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**RESEARCH OF THE INFLUENCE OF THE FORMATION
OF THE KNOWLEDGE ECONOMY FOR REGIONAL DEVELOPMENT OF THE REPUBLIC OF BELARUS**

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The hypothesis of dependence of the economic development of the regions of the Republic of Belarus on the level of the knowledge economy index has been tested and confirmed. Calculation of linear correlation coefficients of dependence of GRP value on the index of knowledge economy and its subindexes is performed. Calculations have shown that the level of development in the innovation and ICT regions has the strongest impact on the growth of GRP

Introduction. The economy of the Republic of Belarus is undergoing a transformation period, which is characterized by the need to take into account all global trends in the development of economic systems. It is important for the Republic to form such a model, which would respond to modern challenges, at the same time allow to consider national peculiarities and ensure social and economic development. It should be noted that the Republic of Belarus does not possess significant natural resource potential in order to compete with the economies of foreign countries on the world stage. But at the same time, as experts admit, Belarus has substantial human capital. Thus, it is necessary to use exactly the economic model that could realize this potential in full. It is this model that can serve the knowledge economy.

Task information. This article discusses the theoretical foundations of the knowledge economy, which help to find a suitable model of the national economy of the Republic of Belarus in the absence of a significant natural resource potential. In addition, on the basis of the method of correlation and regression analysis the task is to assess the impact of the regional indexes of the economy for the economic development of the regions of Belarus.

Result, their discussion and perspectives. Modern trends in the world economy [1] lead to the formation of a new concept of economic development. The new, post-industrial stage of society's development and the corresponding type of economy are increasingly focusing on information, high technology, innovation, a person with his knowledge and skills. Thus, this direction of development will allow to move to a qualitatively new level of management, both at the macro and micro levels. There is a growing need to revise the old methods of management and organization in the context of globalization, improvement of communication systems and methods of generating new technologies. The importance of intellectual products such as "know-how", knowledge of the organization is greatly increased in production. These trends indicate the transition of economies to knowledge economies.

The knowledge economy is based on intangible assets and intellectual capital, which is different from the industrial economy based on tangible assets and financial capital. Knowledge economy fundamentally changes all traditional principles, approaches and models of competitive entrepreneurship development. Entrepreneurship in the knowledge economy is increasingly focused on maximizing the market value of companies, in which intangible assets (technological, marketing, customer, etc.), which are the result of the effective use of the intellectual capital of the organization, begin to occupy the main share. Consequently, the role of effective management of intellectual resources increases in the conditions of knowledge economy [3].

The main prerequisites for the formation of the knowledge economy and the creation of knowledge management systems at different levels should be considered [4]:

- transformation of knowledge into a factor of production along with factors such as labour, natural and material resources;
- the increase in the share of the services sector and faster growth of services for business;
- increasing the importance of intellectual capital and investment in education and training;
- development and widespread use of new information and communication technologies;
- turning innovation into the main source of economic growth and competitiveness of enterprises, regions and national economies.

Economics

Foreign scientists [5] have long studied the theory of knowledge economy. One of them is the famous Austrian-American scientist Fritz Machlup. This subject was also studied by such scholars as D. Bell, B. Vernadsky, E. Toffler, K. Arrow and many others.

Currently, Ukrainian and Russian scientists pay much attention to problems of formation of a postindustrial society and the formation of the knowledge economy: V. Geyets, V. Logachev, V. Makarov, V. Seminozhenko, M. Sheresheva.

Three graduates of the University of Vienna, who later lived and worked in the United States – Joseph Schumpeter, Friedrich Hayek and Fritz Machlup, laid the foundations of the knowledge economy. The founder of the knowledge economy as a discipline is considered to be Machlup, author of the book "the Production and distribution of knowledge in the United States," written in 1962 and translated into Russian language in 1966. Then, the knowledge economy was understood simply as one of the sectors of the economy. As the social role of science grew, knowledge-based economies became increasingly understood as a certain type of economy, where the knowledge sector played a crucial role and knowledge production became a source of economic growth. Similar concepts are innovation economy, knowledge society (knowledge society), information society, high-tech civilization.

Machlup defined the knowledge economy as follows: 'One of the sectors of the national economy in which the production, processing and knowledge management'.

The knowledge economy index is a comprehensive indicator of the level of development of the knowledge-based economy in countries and regions of the world. Developed in 2004 by the world Bank group (The World Bank) in the framework of the special program "Knowledge for development" (Knowledge for Development– K4D) to assess the ability of countries to create, adopt and disseminate knowledge. It is issued annually. It is expected that the Index should be used by States to analyse problematic issues in their policies and to measure a country's readiness to move to a knowledge-based development model.

The basis for the calculation of the Index is the world Bank's "Methodology of evaluation of knowledge" (The Knowledge Assessment Methodology — KAM), which includes a set of 109 structural and qualitative indicators, grouped into four main groups [2]:

The index of economic and institutional regime (The Economic Incentive and Institutional Regime) - the Conditions in which the economy and society as a whole are developing, the economic and legal environment, the quality of regulation, the development of business and private initiative, the ability of society and its institutions to effectively use existing knowledge and create new ones.

Education index (Education and Human Resources) – the level of education of the population and its stable skills of creating, disseminating and using knowledge. Adult literacy rates, the ratio of registered pupils (students and schoolchildren) to the number of persons of appropriate age, as well as a number of other indicators.

The innovation system index-the Level of development of the national innovation system, including companies, research centers, universities, professional associations and other organizations that perceive and adapt global knowledge to local needs, as well as create new knowledge and based on it new technologies. Number of researchers engaged in R & d; number of registered patents; number and circulation of scientific journals and so on.

Index of information and communication technologies – ICT (Information and Communication Technology – ICT) – the Level of development of information and communication infrastructure that facilitates the effective dissemination and processing of information.

For each group of indicators, countries are rated in points – from 1 to 10. The higher the score, the more the country is rated according to this criterion. The calculation also takes into account General economic and social indicators, including the annual growth of gross domestic product (GDP) and the human development Index (HDI) of the country.

Table 1 shows the data that show how indicators such as "innovation", "education", "ICTs" and the indicator "GDP per capita" affect the development of the knowledge economy in the Republic of Belarus.

The indicators presented in table 1 allow a comparative analysis by region of the Republic of Belarus.

The leader among the areas of the knowledge economy index and the knowledge index is Minsk, which is quite natural, because Minsk is a place of concentration of industrial, scientific, innovative, educational, information and communication spheres.

The Minsk region follows Minsk city, which is inferior to other regions in the subindex of education due to the lack of universities in the region.

Table 1 – The values of KEI and its constituent sub-indices in the regions of the Republic of Belarus

	Rank	KEI	GRP per capita (RUB m/person.)	Innovations	Education	ICT
A	1	2	3	4	5	6
Brest region	5	3,657	44,137	3,750	4,446	6,248
Vitebsk region	4	3,978	44,759	6,070	6,190	4,109
Gomel region	3	4,388	50,5	6,249	6,507	6,070
Grodno region	7	3,245	52,309	3,574	4,288	4,109
Minsk city	1	5,457	84,029	8,214	8,096	8,929
Minsk region	2	4,460	65,099	7,676	4,443	7,141
Mogilev region	6	3,592	44,635	4,466	6,189	3,395
Average value	-	4,112	55,067	5,714	5,737	5,714

Source: [6, p. 30].

Vitebsk region is on the 4th place, occupying the middle position among the regions. Being higher in the rating of Brest region, Vitebsk region is inferior to it in the subindex of ICT. In the last place in the ranking is Grodno region, which is inferior to the standing before her Mogilev region in all respects, except the subindex of ICT.

Table 2 – Assessment of the influence of the knowledge economy index and its subindexes on the level of economic development of the regions of the Republic of Belarus

Indicators of the degree of tightness of communication	Assessment of the impact on GRP per capita			
	Index of knowledge economy (KEI)	Innovations	Education	ICT
The linear correlation coefficient	0,850	0,788	0,484	0,832
The empirical coefficient of determination	0,723	0,621	0,234	0,692

Source: calculated by the author according to table 1.

The close links presented in table 2 are calculated using the Microsoft office Excel software product. Calculations have shown that the relationship between the GRP indicator and the knowledge economy index calculated by regions of the Republic of Belarus is strong. The impact of Innovation and ICT sub-indices on the gross regional product is also strong.

The obtained results confirm the conclusions made earlier [7, 8], about the most actual directions of activation of points of economic growth in the regions of the Republic of Belarus, including innovative development, development of small entrepreneurship in the innovative sphere.

However, for the development of regional growth points, it is necessary to know in what forms the creation and activation of potential growth points is possible. In the studies devoted to the problems of regional development in accordance with the concept of growth poles [10], these issues are reflected. In work [10] the following forms of creation and activation of poles of growth are allocated: clusters; technoparks; zones of technical and economic development; small industrial formations; zones of development of hi-tech production; free (special) economic zones; territorial production complexes.

The most relevant forms of creation of growth poles were chosen [9]: creation of innovation-active organizations, including in the field of small business; development of free economic zones. The choice and characteristic of these forms of creation of poles of growth in regions is caused by results of the analysis [7, 8] asymmetries of development of regions of RB which showed that on these spheres the greatest regional differentiation is observed.

The paper [9] presents the legislative and regulatory support provided by the state to these spheres of activity, describes the risks associated with the implementation of actual forms of creation of growth poles and considers ways to overcome them. The obtained data [10] showed how such indicators as "innovations", "education", "ICT" affect the formation of the knowledge economy in the regions of the Republic of Belarus.

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