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Research Article

The formation of industrial clusters and the impact of the volume of innovative products on the economic development of the country

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Abstract:

The formation of industrial clusters and the determination of the impact of the production of innovative products on GDP growth consists in developing a model for the interrelation of a group of factors influencing GDP growth. The research methodology is based on studies of GDP growth and its influencing factors. The data was collected using statistical materials from Azerbaijan. The systematic method is used to analyze materials that increase the country's GDP and groups of factors. The relationship of these indicators with the construction of the model is also calculated. Industry clusters are an important tool for the economic development of the country, which contribute to the expansion of entrepreneurship in this area. Based on the analysis of GDP growth data, it was noted that economic growth does not remain stable and does not correspond to previous values. Based on statistical materials for 2010-2024 in Azerbaijan, an econometric model of the relationship between GDP growth and groups of factors has been built. It is noted that the model justifies itself in determining the dependence of GDP growth in any country on specific factors. The results of the study can be applied in determining the main directions for the sustainable development of the economy and maintaining its pace at an optimal level. The research contributes to the growth of the country's GDP, thanks to the theoretical and practical results obtained. The relevance and value of the study is confirmed by its impact on the country's economy and the standard of living of the population.

1. Introduction

Increasing the role of innovation in economic growth is one of the most important tasks that every normal and democratic State must fulfill. This is because the sustainable development of the country's economy and its integration into the global market directly depend on the innovation factor. One of the most important industries in which innovations are being introduced is industry. It is also known that the industrial sector currently occupies the main place in the economy of

developing countries. This actualizes the strengthening of innovation activity in the industries of these countries. Cluster mapping, analysis of existing cluster policies, and policy development recommendations are designed to support policy makers, entrepreneurs, and other decision makers working in the clustering industry. The developed policy of countries to increase the number of small enterprises provides an opportunity to create new jobs, which increases economic growth with an increase in the number of employed people and the standard of living of the population. Currently, countries are facing problems related to the development of innovative activities, the large-scale implementation of innovative ideas, the introduction of scientific and technological progress, and the fundamental transformation of manufacturing industries that produce high-tech industrial products. Naturally, this is related not only to economic policy, but also to the effectiveness of the management mechanism in accordance with the requirements of market relations. Solving these problems, considering scientific, technical and innovative activities from a new perspective, contributes to the creation of a new product, the development of science, education, innovation and industrial policy, and this requires effective coordination [1].

The cluster approach in the formation of industrial policy in the countries of the world has been applied since the 1980s and 1990s. Today, it is not only a powerful tool for achieving the goals of industrial policy of economic growth, its structural changes, modernization, but also a tool for regional and innovative development, increasing the competitiveness of enterprises in domestic and foreign markets. Industrial policy based on the cluster approach is classified as a cluster policy of the state and is effectively implemented by the leading countries of the world [2].

The clustering process of the Azerbaijani industry is conditioned by the need to realize the sectoral, regional, national and economic and public interests of the country's economic entities, as well as the use of modern forms of economic interaction and development [3]. The main feature of the formation of local clusters is their focus on industries representing the oil and gas industry, light industry, construction and the agro-industrial complex. The creation and development of high-tech innovation clusters in the fields of mechanical engineering, bio pharmacology, electronics and information technology is a priority for European countries. At the stage of globalization of economic development, clusterization is widely used and is gaining great importance as a means of dynamic industry development through cooperation, specialization and decentralization of production, increased innovation, the introduction of new technologies, and increased competitiveness of domestic products [4].

The various approaches to the formation of industrial clusters and their types used in different countries are listed below (Table 1).

Table 1. *Approaches to the formation of industrial clusters*

№	The results obtained in these areas	**Author**	**A source**
1	Factors and external influences are important in the process of forming industrial clusters.	Dvoryashina M.M.	[5, p.72-75]
2	Clusters are characterized by the general expediency of their activities, which complement each other, being geographically interconnected companies and related groups of organizations operating in a particular territory. The cluster institute defines the economic processes of the organization and development of the economy; it is a new object in determining the state policy of increasing the competitiveness of the national economy.	Porter M.E.	[6,p.191-202]
3	An industrial cluster, like two different cluster components (sectorial and territorial), is a set of interrelated industries and service sectors specializing in the international division of labor; a territorial cluster is associated with firms that produce additional products and participate in the cluster.	Pilipenko İ. V.	[7, p.28-30]
4	The basis for the organization of an industrial cluster is a network. The formation of a network presupposes stable links with organizations that ensure geographical proximity and infrastructural interaction between participants.	Somova E.Y.	[8, p.117-121]
5	The development of clusterization is better controlled by the private sector. Governments in countries with a relatively weak private sector, while building infrastructure, logistics, and financial capabilities, can provide support for the relevant cluster, including programs covering joint technologies, development, and innovation.	Alexandrov A.V.	[9, p.17-25]

A cluster network is a group of interconnected companies with common financial and business goals based on an effective system of long-term relationships that agree on mutually beneficial cooperation and development strategies [10]. Network members come together, interacting for various reasons, agree to cooperate openly and become dependent on each other to a certain extent. Networks are easily built where numerous trading operations create good awareness and are based on trust [11]. Clusters are an important tool for local and regional economic development, contributing to the expansion of small and medium-sized enterprises in the country (Figure 1).

Cluster structures can give an impetus to economic development, mobilize existing national natural, human, financial resources and innovative, scientific potential of the country [12]. Currently, stable cluster structures have been formed in industrialized countries, significantly increasing the level of economic development and innovation, the economic potential of the country and the level of their competitiveness on a global scale, and the models used to form cluster development are also described [2]. The relationship between innovation systems and cluster evolution is

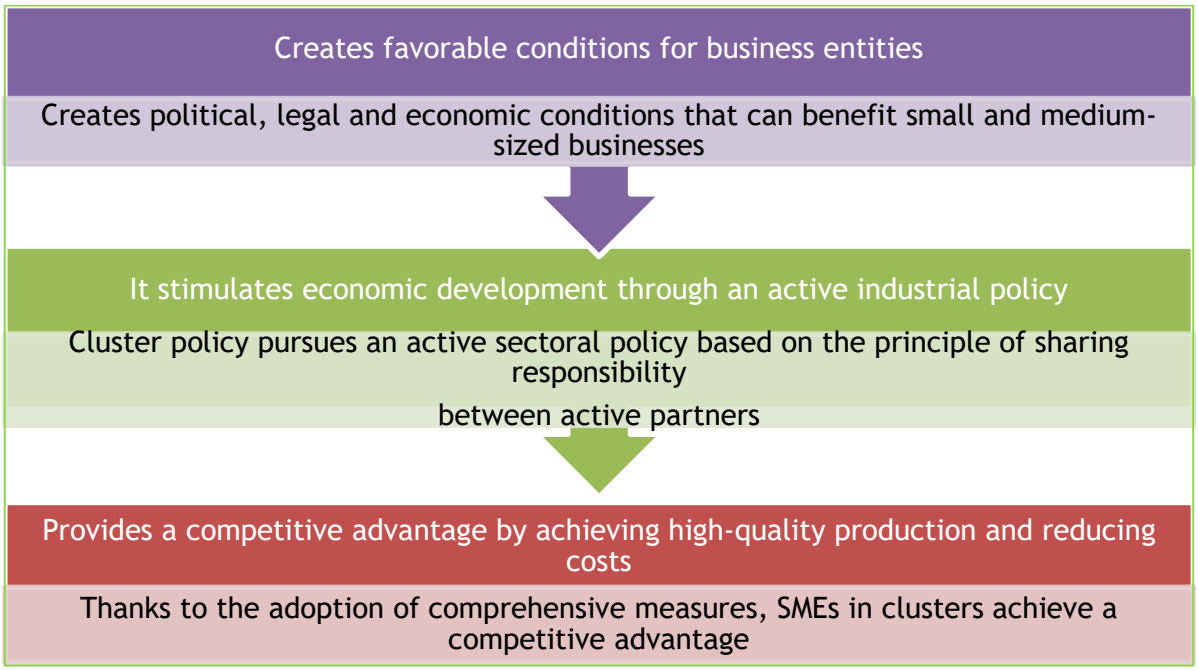

Figure 1. *Beneficios de los clústeres para pequeñas y medianas empresas (Preparado por los autores)*

complex. According to the approach of the regional innovation system (RIS), clusters form an integral part. Empirical studies of RIS show that the formation, growth, maturation, and possibly renewal of cluster groups are related only to the specifics of the infrastructure, institutional structure, cultural aspects, and political activity of a particular region. For example, studies involving regional innovation systems show that these types of systems create favorable conditions for the formation of new clusters. The UNIDO Industrial Development report highlights that the world is changing rapidly, especially in the field of rapidly developing technologies; innovations can serve as catalysts for sustainable development, while countries without access to new technologies risk being left behind; ongoing changes pose new challenges for countries seeking to overcome the poly crisis and accelerate progress towards towards achieving the SDGs. With the desire for industrial development of countries, their manufacturing industry is consolidating, scaling up and increasing efficiency through technological and managerial innovations [13]. To solve these problems, countries need to implement the following measures:

- Action is needed on the part of Governments to ensure a rapid exit from the poly crisis and accelerate progress towards sustainable development.
- This means large-scale investments and appropriate policies that would ensure their most effective use in the target industries.

2. Materials and Metods

The article uses a method for selecting approaches to define the concept of clustering. The choice of the method of approaches to the formation of

industrial clusters in various countries is also applied.

The method of comparative analysis is used to form clusters in various industries when selecting economic driving factors. At the same time, the work uses a method of selecting new innovative technologies that can be catalysts for the sustainable development of the country's economy.

The method of selecting various factors influencing GDP growth is also used. When developing an econometric model of the relationship between GDP growth and selected groups of factors, a special program was applied and coefficients of independent variables were determined. The analysis method was also used to examine the change in GDP growth in Azerbaijan over the period 2010-2024. To determine the adequacy, the model was tested using the Darwin-Watson criterion. Based on the analysis, relevant proposals are given.

3.Results

3.1. A system of factors that ensure the sustainable development of industrial clusters and innovative products

Accelerating sustainable industrial development is crucial to achieving the Sustainable Development Goals (SDGs). In the book “Mission Economics” by M. Mazzucato, a professor at University College London, it is noted that one of the reasons why we have not yet achieved the SDGs is that these goals are not included in our industrial strategies and innovation policies. However, the situation may begin to change when using a focused approach to industrial strategy, focused on the SDGs as the main objectives. By placing the SDGs at the center of a country's industrial, technological, and innovation policies, it is possible to steer the economy towards more inclusive and sustainable models. To do this, it is necessary to create ambitious industrial strategies, as well as conditions that would guarantee government support for efforts aimed at achieving the SDGs [13, p, 15].

The assessment of UNIDO experts shows that low innovation rates in countries indicate that this is a critical area for improvement, as lagging behind can hinder technology adoption and economic growth, and the use of technology from the 4th Industrial Revolution can accelerate innovation, increase industrial competitiveness and diversify the economy. The Industrial Development report 2024 presents a new approach to the integrated assessment of progress in sustainable industrialization, which takes into account several indicators: in addition to SDG 9 (industry, innovation and infrastructure), it also takes into account SDG 7 (affordable and clean energy) and SDG 8 (decent work and economic growth). Industry plays a key role in accelerating growth, innovation, job creation, reducing poverty and hunger, ensuring equality in society, and combating climate change [13, pp. 5-12].

Thus, the main factors increasing the role of industrialization with the use of innovative opportunities include the following:

- ✓ Increasing levels of industrialization, as well as the share of manufacturing industry in the regions of the world;
- ✓ Reduce the difference in the level and speed of industrialization with the gap in progress towards achieving the SDGs between regions;
- ✓ Some regions have made progress in creating dynamic production bases, especially in labor-intensive activities that benefit from globalization;
- ✓ Many countries have yet to realize their industrial potential. Among the main obstacles to the growth of production in the region are the low level of human and physical capital, integration into low-value-added GCD segments, historically underdeveloped infrastructure, and a high degree of dependence on natural resources;
- ✓ Accelerating progress towards achieving the SDGs requires the introduction of appropriate industrial policies that would aim to offset market downturns and coordinate structural changes, while stimulating international integration;
- ✓ Continental free trade zones can provide countries with access to a broader market, which is crucial to stimulate demand in the manufacturing sector and attract investment, including foreign direct investment (FDI), in modern industries.

The formation of clusters in various industries is influenced by economic driving factors. Among these factors that form industrial clusters, we can suggest the following (Figure 2):

- ➢ Proximity to markets: Despite the favorable level of transportation costs for international transportation, being in close proximity to markets can have a positive impact on cluster development;
- ➢ Availability of specialized labor resources and human resources reserves;
- ➢ Availability of equipment suppliers: Exchange between manufacturers and users of capital-intensive products located in a single territory;
- ➢ Availability of specific natural resources;

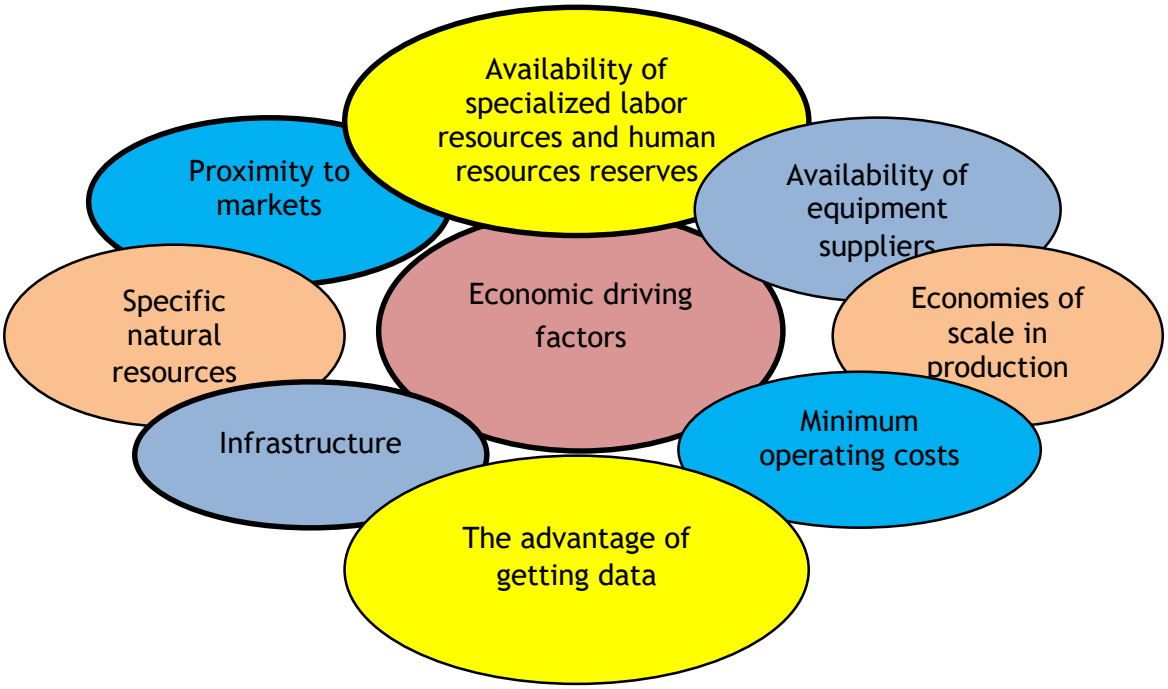

Figure 2. *Economic factors shaping industrial clusters [14,15]*

- Economies of scale in manufacturing: Economies of scale can enable small manufacturing companies to operate in a specific market;
- Accessibility of infrastructure: The types of infrastructure can be specific, for example, certain transport or service facilities that provide agglomeration;
- Minimum operating costs: Firms and their suppliers can be reduced with a high frequency of interaction with each other;
- The advantage of receiving data.

Thus, clusterization policy assumes, first of all, a new management technology that makes it possible to increase the competitiveness of the region, the industry and the country as a whole, it is effective when traditional approaches are not enough. The transformation of a cluster into a well-organized space assumes that large and small enterprises can be grouped into groups of suppliers, infrastructure facilities, research centers, universities, etc. allows it to operate successfully. Considering the above, it can be concluded that the formation of industrial clusters in the country using modernized technologies will lead to the creation of innovative products that will enable the achievement of the set goals for sustainable development. And the fulfillment of these goals gives an impetus to the development of the economy and this is due to an increase in the standard of living of the population living in the country.

3.2. Grouping of factors of innovative products affecting the economic growth of Azerbaijan's GDP

Establishing the dependence of the republic's GDP on an innovative group of factors is an important diagnostic issue in determining the country's economic growth over a given period. Regression models are the best tool (method) for solving this problem. Regression models make it possible to analyze data to assess the situation and predict GDP growth, as well as identify the main factors directly affecting the country's economic growth. Correlation analysis is a method of modeling and studying the properties of raw materials and measured data. The initial data consists of a combination of values of the dependent variable and independent variables (explanatory variables). The model parameters are set in such a way that the model is as close to the data as possible. The qualitative criterion for approximating quantities (the objective function) usually shows the standard error. It is assumed here that the dependent variable is the sum of the values of this model and a random variable. Regression analysis is used for forecasting, time series analysis, hypothesis testing, and identifying hidden relationships in data [16].
The regression model (1) is used to determine the dynamics of GDP growth:

$$Y(t+1)=f\,[\,Y(t), X_i(t), e\,(t)], \qquad (1)$$

where: Y(t), the gross output of the economy (GDP) in period *t*; Xi(t)-the state of the itch factor (innovative activity of GDP growth) at the end of the period t; e (t) is the forecast error for the period t [17].

When determining the dependence of GDP growth in Azerbaijan on the newly introduced and improved group of factors of innovative products, the issue is resolved in stages: -selection of a group of factors of innovative products (newly introduced and improved) that determine the development of the country's GDP; -collection of economic indicators for the analyzed period to build a model; -identification of the country's GDP growth rate (increase or decrease). Building a model set as a goal and verifying its adequacy based on statistical testing; -building a multifactorial regression model, determining its realism for solving an existing problem based on comparing the results of calculations with real data; -using a regression model, determine the level of GDP growth in Azerbaijan depending on the newly introduced actions and improved innovative products in the period 2010-2024 [18].

There are certain groups of factors that directly affect the country's GDP growth and their dynamics will reflect the overall changes in the economy. The collection of statistical data materials is the only source of information. Calculating the average indicator for the period under study, determining the minimum and maximum rates of changes in GDP growth, will allow us to determine the most likely development scenarios. The following indicators are taken as independent variables: newly introduced and improved innovative products in the engineering and manufacturing industries. In the next step, the model's realism is checked by comparing statistical and calculated data. In the last stage, a model of Azerbaijan's GDP growth will be built depending on the above-mentioned group of factors.

In our opinion, the proposed approach will allow us to determine the equation of the relationship between GDP and groups of factors (newly introduced and improved), assess the degree of influence of individual factors on GDP and determine the type of economic growth of the republic. In addition, as a result of the construction of the projected GDP, it will be possible to establish alternative options for the country's economic growth, depending on the degree of influence of the proposed factors.

3.3. Identification of hypotheses for modeling the relationship between Azerbaijan's GDP growth and freely variable groups of innovative product Factors

The period of analysis and selection of the initial data. The period 2014-2024 was used to develop an econometric model that ensures GDP growth in Azerbaijan. The initial data were taken from the statistical collection of industry of the State Statistics Committee of Azerbaijan (Baku, 2024) (Table 2). To present the results of the analysis in a comparative form for 2014, all cost indicators fully cover subsequent years.

Table 2. *The initial statistical data for building the model and the calculation results*

	The volume of GDP, Y, millions of dollars	The volume of products that have undergone significant changes or have been put back into operation		Improved production volume		Calculated indicators of GDP growth based on the constructed model,$\bar{Y}$, millions of dollars
		Mining industry, $Mİ_1$, X_1, millions of dollars	Manufacturing industry,$MFİ_2$, X_2, millions of dollars	Mining industry, $Mİ_3$,X_3, millions of dollars	Manufacturing industry, $MFİ_4$, X_4, millions of dollars	
2010	52909.3	0.7452	2.5788	5.7638	1.1935	55718.9779
2011	65951.6	1.2194	6.5235	6.1353	2.9337	57131.7819
2012	69683.9	0.2329	13.3271	0.1484	0.4196	55178.1313
2013	74164.4	0.1127	3.9207	0.1735	0. 5195	54859.961
2014	75234.7	0.2018	7.2462	0.1129	0.6574	55069.1258
2015	52996.8	0.1023	0.5469	0.1612	0.3469	54475.049
2016	37862.8	0.0759	20.9513	0.1547	0.3182	55811.0764
2017	40867.9	0.1034	8.6334	0.1081	0.1176	54749.9858
2018	47112.9	0.1266	16.9040	0.9567	0.5031	55836.5172
2019	48174.2	1.4681	11.2955	1.0129	2.2976	55284.8461
2020	42693.1	1.4209	5.4966	1.5246	9.8990	62967.6169
2021	54825.4	1.6726	34.1963	1.8525	4.8858	59324.6415
2022	78807.6	2.3365	40.5028	1.0567	22.7427	77043.8477
2023	72428.5	2.2578	36.7063	0.8615	11.3262	65046.6878
2024	74315.9	2.4563	38.0265	1.1263	15.8095	69530.7537

Source: [19, p.120-129] and calculation results using the special program "Vizual Studio Code"

Independent variable factors. The following elements were considered as a possible set of factors influencing GDP growth:

I. The volume of products that have undergone significant changes or have been put back into operation: X_1-mining industry, millions of dollars. X_2-manufacturing industry, millions of dollars.

II. Improved production volume*:* X_3-mining industry, millions of dollars. X_4-manufacturing industry, millions of dollars.

Each of these factors was tested for the possibility of using a regression model as an independent variable. The closeness of the relationship between the selected factors and GDP was determined using the special program "Vizual Studio Code" using the pairwise correlation coefficient. The following rule was also used: • if the correlation coefficient for two quantities (GDP and each factor affecting it) has a value close to ± 1, then the relationship between the selected factor is considered strong; • if the correlation coefficient has a value close to 0 (corresponding to 0.2), then the relationship between the indicators used is considered weak and the coefficient is not taken for use in the model.

The scattering diagrams of the GDP volume by the considered factor of the model and the values of the paired correlation coefficients are shown in the figures below.

Figure 2.1-2.4

As can be seen from the presented diagrams, all the correlation coefficients between GDP and the independently changing factors selected for the analysis were significant, i.e. they could have a noticeable impact on the amount of GDP growth. It should be noted that a large number of observations (n = 15) allows us to obtain a high-quality model. It can be noted that the quality of the model depends on the degree of mutual influence of independent factors: ideally, there should be no mutual influence. In the real sector of the economy, it is difficult to find alternative factors for GDP growth due to their complex indirect and sometimes direct effects on each other.

In order to avoid these problems, it is necessary to estimate the value of GDP separately. And then we summarize the influence of groups of factors based on the determination of the geometric mean of the indicator. To do this, you need to perform the following modeling steps:

Step 1) build two regression models, each of which establishes the relationship between GDP growth and the corresponding group of factors (in our example, X_1 and X_2);

Step 2) evaluate the sensitivity coefficients of GDP growth rates from changes in factors in groups I and II;

Step 3) estimate the generalized GDP growth rate depending on the two influencing groups of factors.

3.4. Description of the calculation results in the regression model

To study the influence of the selected I and II groups of factors on the value of GDP, a linear regression model was chosen, its formula will be as follows:

$$Y=a.X+b, \quad (2)$$

where: Y is the number of observations in GDP growth (number of observations n=15) from independent factors (k=4); a is regression coefficients, a=1,2, ... ,4. When determining the relationship between GDP and groups of key factors, the "Vizual Studio Code" software was used and the results are shown in Table 3.

Table 3. *Matrix of regression model coefficients*

A group of independent variables	Leveling up	R^2	The coefficients of the model			
			a_1	a_2	a_3	a_4
The volume of products that have undergone significant changes or have been put back into operation	$GDP^1=a_0+a_1^1 x X_1+a_2^1 x X_2$	0.2636	4219.7608	11.3696	-	-
Improved production volume	$GDP^2=a_0+a_1^1 x X_1+a_2^1 x X_2$	0.2469	-	-	- 29.9095	959.779

Source: the data is accepted based on the calculation when applying the program "Vizual Studio Code"

The coefficients of determination R^2-(respectively: 0.2636; 0.2469) are sufficient to confirm the high reliability of the results obtained. This shows that the model takes into account all two groups of factors influencing the amount of GDP growth or decrease.

In the course of the study, based on the statistical data provided, a correlation model of economic growth Y was constructed, depending on two groups of factors (1,2, ..., 4 factors). After calculation, the GDP growth formula is expressed as follows:

$$Y=a_0x_{0+}\ a_1x_{1+}\ a_2x_{2+}\ a_3x_{3+}\ a_4x_4\ {}_{+}u, \quad (3)$$

where: x0=1; u is the deviation from the regression function (i.e. dissatisfaction).

Based on the calculation using the "Vizual Studio Code" program, the following formulas were obtained:

$$GDP=54201.9124-1534.4926\text{Mİ}_1+65.0188\text{MFİ}_2+217.9681\text{Mİ}_3+1036.091\text{MFİ}_4. \quad (4)$$

R_m=0.4896; R^2=0.2398; S_e=13099.948; DW=2,29.

The Darbin-Watson criterion (DW), which is an indicator of the adequacy of the model obtained from the calculation, is determined at the level of significance of the statistical values dl=0.488 and du=1.704 in the case of α=0.01 (1%). Also, it is determined at the level of significance of the statistical values dl =0.56 and du=2.21 in the case of α=0.05 (5%) [12, p.447]. At the same time, three hypotheses of the autocorrelation residue in the model were tested:

1. When DW > dl, the hypothesis is rejected in the absence of a true autocorrelation residue.
2. In the case of dl ≤ DW≤ du, the hypothesis remains open.
3. When DW > du, u is taken as a hypothesis.

If we look at the hypothesis, DW >du, or 2.29>1.704, the absence of an autocorrelation balance in the real price is assumed at the level α=0.001 (1%) of the Darbin-Watson criterion. If a=0.05%, then the equation comparing the Darbin-Watson criterion will be acceptable in our example: DW >du, or 2.29>2.21

Thus, the economic growth of GDP in Azerbaijan and its projected value can be calculated based on long-term data for the factors selected in the case under consideration. It should be emphasized that the model justifies itself in any country. The calculated model allows us to determine the form of influence of groups of independent factors on economic growth of GDP in any period.

4.Discussion

The mechanisms of state support and stimulation of industrial clusterization in Azerbaijan currently play a special crucial role [3]. To inform potential investors willing to support the expansion of the Alat Free Economic Zone (AFEZ) abroad, the head of state gave relevant instructions to the embassies of our country. The AFEZ was created based on the national preferences of the country, taking into account the experience of free economic zones in the United Arab Emirates (UAE). It should also be noted that DP World from the UAE is the consultant of the project in Alat [20].

As a result of the study, the authors note that apart from a few developed countries that produce 77% of global GDP, the remaining 188 countries produce only 23% of global GDP. Based on the

analysis of the EU countries with the highest real GDP growth rates, it was noted that the economic growth of each year varies with the comparison of the previous year's indicators. An econometric model of the relationship between the economic growth of GDP and the groups of factors selected for the study has been created. It is also noted that the model justifies itself in determining the dependence of GDP on numerous factors in any country and it allows us to determine the form of interaction of these factors [21-24].

Cluster structures are able to mobilize all resources (natural, human, financial), innovative and scientific potential of the country by stimulating economic development. Today, stable cluster structures have formed in developed industrial countries, significantly increasing the level of its economic development, innovation, economic potential and competitiveness on a global scale using new models.

There are potential opportunities in Azerbaijan that can ensure the development of green clusters. So, at present, in particular, in the Karabakh and East Zangezur economic regions liberated from occupation and newly created, it is assumed that the concept of green spaces will be formed at the expense of the natural resources of the region [25,29]. Industrial parks based on cost-effective, environmentally friendly technologies, including the introduction of new infrastructure tools and other issues, can be formed in Azerbaijan based on the use of renewable energy sources in the mentioned region [20]. Negotiations in this direction are already underway at the state level with the International Renewable Energy Agency and work is underway to attract foreign companies and investors to green energy projects.

The cluster analysis of the Republic of Belarus showed a significant heterogeneity of the manufacturing industry. At the same time, according to all the indicators studied, it is possible to identify the type of economic activity that is constantly in the leading groups for the production of food and tobacco. At the same time, its leading positions are natural, which is confirmed by the analysis of industry development indicators for previous years [30-33].

As a result of the analysis, the researcher notes that within the framework of the cluster development model, it allows to identify a number of problems inherent in the country's IT industry, including a decrease in the indicators of the cluster potential of the IT industry for the most socio-economic regions of the country, trends in increasing the negative impact of the reasons preventing new companies from entering the IT market, ensuring an increase in the level of monopolization of the IT industry [34].

The highly competitive dynamics of the modern economy attracts enterprises to innovation activities in order to find sources of competitive advantage. Innovation creates new opportunities to create new value. Traditionally, in economics and practice, more attention has been paid to technological innovations in the process of diverse innovation activities. Nevertheless, there are more and more opinions that their implementation is associated with the appropriate development of organizational innovations: technological innovations make scientific achievements technically possible, and organizational technologies make them economically effective [18, p.3].

The spread of digital technologies is fundamentally changing production processes. The Fourth Industrial Revolution opens up new opportunities for the introduction of technologies that have a significant impact on the production cycle, starting with highly automated production lines and ending with the large-scale implementation of technological solutions aimed at increasing productivity, optimizing costs, quality and reliability [35]. The author presented a set of trends in the development of digital technologies by their main types, showed the level of industry participation in digital transformation, as well as many other important processes of digital transformation in enterprises that are not measured by quantitative statistics [36,37].

As a result, according to various researchers on the topic, it can be noted that investments are aimed at developing the economy, helping to gain access to loans and allowing small and medium-sized enterprises to develop. Low and high unemployment also have a devastating impact on the dynamics of economic growth. Intensive economic growth is achieved through the use of more progressive means and economical labor items, advanced training of the workforce and the use of production potential, raw materials and consumables. Ultimately, economic growth is closely and directly related to the growth of the standard and quality of life of the population.

5.Conclusions

Industrial cluster mapping and analysis of existing cluster policy is designed to support policy makers, entrepreneurs, and other decision makers in the field of clustering [38-40]. Clusters are an important tool for the economic development of the country and contribute to the expansion of small and medium-sized businesses.

Country development applied innovations in industry face problems related to the development of innovative activities and the large-scale

introduction of innovative ideas. With the introduction of scientific and technological progress and the fundamental transformation of the processing industry, the manufacturing countries of high-tech industrial products are pursuing the goal of expanding their positions in the product sales markets by ensuring the entry of their innovative products into the relevant markets [38-40]. The clustering policy assumes a new management technology that allows to increase the competitiveness of the region and the country. This policy can be effective when traditional approaches to solving problems are insufficient. Turning a cluster into an organized space allows them to work successfully. For this purpose, large and small enterprises can be grouped together, such as suppliers, infrastructure facilities, research centers, universities, etc. Thus, the creation of industrial clusters and the use of innovative technologies in entrepreneurship allows the country's GDP to grow. As a result of the research on the developed topic, it can be concluded that the quality of the model depends on the degree of mutual influence of independent factors on economic growth: ideally, there should be no mutual influence. In the real sector of the economy, it is difficult to find alternative factors for GDP growth due to their complex indirect and sometimes direct effects on each other. In the end, GDP growth directly affects the level of employment and the quality of life of the country's population.

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