

Analysis of the factors of human capital formation in the regions of the Russian Federation

Irina Rakhmeeva^{1,*}, *Evgeniya Tukhtarova*^{1,2}, and *Polina Kuklinova*¹

¹Ural State University of Economics, Yekaterinburg, Russian Federation

²Institute of Economics of the Ural Branch of the Russian Academy of Sciences, Yekaterinburg, Russian Federation

Abstract. Human capital is the most important condition for the transition to a new technological order in the Russian regions. In this connection, the analysis of factors that have a direct impact on the formation of its qualitative characteristics is the most important task. The research is aimed at analyzing the factors of human capital formation in the regions of Russia. The methodological basis of the study was the theory of human capital and the provisions of the national project demography. Methods of grouping, graphical analysis, as well as statistical, mathematical and econometric methods of analyzing the influence of demographic, educational and other factors on the formation of human capital in Russia were used in the work. The results of the study contribute to understanding which factors are stimulating for human capital, and which create barriers to its accumulation.

1 Introduction

A high level of human capital is necessary for the successful development of the sixth technological order and the construction of a new economic model. For this reason, the qualitative characteristics that form the basis of human capital are decisive in global competition.

Most researchers recognize that education and health care are two fundamental components of human capital. The strengthening of the qualitative characteristics of human capital occurs under the condition of a harmonious combination of socio-cultural and economic factors that create the existing formal and informal institutions in the country. The formation of the level of human capital directly depends on how the relationship between formal and informal institutions is built.

The regional factor of the formation and accumulation of human capital in large countries, to which Russia belongs, is also of great importance. Given the scale of the territory, uneven settlement, as well as regional differentiation in the economic development of Russian regions, it is important to assess the vector of influence of socio-cultural factors in order not to fall into the so-called "trap of human development", out of

*Corresponding author: rahmeeva_ji@usue.ru

which it seems extremely difficult. To this end, the analysis of the dynamics of human capital accumulation in different regions of Russia allows us to obtain important information about the demographic and socio-economic policies being carried out, about their balance or the necessary adjustments for the harmonious development of the country.

In this connection, the study is devoted to identifying the role of factors that have a positive impact on the level of human capital, as well as factors that create barriers to its formation.

The purpose of the study is to determine the role of socio-cultural factors in the formation of human capital. The goal of the study determined the range of tasks that were solved:

1. Identification of factors that have a positive impact on the formation of human capital.
2. Definition of the role of formal and informal institutions that influence the level of human capital.
3. Identification of factors that have a negative impact on the formation and accumulation of the level of human capital.

2 Materials and Methods

The theory of human capital at the beginning of development was based on the study of the "man – production" bundle. A person was considered as an attachment to a production machine, in terms of economic losses or benefits mainly for production, capital or economic growth [1-2].

In other words, human capital was analyzed only as one of the factors of production in economic development, often not the most important [3,4].

However, the influence of human characteristics on economic development was noticed as early as the 17th century. Thus, Antonio Serra was the first to suggest that the wealth of the city depends on the diversity of artisans working in it. Speaking in modern language: the higher the level of human capital represented by a multitude of qualified specialists in the economy, the deeper the division of labor and the greater the additional product they create, therefore such countries are rich [5].

Since the end of the last century, works devoted to the role of education, its impact and contribution to economic development have begun to appear. As such, it is necessary to mention the works of Nobel laureates in 2021, D. Engrist, G. Imbens and D. Card, who showed the role of education in people's future incomes, how it affects the structure of the labor market and how it ultimately affects the economic development of the country [6-9].

The problem of reproduction of human capital in Russia has a pronounced regional character, which is fueled by the prevailing various socio-cultural conditions, which are also based on the current system of education and healthcare.

Taking into account regional peculiarities of reproduction and the formation of qualitative characteristics of human capital in Russia changes not only the paradigm of understanding its content, but also makes it necessary to create certain conditions for the effective accumulation of its intellectual component. In this regard, questions arise that require the study of socio-cultural factors reflecting this process.

The study used spatial-time series from 2013 to 2019 at the macro level (macro-regions of the Russian Federation) and at the level of subjects of the Russian Federation. Tyumen Region and Arkhangelsk Region are represented by autonomous districts and regions without autonomous districts. Since 2014, actual data for Crimea and Sevastopol have been added. The study was based on data from the report for various years of the Analytical Center under the Government of the Russian Federation and statistical information of Rosstat for 2013-2019.

The HDI indicator for the regions of the Russian Federation for 2013-2019 was used as an indicator of human capital. In order to highlight the clustering of regions by the level of human capital, the authors used the typology of threshold values developed by UN specialists for 2020-2021. Having shifted them and adapted them to the conditions of Russia, the following gradation of regions according to the level of human capital is proposed:

- from 0.96 to 0.87 – regions with a high level of,
- in the range of 0.866-0.83 – regions with an average level,
- in the range of 0.82-0.79 – regions with a reduced level.

Indicators of education, health, demography and quality of life in Russian regions were used to analyze the impact of factors of human capital formation. The analyzed indicators are considered as the main indicators of socio-cultural factors that have a major impact on the formation of the level of human capital. The indicators were taken from the report of the Analytical Center under the Government of the Russian Federation for 2013-2019. The latest official data on regional HDI were published in December 2021. This data is for 2019. This is a problem for timely response and building development strategies, but their analysis allows us to identify systemic problems.

3 Results and Discussion

An analysis of the latest data on the human development index shows that in Russia since 2013 there has been an upward trend from 0.839 to 0.87 in 2019. The biggest jump in the growth of this indicator occurred in 2017, the year when Russia had been under sanctions for several years. In our opinion, this can be explained not only by the adaptation of the Russian economy to unfavorable external conditions, but also by the growing importance of the role of socio-cultural factors in Russian regions during a difficult period.

Indirectly, this is evidenced by the polls of the Russian Public Opinion Research Center about the change in the trend in the attitude of Russians to such an informal, but important socio-cultural institution as the family. So, if in 2014 only 56% of Russians considered the attitude to the registration of family status important, then in July 2021 the share of such people increased to 71%.

However, the analysis of Rosstat data on the marriage rate in the context of the regions of the Russian Federation did not show a trend for its increase, which can be explained both by the demographic hole in the 90s and noughties, and by the insufficiently formed economic environment for creating strong families. In other words, there is an awareness of the importance of traditional values in society and the strengthening of the status of officially registered families, which has not yet found its real reflection in view of the lack of decent economic conditions. It should be noted that one of the small Russian regions where there is a tendency to increase the proportion of marriages is St. Petersburg, which can be explained not only by the high level of income, but also by the high role of the socio-cultural phenomenon.

Along with the popularization of traditional values in Russian society, the joint report of RPORC and National Priorities notes the importance of psychological and material support for families, especially for the young, who often postpone the birth of not only the second, but also the first children. Unfortunately, by now not all regions can boast of the implementation of regional programs to support young families, despite the implementation of the national project "Demography", which started in 2019.

Serious regional differences in income generation narrow the space for the implementation of this program in the Russian regions, which could affect the strengthening of regional differentiation in the human development index in 2019 (Fig. 1).

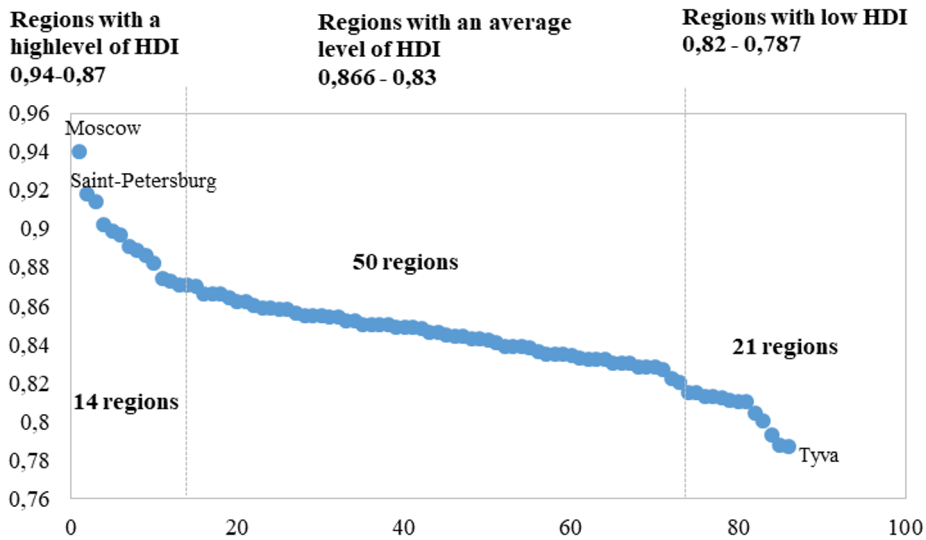


Fig. 1. Human Development Index in the regions of the Russian Federation, 2019.

An analysis of the regions of the Russian Federation in 2019 by the HDI level showed that only 14 regions in Russia have decent living conditions, have access to quality services in the education and healthcare system, respectively, such regions have a high level of human potential, which ranges from 0.94 to the average Russian level of 0.87. Whereas most of the Russian regions (50) are in the region of average values for the HDI level, the range of which is 0.866-0.83, and 21 regions are in the zone of relatively low HDI level (0,82-0,787).

In the most advantageous situation for HDI in 2019, there were three regions with a large margin from the rest – Moscow (0.940), St. Petersburg (0.918) and KhMAO (0.914), i.e. regions with high incomes. In general, the pool of regions where a high level of HDI is formed and accumulates includes 14 regions: YANAO (0.902), Nenets Autonomous Okrug (0.899), Sakhalin Oblast (0.889), Tatarstan (0.897), Tyumen Oblast (0.891), Yakutia (0.886), Belgorod (0.882), Astrakhan (0.874), Krasnoyarsk Territory (0.873), Tomsk (0.871) and Magadan regions (0.871). Along with resource-rich regions, this category deservedly includes regions with high scientific and technological potential – Tomsk, Astrakhan and Belgorod regions, which were able not only to preserve, but also to increase the level of human capital.

In addition, it is important to note another trend characteristic of some regions with a high level of human capital – a decrease in the number of divorces. For example, in Tatarstan over the past 9 years, the divorce rate has decreased from 4 in 2011 to 3 in 2019 per 1,000 people. The same trend is typical for the Nenets Autonomous Okrug, KhMAO, YaNAO, Astrakhan and Belgorod regions. We agree with those researchers who believe that economic well-being leads to an improvement in the demographic situation and a decrease in divorces in society. However, for most regions of the Russian Federation, this trend remains unsatisfactory.

The improvement of the quality of life and the level of income has also affected the strengthening of families and the improvement of demographic indicators. Therefore, we believe that the existing gap in the level of human capital between successful regions and the rest indicates that the institutional environment contributes to the fact that the prevailing socio-cultural factors in these regions work for the development and improvement of the

level of human capital. Whereas in other regions, a weak institutional environment can contribute to the creation of socio-cultural barriers to its development.

Indeed, subsidized regions, which for many years have demonstrated low rates of economic development in comparison with other subjects of the Russian Federation, also differ in a lower level of human capital, which can be explained by the weak efficiency of regional institutions. Thus, the lowest incomes in 2019 were recorded in the following regions: the Jewish Autonomous Region (0.788), the Republic of Tyva (0.787), Mari El (0.83), Buryatia (0.81), Dagestan (0.827) and Chechnya (0.793). In addition to low incomes in these regions, the demographic situation has worsened, first of all, a decrease in life expectancy (life expectancy), for such regions as the Jewish Autonomous Region and the Republic of Tyva, where the standard of life expectancy in these regions is about 8% lower than the average Russian level.

The thesis about the high sensitivity of demographic indicators to income level is also associated with such a socio-cultural phenomenon as marriage. Thus, in almost all of the above outsider regions, there is a decrease in the overall marriage rate, even in regions such as Dagestan and Chechnya. For example, if in 2011 the total marriage rate in Dagestan was 8.1, then in 2019 this indicator almost halved to 4.8.

In our opinion, despite the fact that the Caucasus regions are low-income, with poorly functioning institutions, negative effects can be leveled due to the prevailing socio-cultural factors. As a result, on the one hand, socio-cultural factors contribute to the improvement of human capital in the Caucasus, while on the other hand they can be barriers to its development, for example, due to low educational coverage in the age cohort of young people aged 7-24 years.

Thus, the analysis of the weighted average component of the HDI education index recorded its lowest level for the Caucasus regions (71% of the population aged 7-24 years), which can be explained by the prevailing socio-cultural norms and customs, when most of the female population marries at a young age and has only basic or secondary education (grades 9 or 11). At the same time, continuing education or going to work in the future seems extremely difficult in traditional families of the Caucasus.

A similar situation has developed in the Far Eastern regions, where there is also a low level of education coverage for young people aged 7-24 years compared to other regions of the Russian Federation. This may be due to a restriction in access to higher or secondary specialized education. Thus, according to a study by the HSE Center for Interdisciplinary Research of Human Potential, a significant number of universities were closed in the Far East in 2017. The correspondence form of study in most institutes was also reduced, which was very popular for many cities of the Far East due to their remoteness from universities. Therefore, this could have an impact on the fact that out of 100%, only 82% of the population in this age cohort is covered by education.

An analysis of the components of the HDI in the North Caucasus region and individual subjects of the Far East indicates that weak institutions are operating in these regions, contributing to the formation of prerequisites for the deterioration of the level of human capital. Along with a weak institutional environment, the informal institution of the family acts as a counteraction to this, where centuries-old socio-cultural norms and traditions are maintained, such as: support for a healthy lifestyle, characteristic of most residents of the Caucasus, the culture of creating and supporting young families, the transfer of knowledge from older to younger generations, etc.

4 Conclusion

In general, the analysis of the components of the human development index by region indicates that its differences in the development of human capital are influenced not only by

economic factors, but also by existing institutions, as well as established socio-cultural factors: marriage, divorce, life expectancy, accessibility of the education system, healthcare, healthy lifestyle, cultural and culturalmoral potential, traditional values, etc. in Russian regions. In our opinion, the best combination of factors that contributes to the development of human capital and its subsequent accumulation is a combination of socio-cultural and economic.

Despite the fact that the role of the family institution has increased and strengthened in Russia in recent years, it is not yet necessary to talk about a decrease in the dynamics of divorces for most Russian regions. To improve the level of human capital in Russian regions, effective work of state institutions is necessary to increase not only economic well-being, but also awareness of the importance of socio-cultural factors and the creation of conditions for these factors to work for the development of human capital, and not be barriers.

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