

Human capital in the competitive advantages determinants system in terms of territories sustainable development

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Abstract. The features of the human capital development in the competitive advantages determinants system of the Russian Federation economy in the conditions of territories sustainable development had been identified. The global competitiveness of the Russian economy in the context of socio-economic and geopolitical instability had been considered; the problems of improving the quality of the basic characteristics of individual human capital as one of the main factors in ensuring competitiveness in the territories sustainable development context had been characterized, the current dynamics of the human capital index in the Russian Federation had been analyzed; the influence of the human capital index on the value of the index of competitiveness of the Russian Federation on the basis of econometric models had been determined, the dependence of the global competitiveness of the national economy on the human capital index had been revealed.

Keywords: Competitiveness · National economy · Human capital · Sustainable development

1 Introduction

Human capital is one of the main factors for competitiveness increasing, as well as a condition and the most important resource for the national innovation economy creation and development. On the economic and technological knowledge basis, new technologies are being developed and created, the latest scientific developments and technology are being implement, which creates and forms the national wealth of the country. It is human capital that generates innovation and creates favorable conditions for the innovative economic system formation.

In the context of territories sustainable development and transformational shifts in the global economy, the role of human capital in the society socio-economic development implementation is increasing significantly, which is confirmed by dissertation research in recent years. Thus, the theoretical and methodological problems of human capital management in the context of the digital economy development are considered in the dissertations of V.V. Kovelsky [14], E.V. Shirinkina [21].

The considerable scientific interest is increased to the questions related to the human

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capital assessing management system formation. The works of Yu. G. Balashova [3], A.A. Bulova [5], R.P. Yakunina [28] are devoted to their solution. The problems of the human capital management system transformation are analyzed in the L.D. Gurtskaya dissertation [11]. The issues of human capital efficiency increasing are considered in the works of T.M. Dodohtyan [8], S.V. Koval [13].

Scientists are studying the human capital development in different Western countries, for example, R.S. Rodrigo [18], the East, for example, Azadi, Pooya and others [2].

The importance of investing in education is emphasized by D. Deming [6]. Serenko [20]. Issues of human capital development associated with its use in certain sectors of the economy, for example, in agriculture, are considered by Yu. O. Derevyanko [7]. A framework human capital model for company goals achieving had been proposed by Juniawan Mandala Putra, Josua Panatap Soehaditama and others [12]. A.Serenko turns to the dismissal phenomenon analysis from the human capital management point of view. [20]. The issues of human capital development related to its use in certain sectors of the economy, for example, in agriculture, are considered by Yu. O. Derevyanko [7], P. Tommaso, F. Rossi, G. Santangelo [27].

Against the backdrop of a wide range of scientific works presented in the economic literature, the issues of human capital in the national economies competitiveness context in the current realities of global challenges and transformational processes require deep and systematic study, which determines the relevance of the research topic.

2 Materials and Methods

The purpose of the study is to identify and characterize the features of the human capital development in the competitive advantages determinants system of the Russian Federation (RF) economy in the territories sustainable development conditions.

The set goal involves the solution of a number of research tasks: to consider the problem of improving the quality of the basic characteristics of individual human capital as one of the main factors in ensuring competitiveness in the terms of sustainable development; to analyze the Russian economy global competitiveness in terms of socio-economic and geopolitical instability; characterize the current dynamics of the human capital index in the Russian Federation; to determine the impact of the human capital index on the value of the Russian Federation competitiveness index on the basis of econometric models. According to our hypothesis, we assume that there is a certain dependence of the global competitiveness of the national economy on the human capital index, and we consider such a correlation on the example of the Russian Federation economy.

The theoretical and methodological basis of the study is the fundamental modern economic theory provisions, the scientific works of domestic and foreign scientists on the transformation of the world economy in the context of globalization problems, as well as on the formation, evaluation and development of the human resources international competitiveness in modern economic conditions, primarily conceptual provisions of the theory of human capital, set out by Theodor Schultz [12], further developed by Gary Becker [4], presented in Thurow L. works [26]; M. Porter's fundamental works on the competition problems [17], works of domestic scientists: L.I. Abalkina [1], S. I. Dyatlova [9], M.M. Kritsky [15] and many others.

The instrumental and methodological apparatus includes historical-logical, systemic and situational approaches with their structural and functional research methods, statistical methods of analysis. For specific research problems solving general scientific and special research methods had been used, such as: historical and logical (when studying global transformational processes in the economy; balance and statistical methods, methods of quantitative and qualitative analysis, comparison, analogies, observation (when considering the state and prospects of human resources development in the world economy in the

globalization context; system-analytical (when studying aspects of the transformational economic processes impact on the human resources development, investment analysis, analysis of innovation and innovation activity, graphical method, index method, including the global innovation index, as well as the method of correlation and regression analysis.

3 Results

Nowadays human capital is one of the main factor of a “knowledge economy” (innovation economy) formation. Within the framework of sustainable development, human capital cannot be considered only from the point of view of the social component, since achieving sustainable development is possible only when a person, having satisfied his material needs, satisfies his spiritual needs, thereby improving the environmental component of sustainable development. Thus, a person should be considered from different points of view (Figure 1):

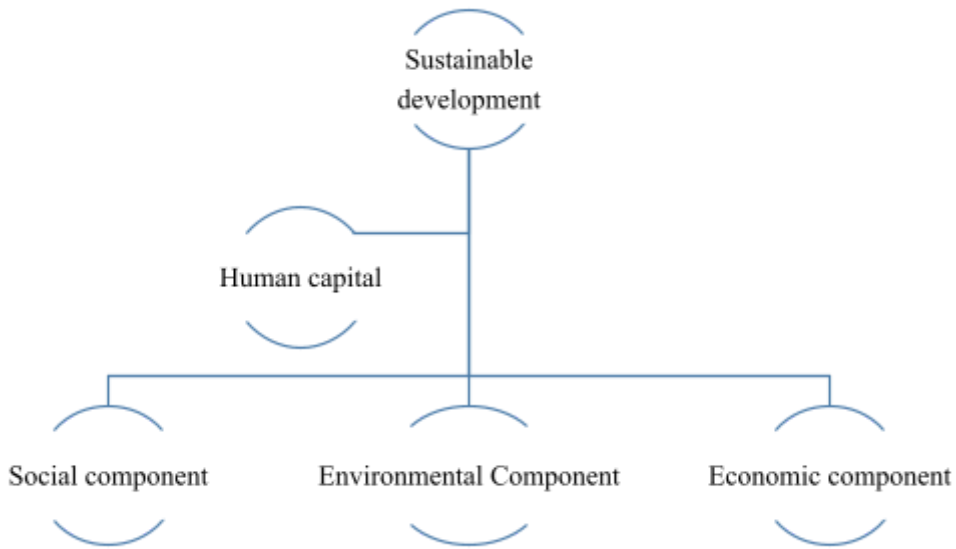


Fig. 1. Human capital in the territories sustainable development system
Source: compiled by the authors based on International Institute for Management Development rankings data [23].

The figure shows that human capital occupies a central place in the system of sustainable development; therefore, great attention should be paid to its assessment and reproduction in order to predict the possibilities of achieving sustainable development. Human capital can be assessed at various levels, the three main ones being the level of the enterprise, region and country. Obtaining a reliable and accurate assessment of human capital can be very problematic, for example, the level of an enterprise may not be enough to assess the human potential of a territory, or the level of a country will very vaguely reflect the current situation. So, it is better to assess human capital at the regional level. This way more reliable, albeit enlarged results could be achieved.

As part of the study, considering the problem of the quality of the basic characteristics of individual human capital improving as one of the main factors in ensuring competitiveness in terms of the economic systems transformation.

Many researchers of the modern world economy note that the transformation processes

have changed the external and internal systems of economic relations and modernized the factors of its competitiveness.

The World Economic Forum participants define human capital as a set of knowledge and professional skills of the population that help create economic value in the global economic system [25]. The accumulation of human capital is one of the main driving forces of the economy, the most important factor ensuring the economic well-being of the country and the security of the state. Human capital and its growth cycles are now considered as the most important factor in the economy and society development. According to some estimates, human capital in the Russian Federation reaches the 26th place in the world, although its growth is limited by many factors [25].

This factor is the economy creation and development foundation and ensures the competitiveness of the state at the international level. According to the World competitiveness center data, Russian Federation remaining competitive in times of geo-political turbulence and is demonstrating a positive growth trend as per International Institute for Management Development rankings data (Figure 2) [23]:

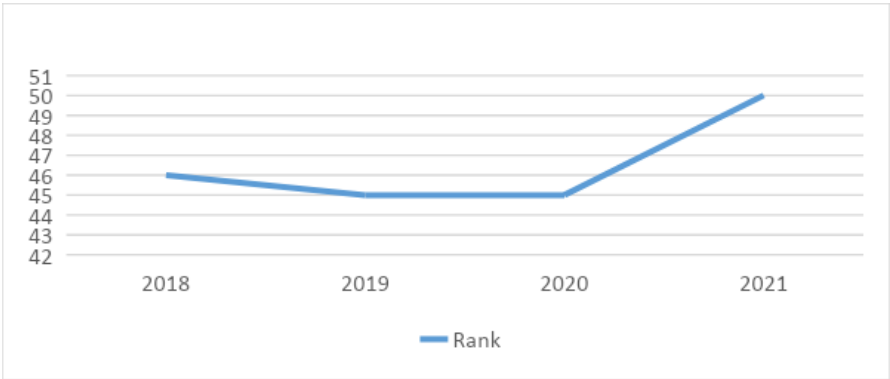


Fig. 2. Dynamics of the Russian Federation Competitiveness Index
Source: compiled by the authors based on International Institute for Management Development rankings data [23].

Russia has risen in the IMD World Competitiveness Ranking from 50th to 45th place in 2021. Switzerland, Sweden, Denmark, the Netherlands and Singapore are in the top five of the list, Slovenia, Italy, Hungary, India and Chile occupy five places ahead of our country. [23].

The Global Competitiveness Ranking is no exception - an annual global survey and the resulting ranking of the world's countries in terms of economic competitiveness, which reflects a country's ability to create conditions and support a competitive business. For all the basic components of the rating, Russia is on 40-50 places (figure 3). A positive results (38th place) are reached in state of the economy and infrastructure, which indicates the presence of growth potential in the ranking in the short term. There are opportunities for advancement in education and medicine. The highest place in individual components is observed in the field of tax policy and information technology [22].

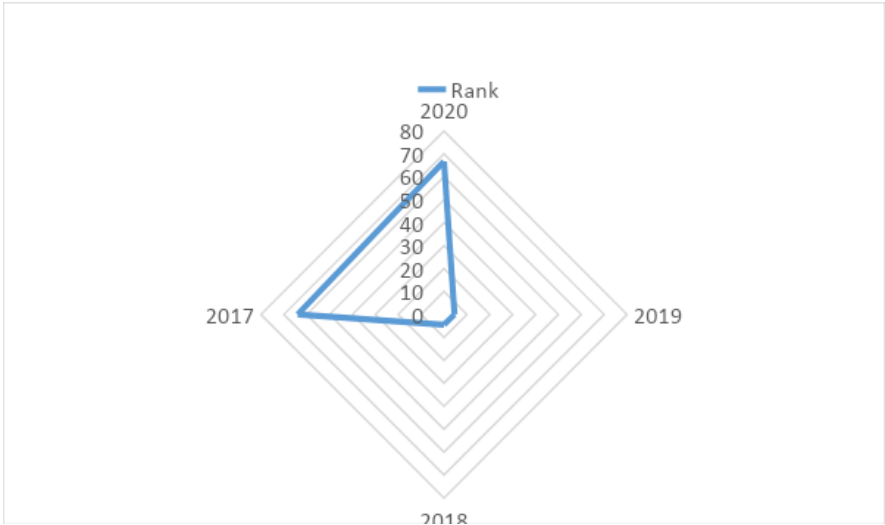


Fig. 3. Dynamics of the Russian Federation Global Competitiveness Index

Source: compiled by the authors based on The Global Competitiveness Report 2021 provided by World Economic Forum data [22].

The basic indicator widely used for evaluation in a given country is the human development index. This index is calculated annually by one of the departments of the United Nations based on a number of indicators (such as the level of accessibility and quality of education, the level of inequality, indicators of public health, etc.). The diagram on figure 4 shows the dynamics of the human capital index according to the latest report from 2020:

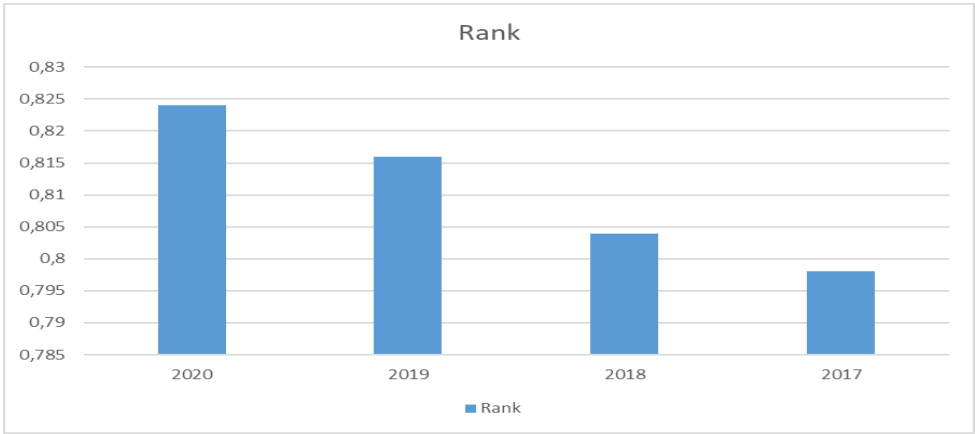


Fig. 4. Dynamics of the Russian Federation Human Development Index

Source: compiled by the authors based on International Institute for Management Development rankings data [23].

As can be seen from the chart, in 2020, the HDI value in Russia reached 0.8244 compared to the global average of 0.737. Russia ranked 52nd out of 189 countries, falling into the group of countries with "very high human development".

Based on the analysis of the above indicators, a study of the human capital index influence

on the value of the RF competitiveness index based on econometric models had been researched. Calculations are based on International Institute for Management Development rankings [23] World Economic Forum statistical data [22].

Using the given diagram data, by means of the graphical method, a pair regression equation was constructed and a correlation analysis had been performed. As a result of calculations, a multiple regression equation had been obtained:

(1)

$$Y = -154.4775 + 233.6983X1.$$

Where Y – is Russian Federation Competitiveness Index, X1– Russian Federation Human Development Index.

The chosen method is used to visualize the form of connection between the studied economic indicators. The graphical display of the model is shown in Figure 5:

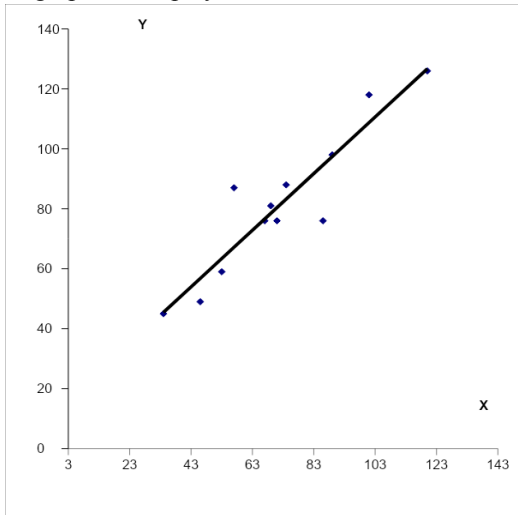


Fig. 5. Graphical display of a linear econometric model.

Source: compiled by the authors based on International Institute for Management Development rankings data [23] and World Economic Forum data [22].

An economic interpretation of the model parameters is possible: an increase in X1 (Human Capital Index) by 1 unit of measure leads to an increase in Y (Index of global competitiveness of the state) by an average of 233.698 units. According to the maximum elasticity coefficient $E1=5.422$, we conclude that the factor X1 has the greatest influence on the result Y. The statistical significance of the equation was verified using the coefficient of determination and Fisher's test. It had been found out that in the situation under study, 0.61% of the total variability of Y is explained by a change in X1. When the x1 factor changes by 1%, Y will change by 5.422%.

The calculations based on the construction of an econometric dependence model confirmed the conclusion about the positive impact of the human capital index on the value of the Russian Federation competitiveness index.

4 Discussion

The uniqueness of the HCI development process requires systemic investments of physical, financial and material resources corresponding to each of its elements at different levels of the hierarchy in order to obtain a positive synergistic effect. All this means that the process of

formation and development of the HCI as a set of necessary personal parameters that ensure the existence of a person at various stages of his life should be considered on the basis of a systematic description and a component approach. Such an approach will make it possible to trace the dynamics of the qualitative characteristics of individual components of the HCI at various stages of development and to identify the most priority of them.

The key term for the reproduction of a competitive human capital is state support for the financial capabilities of the family as the main link in the formation and accumulation of HCI, as well as the development of strategic decisions to create conditions for both initial investment and subsequent investment in order to develop certain competencies and productive abilities of HCI during the period of labor activity.

Consequently, the management of the human capital formation and development will be a significant factor in the creation of competitive advantages in the long term in the context of territories sustainable development.

5 Conclusion

In the current realities, as shown by the results of the analysis, there is a positive impact of the human capital index on the value of the competitiveness index of the Russian Federation, which allows us to consider human capital as a significant factor in the competitive advantages of the economy of the Russian Federation in the face of sustainable development implementation challenges.

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