



Human capital as a strategic factor in the development of the region's economy

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Abstract:

The article is devoted to the study of the human capital of the region as a key resource of socio-economic development of the territory. As a result of the generalization of approaches to the interpretation of human capital, the author's definition of the human capital of the region and its components is proposed. The content of methods of estimation of human capital at the regional level is investigated. The analysis of the state and development trends of human capital in the Belgorod region using a multicomponent method and the method of substitution estimates was carried out. The interrelations between the level of cluster development and the human development index of the regions of Russia are revealed.

Key words: regional economy, human capital, cluster development, Human Development Index (HDI)



Introduction

At the beginning of the third millennium, the Russian scientists estimated the national wealth of all countries in the world at 550 90 trillion dollars. Half of this amount was accounted for the most developed countries (USA, Great Britain, France, Germany, Italy, Canada, Japan). More than half of the world's national wealth was human capital - 365 trillion dollars. 95 and 90 trillion dollars were accounted for reproducible and natural capital, respectively.

According to a study conducted by the World Bank, in Russia natural resources per capita are 2.2 times more than in the USA, 5.2 times more than in Germany, 3.4 times more than in France. But there is a significant lag from these countries on the wealth created by man (businesses, roads, schools, hospitals, etc.); it is more than 5 times. The gap in the development of the society's intangible resources, which characterize the level and quality of education, medical care, the effectiveness of institutions designed for management, provision of public services and business regulation, is even greater: it is 26 times compared with the USA, 20 times with France, 18 times with Germany. The accessibility of social facilities (education, medicine, culture) in connection with their concentration in large cities poses an urgent problem for the population of peripheral regions.

A steady trend in economically developed countries is the increasing share of revenues to the state budget from high-tech production - in the EU countries this figure ranges from 71 to 76%. In Russia, it is about 5% in the domestic market and only 0.5% - on the external. The science-intensive goods in the United States account for 95% of exports, in Russia - about 5%. In the production of knowledge in Russia, about 1.6% of GDP is invested, and in OECD countries - about 5%. The study of the processes of scientific and technological development shows that human capital, the cycles of its growth and development are the main factors in the generation of innovative waves and cyclical development of the economy and society (Parfenov et al., 2015; Anichin et al., 2017; Moskovkin et al., 2015).

Evaluation of the components of the human capital of a particular region is an indispensable element for building an effective regional economic policy. At the same time, in the regions of Russia there are still no effective evaluation algorithm and long-term, deeply developed programs for the formation of human capital as a renewable strategic resource of competitiveness. The change in the role of human capital, its qualitative transformation in the conditions of the formation of new technological structures, causes an increase in the scientific interest in this problem and determines the relevance of the research topic, its theoretical and practical significance.



Materials and methods of research

The research materials were the scientific theories and the work of economists in the field of determining the content of human capital, its evaluation and use at the regional level. Collections of Federal State Statistics Service (Rosstat) have been used: "Statistical year-book. Belgorod region. 2017", "The Belgorod region in figures. Release of 2017", "Regions of Russia. Socio-economic indexes. 2017". According to these materials, the basic indicators of human capital of the Belgorod region for 2012-2016, the data for calculating the index of human development of the region were determined. Also in the course of the research the data of the Maps of Russia clusters, of Rating of innovative development of regions of Russia (2016) and the European Cluster Panorama (2016) were used for detection of features of territorial distribution of clusters in correlation with the index of human development.

The principles of dialectical objectivity, positive and normative approaches, abstract-logical and systematic approach, as well as economic and statistical methods of data processing and analysis are used as a methodological basis of scientific research in the article.

Approaches to the definition of "human capital of the region"

The wealth of the territory consists of the accumulated physical, financial and human capital, as well as the natural capital of the region in the valuation. The human capital of the region is currently the most intensive and complex productive factor in the development of the economy and society of the territory.

The founder of the theory of human capital G. Becker defines it as "a set of innate abilities and acquired knowledge, skills and motivations, the effective use of which contributes to an increase in income and other benefits." (Becker, 2002)

As a result of generalization of modern interpretations of human capital, a number of common approaches are identified:

- human capital as a resource capable of generating income (Raizberg et al., 2011; Rumyantseva, 2016);
- human capital as a reserve of abilities, knowledge, skills used in activities (Thurow, 1970);
- human capital as a stock of the abilities, knowledge and other characteristics allowing to receive higher incomes in the future (Schulz, 1961; Becker, 1975);
- human capital as a stock of abilities, knowledge and other characteristics formed as a result of investments, allowing to receive higher income in the future (Dobrynin et al., 1999; Yarushkin et al., 2013);



– human capital as a universal concrete form of human activity (Simkina et al., 2007).

Thus, the human capital of the region is the aggregate of labor resources localized on the territory possessing a certain level of education, professional knowledge and skills, health, tools of intellectual and organizational work, habitat and intellectual activity that ensure efficient and rational functioning of human capital. It should be noted that the human capital of the region is a unity of quantitative (number of working-age population living in the territory) and qualitative (level of education, health and income) components.

Methods of assessment of the human capital of the region

It is accepted to define natural (temporary) and cost methods of measurement of the human capital. Temporary methods involve the estimation of human capital in man-years of training (the higher the level of education, the greater the volume of human capital possesses an individual). Cost methods of measuring human capital allow to determine its value as a factor of production in monetary units (Korchagin, 2017; Yakimchuk et al., 2017; Chistnikova et al., 2017).

The cost methods of assessing human capital in the region include:

- expensive method considering the volume of investment aimed at the development of the human capital;
- income (rent) approach, taking into account the return on funds invested in improving the educational and qualification level; it assumes a quantitative assessment of the acquired knowledge and skills;
- substitute estimates (including the index method) based on formal education, health and income indicators that provide international comparability;
- multicomponent method that takes into account the accumulated level of knowledge, professional skills and physical abilities to work of the inhabitants of the region. (Kleshcheva, 2016; Nosachevskaya et al., 2017)

Within the framework of the multicomponent method for assessing the human capital in the region, a set of indicators can be used, including the dynamics of the population, indicators of income and the level of education of the population, economic activity and employment structure of the population, development of the social sphere.

The HDI (Human Development Index) can be considered as an integral indicator in the context of the replacement approach, which allows a fairly complete and objective assessment of the development of human capital in the region (Demyanova et al., 2017). It is a complex indicator,



which is a simple average value derived from the division of the sum of the three indices (life expectancy index, education level index, living standards index).

Development trends of human capital in the Belgorod region

We've explored human capital as a strategic factor in the development of the region's economy by the example of the Belgorod region of Russia.

The main indicators of human capital (Mafi et al. 2012) of the Belgorod region for 2012-2016 are presented in Table 1.

Table 1 - Dynamics of the basic indicators of human capital of the Belgorod region for 2012-2016.

Indicators	2012	2013	2014	2015	2016	2016/ 2012, (+, -)
The population of the region, thousand people.	1536	1541	1544	1547	1550	14
The level of employment in the region, %	63.7	65.4	66.1	65.7	67.3	3.6
Life expectancy, years	71.91	72.16	72.25	72.61	72.62	0.71
Population with higher education in the region, %	28.9	29.9	30.2	30.9	32.3	3.4
Population with a secondary specialized education in the region, %	47.8	48.9	48.7	47.6	49.2	1.4
The incidence of the population (the number of inhabitants of the region who have been diagnosed), thousand people.	1203.3	1196.7	1138.4	1095.7	1157.0	-46.3
Morbidity level, %	78.34	77.66	73.73	70.83	74.65	-3.69
Monetary income per capita, rub.	260351	285074	304857	335294	354936	94585
Gross regional product, total, mill. rub.	545517	569006	619678	686357	694593	149076



Gross regional product per capita, rub.	354571	368875	400821	443086	448125	93554
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The population of the Belgorod region and life expectancy in the studied period annually increased at moderate rates, which had a positive impact on the development of human capital in the region.

Positive dynamics was observed in the indicators of education and employment. In the Belgorod region in 2012-2016 the incidence of the population decreased, that is the number of sick citizens with the established diagnosis to average annual population of the region was reduced.

In the Belgorod region, the per capita income of the population for the study period increased by 94585 rubles (36.33%), the growth of the gross regional product amounted to 149076 million rubles (27.33%), the gross regional product per capita increased by 93554 rubles (26.39%).

In general, dynamics of key indicators of the human capital of the Belgorod region for 2012-2016 is moderately steadily positive; however it doesn't provide powerful impact on economic development of the region yet.

We will continue a research of the human capital of the Belgorod region by assessment of values of the combined indicator - the index of human development of the region in 2012-2016 (Table 2).

Table 2 - Dynamics of human capital indices of the Belgorod region for 2012-2016

Indicators	2012	2013	2014	2015	2016	2016/ 2012, (+, -)
The index of life expectancy	0.781	0.782	0.786	0.794	0.794	0.013
Education level index	0.934	0.935	0.943	0.944	0.946	0.012
The index of income (standard of living of the population)	0.939	0.939	0.933	0.932	0.932	- 0.007
The Human Development Index (HDI)	0.885	0.887	0.891	0.890	0.891	0.006
Region category according to HDI	Region with a high level of HDI					

In the Belgorod region for 2012-2016 there was a positive dynamics of the index of life expectancy (+0.013), as well as the index of the level of education (+0.012). Due to the crisis phenomena in national economy the index of income (the standard of living of the population) has decreased on 0.007 that demonstrates deterioration in welfare of inhabitants of the region.



Despite the favorable size of the human development index (HDI) and the positive dynamics of the main indicators of human capital of the Belgorod region for 2012-2016, the pace of economic development and the quality of life of the population in it is below the desired level achieved in the leading subjects of the Russian Federation.

Research of interrelation of level of cluster development and human capital of the region

We've formulated the working hypothesis of a study on the existence of a direct relationship between the level of cluster development and the level of development of human capital determined by the HDI.

Let's look at how clusters are located on the territory of Russian regions (Figure 1).

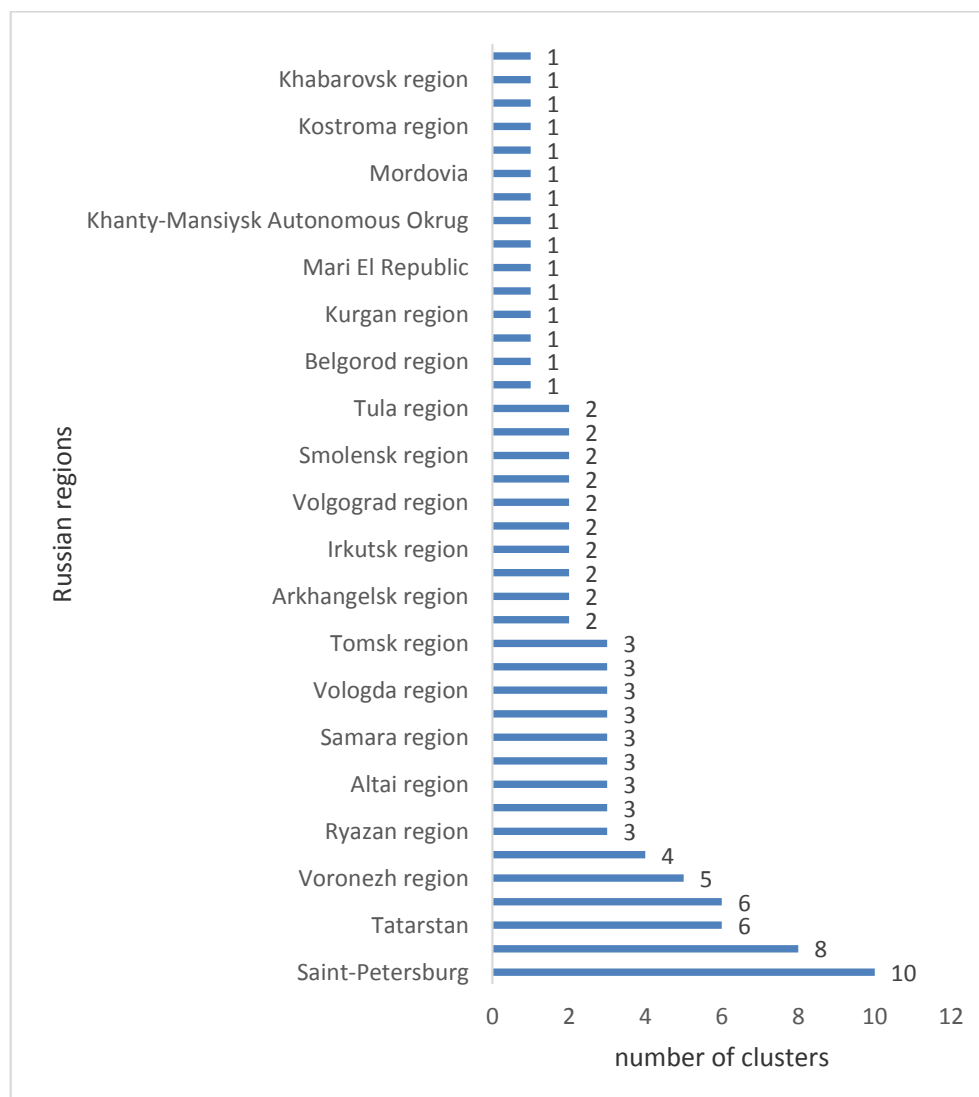


Figure 1 – The clusters of the Russian regions



Regions-leaders of cluster formation are: St. Petersburg - 10 clusters, Moscow and Moscow region - 8 clusters, the Republic of Tatarstan – 6 clusters, Rostov region – 6 clusters, Voronezh region-5 clusters. These regions account for 33 % of all clusters in the Russian Federation. These regions also conduct an active innovation policy, lead the ratings of innovative development of the Russian regions (Table 3), have a regional cluster strategy, actively working cluster development centers. Half of the regions of the Russian Federation did not register any cluster at all. Thus, the cluster development of the Russian regions, as well as economic development in general, is carried out very unevenly.

Table 3 – Regions - leaders of cluster development

Region	Number of clusters	Rating of innovative development of the region	The group on the rating of innovation development
Saint-Petersburg	10	3	strong innovators
Moscow and Moscow region	8	2 (14)	strong innovators
Republic of Tatarstan	6	1	strong innovators
Rostov region	6	26	medium-strong innovators
Voronezh region	5	15	medium-strong innovators

Let's find out whether there is a relationship between the level of cluster development of the region and the region's HDI. According to the Human Development Report of the Russian regions for 2015, the leaders of human development are: Moscow, St. Petersburg and the Tyumen Region. It is interesting to note that the cities of Moscow and St. Petersburg are the leaders of cluster formation in Russia and have the highest values of HDI components. In the Tyumen region, the life expectancy index is low, but the high level of income provides leadership in HDI, with only one cluster registered in the region. Regions-outsiders in the HDI are the Jewish Autonomous Region, the Chechen Republic and the Republic of Tyva. The Jewish Autonomous Region and the Republic of Tyva are characterized by low life expectancy. The Chechen Republic has low indices of income and education. These regions have not registered any cluster on their territory. Among the lagging regions in terms of the level of the HDI can be called the republics of the North Caucasus and southern Siberia, which have just begun to implement a cluster approach to the development of



territories. Of particular interest is the development of regions that managed to significantly improve the position in the rating of the HDI: the Astrakhan Region, the Chukotka Autonomous District and the Penza Region. The Penza Region can be attributed to regions that actively implement cluster policy. There are 4 clusters registered in its territory. HDI also depends on the type of region: Russia's financial and economic centers have an average index of 0.905, commodity exporters of 0.884, and less developed agricultural regions of 0.809.

Discussion

The efficiency of the formation of human capital largely depends on the quality of economic space, which is determined primarily by: density (population, the volume of gross regional product, natural resources, fixed capital, etc. per unit area); placement (indicators of uniformity, differentiation, concentration, distribution of population and economic activity, including the existence of economically developed and undeveloped areas); connectivity (intensity of economic ties between parts and elements of space, development of new forms of spatial organization of production, such as clusters, conditions of mobility of goods, services, capital and people, determined by the development of transport and communication networks).

Cluster development does not yet affect the level of inequality in the regions of Russia in the development of human capital. Unfortunately, the level of well-being of the population and inequality in the distribution of income are determined in Russia now not by the development of innovations and clusters, but by factors of non-economic order (geographical position, natural resources, cultural characteristics), which is typical for countries with transitive and developing economies.

Conclusion

The trends of economic development in recent years have shown that not only quantitative estimates of human capital, but also its qualitative content and the life cycle of human capital, are changing, the structure is complicated. This is due to the strengthening of the intellectual component in the human capital, the change in the nature of its contribution to the creation of the nation's wealth. In connection with the increasing contribution of technological development to the aggregate factor productivity in the world, there is an acute global competition for economically active people with professional competencies. At the same time, large-scale challenges for the development of Russia are expected from human capital in the medium to long term, further ignoring of which is unacceptable. This is, first of all, a reduction in the number of people in working age and an increase in the number and proportion of older age groups.



In recent decades, the Russian Federation has been experiencing the regionalization of social and economic processes. Updating of strategic documents of social and economic development of Russia occurs in crisis conditions. It is necessary to search for a new model of the growth of the Russian economy. Its goal would be to diversify its structure by accumulating human capital, borrowing and developing new technologies, creating conditions for investment and entrepreneurship.

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