complexity: experts should represent various organizations and institutions – both public and scientific, and included in the structure of public authorities directly involved in the protection of the environment, the study and development of the network of protected areas and its management. We think it is more convenient to conduct an in-depth interview, which involves a long conversation according to the general program, but without specifying the questions. This helps bring the expert to a confidential and "live" conversation, following which the interviewer receives the most detailed, deep and often unique information.

At the fifth stage, the information on conflicts in the protected areas of the region obtained during the 2nd, 3rd and 4th stages is systematized and analyzed. At this stage, a list of conflict situations associated with the establishment and functioning of protected areas in the region is formed, and the structure of each conflict is determined by identifying its parties, subject, motives and stage. The result of the fifth stage is the formation of an information database on conflict situations in the protected areas of the region; the database is convenient for subsequent use (mapping, forecasting, finding solutions, etc.).

At the sixth stage, recommendations are worked out concerning the elimination or mitigation of conflicts in the protected areas of the region identified during the analysis.

Analysis of conflict situations arising in the course of establishment and functioning of protected areas in the Arctic region (on the example of the Arkhangelsk Oblast)

In order to test the proposed algorithm for analyzing conflict situations arising in the course of establishment and functioning of protected areas, we decided to choose the Arkhangelsk Oblast as the object of testing, since it is one of the most interesting regions of the Russian Arctic in terms of natural and climatic conditions. The choice of this Arctic subject of the Russian Federation is due to the following reasons: a) the Arkhangelsk Oblast is the largest subject of the European part of the Russian Arctic, having the greatest length from North to South and the most pronounced zoning; b) there are several natural zones in the Oblast: Arctic deserts, tundra, forest tundra, and taiga; preservation of the natural diversity of each natural zone is of great importance for the region and for the Arctic as a whole; c) the land area of protected areas in the Arkhangelsk Oblast is only 47.2 thousand km^2, which corresponds to 8% of the area of the region. This is two times lower than the standard adopted in the Convention and may indicate the presence of unresolved conflicts in the field of protected areas.

At ***the first stage,*** a database on protected areas of the Arkhangelsk Oblast was formed. Due to the diversity of natural complexes and the presence of unique natural objects, an extensive network of protected areas has been formed in the region; this fact is of great importance for the preservation of biodiversity and maintaining the ecological balance in the Arctic. The network of protected natural areas of the region includes 107 protected areas; among them:

– eight protected areas of federal significance, including one reserve (Pinega), four national parks (Kenozersky, Vodlozersky, Russian Arctic and Onega Pomorie), two arboretums and one botanical garden;

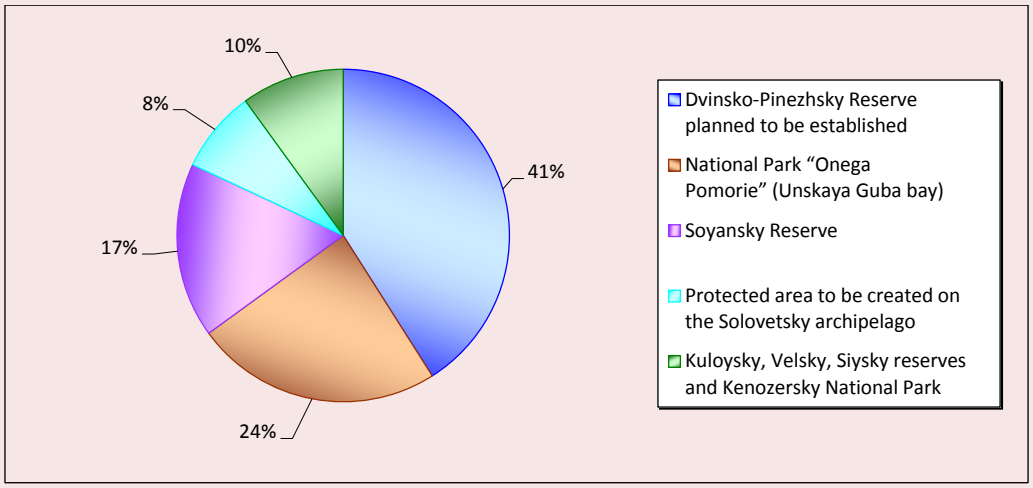
– 99 protected areas of regional significance, including 33 nature reserves and 66 natural monuments.

These protected areas are located unevenly, although they are represented in all the districts of the Arkhangelsk Oblast. The area they occupy varies from 0.3% (in Shenkursky District) up to 30% of the district (in Primorsky District).

At ***the second stage*** of the study, we carried out the content analysis of media publications. The bulk of information about the conflicts in protected areas of the Arkhangelsk Oblast was obtained from major regional information and analytical publications (newspapers *Moskovsky komsomolets Arkhangelsk*, *Pravda Severa*, *Ekho Severa*), and from information sources at the municipal level. Their detailed analysis revealed 59 references to conflict situations related to the functioning and establishment of protected areas of the Arkhangelsk Oblast. Almost 41% of the publications we analyzed *(Fig. 1)* concern the establishment of Dvinsko-Pinezhsky Reserve on the territory of Pinezhsky, Kholmogorsky, Vinogradovsky and Verkhnetoemsky districts.

Dvinsko-Pinezhsky Reserve that is planned to be created is located in the center of the interstream area of the Northern Dvina and Pinega rivers, where an area of undisturbed thousand-year old forests, which is the largest in Europe and which represents the standard of the wild Northern taiga, is preserved. Thirteen out of 24 publications dated 2017–2018 reflect the actions of the main parties to the conflict: public environmental organizations, timber companies, and legislative and executive authorities of local and regional levels. District heads, regional and district deputies, as well as heads of timber companies, opposed the creation of the reserve due to fears of the need to abandon part of their rental base and, as a result, to shut down a number of enterprises of the forest industry; in addition, there is a risk

Figure 1. Publications in the media on the subject of conflict situations related to the establishment and functioning of protected areas of the Arkhangelsk Oblast (in % of the number of publications found)



of growing unemployment, social tensions, and reducing the standard of living of local residents. However, recent publications reflect a positive trend in the resolution of the conflict. In April 2018, a protocol was signed on the coordination of the boundaries of Dvinsko-Pinezhsky Reserve between the heads of the largest timber companies in the region, the World Wildlife Fund, Greenpeace Russia and the Government of the Arkhangelsk Oblast. A large number of regional media publications were devoted to this event.

Soyansky Biological Reserve located on the territory of Primorsky and Mezensky districts of the Arkhangelsk Oblast ranks second according to the frequency of its mentioning of conflict situations among protected areas of regional significance. More than half of the publications about Soyansky Reserve dedicated to the violations of its regime, including poaching (illegal hunting and fishing on spawning salmon streams). A quarter of the publications reflect the resonant events associated with the visit and recreation of the authorities in the huntsman's house on the territory of Soyansky Reserve. The remaining publications deal with illegal logging and littering of the Reserve.

The National Park "Onega Pomorie" is the most "conflict-ridden" (24% of all publications) among the protected areas of federal significance in the Arkhangelsk Oblast. Most of the analyzed materials about the National Park, published in the period from 2014 to 2016, contain information on fishing opportunities in Unskaya Guba bay. Parties to the conflict are local people, fishing farms, and the administration of Primorsky District; they advocate for the exclusion of Unskaya Guba bay from the boundaries of the National Park and for granting the collective fishing farms their lost right to catch navaga. Another party is represented by the management of the National Park, which exercises control over the execution of the regime under which industrial fishing in Unskaya Guba bay is prohibited in the territory of "Onega Pomorie". The rest of the publications are devoted to the collection of fees for visiting the Park and poaching.

Eight percent of publications cover the conflict situation related to the proposed creation of a federal reserve on the Solovetsky archipelago. The parties to the conflict are local

residents, the scientific community, public authorities, and the employees of Solovetsky Museum-Reserve. We described the essence of this conflict situation in the introduction to our paper.

The remaining 10% of publications are devoted to conflicts in Siysky Reserve (illegal logging), Kuloysky Reserve (poaching), Velsky Reserve (ensuring the safe passage of animals through the roads) and Kenozersky National Park (illegal construction and fishing).

As part of ***the third stage*** of the analysis of conflict situations arising in the course of establishment and operation of protected areas in the Arctic region, we prepared and sent official requests to the heads of municipalities of the Arkhangelsk Oblast, on the territory of which the protected areas are functioning. In total, 22 requests were sent: 19 – to the municipal districts of the region and three – to the cities of regional significance.

Having analyzed the official answers received from the authorities of the municipal level of the Arkhangelsk Oblast, we find out the following:

1. According to local authorities, there have been no conflicts, disputes and disagreements related to the establishment and functioning of protected areas in their territories in the majority of administrative-territorial units of the Arkhangelsk Oblast (Leshukonsky, Konoshskiy, Ustyansky, Plesetsky, Vilegodsky, Vinogradovsky, Shenkursky, Primorsky, Kargopolsky, Nyandomsky, Kholmogorsky, Lensky districts, the city of Severodvinsk and the town of Novodvinsk).

2. In eight municipalities of the region, according to the executive authorities of the municipal level, there are the following conflicts, disputes and disagreements:

– mismatch of the name and location of the natural monument "Talitsky klyuch" (Onezhsky District); according to the administration of the municipal entity "Onezhsky Municipal District", the true name of the natural monument is "Taletsky klyuch", and the location should be determined by the passport to this natural monument dated 1986;

– the meeting of the Deputies of the municipal entity "Verkhnetoemsky Municipal District" supported the appeal of the Municipal Assembly of the municipal entity "Vinogradovsky Municipal District" to the federal and regional legislative and executive authorities, in which they asked to prevent the establishment of "Dvinsko-Penezhsky" reserve of regional significance as of December 27, 2016 (Verkhnetoemsky District); it is interesting to note that in its answer the administration of Vinogradsky District did not consider it necessary to point out the existence of this appeal;

– disagreement of local residents with the expansion of Shilovsky Reserve (Krasnoborsky District), in connection with which a letter was sent to the Governor of the Arkhangelsk Oblast;

– identification of a threat to the normal existence of I.M. Stratonovich dendrological garden (Arkhangelsk) on the part of ZAO Engineering and Construction Firm "Instroy"; it is recorded in the appeal of NARFU to the administration of the municipal entity "City of Arkhangelsk" on August 28, 2014, in which it is noted that the construction of high-rise property and parking lots carried out by Instroy in the vicinity of the arboretum, violates insolation completely; as a result, the existing ecosystem is facing irreversible catastrophic consequences: death of plants and loss of historic gardens;

– comments of the Administration of the municipal entity "Kotlassky Municipal District" related to the need to adjust the boundaries of Solvychegodsky Reserve in terms of excluding the territory of the town of Solvychegodsk, the territory intended for the expansion of the cemetery in the vicinity of the village of Andreevskaya, and the road

"Zabolotye–Solvychegodsk–Yarensk" (Kotlassky District) from its composition;

– the infringement of the interests of the local population recorded in the appeal of the Council of Deputies of the municipal district "Soyanskoe" from December 25, 2013 to the government of the Arkhangelsk Oblast; the appeal concerns the fact that local population residing in the village of Soyana constantly uses spawning salmon rivers for transportation; the appeal also deals with the rent of forest land for recreational purposes (Mezensky District) in coordination with the local authorities of the municipal district "Soyanskoe";

– local residents who consider themselves hostages of Verkolsky Reserve (Pinezhsky District) show their discontent about the zoning of the reserve and the restriction of travelling by motor boats, snowmobiles and wheeled transport; in addition, local residents have designated areas in which they want to harvest industrial and fuel wood for their own needs; but their requirements did not coincide with the vision of the Center for Nature Management and Environmental Protection of the Arkhangelsk Oblast (hereinafter – the Center for NMEP AO) that acts in the interests of the reserve;

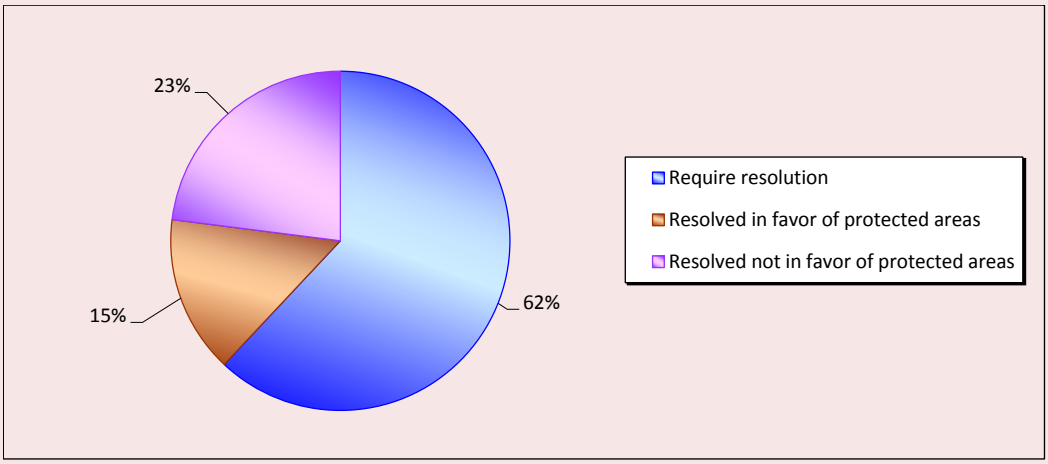
– illegal logging in Timanevsky coniferous forest, Tarasovskiy pine forest, Shunemsky coniferous forest, Bereznikovsky pine forest, Korenevsky coniferous forest and Vorontsovskaya grove, as well as the littering with production and consumption waste and waste lumber in protected areas of Velsky District, especially in Zeleny Bor.

At ***the fourth stage***, 12 experts from among the representatives of environmental organizations, public authorities, managers of protected areas and scientists of the Arkhangelsk Oblast were selected for the expert survey. An in-depth interview lasting from one and a half to two hours was conducted with each expert. As a result of processing the data obtained during the expert survey, 47 conflicts were identified in 24 protected areas of the Arkhangelsk Oblast. At the same time, more than 62% of federal protected areas and 54% of regional reserves have certain conflict situations. According to experts, the following protected areas should be recognized as the most "conflict-ridden": Primorsky Landscape Reserve, Soyan Biological Reserve and the National Park "Onega Pomorie".

Currently, 38% of all conflicts identified in the expert survey are in the stage of completion. Nevertheless, more than half of them ended up not in favor of protected areas: the area of protected natural area was reduced and the protection regime was made less strict *(Fig. 2)*.

Examples here are the arboretum of the Northern Arctic Federal University (urban construction on the area designated for the expansion of the arboretum), Primorsky and Soyansky reserves (they lost the areas that are of interest to resource companies), Chugsky Reserve (active operation of the plaster quarry is threatening the greater part of the protected natural sites of the reserve), Uftyugo-Ileshsky Reserve (its actual area is smaller than planned, because of the tenants of the forest fund), and others. Pinezhsky Reserve and Kenozersky National Park, which have existed for more than 25 years, are good examples of conflict resolution from the point of view of the interests of protected areas. Thus, in the territory adjacent to Pinezhsky Reserve, active environmental and educational work is carried out both with the local population and with tourists; the work gives positive results. Kenozersky National Park has taken a number of active measures to resolve conflict situations: educational work with the local population has been organized, a special employee in the Park's Directorate has been assigned to coordinate the construction and reconstruction of residential and non-residential

Figure 2. Resolution of conflict situations related to the establishment and operation of protected areas of the Arkhangelsk Oblast (% of the total number of identified conflicts)



facilities of the local population, a microloan fund has been created to maintain the traditional way of life of villagers, transport infrastructure has been created and reconstructed, etc.

The subjects identified in the expert survey of conflicts related to the functioning and establishment of protected areas in the Arkhangelsk region are as follows:

1. The territory of protected areas. This subject of conflict can be divided into the following groups:

– construction in a protected area (Soyansky, Primorsky, Kozhozersky reserves etc.);

– travelling in the territory of a protected area (NP "Onega Pomorie", Verkolsky, Shelovsky, Klonovsky reserves, etc.);

– visiting the territory of a protected area (NP "Onega Pomorie", Pinezhsky reserve);

– the territory of protected areas to be used for construction, as well as the placement of linear objects (Belomorsky Reserve, Arboretum of the Northern (Arctic) Federal University, etc.);

– the territory of protected areas to be used for exploration and mining (Soyansky, Primorsky, Chugsky reserves);

– the territory of protected areas to be used for grazing deer (Kuloysky Reserve);

– the territory of protected areas to be used as the landfill of household waste (Permilovsky Reserve).

2. Forest resources, which are divided into:

– wood resources, industrial and fuel wood (Verkolsky, Monastyrsky, Filatovsky, Uftyugo-Ileshsky reserves, etc.);

– non-wood forest resources – mushrooms, berries (Shilovsky Reserve).

Along with the territory, forest resources are the most common subject of conflict situations in protected areas of the Arkhangelsk Oblast *(Fig. 3)*.

3. Aquatic biological resources (NP "Onega Pomorie", Soyansky, Lachsky reserves, etc.).

4. Hunting biological resources (Klonovsky, Puchkomsky, Vilegodsky, Soyansky reserves, etc.).

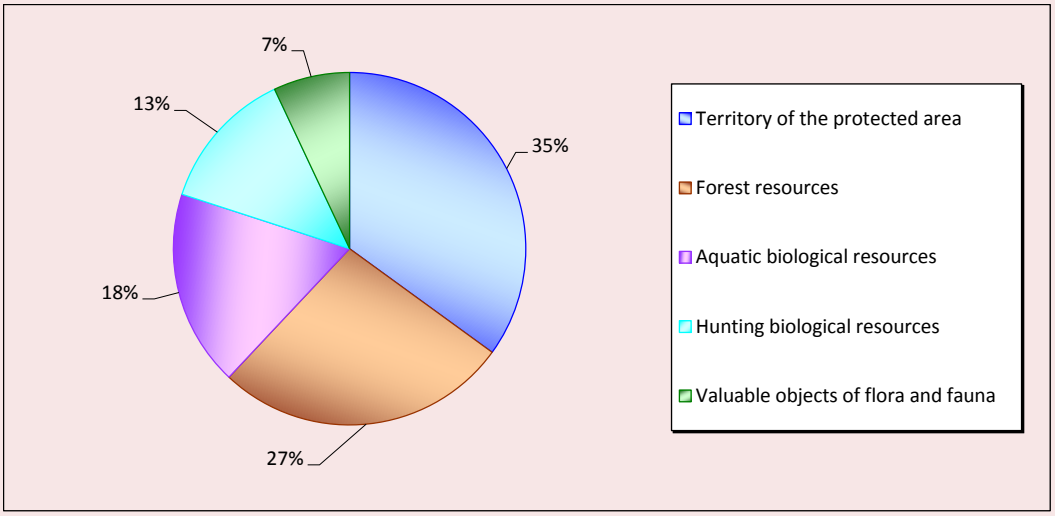
5. Valuable objects of flora and fauna (Soyansky Reserve, natural monument "Golubinsky Karst Massif").

The parties to the conflicts that are related to the establishment and functioning of protected areas of the Arkhangelsk Oblast and

Fragment of the table that systematizes and structures the conflicts related to the establishment and functioning of protected areas in the Arkhangelsk Oblast (on the example of Primorsky Landscape Reserve)

Parties to the conflict	Subject of the conflict	Motives of the conflict	Stage of the conflict	Actions aimed to resolve the conflict
A. Mineral exploration and production enterprises/- environmental public and scientific organizations	A. Territory of the Reserve	A. Mining enterprises claim the territory of the Reserve for exploration and mining. Environmental public and scientific organizations advocate for the preservation of the area and undisturbed territory of the Reserve.	A. Stage 4 – end of the conflict	A. Conflicts are resolved in favor of resource-producing enterprises. The territories of the Reserve of interest to the companies are removed from its composition.
B. Scientists/- scientists	B. Valuable objects of flora and fauna	B. Some scientists justify from a scientific point of view the necessity to withdraw the quarters from the territory of the Reserve as a result of the loss of their natural value; other scientists oppose them, believing that this territory is still of great importance.	B. Stage 3 – conflict actions	B. Absent.
C. Illegal loggers /- Center for NMEP AO	C. Forest resources	C. Illegal logging takes place on the territory of the Reserve. The Center for NMEP AO considers this process as a violation of the protected areas regime and a threat to biodiversity.	C. Stage 3 – conflict actions	C. The Reserve does not have the necessary material, technical and human resources to patrol the vast territory and prevent violations.
D. Illegal collectors of fossils of the Vendian period /- Center for NMEP AO	D. Area with fossils of the Vendian period	D. The fossils of the Vendian period are collected illegally on the territory of the Reserve. The Center for NMEP AO considers this process as a violation of the protection regime and loss of natural value of the territory.	D. Stage 3 – conflict actions	D. The Reserve does not have the necessary material, technical and human resources to patrol the vast territory and prevent violations.
E. Residents of the city of Arkhangelsk and Primorsky District /- Center for NMEP AO	E. Territory, hunting resources, biological water resources, buildings	E. Residents of Arkhangelsk and Primorsky District visit the territory of the Reserve for the purpose of illegal hunting, fishing and lodging in illegal buildings (huts). Center for NMEP AO considers this process as a violation of the protected areas regime and a threat to biodiversity.	E. Stage 3 – conflict actions	E. The Reserve does not have the necessary material, technical and human resources to patrol the vast territory and prevent violations.

Figure 3. Subjects of conflict situations in the media, related to the establishment and functioning of protected areas of the Arkhangelsk Oblast (% of the total number of the subject of identified conflicts)



identified during the expert survey include: the Centre for Nature Management and Environmental Protection (26% of the total number of the conflicting parties); local population (17%); scientific organizations and societies (9%); the management of a reserve or national park (7%); environmental non-governmental organizations (6%); tourists (6%); government (5%); entrepreneurs (5%); poachers (4%); forestry companies (4%); exploration and mining enterprises (3%); illegal loggers (2%); representatives of the Russian Orthodox Church (2%); construction companies, organizations engaged in the construction of linear objects (2%); fishing collective farms (1%); representatives of horticultural associations (0.5%); reindeer herding teams (0.5%).

The fact that the Center for NMEP AO is frequently a party to the conflict is explained by the fact that the Center is responsible for compliance with the protection regime at regional protected areas, thereby automatically becoming an antagonist of any violators, whether poachers, illegal loggers, tourists or others.

At ***the fifth stage***, the extensive data on conflicts in protected areas of the Arkhangelsk Oblast obtained as a result of content analysis of the media, official responses of municipal authorities and expert surveys were systematized and presented in the form of a table. It contains the most important information about each conflict situation related to the establishment and functioning of protected areas in the region: the parties to the conflict, their motives, the subject and stage of the conflict, as well as the actions taken to resolve it. Since the whole table is quite extensive, this paper contains only a fragment of it; this fragment can serve as a model for systematizing and structuring conflict situations in protected areas of the region *(Table)*. As an example, we have chosen Primorsky Landscape Reserve, one of the most "conflict-ridden" protected areas of the Arkhangelsk Oblast.

Conclusions and recommendations

Thus, on the basis of systematized information on conflict situations related to the establishment and functioning of protected areas in the Arkhangelsk Oblast, we draw the following conclusions.

• Current or already completed conflicts occur in 35 functioning protected areas and in two areas planned to be established in the region. This means that almost a third of all existing protected natural areas in the Arkhangelsk Oblast are marked by the presence of conflict situations, which once again emphasizes the importance of research in this field.

• A total of 58 conflict situations were identified during the work, the subject of most of which are the territory of the reserve and its forest resources. At the same time, only 18 of the 58 conflicts in protected areas of the Arkhangelsk Oblast are in the process of completion, while the rest are still not resolved, which has a negative impact on the efficiency of the protected areas, biodiversity conservation and maintaining the fragile balance of Arctic ecosystems.

• More than half of the identified conflicts are concentrated in eight protected areas: National Park "Onega Pomorie", Soyansky, Primorsky, Kuloysky, Verkolsky, Belomorsky, Klonovsky reserves and the natural monument "Golubinsky Karst Massif". At the same time, the most conflict-ridden ones are Primorsky Landscape Reserve (7 conflicts), Soyansky Biological Reserve (7) and the National Park "Onega Pomorie" (4 conflicts). It is important to note that the conflicts in Soyansky Reserve and NP "Onega Pomorie" appeared both in the media and in the official responses of local governments and interviews with experts. This fact directly indicates the high relevance and severity of conflict situations in these protected areas.

Analysis of the information obtained during the study of media publications, official responses of local authorities and expert survey allows us to offer the following recommendations to eliminate and reduce the number of conflicts related to the establishment and functioning of protected areas in the Arkhangelsk Oblast (***sixth stage***):

1. To create the Public Council for protected areas of the Arkhangelsk Oblast under the Ministry of Natural Resources and Forestry of the Arkhangelsk Oblast. The Public Council for protected areas of the Arkhangelsk Oblast is designed to ensure that the needs and interests of residents of the Arkhangelsk Oblast, enterprises of the resource sector are fulfilled and the unique natural complexes of the region are preserved and protected. The Council should be a standing advisory body.

The composition of the Public Council should include: representatives of the Ministry of Natural Resources and Forestry of the Arkhangelsk Oblast, the Center for Nature Management and Environmental Protection of the Arkhangelsk Oblast, scientific organizations and public environmental organizations, and representatives of resource-extracting enterprises.

2. To organize public councils for protected areas under the administrations of municipalities located in the territories adjacent to protected areas. As in the case with the regional Public Council, the Public Council for protected areas under the administration of the municipality should be a permanent advisory body that takes into account the needs of residents of the municipality, and helps preserve and protect the unique natural complexes.

The composition of the Public Council for protected areas under the administration of the municipality should include: representatives of the administration of the municipality, a structural unit of the Center for Nature Management and Environmental Protection of the Arkhangelsk Oblast (huntsman), representatives of forestry, educational institutions, and local population.

3. To organize and implement environmental education:

– to organize the work with the media at the regional and district levels to educate the population (getting acquainted with the natural values of protected areas, the activities of the Center, the Regulation on Protected Areas, responsibility for violation of protected areas) and highlight the problems associated with the establishment and functioning of protected areas;

– to organize the work with educational institutions (kindergartens, schools, colleges, technical schools, universities); to this end, it is necessary to develop a plan of standard presentations for students of educational institutions at various levels, which would include brief information about the location of protected areas, valuable objects of protection, the regime of protected areas and the activities of the Center;

– to create an information stand in each municipality located on the adjacent protected area (in the administration of the municipal entity or in shops), which will provide information relating to the activities of the protected area;

– to make a proposal to the Ministry of Education and Science of the Arkhangelsk Oblast concerning the introduction of educational programs in biology and geography within the regional component of the block of educational hours, containing information about protected areas of the Arkhangelsk Oblast;

– to develop and publish a textbook for schools of the Arkhangelsk Oblast, dedicated to protected natural areas of the region;

– to organize and held meetings of the local population living in neighboring protected areas with leading scientists engaged in various studies related to the functioning of protected areas.

4. To implement regular research aimed to study protected areas of the Arkhangelsk Oblast:

– to continue inventory work related to protected areas of the Arkhangelsk Oblast;

– to monitor especially valuable natural objects, flora and fauna;

– to make scientific research findings available to all stakeholders (the Center for NMEP AO, public councils on protected areas, etc.).

5. To carry out forest management works on the territory of protected areas in order to update their zoning. This will allow the local population to allocate areas for economic activities, which will contribute to the leveling of conflicts related to the functioning of protected areas.

6. To make an inventory and to register the roads located in protected natural areas of the Arkhangelsk Oblast. This activity will help officially allocate those roads that actually exist in the protected areas and are used by the population. In turn, this will make it possible to attract funding for the reconstruction and maintenance of these roads.

7. To increase funding for the Center for NMEP AO, which will increase the staff of structural units (huntsmen), improve their material and technical equipment, and help implement the above activities.

Conclusion

Thus, the goal of our study has been fully achieved. Our algorithm for analyzing the conflict situations arising during the establishment and functioning of protected areas of the region is universal and can be applied to any administrative-territorial entity of the Russian Federation. The algorithm is characterized by comprehensive coverage of the views of all stakeholders (representatives of environmental organizations, state and municipal authorities, managers of protected areas, scientists) and by the use of various

complementary sources of information (media, official documents, interviews of experts). Its implementation provides the most accurate and reliable data to identify the conflict, structure it and carry out its comprehensive analysis.

Having tested the developed algorithm on the example of one of the Arctic regions of the Russian Federation, we identify and analyze 58 conflicts occurring in 35 operating and 2 planned protected areas of the region. On the basis of the study, we formulate a set of specific recommendations for their elimination, reduction and prevention, aimed at improving the organizational structure and activities of public advisory councils under the state and municipal executive authorities and at implementing environmental educa-tion, forest management, inventory and research. The results of our work aroused great interest in the executive authorities of the Arkhangelsk Oblast and were used in their activities in order to make and adjust management decisions in the field of environmental protection.

Conducting similar studies in other regions of the Russian Arctic will help form an extensive database of conflicts in the protected areas of the macroregion, which will later become the basis for the development of evidence-based recommendations for their resolution and preservation of the unique and fragile nature of the Arctic regions of the Russian Federation.

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Competition of Russian Economic Journals in the World Market*

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Abstract. The paper considers the next stage of formation of the Russian market of economic journals, which is characterized by its clear division into two segments – external and internal. The external segment contains publications included in the international databases Scopus and Web of Science (WoS), the internal segment covers publications that are not included in these databases. To reflect the changes that have occurred in the market, we upgrade the methodology for compiling the Rating of Russia's Leading Economic Journals (RLEJ). The innovations affect the subsystem of expert assessment of publications included in the external segment, taking into account the differentiation of Scopus and WoS databases on quartiles, as well as the subsystem of market representation, taking into account the availability of Russian and English versions of journals. We provide the results of the fifth wave of RLEJ rating in the form of a Diamond List (top 13 journals) and a List of Journals of the Second Tier, consisting of 12 titles. We analyze the reshuffling of journals in comparison with previous years; we show that Russia already has 19

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economic publications with international certification, of which eight publications have double certification (both Scopus and WoS). We consider several stylized examples of success and failure of journals; this allows us to determine the outlines of a general model for development of publications of the international level. In particular, we review the work of the heads of journals "at the top" – as drivers of their development through establishing external relations and finding financial resources, and their work "at the bottom" – as organizers of local scientific communities and exclusive intermediaries between authors and professional translators. Certain changes are pointed out in the employment relationship with highly qualified translators; now they are characterized by greater flexibility compared to the previous period. We also consider medium-and long-term implications of the emergence of two market segments of Russian economic journals.

Key words: rating, economic journals, international databases.

Introduction

Russian economic science continues its attempts to integrate into the world information space by promoting national periodicals in the international databases *Scopus* and *Web of Science* (WoS). In Russia, the fact of the journal's entry into these databases is now perceived as a kind of international quality certificate. In 2018, this process has become mature, when 15 Russian economic periodicals passed international certification; it is reflected in the Rating of Leading Russian Economic Journals (LREJ Rating).

According to the analysis of the data of LREJ Rating-2018 and their discussion at the 7th International Scientific and Practical Conference "World-class Scientific Publication – 2018: Editorial Policy, Open Access, Scientific Communications" we can make an optimistic conclusion that the emergence of 30–35 world-class publications in the Russian market will make national ratings of journals unnecessary; it was assumed that the new leading journals would be promoted in international databases, which would be automatically reflected in their status in Russia. We suggested that this period might start in 2020 [1].

Time has shown that these forecasts were too simplistic and optimistic. First, the entry of Russian journals in *Scopus* and *WoS* has not resolve the problem of their qualitative evaluation, and made it even more complex and ambiguous; and second, there are new imperatives in the international recognition of journals which also require consideration and integration into the overall evaluation system. In this regard, the purpose of our paper is to clarify the new disposition of Russian economic journals, taking into account the Russian and international market segments on the basis of an improved technique for their rating.

Further, as in previous works [1], this paper considers the concept of "market" in a broad interpretation as a system of participants engaged in the production and consumption of the product (journal). Producers are represented by publishers (owners), editors (employees or volunteers) and reviewers (expert community). Authors are involved (for a fee or for the opportunity to access the readership) in the process of journal creation. The market product (journal content) is characterized by quality and consumed by the scientific community for a certain nominal fee, expressed in popularity, prestige and citation of the publication. All these processes are facilitated by the interaction of market participants, which has the nature of transactions such as purchase and sale, even in the absence of monetary payments. The specifics of the journal market consists in the fact that in some cases producers

and consumers of the content are the same, but this does not change the overall strategy of the journals in the struggle for interest from the scientific community, and this is equivalent to the struggle for the readership. As it was mentioned, the success in this struggle is *symbolic* – popularity (number of views and downloads of texts), citation of articles, a large portfolio of materials sent for publication, etc. Thus, the market of journals means the widest possible concept, namely a wide range of competing periodicals. Further, we shall discuss the structure and functioning mechanism of Russian economic journals market in more detail.

Making ratings of economic journals: international and Russian experience

It has been mentioned more than once that the emergence of various ratings of economic journals is a reaction to their rapid expansion and development [1, 2]. Understanding the place of a particular publication in the market is relevant both for authors who choose where to publish their paper, and for the journals themselves, for which their positions in the rating can set the strategy for their further development and promotion. In addition, ratings can be taken into account at the state level, for example, when making a decision on budget financing and providing support to certain organizations [3].

These findings are supported by empirical estimates and analytical studies. Thus, the article [4] presents the results of the analysis of the impact factor and the rating of the journal on the author's decision to publish their paper in a particular title. The calculations have confirmed that journals with a higher impact factor or place in a rating are expected to receive a larger number of articles. At the same time, the growth of the impact factor by 1% leads to an increase in the number of articles submitted to the journal by almost 64 per year. However, with regard to the change in the number of authors submitting their papers to economic journals as they enter and move into the Top-5, the results obtained turn out to be diametrically opposite: the journal's presence in the top of the rating does not guarantee an additional inflow of articles to it, but, on the contrary, leads to a decrease in their number. Y. Zheng and H. Kaiser think that it is because the authors are not sure their papers meet the requirements of a journal from the Top-5 list.

Thus, today it is recognized that ratings are necessary; they have become a working tool of our time and are often used as supporting guidelines and tips. However, the metho-dological approaches underlying their construction still cause a lot of criticism and are the subject of open discussions in the academic community. Probably, it will not be a mistake to say that the main "accusation" against any rating is that they represent a "set of subjective decisions of its designer" [5]. Based on the attempts of developers of rating products to neutralize their subjective nature, all rankers can be divided into three groups: supporters of quantitative assessments, adherents of qualitative characteristics and advocates of hybrid techniques.

Since the appearance of the first journal ratings in parallel with those based on expert assessments and not taking into account quantitative data [6, 7, 8, 9], the rating products developed on the basis of bibliometric indicators, in particular citation indices, were also actively developed [10, 11, 12, 13]. Proponents of the use of quantitative indicators in the rankings point to their greater objectivity compared to subjective expert evaluation, which allows us to perceive these indicators as indicators of quality [14]. Opponents of the bibliometric approach point out that bibliographic indicators are not as objective as their supporters say. This is due to the fact that citations are often "rhetorical" and act as a means of conducting a scientific discussion of previous experience rather than the recognition of the intellectual contribution

of the researcher. Moreover, the practice of such "rhetorical" references "wandering" from article to article is quite common; and this can harm really important findings that did not get into the "wandering" list [15]. In addition, the authors note that the high impact factor of the journal may be the result of multiple citations of a small number of articles and it does not reflect the average level of the remaining articles of the publication [16].

Against the background of supporters of quantitative and qualitative assessments competing with each other, there emerge the hybrid ratings based on the combination of positive aspects of both approaches; such ratings are becoming increasingly popular. Such synthetic rating products have become a trend of the last decade [17, 18, 19].

Russian researchers did not stay away from the rating fever and are actively engaged in the process of ranking economic journals and determining the best of the best among them. As well as among foreign researchers, in the Russian community there were adherents of various methodological approaches: bibliometric [20, 21, 22], expert [23, 24], hybrid [25]. The main methodological approaches to the ranking of Russian economic journals are discussed in more detail in [22]. The controversy surrounding the rating of journals [26, 27] allows the developers of existing ratings to move towards their improvement and enhancement of their quality. Thus, the technique of LREJ Rating considered in our paper, thanks to critical remarks and discussion in the external environment, has undergone several changes in the direction of reducing the share of subjective expert assessments and bibliometric indicators that raise controversy and increasing the Rating's objectivity by searching for new indicators that can improve the quality of the study. Later, we will consider the changes in the technique of the current wave of LREJ Rating and the reasons that gave rise to them.

New stage of the competition: expanding the zone of "peripheral" journals

Every year since 2015, we build LREJ Rating, which determines the top 50 economic journals in Russia. In addition, we build the Diamond List of journals, which includes the top 13 publications from LREJ Rating. Previously, journals involved working with the opinions of experts; this fact, regardless of the procedures used, caused doubts, disputes and, as a result, distrust among interested parties. The considerable efforts that Russian journals are undertaking to be included in *Scopus* and *WoS* have weakened the subjective element of rating, because the very fact of international certification has largely replaced the work of domestic experts. Consideration of this circumstance formed the basis of the updated rating algorithm used in 2018. However, by 2019, it became clear that *a new stereotype of behavior* has developed among researchers: they should submit their papers only to the journals with international certification; the list of journals of the Higher Attestation Commission (VAK List), which was traditionally widely used earlier, has ceased to serve as an adequate benchmark and quality mark for researchers.

This stereotype was a reaction to the requirements of scientific funds and university administrations in relation to the status of publications – it is considered to be high if the paper is published in a journal covered in *Scopus* and *WoS*. In some cases, this requirement appears in a milder form, when all publications are taken into account, but preference is given to international publications; in other cases, all other journals are categorically rejected. As a result, the country has developed two segments of the market of domestic economic journals – *internal,* i.e. purely Russian, and *external*, i.e. international. Moreover, today almost the entire internal segment by default falls into the category of periphery, because it is on the sidelines of the world information field. In this regard, the

journals belonging to this group are referred to as "peripheral".

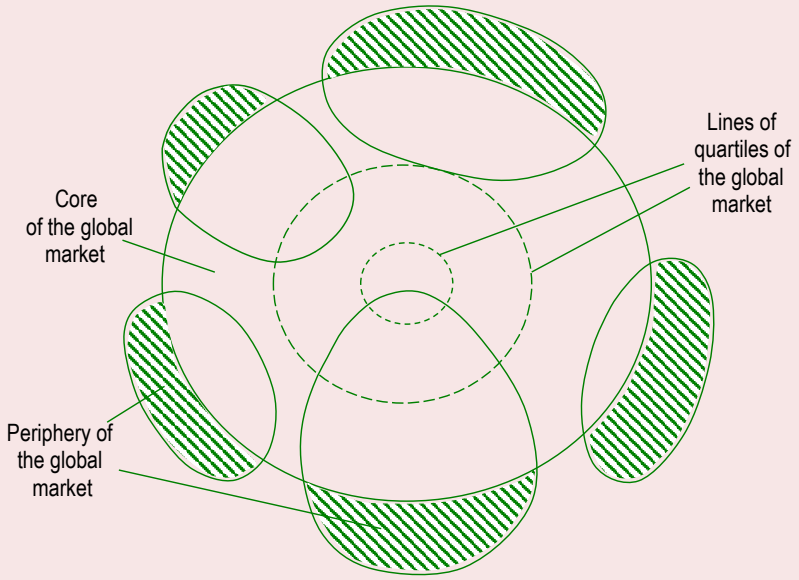
This process is a consequence of a more global process, *massification*, and as a result, *marginalization* of all markets. At the *first stage*, according to our estimates, until 2014, the market of economic journals was extremely democratic and was formed at the expense of the mass involvement of participants. The institutionalization of the market has occurred through the establishment of the Russian database *eLIBRARY*; the number of national economic journals covered in it is 1,281 as of April 11, 2019. At the *second stage*, 2015–2017, there was a struggle for leadership, accompanied by publications ranking. For these purposes, special "filters" were created such as the VAK List, internal lists made by scientific organizations and universities, and national ratings initiated by journals. All of these filters can be classified as *conditionally legitimate*, because they were widely used, although they caused a lot of issues and the scientific community has not reached a consensus in relation to them. At the *third stage*, starting from 2018, a new filter in the form of international status of journals (*Scopus* and *WoS*) was institutionalized; it was initially rejected by many, but was eventually adopted by the scientific community and turned into a *globally legitimate* quality criterion. During this period, two segments of the market were finally formed – the external segment, which included the leading journals, and the internal segment, which included the rest of the publications

Currently, the third stage continues, but it is characterized by qualitative changes in two segments of the journals market. First of all, inter- and intra-sectoral competition is becoming tougher. At this stage, the external segment is gradually expanding and strengthening qualitatively due to the entry of new candidates for leadership and promotion of old leaders to higher quartiles. However, the very expansion of the prestigious segment is destructive to another segment, because it demonstrates the fact that self-respecting publications need to move to a "better world". Thus, the previously mentioned stereotype is formed, according to which "real" journals are only those that have passed international certification; other publications by default fall into the category of peripheral journals (PJ).

For a better understanding of the processes under consideration we can offer a nuclear pie chart of the world journal market; the chart represents a zone of journals with international certification and a zone of peripheral journals from different countries *(Figure)*. The national journal markets of each country are shown in small circles and ovals and consist of two segments – internal, represented by PJ (shaded areas), and external, represented by world-class journals. The goal of each country is to maximize the share of the external segment or, what is the same, to minimize the share of PJ. Geometrically, the country's promotion on the world journals market is manifested in the expansion of the area of international publications and its extension towards the core of the world market (large circle). The world market itself consists of the core, represented by world-class publications (large circle), and the periphery, consisting of PJ from different countries. In turn, the core of the world market has many gradations (dotted lines), which reflect the level (quartile) of the publications included in it.

The marginalization factor, which shows the share of PJ in the total number of journals, can serve as a quantitative measure of the periphery of the Russian journal market. Looking ahead and taking into account the current data on the volume of the external (19 journals) and internal (1,281 journals) market segments, it is easy to calculate the marginalization rate, which is 98.5% (i.e. [(1281–19)/1281]100%=98.5%). In other words, the domestic market of economic journals is characterized by almost total "periphery".

Nuclear pie chart of the world market of economic journals



The phenomenon of total marginalization, i.e. the shift of the overwhelming majority of market participants to its periphery, is a feature of the entire modern world, especially in the countries outside its core. Previously, the structuring of markets was carried out through the formation of the "middle class" in all its manifestations, but today this very middle is washed out and pushed to the sidelines of economic life. This applies to all social communities and in particular to the journals market, where the middle tier is almost completely eliminated by the dominance of the binary dilemma "either/or": either you are among the few leaders, or you fall into the category of PJ. Without giving an assessment of this trend, we will proceed from its existence in the future.

We emphasize that the term PJ does not carry any negative connotation, but reflects only the fact that these publications are on the periphery of the world market of journals. PJ includes the so-called "garbage" or "predatory" publications that violate the norms of academic ethics. However, along with garbage publications, PJ include high-quality domestic journals that have not yet passed international certification – for financial or technical reasons. Thus, the PJ segment is qualitatively heterogeneous, but this does not change the fact that the country's leading researchers do not consider them authoritative enough to submit their papers to them and, consequently, to read them regularly.

New imperatives in the evaluation of scientific journals

In 2018, our LREJ Rating was considerably revised in comparison to the previous three years. In particular, the international status of the publication was taken into account. These journals were not subjected to expert evaluation of their quality and received the maximum points for this item. Thus, the assessment of quality, which was suffering from subjectivity one way or another, henceforth extended only to the internal segment of journals, while for the publications of the external segment, this procedure was shifted to the international structures that decide on their inclusion in *Scopus* and *WoS*. At the initial stage, this approach was quite justified, but the high speed of market development has led to its serious transformation, which was manifested in the following facts.

First, the publications of the external segment began to "move" within international bases, shifting to higher quartiles. In such a situation, a unified evaluation of the quality of a journal for the very fact of its entry into *Scopus* and *WoS* is not adequate; it is necessary to take into account the quartile of domestic journals. However, there are some issues in calculations concerning this fact. The gradations of the two databases – *Scopus* and *WoS* do not coincide, which hampers their automatic comparison. Moreover, the academic status of the two databases is not equivalent. While *WoS* is an American system with very strict requirements and almost complete absence of "garbage" journals in it, then Scopus is its European alternative with less rigid filters that allow it to include "predatory" publications, which are periodically excluded from the database with a scandal. In addition, it is necessary to take into account the fact that some Russian publications may be included in a fairly high quartile only in one database, and others – on more modest positions, but in both databases. Simple addition in such a situation does not give adequate results.

Second, many publications have realized the fact that *it is possible to be included in* international databases if they have only a Russian-language version, but *it is impossible to move upward* in them. It is almost impossible to get into the 1st and 2nd quartiles if a journal has a Russian version only; for this it is necessary to have at least a full-fledged English version. Indexation of the publication based on citation implies its availability to the world community, and this is possible only if the English-language version is available. Moreover, the higher the quartile, the stricter the requirements to the quality of translation into English; as a rule, a primitive translation from Russian causes complaints from experts of international databases and can lead to loss of the readership of the publication.

These circumstances led to a new wave of "stratification" of journals of the external and internal market. Some already have full-fledged Russian and English versions, while others are published only in Russian; some are covered in two databases, while others – in only one. These new market barriers are reflected in the modernized rating system of Russian economic journals.

The algorithm for constructing LREJ Rating: taking into account new trends

As noted earlier, the analytical framework for LREJ Rating was improved in 2018. This served as the basis for the development of its current version, which in 2019 includes the following stages.

The first stage is the rating of journals according to four parameters of the RSCI, taken from the scientific electronic library *eLIBRARY*, and one indicator calculated on the basis of the data of this database:

x_{1i} – total number of citations of the i-th journal without self-citation (i.e. the *citation coefficient* characterizing the final impact of the publication);

x_{2i} – 5-year impact factor of the i-th journal without self-citation (i.e. the *impact factor* reflecting the relative activity of citation of materials of the publication);

x_{3i} – 5-year Herfindahl-Hirschman index of the i-th journal for the citing journals (i.e. *group citation coefficient* taking into account possible collusion between journals in relation to cross-references);

x_{4i} – half-life time of articles of the i-th journal cited in the current year (i.e. the index of the "half-life" of the article or the *durability coefficient*, taking into account the time depth of citation and reflecting the degree of durability and fundamental nature of materials of the publication);

x_{5i} – potential of high citations (i.e. the sum of citations of articles with more than 11 citations

for the current year), which charac-terizes the ability of the journal to publish breakthrough research findings.

To identify highly cited publications, we used basic principles of the methodology of the *Essential Science Indicators* international base according to the methodology of the previous version of LREJ Rating. As in the previous version of the rating, its fifth wave was carried out in collaboration with O.V. Tret'yakova and A.S. Artamonova, researchers from RAS Vologda Research Center, who provided information on the indicator of the potential of high citations.

The rating on RSCI parameters is based on the indicators y_{hi} that represent normalized values x_{hi} (h – number of RSCI parameter). Indicators x_{1i}, x_{2i}, x_{4i}, x_{5i} are normalized in a "direct" way:

$$y_{hi} = (x_{hi} / \max_i\{x_{hi}\})100\% \ , \quad (1)$$

where y_{hi} – normalized value of x_{hi}.

"Reverse" normalization is carried out for the indicator x_{3i}:

$$y_{3i} = (1 - x_{3i} / \max_i\{x_{3i}\})100\% . \quad (2)$$

The final rating score (x_{Ri}) of RSCI indicators is determined by weighing the particular normalized values (y_{hi}):

$$x_{Ri} = 0{,}2y_{1i} + 0{,}2y_{2i} + 0{,}2y_{3i} + \\ + 0{,}2y_{4i} + 0{,}2y_{5i} \quad (3)$$

followed by normalization – y_{Ri}.

The equation (3) used equal weighting factors for all aggregated RSCI indicators.

The second stage involves the formation of a sample of journals that claim to be the best. The rating score (3) obtained at the previous stage for the 100 best economic journals in Russia is the basis not only for further calculations, but also for the formation of an "advanced" sample of journals, which are to undergo a more thorough analysis.

At ***the third stage***, expert evaluation of journals is carried out. In 2019, experts evaluated the journals on only one parameter:

x_{6i} – scientific level of the i-th journal (compliance with modern requirements, degree of instrumental elaboration, culture of working with empirical material, etc.) (i.e. the *index of scientific level*).

Expert assessments were given on a 10-point scale [0;10] only for the journals of the internal market segment according to the rule: the more, the better. At the same time, as before, it was assumed that the maximum score of the internal segment journals could not be higher than the score obtained by the external segment journals. The procedure of expert evaluation of the journals of the internal market segment remained the same as in the previous version of the rating (Balatsky, Ekimova, 2018).

The following heuristic procedure was used to calculate the estimates of the scientific level of the journals of the external segment:

$$x_{6i} = 10\left(\frac{k_{Si} + k_{Wi}}{b}\right), \quad (4)$$

where k_{Si} and k_{Wi} are the bonus rates for the quality of the i-th journal included in a certain subgroup of *Scopus* and *WoS*, respectively; b is the reduction coefficient.

In the rating calculations, parameter b was assumed to be equal to 1.5, and the premium rates are shown in *Table 1*.

The rationale for the selected evaluation procedure (4) is as follows. If a journal is included in two scientometric databases, it should get a bonus (it is better than being covered in only one database), i.e. the following condition must be met: $b<2$; in the case of $b=2$, a simple averaging of the parameters of the two bases is carried out and the bonus for coverage in the two databases is lost. If there is a simple addition of the parameters of the two databases, i.e. when $b=1$, then the result, which for the two databases

Table 1. Scale of compliance of Scopus and WoS sub-groups

Database		Bonus rate for the quality (k)
WoS	*Scopus*	
1 quartile	–	1,4
2 quartile	1 quartile	1,3
3 quartile	2 quartile	1,2
4 quartile	3 quartile	1,1
Emerging Sources Citation Index	4 quartile	1,0

Table 2. Awarding "bonuses" for the presence of English and Russian content

Journal content	Score (x_{Ai})
Only a full-fledged Russian version	1.0
Hybrid version (partly in Russian, partly in English)	1.5
Only a full-fledged English version	2.0
Full-fledged Russian version with part of the content in English	2.5
Two full-fledged versions – Russian and English	3.0

is approximately the same, is doubled; and this in turn gives an unreasonably large bonus for the partial duplication of the international status. Therefore, parameter b must be selected so that it satisfies the condition: $1<b<2$. In the calculations we use a border $b=1.5$ according to the simple "principle of the golden mean".

When constructing the scale of compliance in Table 1 we assumed that 10 points would be assigned to the journal for the fact of its inclusion in an international database. Taking into account the fact that *WoS* has a preliminary stage (group) – Emerging Sources Citation Index – in which journals are admitted before their coverage in the active list with gradation by quartiles and the fact that *Scopus* has no such "buffer", we consider it advisable to make a shift between the quartiles of the two databases. The presence of a larger number of subgroups in *WoS*, its great prestige and the absence of "garbage" journals allows us to use the bonus scale in its favor. The value of a 10% step-by-step increment is sufficient to make the quality parameter of the journal the dominant component in its ranking score, and at the same time it is not too large to "suppress" all other sides of the market position of the publication.

The obtained expert estimates were normalized to obtain the final score y_{Ei}.

At ***the fourth stage***, an additional indicator of *market representation* of the journal is calculated – x_{Ai}. It takes into account the availability of the English version of the content. The value of this indicator was formed in accordance with the rule specified in *Table 2*.

The following considerations can serve as a justification for the table rule. For a journal that has reached the international level, the priority is to present its content to the world community, and to do this it is necessary to have a full-fledged English version. Otherwise, the journal included in the external segment of the Russian market does not receive additional readership in comparison with the usual publications of the internal segment, and the very procedure of international certification takes a purely symbolic meaning. Moreover, the absence of international readers is fraught with the absence of citations in the relevant databases, hence the low international indexation of the publication and the risk of being excluded from the scientometric system. At the same time, the presence of the Russian version is also important, since it is mainly domestic readers that will be the main consumers of Russian journals for a long time; therefore, it would be absolutely unreasonable to pay no attention to them.

At the end of this stage, the normalized index of market representation of the journal y_{Ai} is calculated.

At ***the fifth stage***, the RSCI rating y_{Ri}, the expert rating y_{Ei} and the market representation rating y_{Ai} are aggregated:

$$x_i = 0{,}4y_{Ri} + 0{,}1y_{Ai} + 0{,}5y_{Ei} \qquad (5)$$

with the subsequent normalization and obtaining the final score y_i.

Within this paradigm, there is a clear division of the journal's success between two market segments, which is reflected in the aggregation rule (5). In contrast to previous versions of LREJ Rating, the rule (5) takes into account the RSCI indicators of the journal that reflect its actual success in the internal segment of the market; the rule also takes into account the market representation indicator, which reflects its potential success in the external segment. Moreover, the latter indicator is important not only for journals of the external segment, but also for those publications of the internal segment that have not yet entered the international databases, but are already preparing for this in advance.

The results of the fifth wave of rating

The implementation of the above algorithm allowed us to obtain the fifth wave of LREJ Rating, presented by the first 50 journals and fully available at the "Non-Ergodic Economy"[1] portal. *Table 3* shows a traditional Diamond List, which includes top 13 economic titles of the country; *Table 4* shows the second tier that contains top 12 journals.

The rating base we have created shows that in the fourth wave of LREJ Rating there were 15 publications that overcame one international barrier, including 5 publications that overcame two barriers. The fifth wave of such journals contained 19 and 8 titles, respectively. Consequently, 4 new editions overcame the first barrier, and 3 journals from among the old leaders were able to overcome the second one. This is fully consistent with a forecast, according to which we can expect an annual replenishment of the external market segment by 4–5 journals [1].

According to our expectations, the competition has intensified primarily in the second tier, where more than half of the journals (7 titles) have an international status, compared with

Table 3. Diamond List of Russian economic journals, 2019

Place	Journal	Final score y_i	RSCI parameters					y_{6i}	y_{Ai}
			y_{1i}	y_{4i}	y_{3i}	y_{2i}	y_{5i}		
1	*Voprosy ekonomiki*	**100.0**	98.5	30.0	99.3	100.0	100.0	90.9	33.3
2	*Forsait*	**86.8**	10.8	28.3	99.3	75.9	2.0	95.4	100.0
3	*Ekonomika regiona*	**84.8**	33.7	18.8	99.3	47.3	28.0	100.0	50.0
4	*Mirovaya ekonomika i mezhdunarodnye otnosheniya*	**77.7**	34.0	34.4	97.9	23.2	11.0	95.4	33.3
5	*Problemy prognozirovaniya*	**75.0**	31.4	35.5	96.5	42.0	8.3	74.9	100.0
6	*Vestnik mezhdunarodnykh organizatsii: obrazovanie, nauka, novaya ekonomika*	**74.9**	4.4	19.4	96.4	15.6	0.0	95.4	66.6
7	*Terra Economicus*	**74.1**	29.4	32.7	93.4	16.3	0.0	90.8	50.0
8	*Zhurnal Novoi ekonomicheskoi assotsiatsii*	**70.8**	10.3	17.7	98.5	31.0	0.0	90.8	33.3
9	*Ekonomicheskaya politika*	**70.7**	10.1	18.8	97.4	26.4	4.4	90.8	33.3
10	*Ekonomicheskie i sotsial'nye peremeny: fakty, tendentsii, prognoz*	**66.8**	17.5	20.5	98.1	29.8	4.8	68.1	100.0
11	*Den'gi i kredit*	**65.6**	25.7	19.4	97.5	24.6	29.9	61.3	100.0
12	*Biznes-informatika*	**64.6**	3.9	32.7	97.4	14.4	0.0	68.1	100.0
13	*Rossiiskii zhurnal menedzhmenta*	**61.9**	10.1	45.0	97.2	25.3	0.0	68.1	50.0

[1] Available at: http://nonerg-econ.ru/cat/18/9/

Table 4. Second tier of Russian economic journals, 2019

Place	Journal	Final score	RSCI parameters					y_{6i}	y_{Ai}
			y_{1i}	y_{4i}	y_{3i}	y_{2i}	y_{5i}		
14	*Vestnik Sankt-Peterburgskogo universiteta. Ekonomika*	**60.7**	8.0	33.8	96.0	20.8	7.4	68.1	50.0
15	*Prikladnaya ekonometrika*	**59.5**	5.4	36.6	95.8	16.0	0.0	68.1	50.0
16	*Journal of Institutional Studies*	**59.3**	6.3	21.6	96.3	28.2	0.0	68.1	50.0
17	*Ekonomicheskii zhurnal Vysshei shkoly ekonomiki*	**59.1**	7.0	37.7	97.2	26.7	0.0	68.1	33.3
18	*Sovremennaya Evropa*	**58.1**	5.1	12.2	92.2	11.0	0.0	74.9	33.3
19	*Russian Journal of Economy*	**57.9**	0.9	11.1	85.3	21.9	0.0	68.1	66.6
20	*Upravlenets*	**57.3**	5.6	16.6	97.8	11.9	0.0	68.1	50.0
21	*Journal of Tax Reform*	**54.9**	0.4	12.2	77.4	0.0	0.0	68.1	66.6
22	*Ekonomika i matematicheskie metody*	**50.0**	11.5	72.7	94.9	13.7	0.0	47.7	33.3
23	*Vestnik Sankt-Peterburgskogo universiteta. Menedzhment*	**47.4**	8.8	53.3	97.6	26.9	0.0	40.9	50.0
24	*Prostranstvennaya ekonomika*	**46.7**	11.1	25.5	98.5	39.0	5.0	40.9	50.0
25	*Problemy upravleniya*	**42.8**	10.9	36.6	95.5	16.1	0.0	40.9	33.3

the previous wave, in which there were only 1/6 of them (2 titles). At the same time, the Diamond List has undergone significant changes in the course of the year – 4 titles out of 13 journals of the last wave were pushed out into the second tier. Although all the leaders are well known, there are continuous changes among them. All this allows us to state that the competition between Russian economic journals is not fading, but has the potential for long-term growth. We can say that today the market is at the peak of competition.

It is noteworthy that even the permanent leader – *Voprosy ekonomiki* – is not too far away from its closest pursuer. For example, in 2018, it was ahead of *Forsait* by almost 26 points, and in 2019 – by only 13 points. Similarly, in the 2018 rating, *Voprosy ekonomiki* broke away from the journal that ranked last in the Diamond List by almost twice (50 points), whereas in 2019 – by only 38 points. All this clearly indicates an increase in the "density" of competition among the first-tier publications.

A comparison of the 4th and 5th waves of LREJ Rating shows how the process of marginalization of the then very successful journals is going on. For example, *Ekonomika i matematicheskie metody* moved from the 16th to the 22nd place, *Prostranstvennaya ekonomika* – from the 20th to the 24th place, and *Ekonomicheskaya nauka sovremennoi Rossii* found itself outside the second tier, having descended from the 21st to the 29th position.

We cannot say that the next round of ranking that has been lost by some journal puts an end to its prospects; however, time is working against outsiders. Later entry into international databases will likely no longer allow such publications to claim a place on the Diamond List. Even among the journals from the external segment, those at the bottom will have to be satisfied with the best articles that have not been submitted to or accepted by more authoritative journals, which will make it difficult for them to move forward. The fact is that the number of "special" authors and papers is limited, and they are all engaged by the most successful journals included in the Diamond List; and there simply remain no high-quality and highly cited papers for those journals that are left. In addition, the current leading journals, which already have an English version, are beginning to invite foreign authors, thereby increasing their own chances of receiving high-quality papers; as for journals that have

been admitted to international databases later, they are at risk of losing even this contingent of researchers.

Orientation of Russian journals toward international recognition leads literally to "shocking" changes in the rating over the different years. For example, *Upravlenets,* after its admission to *WoS* in 2018, broke into the second tier literally from the outskirts of the PJ segment. Similar leaps have been made by English-language journals *Russian Journal of Economy* and *Journal of Tax Reform*, which did not previously appear as noteworthy players in the domestic market. An even more dizzying leap has been made by the journal *Den'gi i kredit* that moved from the 23rd to the 11th position, and thus took its rightful place in the Diamond List, despite being the only journal without international certification. Thus, the current phase characterized by the presence of "dark horses", which in a certain moment come into the spotlight. The next 3–4 years are likely to present even more such surprises.

The most important reasons for the *spontaneous* emergence of new leaders "pushing" through their competitors are the great dependence of the success of the journal on its editor-in-chief and the unpredictability of its editor-in-chief finding new financial sources. Sometimes the new head of the journal manages to find decent funding sources; thus the journal undergoes complete reformatting and in the shortest possible time comes to the forefront. And if the new head is unsuccessful, then the journal loses the achieved success completely. We will touch upon this aspect in more detail later on.

Stylized examples of successes and failures

Earlier publications [1, 25] have already considered the success factors of Russian economic journals, and therefore in this section we will consider only some of the most striking examples[2] that can be considered as stylized and that allow us to understand the key features of the market under consideration [28].

One of the textbook examples illustrating the effect of *the role of personality in the history* of a journal is the complete reformatting of the journal *Den'gi i kredit* after K. Yudaeva, First Deputy Chairman of the Bank of Russia, became its editor-in-chief. Having received a PhD in Economics at the Massachusetts Institute of Technology and obtained experience in academic research in foreign organizations and in practical work in the mega-regulator of the country, K. Yudaeva carried out a comprehensive reform of the journal that did not meet modern requirements and turned it into an advanced scientific publication. The number of issues per year was reduced from 12 to four; and the average number of papers per issue – from 12 to six. For example, in 2017, when *Den'gi i kredit* was not reformed, the total number of papers published in it was 148; and in 2018, when the new format of the journal was already in force, only 23. Thus, the reform has led to a reduction in the volume of the journal's content by almost 6.5 times with a simultaneous multiple increase in its quality. In addition, since 2018, *Den'gi i kredit* publishes a full-fledged English version. In parallel, there was a radical change in the composition of the journal contributors –the papers by analysts from the Bank of Russia and foreign economists specializing in monetary issues, including employees of foreign central banks, began to dominate. All these achievements were a direct result of the use of extensive professional contacts of the mega-regulator of the country – the Bank of Russia – and its almost unlimited financial opportunities to finance its "own" journal.

[2] All the specific examples provided below are based primarily on insider information available to the authors and not mentioned in the scientific literature. It is this fact that makes the given cases valuable for the problem we are discussing: they are widely published for the first time, although most of this information, not being secret, as a rule, remains "inside" the editorial offices of journals and is not brought to the consideration of the general public.

Thus, K. Yudaeva acted in a timely manner as a moderator and a link between the regulator, the academic community and the scientific and information platform represented by the journal *Den'gi i kredit*. At the moment, the entry of this title in the international database is only a matter of time, and, apparently, it will happen in the near future.

Another striking example showing the dedicated work of the editor-in-chief, but this time not so much "from above" as is the case with *Den'gi i kredit*, but "from below", is provided by the *Journal of Tax Reform*. Its head, I.A. Mayburov, not only supervises the process of publication of the journal, but also engages in searching for articles and researchers in the Russian-speaking information field; thus he can provide the journal with quality content. For example, he gets in touch with the authors, whose Russian-language articles he likes and whose articles correspond to the remit of his publication and asks them to write a generalizing and modernized material, and he himself acts as a link between the authors and good translators into English. Thus, the journal plays the role of an *exclusive mediator* (interface) between the communities of Russian-speaking authors and professional translators. Let us emphasize that, as a rule, the authors and translators live in different cities of the country; therefore, the *Journal of Tax Reform* performs, among other things, a global mission to ensure the *geographical connectivity* of market research agents. This aspect of the work is strategically important for a journal published in English, because poorly written or edited papers almost instantly receive complaints from *Scopus* and *WoS* experts, which entails the risk of being moved to a lower quartile or excluded from scientometric databases[3].

[3] Note that many emerging Russian journals that have been included in international databases are constantly checked by database experts for the quality of the publication language.

It is interesting to note that the foundation of the *Journal of Tax Reform* was preceded by a long organizational work. In particular, an international tax symposium "Theory and practice of tax reforms" founded by I.A. Maiburov was launched in 2009; to date it has celebrated its 10th anniversary. As part of this initiative, there is an annual "review" of those "interested" in tax issues, among which the *Journal of Tax Reform* finds its contributors. The journal's first issue appeared only in 2015 – after a pool of specialists, including economists from neighboring countries, had been formed. In parallel, books on taxation in the format of encyclopedias are published and regular online surveys are conducted on the website of the symposium; these activities also contribute to the consolidation of specialists in tax regulation and indirectly provide the *Journal of Tax Reform* with authors.

We must say that the emergence of a full-fledged foreign market of Russian economic journals has led to an increase in the value of skilled translators. In this regard, we can note examples when the management of a journal makes certain concessions to their full-time translators and allows them to work from home. We can say that editors-in-chief, realizing that "cadres are the key to everything", act on this basis, abandoning unnecessary bureaucratic procedures. Such is the case with the journal *Economic and Social Changes: Facts, Trends, Forecast*: international databases assess the quality of its papers translated into English as "excellent". These trends lead to the improvement of labor relations and to the formation of a modern culture of cooperation in the scientific research market.

An interesting example of *scientific and business cooperation* is provided by the journal *Ekonomika regiona*; its former editor-in-chief A.A. Kuklin has cooperated for many years with the Director General of the Ural Mining and Metallurgical Company (UMMC) A. Kozitsyn, a dollar billionaire and an active benefactor. The

head of UMMC is a member of the editorial board of the journal and acts as a permanent sponsor of its initiatives. Without financial support from business, the journal *Ekonomika regiona* is unlikely to be able to take such a high position in the international market so rapidly.

At the same time, we can provide examples of failures in promoting advanced scientific journals. For example, *Vestnik mezhdunarodnykh organizatsii: obrazovanie, nauka, novaya ekonomika* published by the Higher School of Economics (HSE), has a practice of publishing two papers by the same author in one issue, which by academic standards is totally unacceptable. For comparison, another HSE publication – *Mir Rossii* – does not publish two papers by the same author during the year, even in the auxiliary section devoted to the review of new books. Violation of *academic standards* can negatively affect the promotion of the journal in international databases and lead to a fall in its prestige in the eyes of researchers.

Another rather sad example is the failed attempt of the journal *Zhurnal Novoi ekonomicheskoi assotsiatsii* to produce a full-fledged English version. Having received a grant to support this work, the publication released the 1st and 2nd issues in 2018 in two versions, after which, for reasons beyond the journal's control, the received funding stopped for an indefinite time, and the initiative died out. It is possible that the attempts to publish both the Russian and the English version will be continued; however, so far *Zhurnal Novoi ekonomicheskoi assotsiatsii* has moved down to the 8th position in the Diamond List, whereas in previous years it ranked 4th and 6th. Two journals published in Rostov-on-Don and included in international databases – *Terra Economicus* and *Journal of Institutional Studies* are facing a still more serious problem. These publications are the flagships of economic science of the Southern Federal District of Russia, but they failed (unlike *Ekonomika regiona*) to find sponsors to launch the English version. The management of the Southern Federal University, under the auspices of which these two journals are published, does not want to invest money in their promotion; besides, it is also not yet possible to find a private investor in the region.

There already exist examples of *negative digitalization* associated with the journals' excessive enthusiasm for modern digital platforms. Many journals have switched to the format of electronic submission of papers to the editor (which in itself is a positive point). However, often this procedure involves a large amount of filling in various information online and the conclusion of a copyright transfer agreement. Without this, the paper is not accepted, while such a contract is clearly an excessive registration option, because if the review is negative, the paper is automatically rejected and the contract is not required by definition. Such attempts to include the maximum number of legal options in the electronic registration procedure in advance may also lead to the unwillingness of potential authors to submit their papers to such journals.

Conclusion

The emergence of two segments – external and internal – on the Russian market of economic journals has ambiguous long-term implications. What exactly can be expected in the short and long term?

There is no doubt that many Russian journals are working hard to be admitted to international scientometric databases. This is a positive phenomenon, since all these publications have to correspond to at least a minimum academic level, and this contributes to an increase in the number of quality journals in the country and the improvement of the entire economic community. However, in the longer term, the success of external publications will mean their gradual transformation from predominantly Russian to international. This implies that more and more

of the content of the journals will be contributed by foreign authors, and the quota of Russian economists will be continuously decreasing. Thus, the most authoritative publications from the external segment will eventually cease to "serve" as promoters of domestic scientists, and will begin to live their own lives as global players in the academic market. The experience of the journal *Forsait* proves this scenario is real: according to our estimates, 60.7%[4] of its content in 2018 was provided by foreign researchers.

Thus, in the medium term, Russian economists may lose the opportunity to publish in the top journals from the external segment. This situation can be mitigated by introducing at least a minimum quota for domestic authors. However, such a measure can only be implemented on a voluntary basis. In the longer term, when the language culture of Russian economists significantly increases, we should expect the opposite problem, when scientists who are fluent in English, will prefer to submit papers to foreign journals published in English-speaking countries. In this case, even the journals from the external segment are at risk of being left without the top domestic authors. Given the rate of changes in the Russian market of economic journals, we note that the events described may occur in the not too distant future. According to our estimates, it is a matter of 8–10 years.

The proposed method of rating Russian economic journals makes it possible to monitor and evaluate their success adequately in both segments of the market – internal and external. We estimate that the methodology will remain fully operational for at least the next five years.

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[4] Here we mean the proportion of papers submitted by foreign authors in the total number of papers published in 2018.

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Trends in the Development of Forestry in Russia and Finland

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Abstract. The article is devoted to the forestry in Russia and Finland considered through economic relations developing under the influence of national forest legislation and state forest management systems. The purpose of the article is to assess the trends in the development of forest relations formed within the framework of national forest regulations and their respective forest management mechanisms on the example of two countries: Russia and Finland. The study is based on a system approach to forestry

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considered from an ecological and economic perspective, using subject-object, abstract and logical methods, comparative, spatial, statistical analysis, modern theories of sustainable development, as well as foreign and domestic experience of forest relations. The research novelty lies in revealing trends in the development of forest economy formed under the influence of national forest legislation systems, forest management systems taking into account population's opinion. The ratio of organizational-administrative and economic methods of forest management by public authorities of the two countries are analyzed. The economic efficiency of forest management in two countries is compared through contrasting costs and revenues of forestry. The positive and negative trends of the Russian forest economy since the beginning of the administrative reform in the country are analyzed. Trends in forest economy, environment and sociology showed are more negative rather than positive. The research results can be in demand by research institutions forecasting the development of sectoral economies, forest organizations for building economic relations between the state, forestry business and the population. The study can be continued in terms of assessing trends in the development of forestry as an eco-economic system with a long manufacturing cycle, taking into account the new paradigm of thinking about the role of renewable forest resources in human life.

Key words: forest economy, forest management, forest legislation, forest ecosystem services.

Introduction. The well-established methods for measuring the effectiveness of forest economy are generally based on the comparison of costs and results from sale of useful material products originating from forests. However, this approach does not take into account the costs of the "intangible benefits" consumed by the society or the regulatory, supporting and other forest services that extend far beyond states where the forests are located. The development of international relations with other countries – consumers or suppliers of forest resources – excludes isolated consideration of the national forest economy. In this case, contractual relations between countries are based on the laws of supply and demand. The problem of consumption of "intangible benefits" by an unlimited number of states in the absence of an act of purchase and sale remains unresolved.

The features of a forest as a complex ecosystem formation determine the features for defining the efficiency of forest management. A significant number of works of classic Russian forest researchers and forest economists are devoted to the multilateral study of forest as a biological system with all its numerous services. A.T. Bolotov [1], N.A. Moiseev [2], G.F. Morozov [3], V.V. Strakhov [4], V.N. Sukachev [5], M.E. Tkachenko [6], M.K. Turskii [7] and other researchers supplemented theoretical forestry with knowledge of a forest as a geographical and economic phenomenon. This approach to forests has become a prerequisite for the development of the ecosystem approach.

A number of domestic studies is focused on the aspects of eco-economic assessment of forests and the multiple services of forest ecosystems. The most remarkable are the works by N.P. Anuchin [8], N.A. Moiseev [2], N.I. Kozhukhov [9], P.T. Voronkov [10], K.H. Gofman [11], A.A. Gusev [11], E.P. Smolonogov [12], T.I. Yakovleva [12], etc.

The approaches to measuring the economic value of ecosystem services and biodiversity in comparison are analyzed in international studies [13; 14; 15; 16; 17; 18; 19]. However, not all ecosystem services can be accurately measured and assessed; the problems of their assessment

are currently debatable in the scientific community, which suggests the need to continue research into this area, especially taking into account regional characteristics.

The quality of forest legislation and state forest management determines the effectiveness of forest relations, regardless of ownership of forest. State forest management inherent in all countries is carried out within the framework of legal regulation of branches of law forming the national legal system.

The interaction of the society with the nature takes place in two main directions: the use of natural resources and their reproduction and conservation. National peculiarities, traditions, customs and global challenges influence the national systems of state forest management. Current challenges indicate global climate change and environmental degradation in the world. The eco-balance on the planet is largely determined by forests.

All these determine the attitude of the forest states to the problems of forest management and forest conservation, bringing to the fore the protection of forests, sustainable forest management, "greening" of the forest legislation – a unifying sign of actions of almost all forest states for the conservation of forest resources. At the same time, forest management schemes of different countries have a number of features, the main being their relative structural stability and focus on income from the use of forests. There is no consistency between the environment and the economy when implementing control actions in state forest management.

The priority goal of the forest policy in all countries is to maintain balance between the various interests of the population, the state and private business.

Despite the external stability of the management structure, its internal content determined by a set of functions and powers, the range of tasks to be solved put forward in a given period of time changes over time. The stability of forest management, which is the most important quality of the management system, is based on the standards of constitutional and forest law, as well as traditions and customs, which contributes to the continuity of forest legislation. Therefore, countries with economies in transition, including Russia, which are forced to meet both new external challenges and internal revolutionary changes in the national economy, are in a difficult situation.

Forest management in Russia has a number of disadvantages:

– lack of reliable and complete information on the quantitative and qualitative state of forests;

– non-compliance with the balance of interests of main subjects of forest relations: the state, the population and forest business structures;

– imperfect balance of powers in forestry between Russia and its entities, etc.

The negative features of the Russian forest economy are:

– discrepancy of budgetary interests of Russia and its entities in establishing and distributing payments for forest management;

– low fees for the right to use forest plots (average of 60 RUB/m^3);

– revenues from the use of forests are two times lower than the cost of public forest management over a long period of time, etc.

The above stated mainstreams the need to study foreign forest management systems to develop proposals and recommendations for possible adaptation of certain elements of foreign experience in forest management to Russian conditions taking into account the objective laws of forest relations.

The purpose of the research is to assess trends in forest relations formed within the framework of national forest regulations and their respective forest management mechanisms on the example of two countries: Russia and Finland.

The world forest economy, consisting of national forest economies of individual countries, is the cost result of the use of forest resources, their protection and management within the legal framework of the individual state. Despite the relative similarity of the forest regulatory framework of European countries and forest management systems, the forestry sector of each country is individual: there are no two countries with identical economic, social, natural conditions and forest regulations.

Finland was chosen to compare the basic economic indicators reflecting the vector of development of forest relations and their effectiveness. Finland and Russia from the beginning of the 19th to the beginning of the 20th century had a common history of forestry. After Finland's independence, the forestry sector of the two countries were developing independently. Currently, among all European countries, forestry management corresponds to the concept of sustainable forest management only in Finland. Forest management in the country is recognized as the most effective among all European forest countries [2]. Despite forest land, wood resources and forms of forest ownership different from Russia's, the comparison of specific value and natural indicators of the forest economy of the countries provides a basis for comparison and selection of factors affecting the long-term results of development of forest economies of the two countries.

The *research object* is organizational, economic and legal relations between private forest business, state forest management bodies and the population in the countries under study.

The *research subject* is trends in the economic indicators of forestry in Russia and Finland.

Research methods. The authors used subject-object, abstract-logical methods, comparative, spatial, and statistical analysis, modern theories of sustainable development, as well as foreign and domestic experience of forest relations. The data obtained from official requests to Consulate of Finland, consultations and interviews with employees of sectoral departments of the studied countries conducted by the authors of the research, materials from official websites of the state forest management bodies of the countries under review form the information and empirical framework of the research.

Research results and discussion

Forest management system and forest economy in Finland.

The system of forest law and relevant economic and administrative relations determines forest ownership. The share of private and public forest ownership varies across Europe. In Finland, private ownership prevails (*Tab. 1*). The state owns northern and eastern forest lands (a significant share is occupied by specially protected areas), private owners own more productive forest lands in the south of the state (*Tab. 1*).

The variety of forms and types of forest ownership, the unitary form of government determines a particular mechanism for national forest management.

The country has had a decentralized forest management system for many years. Forest management schemes of state bodies, municipal and commune management bodies, private owners or representatives of the owner are characterized by relative independence in decision-making and formation of management bodies.

Table 1.Forest owners in Finland

Owner	Area of forest land					
	South of Finland		North of Finland		National average	
	mln ha	%	mln ha	%	mln ha	%
Physical persons	8.766	73.3	5.131	36.1	13.897	53.1
State	1.149	9.6	7.933	55.8	9.082	34.7
Legal persons	1.330	11.1	0.546	3.8	1.876	7.2
Other (municipalities, the church and other owners)	0.720	6.0	0.617	4.3	1.337	5.1
Total	11.965	100	14.226	100	26.192	100

Source: compiled by the authors based on official statistics: *Luke's statistical services*. Available at: http://stat.luke.fi/en/uusi-etusivu [20].

Thus, the decentralized forest management scheme which has existed long time has formed its own traditions and customs, which have the power of law and do not need state regulation. The positive aspects of a decentralized management system are that economic, forestry and social characteristics are taken into account at each level of management.

At the highest level, there is no separate forest management body, state forest management is carried out by the Ministry of Agriculture and Forestry (*Maa - ja metsätalousministeriö*). The management of natural protected objects is carried out by the Ministry of Environment (*Ympäristöministeriö*) responsible for conservation and maintenance of ecosystem services of forests. The Department for Natural resources under the Ministry of Agriculture and Forestry has a division "Forests and Bioenergy", whose name indicates the importance of renewable resources at the state level, while emphasizing the importance of bioenergy as a new trend in the development of forest economy.

One of the important traditional elements characterizing the development trend of forest economy in the country is state support for private forest entrepreneurship. State forest centres (*Metsäkeskus*) provide services to private business entities for the implementation of a significant part of forestry activities and works. The funding sources of the centers are the state budget and own funds.

The functions of the state forest service "*Metsähallitus*" – a state enterprise – are: commercial activity on deriving income from forest management; providing services in tourism, recreation etc. to the population. The activity is usually costly, compensated by income from commercial activities; budget funding is provided.

Research and expert activity of Natural Resources Institute Finland (Luke) suggests the pronounced environmental and economic character of scientific research in forestry in the past decade. The Institute provides scientific substantiation for decisions in forest management aimed at the development of green economy and sustainable environmental management.

Forest management of municipalities is the sphere of local self-government. Many municipalities have their own forests, such as parks, maintenance, recreational and other forests, so the municipality administration is responsible for forest management. Municipality forests are not considered as a source of raw wood; the main purpose of their use is population's recreation and maintaining a favorable environment.

Table 2. Performance of wood resource transactions in Finland

Year	Volume of harvested wood resources			Sales volume of wood resources		
	All owners, thousand m^3	Private owners		By roadside prices, thousand m^3	By standing wood prices	
		thousand m^3	share, %		thousand m^3	share, %
1996	46915	39919	45.97	7149	25374	78.02
1997	52996	47148	47.08	6754	33042	83.03
1998	55131	48881	47.0	7175	29439	80.4
1999	55289	47757	46.35	6270	27454	81.41
2000	55903	47988	46.19	5873	31705	84.37
2001	53250	45105	45.86	6299	22919	78.44
2002	54158	46315	46.10	6876	30246	81.48
2003	55030	46715	45.91	5523	26546	82.78
2004	55051	46564	45.82	5466	28819	84.06
2005	52572	44211	45.68	5670	22741	80.04
2006	50823	39381	43.66	4797	26522	84.68
2007	57742	46359	44.53	5683	33325	85.43
2008	51686	41045	44.26	8370	20265	70.77
2009	41374	32052	43.65	3380	12448	78.65
2010	51996	40667	43.89	5322	26609	83.33
2011	52419	41023	43.90	4612	20455	81.6
2012	51502	39693	43.53	5137	22799	81.61
2013	56224	44871	44.38	5057	31297	86.09
2014	55926	44707	44.43	5934	33961	85.13
2015	58 514	48 145	45.14	5396	32850	85.89
2016	61790	51076	45.25	7190	33824	82.47

Source: compiled by the authors based on official statistics: *Luke's statistical services*. Available at: http://stat.luke.fi/en/uusi-etusivu [20].

The forest management mechanism depends on the predominant production mode, the levels and needs of the development of productive forces, the diversity of forms and types of forest ownership, creating a market environment in supply and consumption of forest resources.

Demand and supply is formed both in the national and international market in the context of particular assortments. Detailed information on the market prices of various sorts is available in the public domain, not only in Finland but also in other countries of the European community.

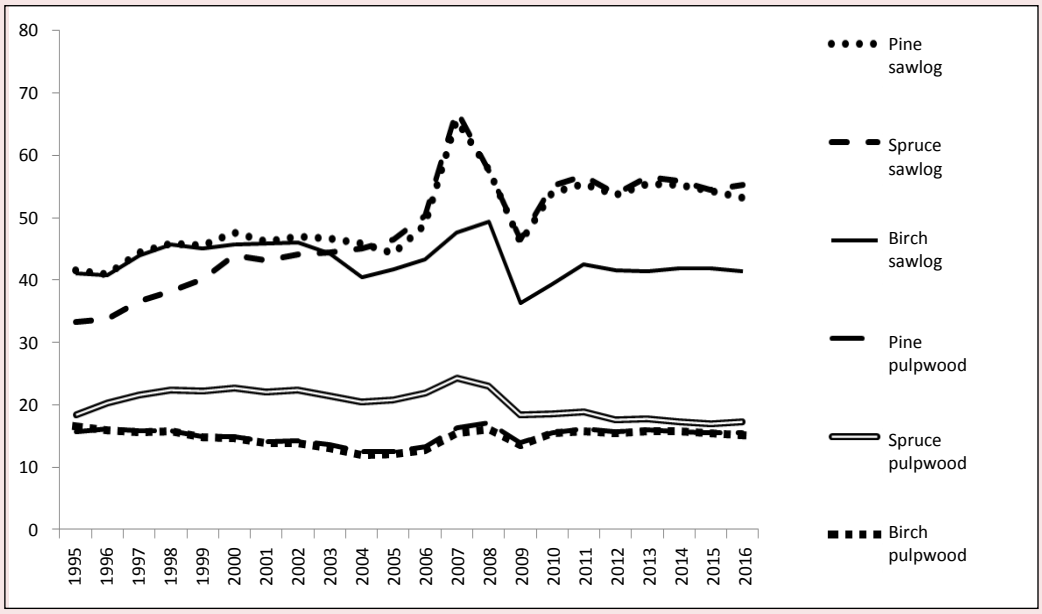
All forest owners are sellers in the sectoral market, but the bulk of wood resources is harvested by private owners (*Tab. 2*).

The market mechanism creates dynamic pricing of wood resources for key transactions: trade in growing forest plantations at "standing wood prices" (prices of growing forest); trade in harvested wood resources at "roadside prices" (*Tab. 2*) [22].

The market price of wood resources should cover the owner's costs of cultivation, preservation, management, and payment of taxes, it must contain a share of profit for the seller [22]. The price performance of standing wood depends on the market conditions of roundwood, according to the long-term performance of prices for main sorts shown in *Figure 1* and *Figure 2*. The market prices for assortment vary by type of felling, territorial factor (there is a differentiation of prices by forest center and region of the country).

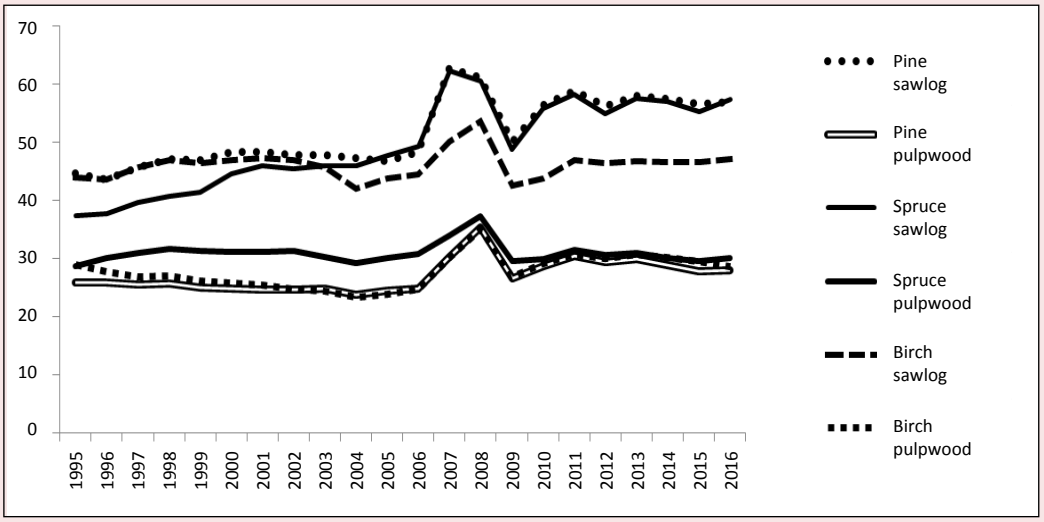
The weekly, monthly and annual statistics of price by Luke Institute shows the dynamic pricing of wood resources.

Figure 1. Performance of standing wood prices of main assortments, euro/m^3



Source: compiled by the authors based on official statistics: *Luke's statistical services*. Available at: http://stat.luke.fi/en/uusi-etusivu [20].

Figure 2. Performance of roadside prices for main assortments, euro/m^3



Source: compiled by the authors based on official statistics: *Luke's statistical services*. Available at: http://stat.luke.fi/en/uusi-etusivu [20].

More than 80% of sales are sales of standing forests (Tab. 2), therefore the buyer is usually engaged in timber harvesting. Forest enterprises mainly use the services of small contractors for harvesting wood resources. The costs of harvesting and hauling are formed according to market laws.

Pricing in the sectoral market is objective and is not determined by the form of ownership of forest resources. The state as a major owner

of forest resources (Tab. 1) in the market has an advantage over private owners. However, state forest lands are remote and less productive. Wood from state forests is sold taking into account the maintenance of stability in the domestic market.

The price policy of the state is carried out through economic and administrative levers, namely:

– participation in the preparation of various guidelines and recommendations, taking into account the conservation and maintenance of forest ecosystems at the national and European level;

– improvement of anti-monopoly legal acts;

– development of differentiated taxation of forest entrepreneurs;

– improvement of public-private partnership in forest management: the state subsidizes the implementation of measures for protection of forest ecosystems and refore-station by private owners (budget funds – an integral part of the price of standing forest) [22];

– information and consulting services, etc.

Finnish forest legislation regulating forest relations.

International agreements and treaties, the Constitution of Finland (*Suomenperustuslaki*), the "Forest Act" (*Metsälaki*), regulations of the legal systems of the country and the European Union, legal sanctioned traditions and customs are sources of forest law in Finland. Finland is an active member of:

– fundamental multilateral environmental agreements and processes on sustainable forest management;

– negotiation processes in the field of forestry at the global and regional levels (UN Forum on Forests and others);

– a number of international forest organizations;

– cooperation in the field of forestry within the Nordic Council;

– bilateral and multilateral international cooperation (cooperation with Russia is a priority in bilateral cooperation).

A comparative analysis of standards of Constitutions of Finland and Russia related to forest resources is presented in *Table 3*.

Table 3. Provisions of Constitutions of Russia and Finland related to forest resources

Provisions of Constitutions	Finland	Russia
Guarantee of the right of ownership	All are guaranteed with protection of property rights (§ 15).	In Russia, private, state, municipal and other forms of ownership are recognized and protected equally (art. 8).
The use of property	The powers and procedure for exercising state-owned rights of a participant in companies in which the state has controlling interest are established by law. The law also establishes cases in which the consent of the Parliament is required for the acquisition of controlling interest or its assignment to the state. (§ 92).	Ownership, use and distribution of land and other natural resources is carried out by their owners freely, if it does not harm the environment and does not violate the rights and legal interests of other persons (art. 36).
Alienation of property	The law defines the order of alienation with full compensation of property for general needs (§ 15). State immovable property may be alienated only with the consent of Parliament or in accordance with what is established by law (§ 92).	No one may be alienated of their property except by a court decision. Compulsory alienation of property for state needs can be carried out only on condition of preliminary and equivalent compensation (art. 35).
Source: compiled by the authors.		

Multi-purpose forest management is popular in the country. It is based on the "common right" (applies not only to the population of the country, but to all visitors to the country), which guarantees free movement in forests of all types of property. "The common right" is not specified in legal acts, but has legal force and is taken into account in judicial practice.

Adopted in 1886, the original "Forestry Act" protected forests from devastation and contributed to reforestation. Based on the principle of continuity of forest law, certain provisions of this law are still an integral part of the national forest legal acts.

The current national forest legislation system is headed by the "Forest Act" (*Mets laki*) adopted in 1997, which has a framework character. Subsequent changes and annexes to the Act show the strengthening environmental focus of sectoral legislation aimed at conservation of forest ecosystems, forest biodiversity, and sustainable forest management. In 2014, the forest legislation was updated in order to increase the profitability of forestry, expand the freedom of owners in forest management and, at the same time, strengthen their responsibility for forest lands. Legal regulation in forestry is based on the predominance of the permissive method allowing the choice of management tools over the imperative method based on power control.

There is national forest policy, a program, a strategy, a METSO forest biodiversity program for southern Finland, regional forest programs. The national forest policy is in many aspects based on the political strategies of the European Union.

Assessing the efficiency of forest management in Finland.

The efficiency of forest management is based on the comparison of costs and results of the forest owner heterogeneous in time. The criterion of efficiency is the economic, social, environmental effect measured against the costs of its realization or prevention of damage. When determining the efficiency from the forest economy perspective, in addition to economic analysis of results and costs, it is necessary to take into account the variation over time in the value of investment assets, which include a forest area with inseparable improvements (for example, forest and wood processing infrastructure). According to foreign researchers, investment in forest land give not high, but stable income, relative to income from other types of investment (for example, portfolio investment and others) [22, 23]. In market economy, the efficiency of forest management in any form of forest ownership is measured by maximum net income from forests exploitation.

Table 4 demonstrates indicators of forest management efficiency. The indicators of efficiency in the country are determined per hectare of forest land, which is the main production factor in forestry. Thus, the spatial efficiency or efficiency of one hectare of forest land is calculated. We have determined the appropriate performance indicators per cubic meter of wood (Tab. 4) as accepted in the Russian conditions per 1 hectare of forest land.

Despite different approaches to efficiency in the countries under review, the calculations can be considered comparable since the approaches are based on the comparison of costs and results obtained from the use of a unit of forest land.

The efficiency of pricing at a particular time depends on the demand and supply, the methods of state control, interest rates of credit institutions, state support for business structures etc. The period under review is characterized by positive dynamics of the total per-hectare efficiency: from 80.2 euros/ha to 114.3 euros/ha. Net profit of a forest owner identified given state support in the analyzed period ranges from 19.1 euros/m^3 to 22.1 euros/m^3.

Table 4. Average efficiency of wood harvesting in Finland

No.	Indicator	2010	2011	2012	2013	2014	2015	2016	Deviation 2016 to 2010		
									Abs (+; -)	Change rate, %	Rel, %
	Absolute indicators, thousand euros										
1.	Gross income from the sale of wood resources	1437452	1479497	1365884	1635559	1631433	1685723	1674567	237115	116.5	16.5
2.	Government subsidies	62867	63324	61201	64231	59348	57814	52746	-10121	83.9	-16.1
3.	Reforestation costs	347296	358075	345017	280539	278299	224066	218296	-129000	62.9	-37.1
3.1.	Investment in reforestation	198988	207855	204881	212085	207634	164066	156580	-42408	78.7	-21.3
3.2.	Forest management and other costs	148308	150220	140136	68454	70665	60000	61716	-86592	41.6	-58.4
4.	Operating result	1153023	1184745	1082068	1419251	1412482	1519471	1509017	355994	130.9	30.9
	Relative indicators, euro/ha of forest land										
5.	Gross income from the sale of wood resources	110.1	109.7	101.2	121.5	121.2	126.1	125.3	15.2	113.9	13.8
6.	Reforestation costs	26.6	26.5	25.6	20.8	20.7	16.8	14.9	-11.7	56.0	-43.5
7.	Government subsidies	4.8	4.7	4.5	4.8	4.4	4.3	3.9	-0.9	81.3	-18.8
8.	Operating result	88.3	87.8	80.2	105.5	105.0	113.7	114.3	26	129.4	29.4
	Relative indicators, %										
9.	Operating result/gross income from the sale of wood resources, %	80.0	80.1	79.2	86.8	86.6	90.1	90.1	10.1	112.6	12.6
	Relative indicators, euro/m^3 of harvested wood										
10.	Gross income from the sale of wood resources	35.4	36.1	34.4	36.5	36.5	35.0	33.2	-2.2	93.8	-6.2
11.	Government subsidies	1.6	1.5	1.5	1.4	1.3	1.2	1.1	-0.5	68.8	-31.3
12.	Reforestation costs	8.5	8.7	8.7	6.3	6.2	4.7	4.3	-4.2	50.6	-49.4
13.	Operating result	28.4	28.9	27.2	31.6	31.6	31.6	29.9	1.5	105.3	5.3
14.	Taxes	8.5	8.7	8.2	9.5	9.5	9.5	8.9	0.4	104.7	4.7
15.	Net profit	19.9	20.2	19.1	22.1	22.1	22.1	20.9	1	105.0	5.0
16.	Net profit excluding subsidies	18.8	19.1	18.0	21.1	21.2	21.3	20.2	1.4	107.5	7.5

Source: compiled by the authors based on official statistics: *Luke's statistical services*. Available at:http://stat.luke.fi/en/uusi-etusivu [20].

Assessing forest management efficiency in Russia.

The features of determining state forest management efficiency are determined by the predominance of state ownership of forest land and decentralized form of forest management in Russia. Decentralization in forest management is expressed in transfer of a number of powers on forest management from the owner to Russia's constituent entities which receive subventions from the federal budget to perform the transferred powers. The comparison of powers of Russia and its entities suggests that the majority of powers is concentrated at the federal level, which is why we can claim the actual preservation of the centralized system of forest management.

The most in demand among forest land rights are lease of forest plots and purchase and sale of forest land for up to one year. Forest legal acts are to a greater extent formulaic in their form; they legally bind and do not take into account the natural, economic and social characteristics of the regions.

The use of forests by legal entities and individuals, including foreign ones, is carried out with or without the provision of forest areas, with or without removal of forest resources. An auction is a common way of assignment of forest land for use. The largest number of articles of the Forest Code of the Russian Federation is devoted to forest management, which emphasizes the resource focus of the forest legislation. Fewer articles of the Forest Code are devoted to protection of forest ecosystems and forest reproduction.

Forestry in Russia has shifted towards market economy relatively recently. In 1993, the Basics of the forest legislation in Russia enshrined the right of private business to forest management. Currently, the economic relations in forestry are only being formed and can be characterized as administrative and market [24]. They provide for a centralized state determination of the minimum, initial value of the standing wood (or the value of forest right) and the establishment of the final value of standing wood after forest auctions.

Forest legislation defines the principle of payments for forest management, the payments to the budget system include: rent for long-term use of forest up to 49 years; payment under the forest land purchase and sale contract for short-term use of forest up to one year, which, along with fines and penalties, are recognized as non-tax revenues of the budget system.

A significant income from forest management comes from harvesting of wood resources. The main indicator of harvesting is allowable annual cut of harvesting of wood resources defined by the rated wood cutting with prohibited excessive cut. The allowavle cut of the past decade in Russia is about 600 million m^3, and its development is characterized by a negative downward trend. The recent actual harvesting of wood resources is no more than 25–30% of the estimated allowable cut (*Fig. 3*). Such dynamics ensures an increase in the areas of ripe and over-mature stands, reducing the demand for such them.

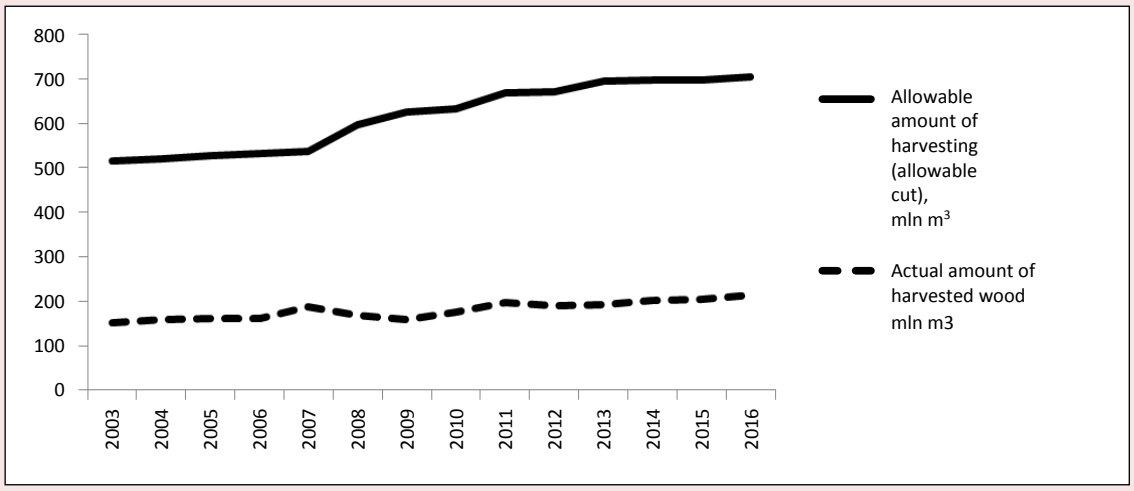
A significant risk factor is the unpredictable government decisions in forest management. Lack of negotiation process between public authorities and business increases the risk. The negotiation process between business and the state is the basis for the forest management policy in democratic states; the implementation of state power in forestry is a characteristic feature of authoritarian states.

The ratio of income and cost of forest management reflects the management efficiency (*Tab. 5*). The results in the form of state revenues from forest exploitation are less than the cost of forest management, which reflects low forest management efficiency and profitability [24].

Table 5. Forest management budget efficiency in Russia

Indicator	2010	2011	2012	2013	2014	2015	2016	Deviation 2016 to 2010		
								Abs (+; -)	**Change rate, %**	**Rel, %**
1. Cost of forest management, bln RUB	27.4	45.1	51.2	59.3	63.4	59.4	59.5	32.1	217.2	117.2
1.1. From federal budget, bln RUB	15.0	21.2	19.9	22.5	24.8	24.1	21.9	6.9	146	46
- share in total cost, %	54.7	47.0	38.9	37.9	39.1	40.6	36.8	-17.9	67.28	-32.7
1.2. From budgets of Russia's constituent entities and other sources, bln RUB	12.4	23.9	31.3	36.8	38.6	35.3	37.6	25.2	303.2	203.2
- share in total costs, %	45.3	53.0	61.1	62.1	60.9	59.4	63.2	17.9	139.5	39.51
2. Revenues from forest management, bln RUB	19.9	21.6	22.6	23.2	25.4	26.5	29.7	9.8	149.2	49.25
Including by level of the budget system: 2.1. Into federal budget, bln RUB	14.8	16.3	17.0	17.4	19.1	19.6	20.9	6.1	141.2	41.22
- share in total revenues, %	74.4	75.5	75.2	75.0	75.2	74.0	70.4	-4	94.62	-5.38
2.2. Into budgets Russia's constituent entities, bln RUB	5.1	5.3	5.6	5.8	6.3	6.9	8.8	3.7	172.5	72.55
- share in total revenues, %	25.6	24.5	24.8	25.0	24.8	26.0	29.6	4	115.6	15.63
3. Area of forest land, mln ha	1146.38	1146.38	1146.38	1146.38	1146.38	1146.38	1146.38	-	-	-
4. Forest utilization fee, RUB/ha of forest land	17.3	18.8	19.7	20.2	22.1	23.0	25.7	8.4	148.6	48.55
5. Budget expenses, RUB/ha of forest land	23.8	39.2	44.5	51.6	55.1	51.7	51.7	27.9	217.2	117.2
6. State forest management efficiency rate	0.73	0.48	0.44	0.39	0.40	0.45	0.50	-0.23	68.49	-31.5
- in relation to subventions from the federal budget	0.99	0.77	0.85	0.77	0.77	0.81	0.95	-0.04	95.96	-4.04
- in relation to budget funds of Russia's entities	0.41	0.22	0.18	0.16	0.16	0.20	0.23	-0.18	56.1	-43.9
Source: compiled and calculated by the authors based on data of the primary reporting of the Federal Forestry Agency.										

Figure 3. Forest management efficiency in the case of timber harvesting in Russia



Source: compiled by the authors based on primary reporting data of the Federal Forestry Agency.

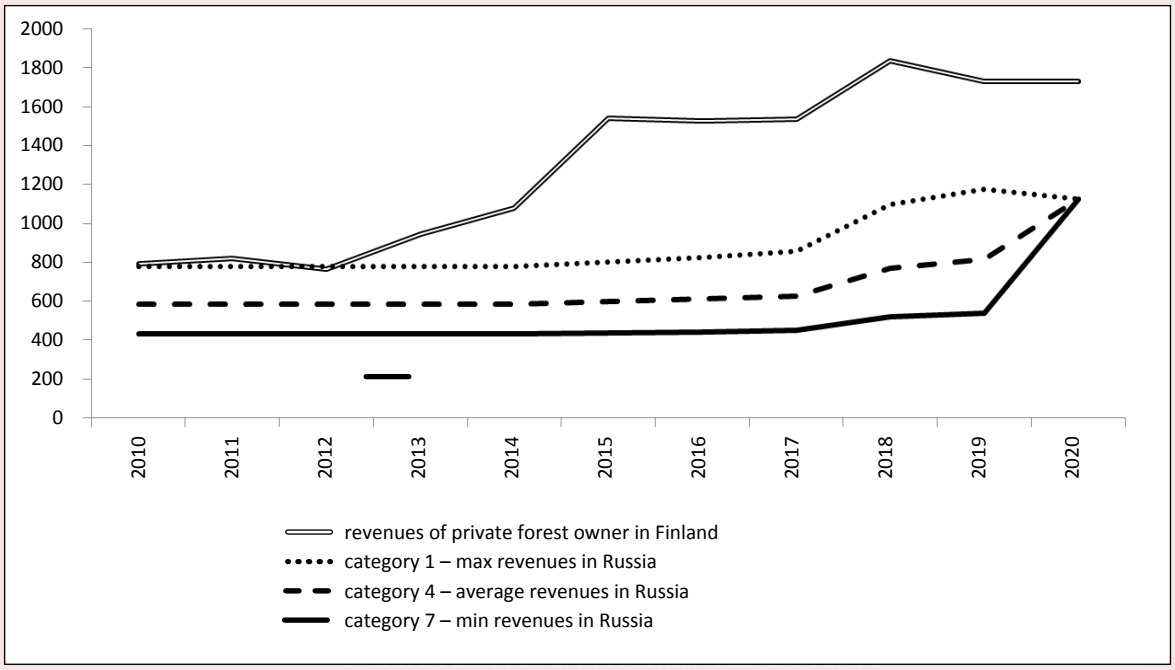
Despite the fact that forest exploitation in Russia is competitive, the rent is not always dependent on the ratio of supply and demand for primary processing products such as round timber. The inert pricing process strongly based on administrative methods makes it impossible to set the price of standing wood depending on the market price of round timber. The response of state forest management authorities to changes in forest products and services market is slow. The analysis of profitability of forestry for a number of years shows a significant lag of owner's revenues from forest exploitation, especially in recent years (*Tab. 5*).

Figure 4 graphically presents the revenues to the state budget from forest utilization by "timber harvesting" compared with the income of the forest owner in Finland.

The analyzed annual data for Russian and Finnish conditions (Fig. 4), are provided in comparable form (state financial support for private forest owners in Finland is excluded, average annual exchange rates are taken into account, all data are recalculated in RUB/m^3, specific values are calculated, the economic content of categories "net profit of private forest owner" and "revenues to the state budget of rent and net profit of a tenant" are identical in their economic content). To compare, the revenues from forest utilization in the Leningrad Oblast (the formula of species composition – 4pine3spruce2birch1asp) was calculated for three stumpage price categories (category 1 – maximum revenues, category 4 – average revenues and category 7 – minimum revenues).

The economic analysis of the resulting economic indicators for two countries (similar forest areas) leads to the following conclusion: despite the almost identical prices for round timber, the profitability of forestry in Finland is higher than in Russia. This is explained by different approaches to forestry focused on the final result of work and the formation of high-quality commercially available land, while in Russia only forestry activity is focused on. The activity and its final result is not the same. One may perform a lot of work, spend much money and not get the final result. In other words – the cost-effectiveness in forestry in

Figure 4. Net income from forest utilization in Russia and Finland, RUB/m^3



Source: calculated and compiled by the authors based on data from the Natural Resources Institute Finland (Luke) and the Ministry of Industry and Trade of Russia.

Finland is higher than in Russia. Another factor affecting the revenue difference is the exchange rate difference. In 2010, the value of euro comprised 39.87 rubles, while starting from 2015 it increased almost twice, which led to a lag in profitability of domestic forestry. The data for 2020 are forecast: for conditions in Finland they were adopted according to the forecasts of Natural Resources Institute Finland (Luke) [20], for domestic conditions – the forecast values of the Ministry of Industry and Trade of Russia, amending the Government Decree no. 310 "On rental rates per unit of forest resources and rental rates per forest area unit in federal ownership", dated 22.05.2007 [25]. The intersection of three curves in one point reflecting the maximum, minimum and average revenues is not due to market changes, but due to the wish of a forest owner – the state, to increase by administrative means the rates of lowest stumpage prices without changing the maximum.

It is noteworthy that the features of determining forest management efficiency are attributable to the fact that a forest is an ecosystem. The ranking of the degree of importance of forest ecosystem services in the countries under study at the national level is based on population's assessment and the contribution to GDP of each service: both in Russia and in Finland, the value of resource services is high; the value of cultural services is average; the value of regulatory services is low; the value of supporting services is low.

Despite similar assessments of forest ecosystem services, forestry promotion and environmental education for the population and the younger generation, is paid much more attention in Finland than in Russia.

Russian forest management tools are based mainly on the resource approach; they aim to achieve monetary objectives and do not take into account the diversity of forest ecosystem services. At the same time, there is a trend towards the greening of forestry planning. For example, the plans of Russia's constituent entities contain a section on economic assessment of "intangible benefits" in the regions. Yet in practice, the resource-based economy has become the basis not only for private forest companies; it is reflected in the modern state forest policy. Thus, the purpose of the forest policy in the economic sphere is "to increase GDP based on market demand" [26]. As a result, GDP may increase but at the expense of degradation of unique natural complexes (forests).

Conclusion. The trends in the development of forest economy of the studied countries indicate the shift transition from a resource-based to the ecosystem approach. A forest remains the object of management, but it is no longer a forest resource, but an eco-system. An example is the inclusion of ecosystem services for the population in the national project of Russia "Environment" by increasing the number of visitors to specially protected areas, increasing the reforestation area, reducing the area of forest fires, etc.

In Finland, forest management is based on measuring costs and benefits of forest utilization; the environmental functions of forests that are irrationally assessed are generally not included in the turnover. The state provides subsidies forest management activities and ecosystem services by private owners. The current state of forest relations in the country is based on the principle of continuity of forest law, with a the pronounced environmental content. The framework nature of the national forest law establishes the main areas of the increasingly eco-oriented national forest policy. The patterns of forest relations development in Finland consist in the shift from mandatory management methods towards dispositive methods, allowing the right to choose private forest business management methods.

Russia is the richest forest power in the world, but in many volume and cost indicators: from timber harvesting to products of its deep processing, it is inferior to many countries. Huge forest areas owned by the state, severe climate and underdeveloped transport infrastructure are significant reasons for the lagging forest economy. But forest management formed within the framework of forest legislation in the absence of a clear forest policy has an even more negative impact on economic indicators.

The strategic objectives include achieving sustainable forest management in Russia, innovative and effective development of utilization, protection, and reproduction of forests, ensuring advanced growth of forestry, the country's social and environmental security, and unconditionally implementing international obligations of Russia in terms of forests.

However, within the framework of the existing forest legislation, achieving the goals without a fundamental change in forest relations may result in additional costs from the state budget and an increase in the cost of forest business.

The stagnation of the national forest economy is a characteristic feature of the past ten years of the economic forestry cycle; this forces people to look for new forms of economic relations between the state and forestry business. Amid state ownership of forest lands the revival of the forest economy is unlikely without changes in forest legislation.

The rise of forest economy is possible without changing forest ownership, it is necessary to legally regulate forest relations based on the framework of the federal forest law and complete forest laws of each Russia's constituent entity taking into account the region's economic, environmental and social conditions.

According to the research results, it is inappropriate to copy the organizational and economic mechanism of forestry in Finland and apply them to domestic conditions. The analysis indicates that different groups of factors for the development of proposals for adjusting the areas of development of domestic forestry have a strong impact on effective economic indicators in forestry.

The study contributes to the theory of forest economy, which lies in identifying the patterns and trends in the development of forest relations formed by management systems and forest legislation in Russia and Finland. The significance of the research consists in the development of new approaches that provide a new assessment of the importance of domestic forest economy and forest resources in the world economy of environmental management, stabilizing climate change and improving the quality of life.

Discussion of results. The research results reveal certain trends in the development of forest economies in the two countries; however, they rose a number of questions to the economic science: what is the role of public forest management in the formation and development of forest relations economy, is the availability of forest resources the key to effective economic development of forestry, can a large amount of resources and forest services ensure effective forest economy and make a significant contribution to GDP in the country? Without turning to economic analysis of indicators reflecting the efficiency of the forest economy we can state that large forest areas have a positive impact on production and consumption of ecosystem forest services. However, the volume of production of such services almost always equals the volume of their consumption, and the production itself depends mainly on the natural production factor.

The state of forest economy depends less on the form of forest ownership, more – on the system of taxation, forest management and forest legislation of a particular country.

The issue of possibility or feasibility of including ecosystem forest services in market relations remains open. Such services do not recognize administrative and state borders, are consumed by the population of all states, but are not estimated financially, while the owner of forest resources, in our example – the Russian Federation, does not receive payments for services provided.

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Economic Integration of Immigrants through Overcoming Inequalities in Employment and Wages. Comparative Analysis of British and French Muslim Communities

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Abstract. The issue of immigration management is one of the most complex and relevant both in academic science and practical politics. It polarizes public opinion and provokes fierce debate. One of the most important objective of the domestic policy of countries with a large number of immigrants is effective socio-economic integration of foreign cultural communities and consolidation of the civil society. The article deals with the general issues of integration of Muslim immigrants in the UK and France in the economy; provides data on their number, employment, income and social status compared with the ethnic majority. The information framework of the research includes official statistics, sociological surveys, analytics of government institutions and commissions, reports of well-known research centers and Muslim organizations. Due to the peculiarities of statistics it is impossible to directly compare the situation of British and French Muslims. Moreover, in the UK and France, migrant integration is carried out according to different historical models. The article demonstrates the specific features of each country in migrant resettlement, the position of Muslims in the labor market among various immigrant minorities, the issues of the national policy in fighting against discrimination and Islamophobia. The purpose of the article is to focus on objective quantitative and qualitative indicators of economic activity of Muslim immigrants in the two countries in question to overcome the existing stereotypes and political speculation. Analysis of the economic status of Muslims in the UK and France reveals a significant spread

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depending on the country of origin, country of birth, belonging to the first or the second generation of immigrants. The article concludes that the UK opens up more opportunities for the economic integration of Muslims than France.

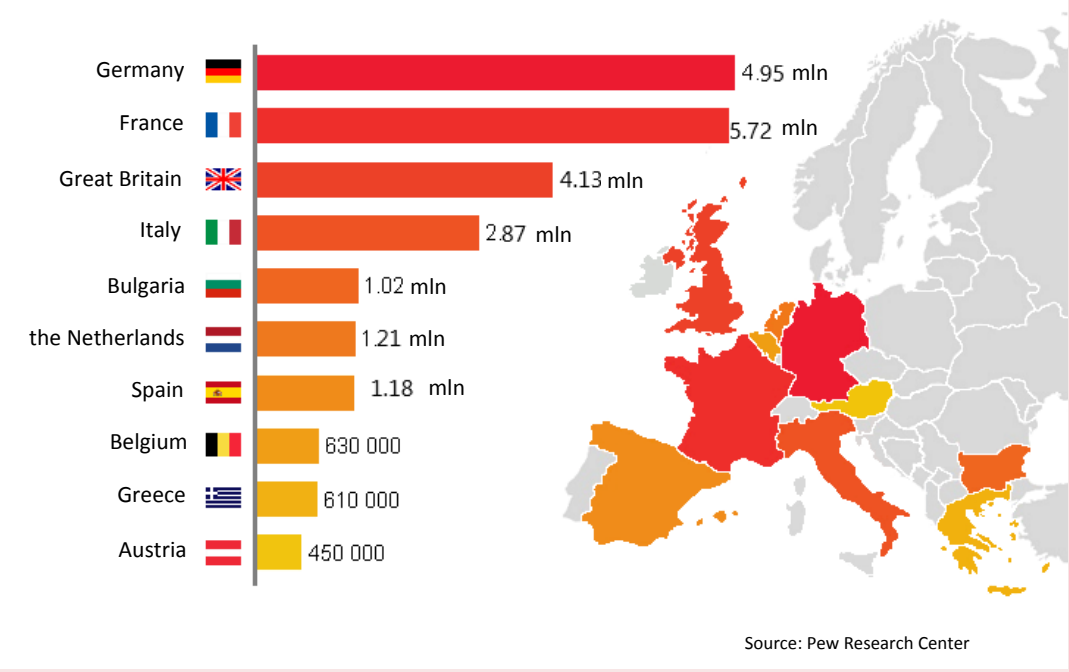
Key words: immigration, Muslims, economic integration of immigrants, the UK, France, employment, labor market.

Introduction

At the moment, Islam is the second largest and fastest growing religion in Europe. The number of Muslims is increasing three times faster than the growth of indigenous non-Muslim population. This is due to the record high immigration in the past 30 years and higher birth rate than in Christian or non-religious families. The numbers (*Fig. 1*) speak for themselves.

According to Pew Research Center, in 2016 the largest Muslim communities have developed in France, Germany, the UK, and Italy [1]. Germany is most often chosen as an asylum; traditional migrants prefer the UK. The rapid demographic growth of the Muslim community in Europe makes its rapid integration impossible. In countries of mass migration of Muslims the rejection among indigenous population is growing. Islamophobia is progressing; among all migrant communities, the most difficult is the integration of Muslims [2, pp. 3, 9]. The increase in the number of Muslims in Europe since the end of the 20th century has become a global challenge for the European civilization. The issue of the threat to national identity, the concept of the nation state is on the agenda. At the same time, it is equally important to maintain economic stability, a high standard of living in economically developed European countries, and therefore, search for effective mechanisms for migrant integration

Figure 1. Muslim population in European countries



into the host society. The level of integration of newcomers depends on two main factors: how quickly their number grows and how quickly they adapt to the new conditions. Most first-generation migrants are limited to their ethnic group. They settle nearby, practically creating ethnic ghettos, communicate in their national languages, find work "among their own", but such economic integration does not lead to social integration.

We believe that socio-economic integration is best achieved through ordinary, non-ethnic employment. Access to free labor market, getting a job on an equal basis with local candidates provides legal income, social status, as well as the opportunity to learn the official language, learn the rules and customs of the host society, make friends and build good relations with colleagues among indigenous population. For representatives of the second generation of migrants it is also a chance to develop a successful career in open competition with the representatives of the ethnic majority. The purpose of the research is to study the problem of employment and overcome the pay gap of Muslim immigrants of the first and the second generation in the UK and France as two most indicative countries facing a global challenge of modern immigration.

Research methods

A comparative analysis was chosen as the main method of studying the issues of employment of the representatives of Muslim minorities. It reveals and takes into account many factors explaining the similarities and differences in integration models. In order to determine quantitative indicators we used open data from statistical sources such as the Eurostat statistical office of the European Union, the national statistics offices of the United Kingdom and France. When studying government approaches to Muslim integration we analyzed government acts and official reports. In particular, the Report on the pay gap on ethnic grounds released by the UK Equality and Human Rights Commission in August 2017. We used secondary analysis of sociological surveys and sociological experiments conducted by both independent and government institutions to determine the level of discrimination and social tension against Muslim minorities.

The number and settlement of Muslims in the UK and France

All estimates of the number of Muslims in the UK in recent years are based on the results of the last national census in 2011: 2.71 million Muslims, representing 4.8% of the population in England and Wales [3]. Although the number of Muslims exceeds the total number of votaries of all other non-Christian denominations, it is too early to talk about the Islamization of the country, when only every 20th resident is Muslim. According to the same census, 47% of the total number of Muslims were born in the UK. In 2001, when the issue of religious affiliation first appeared in the census, 1.55 million people were called Muslims, thus the increase of Muslims in the decade between the two censuses was 75%. The main factors in increase are higher birth rate in Islamic families, as well as the growth of migration from Muslim countries [4, p. 23]. According to Pew Research Center, newly arrived migrants provided a 60% increase in the Islamic population in Europe from 2010 to 2016 [1, p. 12]. Therefore, contemplating on the situation of Muslim communities we can assume with confidence that the majority of Muslims in Britain and France are immigrants of two generations.

British Muslims are divided into many ethnic groups. According to data from 2011, 68% (1.83 million) came from Asia, 32% – are of non-Asian origin. Most English-speaking

Muslims are British-born descendants of immigrants from Pakistan, Bangladesh, and India. An interesting fact is that in a survey of 73% of people practicing Islam defined their nationality as British with confidence [4, p.17]

Statistics on British Muslims are diverse and in open access, unlike French statistics. Unfortunately, neither census data nor any other government statistics on French Muslims exist. Under French law, collection of personal information based on race, nationality and religion is prohibited. For a long time, the only practice with regard to immigrants in France was the assimilation policy. In France, assimilation means that anyone wishing to reside permanently in France and obtain French citizenship had to adopt the model of behavior of the local community and preferably marry a French woman/man. The fact that once a migrant is naturalized in France, in official sense, they are no longer immigrants or members of a national or religious minority does not contribute to a correct understanding of the number of Muslims in France as well[1]. Thus, immigrants who arrived in the 1960s-1980s are beyond the research scope. How many of them remained committed to Islam is unknown.

Independent research centers, commercial analysts, as well as Muslim public organizations that collect information through their channels and conduct various social surveys may help the researchers. Cross-comparisons of European and national statistics are also possible. Officially, the prevailing view is that the number of French Muslims is approximately equal to the number of Muslim immigrants (those born abroad in Islamic countries). The CIA World Factbook yearbook for 2017 estimates the number of Muslims in France as 7–9% of the population (as of July 2017, 67.1 million people) [5]. According to the report of the Supreme Council for Integration, 4 million Muslims lived in France in 2000 [6, p. 33]. Wikipedia, citing Director of the National Institute for Demographic Research (Institut National D'Études Démographiques – INED) François Eran, states that the number of Muslims in 2017 amounted to 8.4 million[2]. This figure is well correlated with the estimate of 8.5 million people provided in the latest serious research by Jean-Paul Gourévitch "Les veritables enjeux des migrations" (The True Problems of Migration) [7, p. 176]. However, Azouz Begag, a former Minister for equal opportunities (2005–2007), using differences in the level of religious practice such as "Muslim religion" and "Muslim culture", introduced into circulation by the Supreme Council for Integration, believes that the number of people belonging to the "Muslim culture" in France in 2017 reaches 15 million.

According to the survey in 2008-2009, in France the share of adult immigrants who consider to be both French and of their ethnic group is 45%, of immigrants' children born outside France – 58%, of immigrants' children (both parents are immigrants) born in France – 66% [8]. Most often French Muslims settle inside and around the three largest cities – Paris, Marseille, and Lyon. There, there are five large cathedral mosques. In Lille, Toulouse, Marseille, Muslims make up at least 20% of the population, and in Seine-Saint-Denis department, part of the Paris agglomeration, according to its prefect, there are 700,000 Muslims, and Mohammed is the most common name among the inhabitants. In a survey conducted by the National Institute of Statistics

[1] In France, an immigrant is a person born outside France to parents of non-French citizenship, as well as children born in France in immigrant families.

[2] Islam en France. *Wikipedia*. Available at: https://fr.wikipedia.org/wiki/Islam_en_France

Table 1. Number of young Muslims in urban areas of Birmingham, 2011

District	Pre-school age, 0–4			School age, 5–15		
	Total	Muslims	% of Muslims	Total	Muslims	% of Muslims
Washwood Heath	3 520	2 935	83.4	7 650	6 547	85.6
Bordesly Green	3 660	2 979	81.4	7 798	6 531	83.8
Sparkbrook	3 282	2 670	81.4	6 715	5 526	82.3
Springfield	3 012	2 261	75.1	6 020	4 510	74.9
Aston	3 190	2 109	66.1	6 046	4 173	69.0
Lozells and E. Handsworth	2 874	1 750	60.9	6 012	3 749	62.4
Nechells	3 322	2 086	62.8	5 677	3 710	65.4
Hodge Hill	2 657	1 562	58.8	5 363	3 136	58.5
South Yardley	2 898	1 427	49.2	5 320	2 638	49.6
Source: Census 2011. ONS Table DC2107EW						

and Economic Studies (Institut national de la statistique et des études économiques – INSEE) in 2015, 9,000 secondary school students were interviewed, 25.5% of whom called themselves Muslims [9]. The survey of school students is actually quite revealing. According to sociologists, half of the Muslim population in France today is represented by children and adolescents under 24[3].

Just like in France, the majority of Muslims in the UK are concentrated in metropolitan areas. 76% of the Muslim population in England reside in Greater London, Birmingham, and Manchester. Muslims in London make up 12.4% of the population, and in the UK there are 35 administrative districts where Muslims make up 10% or more of the population. Among people who called themselves Muslims children and adolescents under 15 years account for 33%. This is a great demographic resource. In general, the entire Muslim population is young and growing rapidly: about 60% are people under 30. The ethnic settlement in some cities has resulted in the emergence of areas where the concentration of Muslim children is more than 50% [3]. This is illustrated in *Table 1.*

In general, immigrants rarely dispersed since integration into groups, creation of ethnic enclaves meets their needs to survive and adapt in the new socio-economic, political and cultural environment of the host society [10, p. 150]. But the degree of concentration of ethnic communities in one place of residence is different for England and France. The model of **ethnicity-based resettlement** dominates in the UK, being typical for three main ethnic communities – Indians, Pakistanis, and Bangladeshis. The area of settlement of the group expands mainly due to an increase in the population. Thus, about 40% of Bangladeshis in London live in one of its 33 districts – Tower Hamlets – and account for at least a third of the Muslim population [11, p. 15]. The determining factor in resettlement is ethnic rather than social status. Another model, which, according to the study by A.V. Kapralov [11], is more typical for the French society, is a model of **social resettlement**. It implies the resettlement of immigrants according to their income and employment. Here, further social integration of immigrants and their even settlement is possible, as well as the concentration of rich immigrants in upscale areas and poor immigrants – in downscale areas [11, p. 15]. In our case, the second option is more common, which is especially evident

[3] Islam en France. *Wikipedia*. Available at: https://fr.wikipedia.org/wiki/Islam_en_France#Démographie

in Paris and its suburbs. Initially, the majority of immigrants have a lower social status than the local population; they are concentrated in areas with minimum cost of rental housing. But ethnic groups in Paris do not live in isolation in ethnic neighborhoods, but in multinational areas with mixed Arab, black African and white French population.

The emergence of socially disadvantaged areas is very dangerous as they accumulate the most problematic part of the population. Such "ghettos" are characterized by high unemployment level, low incomes, criminality, spread of drug addiction. However, in London there is another problem – "ethnic enclaves" (sometimes even rich ethnic areas), where immigrants exist in their world, reproducing the conditions of their country of origin, where they can exist more or less isolated from the native British and support their traditional lifestyle [11, p. 20].

Analysis of employment practice and income levels of Muslim immigrants in the UK and France in 2000–2017

It is difficult to argue the fact that socio-economic problems (poor housing, high unemployment rate, difficulties in obtaining education, etc.), as well as religion-related discrimination lead to severe consequences and the strengthening of Islamic extremism. According to many researchers, all significant Muslim demonstrations accompanied by violence, for example in 2005 and 2011, were primarily the result of socio-economic factors rather than religious ones. Therefore, the issue of economic integration of Muslim migrants and the effectiveness of state measures to limit racial or religious discrimination in employment is extremely important in our study.

Data on the economic activity of the UK population in 2011 show that 19.8% of Islamic population had a full-time employment (the entire population – 34.9%), 7.2% of Muslims were unemployed (compared to 4.0 % of the total unemployment in the country) [4, p. 19]. The Muslim community of the country considers such indicators to be the result of racial discrimination and Islamophobia. In 2003, recognizing these negative phenomena, the government adopted The Employment Equality Religion or Belief Regulations, the main articles of which were later confirmed by the Equality Act 2010 [12]. It is noteworthy that the employment situation among Muslims is improving. According to the Office for National Statistics for 2004, 13% of Muslims were unemployed, which is three times higher than that among Christians. Muslims aged 16–24 had the highest unemployment rate – 28% (among Christians of the same age the unemployment rate was significantly lower – 11%). According to the latest census, the share of Muslims without a profession has significantly decreased in 10 years – from 39 to 26%. [4, p. 60]. In 2011, the number of university graduates among Muslim was only slightly lower than the national average: 24 against 27%. In general, there has been a significant increase in the level of education of the non-indigenous population.

In 2011, the share of employed Muslim women was 29% compared to 50% in the country as a whole. The share of Muslim women aged 16–74 who responded that they are fully devoted to home and family amounted to 18%, which is three times higher than the national average [4, p. 62]. This is largely due to the fact that in Islamic world, the majority of women after marriage give priority to their family, but it is also of great importance that they still feel some discrimination in employment [4, p. 63]. However, the share of Muslim women among university students

is quite high – 43%, in some municipal units the share of Islamic women studying full-time exceeds the share of Muslim men. Quite impressive are the data on the share of Muslims employed in top management and high-paid jobs – 5.5% against 7.6% across the population. 9.7% of Muslims are self-employed or work in small business, which almost equals the share of all self-employed in the country (9.3%) [4, p. 64].

In order to study the financial situation of Muslim immigrants it is recommended to refer to the report of JRF (Joseph Rowntree Foundation) "Reducing Poverty in the UK" published in 2014. One of the articles is called "Religion and Poverty". This is a rare case when the relations between religion and material well-being is investigated. Most studies are based on the ethnic origin of the subjects. The research framework is rather impressive: there were 60,925 respondents who answered questions about their religious identity [13]. According to the JRF research, the group of poorest UK inhabitants contains the largest number of Muslims. The report characterizes the poverty level as less than 60% of the family's annual median income, which at the end of 2017 amounted to 27,300 pounds [14].

According to the above calculations, 50% of Muslims live in poverty. However, the most prosperous group is the Jews, where the share of the poor does not exceed 13%. To compare, we present other groups: the share of the poor among the Sikhs is 27%; among the Hindus – 22%; Catholics – 19%; Anglicans – 14%, among people who do not belong to any religion – 18% [13, p. 34]. According to the authors, the causes of poverty lie in the history of Muslim immigration to the UK, and are primarily explained by the fact that they are immigrants of the first generation. Among the most important causes of poverty are also lack of English skills, the number of young children in the family, which hinders the employment of mothers and reduces per capita income. The majority of the poorest members of the Muslim communities come from Pakistan and Bangladesh. Most immigrants from these countries did not have professional qualifications and their English was satisfactory. However, in the second generation, these immigrants achieve much better economic results. Women employment is more difficult as it is customary for women to take care of children and the household in their traditional environment. The Muslim Council of Britain recognizes that an unmarried Islamic woman is 1.5 times more likely to find a job than a married woman [4, p. 63].

Thus, the authors of the reports do not consider ethnic or religious discrimination to be the main reason for low income of immigrants from Pakistan and Bangladesh, mentioning, however, that the religious factor becomes important if the potential candidate prefers to wear national clothes that sharply distinguish them from the general background or otherwise emphasize their religious beliefs. The authors also note that the risk of becoming poor is much greater among Muslims than that of other groups, but the reason for that is not clear enough.

Unfortunately, we do not have comparable statistics on the Muslim population in France. However, there is no doubt that immigrants are very vulnerable in the labor market as the unemployment rate in France is much higher than in the UK. In 2015–2016 it varied from 9.7 to 10.2% [15]. In 2017, the number of officially reported unemployed amounted to 3.55 million people. The share of Muslims among them is unknown. Most studies indirectly confirm that the share of employed Muslims is significantly lower than the national average. Thus, in 2014 in areas of their residence, in depressed areas,

the unemployment rate of people aged 15–64 years comprised 26.7% compared to 10% of the national average [16]. Although the migration crisis in Europe did not affect France as much as Italy or Germany, according to Eurostat, the number of forced migrants from Muslim countries also increased: from 64,000 in 2014 to 84,000 in 2016 [17]. Since the influx of humanitarian migrants does not correspond to the needs of the labor market, this makes it difficult to solve the problem of employment of the new comers.

The low level of migrants' education significantly limits the opportunities of their inclusion in production – to mainly unstable, low-paid places jobs with poor working conditions and an increased risk of ending up on the street. According to Eurostat, in France in 2016 42% of the population aged 15–74 did not have a complete secondary education, while in the EU as a whole – only 35%; the unemployment rate of those of the same age born in other countries was 17%. In 2015, 24% of migrants over 18 were considered poor because their income was below 60% of the median income in the country, 10% suffered from severe material deprivation (Eurostat, 2017). Migrants' limited access to the labor market significantly complicates their socio-economic integration and mobility [18, p. 20].

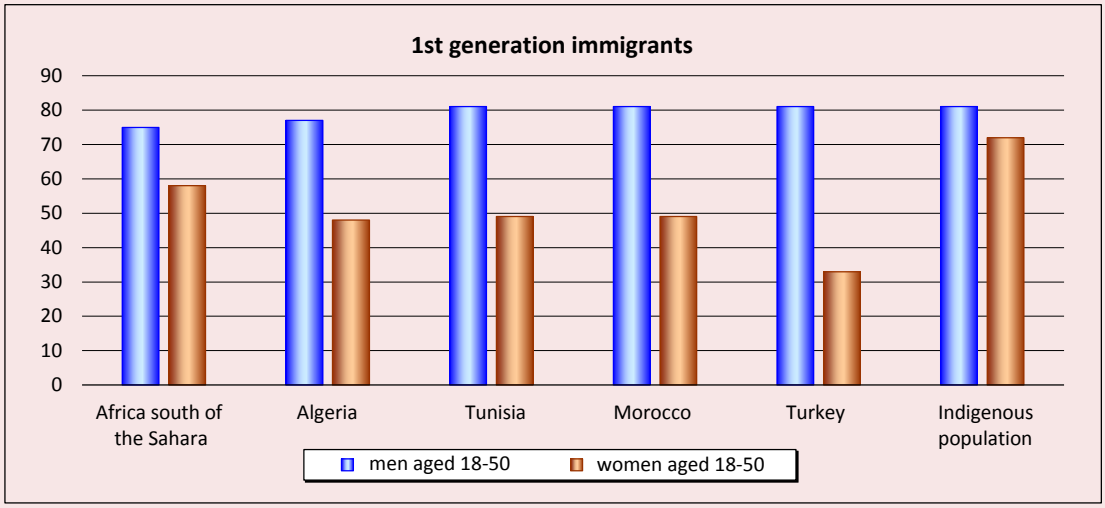
One may get a certain idea of the economic integration of the Muslim population from a joint study of national institutions of INSEE and INED conducted in 2008-2010 under the poetic name "Trajectories and Origins"[4], the purpose of which was to establish a link between the living conditions and opportunities for the advancement of individuals in the society with the social and ethnic (immigrant) background [19]. The study covers 21,000 people of different age and background, both immigrants and their children and the local French population. The main idea of this fundamental research was to determine the extent to which immigrants can use the resources and opportunities of the French state and society for successful integration and personal growth. For this purpose the dynamics of differentiation and homogenization within one group and between groups was determined. The survey participants told about their parents and country of origin, income level, education, profession, and marital status. The survey confirmed that the lowest employment rate was among immigrants from Morocco, Algeria, Tunisia, Turkey, sub-Saharan Africa. These data are graphically presented in *Figure 2* and *Figure 3*.

The comparison of generations demonstrates that women employment is growing, but in general, immigrants' children in France are left without employment more often than their parents. The reason for this is not clear, but it definitely is not the youth of the second generation. Three quarters of first-generation immigrants surveyed entered the country when they were under 30 and were nevertheless in demand in the labor market. Moreover, when comparing groups of people aged 18–30 and 31–50, it was revealed that the risk of losing a job increases after 30; for example, for immigrants from Algeria, it was 2 times higher than that of the indigenous population, and for immigrants from Turkey – 1.6 times.

Despite the fact that the question of religion was asked to all respondents of INED/INSEE, the study focuses on the specific features of integration of different ethnic groups. How legitimate is this projection on the Muslims? Here we are guided by the idea of Islam as a very strong traditional religion, the importance

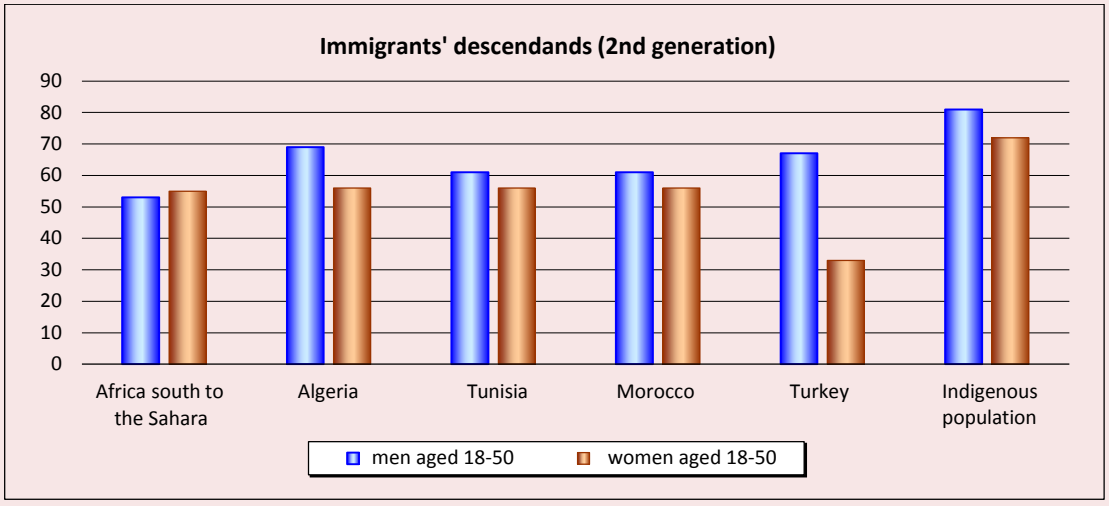
[4] "Trajectoires Et Origines". In Russian literature there are different versions of translation.

Figure 2. Employment of French immigrants by country of origin (% of population), 2009



Source: compiled from INED and INSE data (Trajectories and Origins. Survey on Population Diversity, 2010 in France).

Figure 3. Employment of the second generation of French immigrants by country of origin (% of population), 2009



Source: compiled from INED and INSEE data (Trajectories and Origins. Survey on Population Diversity, 2010 in France). Available at: https://teo-english.site.ined.fr/

of which, like the number of followers, is steadily growing. It can be assumed that at least 80% of immigrants from Maghreb countries and their descendants consider themselves Muslims. According to the study conducted by the French Institute of Public Opinion (Institut français d'opinion publique – IFOP) for *La Croix* newspaper in 2011, 75% of immigrants from Muslim countries considered themselves religious.

The qualification level and language skills are important basic criteria for employment. About 40% of immigrants who came to France in 1990–2000 had no qualifications (or had only primary or lower secondary education), while 34% had higher education. These

figures are much better than those of the first-generation immigrants (1960–1970s), 76% of whom had no secondary education or professional qualifications and only 11% graduated from universities. Many immigrants coming to France from the former French colonies had good French skills. 77% of people from West and Central Africa, 53% from the Sahel zone, 44% from North African countries demonstrated good language skills [19, p. 33]. Compared to immigrants from Portugal or Turkey, Africans had an important advantage. However, studies and opinion polls show that it is Muslim immigrants who have been most often discriminated against in employment.

We cannot clearly state that religion is the main cause of discrimination. During the INED/INSEE survey, the majority of respondents pointed to discrimination by race and country of origin, a smaller share linked discrimination to issues of religion, gender or age. (Indeed, it is difficult to distinguish between the "Muslim" and "non-Muslim" aspect of the issue since in Europe almost all Muslims come from the same country or region. For example, Muslims in Germany are primarily Turks, Muslims of France mostly come from Maghreb countries). However, the Proceedings of the National Academy of Sciences (PNAS) published in December 2010 explicitly point to the existence of religious discrimination. American researchers from the United States conducted a "mail questionnaire" sending identical resumes with Arabic names and Muslim backgrounds and Christian stating the participation in Catholic organizations to the leading national recruiting agency to determine the difference between the employment opportunities and income levels of the second-generation Muslim immigrants and French Christians. A Muslim was 2.5 times less likely to find a job than a Christian. A similar study with similar results was conducted by the U.S. Department of Labor in 2013. In 2009, the Open Society Institute noted an increase in religious discrimination: 55.8% of Muslim and 43% of non-Muslim respondents stated that in 2009 they were more likely to face racial prejudice than 5 years ago. 68.7% of Muslim and 55.9% of non-Muslim respondents believed that the same could be said about religious prejudices. More than 90% of all respondents believed that Muslims suffer from religious prejudices of the society [20].

According to the research conducted by Institut Montaigne in 2013–2014, 44% of second-generation immigrants faced discrimination at least once in their lives. Having the same professional qualifications, Catholics are 30% more likely to be called for an interview than the Jews, and twice more likely than Muslims, especially Muslim men, who had to apply four times more resumes than Catholics to be invited for an interview [21]. Entrepreneurs ignore people of a different race when selecting candidates to work with clients or for leadership positions. Despite the fact that the 2006 law "On equal opportunities" proclaims personnel recruitment based on anonymous resumes the latter are not used. According to the INED/INSEE survey, the economic activity of Muslims is most often limited to work in construction (25% – the first generation, 16% – the second), manufacturing (17 and 16%), as well as the service sector (HoReCa – 53 and 59%) [22, p. 8]. Muslim women are most likely to find a job in healthcare and social sector. Muslims are almost not introduced in public service – there are 10 times less Muslims than the representatives of the indigenous population.

In early 2015, Prime Minister of France Manuel Valls declared there is "territorial, social and ethnic apartheid" in the country, recognizing the existence of discrimination on racial and ethnic grounds. We have already mentioned the model of "social resettlement" typical of French immigrants: in disadvantaged suburbs, which after January 1st, 2015 became known as "priority zones" despite all state efforts, the share of unemployed, especially among young people is still the highest. 5.5 million people live in 1,500 priority areas; more than half of these people are immigrants of the first and second generation. Particularly vulnerable are minorities who have been able to rise above their social environment and receive a good education. As emphasized in the report of the research center of the National Observatory of Urban Policy in 2015, those with higher education over 30 are 22% less likely to work within trade if they live in a priority urban area. Muslims living in migrant areas are much more religious than those scattered in mixed areas, and 90% of young people aged 18–25 eat Muslim food and do Ramadan. Failures in the socio-economic integration of migrants, the feeling of social segregation lead to the fact that young people in suburbs oppose Islam to republican values.

In the UK, on the contrary, the influence of the territorial factor on the unemployment rate is not recorded, but among other factors there is racial discrimination and Islamophobia. In the framework of the survey undertaken on behalf of the Department for Work and Pensions (DWP) approximately 3,000 applications for 987 positions were sent under false names of Nazia Mahmud, Mariam Namagembe and Alison Taylor. All three candidates had British education, very similar qualifications and experience. Alison Taylor received a positive response from employers in every ninth case, while candidates with "non-British" names received responses only at every sixteenth position[5].

The most recent and interesting statistical study on the economic inequality of migrants in the UK is a study by the University of Essex conducted in 2015–2017 on behalf of the Commission on Human Rights to study the pay gap between white Britons and the representatives of non-white minorities, identify areas of violation and appeal to state intervention, if necessary [23]. Data were taken from quarterly reports of the National Bureau of Statistics (Labor Force Survey) [24]. This is the only source that records the ethnic origin of employees. To what extent are the data on ethnic minorities applicable to Muslims, since the question of religious affiliation was not raised in the study? According to the 2011 Census, 31.6% of the black and non-black population in the UK are Muslim, i.e. each third [25]. Some ethnic groups such as Pakistanis, Bangladeshis, Somalis, are almost entirely Muslim. Therefore, we consider it acceptable to extrapolate the data of the study on the pay gap among national minorities to the UK Muslim population within certain limits.

It is clear that the pay gap is a long-lasting phenomenon. Ethnic minorities have always earned less than the indigenous population. This is often determined by the social background, yet sometimes it is only the matter of discrimination. We have repeatedly mentioned that newcomers do not know the language, are not qualified enough, are unfamiliar with the UK culture. But studies prove that immigrants often work in lower-paid industries with higher qualifications. In

[5] Undercover job hunters reveal huge race bias in Britain's workplaces. *The Guardian*. 11.09.2009. Available at: https://www.theguardian.com/money/2009/oct/18/racism-discrimination-employment-undercover

2002–2014 white British people, both men and women, earned more than the rest in 70% of cases, but the gap varies greatly among different ethnic groups, and the wages of women and men are very different. Income is highly dependent on the place of birth – the UK or another country. However, there are exceptions: for example, Indian and Chinese men earn the same as white UK citizens regardless of their place of birth. But the situation among Pakistanis and Bangladeshis born abroad is worse [23, p. 8]. For example, a man who comes from Bangladesh receives an average of 48% less. His sons born in Britain reduce the gap to about 26%. The same image is for Pakistanis – 31 and 19%.

The situation for women is debatable. Women from Bangladesh and Pakistan earn 12% less than the average earnings of the white majority, other ethnic groups do not make a significant difference, or immigrants have higher wages. Thus, black African women receive 21% more than their white competitors [23, p. 55].

What are the possible flaws in such a report? It only gives an idea of wage employment. It does not take into account the self-employed and extra income (side activity), while 10% of Muslims in the UK are self-employed. We cannot limit ourselves to figures and assume that the difference in pay is due to ethnic discrimination. It is necessary to take into account the full range of business qualities valued by employers. Only if the difference in pay is not explicable can we talk about discrimination. What do the authors of the report see as the main reason for the pay gap? As tempting as the simple idea that ethnic minorities are paid less because of racial discrimination may seem, the image is somewhat different. It turns out that minorities tend to gravitate to certain professions, or more precisely, to spheres of employment, and in many respects this fixation is due to the pay level at their work.

Contemplating about the pay situation of Muslim minorities in France, we can note the already mentioned 2008–2009 INED/INSEE project. According to the survey, 97% of employed migrant men worked full-time, only about 70% – women. 88% of economically active men and 92% of women were hired for wage. Against this background, immigrants from Turkey stood out sharply – 74% of first-generation immigrants and 83% of their sons were hired, the rest were self-employed [19, p. 69].

To quantify the pay gap, French researchers studied the hourly pay of men and women in full-time and part-time, simultaneously determining whether part-time employment is desirable or forced. They came to an interesting conclusion that according to a combination of factors (country of origin, language skills, qualifications, occupation, etc.), the majority of immigrants receive a pay comparable to the pay of the ethnic French. But to come to this conclusion it was necessary to conduct factor analysis of statistics.

The relative pay of immigrants from all countries except Spain, Italy and Portugal was lower than that of the indigenous population. Men from Turkey and African countries earned less of all. As for women, the pay gap between the indigenous population was observed only among Turkish women. Trying to explain the pay gap the researchers constructed four models starting with basic statistics and each time complicating factor analysis. Thus, in pure statistical terms, immigrants from Algeria had 13% less income than the indigenous French. After adding indicators such as education, professional qualifications the figure was 16% less. With the introduction of other features such as time spent in France, language skills, citizenship, the gap was reduced to minus 7%, and after adding very specific requirements

to skills and work experience, the pay gap was reduced to 1–2% [19, pp. 71–72]. Thus, according to the econometric model it turned out that discrimination is insignificant.

In our view, it is still impossible to reduce the unique economic characteristics of migrants to mathematical models. There is a number of factors and conditions that are not limited to statistics with regard to the Muslim minorities. The main thing here is to understand why social mobility does not work well for Muslims in France. After all, their earnings do not differ much because Muslims or national minorities in general are paid less, but because they are mostly employed in low-paid economic sectors. The same report notes that migrants' children, for example from Algeria or Tunisia, often inherit their parents' activity, although they demonstrate certain improvement in skills, shifting from purely manual labor to partially automated manual labor. This raises the questions about the effectiveness of the French policy towards Muslim migrants.

Conclusion

The economic integration of Muslims is a fundamental element in the complex relationship between immigrants and the host society. The author attempts to generalize and analyze diverse statistics for 2001–2017 obtained as a result of surveys of the Muslim population, especially first- and second-generation immigrants from Asia and Africa legally residing in the UK and France. The analysis leads to some cautious conclusions about the level of socialization of these religious minorities achieved to date.

In the UK and France, different models of socio-economic interaction with immigrant minorities have historically been implemented, but in both countries their inclusion in economic activity is slow and incomplete. The main problems today are a sharp increase in the number of people in Muslim communities, a relatively low level of education and skills of newcomers, their unwillingness to integrate and acculturate. This is reflected in concentrated resettlement and creation of ethnic neighborhoods, the reproduction of traditional ethnic spheres of employment, which is a serious problem for both economic integration and inclusion of Muslims in the civil societies of the host countries.

The second generation of British Muslims demonstrate serious improvements in their status and income, especially those born in the UK. 73% of Muslims certainly choose "British" as their cultural identity. In France the opposite is observed. Immigrant children do not improve their socio-economic status relative to their parents' status; positive changes are insignificant. With a certain degree of confidence we can say that the UK policy towards Muslim minorities is more balanced and provides better results.

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Human Potential Formation of Children in the System of General Education*

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Abstract. Improving the quality of human potential is a priority area of socio-economic development of Russia. The solution to the issues of breakthrough scientific, technological and socio-economic development of Russia up to 2024 set in the national projects depends on it. One of the important elements of the national project "Education" is to update the content, methods and standards of education, including the development of the 21st century skills and the new literacy, the introduction of modern educational practices aimed at increasing independence and motivation for knowledge. One way or another, all these objectives are connected with the formation and development of human potential of the Russian child population. The number of groups of young population in Russia today is insufficient to compensate for the demographic losses of the society. Therefore, it is important to preserve and increase the country's human potential, strengthening these processes in all social institutions, including family, education, healthcare, etc. The purpose of the paper is to analyze the opportunities of the modern system of general education to form child human potential, as well as improve the quality of relations "parents – school", "children – school". The research framework is based on surveys conducted by the Vologda Research Center of RAS in the Vologda Oblast. The surveys were attended by parents with children aged 3–17 (2018) and teachers of secondary schools (2011, 2015, 2017). The research novelty of the study lies in the evaluation of relations "parents – school", "children – school", which demonstrate a high dependence of formation and development of intellectual and social characteristics of the child population on their

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quality. Thus, human development rate is higher (0.822 units) among children whose parents are involved in their school life than among the rest, even among those who are not deprived of their parents' attention (0.786 units – answers: often). The study shows that the less parents and children contact in relation to reading, the lower the indicators of child human potential (with constant reading practice, the rate is 0.840 units, with occasional – 0.781 units.). The research results are useful for experts in education and organizations working with parents of schoolchildren.

Key words: human potential, child population, parents, system of general and supplementary education, interaction of parents and school in child education.

Introduction

Human development accounts for more than 70% of a country's national wealth. The main integral measure of human potential is the world's widely recognized Human Development Index (HDI)[1]. It is calculated[2] annually (since 1990) within the framework of the UN Development Programme and includes a UNDP Human Development Report [1]. Such reports are published today by more than 100 countries (in Russia – since 1997).

In the ranking of countries in 2018, Norway is the leader (0.958 units). Russia [2] ranks 49th (*Tab. 1*). Despite the fact that the country is in the group with a very high level of human development, the lag behind top five countries is more than 15%. However, the current position of Russia in the ranking is lower than during the Soviet period, where it ranked 31st (0.734 units) in 1990.

Russia, like many countries of the world, seeks to enter the path of sustainable development. Therefore, improving human potential is a priority area of its socio-economic development. The importance of human potential is emphasized in all strategic documents of the Russian Government and program speeches of the Russian President who

Table 1. Performance of integral UNDP HDI

Country	1990	2000	2010	2015	2017	2018
Norway	0.850/3*	0.917	0.942	0.948	0.953	0.958/1
Germany	0.801/12	0.868	0.921	0.933	0.936	0.936/5
USA	0.860/2	0.885	0.014	0.920	0.924	0.924/14
Japan	0.816/9	0.855	0.885	0.905	0.909	0.909/19
France	0.779/20	0.849	0.882	0.898	0.901	0.901/24
Poland	0.712/44	0.785	0.835	0.835	0.865	0.865/33
Russia	0.734/31	0.720	0.780	0.813	0.813	0.816/49
Belarus	-	0.683	0.792	0.805	0.808	0.811/53
Brazil	0.611/80	0.684	0.724	0.757	0.759	0.759/79
China	0.502/102	0.594	0.706	0.743	0.762	0.762/90
India	0.427/113	0.493	0.581	0.627	0.640	0.640/130

* Hereinafter – country's position in the ranking.
Source: Data from the official website of the UN Development Programme. Available at: http://hdr.undp.org/

[1] Previously – index of potential human development.

[2] The indicator is calculated based on three sub-indices: longevity measured as life expectancy at birth; education; standard of living measured by GNP (GDP) per capita based on the purchasing power parity. HDI value makes it possible to classify countries and regions according to the level of human development. The countries with a very high level are those where HDI is over 0.8; in countries with a high HDI level – in the range within 0.7–0.8; with an average level – 0.5–0.7; with a low HDI level – lower than 0.5 (the provided figures are rounded).

has repeatedly stressed that "...one of our main competitive advantages ... is efficient use of people's knowledge and skills" [3]. The national projects approved in 2019 also reflect an action plan which aims to improve the human potential in Russia. It includes four projects ("Healthcare", "Education", "Demography", "Culture") with a total funding of more than five trillion rubles [4]. One of the goals of the project "Education" reads: "The education of a harmoniously developed and socially responsible person based on spiritual and moral values of the peoples of the Russian Federation, historical and national and cultural traditions".

The accumulation of human potential begins in the childhood. "It is the state of the child population, its socio-biological characteristics that is the basis for the formation of human potential and human capital in the modern society" [5].

The main institutional environment necessary for the formation of the qualitative human potential of the child population is primarily the family, as well as educational institutions that are included from a child's certain age in the process of socialization of their personality.

Education is a complex social phenomenon, the sphere of transfer, assimilation and processing of knowledge and social experience, which ensures the importance of this sphere for human development.

The purpose of the article is to analyze the possibilities of the modern system of general education for the formation of human potential of children, as well as the quality of relations "parents – school", "children – school".

The main approaches to studying human potential of the child population

A great interest in human potential is caused primarily by the conditions of increasing global competition for this resource [6]. Many works of domestic and foreign scientists are devoted to the analysis of the nature of the concept under study. The evolution of theories of human development is associated with the works of economists such as A. Smith [7], D. Ricardo, J.M. Keynes, Th. Schumpeter, A. Marshall [8], T. Veblen, T. Schultz [9], G. Becker [10], K. Marx, and W. Petty. They present ideas and conclusions about the place of a human in the structure of national wealth, its role in intellectual activity, investing in its development. Further development of the theoretical provisions is aimed at a narrower category of "human capital", which is considered as a result of investment and a source of human income in the future. Later, the "concept of human development" (A. Sen [11], M. ul Haq [12]) became widespread, which became the basis of [13] Human Development reports [14].

There are differences in terminology in Russian and foreign studies of human development. The representatives of the socio-demographic school of thought (N.M. Rimashevskaya et al.) note that the term "human potential" whihch ahs gained a foothold in Russia "is substantially more accurate" [15, p. 83], "in contrast to the term "human development" adopted abroad". The analysis of the category "human potential" in the works of domestic researchers shows that the most used components of human potential [16] are ***intellectual, creative, communication-based, value-based, and activity***. Moreover, the greatest number of characteristics that form the basis of human potential assessment is presented in the theory of population quality initiated by N.M. Rimashevskaya. A distinctive feature of her socio-demographic school is the study of human (or population) potential in aspects such as health (physical, mental, social); professional and educational

abilities (intellectual potential), cultural and moral behavior (socio-cultural activity).

This approach is used in the analysis of child's human potential [17]. The difference from the "adult" human potential is that child's potential is evaluated from the standpoint of formation of certain skills taking into account the age-specific development:

1) in terms of ***health*** – physical skills, hygiene, diet and rest, mental state, stress resistance, etc.;

2) ***intellectual development*** (skills that characterize the formation of higher mental functions: memory, thinking, imagination, attention, including digital skills);

3) ***socio-cultural activity*** (skills of children's socio-cultural adaptation – etiquette and communication, household behavior, etc.).

It is noteworthy that in scientific literature the concept of "child human potential" is not present despite the fact that its active formation takes place in childhood with the participation of main institutions: family, system of education and healthcare.

Child population is more often studied in categories such as health, mental development, and social adaptation. There are no comprehensive studies assessing child human potential in general. From this point of view, the research undertaken by the researchers of the Vologda Research Center of RAS under the Russian Foundation for Fundamental research grant is unique and original.

In this article we focus on one of the social institutions that form child potential – the system of general education.

The approach to "education as one of the leading social institutions" was proclaimed by psychologists (L.S. Vygotskii, A.N. Leontiev, A.R. Luria), economists (D. North, M. Weber, S.G. Kirdina, T. Luckmann, G. Spencer, S.G. Strumilin), sociologists (G.E. Zborowskii, F.E. Sheregi, D.L. Konstantinovskii, and G.A. Cherednichenko), as well as the representatives of other social sciences. In our study, we consider education from the point of view of the institutional theory, since "... the development of education ... is determined by the institutional characteristics of the society" [18]. Education as an institution performs a specific set of functions focused on certain social needs:

– transfer (translation) of knowledge from generation to generation;

– generation and preservation of culture of the society;

– socialization of an individual and their integration into society;

– promotion of reproduction and change of the social structure of the society, the channel of individual social mobility;

– social control [19].

In the scientific literature, the main functions of education are considered more widely: as a range of socio-cultural, socio-economic and socio-political positions. The first group includes objectives aimed at the development of spiritual life of the society, preservation, transfer and development of the cultural heritage. Socio-economic functions are associated with the formation and development of intellectual, scientific, technological and human potential, as well as social stratification. The implementation of socio-political functions ensures social security in its broadest sense [20].

An educational system, as defined by F. Sheregi, is "a basic social institution that determines the level of scientific, technological, economic and cultural progress of the society" [21]. At the same time, education is considered from the standpoint of formation of an individual in all its manifestations and qualities. "In the end, the highest value and

hierarchically highest goal of education is mental characteristics of both personality and the society in their natural interrelation and interdependence" [22]. The latter is the subject of the research analysis – the relations and interdependence of three actors affecting the formation of human potential, i.e. socio-cultural, intellectual characteristics of the child population – parents, children and education.

Materials and research methods

The informational framework of the research is based on the results of a sociological survey among the population of the Vologda Oblast. Empirical data were collected in 2018 in the form of a handout survey of parents. 1,500 people with children aged 3–17 in the cities of Vologda and Cherepovets, in Babaevskii, Velikoustyugskii, Mezhdurechenskii, Gryazovetskii, Kirillovskii, Nikolskii, Tarnogskii and Sheksninskii districts were surveyed. The sample was represented on the basis of statistics on the age and sex composition of the population in the Vologda Oblast as of 01.01.2017, it was ensured by the proportions between urban and rural population, between the inhabitants of settlements of various types (rural settlements, small and medium cities); the age structure of child population in the region.

The data on social well-being and financial situation of teachers of secondary schools in the Vologda Oblast obtained from the monitoring study conducted by the Vologda Research center of RAS in 2011, 2015, 2017, and a pilot survey of parents of school children in Vologda (2018) are partially used.

To analyze certain aspects of child human development, Rosstat statistics databases are used, along with sources of foreign databases, the results of sociological studies of the Higher School of Economics (HSE) and the Russian Presidential Academy of National Economy and Public Administration (RANEPA) on the relevant topics.

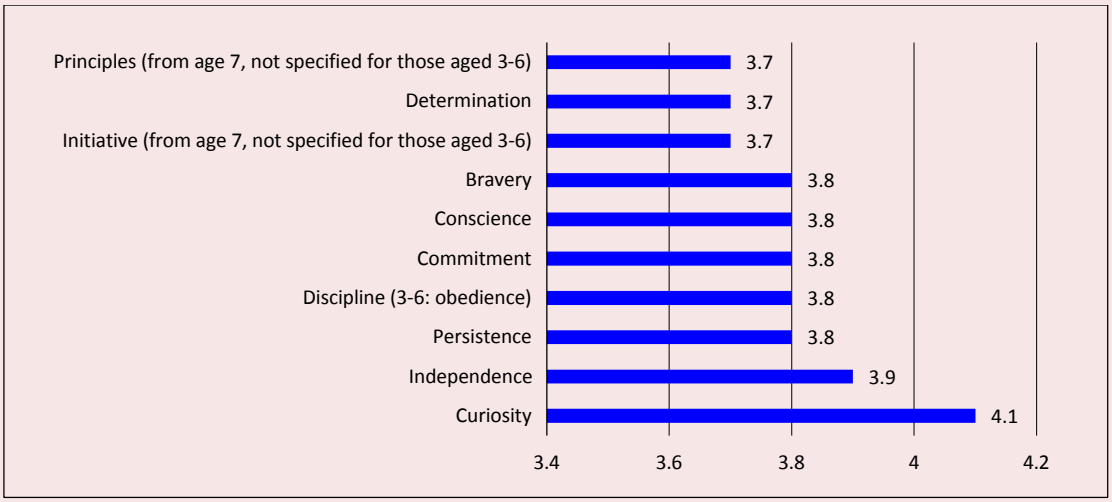
Results and discussion

One of the central issues of modern general education is motivation for learning activities. Motivating factors are critical in achieving positive learning results. The researchers note a wide variety of motives that affect the effectiveness of training, which is primarily due to age characteristics [23]. There are two clusters of educational motives: *cognitive interests* associated with the need to master skills and knowledge, and *broad social motives* as a response to the need for communication, evaluation and approval of other people, the desire to take a certain place in the system of public relations [24]. Parents of school children evaluate these groups of motives as equivalent, on average by 3.9 points on a 5-point scale (*Tab. 2*). The requirements to personal development of children have increased significantly with the introduction of new federal state educational standards. This is especially evident in increased attention to students' personal qualities such as *activity, independence, initiative*. The importance of development of these qualities is emphasized and introduced in the national project "Education" by the indicator of social

Table 2. Parents' assessment of importance of educational motives for children on a 5-point scale, average points

Educational motives	Average points
Personal (a sense of self-esteem and ambition, desire for authority among peers)	4.0
Social (awareness of the social significance of learning, understanding the value of learning as something developing personality, the need to develop worldview and mindset, etc.).)	3.9
Cognitive (interest in obtaining knowledge, curiosity, desire to develop cognitive skills, getting pleasure from intellectual activity, etc.).)	3.9
Source: data of opinion survey of students' parents, VoIRC RAS, 2018.	

Figure 1. Parents' assessment of degree of children's volitional qualities, average points on a 5-point scale



Source: data of opinion survey of students' parents, VolRC RAS, 2018.

activity of students "*number of students involved in activities of public associations on the basis of educational institutions of general education, secondary and higher professional education*", which is expected to increase 8 times in 2024 (from 1.61 to 8.8 million people) [4].

Independence as one of the volitional qualities of an individual is estimated by parents quite high – 3.9 points out of 5. However, this is not the highest score. The most developed quality of children, according to their parents, is curiosity (above 4 points; *Fig. 1*). Qualities such as perseverance, discipline, commitment, conscience, and courage is rated 3.8 by the respondents. Initiative is developed to a lesser extent (3.7 points), and this gives a pause for thought. Moreover, this characteristic is not predominant not only in the average sample, but also among older age groups (11–14 and 15–17).

Motivation to educational activity largely depends on the child's attitude to educational institutions (kindergarten, school, professional institutions), the quality of the relations "children – school". The formation of human potential of the child population in educational institutions should be accompanied by a comfortable external environment which determines children's mood at school. The research shows that in general, the positive attitude prevails among school children (*Tab. 3*): more than a third of parents (36%) say that their child has a positive attitude to school. Another 46% of children have a friendly attitude to school, though sometimes it depends on the mood. The most positive attitude is among children from Cherepovets, according to estimates of their parents (48%).

The least positive attitude towards school is typical for school children in rural areas. This does not appear to be a random assessment. It is known that the optimization of the social sphere that took place in the recent past affected the rural infrastructure (in total, during 1990–2016, the school network in the region was reduced by more than 2 times – from 835 to 366 units [25]). Increased distance between the place of residence and the place of education, including school, began to be positioned as the main causes of migration

Table 3. Parents' assessment of their children's attitude to school (for parents with children aged 3–6 the question concerned kindergarten attendance), %

Option	Vologda	Cherepovets	Districts	Oblast in general
An extremely negative attitude to school, occasionally skips classes (3–6: Always cries in the morning, does not want to leave the family)	2.6	2.9	5.1	**3.9**
An indifferent attitude to school, goes to school without much pleasure (3–6: Does not want to go to kindergarten, does not cry, but expresses dissatisfaction)	11.2	9.4	19.3	**14.5**
It depends on the mood, but in general the attitude to school is positive (3–6: Depends on the mood; depends on what kind of caregiver works that day)	48.2	39.9	47.6	**45.8**
A positive attitude to school, always goes to school in a good mood (3–6 years: Always goes to kindergarten in a good mood)	***38.0***	***47.7***	***27.9***	***35.8***
Source: data of opinion survey of students' parents, VolRC RAS, 2018.				

sentiments of the population in the region. According to the research of VolRC RAS, the migration of young people in most cases is associated with education (41.4%) [26]. The wish to provide a child with a better quality education forces families to leave. As a result, rural settlements are becoming increasingly empty and depopulated.

The problems of formation of human potential of the child population in rural areas is reflected in the index calculated by the researchers [11] of VolRC RAS based on the data from the sociological survey[4] (*Fig. 2*). It shows the development of basic characteristics of a child personality, which together form the potential that generate the basis of the future of human potential.

Figure 2 shows that the index of human potential development of the child population (IHPDC) among rural children in the districts (0.768 units) is substantially lower than the corresponding values of potential among urban children (0.827 units in Vologda and 0.799 units in Cherepovets). Moreover, the index value is lower than the average regional indicator (0.792 units).

Parent involvement in the child's school life, the family's interest in their education is an essential condition for qualitative formation of human potential.

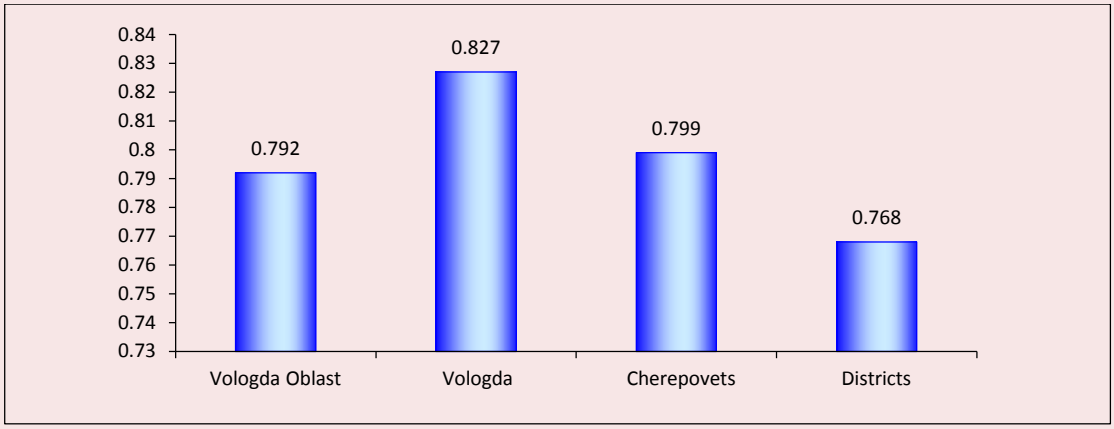
The study shows that only a quarter of parents (26%) always stay with the child when they do their homework. Almost as many (28%) do it often, but not always. And the rest of parents admit that it happens rarely, from time to time or never (45.8%).

However, the survey results show that constant parents' attention to this issue has a positive impact on the development of child human potential (*Tab. 4*). Among those children whose parents demonstrate great attention to their children's school life the rate of human potential formation is higher (0.822 units) than among the rest, even those who are not deprived of their parents' attention (0.786 units – often). Indicators of intellectual development (memory, attention, thinking and other characteristics) are also significantly higher (0.810 units). Accordingly, their parent asses the thinking skills of a child to be higher – 4.1.

It is noteworthy that parents may not always be able to help their child in understanding any complex school tasks. According to sociologists, "innovations in education significantly complicate qualitative performance of parents as translators of educational skills to their

[4] The composite index of human potential development of the child population is calculated as the geometric average of three sub-indexes: I_H – sub-index of health; I_{ID} – sub-index of intellectual development; I_{SCD} – sub-index of socio-cultural development.

Figure 2. Index of human potential development of the child population in the Vologda Oblast by age (parents' assessment), points



Source: opinion survey of students' parents, VoIRC RAS, 2018. [11]

Table 4. Dependence of human potential formation of child population on quality of relations "parents – children" in terms of doing homework, %

We do homework on weekdays (starting from the age of 7, 3–6 – not specified)	Average	IHPDC	Sub-index of intellectual development	Thinking skills
Never	8.6	0.777	0.776	4.0
Rarely	14.7	0.749	0.737	3.7
Sometimes	22.5	0.796	0.789	3.9
Often	28.2	0.799	0.786	4.0
Always	26.0	0.822	0.810	4.1
Sources: opinion survey of students' parents, VoIRC RAS, 2018; author's calculations.				

children" [27] since their knowledge, skills and competencies were mastered "within the framework of old standards".

Another significant problem of interaction between parents and children is learning to read or reading together. Reading books "expands children's understanding of the world, develops thinking, teaches perseverance and develops skills of independent work, analysis, forms worldview, values, and beliefs" [28].

Cross-country studies of children's learning achievements (e.g., PIRLS) conducted by international organizations (in this case, the International Association for the Evaluation of Educational Achievement) help assess the level of reader's literacy, compare the quality of reading and understanding of texts by primary school students in different countries. Russia has participated in all waves of PIRLS research conducted since 2001 (once every five years). Russian school children demonstrate good results: in 2016 they ranked 1st (*Fig. 3*).

Developed countries are currently discussing the problem of "reading crisis", believing that its consequences could have a negative impact on the economic, social and spiritual life of the society in the future [30]. The study confirms these concerns.

Table 5 suggests the less parents and children contact with regard to reading, the lower the indicators of human potential formation of children (with constant reading practice, the index is 0.840 units, with very rare – 0.781 units, in the absence of such practice – 0.759

Figure 3. Russia's position in international student research [29]

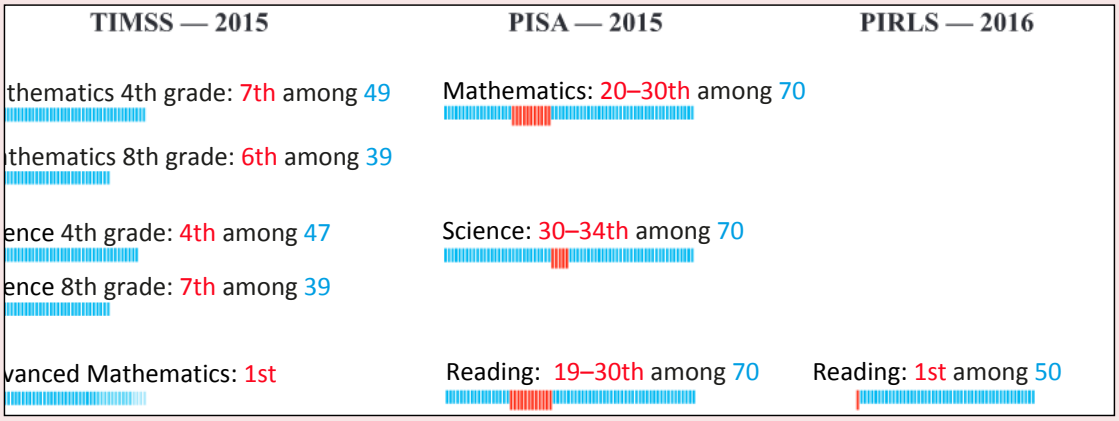


Table 5. Dependence of human potential formation of child population on the quality of relations "parents – children" in terms of reading together, %

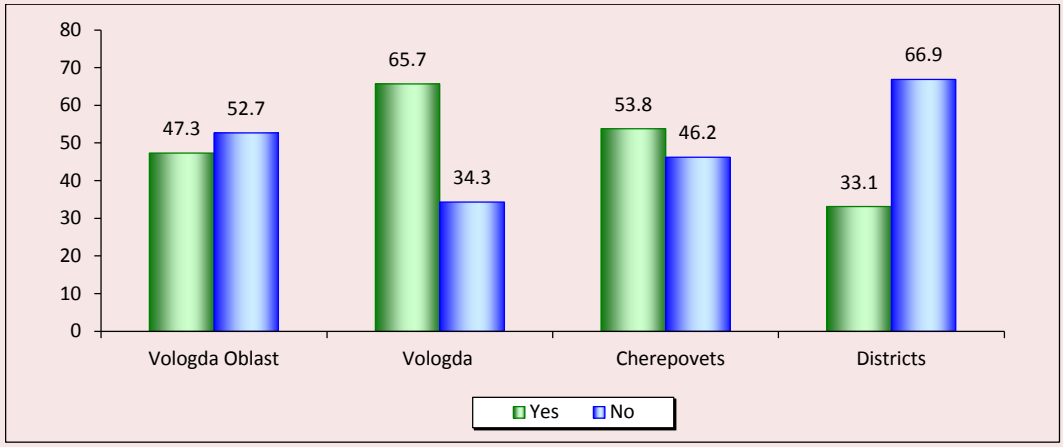
We read books in weekdays	Average	IHPDC	Sub-index of intellectual development	Thinking skills
Never	12.6	0.759	0.748	3.8
Rarely	17.8	0.781	0.768	3.9
Sometimes	30.6	0.783	0.774	4.0
Often	28.1	0.799	0.797	4.1
Always	10.9	0.840	0.824	4.2
Sources: opinion survey of students' parents, VoIRC RAS, 2018; author's calculations.				

units). The same trends can be observed in the development of children's intellectual skills.

Thus, the quality of relations "parents – children" highly affects the formation of human potential of children. And it not only the process of joint action that is important, but also parents' attention, their involvement in their children's life. According to the research of Public Opinion Foundation, modern parents note "a high demand for close relations with children... But in order to build relations one you needs to spend time with children. 42% believe that they spend less time with children than they would like to" [31].

An important factor in the development of human potential of the child population is participation in *supplementary education programs*. In 2018, within the framework of the priority project on supplementary education in Russia, a model of personalized financing of supplementary education was implemented. In the Vologda region by the end of 2017, more than 15,000 children received certificates for supplementary education services. An increased coverage of children aged 5–18 with supplementary educational programs (2016 – 694 units, 2015 – 489 units, 2014 – 112 units) has ensured the implementation of the 2012 May Decree of the President of the Russian Federation [32]. The Decree is expected to increase the coverage of children aged 5–18 with supplementary education programs to 70–75% by 2020. The target value of the national project "Education" to participate in supplementary education programs – 80% by 2024 [4].

Figure 4. Distribution of parents' answers to question "Does your child attend supplementary education classes (courses)?", %



Source: opinion survey of students' parents, VolRC RAS, 2018.

According to the research, most urban children have access to supplementary education. 66% of Vologda and 54% of Cherepovets parents note that their child/children attend classes of supplementary education (*Fig. 4*).

At the same time, only one third of rural children (33%) have access to this type of educational (creative, search, entertaining, developing) activity. This situation significantly limits the conditions for qualitative formation of children's human potential in rural areas.

A very important research result is the identification of motives of parents who decide that their children need to receive supplementary educational services (*Tab. 6*). According to the survey, the focus on child's interests and hobbies is the most preferable among the parent community (4.5 points on a 5-point scale). This position ranks first according to the survey results. The second is child's abilities and aptitude (4.4). It can be argued that this approach will provide the child with conscious professional choice, and a job by vocation in the future. This is very important for the economy of any territory (district, region, country). The researchers have proved that a job by vocation gives a significant economic effect, which is expressed in greater returns on wage, higher quality of workers and their increased productivity compared to the rest of employees [33].

The leading role of the child's wish when choosing supplementary education institutions is demonstrated by the results of HSE studies showing that about half of parents (42.5%) state their child's wish to be the reason for choosing a particular course [34]. Thus, the relations "children – school" demonstrate a positive trend in the sphere of supplementary additional. This is especially important because more than 70% of 15–17-year-old children, according to their parents, have already chosen their future profession (*Tab. 7*). Such confidence is inherent in both urban and rural parents almost equally.

The analysis of prevalence of supplementary education for children shows that the most common areas are art (59%) and sports (57%). The same areas of supplementary education can be found in parents' responses about their education (58% and 43%, respectively). The

Table 6. Assessment of significance of motives which influence parents' decision that their child should attend supplementary education courses (% of those whose child attends courses of supplementary education; answer "Yes"), average score on a 5-point scale

Option	Vologda	Cherepovets	Districts	Oblast
Child's interests and hobbies	4.6	4.3	4.4	4.5
Child's abilities and aptitude	4.5	4.3	4.3	4.4
Parents' wish	3.8	3.6	3.4	3.6
Affordable cost of the service	3.8	3.6	3.3	3.6
Prospects and relevance of this sphere	3.6	3.5	3.5	3.5
Recommendations of friends, acquaintances	3.1	3.3	3.2	3.2
"Fashion" for this type of supplementary education	2.4	2.8	2.8	2.7
Source: opinion survey of students' parents, VoIRC RAS, 2018.				

Table 7. Distribution of parents' answers to question "Has your child decided on the choice of future profession? (question for parents of children aged 15–17), %

Option	Vologda	Cherepovets	Districts	Oblast
The child has made a choice	71.4	85.7	61.9	70.5
Still undecided	20.6	7.9	30.5	22.1
The child has not decided completely	7.9	6.3	7.6	7.4
Source: opinion survey of students' parents, VoIRC RAS, 2018.				

results of the all-Russian survey are similar. According to the HSE, art classes are attended by 48% of students, sports – by 37% [34]. It is noteworthy that the technical profile of supplementary education (IT, modeling, design, robotics, etc.) is less common among school children (in the Vologda Oblast such classes are attended by children of 15% of respondents; in Russia – by 7%) [34]. There is a need for certain efforts in this field of education since amid the development of the digital environment and the transition from routine production to robotics experts with technology- and IT-related skills are becoming increasingly sought-after.

The prevalence supplementary classes of different profile for children varies in federal districts of Russia (*Fig. 5*).

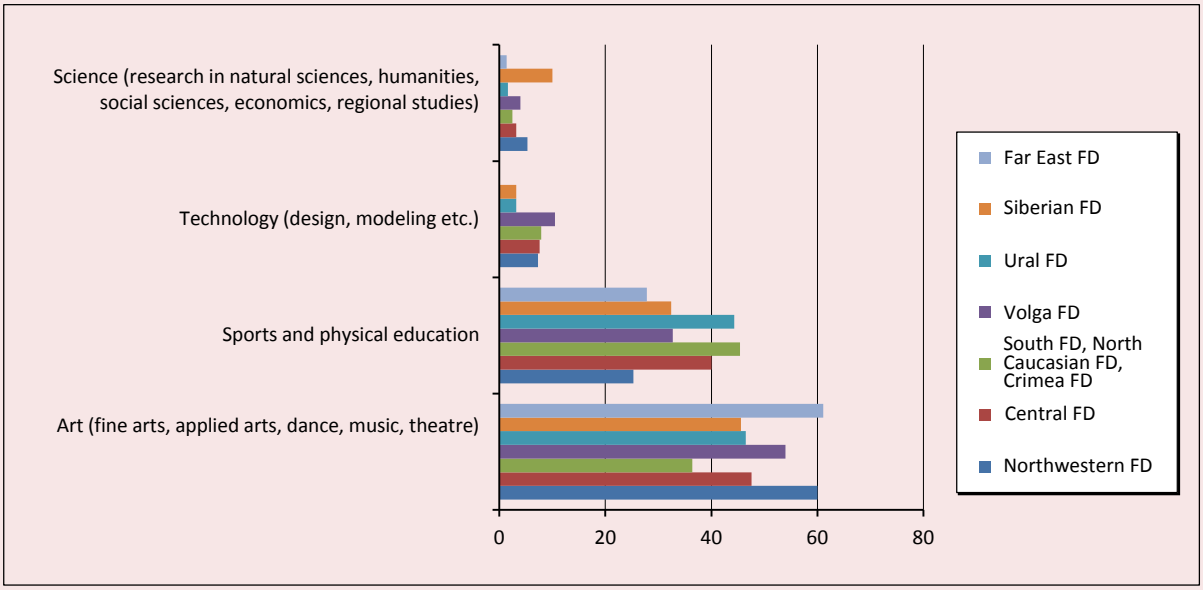
For example, sports are more popular among children in the South, North Caucasus, Ural federal districts and the Republic of Crimea, art-related classes – in the North West, Volga and Far East federal districts. The Far East Federal District is also characterized by tourism and handicraft programs. Technology classes are most often attended by children of the Volga Federal District, and smallest number of children of this profile is in the Siberian and Ural Federal districts.

It is interesting to trace the effectiveness of classes of supplementary education (*Fig. 6*). Most parents note that their child's engagement in supplementary education has significantly affected the development of their creative potential (65%). Moreover, the child's contacts have expanded (55%) and their intellectual level has significantly increased (51%).

It is estimated that more than a third of parents note that the level of leadership skills of the child becomes significantly higher (38%) as they attend supplementary education classes. This is a significant result which shows that lack of attention to the development of children's initiative at school is compensated for in the system of supplementary education.

It is noteworthy that, according to the estimates of the parent community, both cognitive and social motives of children's educational activities are implemented in

Figure 5. Prevalence of supplementary education profiles for children in federal districts (FD) of Russia, 2017 (% of the total number of parents who responded) [34, p. 21]



the system of general and supplementary education with a certain degree of success. Accordingly, the formation of components of human potential of the child population such as intellectual and socio-cultural development is ensured.

One of the factors directly affecting IHPDC in terms of development of abilities, knowledge, and skills is the quality of a professional teaching group and, accordingly, the quality of relations "parents – school", "children – school".

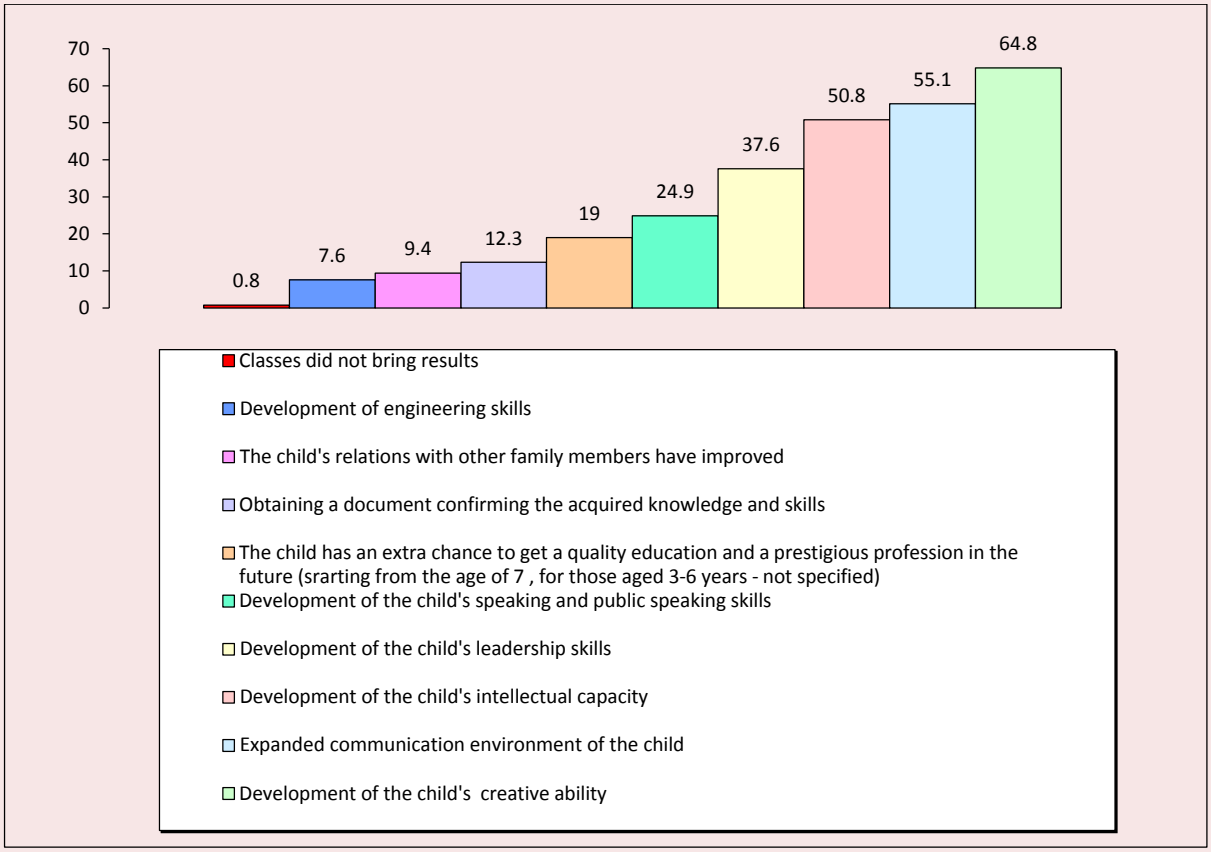
The main criteria of socio-professional status of teachers are the level of education and qualifications. The results of the TALIS-2018 research show that 75% of Russian teachers have been trained in specialist's and master's programs, every sixth (16%) received a bachelor's degree[5] (*Fig. 7*). In the countries participating in the TALIS study, these figures are lower – 41% (master's degree) and 51% (bachelor's degree), respectively.

Judging by the data of RANEPA study (2013–2014), the first qualification category (49% of teachers) is the most common among teachers, 31% of teachers have higher qualification category [36].

The growing shortage of teachers, which is a feature of the modern stage of education development, significantly complicates the process of developing child human potential. The coverage of teachers of general education in Russia in the 2016/2017 academic year was 96.6%, while in 2015/2016 academic year – 99.2% [37]. The most sought-after in Russian schools are teachers of foreign languages (coverage in Russian schools – 96.2%), Mathematics – 95.8%, PE– 95.6%. The schools' need for qualified specialists is very acute, which can be traced by the example of the Vologda Oblast [37]. According to the Department of Labor and Employment of the

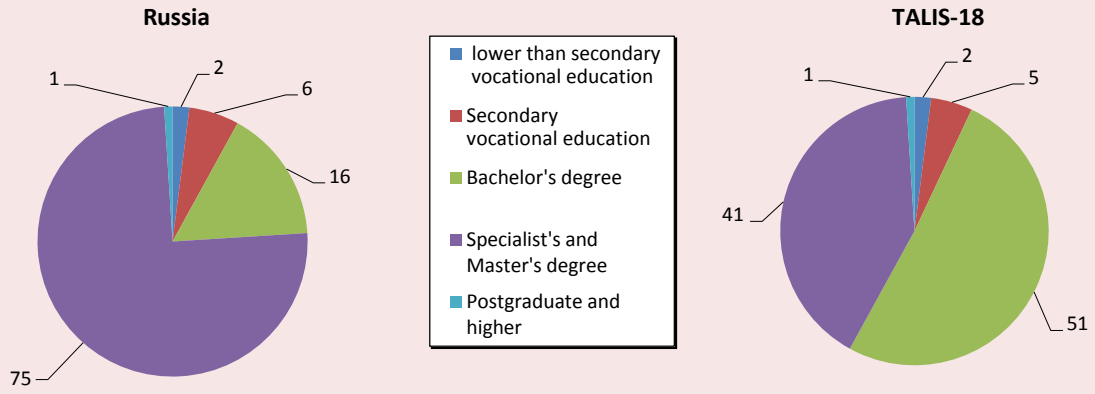
[5] Open data of the Ministry of Education and Science. *Official website of the Ministry of Education and Science of the Russian Federation*. Available at: http://xn----8sblcdzzacvuc-0jbg.xn--80abucjiibhv9a.xn--p1ai/opendata/

Figure 6. Distribution of parents' answers to question "What results have supplementary classes brought?", % of those whose children attend classes of supplementary education (answer "Yes")



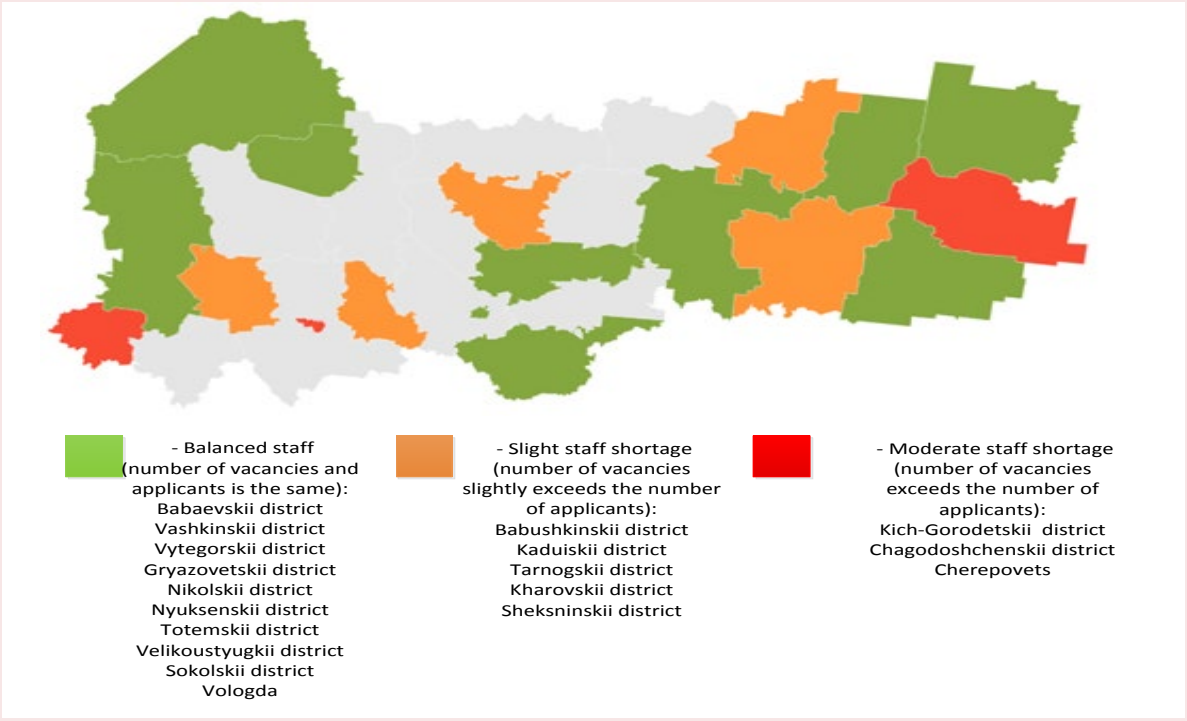
Source: opinion survey of students' parents, VolRC RAS, 2018.

Figure 7. Level of teachers' formal education, %



Source: Lifelong education of teachers and school principals: report on the results of the international teachers study on teaching and learning TALIS-2018 (Teaching and learning international survey). Part 1. Moscow: Rosobrnadzor, 2019. 41 p.

Figure 8. Coverage of teachers at educational institutions in the Vologda Oblast



Source: Employment barometer. Available at: http://voloblcareer.ru/barometer (accessed: 06.05.2019).

Vologda Oblast, a moderate shortage of teaching staff is observed in Chagodoshchenskii, Kichmengsko-Gorodetskii districts and in the city of Cherepovets (*Fig. 8*). A slight shortage is indicated in Babushkinskii, Kaduyskii, Tarnogskii, Kharovskii and Sheksninskii districts [37]. As of the beginning of May 2019, there are 34 vacant jobs for teachers of foreign language, 17 – for Physics and Mathematics teachers, 8 – for primary school teachers in the region[6].

The quality of teaching staff is directly related to the quality of the parent–school relations. The results of a three-wave monitoring study of social well-being and financial situation of teachers at secondary schools in the Vologda Oblast conducted by VolRC RAS (in 2011, 2015 and 2017) demonstrate [25] the teachers' satisfaction with the relations with children (satisfaction index[7] – 185 points) and children's parents (166 points) within their teaching activity. Similar assessment is repeated in the parent environment. At the same time, parents demonstrate a higher level of satisfaction than teachers. The highest index values in the estimates of parents are those reflecting the professionalism of the teaching staff (194 points) and teachers' attitude towards children (179 points)[8].

[6] All-Russian database of vacancies. Available at: https://trudvsem.ru/ (accessed: 06.05.2019)

[7] The index is calculated as the difference between the sum of positive and the sum of negative answers. The result is added to 100 to avoid negative values. Thus, completely positive answers provide an index which equals 200, completely negative – 0, and the equilibrium – 100, which is essentially a neutral estimate.

[8] Data of the pilot survey of parents of school children in the city of Vologda held in 2018 by VolRC RAS.

Conclusion

The framework of human potential is formed primarily in the family and the educational system as key social institutions. The contribution of other factors (healthcare, culture) is definitely undeniable, yet knowledge and skills that help a person create their "capital", belong to the first two sustainable forms of people's organization. However, family and educational sphere, being the most important social institutions for the formation of child human potential, have a number of determining characteristics. The research reveals that greater success in formation of child human potential is achieved by families who pay much more attention to their children's education and are more involved in their school life. Studies have shown that there are certain problems in the "parents – school" relations within the framework of "parents – children" relations. These include, in particular, insufficient parents' involvement in their children's school life, which is a limiting factor in the process of human development. Accordingly, this problem should be addressed by the teachers to improve their cooperation with the parent community, primarily through improving the quality of education, increasing access to information about children's school life, assistance in mastering the skills of efficient parenthood, increasing parents' participation in the school life (discussion of the school development program, content and methods of education, ways to achieve indicators, etc.). However, parents should strive to interact with teachers, realizing that their participation in the school life of their children should not be limited to its material content. It is necessary to shift the focus to spiritual and moral communication. After all, it is parents that the right message should go from, determining children's motivation and interest in learning.

A number of characteristics of child human potential is successfully formed in the system of supplementary education. However, the share of children involved in engineering classes is insufficient, which will affect the country's lag in this process in the digitalization era. To increase attention to children's involvement in engineering classes within supplementary education it is especially necessary to interact with the parent community.

There are significant limits for child human development in rural areas. The study shows a significant gap in IHPDC of rural areas. It is necessary to pay attention to the conditions of formation of human potential of rural children – increasing the availability of educational resources, including online forms of supplementary education. We believe that target support for rural schools as a tool for equalizing social opportunities is also necessary.

The analysis of the quality of interaction between the triad of actors (parents, children, school) and its role in the formation of human potential of the child population made it possible to justify a new approach to modeling/building these relations. Our approach is based on shifting the relations from the "chain" model (parents – children – school) towards the "circle" model (parents – children – school – parents), in which actors can effectively build child potential.

As a result of implementing this approach, the interaction between the school and parents should be raised to a new level. First of all, in terms of parents' understanding of their responsibility for their children's education and upbringing. The meaning of effective cooperation should lie in establishing symmetrical mutually beneficial relations between teaching and parenthood [38], which will make a significant contribution to the formation and development of child human potential.

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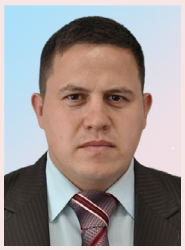
Intraregional Differentiation of Demographic Potential in the Republic of Tatarstan



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Abstract. The issues of formation of agglomerations are more considered from the economic point of view and as an effective way of infrastructural development of territories. However, the demographic aspects of studying the potential of the regions' territories are left without attention. The purpose of the research is to determine the zones of demographic risk and stability of the Republic of Tatarstan and identify the vector of demographic development of its three agglomerations. The theoretical analysis of the concept of "agglomeration" helps consider the unification of cities and municipal districts not from the geographical and economic perspective, but as a tool for effective development of human capital. The method of rapid analysis of demographic processes in the Republic of Tatarstan developed by the Center for Family and Demography at Tatarstan Academy of Sciences is a differentiated analysis of demographic prospects of agglomerations of the Republic taking into account their initial potential. In the article, based on the agglomeration approach we differentiated intra-regional demographic potential of municipal formations of the Republic. In order to determine the zones of demographic risk in three agglomerations, we calculated the integrated rank of municipal districts according to the main demographic indicators: total fertility rate, mortality, natural growth, marriage rate, divorce rate and migration gain. The article reviews in detail birth rate as the most important category of the region's socio-demographic development. The ranking of municipal districts of the Republic of Tatarstan included in various agglomerations, according to the current demographic situation, helps identify the region's prosperous zones at the present development stage. The definition of risk zones will help adjust the social and demographic policy of municipalities, thereby ensuring sustainable demographic development of the Republic of Tatarstan as a whole.

Key words: birth rate, migration, marriage rate, divorce rate, mortality, Republic of Tatarstan.

Introduction. The priority areas of Russia's development are the regional strategies of sustainable development, with one of the mechanisms being the formation of agglomerations.

A.L. Kudrin, Head of the Center for Strategic Development, at the session "Economy of a Thousand Cities" noted that in order for Russia to remain a competitive country, to grow rapidly, it must grow and create its largest agglomerations. In his opinion, urban agglomerations should appear in all parts of the country; they will be the place where intellectual potential, social capital and quality of life are concentrated. American scientist P. Krugman [1] notes that if economic activities are unevenly distributed large agglomerations can form, which in turn will form a gap within a country or region.

The Concept of the Strategy of Spatial Development of the Russian Federation up to 2030[1] considers an agglomeration as an urbanized area, a system of resettlement. According to the Concept, there are 124 formed and emerging agglomerations in Russia.

Theory and methodology. The issues of studying agglomerations are interdisciplinary; they attract the attention of economists, sociologists, geographers, historians, demographers, etc. There are numerous interpretations of the concept of "agglomeration" which are covered in the works by S.A. Kozhevnikov [2; 3].

An agglomeration is a complex of urban settlements or regions, which is united mainly

[1] *The Concept of the Strategy of Spatial Development of the Russian Federation up to 2030.* Available at: http://карьеры-евразии.рф/uploadedFiles/files/Kontseptsiya_SPR.pdf (accessed: 25.02.2019)

through economic ties[2] and ensures the improvement of resource efficiency (territorial and financial), as well as the development of human capital. The intensity of economic and labor migration determines the presence and nature of interaction between settlements. There is an agglomeration effect which summarizes the economic and demographic potential of several settlements. From this point of view, agglomerations are becoming an important component of the region's socio-economic growth.

The issues of assessing the social component of the region's potential become important in modern conditions of social and demographic tensions. In turn, this socio-demographic problem remains poorly studied from the theoretical, methodological and practical point of view, which can lead to incorrect forecasting and selection of ineffective management decisions. We found out that there is no single interpretation of the category "demographic potential".

A.G. Vishnevskii together with other researchers defined the essence of demographic potential as the number of residents in a territory. They use the following indicators to characterize the demographic potential: population and its reproduction (birth rate, mortality), age composition, life expectancy, migration gain, population growth forecast, life expectancy at birth, demographic ageing and provision of pensions.

In this paper, demographic potential is considered not just as the region's population, but as a system that helps assess fertility rate, mortality rate, marriage rate, divorce rate and migration rate, that is, the territory's viability [4]. In the practical part of the research we will discuss in more detail the potential of fertility as it acts as an important factor in determining the territory's demographic potential. There is a need to study the demographic potential within the territory's human potential. In this aspect, demographic potential should be considered as a quantitative and qualitative potential of population reproduction in a particular territory (region). It is based on indicators such as population, its sex and age composition, population increase (loss), migration process, etc. It is very important that the growth of demographic potential is carried out through effective demographic policy.

The current stage of the country's development is characterized by agglomeration construction which affects all major regions, including the Republic of Tatarstan. In this case, demographic indicators (birth rate and death rate, life expectancy, migration rate, etc.) will largely determine the state of territorial development. This phenomenon is confirmed by regional strategies. In 2015 "The Strategy of Socio-economic Development of the Republic of Tatarstan up to 2030" was developed. Its main value is the human, and human capital is the basis of economy, the key to success. A measure of successful region's development is the quality of life of its population, the quantity and quality of accumulated and successfully functioning human capital. The strategy of accumulating human capital includes several social areas, including demographic, that is, demographic development is the factor in its formation.

Statistical analysis of demographic processes shows that the impact on at least one of determinants is reflected in the overall performance. Each factor has its own set of internal and external conditions that determine the overall result.

V.V. Merkur'ev singles out agglomeration of municipalities, interpreting it as a type of

[2] *Sociological encyclopedia: in 2 volumes.* Vol. 1. Moscow: Mysl', 2003. 694 p.

functioning of a certain number of municipalities in a concentrated area, integrated into a common, diverse dynamic system with strong internal ties that contribute to effective and mutually beneficial use of local resources (labor, financial, material, informational) [5]. A.E. Katz [6] considers the formation of agglomerations as a new way of territorial development (infrastructure and economic). The unification of municipal districts is beneficial for both central core and adjacent territories.

The issues of agglomeration formation are mostly considered from the economic point of view and as an effective way of infrastructure development. Thus, there is a very significant set of works where the welfare of individual territories is analyzed taking into account the population's income level [7–10]. However, there are almost no works devoted to the study of the most important processes of modern socio-demographic development of agglomerations. S.R. Khusnutdinova and M.V. Safonova in their article "The demographic situation of urban territories in the Republic of Tatarstan" [11] present a general analysis of the demographic situation in three agglomerations of the Republic – Kazan, Kama and Almetyevsk. The authors positively describe the demographic situation in urban territories of the Republic in 2014. It is noteworthy that agglomeration processes increase asymmetry in the regions' socio-demographic development, predetermining the importance of leveling the negative effects of local accumulation of resources [12].

N.L. Mosienko [13] justified the need to supplement the geographical and economic approaches to the study of agglomerations with sociological representation which would consider urban and rural municipal areas as a single social space. Intensive interaction which provides a common living environment defines agglomeration not only as a community of territorial zones, but also as an integrity of social space. From the sociological point of view, agglomeration should be considered as a key form of resettlement. During the agglomeration process population, characterized by mobility and circular migration, is attracted to the suburbs of large cities. There is a correlation between the opportunity to move within an agglomeration and the economic development of the territory, people's social well-being, due to the fact that the social life of the majority is characterized by a high level of mobility [14]. According to the researcher, due to the phenomenon of mobility it is possible to form agglomerations as a cluster of settlements united by close ties.

The purpose of the study is to determine the zones of demographic risk and stability in the Republic of Tatarstan and identify the vector of demographic development of agglomerations in the Republic taking into account the overall integrated rank of demographic processes in municipal districts.

The study is practically significant as the obtained data can be used for developing the significant areas of the regional socio-economic and demographic policy, namely, for preparing the regional development program, documents of the state policy on demographic issues, etc.

Methodological tools. Based on the adopted Strategy of Socio-economic Development of the Republic of Tatarstan up to 2030[3] we have grouped the municipalities of the Republic into three zones: demographic zone no. 1 (23 municipal districts), demographic zone no. 2 (9 municipal districts), demographic zone no. 3 (11 districts) [15].

[3] *Strategy of Socio-economic Development of the Republic of Tatarstan up to 2030.* Available at: http://mert.tatarstan.ru/strategiya-sotsialno-ekonomicheskogo-razvitiya.htm (accessed: 20.02.2019)

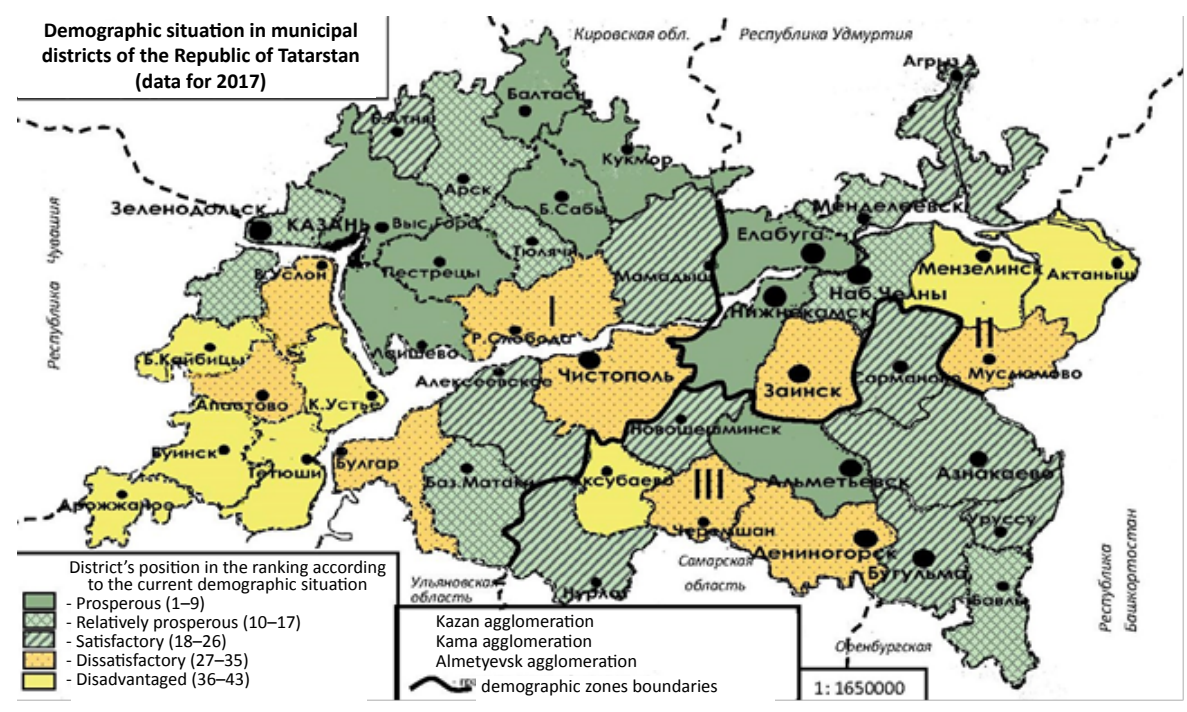
Table 1. Agglomerations and rural sub-zones of the Republic of Tatarstan

1) Kazan agglomeration a) Predkamskaya rural sub-zone; b) Zakamskaya rural sub-zone; c) Predvolzhskaya rural sub-zone.	**Demographic zone no. 1 (D1)**
2) Kama agglomeration a) rural areas of the Kama agglomeration belt	**Demographic zone no. 2 (D2)**
3) Almetyevsk agglomeration a) rural areas of the Almetyevsk agglomeration belt.	**Demographic zone no. 3 (D3)**
Source: *Strategy of Socio-economic Development of the Republic of Tatarstan up to 2030*. Available at: http://mert.tatarstan.ru/strategiya-sotsialno-ekonomicheskogo-razvitiya.htm	

The method of assessing the demographic potential of the territory lies in identifying the integrated rank of demographic indicators of municipal districts of the Republic. The obtained data will help demographically categorize the municipalities of the Republic of Tatarstan.

The Center for Family and Demography of Tatarstan Academy of Sciences ranked municipal districts of the Republic by demographic indicators. The ranking is a necessary tool for analyzing various aspects of regional well-being in general, and agglomerations in particular [16]. There are different models of well-being: additive [17], multiplicative [18], power additive [19], etc. We selected a certain number of demogr method to reduce them to an integrated indicator [20]. In order to determine the zones of demographic risk in the three agglomerations we calculated the

Figure 1. Zones of demographic risk and stability in the Republic of Tatarstan



Compiled from: *Demographic Yearbook of the Republic of Tatarstan. 2018: statistics book*. Tatarstanstat. Kazan: Izdatel'skii tsentr Tatarstanstata, 2018. 162 p.

integrated rank of municipal districts based on the aggregation of demographic indicators (total fertility rate, mortality, natural growth, marriage rate, divorce rate and migration gain (per 1,000 people)). The calculation was based on the sum of ranks of all demographic processes, on received data, as well as on the definition of an integrated rank of each municipal district.

The Republic of Tatarstan consists of two urban districts and 43 municipal districts. The demographic situation in the Republic is characterized by significant spatial differentiation. The total population of the Republic of Tatarstan at the beginning of 2018 comprised 3,894,284 people[4], 76.8% – urban population and 23.2% – rural. The predominance of the urban population over the rural population is observed in the 1970s[5] (this may be due to the change in the status of some territories). During the year, the total gain amounted to 14,345 people (9,827 – natural, 4,518 – migration).

Results and discussion. The ranking of municipal districts in the Republic of Tatarstan included in various agglomerations based on statistics of 2017[6] helped identify groups of districts with a prosperous, relatively prosperous, satisfactory, dissatisfactory and disadvantaged demographic situation.

Almetyevsk agglomeration. In Almetyevsk agglomeration, the lowest position (39th) by marriage rate is occupied by Sarmanovskii municipality. Novosheshminskii district is characterized by the most favorable situation in the country (1st position) by this indicator. If Almetyevsk district did not have one of the highest divorce rates (36th position) the overall district on the current demographic situation would be rated higher. By divorce rate, the most prominent are Aksubaevskii (ranked 7th in the Republic) and Cheremshanskii (rated 10th in the country) districts. According to migration gain index, in most areas of the agglomeration a negative gain is observed. The worst situation is in Bugul'minskii (36th), Leninogorskii (38th), Sarmanovskii (39th), Nurlatskii (40th) districts. Aksubaevskii district with the indicator (-10‰) is ranked 41st. A positive migration gain is observed only in Almetyevskii municipal district (4.3‰) so it ranks 6th in the country.

Kama agglomeration. In Kama agglomeration, only 2 districts are in an unfortunate situation: Aktanyshskii (36th) and Menzelinskii (40th). In the studied demographic zone, the best demographic situation (prosperous) is observed in Nizhnekamskii (7th) and Elabuzhskii (9th) municipal districts; these areas have one of the highest fertility rates (6th and 4th) in the Republic. According to the ranking of municipal districts, low mortality rate occurred in Nizhnekamskii 9.1‰ (1st) and Elabuzhskii 10.2‰ (2nd) districts. The ratio of main demographic indicators (birth rate and mortality rate) contributed to the fact that one of the best indicators of natural population growth in the country is observed in Nizhnekamskii 2.6‰ (2nd in the country) and Elabuzhskii 2.4‰ (3rd in the country) districts. The remaining districts occupy middle positions in natural population growth and are located in the range from 19 to 27 ranks. The only exceptions are Aktanyshkii (32nd) and Muslyumovskii (36th) municipal districts.

[4] *Demographic Yearbook of the Republic of Tatarstan. 2018: statistics book*. Tatarstanstat. Kazan: Izdatel'skii tsentr Tatarstanstata, 2018. 162 p.

[5] *Ibidem*.

[6] *Demographic Yearbook of the Republic of Tatarstan. 2018: statistics book*. Tatarstanstat. Kazan: Izdatel'skii tsentr Tatarstanstata, 2018. 162 p.

The lowest marriage rate is observed in Tukaevskii, Agryzskii, and Aktanyshkii municipal districts. By divorce rate within the agglomeration there are also districts that demonstrate the lowest rates in Tatarstan: Nizhnekamskii, Mendeleevskii, Elabuzhskii, Zainskii. The smallest number of divorces in this agglomeration was recorded in Tukaevskii and Muslyumovskii districts (they rank 16th in the Republic). However, Muslyumovskii district has the lowest migration gain among 9 districts in the zone (-10.6 ‰) and is ranked 42nd in the list of municipal districts. Only two areas of the agglomeration have positive migration gain: Tukaevskii (6.3‰, 4th) and Mendeleevskii (3.8‰, 7th).

Kazan agglomeration. Five districts of Kazan agglomeration are in the zone with the most sophisticated unfavorable demographic situation: Tetyushskii, Kamsko-Ustyinskii, Drozhzhanovskii, Kaibitskii, and Buinskii municipal districts. They have negative migration gain. Yet it is noteworthy that all districts of this sub-zone differ in a relatively low divorce rate, with the exception of Zelenodolskii district, which ranks one of last (40th). Drozhzhanovskii district, raking 35th by marriage rate, has one of the lowest divorce rates (with 1.8 people per 1.000 people, 3rd) among municipal districts. According to this indicator, Baltasinskii district is the leader in the Republic, which is in a prosperous demographic subzone and has seriously improved its performance in recent years.

In Kazan agglomeration, there are several districts where the best and worst demographic situation in the Republic of Tatarstan is observed. The most favorable demographic situation not only in the study zone, but also in the Republic as a whole, is observed in Sabinskii, Pestrechinskii, Baltasinski, Kukmorskii, Vysokogorski, and Laishevskii municipal districts.

Sabinskii district does not rank lower than 9th in any of the six studied indicators. Pestrechinski, Laishevskii and Vysokogorskii districts have the best positions in the Republic on fertility rate, mortality rate, natural population increase (decrease), marriage rate and migration rate. Divorce rate is the only indicator that puts them in the middle of the ranking among municipalities. Most areas are characterized by high migration gain. Pestrechinskii municipal district has a record high level in Tatarstan in terms of net migration rate (65.7 per 1,000 people).

Fertility rate. A very important reference point for the demographic well-being of the region is birth rate. Let us take a closer look at the analysis of this indicator. According to the Territorial body of the Federal State Statistics Service in the Republic of Tatarstan, the areas with the lowest birth rate are areas of unsatisfactory and disadvantaged zones: Kamsko-Ustyinskii (8.2‰), Drozhzhanovskii (7.3‰), Apastovskii (7.0‰), Kaibitskii (6.9‰), Rybno-Slobodskii (6.8‰), Tetyushskii (6.5‰). All of them are geographically part of Kazan agglomeration.

Birth rate is influenced by many factors: the patterns of demographic behavior, marriage and divorce rates, involvement in the migration process, level of education, women employment, household income, etc. In this paper, we focus on the study of the birth dynamics depending on the share of women of reproductive age. This aspect is of great interest due to the fact that there is a decrease in the share of women of reproductive age. The authors of the article carried out a retrospective analysis and demographic forecast of the number of women of reproductive age using the cohort component method. The data obtained can be found in the author's publications [see, for example, 21].

The share of women of reproductive age comprises 44.5% of the total number of women. At the same time, the largest number is concentrated in the city of Kazan (47.3%), Elabuzhskii district (47.1%), city of Naberezhnye Chelny (45.6%), Pestrechinskii (45.4%) and Nizhnekamskii districts (45.1%). In our opinion, this is one of the most important indicators determining the further demographic development of respective territories. When determining the demographic potential of districts it is necessary to highlight the districts with the highest share of women aged 15–19 years: Drozhzhanovskii (15.9%), Aksubaevskii (15.5%), Kaybitskii (14.9%), Novosheshminskii (14.4%), Sarmanovskii (13.8%), Cheremshanskii (13.5%), Muslyumovskii (13.4%), Rybno-Slobodskii (13.3%). However, Drozhzhanovskii district has the lowest share of female population aged 30–34 years (9.6%), which largely determines the present unfavorable demographic situation in the district. Most districts today are in unsatisfactory and even disadvantaged demographic zones, but given the high share of young women of reproductive age, these districts will be able to significantly improve their demographic situation in the coming years.

Based on the data of recent years, many districts in the south of Kazan agglomeration have serious demographic problems, and the districts of the northern part of Kazan agglomeration, on the contrary, have positive indicators of demographic gain. Zones are formed uniting several nearby districts with similar positive or negative demographic situation.

Some districts gradually fall under the zone of demographic depletion by birth potential – in total, women aged 40–49 years (who are most unlikely to give birth to children) comprise 1/3 or more of women of reproductive age in municipal areas, that is, in these areas, these women are unlikely to contribute to population reproduction. In Kazan, this share is only 25% while in Novosheshminskii district it is 39%, in Muslyumovskii – 38%, in Drozhzhanovskii – 37%.

Low birth intensity in areas such as Drozhzhanovskii and Kaybitskii is due to the low share of women at the peak of fertility (aged 24–34). In a number of municipal districts of the Republic, where low birth rate was recorded in 2018 (Aksubaevskii, Drozhzhanovskii, Kaybitskii, and Rybno-Slobodskii), there is a high share of women of the youngest age groups (aged 15–19), which in the long term significantly increases the probability of increasing birth rate in the absence of migration from these areas. A completely different situation is observed in the districts that provide high fertility for 2018, but have a low share of women of the youngest age group aged 15–19, which will determine the birth rate in the medium term: Almetyevskii, Vysokogorskii, Zelenodolskii, cities of Kazan and Naberezhnye Chelny. Cities compensate for fertility through migration from rural areas due to the fact that women from age groups at the peak of their fertility migrate.

According to the analysis, one and the same district today may be in the demographic risk zone while having the prospects of improving the demographic situation, provided there is no outflow of young people to cities. Migration loss rate among rural women is 2.5 times higher than that among men, and among women of working age – almost 4 times higher. As a result of this predominance of women in migration outflow, the gender imbalance in this age group is significantly increased and the possibility of starting a family is lost.

On the one hand, the reproductive potential (the absolute number of women of reproductive age) is higher in the city due to higher concentration of women of reproductive age in urban areas. On the other hand, the number of children born to one woman during her lifetime is higher in rural areas. Territorial differences should be taken into account when identifying the causes that affect reproductive strategies. An increase in total fertility rate of the rural population is provided, first of all, through stable positive dynamics of the value of this indicator for the second and subsequent births. A decrease in total fertility rate (TFR) in rural areas since 2015[7] is only due to the change in the child's place of birth registration, which is associated, inter alia, with the optimization of maternity hospitals in the districts. According to demographic studies, TFR in rural areas in Russia is growing at a faster pace. In 2014 it was higher than in the city by 47% due to stable positive dynamics of this indicator for the second and subsequent births.

During 2015–2017[8], on average there was a slight increase in the average age of motherhood in Tatarstan municipalities. Thus, the average indicator for municipal districts increased from 28.18 years in 2015 to 28.59 years. However, if we consider the change in this indicator separately in the order of births, we should note a more noticeable increase in the average age of a mother at the birth of the first child. On average in municipal districts, the age of a mother at the birth of first children increased from 25 in 2015 to 25.5 years, which indicates the ongoing process of women's postponing their decision to have children. The average birth age of the second child during the analyzed period remained stable, fluctuations were very insignificant, the age of a mother at birth of children of the third and subsequent orders in 2017 even slightly decreased compared to the previous two years. This shift in the birth scheme can be explained by a positive impact of demographic policies, in particular maternity capital, on this category of mothers. In turn, the ongoing process of "motherhood ageing" is largely due to the postponement of first-born children.

As for the differentiation of regions in Tatarstan by average age of a mother at birth, data analysis helps draw the following conclusions.

1. The range of general indicators of an average age of a mother (including children of all orders) is quite wide, the spread of an average age of motherhood in municipal districts is from 26 to 30 years in 2016 and 2017. The standard deviation for this indicator is 0.88 in 2017.

2. The areas with the lowest average mother's age at birth as of 2017 are: Sarmanovskii (26.8 years), Leninogorskii (26.9 years), Atninskii (27.2 years), Aksubaevskii (27.5 years), and Novosheshminskii (27.5 years).

3. The highest average age of motherhood at the end of 2017 is observed in the following municipal districts: Agryzskii (30.9 years), Zelenodolskii (30.2 years), Kamsko-Ustyinskii (30 years), Nurlatskii (29.6 years), and Verkhneuslonskii (29.5 years).

4. There is a particularly wide range of an average age of a mother at the birth of the first child (21–29 years), the standard deviation for this indicator in 2017 was 1.66. The "youngest mothers" in 2017 live in Atninskii (21.4 years old) and Alkeevskii (22.6) districts; Nurlatskii (28.9) and Laishevskii (29.3) districts have the highest rate of average age of a mother at the birth of the first child.

[7] EMISS state statistics. Available at: https://fedstat.ru/indicator/31517 (accessed: 16.02.2019)

[8] *Demographic Yearbook of the Republic of Tatarstan. 2018: statistics book*. Tatarstanstat. Kazan: Izdatel'skii tsentr Tatarstanstata, 2018. 162 p.

Table 2. Ranking of municipal districts of the Republic of Tatarstan according to the current demographic situation for 2017

Sub-zone	Rank	Municipal district
I. Prosperous	1	Sabinskii
	2	Pestrechinskii
	3	Baltasinskii
	4	Almetyevskii
	5	Kukmorskii
	6	Vysokogorskii
	7	Nizhnekamskii
	8	Laishevskii
	9	Elabuzhskii
II. Relatively prosperous	10	Arskii
	11	Tyulyachinskii
	12	Alekseevskii
	13	Mendeleevskii
	14	Zelenodolskii
	15	Tukaevskii
	16	Bavlinskii
	17	Alkeevskii
III. Satisfactory	18	Yutazinskii
	19	Axnakaevskii
	20	Atninskii
	20	Nurlatskii
	22	Novosheshminskii
	23	Bugulminskii
	23	Mamadyshskii
	25	Agryzskii
	26	Sarmanovskii
IV. Dissatisfactory	27	Cheremshanskii
	28	Zainskii
	29	Apastovskii
	29	Spasskii
	31	Verkhneuslonskii
	31	Chistopolskii
	33	Leninogorskii
	34	Rybno-Slobodskii
	35	Muslyumovskii
V. Disadvantaged	36	Aksubaevskii
	36	Aktanyshkii
	36	Buinskii
	39	Kaibitzkii
	40	Drozhzhanovsky
	40	Menzelinskii
	42	Kamsko-Ustinskii
	43	Tetyushskii

Source: compiled by The Center for Family and Demography at Tatarstan Academy of Sciences.

5. In general, the process of postponing childbirth has mostly affected the districts with centers that are cities of republican status or located close to urban districts (Nizhnekamskii, Nurlatskii, Zelenodolskii, Verkhneuslonskii, Laishevskii districts). The districts where the median age of motherhood remains low have predominantly rural population (Sarmanovskii, Atninskii, Novosheshminskii, Tukayevskii).

As a result of intensifying the state policy on fertility a significant impetus for changing reproductive behavior was given to women of older age (35-39) who started giving births to children, which would not take place without the measures of the demographic policy. In most districts (35) of Tatarstan, this age group ranks fourth in the ranking of the implementation of reproductive potential. An exception is Apastovskii district, where this category of women follows women aged 40–44, as well as Arskii and Leninogorskii districts, where they are behind women of younger ages in the number of births, ranking third. Women aged 35–39 account for the majority of births of third and further children.

Conclusion

The population and the demographic structure are two most important socio-economic indicators that characterize the sustainability of each municipal district. The deterioration of the demographic situation is facilitated by the decline in the population' living standard, the reduction in the number of jobs, the ongoing socio-economic changes, as well as people's poor care of their health. The observed unfavorable demographic processes are caused by the latest trend to have a small family [22], a steady decline in the number of marriages, and uncertainty about the future. A decrease in the number of children and adolescents leads to an increase in the share of elderly people in the age composition, which leads to population ageing.

The method of rapid analysis of demographic processes in the Republic of Tatarstan developed by The Center for Family and Demography at Tatarstan Academy of Sciences is a differentiated analysis of demographic prospects of agglomerations in Tatarstan, taking into account their initial potential [23] (*Tab. 2*). The main trends in the development of rural settlements at the present development stage should include the improvement of positions of a number of municipal districts, especially those located in sub-urban areas of large cities. Previously, the expansion of cities led to a significant decrease in the rural population around the agglomeration zone, while at this stage, rural settlements, on the contrary, feel more comfortable being part of urban agglomerations. For example, municipalities adjacent to the city of Kazan (Laishevskii, Pestrechinskii and Vysokogorskii) have significantly improved their positions, which indicates the growing importance of sub-urban areas in difficult socio-economic conditions.

It is noteworthy that Kazan agglomeration consists of areas with highest (most areas of the Kama region) and lowest (most areas of the Volga region) integrated indicators of demographic development.

Thus, the analysis of demographic indicators, as well as the integrated rank of municipal districts in Tatarstan helps find out that:

– The most favorable situation is observed in Kazan agglomeration (1. average integrated rank is 20; 2. Most municipal districts of the prosperous and relatively prosperous sub-zone are included in this agglomeration, which makes up 48% of the total number of districts in this agglomeration).

– The average position is occupied by Almetyevsk agglomeration (1. average integrated rank – 21; 2. The subzone with a satisfactory situation includes municipal districts, which is 54.5% of the total number of districts in this agglomeration).

– The least attractive demographic situation is in Kama agglomeration (1. Average integrated rank – 23; 2. An almost equal number of municipal districts in each sub-zone). It is noteworthy that the demographic situation in this agglomeration in 2016 was a little better.

According to the study of the three agglomerations and all 43 municipal districts, the demographic problem remains one of the most acute in the majority of districts. The authorities in these districts are well aware that it is necessary to pursue intensive demographic and family policy [24], take urgent measures to improve the demographic situation, but this problem can be solved only by addressing many economic and social issues. In a number of districts it can be seen that programs designed to improve the standard of living in general, especially those involving youth from rural areas, ensure positive results.

The theoretical and practical contribution of this study consists in the analysis of the demographic potential of a region through the strategy of accumulating human capital, including the social and demographic focus, rather than from the geographical and economic point of view.

The experience of Tatarstan in calculating the integrated rank of municipal districts for main demographic indicators and identifying zones risk and resilience can be considered by the agglomerations in Russia (Moscow, Saint-Petersburg, Voronezh, Rostov-on-Don, Volgograd, Krasnodar, Nizhny Novgorod, Samara-Togliatti, Kazan, Ufa, Perm, Saratov, Yekaterinburg, Chelyabinsk, Omsk, Novosibirsk, Krasnoyarsk, Irkutsk, Vladivostok, Nakhodka, Khabarovsk, Tyumen, Tomsk, Barnaul, Izhevsk, Makhachkala, etc.[9]).

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Modern Forms and Methods to Motivate the Population to Engage in Creative Labor Activity*

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Abstract. Socio-economic changes are accompanied by the growing complexity of labor and transformation of its content in the direction of innovative and creative aspects. The spread of such labor makes it necessary to search for new approaches to motivate employees to use their labor and creative potential effectively. Our study considers new forms of non-financial incentives such as taking part in participatory governance, creating management systems designed to ensure the involvement of talented and creative employees in innovation projects and promotion of their career advancement. The goal of our research is to study the impact of traditional (fair pay, good working conditions, etc.) and modern (creative approach, participation of employees in corporate management, etc.) motivation factors on the quality of labor potential and parameters of its implementation (in particular, productivity and wages). The novelty of our

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study consists in the fact that it tests methodological aspects that characterize the quality of labor potential and individual parameters of its implementation in the population groups that differ in their degree of satisfaction with motivation factors, taking into account the degree of their relevance. The difference between the approach we apply and the existing ones is that in our case it is not only possible to overcome the problem of judgment motives as objectified social facts, but also to justify a thesis according to which the role of modern motivation factors in the work of the population is underestimated. In particular, the latter is due to the fact that the results of the analysis have shown that the low importance of modern motivation factors is associated with a higher quality of labor potential, productivity and wages, while the high importance of traditional motivation factors can often lead to opposite results. Methodological provisions regarding the assessment of specific aspects of labor activity and daily life of the population concerning their satisfaction with them and their importance can be used as a tool to analyze the existing or emerging motivation systems at the organizational level.

Key words: motivation, material and non-material incentives, labor potential, implementation of labor potential, creative labor activity, satisfaction with various aspects of labor life.

Traditional and new forms of employee incentives.

Globalization processes, global competition and the new technological mode inevitably changes social and labor relations. More and more often, it is not only about labor activity as such, but about creative labor activity of the population. This concept is based on labor activity, which is considered from the standpoint of both quantitative and qualitative characteristics of the work performed (among the latter, for example, the discipline of participants), but also the nature of this activity. Taking the latter into account (the nature of activity) creates prerequisites for the division of labor activity into creative and non-creative (Popov A.V., 2012)[1]. Accordingly, creative labor activity can be characterized as a type of labor activity, involving the population in the processes of creating new ideas, improving organizational technologies, developing new products. The implementation of these processes becomes possible due to the participation of employees with abilities associated with the development and implementation of new, promising ideas in the individual activity of the subject, in activities of the social system in which the subject operates at the cognitive and behavioral level (Yagolkovskii S.R., 2013)[2], and thus the solution of tasks that contribute to the improvement of quantitative and qualitative results of labor (Bogdanchikova T.V., 2006)[3]. The innovative nature of labor processes is ensured through increased requirements to the employees, as well as through the need to develop new systems of personnel motivation [1].

The analysis of motivation problems is connected with the correlation of motives acting as an internal motivation of individuals and stimuli forming their stimulation field. The concept of motivation comes from the unity of a motive and a stimulus, and the motivational mechanism is regarded as a type of interaction, stimulation field, motives and praxeological "safety" of an individual causing

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necessary activity without coercion and guiding it accordingly (Yadov V.A.[4], Yakobson M.P.[5], Kovalev V.I.[6], Shavel' S.A.[7]). It should be emphasized that in this case, the motive is not characterized as any impulse that arises within a person, but as its conscious nature that leads a person to the willingness to act. The stimulus does not cause the action directly, but indirectly, through a motive, so the stimulus is the "driver" of the motive, and the latter, in turn – the action. The latter is emphasized in the research by H. Heckhausen, who considers motivation as a call to action to a specific motive (the motive, rather than an incentive)[8].

As shown above, there is a certain correlation between labor activity and creative labor activity, these concepts are related as "whole – part of the whole", in the latter case, not only the features inherent in the whole (labor activity), but also the specific features of the part associated with the creative nature of processes. This, in turn, may mean that, speaking about the motivation of labor activity, on the one hand, and creative labor activity, on the other hand, one can find both general and special. This idea can be illustrated as follows: if, for example, all employees at the company find it important to create conditions (organizational, technological, economic, social, psychological) to ensure higher results of labor activity, then in the case of those who show themselves as creative it becomes important to maintain the conditions that lead to the best realization of creative potential. Both employees in general and the creative ones find the content of labor greatly important, but in the latter case it becomes important to have a creative component at work, an opportunity to participate in management and promotion. Both groups of employees emphasize the importance of material rewards, however, in the first group, workers are stimulated for their high level of labor activity in general, while the second – mostly for creative production, enthusiasm and initiative. Based on the above, it turns out that creative employees can be more often focused on providing ample opportunities for personal and professional development, for participation in complex projects, in solving non-standard creative tasks, for participation in participative management, etc.

The employee's motivating factor in self-realization of creative thinking, creativity, generating an idea or creating a new product, is hampered by the fact that some managers keep to traditional "old school" ways, implying certain rules and algorithms, without creating conditions for activating creative activity [2]. However, there are examples of enterprises and organizations whose management bodies create the necessary (organizational, technological, economic, social and psychological) conditions for generating creative activity of employees. A number of companies (JTI, METRO, Noril'skii nikel', Evroset', etc.) have developed corporate programs (Akhmetshin, Morozov et al., 2018 [3]). Most of them are characterized by the use of an integrated approach to employee incentives (along with the use of tangible non-material forms of incentives).

The use of an integrated approach lies in creating a system of labor motivation, which consists of material and non-material incentives, with the main goal being to ensure

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quality and productive work of employees, attracting and retaining the most talented professionals, and disclosing employees' personal potential. Thus, at the present development stage, the division of stimulation methods into two groups still exists, yet the forms in which they are implemented may differ from traditional ones.

In addition to traditional types of material incentives (wages, benefits), in modern conditions there are "motivational innovations" such as profit participation (when using this type, the share of profit is established, from which an incentive fund is formed through which personnel categories who can actually affect the profits of the organization are encouraged), a bonus system (remuneration, wage bonus, annual bonus, Christmas and New Year bonus, work experience bonus, bonus for absence of absenteeism, target bonuses, thirteen month's pay), participation in the share capital (based on purchase of shares of the organization and receipt of dividends: purchase of shares by an employee of the organization can occur both on a preferential and a free of charge basis), payment of transportation costs, health care programs (voluntary health insurance policy), employee training at the expense of the organization, irregular extra payments (gifts for holidays, cash rewards to best employees, etc.), packages to health resorts and recreation centers, flexible working hours, payment of various kinds of insurance, systems for obtaining preferential loans, etc.

Forms and methods of non-material incentives provide a more effective impact on labor results. The complexity of non-financial incentives is that the methods should be chosen personally for each employee as each person's motives vary significantly.

Along with the traditional forms of non-material incentives (diplomas, prizes, career growth, professional competition, social package), there are *all sorts of internship at the company's expense are currently used, emphasizing the important role of an employee* (for example, a boss greets them by shaking hands and invites to a private birthday party, or consults on important issues, etc.). D.), *greater autonomy in decision-making for an employee*, if it does not harm the company as a whole, *complex projects and non-standard creative tasks that are interesting to solve*, comfortable conditions for an employee (modern technologies, a separate office, etc., if it is necessary to improve the labor quality, creating a favorable psychological climate in the team (through the use of methods such as: praise and approval of employees' actions; conversation with the employees on non-work topics; birthday greetings; corporate entertainment such as holiday parties or trips), etc.

An example of *an integrated approach to employee incentives* is the policy of METRO AG international trade holding, focused on *the cultivation of professional personnel, providing ample opportunities for personal development* (Akhmetshin et al., 2017 [4]). Such an approach is used in PAO Noril'skii Nikel' mining and metallurgical company – an organization which creates conditions for life-long education, career development in a team of like-minded people, realization of employees' creative potential through participation in various projects.

The effective use of various types of incentives makes it possible to influence aspects such as staff turnover, productivity and involvement in affairs of the organization.

Corporate incentive systems are a set of interrelated methods of personnel motivation created in the company based on its corporate culture to implement strategic goals, which, in turn, are formulated taking into account factors

in internal and external environment. The most important characteristic of this motivation system is a set of applied incentives expressed in the methods of motivation at the company level and forming common goals, values and standards.

The establishment of corporate incentive systems involves corporate awards, bonus payments based on the results of activities according to the principles of personnel evaluation developed in organizations, opening savings funds for employees, provision of preferential loans (including for housing construction), full or partial coverage of education costs, as well as employee training, investing in their children's education, etc.

An example of modern types of incentives is the use of IT and business games. For example, Evroset' uses a system of motivation in the form of a business game, which covers 80–85% of company's employees [3]. In the game, there is "virtual money" – golden coins; the participants collect coins performing their key performance indicators (KPI). The rules of the game imply that regional heads may invest the accumulated coins in themselves, their people, trade outlet of their sector or simply monetize them, etc.

Modern forms of financial incentives include *employee's assessment of work by colleagues or an opportunity to independently choose their own reward*. This principle assumes that employees have an opportunity on a monthly basis: in the first case – to give a certain number of points to their colleague, in the second – to get points for good work and excellent results. Thus, accumulating points an employees can get an equivalent in cash (or expressed in a different form) after a certain period of time. Such methods of material incentives are common, for example, in Zappos, an American company specializing in online sales of shoes. In Facebook, one of the forms of material incentives is a weekly rewards *for employees who distinguished themselves in labor results to a greater extent compared to others* (tickets to concerts, popular gigs, etc.) [5].

Another modern trend is participative management, which is ideally based on the recognition of mutual interests of members of an organization, integration of these interests and, thus, on increasing the interest of employees in the results of their work. There are three key forms of participative management: employee participation in management, in profit and in ownership. *The first form provides employees an opportunity to participate in discussion and decision-making concerning the organization's activities, both at the working group level and at other levels* (for example, at the level of production units and the organization as a whole). In European countries such as Germany such a principle of representation is enshrined in law and is associated with the participation of employees in supervisory boards and other governing bodies. This practice is becoming widespread in the Russian economic environment.

Another form of manifestation of participatory management is the participation of employees in profits and ownership, which is lies not only in distribution of part of profit between employees according to the organization performance or at the end of the term established in the trust agreement, but also in identifying *talented, tolerant employees prone to action and engaging them in solving various problems* [6]. *It is the latter that leads to the stimulation of creative activity, the development of ideas by different categories of creative employees, which can be accompanied first by an increase in profits, and then – its redistribution according to the contribution of participants.* In case the profits of an organization are reduced, the situation

may be the opposite – the amount of payments to employees may be reduced. In addition to these forms, in some cases we are talking about the participation of workers in gain sharing, which is very close to the previous method of stimulation. Nevertheless, the former involves reducing the cost of working time per unit of output, improving its quality, increasing labor activity, focus on interaction between the subjects of activity.

It should be emphasized that the forms of participative management outlined above have both advantages and disadvantages. On the one hand, the use of such forms creates prerequisites for raising employees' awareness of the organization's activities to settle various conflicts, strengthen the integration of company members, overcome the alienation of employees from the work results. On the other hand, the transfer of decision-making power to employees can "blur" the responsibility in collective decision-making, can lead to a greater prevalence of less risky and less innovative decisions, to an increase in costs of coordination and distribution of work[9]. Therefore, decisions on the use of certain forms of incentives should be associated with the comparison of their positive and negative aspects, their benefits and costs. In general, it is noteworthy that the introduction of participative management will help attract employees to the discussion of problems and development of solutions, form participation in the changes taking place in the organization, and in some cases – to public recognition of work results [1, pp. 44–45].

Such management systems are aimed at ensuring the participation of more talented and creative employees in the management of an organization based on engagement in innovative projects and career growth [7, pp. 43–44]. The implementation of such an approach, according to Harvey Levine [8], creates prerequisites for overcoming one of the main barriers of creative activity associated with lack of trust in management.

The massive transition to the contractual system of employment (performance-based contracts) is currently a widespread phenomena. Since 2012, Russia has been actively developing a system of performance-based contracts in the public sector (healthcare, education, science). The objective of a performance-based contract is to make remuneration as reasonable and fair as possible by setting individual performance indicators and incentive criteria for each employee. A performance-based contract is a more detailed and specified employment contract containing [9] the following conditions:

– a specified job description and a detailed list of duties;

– terms of payment, including incentive payments;

– indicators and criteria for assessing performance in relation to incentive payments;

– the amount of payments for collective work results;

– measures of social support.

The point of a performance-based contract as an economic category is to establish mutually beneficial conditions for an employer and for a particular employee by an employment contract, i.e. it also performs a motivational function.

Summarizing, we note that amid the socio-economic changes, labor is complicated, its content is transformed, which is expressed in various creative and innovative aspects, which makes the development of new ways to encourage employees to use creative abilities

[9] Participative management. Available at: http://www.pragmatist.ru/motivaciya-truda/partisipativnoe-upravlenie.html (accessed: 11.04.2019).

relevant. Despite such changes, two main ways of stimulation (material and non-material) continue to prevail, yet the forms of their implementation are being transformed. Along with the traditional forms and methods of stimulation, new types are created, in particular, corporate systems, IT, business games, performance-based contracts, participative management, etc.

The latter are partly related to corporate incentive systems that take into account aspects related to the peculiarities of employee evaluation: for example, the peculiarities of assessment (management/other employees), the frequency of rewards, the opportunity to choose various types of remuneration, etc. In modern conditions, material incentives for employees can be manifested through the formation of savings funds for employees of enterprises, full/partial coverage of costs of education for employees and their families, provision of preferential loans (including for housing construction), etc.

One of the forms of non-financial incentives is engagement in participative management, which is associated with the mutual recognition of interests of members of the organization, increasing the employees' interest in work results. We emphasize that such management systems are focused on ensuring the participation of talented and creative employees in organization management based on career growth and engagement in innovative projects. This becomes possible when systems of lifelong education and professional development are created, along with the environment for realizing employees' creative potential, including their participation in various projects. It is noteworthy that the use of these forms of stimulation often increases trust in the organization's management system, provides a better understanding of processes taking place at the organizational level, ensures the employees' position in the team and their opportunities in the implementation of group projects, thereby creating prerequisites not only for development, but also for the realization of accumulated potential (primarily intellectual and creative).

In view of the above, the study takes into account both traditional motivational factors (pay equity, working conditions, etc.) and innovative ones related to creativity and participation in management. The issues of labor motivation in this article are considered with regard to the Russian population since many forms and methods of motivation are innovative for the population in our country.

The purpose in to study the impact of traditional (pay equity, working conditions, etc.) and modern (a creative approach, employees' participation in management, etc.) motivational factors on the quality of labor potential and parameters of its implementation (in particular, productivity and wages). The research novelty lies in the testing of methodological aspects which characterize the quality of labor potential and individual parameters of its implementation in population groups differing in their satisfaction with motivational factors, taking into account the degree of their importance.

Due to the complex processes of labor potential reproduction, in particular its formation and use, the study focuses on the results of these processes: in the first case, attention is paid to the values of quality indices of labor potential, in the second – the values of indicators characterizing productivity and wages.

Methodological aspects of the research. Describing the methodological aspects, it should be noted that labor motivation is often analyzed through direct questions, involving the

choice of the most significant motives, a point assessment of their importance, their ranking. A similar approach implemented, for example, in the work of I.N. Vitushkina (2004 [10]) lies in the analysis of average points in importance and satisfaction of each motive, as well as in their ranking.

The most prevalent motives are often organization of labor, labor content, sanitary and hygienic working conditions, remuneration, relationships with colleagues and heads in terms of work issues, etc. These aspects, as noted by A.L. Temnitskii (2013 [11]), were constantly taken into account and monitored in long-term sociological studies. Thanks to these it is possible to build a hierarchy of with different aspects of labor situation and working life in general.

Despite the availability of studies in this area, some aspects remain controversial, which is reflected in the works of I.M. Popova, G.P. Bessokirnaya, V.E. Shlyapentokh. These aspects include the range of opinions when determining the position of factors such as working conditions, relationships among colleagues, and certain unanimity regarding the stimulating role of wages. Issues related to defining types of motivation ("maximum income at the cost of maximum labor" or "guaranteed income at the cost of minimum labor", etc.) still require extra analysis [12, p. 106]. Aspects involving the distinction between "motives understood" and "motives performed" or, rather, "known" motives and "genuine" motives, "real", "true" motives and "proclaimed" motives [13]. Regarding the latter, it is emphasized that verbal judgment motives become similar to "proclaimed" motives. As noted by I.M. Popova (1976 [14]), verbally expressed estimates of any motivational factor that may occupy a particular position in the overall ranking of motives may not indicate its real importance for labor.

A similar opinion belongs to V.E. Shlaypentokh (1973 [15]), who emphasizes that the respondents' estimations regarding motives for certain actions such as employment or dismissal, one needs to be critical, to compare subjective and objective information, not filtered through a "respondent's evaluation framework". One of the possible ways to overcome this difficulty is to take into account the specific results of work along with motivational factors. Back in 1976, I.M. Popova pointed out the necessity to analyze the actual work behavior of employees when studying their employment preferences. A similar approach was used in the studies conducted under the leadership of O.I. Shkaratan, involving the comparison of elements of the working situation with the results of work, rather than with job satisfaction as such. In the 2000s, the use of this approach was justified in the study of A.G. Zdravomyslov and V.A. Yadov (2003 [16]). It was noted that the factors affecting productivity do not always determine the level of job satisfaction. Accordingly, there is a need to check the significance of labor motives with real labor indicators. The preservation of relevance of considering this issue was referred to in the work by F. Herzberg [17]. In his review study, which included monographs and articles on factors that shape attitudes to work and the results of attitudes to work in productivity and quality of work, he noted that "there is confusion and a mess in this sphere". In some cases (e.g. Abercrombie N., Hill S., Turner B.S., 2004[10]; Ilyasov F.N., 2013 [18, p. 18]. 20–21], etc.) it is emphasized that the correlation between labor motivation and productivity is not revealed and data on the correlation between motivation and job satisfaction, as well as the quality of work are still unconvincing.

[10] Erofeev S.A. (Ed.). Abercrombie N., Hill S., Turner B.S. *The Dictionary of Sociology*. 2nd edition. Moscow: Ekonomika, 2004.

Table 1. Certain aspects of working life: satisfaction and importance

No.	Importance of motives and incentives	Satisfaction with the aspects of working life
1.	Fair payroll	Equity pay
2.	Provision of extended social package	Completeness of the social package
3.	Decent working conditions that contribute to the preservation of health and improve performance	Sanitary and hygienic conditions and safety at work
4.	Interest in the results of their activities, the manifestation of interest in the work	Content of work
5.	Favorable psychological climate in the team	Psychological climate in the team
6.	Transparent system of promotion and career development	Career opportunities
7.	Internal interest in creativity	Creative work
8.	Democratic management in an organization, conditions for free exchange of opinions	Opportunity to participate in management decision-making

Taking into account the above aspects, we use an approach in which we studied the correlation between indicators that reflect, on the one hand, the satisfaction with certain aspects of labor activity, on the other hand, the parameters characterizing the quality of labor potential and its implementation.

The satisfaction with certain aspects of working life was analyzed using the answers to the following questions: 1) "Are you satisfied with the following aspects of your working and everyday life?"[11] And 2) "Please, evaluate the importance of motives and incentives listed below...?[12]. The aspects that were taken into account in the study are presented below (*Tab. 1*).

It is noteworthy that along with the traditional motivational factors used in research works related to, for example, fair pay or working conditions that contribute to the preservation of health, we also take into account aspects that involve the possibility of using a creative approach, with participation in the organization's management. The latter, as noted above, is to some extent related to the practical implementation of principles of participative management.

At the first stage of the research we revaluate satisfaction based on the importance of the aspects of working life. To solve this problem we used the methodological aspects developed for similar purposes by G.G. Tatarova and G.P. Bessokirnaya (2014).

Since the initial point scales were of different dimensions for the two above-mentioned aspects (in one case a 4-point scale, and in the other – 5-point) we reduced the scales to one dimension. Thus, satisfaction adjusted for importance was measured on a scale from 1 to 5 points (*Tab. 2*).

The use of such an approach, involving satisfaction along with the importance of certain aspects under consideration is due to the fact that the use of direct questions for the study of labor motivation does not help identify real motives that correspond to the content of employees' needs and interests. The latter is due to the fact that judgment motives are considered an objective form of existence of ordinary knowledge and act as social facts, ultimately conditioned by the socio-economic conditions of activity [19].

Moreover, we consider the satisfaction in general and the as such and satisfaction adjusted for importance for each aspect of the working life, as well as aspects related to parameters characterizing labor activity. Regarding the latter, we took into account the average score

[11] Answer options: satisfied; rather satisfied; undecided; rather dissatisfied; not satisfied.

[12] Answer options: very important; rather important; more or less important; not important at all.

Table 2. Scheme for calculating satisfaction taking into account importance of certain aspects of work

Importance	Satisfaction	Satisfaction, adjusted for significance
5 – very important [4 и 3]	5 – satisfied [1 и 2]	5
	3 – average satisfaction level [3]	3
	1 – not satisfied at all [4 и 5]	1
3 – more or less important [2]	5 – satisfied [1 и 2]	5
	3 – average satisfaction level [3]	3
	1 – not satisfied at all [4 и 5]	2
1 – not important at all [1]	5 – satisfied [1 и 2]	5
	3 – average satisfaction level [3]	3
	1 – not satisfied at all [4 и 5]	4
Note. Square brackets demonstrate points before reducing them to one dimension.		

(on a 10-point scale) estimates of respondents in relation to their productivity, as well as parameters related to the implementation of both labor potential in general and its individual components (in relation to a motivational factor such as "democratic management in an organization, conditions for free exchange of opinions"). Moreover, we take into account the values of indices of labor potential and its components (with respect to all selected aspects to the working life).

The information framework of the research is represented by data of the monitoring study of the quality of labor potential conducted by the Vologda Research Center of RAS in 2018. The sample is quota, with proportional placement of observation units, it includes 1,500 people of working age (men – aged 16–59; women – 16–54) in Vologda and Cherepovets and eight districts of the Vologda Oblast. The sample representativeness is ensured by proportions between urban and rural population, between the inhabitants of different types of settlements (rural settlements, small and medium cities), the sex and age structure of the adult population in the Oblast, as well as the proportions between the employed, unemployed (listed on the labor exchange) and economically inactive population (school and university students, housewives and other unemployed people). The value of random sampling error is 3–4 % at a confidence interval of 4–5 %. The applied method of survey is a questionnaire at the respondents' place of residence. The questionnaires were processed in SPSS (Statistical Package for the Social Sciences).

Research results. In the study we consider satisfaction as such and adjusted for importance for each aspect of the working life (*Tab. 3*).

Describing these two types of satisfaction (excluding importance/adjusted for importance), in each case, taking into account the answer options "satisfied" and "rather satisfied", we note the absence of changes in almost all eight aspects of the working life, which is manifested in unchanged ranks of these two types of satisfaction (*Tab. 4*). Nevertheless, in most aspects of the working life, except for participation in management decision-making, satisfaction is decreased, especially by the psychological climate in the team, fair payroll and the content of work (by 7.7; 5.5 and 4.7%, respectively)[13].

If we consider importance as such, then the leaders in the ranking by degree of importance of motives and incentives are: fair payroll, favorable psychological climate in the team, decent working conditions, i.e. traditional aspects of motivation. While the opposite

[13] In other cases the changes are insignificant – less than 3% (sample errors).

Table 3. Satisfaction with different aspects of working life (excluding importance/adjusted for importance), % of total respondents

Aspects of working life	Answer option	Satisfaction excluding importance	Satisfaction adjusted to importance
Fair payroll	Dissatisfied + rather dissatisfied	25.2	25.9
	Undecided	33.9	38.7
	Satisfied + rather satisfied	40.9	35.4
Completeness of the social package (basic and extra social guarantees)	Dissatisfied + rather dissatisfied	23.9	20.7
	Undecided	34.7	38.7
	Satisfied + rather satisfied	41.3	40.7
Sanitary and hygienic conditions and safety at work	Dissatisfied + rather dissatisfied	18.1	15.9
	Undecided	33.3	38.7
	Satisfied + rather satisfied	48.5	45.4
Content of work	Dissatisfied + rather dissatisfied	15.4	14.9
	Undecided	32.2	37.2
	Satisfied + rather satisfied	52.5	47.8
Psychological climate in the team	Dissatisfied + rather dissatisfied	10.9	14.3
	Undecided	31.2	35.5
	Satisfied + rather satisfied	57.9	50.2
Career opportunities	Dissatisfied + rather dissatisfied	23.5	21.3
	Undecided	38.6	43.6
	Satisfied + rather satisfied	38.0	35.1
Creative work	Dissatisfied + rather dissatisfied	20.5	18.4
	Undecided	39.8	42.7
	Satisfied + rather satisfied	39.7	38.9
Opportunity to participate in management decision-making	Dissatisfied + rather dissatisfied	26.5	22.3
	Undecided	41.2	44.2
	Satisfied + rather satisfied	32.3	33.6
Source: data of monitoring study of the quality of labor potential, VoIRC RAS, 2018.			

Table 4. Ranking of those satisfied with various aspects of working life, (answer option in total “satisfied”, “rather satisfied”), % of total respondents

Satisfaction excluding importance	%	Rank	Satisfaction adjusted for importance	%	Rank	Difference
Psychological climate in the team	57.9	1	Psychological climate in the team	50.2	1	-7.7
Content of work	52.5	2	Content of work	47.8	2	-4.7
Sanitary and hygienic conditions and safety at work	48.5	3	Sanitary and hygienic conditions and safety at work	45.4	3	-3.1
Completeness of the social package (basic and extra social guarantees)	41.3	4	Completeness of the social package (basic and extra social guarantees)	40.7	4	-0.6
Fair payroll	40.9	5	Fair payroll	35.4	6	-5.5
Creative work	39.7	6	Creative work	38.9	5	-0.8
Career opportunities	38.0	7	Career opportunities	35.1	7	-2.9
Opportunity to participate in management decision-making	32.3	8	Opportunity to participate in management decision-making	33.6	8	1.3
Source: data of monitoring study of the quality of labor potential, VoIRC RAS, 2018.						

Table 5. Please evaluate the importance of motives and incentives listed below for the manifestation of your creativity at work (innovative proposals, inventive activity; answer option in total "very important", "rather important"), % of total respondents

Motives and incentives	Vologda	Cherepovets	Districts	Oblast	Rank
Fair payroll	87.4	84.0	74.5	80.6	1
Favorable psychological climate in the team	83.1	75.7	71.5	75.8	2
Decent working conditions that contribute to the preservation of health and improve performance	83.1	79.1	69.7	75.8	3
Opportunity to earn a reward and other bonuses	80.1	73.1	66.4	71.9	4
Transparent system of promotion and career development	77.4	56.8	66.7	67.0	5
Opportunity for professional development	71.8	61.3	61.3	64.1	6
Interest in the results of their activities, the manifestation of interest in the work	75.4	61.8	58.3	63.9	7
Moral encouragement of creativity (gratitude, certificate of honor, state award, etc.)	66.8	62.8	59.1	62.1	8
Desire to succeed, be recognized	72.1	58.3	57.9	61.8	9
The desire for professional fulfilment	68.5	60.1	57.3	61.1	10
Extended social package (VMI, payment of mobile connection, partial compensation for sports activities, etc.)	64.2	67.1	55.3	60.9	11
Desire to benefit from implementation of new ideas	68.1	56.8	58.1	60.4	12
Democratic management in an organization, conditions for free exchange of opinions	69.7	48.5	58.0	58.6	13
Internal interest in creativity at work	57.2	52.5	55.0	54.9	14

Note: the whole list of motives and incentives of different aspects of the working life is presented, points to importance of motives and incentives that relate to meaningful aspects of satisfaction are in italics.
Source: data of monitoring study of the quality of labor potential, VoIRC RAS, 2018.

"pole" of this is democratic of management in an organization, internal interest in a creative approach to work (*Tab. 5*).

It is noteworthy that, despite the importance of traditional motivational factors, this does not yet indicate that a high degree of satisfaction with them will provide a similar level of both quality of labor potential[14] and its implementation. The results of our sociological research indicate that the highest values of quality of labor potential were achieved, on the contrary, when aspects of labor life such as participation in management decisions and career development were important for employees (*Tab. 6*). While the lowest values of quality of labor potential were achieved when it was about the psychological climate in the team.

[14] The quality of labor potential was estimated based on the concept of qualitative characteristics of the population (Rimashevskaya N.M., Kopnina V.G., 1993) with a multilevel system of components of labor potential. The lower (first) level characterizes a person, taking into account their natural basis (physical health, mental health, knowledge and creativity) and involvement in social relations (sociability, morality, social claims, culture). At the intermediate (second) level, characteristics are generalized to four groups of basic qualities: psychophysiological, intellectual, as well as communicative characteristics and social activity, at the third level – to two components (energy and socio-psychological potential) (Rimashevskaya N.M., 1993). The integral quality of labor potential – social capacity – is a set of properties that determine labor efficiency in specific social conditions. The methodological tools of the study include a questionnaire consisting of blocks of statements corresponding to each of the lower (basic) qualities with ranking assessment scales according to the degree of respondents' consent with the proposed statements. The components were evaluated based on the index method as the ratio of the actual number of points on the scale to the maximum possible amount and took values from 0 to 1. The sociological framework of the research includes the Likert scales in calculating the qualities of the first level, the geometric averages in aggregating the qualities of the second and third levels and in calculating the summarizing indicator. The description of applied methodological tools is given, in particular, in the following article (Ustinova K.A., Chekmareva E.A. The impact of skills development on labor potential, its realization and choice of jobs. *Economy of Region,* 2016, vol. 12, no. 3, p. 730).

Table 6. Average index values of quality of labor potential among respondents satisfied with various aspects of working life (excluding importance/adjusted for importance; answer option, total "satisfied" and "rather satisfied"), points

Aspect of working life	Quality of labor potential, points In group of respondents satisfied with various parties aspects (excluding importance)		Quality of labor potential, points In group of respondents satisfied with various parties aspects (adjusted for importance)	
Participation in management decision-making	0.7226	(1)	0.7094	(1)
Career opportunities	0.7188	(2)	0.7082	(2)
Sanitary and hygienic conditions and safety at work	0.7052	(5)	0.7023	(3)
Fair payroll	0.7009	(7)	0.6992	(4)
Content of work	0.7050	(6)	0.6986	(5)
Creative work	0.7120	(3)	0.6978	(6)
Completeness of the social package (basic and extra social guarantees)	0.7082	(4)	0.6978	(7)
Psychological climate in the team	0.6953	(8)	0.6940	(8)
Note. Rank is in brackets. Source: data of monitoring study of the quality of labor potential, VoIRC RAS, 2018.				

Table 7. Average values of labor potential quality index in groups of respondents with different levels of satisfaction with wages, points

Satisfied and rather satisfied with:	Quality of labor potential, points In group of respondents satisfied with various parties aspects (excluding importance)		Quality of labor potential, points In group of respondents satisfied with various parties aspects (adjusted for importance)	
	satisfied with wages	dissatisfied with wages	satisfied with wages	dissatisfied with wages
Fair payroll	0.7009 (8)	–	0.7012 (8)	0.6028 (8)
Social package (basic and extra social guarantees)	0.7120 (5)	0.7007 (3)	0.7105 (7)	0.6631 (3)
Sanitary and hygienic conditions and safety at work	0.7125 (4)	0.6808 (6)	0.7118 (4)	0.6731 (1)
Content of work	0.7114 (6)	0.6810 (5)	0.7115 (5)	0.6587 (5)
Psychological climate in the team	0.7070 (7)	0.6683 (7)	0.7070 (6)	0.6665 (2)
Career opportunities	0.7200 (2)	0.7094 (2)	0.7167 (2)	0.6628 (4)
Creative work	0.7169 (3)	0.6840 (4)	0.7131 (3)	0.6455 (7)
Participation in management decision-making	0.7265 (1)	0.7143 (1)	0.7224 (1)	0.6521 (6)
Source: data of monitoring study of the quality of labor potential, VoIRC RAS, 2018.				

The research suggests that one of parameters affecting satisfaction with different aspects of working life could be the level of remuneration. The income level can have an impact on the person's priorities. Indeed, based on the index values of quality of labor potential presented in the last two columns of *Table 7* it is clear that for those satisfied with wages the first three positions are occupied by an opportunity to participate in management decision-making, career development, and creative work. However, for those who are not satisfied with their wages, on the contrary, traditional motivational factors play the key role.

A similar conclusion can be made by considering productivity in the context of the specified aspects of the working life. The highest values of average labor productivity were achieved in aspects such as participation in management decision-making (8.45 and 8.34 points, respectively), career development (8.44 and 8.32, respectively), as well as in the case of both basic and extra social guarantees (*Tab. 8*).

Table 8. Average labor productivity according to degree of satisfaction with various aspects of working and daily life, points on a 10-point scale

Certain aspects of working and daily life	Average labor productivity depending on satisfaction		
	Dissatisfied + Rather dissatisfied	Undecided	Satisfied + rather satisfied
Average labor productivity depending on satisfaction, excluding importance			
Fair payroll	7.29	6.81	8.29
Social package (basic and extra social guarantees)	7.13	6.73	8.46
Sanitary and hygienic conditions and safety at work	7.03	6.67	8.32
Content of work	6.84	6.64	8.29
Psychological climate in the team	6.67	6.65	8.18
Career opportunities	7.10	6.91	8.44
Creative work	6.95	7.00	8.38
Participation in management decision-making	7.26	7.01	8.45
Average labor productivity depending on satisfaction, adjusted for importance			
Fair payroll	7.34	7.53	8.26
Social package (basic and extra social guarantees)	7.22	7.40	8.32
Sanitary and hygienic conditions and safety at work	7.07	7.38	8.29
Content of work	7.15	7.35	8.18
Psychological climate in the team	6.68	7.41	8.17
Career opportunities	7.18	7.53	8.32
Creative work	7.19	7.63	8.13
Participation in management decision-making	7.29	7.59	8.34
Source: data of monitoring study of the quality of labor potential, VoIRC RAS, 2018.			

Thus, it can be concluded that the importance of aspects of working life such as participation in management decision, career development and creative work provide higher values of quality of labor potential, higher satisfaction with wages, as well as labor productivity. In the case of traditional motivational factors (sanitary and hygienic conditions and safety, psychological climate in the team, social package, etc.),however, the values of all the above indicators, indicating both accumulated potential and its effective implementation, are significantly lower. Taking this into account, we make a conclusion about the positive impact of modern motivational factors on formation and use of labor potential.

Conclusion. The present research draws attention to creating environment for efficient work as one of the most important conditions for the reproduction of employees' potential. It is proved that taking into account satisfaction in general identified based on direct estimates does not often solve the above problem since judgment motives may act more as objective social facts. In order to overcome this difficulty in our study we took into account the satisfaction with certain aspects of working and daily life along with their importance for employees.

It is proved that a higher level of satisfaction with certain aspects of working life is accompanied by higher indicators of both quality of labor potential and labor efficiency. This again demonstrates the importance of taking into account motivational factors at work. Nevertheless, of all aspects of the working life, the highest values of quality of labor potential and labor efficiency are provided through achieving the highest level of satisfaction in terms of participation in management decisions, creative labor, and career

development. These factors create prerequisites for the growth of qualitative characteristics of the population and their effective use, but their role remains underestimated since it is traditional motivational factors that are still more important for employees (psychological climate in the team, content of work, sanitary and hygienic conditions, etc.). In the coming years, the primary objective in the social policy in Russia should be to ensure full productive employment as the main source of improving the quality of life. The main national priority should be to increase the intellectual potential of the nation [20, p. 56]. The results show the importance of creating conditions for employees to promote the development of their educational and professional level, including in connection with career development, creation of an appropriate environment for creative activity by solving relevant tasks of employees, and the formation of appropriate "motivational field". Our conclusions about the influence of motivational factors (traditional and modern) on the quality of labor potential, labor efficiency and wages confirm the provisions of the process motivation theories, where population's behavior is associated with motives and incentives due to the existing expectations and perceptions of a particular situation. Methodological provisions concerning the assessment of specific aspects of the working and daily life from the standpoint of satisfaction with them and their importance can be used as a tool for analysis of the existing or emerging system of motivation at the organizational level. The need for such an analysis, based on data of sociological studies, can be partly attributed to the fact that even at the level of executive authorities, their public reports mainly reflect the issues of implementation of target indicators, while the problems of population's concern (for example, the standard of living, etc.) are less evident.

The failure to take into account the qualitative parameters of the Russian society in the social and labor sphere obtained from sociological studies does not help properly assess the potential of the Russian society, which, in turn, is one of the most important factors determining the further direction of social development, competitiveness and viability of the state [21, p. 24, 29–30]. The latter statement, in particular, is supported by the results of foreign studies (e.g. Benhabib and Spiegel, 1994 [22]; Crispolti and Marconi, 2005 [23]; Kneller, 2005 [24]; Nicola Gennaioli, Rafael La Porta, Florencio Lopez de Silanes, Andrei Shleifer, 2011 [25]): in China, according to John Whalley and Xiliang Zhao [26], 38% of economic transformations during 1978–2008 was ensured through effective use of human capital [27, p. 13].

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Public Opinion Monitoring of the State of the Russian Society

As in the previous issues, we publish the results of the monitoring of public opinion concerning the state of the Russian society conducted by VolRC 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 the period from February 2018 (the beginning of the first year of V. Putin's fourth presidential term) to June 2019.

We compare the results of the surveys with the data for 2007 (the last year of V. Putin's second presidential term, when the assessment of the President's work was the highest), 2011 (the last year of Dmitry Medvedev's presidency) and 2012 (the first year of V. Putin's third presidential term).

We also provide yearly dynamics of the data for the last two years (2017–2018).

In April – June 2019, the level of approval of the work of the President of the Russian Federation did not change significantly: the share of positive assessments was 56%, the share of negative assessments decreased from 31 to 28%.

Thus, after a long (from June 2018 to April 2019) decrease in the level of approval of the work of the head of state (which was caused primarily by the reaction of people to the pension reform according to which the retirement age had been raised), the dynamics of population estimates as a whole stabilized. At the same time, the share of positive assessments remains significantly lower than the average for 2018 (56% in June 2019 vs. 66% on average for 2018).

[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 information on the results of VolRC RAS polls is available at http://www.vscc.ac.ru/.

For reference

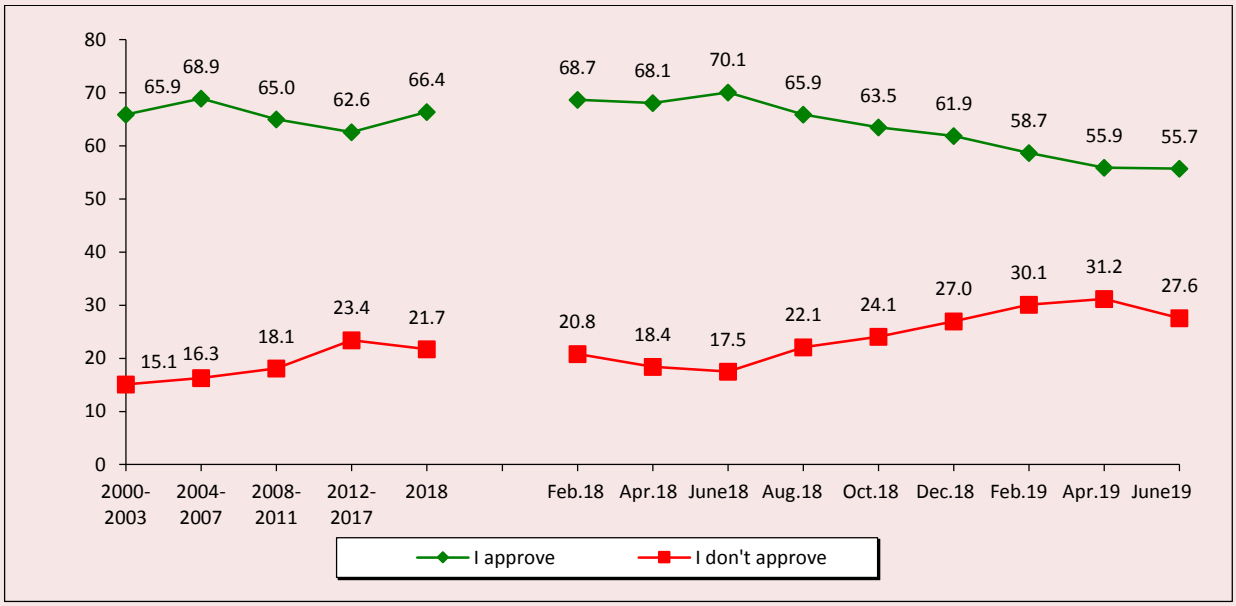
In general, the level of approval of the work of the head of state in recent months has remained stable. According to VTsIOM, the share of positive assessments in May 2019 (just as in April) was 66%, negative – 32%.

For comparison: in February 2018, the level of approval of the President's work, according to VTsIOM, was 78%, and the level of disapproval was 12%[2].

According to Levada-Center, support for the President's work in the first half of June was 64% (in April–May – 65%). The share of negative judgments was 27% (in April – May – 26%).

For comparison: in February 2018, the share of positive assessments of the President's work, according to Levada-Center, was 76%, negative – 22%.

In general, do you approve or disapprove of the work of the President of Russia? (% of respondents)*



* 2000 – 2003: average annual assessment of V. Putin's first presidential term;
2004 – 2007: average annual assessment of V. Putin's second presidential term;
2008 – 2011: average annual assessment of D. Medvedev's presidential term;
2012 – 2017: average annual assessment of V. Putin's third presidential term.

[2] It should be noted that in February 2018, VTsIOM conducted a telephone survey (apparently in connection with the upcoming presidential election). To compare the current indicators, it is more correct to analyze the results of the January survey, according to which the share of positive assessments of the President's work was 83%, negative – 11%.

Over the past two months there was a slight (by 3 percentage points) improvement in the assessments of the President's work aimed to restore order in the country (the share of positive responses increased from 42 to 45%), to protect democracy and strengthen the freedoms of citizens (from 32 to 35%).

The share of those who believe that the President successfully copes with the task of strengthening Russia's international positions and boosting the economy and the welfare of citizens did not change over the past two months (45 and 29%, respectively).

It should be noted that in the period from February 2018 to June 2019, the share of positive assessments of the President's work to address the key problems of the country decreased slightly (by 2–8 p.p.). Moreover, unlike the general level of support for the work of the head of state, in this case we cannot say that the negative changes are associated with a sharp deterioration in public opinion in June 2018, when the reform of the pension legislation was announced (in June 2018, there were no sharp leaps in the dynamics of population estimates).

To date, the share of positive assessments related to the solution of all key issues in the country remains 2–5 p.p. lower than in 2016–2018.

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

Answer	2007	2011	2012	2017	2018	Feb. 2018	Apr. 2018	June 2018	Aug. 2018	Oct. 2018	Dec. 2018	Feb. 2019	Apr. 2019	June 2019	Dynamics (+/-) June 2019 compared to…	
															Apr. 19	Feb. 18
Strengthening Russia's international standing																
Successful	58.4	46.2	43.1	55.7	54.2	55.2	56.1	55.6	53.3	51.3	53.5	51.5	50.2	51.9	+2	-3
Unsuccessful	24.9	33.7	37.9	26.8	28.4	26.9	26.9	26.7	29.1	30.7	30.3	31.7	32.7	30.3	-2	+3
Success index	*133.5*	*112.5*	*105.2*	*129.0*	*125.7*	*128.3*	*129.2*	*128.9*	*124.2*	*120.6*	*123.2*	*119.8*	*117.5*	*121.6*	+4	-7
Imposing order in the country																
Successful	53.2	36.6	35.4	50.6	51.1	50.9	54.2	55.1	51.0	48.5	46.9	44.2	42.4	44.5	+2	-6
Unsuccessful	34.0	50.0	50.7	36.1	35.0	32.7	30.8	32.9	36.2	37.9	39.5	40.7	42.6	39.3	-3	+7
Success index	*119.2*	*86.6*	*84.7*	*114.5*	*116.1*	*118.2*	*123.4*	*122.2*	*114.8*	*110.6*	*107.4*	*103.5*	*99.8*	*105.2*	+5	-13
Protecting democracy and strengthening citizens' freedoms																
Successful	44.4	32.4	28.8	40.3	40.5	42.8	42.9	43.4	39.8	37.3	36.5	33.5	32.3	34.6	+2	-8
Unsuccessful	37.0	48.3	52.3	40.2	40.2	38.7	37.1	38.1	41.4	42.7	43.3	45.3	47.7	45.5	-2	+7
Success index	*107.4*	*84.1*	*76.5*	*100.2*	*100.2*	*104.1*	*105.8*	*105.3*	*98.4*	*94.6*	*93.2*	*88.2*	*84.6*	*89.1*	+5	-15
Economic recovery and increase in citizens' welfare																
Successful	47.2	30.7	28.5	29.3	31.0	31.0	31.3	32.3	30.6	30.6	29.9	28.1	28.1	29.1	+1	-2
Unsuccessful	39.1	56.1	57.9	56.9	56.2	53.7	55.3	55.2	58.3	57.2	57.6	56.9	58.2	57.8	0	+4
Success index	*108.1*	*74.6*	*70.6*	*72.4*	*74.7*	*77.3*	*76.0*	*77.1*	*72.3*	*73.4*	*72.3*	*71.2*	*69.9*	*71.3*	+1	-6

* Ranked according to the average value of the index of success for 2018.

In the past two months, the structure of people's preferences concerning political parties did not change significantly. At the same time, in the period from February 2018 to June 2019, we observe a slight decrease in support for United Russia (by 3 p.p., from 38 to 35%) and an increase in the proportion of Vologda Oblast residents who believe that none of the parties represented in Parliament expresses their interests (by 3 p.p., from 29 to 32%).

The positions of other parliamentary parties do not change significantly: the level of support for LDPR is 9–10%, KPRF – 7–8%, Just Russia – 3–4%.

Which party expresses your interests? (% of respondents)

Party	2007	2011	Election to the RF State Duma 2007, fact	2012	2016	Election to the RF State Duma 2011, fact	2017	2018	Feb. 2018	Apr. 2018	June 2018	Aug. 2018	Oct. 2018	Dec. 2018	Feb. 2019	Apr. 2019	June 2019	Dynamics (+/-) June 2019 compared to…	
																		Apr. 19	Feb. 18
United Russia	30.2	31.1	33.4	29.1	35.4	38.0	34.7	37.9	38.4	39.7	38.9	38.1	36.5	36.0	34.6	33.3	34.8	+2	-4
LDPR	7.5	7.8	15.4	7.8	10.4	21.9	11.0	9.6	10.1	9.6	9.7	9.7	9.7	8.8	8.9	8.2	9.1	+1	-1
KPRF	7.0	10.3	16.8	10.6	8.3	14.2	7.6	9.2	7.1	8.1	8.7	10.3	11.1	9.9	9.1	8.0	8.5	+1	+1
Just Russia	7.8	5.6	27.2	6.6	4.2	10.8	4.8	2.9	3.5	2.5	2.3	2.7	3.4	2.8	2.9	2.9	2.5	0	-1
Other	1.8	1.9	–	2.1	0.3	–	0.5	0.7	0.9	1.2	0.5	0.6	0.4	0.4	0.6	0.3	0.3	0	-1
None	17.8	29.4	–	31.3	29.4	–	29.2	28.5	28.8	26.2	26.7	28.5	29.0	31.9	34.2	34.7	32.3	-2	+4
It's difficult to answer	21.2	13.2	–	11.7	12.0	–	12.2	11.2	11.1	12.7	13.3	10.0	9.9	10.2	9.7	12.6	12.4	0	+1

The assessments of psychological well-being of the population remain at a high level: as of June 2019, the proportion of people who experience mainly positive emotions is 71%; the proportion of those who believe that "everything is not so bad; it's difficult to live, but it's possible to stand it" is 79%. In general, these indicators have remained stable throughout the period from February 2018 to June 2019.

Somewhat contradictory conclusions can be drawn about the dynamics of people's assessments of their own financial situation:

On the one hand, during 2019, as well as on average for 2017–2018, the proportion of Vologda Oblast residents who consider themselves to have an "average income" (43%), remains stable. On the other hand, it remains lower than the proportion of those who consider themselves to be "poor" or "extremely poor" (46%).

The consumer sentiment index, which reflects people's forecasts regarding the prospects of the economy and personal financial situation, remains stable in 2019 (90–91 p.); it is even higher than in 2017–2018 (85–89%). However, its value still remains lower than 100 points, which means the predominance of pessimistic judgments in the estimates of residents of the Oblast.

Estimation of social condition (% of respondents)

Answer	2007	2011	2012	2017	2018	Feb. 2018	Apr. 2018	June 2018	Aug. 2018	Oct. 2018	Dec. 2018	Feb. 2019	Apr. 2019	June 2019	Dynamics (+/-), June 2019 compared to…	
															Apr. 19	Feb. 18
Mood																
Usual condition, good mood	63.6	63.1	67.3	70.4	71.2	68.6	71.5	72.5	72.5	71.3	70.7	68.0	68.8	71.4	+3	+3
I feel stress, anger, fear, depression	27.8	28.9	27.0	24.2	23.1	23.4	23.1	22.8	22.5	23.1	23.5	25.6	25.5	23.5	-2	0
Stock of patience																
Everything is not so bad; it's difficult to live, but it's possible to stand it	74.1	74.8	76.6	77.7	77.1	76.2	79.0	76.5	78.0	75.7	77.1	74.3	76.7	78.0	+1	+2
It's impossible to bear such plight	13.6	15.3	15.8	15.8	16.3	16.3	14.8	16.6	15.5	17.1	17.5	19.1	17.5	16.5	-1	0
Social self-identification*																
The share of people who consider themselves to have average income	48.2	43.1	44.7	43.1	42.3	41.2	41.8	43.1	43.3	42.8	41.6	43.8	41.3	43.3	+2	+2
The share of people who consider themselves to be poor and extremely poor	42.4	44.3	44.5	46.6	45.4	46.2	46.5	45.3	44.1	45.4	44.7	44.8	46.9	45.8	-1	0
Consumer sentiment index																
Index value, points	105.9	89.6	91.5	84.6	89.9	89.2	90.3	92.2	89.2	89.2	89.1	90.1	90.0	91.2	+1	+2

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

Over the past two months, we observe an increase in the share of positive assessments of social mood in 6 out of 14 socio-demographic groups, especially in people over 55 years of age (by 7 p.p., from 60 to 67%). In other groups, there were no significant changes in the assessments of the emotional state.

At the same time, we should note that in comparison with the average level for 2018 we observe negative dynamics in the assessments given by some population groups. For example, among people with higher and incomplete higher education, the proportion of those who positively characterize their mood decreased by 5 p.p. (from 77 to 72%), and among residents of Cherepovets – by 4 p.p. (from 76 to 72%).

Social mood in different social groups (answer: "Good mood, normal condition", % of respondents)

Population group	2007	2011	2012	2017	2018	Feb. 2018	Apr. 2018	June 2018	Aug. 2018	Oct. 2018	Dec. 2018	Feb. 2019	Apr. 2019	June 2019	Dynamics (+/-) June 2019 compared to…	
															Apr. 19	Feb. 18
Sex																
Men	65.9	64.5	69.1	70.6	72.8	71.0	73.4	74.5	73.9	70.8	73.4	69.9	68.6	72.1	+4	+1
Women	61.7	62.0	65.8	70.2	69.8	66.6	70.0	70.9	71.3	71.8	68.4	66.4	69.0	70.8	+2	+4
Age																
Under 30	71.3	70.0	72.3	78.1	80.0	74.2	79.6	81.3	77.9	85.1	81.6	76.3	81.2	82.9	+2	+9
30-55	64.8	62.5	67.9	71.5	72.6	68.8	74.0	75.1	74.9	70.9	71.6	68.0	71.5	70.5	-1	+2
Over 55	54.8	58.3	62.1	64.9	65.2	65.6	64.2	64.7	66.5	65.4	64.7	64.3	59.8	67.4	+8	+2
Education																
Secondary and incomplete secondary	58.4	57.4	57.2	63.6	64.8	60.5	65.5	64.8	66.5	63.8	67.8	61.5	60.4	64.4	+4	+4
Secondary vocational	64.6	63.6	66.7	72.0	72.2	68.9	72.7	74.9	72.6	73.5	70.5	68.6	73.0	77.3	+4	+8
Higher and incomplete higher	68.6	68.3	77.0	75.8	76.8	77.9	76.2	77.4	78.4	76.5	74.1	73.8	73.3	72.1	-1	-6
Income groups																
Bottom 20%	51.6	45.3	51.5	52.9	57.3	47.7	61.8	60.0	53.1	59.6	61.3	50.4	56.1	54.9	-1	+7
Middle 60%	62.9	65.3	68.7	72.0	71.9	70.3	71.7	72.3	74.5	73.1	69.7	67.2	69.9	74.1	+4	+4
Top 20%	74.9	75.3	81.1	83.7	82.9	82.2	81.5	85.5	83.4	81.3	83.4	86.2	81.0	81.0	+0	-1
Territories																
Vologda	63.1	67.1	73.6	72.6	71.0	71.0	73.5	75.4	70.4	68.8	67.1	65.5	68.5	70.3	+2	-1
Cherepovets	68.1	71.2	76.2	75.7	75.8	71.5	75.0	76.7	79.1	77.7	74.5	71.1	67.8	72.1	+4	+1
Districts	61.6	57.1	59.8	66.1	68.7	65.6	68.3	68.6	69.8	69.2	70.5	67.6	69.6	71.7	+2	+6
Oblast	63.6	63.1	67.3	70.4	71.2	68.6	71.5	72.5	72.5	71.3	70.7	68.0	68.8	71.4	+3	+3

Conclusion

The results of the monitoring conducted in April – June 2019 allow us to say that people's attitude toward the work of the President has stabilized after quite a long period of negative dynamics caused by their reaction to the changes in the pension legislation. In general, similar trends are demonstrated by the results of all-Russian surveys conducted by VTsIOM and Levada-Center.

The absence of negative changes in the assessments of the President's work is noted for the first time since June 2018; however, it is difficult to judge whether it is a sign of exhaustion of public discontent about the pension reform or it is connected, for example, with the onset of the summer season – a period of vacations and dachas, which could move the socio-political agenda to the periphery of public consciousness. To date, we can only say that the dynamics of public opinion concerning the work of the President were negative most of the time that has passed since the beginning of the new political season, and to make the dynamics positive remains an urgent task for the coming months.

As for the assessment of the financial situation and its prospects for the near future, the situation remains stable, but it can hardly be called positive: the proportion of Vologda Oblast residents who subjectively classify themselves as "poor and extremely poor" exceeds the proportion of those who consider themselves to have an "average income"; and negative judgments prevail in the forecasts of the economic situation and people's personal material well-being.

By and large, we can say that public opinion is stable and positive only with regard to self-assessments of psychological well-being: in all socio-demographic groups (including pensioners and low-income people), more than half of the respondents say that they are in a "good mood; normal, even condition".

Thus, to date, we can state that there are certain changes in the dynamics of public opinion assessments, but it is difficult to draw any long-lasting conclusions on this basis. The autumn-winter season, when the summer holidays come to an end and (due to the beginning of the heating season) utility tariffs increase, will be an important period in terms of testing the "strength" of the existing relations between society and the government. Much will also depend on how tangible the positive changes will be for the general population; the changes, which the first results of national projects, widely announced by the authorities, should lead to.

It is possible that many of the decisions made by the Government in the new political cycle and negatively met by the majority of the population are intended to have long-term effects, and their results should be expected in 20 or 30 years. However, whether the existing level of trust and the overall relative calmness of the socio-political situation can be maintained for these 20–30 years remains an issue that requires the closest attention of the governing bodies, especially in connection with the possible change of the head of state in 2024.

The materials were prepared by M.V. Morev, I.V. Paranicheva, I.M. Bakhvalova.

AUTHOR GUIDELINES
for Submission of Manuscripts to the Editor of the Scientific Journal
Economic and Social Changes: Facts, Trends, Forecast

The Journal publishes original theoretical and experimental articles that fall within the scope of the journal. The manuscript should be of no less than 16 pages (30,000 characters with spaces). The maximum length of the paper submitted to publication is 25 pages (approximately 50,000 characters with spaces). Book reviews, information on scientific conferences, scientific chronicles are also submitted to publication. The papers should contain research findings of completed and methodologically proper works.

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The following materials are submitted to the editorial office in electronic form:

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2. Full information about the author on a separate page: full name, academic degree and title, place of work and position, contact information (postal address, telephone, e-mail – if available), ORCID, Researcher ID. The information should be arranged in a table.
3. Scanned copy of the commitment of the author not to publish the article in other publications.
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The package of materials is to be sent to the editor's email address: esc@volnc.ru.

Text design requirements

1. Margins

Right – 1 cm, others – 2 cm.

2. Font

Font size of the article's text – 14, type – Times New Roman (in case a special type font is needed, when typing Greek, Arab, etc. words, Windows default fonts are to be used). In case the paper contains seldom used fonts, they (font family) are to be submitted along with the file. Line interval – 1,5.

3. Indent – 1.25. Made automatically in MS Word.

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Page numbers are placed in the lower right corner of the page automatically with the use of MS Word tools.

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In the upper right corner, the UDC is placed, under it, after the 1.5 spacing – the LBC, then – the symbol ©, indent (spacing), and the name and initials of the author in semi-bold. After the 2-spacing indent, the title of the article is given. Central alignment is used for the title of the article given in semi-bold. The abstract and key words are given below, after the 2-spacing indent, without a paragraph indent, in italics and aligned by width. Then, after the 2-spacing indent, the text of the article is placed.

6. Abstract

The abstract contains from 200 to 250 words. The abstract states the purpose of the research, points out its undoubted scientific novelty and its differences from similar works of other scientists; contains the methods used by the author and the main results of the work performed; identifies areas of application of the results of the study; briefly formulates the prospects for further research in this area.

Examples of good abstracts for different types of articles (reviews, scientific articles, conceptual articles, application articles) are available at: http://www.emeraldinsight.com/authors/guides/write/abstracts.htm?part=2&PHPSESSID=hdac5rtkb73ae013ofk4g8nrv1.

7. Key words

There should be not more than eight words or word combinations. Key words should reflect the content of the manuscript to the fullest extent. The number of words within a phrase should not exceed three.

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The caption of the table and its number (if present) are given in normal font, without highlighting. The caption runs in bold and is center aligned.

Tables are inserted; drawing tools and AutoShapes are not allowed; column and cell alignment using spaces or tabs is not allowed. MS WORD table editor is used for tables. Each piece of data of the stub and head of the table correspond to discrete cell. Only editor standard tools are applied for creating and formatting tables, no pilcrows, spaces and extra blank lines for semantic breakdown and line adjustment are allowed.

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The caption and its number are placed below the figure. The word "Figure" is in normal font (without highlighting). The caption runs in bold, center alignment, single-spaced.

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Figures and charts, created in MS WORD are to be grouped within one single object. No scanned, exported or taken from the Internet graphic materials are allowed in the article.

Algorithm of charts insertion from MS EXCEL to MS WORD:

1) in MS EXCEL select the chart, using the mouse, right click and select "copy" from the list of options;

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Write: either "Source", or "Compiled with the use of", or "Calculated with the use of", etc., after that – information about the source.

11. Page footnotes

Page footnotes are executed according to GOST R 7.0.5 – 2008.

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The word "References" is given after a 1.5 spacing after the body of the article in lower-case letters, semi-bold italics, center alignment. Then, the list of references is given after the 1.5 spacing.

The sources are not arranged alphabetically, but they are given in the same order as they appear in the body of the article (Vancouver style is used).

In case the paper has a DOI, it is given in the References.

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The list of references contains links to scientific works used by the author in the preparation of the article. It is obligatory that the author provides links to all the sources from the list of references in the body of the article.

In accordance with international publishing standards, the recommended number of sources in the References should be at least 20, of which at least 30% should be foreign sources.

The number of links to the author's works should not exceed 10% of the total number of references given in the list.

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2) regulatory and legislative acts;
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5) dictionaries, encyclopedias, other reference books;
6) reports, records, memos, protocols;
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[1] Information about the modified Harvard standard is given in the book: Kirillova O.V. *Redaktsionnaya podgotovka nauchnykh zhurnalov po mezhdunarodnym standartam: rekomendatsii eksperta BD Scopus* [Editorial Preparation of Scientific Journals according to International Standards: Recommendations of a Scopus Expert]. Moscow, 2013. Part 1. 90 p.

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