**Artículo de investigación**

# Assessment of the level of human capital reproduction in the EAEU countries

Evaluación del nivel de reproducción del capital humano en los países de la EAEU

Оценка уровня воспроизводства человеческого капитала в странах ЕАЭС

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**Abstract**

In modern conditions, the goal of the countries participating in the Eurasian Economic Union (EAEU) is to create a single economic space. In this regard, the issue of developing effective approaches to assessing the level of human capital reproduction, which contributes to the achievement of a common economic goal, becomes relevant. The purpose of this study was to develop an approach to assessing the level of human capital reproduction in the EAEU countries, taking into account the current state of the national economy development. Within the framework of this study, the essence of the economic category "human capital" was substantiated in terms of comparing it with the main economic categories of the concept of human resources. Based on the expert evaluation method, the authors identified the key factors and the priority of their influence on the human capital reproduction in the EAEU countries. An integrated model was developed for assessing the level of human capital reproduction for the EAEU member countries as a synthetic quantity derived from additive convolution. The trend of human capital development in the EAEU countries was

**Аннотация**

В современных условиях целью стран-участниц Евразийского экономического союза (ЕАЭС) является формирование единого экономического пространства. В связи с этим актуализируется вопрос разработки эффективных подходов к оценке уровня воспроизводства человеческого капитала, способствующая достижению общей экономической цели. Целью исследования стала разработка подхода к оценке уровня воспроизводства человеческого капитала в странах ЕАЭС с учетом современного состояния развития национальной экономики. В рамках данного исследования обоснована сущность экономической категории «человеческий капитала» с точки зрения сопоставления с основными экономическими категориями концепции человеческих ресурсов. На основании метода экспертных оценок определены ключевые факторы и приоритетность их влияния на уровень воспроизводства человеческого капитала в странах ЕАЭС. Разработана интегральная модель оценки уровня воспроизводства

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analyzed on the basis of statistical data for 2005-2017. The research results obtained in this study are practical and will contribute to the improvement of indicative mechanisms in the concept of human capital. They will promote improvement in the effective monitoring of the current state of human resources in the EAEU countries.

**Keywords:** human capital, EAEU countries, capital, innovative economy.

человеческого капитала для стран-членов ЕАЭС как, синтетическая величина, полученная на основе аддитивной свертки. Проанализирована тенденция развития человеческого капитала в странах ЕАЭС на основании статистических данных за 2005-2017 гг. Полученные научные результаты в рамках данного исследования имеют практический характер и будут способствовать усовершенствованию индикативных механизмов в концепции человеческого капитала. Будут способствовать повышению эффективности мониторинга текущего состояния человеческих ресурсов в странах ЕАЭС.

**Ключевые слова:** человеческий капитал, страны ЕАЭС, капитал, инновационная экономика.

**Resumen**

En las condiciones modernas, el objetivo de los países que participan en la Unión Económica de Eurasia (EAEU) es crear un espacio económico único. En este sentido, el tema del desarrollo de enfoques efectivos para evaluar el nivel de reproducción del capital humano, que contribuye al logro de un objetivo económico común, se vuelve relevante. El objetivo de este estudio fue desarrollar un enfoque para evaluar el nivel de reproducción del capital humano en los países de la EAEU, teniendo en cuenta el estado actual del desarrollo de la economía nacional. En el marco de este estudio, la esencia de la categoría económica "capital humano" se comprobó en términos de compararlo con las principales categorías económicas del concepto de recursos humanos. Sobre la base del método de evaluación experto, los autores identificaron los factores clave y la prioridad de su influencia en la reproducción del capital humano en los países de la UEEA. Se desarrolló un modelo integrado para evaluar el nivel de reproducción del capital humano para los países miembros de la EAEU como una cantidad sintética derivada de la convolución aditiva. La tendencia del desarrollo del capital humano en los países de la EAEU se analizó sobre la base de datos estadísticos para 2005-2017. Los resultados de la investigación obtenidos en este estudio son prácticos y contribuirán a la mejora de los mecanismos indicativos en el concepto de capital humano. Promoverán la mejora en el monitoreo efectivo del estado actual de los recursos humanos en los países de la EAEU.

**Palabras clave:** capital humano, países de EAEU, capital, economía innovadora.

## Introduction

The relevance of assessing the level of human capital reproduction in the countries of the Eurasian Economic Union (EAEU) is conditioned by the objective needs of the modern stage of the information society and the innovative economy development. In recent years, the course on economic modernization has been implemented in all EAEU countries, which is reflected in a number of official documents (Strategy for Innovative Development of the Russian Federation for the period up to 2020, 2011; The state program of industrial-innovative development of the Republic of Kazakhstan for 2015-2019, 2014; The state program of innovative development of the Republic of Belarus for 2016-2020, 2017; The national strategy for sustainable socio-economic development of the Republic of Belarus for the period up to 2030, 2017). Innovative development of the economy is determined mainly by the human capital amount and the level of its development and quality. The positions of the EAEU countries are much worse than those of other countries in terms of the “development” parameter, where assessment refers to the employment rate, the gender difference in employment, the unemployment rate and the level of under-employment, and especially in terms of the “know-how” parameter as factors of the human capital quality, showing the share of highly skilled workers as well as the average skilled workers, the complexity of labor

and the availability of skilled workers in the market (The Global Human Capital Report 2017, 2017). In addition, it should be noted that over the past 10 years the number of people has decreased by 13% in the countries, and despite a slight increase in the level of labor force participation by 1.5%, the employment rate decreased by 6.1% (Eurasian Economic Commission, 2019).

The specificity of human capital development in the EAEU countries has led to the peculiarities of the innovative development of the economy, which is based primarily on technological borrowing from third (primarily from Western) countries. Maintaining the sustainability of this trend in the long term may lead to the preservation of the subordinate position of the EAEU countries in the world economy, exposing them to technological dependence on Western countries. Since at the present stage the goal of the EAEU member countries is to create a single economic space, it becomes urgent to develop effective approaches to assessing the level of their human capital reproduction to achieve a common economic goal. This study was aimed at developing an approach to assessing the level of human capital reproduction in the EAEU countries with regard to the current state of national economy development.

Within the framework of this study, the essence of the economic category of "human capital" was substantiated from the viewpoint of comparison with the main economic categories of the concept of human resources. The rationale was provided for the main factors determining the human capital reproduction and quality in the EAEU countries at the present stage of the innovative economy development. Based on the identified key factors of human capital reproduction, the authors determined the priority and qualitative nature of their influence, which became the foundation for the development of a universal multifactorial integrated model for assessing the level of human capital reproduction for the EAEU member countries. The current level of human capital reproduction in the EAEU countries for 2005-2017 was evaluated and analyzed.

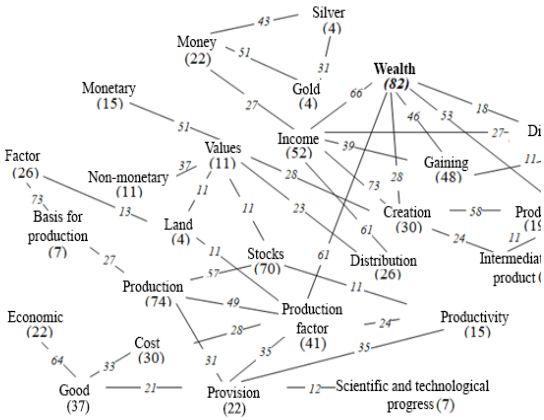
**Literature Review**

The concept of "human capital" did not emerge spontaneously, but was a natural result of the development of global philosophical and then economic thought. In the second half of the twentieth century, this term was introduced in the scientific and organizational-practical use by economists, in particular by Nobel Prize winners, American scholars Theodor Schultz (1971) and Gary Becker (1993). The former began to explore what he called "human capital" in the early 1960s. Based on the analysis of the existing approaches in the etymology of the definition of "human capital", we should note that by this concept many scholars mean economic capital, that is, a factor formed in the production process, the fundamental basis of production (Kianto et al.,2017).Identification of the category of "human capital" with labor force, labor potential, education and knowledge expenses embodied in man distorts the content of this category and complicates its practical application.

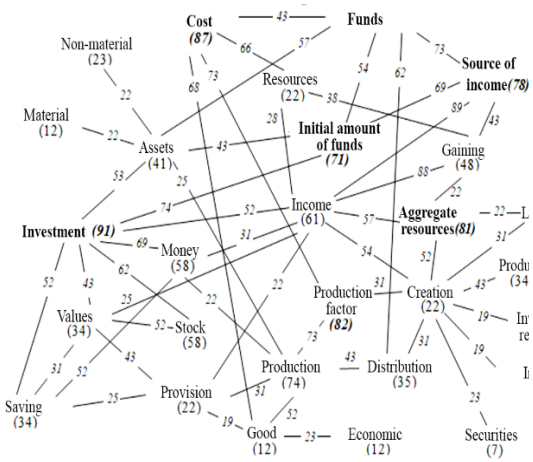
Based on the content analysis of the capital essence (Fig. 1) (Petty, 2018; Marx, 2013; Say, 2011; Mill, 2012; Marshall, 2017; Keynes, 2007; Schumpeter, 2012; Fisher, 2017; Bichik et al., 2009; Borisov, 2010), capital is presented in modern science as a derived factor of the production process from land and labor (the frequency of the mention is 82%) (Missemer, 2018; Lewin & Cachanosky, 2018; Oliver, 2019; Bjørnskov & Sønderskov, 2013). That is, the combination of natural resources and human labor in the labor process forms the value that acts as a capital. Consequently, the capital as an economic phenomenon arises at a certain stage of social interactions. Whereas human capital arises while certain conditions are provided at a given stage of social interactions, which gives grounds to assert that the concept of human capital, as an economic phenomenon, is derived from capital (Escribá-Pérez et al., 2018; Missemer, 2018; Tomoko, 2019).

Based on the content analysis of the "labor potential" category (Fig. 1) (Belousova, 2015; Kutaev, 2008; Popov, 2009) one can state that its content is to reflect the value of combining the available intelligence of an able-bodied person when determining priorities in solving certain tasks under certain external conditions and circumstances.That is, within the framework of the human capital theory, labor potential will be a totality of configurations of skills and knowledge, professional competencies that provide the potential ability to make a profit. The ambiguity of the wording of the "human capital" category as shown by studies (Fig. 1) (Faria et al., 2016; Na & Ying, 2012) is based on the categorical interrelationships between forms of the capital. Human capital implies skills, knowledge, professional abilities, practical experience, motivation, health and so on. At the same time, the fact of profitability as an attribute of capital is leveled, which stimulates

progressive socio-economic transformations. And if within the framework of the "labor potential" perspective, knowledge and professional skills are presented as an opportunity to achieve certain economic goals, in the plane of "human capital" as an economic phenomenon they are treated as part of the ability to generate income for the owner of this knowledge.




The capital concept essence definition from the classical standpoint

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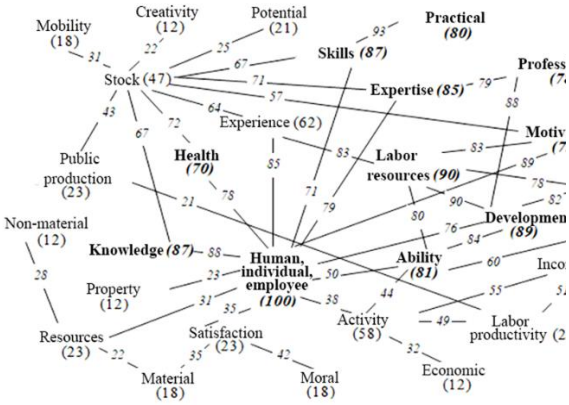
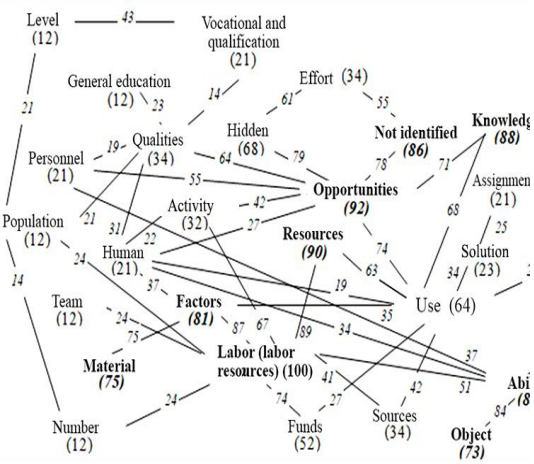



The human capital concept essence definition




The labor potential concept essence definition

Fig. 1. Semantics network of the concept essence of the main related definitions of the human capital concept

Thus, the category "human capital" should be understood as an asset formed in the process of investing in knowledge generation and modification of the individual's productive abilities in the course of labor activity, which provides a certain income to the participants of the investment and production process.

The use of profitability as one of the main essential characteristics of human capital confirms the fact that in those countries where knowledge and productive abilities of a person function in the form of capital, the economy develops on innovations (Skytt-Larsen, 2018). In 1964, Theodore Schultz published a monograph "Transforming Traditional Agriculture", which identified fundamentally new approaches in economics (Schultz, 1971). Along with this approach, there is a methodology for professional assessment of HC, adopted in the OECD for

cross-country comparison. Along with the value assessments of HC, there are methods for assessing human capital by indirect indicators, or the index method. As a rule, it is applied to evaluate and compare the human capital of different countries. The HumanDevelopmentIndex is the most famous indirect indicator of the HC level (Human Development Index, 2019); it was developed in 1990 under the auspices of the United Nations Development Program by a group of experts headed by Mahbub ul Haq, a Pakistani economist. He, in turn, took the contributions of Amartya Senas a principle to elaborate HDI (United Nations Development Program Reports).

Human Development Index is the most common criterion for assessing human capital (Human Development Index, 2019). However, HDI is based only on the quantitative characteristics of human capital and does not reflect its qualitative properties, which ensures the innovative development of the economy.

**Methods and materials**

The expert assessment method is used as the basic method to study factors of the human capital reproduction and to assess its potential. 40 representatives of the Eurasian Economic Commission were experts engaged in studying issues of the social and economic development of the Eurasian region. An expert group of 40 people is considered to be statistically significant at the confidence level of 95%. The minimum sufficient number of experts to provide the representativeness of the survey resultscalculated using formula 1, is 30 people. It follows that assessments obtained as a result of the survey of 40 experts, with the probability of 95%, are significant and representative.

To determine the minimum required size of an expert group formula 1 was used (Tikhomirova & Matrosova, 2016):

$$N = 0.5 \times (\frac{3}{p} + 0.5), \quad (1)$$

Where N is the minimum required number of an expert group;

p is the permissible error adopted at the level of 0,05 (5%).

To assess the expert competence, the competence coefficient is calculated using the following formula (Tikhomirova & Matrosova, 2016):

$$K_i = \frac{\sum_{i=1}^{m} e_{ij}}{m}, \quad (2)$$

where $K_i$ is the competence coefficient of the i-th expert;
$e_{ij}$ is the expert assessment corresponding to "0" value if an expert considers another one to be incompetent and does not consider it expedient to include him/her in an expert group, and "1" if an expert thinks it is necessary to include another expert in a group;
$m$ is the number of experts.

The competence coefficient is measured in the range of [0, 1]. The higher the coefficient is, the more preferable the participation of an expert in the survey is. The threshold value of the competence coefficient sufficient to include an expert in the working group is 0.5. The quality of an expert assessment is proven by the high competence of experts, which, according to formula 2, is not less than 87% for a single expert.
In the framework of the study, experts have been asked to assess the relative importance of factors in assessing the human capital reproduction level on a 5-point scale. At that, "5" indicates the highest significance level, "0" indicates the absence of the factor influence on the human capital reproduction level. The indicator significance assessment within the factor (wi) is calculated using formula 3:

The variance percentage of factors is calculated using the following formula (Rousseau, Egghe & Guns, 2018):

$$w_{fi} = \frac{\sum p_i}{\sum p} \times 100\%, \quad (3)$$

where $w_{fi}$ is the variance percentage of the i-th factor;
$\sum p_i$ is the sum of expert points for the i-th factor

$\sum p$ is the sum of expert points for all factors.
The consistency level of expert opinions has been using the concordance coefficient (Ponto, 2015):

$$W = 12 \times \frac{s}{[m^2 \times (n^3 - n) - m \times t_e]} \quad (4)$$

where m is the number of experts,
n is the number of factors,
S is the sum of squares of rank differences (the deviation from the mean);
te is the sum of the same rank values.
The concordance coefficient can vary in the range of 1> W> 0. At W = 0, there is no consistency of expert opinions, and at W = 1, there is an absolute consistency. The consistency is high at W≥0,5 (Ponto, 2015).
To standardize indicators, the following formula is used (Rousseau, Egghe & Guns, 2018):

$$X_{ijs} = \frac{X_{ij}}{\overline{X_i}}, \quad (5)$$

where $X_{ijs}$ is the standardized value of the i-th indicator of the j-th country;
$X_{ij}$ is the actual value of the i-th indicator of the j-th country;
$\overline{X_i}$ is the average value of the i-th indicator for a sample of countries.

Values in the model have been standardized to make indicators, that have different units of measurement and dimension, comparable: thousands of people, %, units, thousands of US dollars, millions of US dollars. Weighted coefficients of all indicators of the model have the sign "+" because all of them are stimulating factors in assessing the humancapital reproduction: the larger the population, the migration increase, the population economic activity level, the employment rate, expenses on researchesand developments, the number of researchers, GDP per capita, the number of students are, the higher the human capital reproduction level is.

Indicators reflecting quantitative and qualitative characteristics are specified as factors to assess the human capital in EEU member countries. Indicators (X1-X29) in the study are used in absolute values for member countries of the Eurasian Economic Union for the period of 2005-2017 according to Annex data.

**Results**

The studied factors are presented in Table 1 in the descending order in terms of the relative importance of influence they have on the reproduction of human capital in the EAEU countries - i.e. the percentage of dispersion. The percentage of factor dispersion (wf) is calculated by the formula 3, the cumulative percent of factors dispersion is represented as the sum of dispersion of the corresponding factor and all the previous ones (of higher significance). The sufficient level of cumulative dispersion is considered to be 80% to describe the behavior of the system. This level is provided within the 3rd factor - the factor of education and science. Thus, to characterize the level of human capital reproduction, it is necessary to pay due consideration to the demographic, market, as well as education and science factors, which cumulatively describe 89.1% of the dispersion. The percentage of influence of demographic factor on the level of human capital reproduction is 34.8%, the market factor - 32.1%, and the education and science factor - is 22.2%. The influence of health care, environmental and criminality factors are not of such significance and can be neglected. The lower level of significance of these factors can be explained by the fact that the influence of these factors on the reproduction of human capital is reflected through the demographic factor: emissions of harmful substances cause health problems, which in turn affect life expectancy and population size; crime rate also affects the population size and migration.

Table 1 - Value of the relative significance of factors for assessing the level of human capital reproduction in the EAEU countrieS

| Factor | Significance evaluation (percentage of factor dispersion), % | Percentage of cumulative factors dispersion |
|---|---|---|
| | wf | wk |
| Demographic factor | 34.8 | 34.8 |
| Market factor | 32.1 | 66.9 |
| Education and science factor | 22.2 | 89.1 |
| Health care factor | 5.9 | 95 |
| Environmental factor | 3.4 | 98.4 |
| Criminality factor | 1.6 | 100 |

The next stage of the study involved the determination of significance of indicators, which formed the significant factors influencing the reproduction of human capital. The evaluation was conducted in the same way as the evaluation of factors, i.e. on a 5-point scale. The evaluation results are presented in the Table 2.

Table 2. - Value of the relative significance of indicators for assessing the level of human capital reproduction in the EAEU

| Factor | Indicator | Evaluation of indicator significance within the factor | Evaluation of indicator significance with the consideration of factor significance |
|---|---|---|---|
| | | wi | wif |
| Demographic | Population size (X1) | 0.51 | 0.18 |
| | Average expected life expectancy (X2) | 0.09 | 0.03 |
| | Population migration (X3) | 0.4 | 0.14 |
| Market | Level of economic activity of the population (X4) | 0.16 | 0.05 |
| | Number of unemployed citizens who appealed for the services of the state employment agency (X5) | 0.05 | 0.02 |
| | Labor requirements (X6) | 0.02 | 0.01 |
| | Ratio of employed people of working age (X7) | 0.15 | 0.05 |
| | Registered unemployment rate (X8) | 0.05 | 0.02 |
| | Number of agencies performing research and development activities (X9) | 0.06 | 0.02 |

| | | | |
|---|---|---|---|
| | Domestic research and development costs(X10) | 0.15 | 0.05 |
| | GDP per capita (X11) | 0.2 | 0.06 |
| | Number of researchers engaged in research and development activities (X12) | 0.16 | 0.05 |
| | Number of preschool educational institutions (X13) | 0.02 | 0.00 |
| | Number of children in pre-school educational institutions (X14) | 0.02 | 0.00 |
| | Number of schools (X15) | 0.04 | 0.01 |
| | Number of students in schools (X16) | 0.05 | 0.01 |
| | Number of teachers in schools (X17) | 0.05 | 0.01 |
| | Number of vocational schools (X18) | 0.1 | 0.02 |
| | Number of higher educational institutions (X19) | 0.1 | 0.02 |
| | Number of students in educational institutions providing higher professional education (X20) | 0.21 | 0.05 |
| Education and science factor | Students admitted at the expense of physical and legal entities (X21) | 0.03 | 0.01 |
| | Students admitted at the expense of the state budget (X22) | 0.03 | 0.01 |
| | Students admitted at the expense of the local budget (X23) | 0.02 | 0.00 |
| | Number of institutions providing postgraduate education (X24) | 0.05 | 0.01 |
| | Number of postgraduate students (X25) | 0.07 | 0.02 |
| | Number of institutions with doctoral studies (X26) | 0.03 | 0.01 |
| | Number of doctoral students (X27) | 0.07 | 0.02 |
| | Number of candidates of sciences (X28) | 0.07 | 0.02 |
| | Number of Doctors of Science (X29) | 0.04 | 0.01 |

The obtained estimates of significance indicate that the most significant indicators of the demographic factor are X1 and X3 (0.51 and 0.40, respectively); X4 (0.16), X7 (0.15), X10 (0.15), X11 (0.20), X12 (0.16) are the most significant within the market factor; and X20 (0.21) – within the factor of education and science. The significance of other factors not included in the priority list is significantly lower than the indicated ones, therefore, they were neglected in the integral index. Global priority (wif) is calculated with the consideration of factors significance.

Thus, as a result of expert evaluation, the key factors and the composition of factors

characterizing the level of reproduction of human capital have been identified; the relative significance of the priority indicators has been calculated. The statistical significance of the expert assessment is proven by: sufficient number of experts (40 people); high level of their competence in the area being studied (at least 87% per each expert); high degree of dispersion of the identified priority factors (88.1%); consistency of expert opinions in assessing the significance of indicators (concordance coefficient is 0.86, when the sufficient level is 0.75).

On the basis of the obtained estimates of the indicator significance, an integral model of the level of human capital reproduction has been built, which weighting factors are the wif significance indicators presented in Table. 2:

$$I = 0.18 \times X1 + 0.14 \times X3 + 0.05 \times X4 + 0.05 \times X7 + 0.05 \times X10 + 0.06 \times X11 + 0.05 \times X12 + 0.05 \times X20, \quad (6)$$

where X1-X29 are the standardized values of the corresponding indicators calculated (formula 5). The values of the integral index calculated using the multi-factor model developed for the considered EAEU countries for the period from 2005 till 2017 are according to the Table 3. As in the course of the standardization the actual values of the indicators have been divided by the average values of the EEU countries sampling, the average level of the integral indicator corresponds to a standardized value equal to 1.0 for each indicator. With this in mind, the average level of the integral index is 0.63. Compared to this value, only the integral indicator of human capital reproduction in Russia exceeds the average value during the period from 2005 to 2017. The second country in terms of human capital reproduction is Kazakhstan, which integral indicator in 2005 exceeded the average one for the Eurasian Economic Union, but as a result of negative migration rate, lower research and development costs in recent years, the lack of consistent dynamics of other indicators growth, the integral indicator decreased to a level of 0.19 in 2017. Belarus is approximately at the same level in terms of human capital reproduction - the value of the integral indicator is 0.21 in 2017. The lowest level of human capital reproduction has been identified in Armenia: the negative value of the integral indicator during the period from 2005 to 2010, which has not exceeded the level of 0.07 in the period from 2011 to 2017.

Table3 - Value of the integral indicator of human capital reproduction in EAEU

| Country | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Armenia | -0.38 | -0.15 | -0.03 | -0.04 | -0.04 | -0.17 | 0.02 | 0.07 | 0.04 | 0.03 | 0.02 | 0.03 | 0.01 |
| Belarus | 0.25 | 0.26 | 0.23 | 0.24 | 0.25 | 0.28 | 0.22 | 0.22 | 0.23 | 0.25 | 0.25 | 0.22 | 0.21 |
| Kazakhstan | 0.71 | 0.56 | 0.32 | 0.27 | 0.31 | 0.40 | 0.30 | 0.28 | 0.29 | 0.25 | 0.26 | 0.22 | 0.19 |
| Kyrgyzstan | -1.28 | -0.48 | -0.19 | -0.17 | -0.12 | -0.27 | 0.00 | 0.09 | 0.09 | 0.08 | 0.10 | 0.10 | 0.09 |
| Russia | 3.86 | 2.95 | 2.83 | 2.85 | 2.75 | 2.92 | 2.61 | 2.49 | 2.51 | 2.53 | 2.52 | 2.58 | 2.65 |

**Discussion**

As we formulated the economic category "human capital" in terms of the efficiency of the application of knowledge and human skills in frames of this study, it became possible to develop a methodological approach to assess the level of human capital reproduction in EAEU countries. This approach is based on the reflection of the integral level of influence of quantitative and qualitative indicators of human capital as a factor of innovative economy development. It was revealed that the level of human capital in most of the studied countries is below the average indicator in the EAEU and is characterized by a negative dynamic of its

development in 2005-2017. The advantage of the approach to the evaluation of human capital as it is presented in the study, is the index method of assessment (by indirect indicators) used as a basis of this approach, which unlike the value evaluation method (Le, Gibson & Oxley, 2005; Momo et al., 2019) allows to compare the level of human capital reproduction in different countries. It is also based on the availability and uniformity of the required data (needed to calculate the index: all indicators, formed integral assessment indexes are available in most EAEU countries and are checked by UN departments).As a result, it provides the ability to calculate the human capital index for any of the EAEU countries. In addition, the fact that the index actually reflects the aspects of life important for the development of human capital can also be attributed to the advantages of the methodology proposed by this study. First of all, it is based not only on the quantitative characteristics of human capital, as for example the Human Development Index (Human Development Index, 2019), but it also involves qualitative factors, such as: education, involvement in development of innovations, quality of the environment for the formation and development of human capital, as the reproduction of human capital is exposed to the qualitative influence in the EAEU countries. Consequently, the advantages of the developed methodological approach can undoubtedly include the comprehensive description of actual functioning of human capital in the EAEU countries.

It should also be noted that the approach to assessing the level of human capital reproduction is based on indicators of the EAEU countries only, which, on the one hand, restricts its applicability and universality, but provides many advantages, on the other. When analyzing a certain list of countries, we considered their involvement in the overall economic process - the creation of a single market within the development of innovative economy. In other words, at this stage of national economy development, the EAEU countries have a common economic goal which requires precise identification of complementary and destructive factors with the consideration of specifics of their economic development and general economic goals. The developed methodological approach to the assessment of human capital led to the conclusion that the demographic, market as well as education and science factors play a very important rolein increasing the level of reproduction and quality of human capital in the EAEU countries at this stage of their development.

In addition to the advantages of the proposed approach, it should also be emphasized that in frames of this study the human capital was considered as an income (stock) and was based on non-targeted data. This embarrasses developing a reliable forecast of the level of human capital reproduction in countries being studied, and only allows to conduct an ongoing assessment. If human capital is justified as the difference of investment and depreciation (Le, Gibson & Oxley, 2005) by analogy to physical capital, then in this paradigm it can be considered as a flow, but not as a stock (income). Such a presentation is more convenient for forecasting, since it reflects the processes that form human capital, but not its current state. However, these assumptions deserve a separate fundamental study and the scientific results obtained under this study will form the basis of our further scientific priorities.

**Conclusion**

Considering the identified main features of the categories of “capital”, “labor potential”, and “human capital”, the study clarifies the essence of “human capital” as an asset formed in the process of investing in the generation of knowledge and modification of the productive abilities of an individual in the course of employment, which ensures a certain income to the participants of the investment and production process. This approach, in contrast to the existing formulations, reflects the most general characteristics of capital, the ability to apply knowledge and the conditions for their use.

The formulation of human capital as a stock (income) has made it possible to develop a systematic approach to assessing the level of reproduction of human capital in the EAEU countries in the new conditions of the development of an innovative economy. The practical application of this approach allowed us to reveal that all the EAEU countries, except Russia, have a level of human capital reproduction below the average (0.64) and are characterized by negative development dynamics for 2005-2017. The main factors contributing to and determining the level of reproduction of human capital in the countries studied are the demographic, market factors, and the factor of education and science. Improving the effectiveness of these factors should be a priority of state policy on human resource management in the EAEU countries to achieve a common

economic goal - the creation of single market space. The presented approach has an integrated nature of accounting for the characteristics of human capital. It is based on the power of attorney of the data and the availability of calculation technology, can serve as a theoretical basis for the improvement of modern approaches to the assessment of human capital.

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