Methodological approach to the formation and implementation of the human potential of the region

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***Abstract* - Regional development determines the development of society as a whole, taking into account the peculiarities of its potential. Human potential in its various aspects is characterized as the basis for development, including socio-economic. This article proposed a methodological approach to the formation and development of human potential, based on the dual nature of this category. Human potential is positioned as the ultimate goal and as a means of achieving the goals of socio-economic development. A meaningful distinction has been made between the characteristics of human potential and human capital, taking into account their categorical essence and the essence of their related categories. The features of the position of human potential in the region strategic development in terms of its formation and implementation are determined. The dual character is revealed in the essence of the studied category in the application to the education system. The features of the relationship of human potential and innovative socio-economic development of the region are investigated. The results of the analysis of completed and running investment projects in the Voronezh region are presented. The fundamental research, technological development and production interaction model has been improved taking into account the characteristics of the human potential of the region as an example of the Voronezh region. The directions of the human potential formation and realization of the Voronezh region are methodologically grounded taking into account its development strategy.**

Keywords* - *human potential, region, innovative development, strategy

I. INTRODUCTION

The importance of human potential in assessing the directions and prospects of socio-economic development in various aspects is noted by many researchers. Thus, S. Anand and A. Sen talk about the alternative of choosing between two global priorities: human development and increasing the wealth of the nation [1].

Further, D. Assemlu considers the significance of the talents of economic agents and their distribution by respective types of activity on the social development scale [2]. A. Doktorovich [3] and S. Sakharovsky [4] explore human potential from the standpoint of its essence as one of the basic elements of the social development in general. In addition, the category under study is widely considered by researchers, for example, S. Ivanov [5], E. Mikhalkina, N. Kosolapova, O. Senkiv [6], expert groups [7] and, in particular, the authors [8], [9], [10], [11], in regional and industry applications. Official documents defining the strategic goals of the state development and its territorial units, first of all, the regions, contain information about human potential both about the planned result of the activity and as a necessary means of solving targets [12], [13] .

Thus, when applied to regional development, human potential is of particular significance, which, in turn, emphasizes the need to resolve the methodological contradictions that exist in the scientific literature.

In this research, we see the feasibility of the allocation of the following positions. First, a categorical distinction between the concepts of human potential and human capital is advisable. The use of related categories without regard to their association and differences distorts the semantic content of the context. Secondly, the justification of differences in approaches to the formation and realization of human potential is required. Capacity building and its implementation, on the one hand, have spatial and temporal boundaries, on the other hand, they are carried out simultaneously. Thirdly, we note the importance of identifying features of the relationship of human potential and innovative socio-economic development.

II. MATERIALS AND METHODS (MODEL)

According to the logic of our research, the priority is to distinguish between the concepts of human potential and human capital, which are often used as synonyms and in the literature can be considered interchangeable. Our analysis showed that in the scientific literature there is no consensus on the definition of related categories. The category of human potential considered by us is investigated, in particular, in

association with human capital, as well as with labor potential, labor capital.

We highlight classical points of view, which are the basis of the corresponding theories - A. Sen [14], G. Becker [15], T. Schulz [16]; complex works, including the evolution of theoretical views [7], [17]; works aimed at identifying the essential and targeted features of categories [18], [19]. Separately, we suppose, it is worth considering the author's, non-standard approaches to the delineation of categories. For example, A. Mokronosov and Yu. Krutin note that at the level of a scientific language, the use of the characteristics of human capital is illegal, since it is the potential category in its linguistic form that contains the notion of realization possibility [20].

Thus, the comparative description of the works shows that it is advisable to talk about the vagueness of the boundaries between categories related to human potential. The existing positions of researchers demonstrate the subjectivity of the categories assessment, taking into account the semantic accents, their binding to a specific research topic, its basic aspect. Accordingly, when determining the development prospects, they mostly talk about human potential, and when assessing the current state, they give preference to human capital. It is this difference that we see in the Strategies for Federal and Regional Development.

The dual nature of the human potential category, identified by us and based on the approach to research, makes it possible to operate with a category as applied to various aspects of the subjects development.

At the heart of duality lies the characteristic of human potential as a goal of development and as a means of achieving this goal at the same time. Thus, with a broad definition of human potential as, for example, a set of qualities, including abilities that ensure the human life and activities [3], longevity, health, education, high professional qualification, and access to resources necessary to maintain a decent standard of living are called components. In essence, the components reflect the global and local development goals applicable to any society. Accordingly, a means of achieving these goals is a specialist with the appropriate qualities, that is, forming a certain human potential in its economic sense.

Further, the duality of the category is reflected in the application to the formation and development of human potential. This circumstance is revealed from the position of the education role in the noted processes in conjunction with the business community and the state.

Relationship and interdependence are bilateral: there is the point of view of V. Slobodchikov and G. Ignatieva, according to which human potential acts as the main non-material resource for the development of educational systems, integrating other resources [21]. On the other hand, educational systems are the basis for the formation and development of human potential. The regional profile in this case allows us to concentrate efforts on the local needs of society. The significance of the selected elements of interaction is determined by their position in the list of main directions for the implementation of spatial and regional development priorities. In particular, we are talking about improving the system of vocational education with the participation of corporate sector representatives, and the formation of worldwide scientific and education centers [22].

Orientation of the marked centers to certain areas of activity, taking into account the interests of the regions, allows for automatic adjustment of the educational system to the needs of society. Regulation of directions of development and ways to achieve the goals occurs without forcible intervention, in a natural way, as evidenced by international experience. Such an interpretation of the activities of university subjects with regard to the basic values of human development is presented, for example, by A. Boni [23]. An integral component of strategic development is called innovation development [13], [22]. In turn, M. Sevrantes and D. Meissner note that universities and government research organizations can play a leading role in innovation processes by actively developing their own partner networks [24].

Thus, the analytical report of specialists from the Institute for Statistical Studies and Economics of Knowledge of the National Research University Higher School of Economics presented the issue of Russian Regional Innovation Development Ranking [25]. The final index - RRII (Russian Regional Innovation Index) - was formed as an arithmetic average of the normalized values of all indicators included in the rating. In the ranking of the constituent entities of the Russian Federation by value of RRII, the Voronezh Region was included in Group II of IV, having a rank value of 15 (out of 84 positions). RRII - 0.4127 (for comparison, Moscow has the corresponding values of rank and RRII 2 and 0.5363, Belgorod region - 18 and 0.4020). In 2015, improving the quality of innovation policy and science were cited as the key to the success of “breakthrough” regions. At the same time, the role of authorities, companies, universities and scientific organizations was especially noted. Globally, N. Javad, for example, calls innovation the key to success [26]. On the basis of this, we can conclude that the innovation component fully correlates with the positions of human potential formation and realization, precisely in this combination, taking into account the duality of the nature of the category. Innovations are developed in the scientific and educational environment, implemented in the field of business. The successful introduction of innovations stimulates their development, which contributes to the development of human potential and enhances the motivation for its implementation.

On the example of the Voronezh region, we reviewed the implementation of investment projects, including with the participation of foreign partners. According to the data of the Regional State Budgetary Institution “Agency for Investments and Strategic Projects”, the system of higher and secondary vocational education includes more than 28 universities and their branches, which enroll 107 thousand students [27]. The number of organizations that carried out research and development in the Voronezh Region is 63. By the number of such organizations, the Voronezh Region is ranked 3rd in the Central Federal District (CFD) (after Moscow and Moscow Region) and 14th in Russia. In the context of formation of the Voronezh region human potential, one can speak about the corresponding strong side [12], [13], [25], [26].

From the point of view of the human potential implementation methodology, the data of the Voronezh region on the main development indicators are important. We consider options for the commercialization of innovations, the use of formed skills, knowledge and skills as a substantive characteristic of human potential.

So, there are large enterprises of federal significance (enterprises of the nuclear power industry and the military-industrial complex) in the Voronezh region. There are 28 Voronezh aerospace, aviation and radio-electronic enterprises in the register of enterprises of the military-industrial complex of the country. The leading industrial productions of the region are the production of electricity, food, chemical production, the production of rubber and plastic products, vehicles and equipment, electrical equipment, electronic and optical equipment, metallurgical production and production of finished metal products. In the region, investment projects involving foreign partners have been implemented and are being implemented, amounting to more than 41 billion rubles. These include: Construction of a cement plant, Switzerland; Construction of a plant for the production of engineering products, commercial vehicles and agricultural machinery, Czech Republic; modernization of the existing tire plant, Italy; construction of an oil extraction plant, USA; construction of a pharmaceutical production and warehouse complex, Germany; construction of a plant for the production of power transformers, Germany; construction of a plant for the production of animal feed, the Netherlands; mobile network creation, Sweden; construction of dialysis centers in Voronezh and Bobrov, Germany.

The analysis showed that the dichotomy of human potential with regard to its innovative component is not sufficiently realized. Innovation development prevails over their commercialization and implementation as a whole. But if we focus on the difference in human potential and human capital, priority is given to the first.

III. Results and Discussion

Taking into account the analysis of regional characteristics of the human potential formation and implementation, we found it possible to adjust the model of interaction between basic research, technological development and production [28]. In the basic model in the fundamental research sector, the growth of new knowledge, that is, the human potential component, is calculated based on the existing knowledge base V, the involved volume of human resource X and the normative scientific productivity a (1):

$$dV / dt = aVX \quad (1)$$

Further, in the sector of technological development, the increase in scientific and technical result is proportional to the existing stock of development and innovation W, the involved volume of human resource Y and the normative productivity b (2):

$$dW / dt = (bW + cV)Y \quad (2)$$

In the production sector, the final product is formed on the basis of the existing means of production, the volume of human resources involved Z and labor productivity q (3):

$$H = qWZ \quad (3)$$

The final product is distributed between the three sectors as X,Y,Z (4):

$$H = X + Y + Z \quad (4)$$

We believe that, based on the duality of the human potential nature, it is expedient to add to this model the contribution of the professional education system in terms of the costs of training and retraining specialists; the significance and magnitude of the time lag between the stages of development and implementation of innovations (quantification of relevance); qualitative assessment of the final product in terms of its demand (correction factor).

IV. Conclusion

So, methodologically, the category of human capital is manifested in all aspects of its application, taking into account the duality of its nature. The content reflects the quality potential, development opportunities that exist at the moment. It acts as a goal and as a means of achieving the goal at the same time. It links the education system and the corporate sector into an interdependent system, oriented, respectively, to the formation and realization of human potential.

The innovative component of strategic regional development is determined by the quality and quantity of human potential, creating strengths and weaknesses of the region. The model of interaction of basic research, technological development and production, adjusted for the duality of human potential, allows to take into account the peculiarities of the region development.

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