TÍTULO: Potencial humano en el contexto de la clusterización de la economía rusa.

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RESUMEN: Este artículo refleja la importancia y relevancia de la agrupación en la economía del país. El enfoque de clúster actúa como una herramienta para desarrollar el potencial de la economía, incluida la formación de innovaciones. Se investiga el aspecto histórico de la aplicación del concepto de clúster en el extranjero y en Rusia. Se destacan los rasgos característicos de la agrupación en la Federación de Rusia. Se considera la influencia del potencial humano en el desarrollo económico. El estado actual del capital humano en Rusia se analiza en función del índice de desarrollo humano.

PALABRAS CLAVES: crecimiento económico, enfoque de clúster, potencial humano, capital humano, índice de desarrollo humano.
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ABSTRACT: This article reflects the importance and relevance of the group in the economy of the country. The cluster approach acts as a tool to develop the potential of the economy, including the formation of innovations. The historical aspect of the application of the cluster concept abroad and in Russia is investigated. The characteristic features of the grouping in the Russian Federation are highlighted. The influence of human potential on economic development is considered. The current state of human capital in Russia is analyzed based on the human development index.

KEY WORDS: economic growth, cluster approach, human potential, human capital, human development index.

INTRODUCTION.

The main condition for stable growth in the current circumstances is the competitiveness of the Russian economy, based on the innovative activity of organizations. At the same time, an important role is played by clustering, as the driving force of the entire world economy.

The cluster approach involves the consolidation of competing companies, legislative bodies, scientific and educational institutions with the aim of combining efforts to ensure economic growth, while the interaction within the cluster is able to achieve synergy and a number of competitive
advantages, including cost reduction, the implementation of human potential and social projects, combining efforts to eliminate difficulties, etc.

On the foreground in the system of innovative economic development, stands human capital, as the accumulation of knowledge, the importance of education and increasing the level of professionalism, - on the one hand, as well as the emergence of new trends in the structure of needs and an increase in wages.

DEVELOPMENT.

Let us consider in more detail the history of the cluster approach, the main characteristics of the cluster, the difference in its definitions and the current state of clustering in Russia and the world.

The theoretical basis of the cluster approach was born in the XIX century when it was determined that the performance of companies depends on their geographical location and proximity to other firms with which the company interacts. The founder of clustering is considered to be a professor at Harvard School, Michael Porter, who considered the cluster as an alliance of geographically adjacent interconnected firms and related organizations that function in a certain area and are distinguished by common activities and complementary to each other (Porter, 2001, p. 207).

The theory of clusters was improved by M. Enright, who noted that the competitive advantages of countries are created at the regional, rather than at the national level, which suggests the existence of regional clusters, which means “...geographical agglomeration of firms operating in one or more sectors of the economy” (Enright, 1992).

It should be noted that the classics of cluster theory, which paid particular attention to the geographical aspects of the activities of firms, are distinguished by I.G. von Tyunen, V. Launhardt, A. Weber, A. Lesch, V. Kristaller; in addition, the work of domestic representatives of economic geography, who considered spatial patterns, taking into account the specifics of enterprises, - I. G.

In the 20th century, interest in economic systems developing based on economic and territorial proximity increased. As a result, thanks to the Italian economists S. Zamanski and L. Ablas, the term “industrial cluster” appears in science, i.e. “...many industries associated with large flows of goods and services more than with other areas of the national economy” (Czamanski & Ablas, 1979).

It is necessary to clarify that the emergence and emergence of clusters in European countries began in the 70s, and clustering came to Russia later for 20-30 years.

Today, in the world and domestic practice, considerable experience has been accumulated in creating and improving various cluster formations, and the need for cooperation, in the presence of structural and technological changes in the global economy, intensifying international competition and globalization processes, does not lose its relevance.

However, if the classic-cluster approach focused on the real sector of the economy (for example, M. Porter studied specifically industrial clusters), then today it makes sense to talk about expanding the scope of application of the concept of cluster development.

In the literature, there are various definitions of the notion of “cluster”, the subject of which differ in the scale, direction, characteristics, but the condition for the efficiency of its creation is united: several economic entities are more competitive together than separately (Table 1).
Table 1. Various definitions of the concept of “cluster”.

<table>
<thead>
<tr>
<th>Author</th>
<th>Concept</th>
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<tbody>
<tr>
<td>L. Young</td>
<td>Cluster is an association of small and medium-sized private firms located near and near major universities</td>
</tr>
<tr>
<td>W. Price</td>
<td>Cluster is a method of using the advantages of the industry, enterprises and successful regional management, providing for a close connection between the state and entrepreneurship.</td>
</tr>
<tr>
<td>D. Jacobs</td>
<td>Cluster is geographical or spatial grouping with a view of organizing economic activity, implies horizontal and vertical communications, the use of common technologies, the presence of a “core”, constant cooperation.</td>
</tr>
<tr>
<td>S. Rosenfeld</td>
<td>A cluster is a geographically limited complex of similar related or complementary companies, with active distribution channels, infrastructure, human resources, which has the ability to both benefits from common opportunities and joint threats.</td>
</tr>
<tr>
<td>K. Keteps</td>
<td>A cluster is a union composed of companies of interdependent industrial sectors, state authorities, educational institutions, financial and public organizations.</td>
</tr>
<tr>
<td>M. Afanasyev, L. Myasnikova</td>
<td>Cluster is the interconnection of production, service companies, uniting market institutions and consumers.</td>
</tr>
<tr>
<td>M. Voynarenko</td>
<td>A cluster is an association with interconnections between its participants, internal cooperation and competition, focusing on market demand.</td>
</tr>
<tr>
<td>A. Voronov, A. Buryak</td>
<td>Cluster is an established, relatively stable system of specialized enterprises that sell competitive products concerning territorial specificity.</td>
</tr>
<tr>
<td>A. Mitranyan</td>
<td>A cluster is a concentration of the most efficient types of economic activity carried out by competing firms, guaranteeing competitive advantages in industry, national and global markets.</td>
</tr>
<tr>
<td>Ye. Monastyrnyyy</td>
<td>An innovation cluster is a center for the generation of scientific knowledge, training and adaptation centers of highly qualified specialists that produce products with long-term competitive advantages; functioning promising markets or developing sales network.</td>
</tr>
<tr>
<td>A. Prezdnichnykh</td>
<td>A cluster is an organism or a “regional ecosystem” that guarantees the competitiveness of cluster members.</td>
</tr>
</tbody>
</table>

**Source:** Compiled by the author on the basis of the used literature (Mayakova, Osipov, & Osipov, 2014, p. 93-94; Yershova, 2014, p. 2612; Pogodina & Katayev, 2014, p. 55-56).
The definition of “cluster” is also mentioned in the regulatory documents of the Russian Federation. Thus, in the Methodological Recommendations for the implementation of cluster policy prepared by the Ministry of Economic Development of Russia, “the cluster is a combination of companies, equipment suppliers, components, specialized production and service services, research and educational enterprises related by local proximity and functional conditionality in the production and sale of goods and services” (“Guidelines,” 2008).

Clustering continues to evolve and now, however, there is still some ambiguity in the conceptual apparatus.

In contrast to the previously used sectoral principle of structuring the economy and managing its competitiveness, the cluster system of production management contributes to the effective management of industry, the economy, the social sphere, activating scientific discoveries, inventions, and producing competitive products (Kocheva, Matev, & Panishchenko, 2015; Kondratyeva & Rogova, 2015; Kudryashov, 2017).

Nevertheless, in the scientific literature, it was established that clusters are formed by sectoral and territorial features. According to the classification by industry emit industrial, construction, tourism and other clusters.

Besides, in scientific journals, the clusters are classified in an innovative cluster. However, in our opinion, in modern conditions, any progressive cluster should be innovative.

Also, today, there are regional, vertical and industrial cluster formations (Table 2).
Table 2. Cluster Classification.

<table>
<thead>
<tr>
<th>Cluster’s type</th>
<th>Characteristic</th>
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<tr>
<td>1. Regional (territorial)</td>
<td>Association takes place within one or similar industries, often associated with one or other well-established conventional models.</td>
</tr>
<tr>
<td>2. Vertical production chains</td>
<td>Highly specialized sectors whose adjacent phases of the production process constitute the core of the cluster.</td>
</tr>
<tr>
<td>3. Large industrial clusters</td>
<td>Formed within some leading industry.</td>
</tr>
</tbody>
</table>

Source: Compiled by the authors on the basis of the data provided by Yu.V. Gromyko (n.d.).

As noted earlier, clustering has a synergistic, multiplicative effect on economic development. For each cluster member, the effect will appear differently, namely:

1. For companies: an increase in labor productivity, the increment of profits, expansion of markets for the implementation of the final product, recruitment of investors, the introduction of advanced technologies, etc.

2. For the government: increase the budget, reducing unemployment benefits, expanding infrastructure.

3. For the economy of a country (region): increase in gross domestic (regional) product, size of investments, the export of high technology products, employment, and welfare of the population, etc. (Savzikhanova, 2014, pp. 100-101).

Communication of participants in the cluster is carried out through vertical (sales and purchase acts), as well as horizontal communications (additional products or services, the use of closely related processes or technologies). Directly from the collective work and interrelations within the cluster, from the ability of each member to effectively use internal and mobilize external resources depends on the competitiveness of the cluster as a whole (Murtazina & Vesloguzova, 2015, p. 42).
The main document establishing the boundaries of cluster policy in Russia is the Concept of Long-Term Socio-Economic Development of the Russian Federation until 2020, providing for the formation of cluster entities that realize the competitive potential of the regions, as well as the creation of a number of innovative high-tech clusters in the European and Asian parts of the Russian Federation.

Speaking about the modern realities of clustering, currently, in our country textile (Ivanovo), automobile (Samara), aviation (Ulyanovsk), biopharmaceutical (Novosibirsk), agricultural (Krasnodar) clusters are successfully developing (Litvinenko et al., 2018; Litvinenko, Solovykh, Smirnova, Kiyanova, & Mironova, 2019).

Key features of the cluster-specific to the Russian economy are shown below in Figure 1.

**Figure 1.** The main characteristics of the cluster of the Russian economy.

*Source: Kondratyeva & Rogova (2015).*
The Ministry of Economic Development of the Russian Federation promotes the development of innovative territorial clusters (ITCs), which are concentrated mainly in the European part of the country (18 clusters). Only 7 out of 25 clusters are located in the Asian part of Russia, while most of the clusters are located in regions with a fairly high level of innovative activity, such as Privolzhsky (9 ITK), Central (6 ITK), and Siberian (5 ITK).

In the country, medicine and pharmaceuticals, information and communication technologies, nuclear and radiation technologies, the creation of aircraft and spacecraft, new materials, mechanical engineering, instrument engineering, and the automotive industry, as well as the chemical industry are being developed through clusters (Semenkov & Isakhayev, 2014, p. 18).

Understanding the significance of the cluster concept throughout the world and in our country, in particular, is mainly connected with the solution of the problems of modernization and technological development of the national economy.

However, the development of domestic cluster projects is hampered by various kinds of barriers: insufficient methodological and informational and consulting, financial support for clusters; the inconsistency of the activities of federal and regional executive authorities, local authorities and subjects of cluster associations (Litvinenko, 2016, pp. 88-89). Despite this, clustering is the most promising form of interaction between education, science, and industry, acting as growth points of the domestic market.

Thus, clusters are primarily focused on the opportunity for entrepreneurship and the region to develop not by inertia, but innovatively. At the same time, for the commercial sector, clustering is a chance to secure a competitive advantage in the future, forming a long-term development strategy for 5-10 years or more (Chorosova & Solomonova, 2017, p. 16).
In our opinion, the main directions for the development of the cluster approach in Russia should be the growth of the level and quality of life of the population and the improvement of human potential, which also becomes the source of the country’s economic growth and contributes to the growth of investment not only in the production process but also in human capital, will go further.

The use of the cluster approach allows to bring together the interests and strengthen the interaction of industry, R&D sector and education. So, in the European Union, there are more than 2 thousand clusters, which employ 38% of its workforce (Murtazina & Vesloguzova, 2015, p. 41).

Improving the quality of education, the development of science and high-tech industries are considered as a resource for the qualitative renewal of all components of economic growth (STP, labor resources, management, and organization of production).

Creating and implementing new methodological approaches to solving the problem of improving the human capital management system based on innovative development will provide an opportunity to create the basis for high-quality and stable growth of the economy (Osipov, Grivanov, & Shokurova, 2018, p. 24).

The main aspect of the socio-economic development of society is the achievements in the area of human potential increase, as well as the satisfaction of the needs of the population. The quantitative criterion of human potential is the Human Development Index (HDI), which is an integral indicator that considers the key aspects of human development such as health, knowledge, and income (Gromyko, n.d.).

Currently, the calculation of the index is based on three parameters, shown in Figure 2.
Figure 2. Parameters for calculating the human development index.

Source: compiled by the authors on the basis of the data provided by Bobyleva and Grigoryeva (2017).

The basic principle of calculating each of the constituent parts is a comparison of the current situation with the maximum (desired) and minimum values.

The value of the HDI is a criterion for dividing states into groups with different levels of human development (Figure 3).

The rating considers 189 countries of the world, of which Norway, Switzerland, Australia, Ireland, and Germany led 2018, while Niger, Central African Republic, South Sudan, Chad, and Burundi have the lowest HDI (Grigorenko, Klyuchnikov, Gridchina, Litvinenko, & Kolpak, 2016).
Figure 3. The division of states into groups according to the value of the human development index. **Source:** compiled by the author on the basis of the data provided by Bobyleva and Grigoryeva (2017).

Figure 4. Dynamics of the level of human development in the Russian Federation for the period 2000-2017. **Source:** compiled by the author on the basis of the data provided by Bobyleva and Grigoryeva (2017), and Human Development Index (HDI) (2018).
The world average index value is 0.717, which is significantly lower than in our country. Russia ranked 49th (0.816), ahead of Montenegro and Bulgaria, but did not reach Oman and Argentina ("Human Development Index," 2019).

The dynamics of the level of human development in the Russian Federation to this day is reflected in Figure 4. Based on the data of the chart, it can be seen that, overall, the index had a positive trend until 2016, then the value fell by 7.4% (Gaisina, Bakhtizin, Mikhailovskaya, Khairullina, & Belonozhko, 2015; Bakhtizin, Evtushenko, Burenina, Gaisina, Sagitov, 2016; Grigorenko et al., 2016; Gladkova et al., 2018).

It should be pointed out that according to the whole range of criteria, the Russian Federation is in the group of countries with a high HDI level, however, when analyzing the particular indicators of this index, there is still a significant imbalance between the key elements of human development which inherited the population of modern Russia from the USSR.

Regarding most other countries, Russia has several individual features, including low population density and a large area, which complicate not only the delivery of goods and services to the consumer but also significantly increases their cost, as well as territorial disunity.

However, the human development index includes not only the life expectancy index, the education index, and the income index, the following indicators are also used for the most complete presentation and creation of conditions for human development (Litvinenko, 2016):

- Security.
- Human rights.
- Promoting equality and social justice.
- Participation in the political life of society.
- Ecological situation and others (Figure 5).

CONCLUSIONS.

Summarizing the results of this study, we note that the improvement of human potential is the most important aspect of public policy; at the same time, attention should be paid not only to the qualitative characteristics of human resources but also to their formation and development.

Creating favorable conditions for the development of human potential in the future implies the need for the integration of science and production within the framework of innovative associations formed as a result of clustering, which provides an integrative approach both to innovation processes and to the development of human capital.
Human potential is considered to be a significant condition for economic growth because the level and quality of development of general labor resources establish the prospects for the functioning of the national economy, the formation of its power and competitiveness. Following this, the problem of creating, maintaining and developing human potential should be a priority state strategic task, the basis for the implementation of which can be a cluster approach.

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