Strategic Priorities for the Human Capital Development in the Context of Socio-Economic Inequality of Russia's Regions

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Abstract. At the present stage of development of the world and Russian economies, research on problems in the field of human capital development in its close relationship with economic growth is due to the transition to digital technologies and qualitative changes in the labor market. In Russia, these processes are complicated by persistent imbalances in regional development. The economic lag of regions, which is also caused by the low level of development and quality of human capital, leads to the formation of institutional traps: low incomes, reduced returns on education and, as a result, lack of motivation to invest in human capital lead to increased regional inequality and create a vicious circle. The authors justify the need to develop a regional policy in the "poor" and "middle" regions aimed at developing and improving the quality of human capital by increasing public investment in education. In addition, the article highlights barriers to quantitative growth, qualitative development and effective use of human capital in Russian regions.

1. Introduction
For Russia, whose economic system is characterized by a vast territory, solving the problem of regional socio-economic inequality is a strategic objective. The high degree of regional development differentiation hinders their economic integration into the single economic space, and ultimately represents one of the threats to the economic and national security of the state.

A significant degree of socio-economic inequality in Russian regions has been persisting throughout the recent history of Russia. The “rich” regions of Western Siberia and the European North with high incomes are leading due to their specialization in export-oriented oil and gas industries. "Poor" regions are unable to overcome the depressive phase of development. Despite the fact that regional inequality is caused by a complex of reasons, all of them, in our opinion, are related to the development and quality of human capital.

2. Relevance, scientific importance of the problem with a brief literature review
2.1. Relevance and scientific importance of the problem
The relevance of research on the problems of formation, reproduction, effective use of human capital, its relationship with economic growth is determined by the features of the current stage of develop-
ment of the world and Russian economies, increasing scientific, technical and technological transformations, and qualitative changes in the nature of work. At the same time, the specifics of our country are its unique geographical location, the availability of extensive natural resources, and their uneven distribution, which initially creates objective conditions for imbalances in the development of territories.

Overcoming the socio-economic inequality of regions is impossible without growth and qualitative development of human capital, matching supply and demand in the labor market, and high return on investment in human capital. Significant regional differentiation has an impact on their further economic development and can act as a threat to national security.

The analysis of region socio-economic inequality, as well as the state of the human capital in Russia, proves that the formation, reproduction, and effective use of the human capital as the main components of the national wealth should become key strategic priorities at federal and regional levels. Human capital should become the main factor of economic development. And the equalization of social and economic disparities of the Russian regions is an essential condition not just for reproduction, but for the qualitative development of human capital.

Thus, the analysis of indicators that measure the degree of regional inequality in Russia would reveal recent trends in the differentiation of Russian regions by the level of socio-economic development; and the study of human capital in relation to socio-economic development will help to identify barriers that limit the improvement of its quality in depressed regions, and to eliminate the backlog.

2.2. Literature review

For the last century many foreign and domestic scientists have been studying the problems of uneven territorial development. G. Myrdal [1] proved the effect of concentration of economic activity on business-friendly territories. J. Friedmann [2] developed the theory of polarized development, dividing the territories into the center and periphery. The idea of the “core-periphery” was further developed in the works of the creator of the new economic geography P. Krugman [3], who systematized the competitive advantages of territories, linking them to two groups of factors: independent of human activity and created as a result of human activity (including human capital). P. Martin [4, 5] analyzed the strengthening of the regional inequality in the context of economic growth on the example of the European Union. At the same time, it should be noted that the process of polarization of Russian regions has a number of specific features. It is important to highlight Russian researchers of uneven territorial development - N. V. Zubarevich, V. V. Kistanov, N. V. Kopylov, B. L. Lavrovskij, E. A. Shil'cin [6, 7, 8].

Investments in human capital, its impact on economic growth, as well as the features of its measurement have been studied by such foreign scientists as J. Mincer [9], who developed an equation for evaluating the return on education; T. Schultz, G. Becker, N. Gennaioli, E. Glaeser, R. La Porta [10, 11, 12], J. Heckman [13], E. Hanushek [14], who proposed to use score on the international PISA test to assess the level of human capital development. A significant contribution to the study of human capital and its features in Russia was made by Russian economists V. E. Gimpelson [15], A. L. Luk'yanova[16], R. I. Kapelyushnikov [17].

3. Problem statement

Overcoming regional differentiation, which arose as a result of uneven economic growth of territories, requires an analysis of current trends in the socio-economic development of Russian regions, identifying barriers to improving the level and quality of human capital, estimating the impact of Investments in education, employment and unemployment in order to develop strategic priorities for the human capital growth in the regions as a way to overcome imbalances.

To achieve the research objectives, the dialectical approach was chosen as the main methodological approach. It involves the study of human capital and economic growth in the regions in dynamics and close relationship. Both general scientific and special methods were used in the work. General scientific research methods include the method of scientific abstraction, analysis and synthesis, grouping,
and graphic method. Special methods include a statistical method that involves quantitative analysis of socio-economic development indicators.

4. Theoretical results

As the borders of the Russian Empire expanded, the need to preserve the integrity of the state forced to strengthen the functions of state territorial administration. However, the tsarist government did not apply special measures of territorial regulation. This led to strong imbalances in the placement of industry and the division of areas into developed (Metropolitan) and backward (colonies).

In the first years of the Soviet Union, the uneven development of economic areas continued. A high level of industrial and agricultural production was achieved in the North-Western, Central and Ural economic regions. Starting in the 60s, production in Western and Eastern Siberia, the Volga region, began to grow rapidly thanks to the state economic policy based on the principle of rational allocation of productive forces.

After the collapse of the USSR and the transition to a market economy, which caused a deep economic crisis, there was an increase in regional inequality, sharp territorial volatility. In the regions that had a highly developed machine-building and military-industrial complex before the reforms, the economic situation deteriorated sharply. The raw material specialization and export orientation of the eastern and northern regions have allowed them to improve their economic performance. In the absence of a rational state economic policy, the market mechanism of intersectoral competition facilitated the inflow of investments into highly profitable raw materials industries and the consolidation of raw materials specialization in Russia. Since the economic development of regions determines their social situation, regions experiencing a shortage of resources are in a dire situation. Subsequently, the cyclical development of the market economy with periodic crises, the consequences of which are very heterogeneous in the Russian regions, led to a long-term and stable nature of their inequality.

An estimation of socio-economic inequality based on comparisons of Federal districts provides the following picture. According to the nominal gross regional product per capita in 2005-2017 four federal districts stood out, ahead of the rest: Ural, Central, Far Eastern, North-West (Fig. 1). Despite the fact that the nominal GRP cannot be used to measure economic growth in the context of high inflation, comparing its absolute values allows identifying the degree of economic inequality between the "rich", "average" and "poor" regions, and the analysis of dynamics make it possible to determine the direction of the trend.

![Figure 1. Dynamics of the nominal gross regional product per capita in the Federal districts of the Russian Federation in 2005-2017, thousand rubles [18, p. 478-479].](image-url)
GRP per capita of "rich", "medium" and "poor" regions, it becomes obvious the higher degree of inequality (table 1). In 2005 the nominal GRP per capita in the "rich" Nenets Autonomous area was higher than in the Republic of Ingushetia (61.3 times). Also significant was its breakaway from the middle-level regions, such as Saratov and Omsk regions (16.2 and 9.8 times more). In Yamalo-Nenets Autonomous area, which took the second place in the top-4 "rich" regions, the indicator in 2005 exceeded the indicators of the Republic of Ingushetia, the Saratov and Omsk regions by 49.2; 13.0; 7.9 times.

In 2005, the "rich" regions of top-4 also showed a significant excess of the nominal GRP per capita relative to the Russian average. It was in Nenets Autonomous area – 8.5; Yamalo-Nenets Autonomous Area – 6.8; Moscow – 3.0; Chukotka Autonomous Area – 1.9 times. In "poor" regions, such as the Republic of Ingushetia, and "medium" regions, such as Saratov and Omsk regions, GRP per capita was lower than the national average by 7.2, 1.9, and 1.2 times, respectively.

During the period 2005-2017, the nominal GRP per capita in almost all Federal districts increased fourfold or more. By 2017 in the Central and Siberian Federal district the indicator has increased in 4.0; Volga – 4.1; in the North-Western – 4.5; South 4.8; North-Caucasian – 4.9; in the Far East – in 4.9 times. The smallest increase was observed in the "rich" Ural Federal district. The outstripping growth rate of nominal GRP per capita in the North Caucasus Federal district relative to the Ural Federal district made possible to reduce the gap between them to 4.5 times by 2017.

However, the breakaway of the Nenets Autonomous Area, Yamalo-Nenets Autonomous Area and Chukotka Autonomous Area of the national average nominal GRP per capita in 2017 was higher than in 2005, amounting to 12.3; 8.8; 2.7 times. Moscow's lead was reduced to 2.5 times. Indicators of "poor" and "average" regions were lower than the average Russian GRP per capita: in the Republic of Ingushetia – 4.4; in the Saratov region – 1.9; in the Omsk region – 1.5 times. Thus, in the Republic of Ingushetia, the gap with the national average has decreased, in the Saratov region – has not changed, and in the Omsk region – has increased.

In 2017, the inequality between the" rich "regions of the top 4, the Nenets Autonomous area, Yamalo-Nenets Autonomous area, and the" poor " region, the Republic of Ingushetia, estimated by nominal GRP per capita, was 54.8 and 39.9 times respectively, and the gap between them began to narrow compared to 2005.

In contrast, the gap for medium regions has widened. The nominal GRP per capita of the Nenets Autonomous area was 23.2 times higher than in the Saratov region, 19.0 times higher than in the Omsk region. Yamalo-Nenets Autonomous area was ahead of Saratov and Omsk regions in this indicator at 16.9 and 13.8 respectively.

Table 1. Dynamics of nominal GRP per capita in "rich", "medium" and "poor" regions in 2005-2017, thousand rubles*.

| Region                        | 2005  | 2010  | 2013  | 2014  | 2015  | 2016  | 2017  |
|-------------------------------|-------|-------|-------|-------|-------|-------|-------|
| Russian Federation            | 125.7 | 263.8 | 377.0 | 405.1 | 449.1 | 472.0 | 510.2 |
| Moscow                        | 382.0 | 730.8 | 981.0 | 1 051.6| 1 102.5| 1 152.4| 1 263.7|
| Nenets Autonomous Area       | 1 067.0| 3 465.4| 4 035.9| 4 329.0| 5 210.1| 5 806.9| 6 288.5|
| Republic of Ingushetia        | 17.4  | 48.2  | 102.2 | 113.2 | 107.0 | 109.5 | 114.8 |
| Saratov Region                | 65.7  | 148.8 | 210.5 | 227.1 | 251.0 | 259.0 | 270.8 |
| Yamalo-Nenets Autonomous Area| 856.1 | 1 491.3| 2 544.9| 3 025.7| 3 336.5| 3 785.5| 4 581.1|
| Omsk Region                   | 109.0 | 193.2 | 279.5 | 305.0 | 312.5 | 314.6 | 331.1 |
| Chukotka Autonomous Area      | 237.1 | 767.8 | 877.6 | 1 142.5| 1 226.2| 1 354.4| 1 386.1|

* Compiled by the authors according to the Federal State Statistic Service [18, p. 478-479].
In the future, the growing gap trend between the "rich" and "poor" regions began to dominate again. Thus, in 2018, the nominal GRP per capita in the Ural Federal district was 5.2 times higher than in the North Caucasus Federal district (table 2). In the Nenets Autonomous area, the indicator was 61.8 times higher than in the Republic of Ingushetia, returning to the level of inequality in 2005. In 2018, the inequality between the "rich" regions from the top 4 and the Saratov and Omsk regions, which are middle-level regions, also increased. The nominal GRP per capita of the Nenets Autonomous area exceeded that of the Saratov region by 23.9 times; the Omsk region - by 19.9 times. In Yamalo-Nenets Autonomous area, the indicator was higher than in these regions by 19.6 and 16.4 times, respectively. Thus, socio-economic inequality between the "rich", "middle" and "poor" regions has increased again.

Table 2. Indicators of socio-economic development of Russian Federal districts (FD) and regions in 2018*.

| Region                          | GDP (GRP) per capita, thousand roubles | Average per capita money income of population (per month), 2019, roubles | Gross average nominal monthly wages of employees of organizations, roubles | Consumption expenditure (monthly average expenditure per one member of household), 2019, roubles | Unemployment, % | Higher education by level of education, % of the total number of unemployed | Secondary vocational education by level of education, % of the total number of unemployed | Employment rates by level of education, % of the total number of unemployed | Unemployment rates by level of education, % of the total number of unemployed |
|--------------------------------|--------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|-----------------|--------------------------------------------------------------------------------|------------------------------------------------------------------------------|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| Russian Federation             | 578.7                                | 35249                                                                  | 47468                                                                    | 28647                                                                                           | 4.8             | 20.7                                                                          | 39.4                                                                       | 34.2                                                                         | 45.0                                                                         |
| Central FD                     | 747.5                                | 46919                                                                  | 60480                                                                    | 36880                                                                                           | 2.9             | 25.1                                                                          | 40.6                                                                       | 39.3                                                                         | 44.8                                                                         |
| Moscow city                    | 1423.6                               | 73827                                                                  | 94011                                                                    | 56185                                                                                           | 1.2             | 46.2                                                                          | 26.7                                                                       | 49.7                                                                         | 43.1                                                                         |
| North Western FD               | 645.7                                | 37993                                                                  | 52649                                                                    | 30646                                                                                           | 3.9             | 18.6                                                                          | 44.4                                                                       | 35.1                                                                         | 47.5                                                                         |
| Nenets Autonomous Area         | 6950.4                               | 80973                                                                  | 86815                                                                    | 31518                                                                                           | 8.1             | 16.5                                                                          | 38.1                                                                       | 29.5                                                                         | 49.5                                                                         |
| St. Petersburg city            | 781.2                                | 47402                                                                  | 63157                                                                    | 39017                                                                                           | 1.5             | 37.5                                                                          | 28.3                                                                       | 43.5                                                                         | 43.2                                                                         |
| Southern FD                    | 355.6                                | 29958                                                                  | 34268                                                                    | 26467                                                                                           | 5.6             | 25.3                                                                          | 41.4                                                                       | 30.7                                                                         | 44.9                                                                         |
| Sevastopol city                | 180.1                                | 29659                                                                  | 34586                                                                    | 25708                                                                                           | 4.2             | 42.6                                                                          | 35.6                                                                       | 43.0                                                                         | 43.0                                                                         |
| North Caucasus FD             | 197.2                                | 24446                                                                  | 29263                                                                    | 20376                                                                                           | 10.5            | 24.0                                                                          | 23.9                                                                       | 35.5                                                                         | 29.8                                                                         |
| Republic of Ingushetia         | 112.6                                | 16559                                                                  | 27463                                                                    | 8952                                                                                           | 26.3            | 23.7                                                                          | 22.7                                                                       | 34.4                                                                         | 32.2                                                                         |
| Volga FD                       | 423.1                                | 28276                                                                  | 34395                                                                    | 23559                                                                                           | 4.4             | 19.0                                                                          | 43.4                                                                       | 31.4                                                                         | 48.1                                                                         |
| Saratov Region                 | 290.6                                | 22752                                                                  | 28503                                                                    | 18663                                                                                           | 5.0             | 19.1                                                                          | 38.1                                                                       | 33.8                                                                         | 47.7                                                                         |
| Ural FD                        | 1032.5                               | 36923                                                                  | 50788                                                                    | 28743                                                                                           | 4.7             | 18.1                                                                          | 45.1                                                                       | 32.5                                                                         | 49.0                                                                         |
| Yamal-Nenets Autonomous Area  | 5710.1                               | 84135                                                                  | 100456                                                                   | 39406                                                                                           | 2.1             | 25.9                                                                          | 34.7                                                                       | 45.8                                                                         | 42.4                                                                         |
| Siberian FD                    | 484.4                                | 27002                                                                  | 40880                                                                    | 21274                                                                                           | 6.4             | 16.9                                                                          | 41.4                                                                       | 30.0                                                                         | 43.8                                                                         |
| Omsk Region                    | 349.2                                | 26946                                                                  | 35194                                                                    | 22717                                                                                           | 6.7             | 15.2                                                                          | 44.3                                                                       | 28.5                                                                         | 45.0                                                                         |
| Far Eastern FD                 | 634.2                                | 37791                                                                  | 56069                                                                    | 30129                                                                                           | 6.3             | 14.5                                                                          | 36.0                                                                       | 32.9                                                                         | 42.9                                                                         |
| Chukotka Autonomous Area       | 1578.5                               | 81778                                                                  | 106846                                                                   | 31447                                                                                           | 3.1             | 12.2                                                                          | 26.7                                                                       | 35.4                                                                         | 44.3                                                                         |

*Compiled by the authors according to the Federal State Statistic Service [18, p. 148-149, 160-161, 164; 19, p. 40-50].
Indicators that characterize the socio-economic situation of regions are the income of the population, wages, and consumption expenditures. The highest average nominal monthly wages was in Chukotka Autonomous Area. It exceeded the average level of wages in the Republic of Ingushetia by 3.9 times; in the Saratov region – 3.7 times; in the Omsk region – 3.0 times. The highest per capita income in 2019 was observed in the Yamalo-Nenets Autonomous Area: it exceed the average per capita income of the Republic of Ingushetia 5.1; Saratov region 3.7; the Omsk region – 3.1 times. In terms of average per capita consumption expenditures Moscow was the leader, exceeding the lowest level among Russian regions in the Republic of Ingushetia by 6.3 times. The gap between the Saratov and Omsk regions and Moscow for this indicator was 3.0 and 2.5 times, respectively. These indicators show significant differences in the standard of living and quality of life of Russian regions.

An important macroeconomic indicator of the regional development is the unemployment rate. In 2018, with an average Russian unemployment rate of 4.8 % (table 2), it was 10.5% in the North Caucasus Federal district, including the Republic of Ingushetia with the highest unemployment rate among Russian regions – 26.3 %. The lowest values of 1.2 and 1.5% remain in Moscow and St. Petersburg. In the Saratov and Omsk regions, there is an excess of the national average by 0.2 and 1.9 percentage points, respectively.

The structure of unemployment and employment by level of education reflects the situation on the labor market and the demand for human capital. The largest share of the population with higher education as part of the unemployed (49.7 %) was in Moscow (Moscow also leads in the share of employees with higher education as part of the employed). In terms of the share of the population with secondary vocational education in the unemployed, the Republic of Ingushetia was the leader - 22.7 %. The Yamalo-Nenets Autonomous area was in second place after Moscow in terms of the share of the population with higher education in the employed (45.8%). The Omsk region was in the last place among the analyzed regions, where the indicator was 5.7 percentage points lower than the average Russian level. Employees with secondary vocational education were most in demand in the Nenets Autonomous area, where their share of the employed was 49.5 %.

5. Practical results (proposals)

The analysis of the indicators of socio-economic development of Russian regions demonstrates the continuing imbalances in their development. Moreover, the reduction of the gap between the "rich" and "poor" regions in GRP per capita, which began in 2017, was again replaced by an increase in regional inequality in 2018. Among the factors that hinder the economic development of depressed regions, in addition to technological and infrastructural ones, it is necessary to highlight human capital, the quality of which has significantly increased with the transition to digital technologies. Increasing demands on the knowledge, skills, and competencies of employees force them to develop individual human capital through permanent training and education. However, there are a number of barriers to improving the quality of human capital and the efficiency of its use in Russian regions.

First, the demand for education for low-income people is limited; quality education is often not available to them. Consequently, they remain in the segment of low-paid workers for life and do not have the opportunity to increase the level of the individual human capital. This increases the social differentiation. If earlier a significant income gap was observed between the owners of natural resources, financial and material capital, on the one hand, and the owners of the labor factor, on the other hand, then by the end of the XX century, this gap was observed between the owners of the labor factor. The group of employees with incomes comparable to those of large owners has expanded. Thus, J. Galbraith's prediction that the contradiction between the educated and the uneducated will become the main thing in a post-industrial society has come true.

Second, access to quality education is generally limited, since its supply is limited in a market economy. The educational process requires financial and time expenditures, and educational institutions do not have time to respond to market demands. Dynamically changing conditions lead to the fact that now it is not enough to get a higher education once: the learning process becomes continuous and requires constant expenses.
Third, if we consider the cost of education as an investment in human capital, we should take into account their return. One of the most common approaches is to evaluate the impact of education through the wage level. And if the first and second barriers to the growth of human capital in the Russian regions are “in the global trend”, but the third barrier clearly has a “Russian specificity” with a negative trend that has developed in recent years.

The average wages of all employees, regardless of the level of education, grew, but if we calculate the growth rate of average wages, we can conclude that until 2011, the growth rate of average wages of employees with higher education outstripped the growth rate of wages of other employees (Fig. 2). However, starting from 2011, the trend has begun to change. The growth rate of the average wages of employees without education began to outstrip the growth rate of other employees. As a result, the gap between the wages of employees with higher education and those without basic general education decreased from 1.97 to 1.58 times.

![Figure 2. The growth rate of the average salary of employees by level of education in 2007-2019 compared to 2005, % [20].](image)

The negative dynamics of the unemployment rate of graduates with higher and secondary vocational education in 2015-2017 also indicates a decrease in the demand for highly qualified workers. (Fig. 3). In 2015 3.9 % of the graduates were unemployed, in 2017 – 11.6 %. The unemployment rate increased the most among graduates with secondary vocational education by education programs for mid-career professionals – 9.7 p.p. Significant number of graduates with secondary vocational education by education programs for skilled workers, were also unable to find work. The unemployment rate among them in 2017 was 17.5 %, an increase of 9.1 p.p. compared to 2015. But if it increased by 7.2 p.p. in cities, it increased even more in rural areas – by 9.6 p.p. In 2017, 17.2 % of graduates with higher education in rural areas were unemployed [20].

The analysis shows that the supply of skilled labor in the Russian labor market exceeded the demand for it. This is a consequence of the backwardness of the real sector of the economy, low technological and technical level of production, undeveloped institutional environment, and market infrastructure. In these conditions, entrepreneurs have a low demand for human capital, and the labor market is dominated by unskilled labor. In response to low demand, workers either refuse to invest in education, reducing the quality of human capital, or strive to emigrate.
Thus, depressed regions, faced with at least three barriers to human capital growth, fall into a vicious circle. Economic backwardness, including that caused by low level of development and quality of human capital, leads to low incomes of the population. This makes it impossible to invest in education. Low returns on human capital in depressed regions reduce the motivation for its further accumulation or lead to internal migration, "brain drain", which hinders economic development.

Accumulation and effective use of human capital in conditions of socio-economic inequality of regions requires overcoming the barriers by improving economic policy, which should take into account the specifics of the region. State policy in relation to depressed regions should not be reduced to "pumping" them with transfer payments that increase corruption. During the crisis and budget deficits, the reduction of Federal transfers will primarily have a negative impact on these regions, which will only increase regional inequality in the future. Therefore, the priority task is to improve the budget stability of the regions and reduce their dependence on Federal transfers.

No less important for most regions is the improvement of the institutional environment, the introduction of development institutions, and the implementation of a flexible, targeted approach that reduces bureaucracy and improves the quality of public administration at the regional level. A strategic priority for the development of human capital should be quality education, that is equally accessible to everyone.

6. Conclusion
The lopsided structure of the regional economy, the concentration of capital and labor in certain regions, unbalanced trade flows, and irregular transport links between them are all the result of miscalculations of state territorial regulation and the lack of a scientifically based regional policy. In the context of spontaneously formed territorial economic proportions, the risks of economic activity and transaction costs of business that hinder economic growth are significantly increased.

Domestic and foreign practice of regional development confirms the need to develop and implement a state territorial policy based on a deep and comprehensive analysis of indicators of socio-economic development of regions, which should be aimed at developing and improving the quality of human capital, which requires public and private investment not only in the production sphere, but also in the social sphere, combined with the formation of an institutional environment, the financial conditions, and market infrastructure.

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