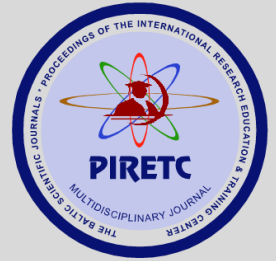


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INNOVATIVE MANAGEMENT METHODS OF THE OIL AND GAS INDUSTRY OF AZERBAIJAN WITH THE OF INFORMATION TECHNOLOGY

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ABSTRACT

In the article, the linear model of the innovation process was investigated and the interrelationships between its causes and consequences were analyzed. It has been shown that - innovation should not be considered only as a process of creating new scientific knowledge. Because they are the basis of acquisition, distribution, combination of new knowledge, development and application of a new product or technological process. Here, the models for determining the effectiveness of the application of information technology have been comprehensively analyzed and their areas of application have been determined. At the same time, the strategic approach to the assessment of the effectiveness of the application of information technologies in the enterprises of the oil and gas industry of Azerbaijan, the development and application directions of the main digital technologies, and the importance of the transition to sustainable innovative development of the industry were substantiated.

Keywords: innovation, information, model, oil and gas industry, technology, intellectual, sustainable and dynamic development.

РЕЗЮМЕ

В статье исследована линейная модель инновационного процесса и проанализированы взаимосвязи между его причинами и последствиями. Показано, что инновацию не следует рассматривать только как процесс создания новых научных знаний. Потому, что они являются основой приобретения, распространения, объединения новых знаний, разработки и применения нового продукта или технологического процесса. Здесь всесторонне проанализированы модели определения эффективности применения информационных технологий и определены области их применения. При этом стратегический подход к оценке эффективности применения информационных технологий на предприятиях нефтегазовой отрасли Азербайджана, направления развития и применения основных цифровых технологий, важность перехода на обосновано устойчивое инновационное развитие отрасли.

Ключевые слова: инновации, информация, модель, нефтегазовая отрасль, технологии, интеллектуальное, устойчивое и динамичное развитие.

Introduction

At the main stage of the development of innovations in modern times, the most important resource of the organization should be directed to the globalization of economic and competitive human intellectual skills, the spread of information technologies, the general integration of the labor market, and increasing the speed of information. The innovation stage of the economy is

related to the maintenance and development of all its achievements at a higher level, unlike the previous stages. Because, at this time, information and knowledge will serve as tools and subjects for creative thinking. Thus, the development of the economy in the world is shaped in many ways under the influence of global technological changes, from which Azerbaijan cannot be left out.

In the context of the globalization of the world economy and the strengthening of competition, the basics of the concept of open innovation require a revision of the openness of the internal management processes of scientific and technical achievements and structural works (ETNKI), the diffusion of technologies based on the unification of the efforts of universities, national laboratories and industrial consortia.

There is a traditional model of the innovation life cycle in the form of a classical linear concept of the innovation process, which is based on the availability of knowledge obtained in the process of fundamental research. Within the framework of the linear concept, all stages of the life cycle of innovations are in a cause-and-effect relationship (Figure 1).

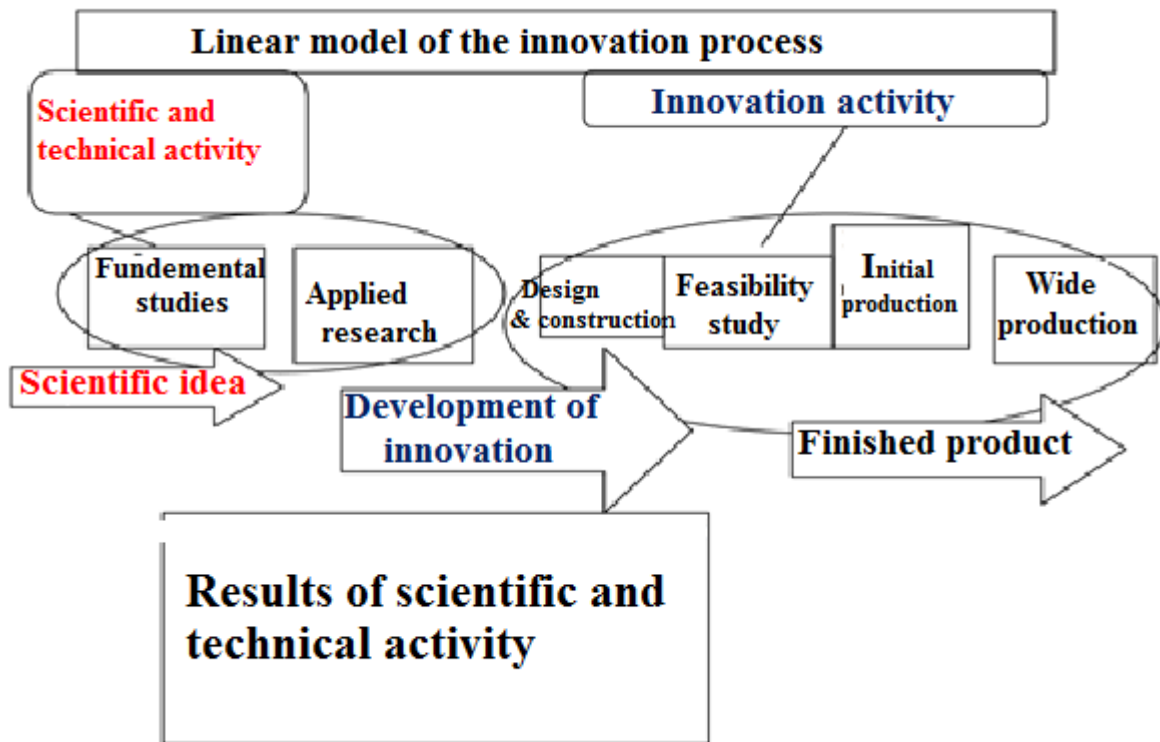


Figure 1. Linear model of the innovation process.

From Figure 1, it is clear that the stages follow each other in a strict order, and basic research produces theories and discoveries that are redefined in applied research. It is then tested in the development process and sold and put into operation in the market as industrial innovations. Each break must end with a result, without which the next one is impossible, so the process can only go in one direction.

However, modern experience shows that the linear concept of the innovation process cannot describe all types of innovative processes occurring in reality. Moreover, a number of well-known

scholars, especially Freeman, argue that his high-tech is an exception rather than an application to industries. Research scholars George and Tiis summarize and synthesize criticisms of the basic assumptions of the linear model, writing as follows [4]:

- innovations can occur at any time in any field of human activity, therefore special conditions created specifically for their creation are not necessary;
- innovation should not be considered only as a process of creating new scientific knowledge. Rather, they involve the acquisition and dissemination of new knowledge, its combination, the development of a new product or technological process, branding and advertising, and even the copying and adaptation of existing innovations;
- new scientific searches do not always lead to innovations, on the contrary, science does not always become the source of innovations in its pure form. For example, innovation may arise in the production process or as a result of the influence of demand forces, by applying existing knowledge in other fields or in new ways;
- innovation is characterized by uncertainty and a high degree of uncertainty. The peculiarity of the innovation creation mechanism is the exceptional role of a complex feedback system, as a result of which the direction of the process can change 360 degrees at any stage, that is, as part of the innovation process, any of its stages can be both the cause and the result, result and condition for the creation of innovation. At present, the concept of "innovation" has become much more complicated and more comprehensive. Now it is not only a means of rapid development, but also a general philosophy of technical evolution and an economic policy, both at the micro level and at the state level. Changes in economic processes change the course of the innovation process, so a classical linear model is not sufficient to describe different types of innovation processes;
- use of foreign direct investment mechanism for the active activity of transnational companies and transfer or exchange of innovations;
- application of new organizational and management schemes in the implementation of the innovation process, such as international consortia, field alliances, etc. [1].

Innovative methods of evaluating the efficiency of information technology application

One of the problems of determining the effectiveness of the application of information technology is the selection of the assessment methodology. In the classical literature devoted to the issue of efficiency evaluation, it is calculated as the ratio of effect to costs. Costs are the total cost of purchasing, installing and configuring, accompanying and supporting equipment downtime during maintenance or troubleshooting [7].

As a result, the task of choosing an assessment method arises, all of which can be divided into 4 types:

1. Cost methods. Evaluation is not based on measuring the end product or result, but on the resources or effort expended.
2. Direct result assessment methods. The methodology evaluates a directly measurable result, such as a decrease in the cost of ownership, an increase in the functionality of the system, a reduction in labor capacity, or the creation of a by-product of the main production.
3. Methods based on the assessment of process ideality. Such methods are based on static or dynamic comparison algorithms. The object of the system under consideration is selected as the base indicator, then the information system with the best indicators of costs incurred per unit of output is considered ideal. Approaches based on comparison with an alternative solution are also popular.



4. Qualimetric approaches. Such methods comprehensively look at the information system, organize its measurement and process the obtained results with statistical, sociological or expert methods [3] cost methods of assessment.

5. Functional point method. This method is used to estimate the cost of creating and implementing an information system depending on the user's requirements. Each such request has both a difficulty scale (easy, medium and hard) and importance to the user.

Accordingly, in the base of previously implemented projects, there is a project whose functional point is closer to the designed one, and their effectiveness is assumed to be maximally close.

6. Consumer index method. This method involves evaluating the results of the application of the innovation process (IP) in the form of a set of indicators that reflect positive changes in the company's activity (increase in income, decrease in costs, increase in turnover, increase in the customer base, etc.) [2].

7. AIE - applied information economy - the methodology is similar to the consumer index, but unlike it, it also includes various subjective indicators, for example, ease of working with the system, customer satisfaction, etc. implies evaluation.

8. EVS is a source of economic value. IP is evaluated according to four indicators, assessing how it benefits the company during its use:

- increasing incomes;
- increasing labor productivity;
- reducing the time of release of products;
- risk reduction.

A strategic approach to evaluating the effectiveness of information technology (IT) implementation in oil and gas industry enterprises: Most of the investments in oil and gas production enterprises are directed to information technologies. A bright example of such a deep application of IT is the activity of scientific research and project institutes of oil companies aimed at meeting the current and prospective demand for information and software products of oil and gas extraction enterprises. Information technology is a lever that enables the development of the oil and gas field. They allow to increase the efficiency of administration and management, as well as to reduce the costs of field development, delivery of raw materials to consumers and processing. These technologies enable oil and gas industry companies to solve the issues of technical process optimization, quality improvement, safety and operational efficiency, acceleration of market access and creation of new business opportunities more quickly and efficiently. The digital transformation of the oil and gas complex is a strategic direction of the development of the field, and without this direction it is impossible to imagine its future. The ecosystem of the digital oil and gas economy is based on the digital collection and transmission of data, which will be a key factor in the development of digital oil and gas production.

The main digital technologies used in the oil and gas industry include:

- business analytics - visualization of seismic data and creation of three-dimensional models of deposits, forecasting based on the study of large data arrays;
- artificial intelligence – prediction of maintenance and repair of equipment based on data analysis of important technical and technological tools;
- dispatching of equipment energy consumption in different operating modes.
- drones - performing visual monitoring of equipment to determine wear rate and ensure fire safety;
- remote monitoring of deposits and management of equipment operating modes.

Currently, project management is used in many developed countries of the world. According to American statistics, almost a third of the world economy is related to project activity. According to the Project Management Institute, the number of professionals in the field of project management is increasing every year. One of the first participants in project management in Azerbaijan was the oil and gas field. It is among the most project-oriented sectors of the economy and is the largest domestic consumer of high-tech industrial products in the country.

Foreign and domestic companies manage the projects of search, exploration and development of oil and gas fields in the republic, where at each stage the tasks that become local projects related to single goals are solved. Today, project management is a proven effective tool for managing any change. Successful projects are the foundation on which the company builds its future.

Whether they are related to building construction, oil and gas field development or implementing a new computer system, according to research by industry analysts, the time to implement new digital solutions is also trending in the systems development lifecycle. Agile principles and approaches are designed to solve the issue of operability and open up efficient and cost-effective opportunities for the organization to quickly adapt to changes in any external conditions and create numerous advantages. Here:

- provides tools and techniques for organizations to quickly generate revenue from implementation;
- allows to reduce the risk of time interruption, because small iteration with precise understanding included in the scope of each iteration

The economic effect of such a global application can be felt only at certain points (for example, at the company's headquarters or at the scientific-project institute). According to traditional approaches, the return of information technologies in enterprises is associated with two main directions:

1. Improving the quality of management and lowering the level of management costs. At the same time, numerous attempts to apply some IT (including corporate portals, knowledge exchange systems, etc.) to Vink's management systems, by carrying out an economic evaluation of investments for the selection of the preferred option for the implementation of the whole strategy of the implementation of this process shows the necessity of its formation. The development of this strategy answers the following questions: "How to evaluate the effectiveness of investments in IT? "By examining the approaches of foreign and domestic authors who consider the problem of return on investments in IT, it can be concluded that this issue is understudied and open for discussion today.

According to the analytical report of the World Economic Forum, digital transformation can increase the profitability of the oil and gas industry by one trillion US dollars.

The oil and gas sector plays an important role in the economy of Azerbaijan, the share of the oil and gas sector in the revenues of the state budget was 52-55% in 2019-2021. In the conditions of current challenges, the digitization of the oil and gas industry can bring more benefits to the country's economy. However, implementing digital technology requires large capital expenditures, while digitization budgets are limited. There have been other cybersecurity issues for the entire oil and gas sector. But, perhaps, the biggest "pain" of digitization in Azerbaijan today is big data. The analysis of the reporting and monitoring system revealed the problems of the current system, namely the existence of two reporting channels and inconsistency of data between USSU and IACng, manual data entry, lack of reports on crude (non-commodity oil),



material balance of commodity and crude oil for each field subject. shows that operative complex mutual analysis is not possible.

At the same time, foreign oil and gas and oil service companies admit that they work on projects in Azerbaijan for a certain period of time, so they do not plan to engage in the development of specialized software and long-term investments. Companies choose the strategy "we buy ready-made solutions on the market", and such solutions, as a rule, provide well-known transcontinental brands such as SAP, Microsoft, etc..

Prospects of oil and gas industry management with information technology

Taking into account the fact that oil and gas production is significantly differentiated according to the level of scientific, technical and innovative development, as a factor of increasing the efficiency of innovation management, in turn, the factors of transition of each field to the type of innovation development, differing both in the level of the economic potential of the fields and the characteristics of the policy carried out in them, and conditions are specific. However, despite the diversity of Azerbaijan's oil industry, it is necessary to understand the initial conditions and objective circumstances in which this transition is not possible under the conditions of the transition of these areas to sustainable and innovative development:

1. Methodological foundations — both theoretical studies on the concept of industrial economy sustainability and innovation orientation, and practical methods of building such socio-economic systems, as well as the experience of implementing innovative development models. In addition, at the modern stage of social development, unfortunately, there are no accurate and adequate technologies for the realization of a sustainable and innovative regional economy model, which is determined not only by the significant differentiation of the regions of Azerbaijan, but also by the considerable difficulties of this process and the features of the innovation process in the country. that (first of all, a significant difference between the moment of investment of funds and the moment of obtaining profit, the uncertainty of the conditions and opportunities for the realization of innovation projects, high risk) in this regard, the search for an effective strategy to achieve economic stability continues both in Azerbaijan and worldwide.

2. Methodological instrument — formation of a single, complex and mandatory methodology for assessing the degree of stability and innovation in the entire territory of the country, taking into account various factors. With the help of developing a system of indicators, there is an opportunity to achieve sustainable and innovative development goals, to manage this process, to statistically evaluate the effectiveness of the tools used and the level of achievement of the set goals.

3. Administrative-management conditions, first of all, envisage improvement of "center-region" relations. In order to achieve the goals of sustainable and innovative development, the formation of relevant republican and regional coordination centers and the precise distribution of powers between them.

At the same time, the state policy in Azerbaijan and its industrial sectors in the field of both the formation of a sustainable economy and the development of innovation does not yet have a unified, comprehensive character.

However, in every country of the world and in any field, modern socio-economic interaction is such that it requires adaptation of interaction in the "human - society (economy)" system based on the superior progress of innovations. This is economic - the emergence or formation of areas in the region that can ensure the operation of production (or methods of their organization) and the

region based on the principles of stability and innovation. Resource conditions are the presence of relevant economic, scientific-technical, natural-resource potential, as well as labor resources (economically active population) in the region, on which the transition strategy to sustainable and innovative development of the industry should be established.

In our opinion, one of the important conditions for the transition of the country as a whole to sustainable and innovative development is that certain measures must be taken to ensure the stability and innovativeness of its activity and development, and the socio-economic system must be implemented by the relevant authorities. However, during the development and implementation of these measures, it is necessary to take into account that the regional system is affected by various negative and favorable factors that should be taken into account. It turns out that the balance of industries from the point of view of the concept of sustainable development of the economy can be achieved when the influence of positive factors that can accelerate and adapt the process of formation of a sustainable, stable and innovative economy in the region is strengthened.

In general, the following should be noted among the factors for the transition of the industry to the development of a sustainable innovative economy:

1. Political-legal. On the basis of the development of the legal basis of the sustainable innovation development strategy, the necessary state regulation of the socio-economic processes of the development of industries is necessary.
2. Education. Education is the generator of the main productive power of the society in the modern economic system, that is, the presence of appropriate personnel potential, the degree of innovation of education is one of the most important conditions in the field of sustainable scientific and technical development of the region.
3. Environmental factor. The presence of natural resources in the republic, the scale of its territory and the characteristics of its geographical location - all these characterize the initial (initial) conditions for ensuring sustainable ecological-economic interaction.
4. Innovative technology factor. Only the existence of a developed market of high-tech products in the industry and an effectively functioning innovation system as a mechanism for the realization of a sustainable economy will allow to ensure efficient modernization of production based on the application of resource-saving, low-waste, environmentally friendly technologies.
5. Financial and economic factor. Ensuring the functioning of the system of efficient financial and economic tools for the regulation of mutual economic activity and the innovation process (fiscal measures, payments and subsidies, environmental and innovation funds, insurance, etc.) in industrial areas.
6. Structural factor. The change of the sector structure of the industrial economy (reduction of the specific weight of resource-intensive and processing sectors against the background of the expansion of the service sphere and the high-tech, science-intensive sector of the economy) will provide the necessary direction and sustainability to economic growth.
7. Information factor. The role of the mass media in the industry is very important in achieving sustainable development, and the level of informing consumers about the importance of innovations in ensuring economic growth, the necessity of sustainable production and consumption methods, and thereby increasing the level of responsibility of all subjects of the economy in relation to innovation activity should be increased.
8. Social factor. Strengthening the role of the main social groups (primarily the growing generation and the economically active population, the entrepreneurial sector) in the

implementation of the transition of the economy to the path of sustainable development by increasing the responsibility for any economic and other actions that may negatively affect the development, application and spread of innovations.

9. Risk factor. Technogenic, innovation, commercial, etc. it is necessary to implement an effective risk management policy. Risk management is an important part of the industry's sustainable development strategy, as a significant part of both cutting-edge development and innovation is risky.

In order to solve these problems, it is necessary not only to increase the competitiveness of the industry in the conditions of the formation of the knowledge economy in the world community, but first of all, to achieve economic stability and balance through the creation of a single innovation space in the industry, as well as relevant changes in the nature and direction of scientific research and engineering design work. It is necessary to develop and implement an innovative development model aimed at For this, the scientific and technical policy of the state should be interconnected and complex, ensuring the formation and improvement of the innovation system in the industry from the position of continuous development, and should be based on the following:

- to help the continuous improvement of the legal and administrative mechanisms that ensure the creation or compensation of environmental damage from the production and economic activity of industrial enterprises and the harmonization of economic interaction based on the development, application and new spread of all kinds of innovations;
- increasing the effectiveness of state regulation of nature protection activities and innovative development, improving organizational-legal and market relations in the field of creation, protection and use of intellectual property as a result of scientific and technical activity;
- ensuring the compatibility of all socio-economic programs and strategies and the growth rate for their restoration with the aim of eliminating the current imbalance in the growth rates of consumption of natural resources for the implementation of economic activity;
- organizing the improvement of the institutional field of innovation activity, the formation of a single coordination center, the reorientation of social and economic institutions to the path of innovation and sustainable development;
- raising the level of innovative education and enlightenment of the population.

The result

1. The successful implementation of the innovative development strategy should help to make qualitative changes in the structure of the economy of Azerbaijan, which should lead to its efficient use of human and natural capital, a new level of social development of Azerbaijan and sustainable growth based on the establishment of an information society. The macroeconomic policy of the Republic of Azerbaijan should be established in terms of modern challenges of globalization and financial instability, strengthening of competition in world markets, increasing role of science and innovation, development of human potential.

2. The need for state regulation of innovation projects in the oil and gas sectors of Azerbaijan, the existing problems in the innovation management system have been identified and their solutions have been proposed.

3. An innovative development model aimed at achieving economic stability and balance through the creation of a single innovation space in the oil and gas industries, and making appropriate

changes to the nature and direction of scientific research and engineering design work was proposed.

4. In order to determine the effectiveness of the state regulation of innovation projects, a new approach to the evaluation of the impact of innovation projects in oil production areas and a mechanism for the integration of innovation projects were proposed.

5. The experience of the state regulation of innovation projects of developed foreign countries was studied and the innovation development model aimed at achieving economic stability and balance through the creation of a single innovation space in the oil and gas industry and recommendations for improving the state regulation of innovation projects were proposed.

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OIL INDUSTRY AND INVESTMENT POLICY

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ABSTRACT

Favorable conditions for domestic and foreign investment are being created in our country. Especially, considering the dependence of the country's economy on the oil and gas industry, increasing the volume of exports and reducing the dependence on the import of non-oil sector products, attracting investment flows to those areas is considered an urgent issue. The organization of various state programs and projects in the country for the purpose of attracting foreign investors to service, agriculture and other industries can be considered a reasonable step. At a time when countries are trying to offer a more fertile and optimal environment to foreign investors in order to get out of the increasingly competitive environment in global conditions, it is important that our state offers the most appropriate incentive and stimulating options to foreign investors. Increasing foreign investments allocated to various sectors of the economy, especially to the non-oil sector, is one of the priority issues nowadays.

Fluctuations in the world oil market cause significant financial losses or additional income in oil exporting and importing countries and companies. Therefore, the focus is on the process of managing financial resources. Unexpected price changes are one of the most important and most difficult issues in the field of financial resource management. Generally speaking, the most important and difficult part of the financial management of the expenses of any enterprise is to ensure the formation of the immunity of the enterprise when unexpected expenses appear. In some cases, as a result of additional costs, enterprises face large financial losses and eventually face bankruptcy. Therefore, ensuring proper management of expenses and financial resources is quite vital to prevent such negative situations.

Proper organization of financial management of costs and revenues in oil companies plays an exceptional role in the long-term activity of that company. The financial management of costs and revenues in oil producing companies is analyzed in a separate context, completely separated from the financial concept. In the conditions of complex market relations, the main goal facing each oil company is to reduce production costs and obtain more profit. In the area of high volume of profit, the company can increase its existing capital, apply investment policy to other areas of the economy and get more profit. In this regard, financial management, as well as the evaluation of costs from the financial aspect, is a very important issue in the management of the enterprise. Financial management includes the preparation of the company's financial policy, the main directions of measures on financial issues, the provision of information to the heads of enterprises and departments and their functional units, and the preparation of financial reports. Therefore, all problems of financial management include all elements of the mechanism of general management from an economic point of view.

This article examines the current state of the oil and gas sector and investment policy, the role of investment policy in different areas of the economy in our country. In particular, the relationship

between the oil and gas and non-oil and gas sectors, the situation in the country in both areas, the factors affecting the economy, the current and future effects of investments on these areas were investigated. Considering the effects of the oil and gas sector on the environment and the problems it may cause, it was emphasized that the establishment of a suitable investment policy is one of the important issues, and attention was paid to the steps that can be taken in this direction.

Keyword: oil industry, foreign investment, the non-oil sector, investment policy, financial management, investment flow, construction.

It is a well-known fact that the Near and Middle East is distinguished by the wealth of natural resources, especially the huge volume of oil and gas deposits, and our country has received more than its share of these resources. Considering that natural resources are divided into exhaustible and non-exhaustible types, and oil and gas resources are also included in the category of exhaustible and non-renewable natural resources, in this case, the efficient use of resources is one of the most important issues for our country. In the context of continuous and sustainable development of the economy, this problem remains an urgent and priority issue on the country's agenda.

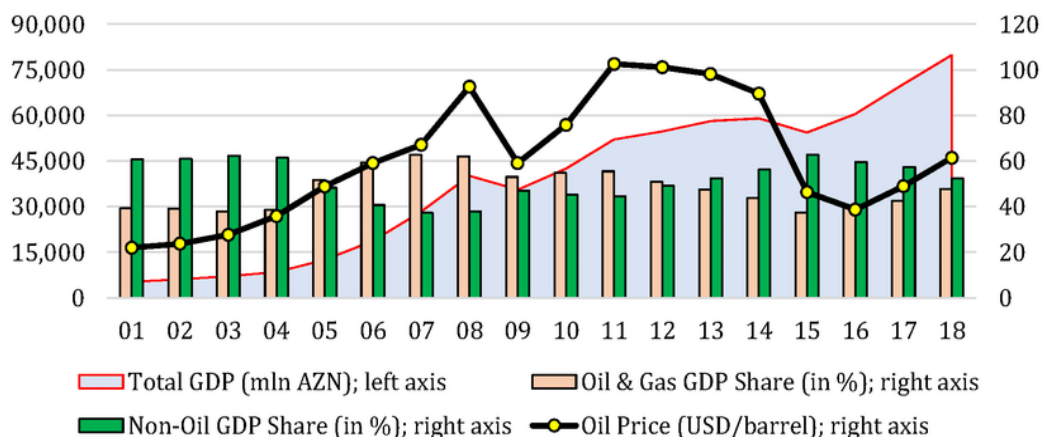
Azerbaijan, which is known for its oil products produced both on land and from deposits in the Caspian Sea basin, has been in the interest of other foreign countries and their large-scale oil and gas companies and investors from the very beginning. This has given impetus to directing both foreign and national investment flows to this area. About 80% of the investments that play a key role in the development of the country's economy fall to the oil industry, and in this regard, it is known how important the oil industry is for the economy of Azerbaijan.

In the latest period report of OPEC (report until the end of 2019), the volume of Azerbaijan's oil reserves was reassessed, and according to this report, the volume of oil reserves in the country is 1.5 billion tons, that is, about 7 billion barrels, which is the world's largest indicator. is equal to 0.4% of the total oil reserves confirmed in the report carried out on countries. The main part of the oil produced in our country falls on the share of "Azer-Chirag-Guneshli" oil field.

The "Contract of the Century" concluded on September 20, 1994 at the initiative of national leader Heydar Aliyev was the beginning of the national oil strategy. This agreement, which was concluded between 11 companies of 8 countries, on the development of the Azeri, Chirag and Guneshli fields, and also known as the "Production sharing" agreement, led to the conclusion of a number of international oil agreements and, therefore, the flow of foreign investment into the country from the first days of independence, significant it led to the construction of oil pipelines, the construction of a new fuel-energy structure, and the creation of an oil fund that boosted the socio-economic development of the country. After that, the oil industry had an irreplaceable role in the economic development of Azerbaijan, and in continuation of this agreement, 26 agreements were signed with 41 more oil companies.

The important place of the oil and gas industry in the country's GDP should also be noted. Considering that the majority of Azerbaijan's income is generated by this sector. In that case, it is useful to analyze fluctuations in oil prices and changes in GDP (Graph 1).

Graph 1. Oil Price, Total GDP in Azerbaijan, and Sectoral GDP Shares



(Source: The State Statistical Committee of the Republic of Azerbaijan, 2019)

Looking at Chart 1, it is possible to see the share of the oil and non-oil sectors in the total GDP, the difference between them and the differences in the share of the oil and gas industry in the GDP based on changes in the price of oil. During this period, the highest limit of the oil price was in 2007, and in 2005-2008, there was an increase in oil prices in the world, due to which the foreign exchange reserves of the country increased and exceeded the foreign debts. From 2009 to 2014-2015, as a result of the decline in the price of oil, the total output began to decline, which led to a noticeable decrease in foreign exchange reserves, and only then did Azerbaijan switch to an "adjusted" floating exchange rate. According to the graph, an increase in oil prices has been observed since that time. Currently, according to the information as of October 26, 2022, the price of oil has increased to about 91 dollars, which means that the economic and political processes that have taken place in recent times have a great impact on the increase in prices.

Recent events such as the discovery of new oil and gas fields and the opening of oil refineries have given impetus to the continuous development of this sector.

It should be noted that investors, major oil companies, before making a decision to invest in any field, study more deeply a number of issues regarding the country and field considered as the object. The investigated factors can be grouped as follows:

1. Resource reserves in the country (labor resources, natural resources, etc.);
2. Socio-political and economic situation;
3. Foreign-international policy and relations of the country;
4. Demographic situation and geographical position of the country;
5. Directions of the selected and applied development strategy;
6. The process of making decisions across the country, the participation of representatives of the private and public sectors and the public in the organization, management and provision of the decisions made, etc.

There were a number of factors that made it necessary to direct investment flows to this field in our country, as examples of which can be shown:

1. The abundance of oil reserves of the Caspian Sea basin and the dry basins would increase the profitability of those companies at the time of investment in this area;
2. In the post-independence period, like all other sectors, the oil and gas sector was experiencing a period of decline, and in this sector, a large amount of funds were required for structural renewal

and economic development, which would be more efficient to solve mainly by attracting investment;

3. Finally, in order to ensure economic and political security in the country and the region in general, it became important to increase the interest of other countries in these fields.

Looking at the investment policy of Azerbaijan, it seems that our country, which is mainly interested in attracting foreign investors, implements a number of measures in this direction. In general, the organization of these events is important for attracting foreign investment and creating favorable conditions for them. First of all, it is important to form a favorable legal framework and define legal norms in terms of ensuring the activities of foreign investors interested in investing in the country. and Labor Codes, as well as the Tax Code. The second issue is that Azerbaijan has signed international treaties and agreements and joined various important conventions, as a result of which it has declared that it agrees with the rules and provisions set by other states and has undertaken that our country has joined several important conventions. An example of this is the 1969 International Convention on Civil Liability for Oil Pollution Damage. Azerbaijan joined this convention in 2004. The third issue is that Azerbaijan signs mutual contracts and agreements with other states on various proposals and fields. Examples of this include promoting mutual investment, simplifying customs procedures, providing the most favorable conditions in transportation, distribution, and other such processes.

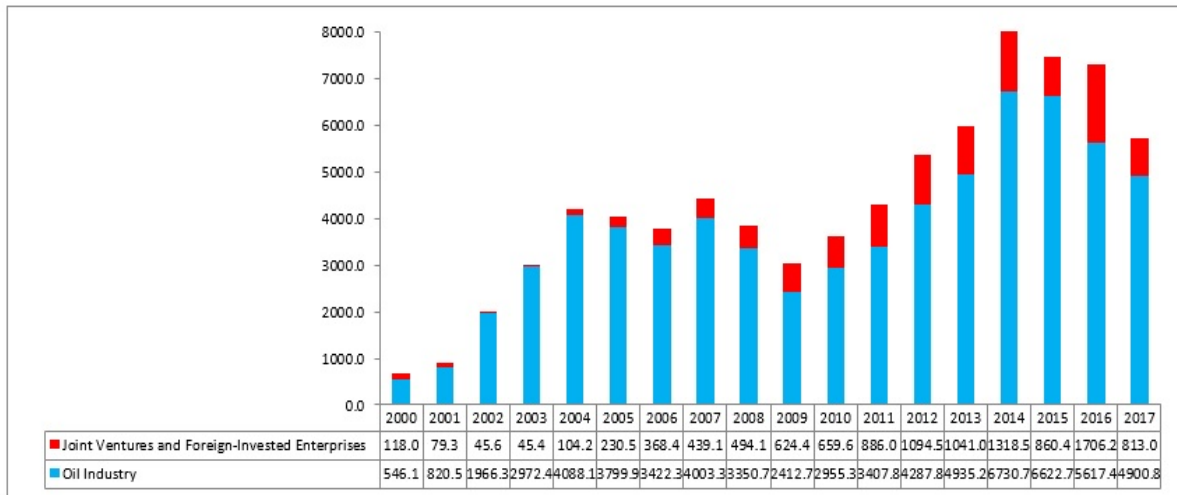
The organization of the flow of foreign investment in the country not only ensures macroeconomic stability and the stability of the national currency exchange rate, but also, as a result of the presence of shares of internationally important companies in the country, it also creates conditions for having the experience of a management system in accordance with world standards and facilitating the process of extracting oil to the world market on the basis of various cooperation agreements.

At present, when investing in the oil and gas industry, the need to develop this sector in the country, the demand for oil products, etc., are taken into account, and the main part of the investments is usually spent on the purchase and installation of new more effective, efficient and productive equipment and facilities.

According to SOCAR's data, more than 36 billion US dollars were invested in the development of ACG deposits by the end of 2018. It is assumed that by the end of 2040 there will be an additional investment of approximately 40 billion dollars in this project.

In the period 2000-2017, 66.8 billion dollars of FDI in the amount of 77.8 billion US dollars directed to the economy of Azerbaijan was invested in the oil sector, while 19.9 billion dollars was directed to the non-oil sector. It can be seen from here that the investments directed to the oil sector have always been more than the investments directed to the non-oil sector. (Graph 2)

Graph 2. Dynamics of Oil and Non-oil direct Investments in the period 2000-2017 in Azerbaijan, (in millions of USD).



(Source: The State Statistical Committee of the Republic of Azerbaijan)

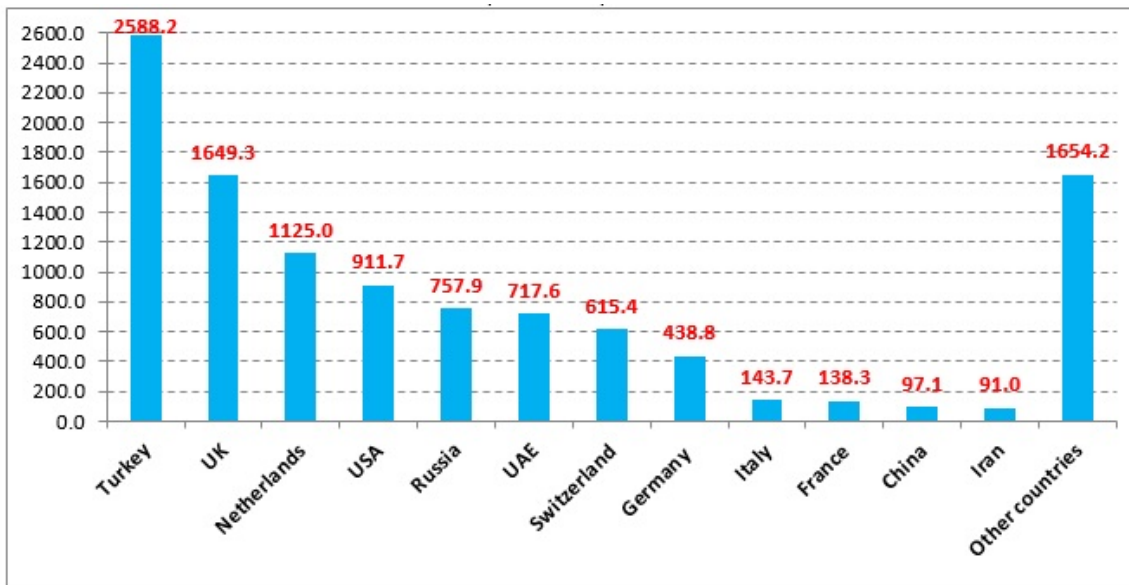
In addition, there are certain risks and dangers in investing in the oil industry. Based on these, errors arising as a result of carelessness in the investigation and calculation of the geological characteristics of deposits, accidents occurring during the opening and drilling processes of deposits, the volatility and uncertainty of supply and demand for a certain brand of oil in the world oil market, the transportation, distribution and transportation of oil. difficulties etc. can be shown as an example.

In the course of all these issues, the essence of the concept of efficient use of resources is noticeable. The main issues that are meant by the efficient use of oil resources are the strengthening of the material, technical and legal base, the improvement of the process of providing innovative devices and machines, the investigation of the main and alternative solutions to delivery and supply problems, the effective management of such processes, etc. Such procedures are envisaged, and the oil and gas policy established in Azerbaijan is aimed at solving such issues.

Against the background of all these processes, it can be stated that, in general, it is impossible to achieve sustainable economic development by attracting investment flows to the country only in one area and by specializing the economy in only one area. Achievements achieved for a certain period do not change the fact that oil reserves may run out one day, and it does not indicate that the investments made during this period should be directed only to this area. It can also lead to the dependence of the country on only one industry. For this reason, in my opinion, attention and investment should be allocated to other areas of the economy, and the investment obtained from the sale, transportation and production of oil in the form of raw materials should be directed to the development of other areas of the oil industry (for example, the oil refining area, machine building and other related areas), and thus only from crude oil dependence should be reduced. Then, the development of the non-oil sector should be encouraged at the expense of the incomes obtained from these areas, and the areas belonging to the non-oil sector, along with the oil industry, should be directed to regular development.

The introduction of a number of subsidies and concessions to attract investors to the non-oil sector can lead to an increase in capital investments in this field by other countries. With this, as mentioned earlier, dependence on crude oil and gas can be reduced to some extent.

Graph 3. Countries of Origin of Foreign Direct Investments to Azerbaijan’s Non-Oil sector (2000-2017).



(Source: The State Statistical Committee of the Republic of Azerbaijan)

As can be seen from the graph, the largest investment flow entered the country from Turkey (\$2588.2 billion), followed by the UK and the Netherlands.

Fluctuations in the world oil market cause significant financial losses or additional income in oil exporting and importing countries and companies. Therefore, the focus is on the process of managing financial resources. Unexpected price changes are one of the most important and most difficult issues in the field of financial resource management. Generally speaking, the most important and difficult part of the financial management of the expenses of any enterprise is to ensure the formation of the immunity of the enterprise when unexpected expenses appear. In some cases, as a result of additional costs, enterprises face large financial losses and eventually face bankruptcy. Therefore, ensuring proper management of expenses and financial resources is quite vital to prevent such negative situations.

Investments ensure the increase of production resources and, as a result, the rate of economic growth. Investments are the kind of capital with the help of which the national wealth is increased. Investment is money put into tomorrow and is essentially focused on human capital. Investment reflects the processes of long-term capital investments of production and non-production spheres of the economy. With certain reservations, investments can be grouped as follows:

- investments in expansion and modernization of production;
- investments in the creation of production infrastructure;
- investments in the creation of stockpiles;

- investments in the creation of social infrastructure;
- investments in training and retraining of personnel;
- science and scientific service.

Large companies of developed countries attach great importance to investments aimed at training personnel and increasing their qualifications, and consider this as an important direction for strengthening their position in the world market. It is increasingly understood that the intellectual product, which is the main factor of economic development, depends on the investments directed to it.

If we look at the classification of issues related to investment activity, we will see that investment activity is a set of all measures taken in connection with the investment of entrepreneurs and investors in one or another area of the national economy and its implementation. Investment activity is carried out both in the state sector and in the non-state sector. The investment activity carried out in the public sector is the investment activity carried out by state bodies, enterprises and organizations. Investment activity in the non-state sector is a private investment activity carried out by administration, enterprise and other institutions that are not part of the state structure. In addition, there is also foreign investment activity, where foreign citizens, legal entities, international institutions, etc. includes investment activities carried out by The joint activity of local enterprises with foreign firms, whether in the state or non-state sector, is a joint investment activity. Investment activity is an investment activity carried out within the investment process, between the investor and the investment object in a closed cycle. This activity takes place in the investment environment. The end result of the investment activity in the investment environment is the profit or income of the investor or entrepreneur.

Proper organization of financial management of costs and revenues in oil companies plays an exceptional role in the long-term activity of that company. The financial management of costs and revenues in oil producing companies is analyzed in a separate context, completely separated from the financial concept. In the conditions of complex market relations, the main goal facing each oil company is to reduce production costs and obtain more profit. In the area of high volume of profit, the company can increase its existing capital, apply investment policy to other areas of the economy and get more profit. In this regard, financial management, as well as the evaluation of costs from the financial aspect, is a very important issue in the management of the enterprise. Financial management includes the preparation of the company's financial policy, the main directions of measures on financial issues, the provision of information to the heads of enterprises and departments and their functional units, and the preparation of financial reports. Therefore, all problems of financial management include all elements of the mechanism of general management from an economic point of view.

On the other hand, allocating investment to the oil and gas sector is one of the methods that will bring some benefits. At this time, it is possible to achieve an increase in oil production and productivity. When it comes to investment directions and sources of financing in oil and gas extraction enterprises, it can be noted that one of the main means of increasing oil production and labor productivity at a regular rate, scientific and technical progress, and increasing production efficiency, therefore, the profitable operation of the oil and gas extraction industry as a whole, is the wide repetition of the main funds of this field. consists of capital construction that determines its production and the amount of investment directed to it.

Basic construction includes all stages of the creation of basic funds, that is, the stages starting from the design of objects and ending with their operation. The main stage of the capital

construction process is the implementation of construction and installation works and the commissioning of the facilities under construction.

Major construction in Azerbaijan's oil industry is regular being carried out on a large scale, with the typical feature of the oil and gas extraction industry at all stages of its development is connected. During the years of Soviet rule, approximately 20% of the national income, and now more than 40% of the investment, is spent on increasing and improving the main funds of the oil and gas extraction industry.

Capital construction in the oil and gas extraction industry - as in other areas of the economy, includes construction and installation works carried out for the purpose of raising the level of construction of new facilities, reconstruction, expansion and rearmament of existing ones. Currently, economic reforms are being carried out in construction, as in other areas of the economy, in order to improve the quality and efficiency of capital construction, improve construction and project-estimate works, and improve the economic mechanism in construction. It is necessary to further increase the level of industrialization of construction work, to widely apply advanced technology, machinery and mechanism systems that ensure the complex mechanization of construction and installation work, which will increase labor productivity in construction, reduce the amount of manual labor, reduce the cost of construction and installation work, will allow to shorten the investment cycle, to ensure that the objects are built and put into use within the normative time.

The term "new construction" refers to the construction and operation of buildings and facilities, infrastructure facilities, oil and gas extraction offices and their structural units based on the approved project for the first time in new fields.

Expansion of production - construction of the second and subsequent shifts of construction objects, additional production complexes and infrastructures based on a new project, creation of new main production areas in the territory of operating oil and gas extraction departments or expansion of previous ones. When expanding existing oil and gas production facilities, production capacity is usually increased faster and with less investment than new construction.

Reconstruction of production - full or partial construction of new equipment in technological departments and auxiliary services on the basis of a single project, or replacement of morally obsolete and physically worn equipment, mechanization and automation of production, elimination of disproportionality and its other way, for example, the main production without expanding existing workshops and building new ones, but in necessary cases, building new facilities with auxiliary and service purposes and expanding existing ones.

Rearmament of production with equipment - consists of complex organizational and technical measures implemented to raise the technical level of individual oil and gas extraction departments to the level of modern requirements by applying new equipment and advanced technology, mechanizing and automating oil and gas extraction processes. Rearmament with equipment is carried out on projects for different objects and types of work in accordance with the technical development plan of oil and gas extraction departments. The purpose of re-arming the existing oil and gas extraction departments with equipment is to intensify oil and gas production by all means, to increase the production capacity of the structural divisions of the oil industry and to improve its use, to reduce the number of workplaces, to reduce the material capacity and cost of oil and gas production, material and fuel and energy. It consists of saving resources, improving the technical and economic indicators of the oil and gas production industry and other types of activities. The experience of oil-producing countries of the world, including the oil industry of Azerbaijan,



shows that rearming, reconstruction and expansion of existing oil and gas extraction facilities with equipment plays an important role in increasing the efficiency of oil production and its intensification.

In contrast to the expansion of oil and gas extraction facilities and the construction of new facilities, existing buildings and installations, oil and gas extraction infrastructures are used during reconstruction and rearmament, most of the investment is spent on the purchase and installation of new, more productive equipment, the construction and installation works carried out in oil and gas extraction facilities are special and its weight is relatively small.

In modern times, when determining the investment in the development of the oil and gas extraction industry, the demand of the Republic's economy for oil and gas, as well as oil products, the need to discover new oil and gas fields is not taken into account.

The composition and structure of investment in the structural divisions of the oil industry are not the same. For example, the following costs are included in the composition of investment in drilling offices:

1. expenses for the implementation of construction and installation works;
2. expenses incurred for the purchase, delivery and installation of drilling equipment necessary for carrying out drilling works;
3. expenses for the implementation of geological exploration works;
4. costs incurred for the maintenance of the administrative-management apparatus;
5. expenses for the creation of infrastructure units and protection of the environment.

The ratio between the expenses included in the composition of the investment is expressed as a percentage. They distinguish the sectoral, technological and reproduction structure of investment.

The sectoral structure of investment - characterizes the distribution of investment between the individual structural units of the economy as a whole, or the list of industries taken separately, the company, the enterprise. The field structure of the industry characterizes the quantitative ratio between the fields and productions included in its composition. By increasing the specific weight of costs incurred for the reproduction of the active part of fixed assets, the efficiency of the technological structure of investment can be significantly increased. The technological structure of investment in the oil industry differs from the structure in other areas of the economy due to the fact that it contains exploration and exploitation drilling costs and the presence of works, machines and equipment that are not required for installation and are not included in the estimate of construction objects. Thus, the technological structure of investment in the oil industry is approximately as follows:

1. Expenditures for drilling works - 45%;
2. expenses incurred for the purchase, delivery and installation of machines and equipment - 30%;
3. The costs incurred for construction and installation works are 25%.

In modern times, the construction and installation works for the extraction of oil from the Azerbaijani sector of the Caspian Sea and the laying of pipelines for the transportation of oil and gas to the world markets are carried out in complex and harsh climate conditions, which significantly increases the specific cost of investment.

The technological structure of the investment is considered advanced if the specific weight of the costs incurred for the purchase, delivery and installation of work, machines and equipment in the workplace is greater than other costs. Because at this time, it is possible to get more products with the same amount of investment. In general, in the total volume of investment, it is necessary to

raise the level of rearming of production with technology, to increase the degree of mechanization and automation, to meet the requirements of the modern era of existing machines and equipment. The increase in the share of costs incurred for modernization and reconstruction of existing productions is one of the ways to improve the technological structure of investment.

The reproduction structure of the investment reflects the ratio between the costs directed to the construction of new facilities on the one hand, and to raising the level of re-armament of existing productions with technology on the other hand.

Investment aimed at the development of the oil and gas extraction industry, mainly spent on geological exploration and search, well construction, drilling, oil and gas extraction and processing, laying of pipelines for the transportation of oil, oil products and natural gas, construction of oil and gas reservoirs is done. Therefore, those objects are considered objects of investment in the oil and gas extraction industry. The economic essence of the indicated objects is that they provide the following:

1. the necessary speed and scale of oil and gas production;
2. optimal proportions in the development of the oil industry, the industry as a whole and the national economy;
3. development of the material and technical base of production;
4. creation of new equipment and progressive technology;
5. implementation of effective deployment of productive forces on the territory of our republic;
6. raising the material and cultural level of the population.

Different types of investment are distinguished depending on the purpose and nature of the objects of investment. Construction of production facilities, cultural-household facilities, administrative buildings, implementation of geological-exploration and prospecting works, and protection of the environment play a key role here. Investments have the following distinctive classification:

1. reproduction of basic funds according to the forms: new construction, expansion of existing productions, reconstruction, modernization of equipment, rearmament with equipment;
2. according to the technological structure of basic construction works: purchase of equipment and production inventory for construction and installation works, project-research works.

Modernization of labor means - improvement of working means of labor and making practical changes in them, replacement and strengthening of nodes and parts, mechanization and automation of production operations, by installing arrangements and devices to bring their production to a state that meets the modern technical and economic level. The costs incurred for the modernization of labor tools are usually paid off in a short period of time.

Undoubtedly, the main place in the increase of the volume of foreign investments is occupied by the "Contract of the Century" and subsequent contracts. At the same time, the interest of foreign investors in other areas of the economy is increasing year by year. After the "Contract of the Century" was signed, the geography of the countries participating in the development of hydrocarbon fields in the Azerbaijani sector of the Caspian Sea has expanded considerably. This is explained by the fact that attracting foreign investors to the country's economy is considered one of the leading directions of state policy.

It is suggested that investment in the oil and gas sector should be directed mainly to the following directions:

- to change capital funds;
- reconstruction of capital funds;



- modernization of capital funds;
- commissioning of new construction facilities;
- purchase and installation of new advanced equipment, machines and mechanisms.

The sources of financing of investment projects to prevent the rate of decline in oil production at oil and gas extraction enterprises of "Azneft" PU may be as follows:

- internal reserves of the enterprises themselves;
- no depreciation;
- net profit (income) remaining at the disposal of enterprises;
- bank loans;
- free funds of enterprise employees;
- foreign investments, etc. It is known that unlike capital investments, investments are made not only in financial form, but also in the form of goods. Due to the country's rich national resources and financial difficulties, the demand for investment is increasing. Therefore, financial security plays an important role in ensuring socio-economic development. Therefore, it is possible to achieve a high growth rate of product production by making investments and giving priority to the application of advanced techniques and technology.

From this point of view, it is necessary to correctly determine the sources of financing of investments. So, for the implementation of investment activity, it must have sources of financing. Azerbaijan for the purpose of solving the relevant issue

In the Law of the Republic "On Investment Activity", the sources of investment financing are defined as follows:

- the investor's own material and intellectual assets, financial resources and intra-household reserves (profit, depreciation deductions, savings of individuals and legal entities, appropriate payments of insurance bodies for compensation of damage caused by accidents and natural disasters, etc.);
- debt-financial funds of the investor (bank and budget loans, bonds and other funds);
- attracted financial resources of the investor (shares and other rights of labor collectives, citizens, legal entities, funds obtained from the sale of shares);
- institutions for investment purposes from budget and extra-budgetary funds;
- foreign investment;
- gratuitous and charitable rights of enterprises, organizations and citizens, donations, etc.

It should be noted that the financing of investment activities from various sources is carried out by state and local bodies taking into account the requirements of the legislation and normative acts of the Republic of Azerbaijan.

Conclusion

Especially in recent times, in the process of liberation of Nagorno-Karabakh and surrounding regions from occupation, as a result of the successful policy implemented by Azerbaijan, the development of other industrial and service areas has already become one of the priority issues at the stage after the military and political return of the occupied lands.

In this way, it is possible to achieve efficient use and management of oil resources, as mentioned earlier, reduction of dependence on crude oil, as well as stability and sustainability of the non-oil sector along with the development of the oil and gas sector. This, in turn, leads to the continuous development of the national economy at an increasing pace.

Fluctuations in the world oil market cause significant financial losses or additional income in oil exporting and importing countries and companies. Therefore, the focus is on the process of managing financial resources. Unexpected price changes are one of the most important and most difficult issues in the field of financial resource management. Generally speaking, the most important and difficult part of the financial management of the expenses of any enterprise is to ensure the formation of the immunity of the enterprise when unexpected expenses appear. In some cases, as a result of additional costs, enterprises face large financial losses and eventually face bankruptcy. Therefore, ensuring proper management of expenses and financial resources is quite vital to prevent such negative situations.

Although attracting investment to the non-oil sector is an effective way to support the development of the gas and oil industry, allocating investment to processes such as improvements and repairs in the oil and gas structure can be evaluated as an efficient method.

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LEVEL OF BENEFIT FROM FINANCIAL LEASING IN SMES IN THE INDUSTRIAL SECTOR

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ABSTRACT

Financial leasing is the name given to the process that provides the right of use of a movable or immovable property to the lessee within the specified dates in return for a price. This period of use may cover the entire life of the property or a certain part of it. Leasing, which has more than one type, allows businesses not to spend all of their capital on a particular property, but instead to obtain the right to use the property needed at lower amounts.

Leasing allows the leasing company to fulfill many of the obligations that would arise when the business purchases the property it needs in advance. Thus, while the enterprise obtains the right to use the property it needs with low amounts, it also avoids complex and costly procedures.

The now more common types of leasing began to emerge in the United States in the 1952s, and this new type of financial service grew rapidly in its advantages.

The first financial leasing companies in Western Europe were established in the late 1950s and early 1960s. However, the unclear status of leasing transactions in tax and civil legislation prevented development. Only after leasing agreements were reflected in the tax legislation, the rate of development of leasing operations increased, and in the 80s their number was about 40.

Since the 60s, leasing operations began to develop in the Asian continent. Currently, the main part of the world market for leasing services is concentrated in the "USA - Western Europe - Japan" triangle. In Western Europe, specialized leasing companies managed by the bank and its subsidiaries act as lessors.

Leasing is an agreement in which the lessee, that is, the lessee, pays the lessor, that is, the owner of the property, for the use of the property. People who ask what is a lease often confuse leasing with a loan - it is not a loan, but a financing mechanism provided by the lessor for the acquisition of vehicles, equipment and other fixed assets and for the use of the lessee.

The parties to a leasing transaction are the lessor, the seller/supplier and the lessee. On the order of the lessee, the property is purchased from the seller/supplier at the expense of the lessor and is given to the lessee.

Here, the lessor is the legal owner of the property and has the right to dispose of the property. The lessee has the right to use and maintain the property in return for regular payments. Depending on the agreement of the parties and the terms of payments, the lessee may acquire ownership rights over that property at the end of the lease agreement.

Leasing is one of the alternative financing and investment methods especially for Small and Medium Sized Enterprises. Financial Leasing is the transfer of ownership to the lessee over a symbolic price determined in the contract at the end of the period, while the ownership of investment property remains with the financial leasing company in general, giving the right of use and risks to the lessee in return for a certain rent.

In this study, the level of utilization of the financial leasing method and the problems encountered in practice in Erzurum, Erzincan and Bayburt provinces in Erzurum, Erzincan and Bayburt provinces in the NUTS II region of the European Union were examined.

Keywords: Financial leasing, Industry sector, SME

In financing through leasing, it generally finds application in the form of selling or leasing, leasing services or operating, Financial Leasing (lease for financial purposes). The most common of these is financial leasing. Financial leasing, which has financing and investment dimensions, is generally related to fixed assets, which is one of the most important asset items of the balance sheet.

Financial leasing is a lease that results in the acquisition of an economic asset by a financial leasing company and leaving the right of use to the lessee in return for a price. At the end of the lease term, the economic asset can be transferred to the lessee at a low cost. It is seen that the fixed assets that will be used in the long term for the last thirty years in the world are provided by financial leasing. In recent years, one third of the fixed asset purchases financed by foreign resources in the USA have been provided through financial leasing [1, 34].

Regardless of the fact that the ownership right of the economic asset will be transferred at the end of the lease term, leases that leave all or almost all of the risks and benefits arising from ownership of the said asset to the lessee for a certain period of time are called financial leases. In addition, for a transaction to be considered a financial lease, it must meet at least one of the following conditions. These [2, 81]:

- 1- Transfer of ownership of the economic asset to the lessee at the end of the lease term,
- 2- Granting the lessee the right to purchase the economic asset at a price lower than the current value at the end of the lease term,
- 3- The lease term covers more than 80% of the economic life of the economic asset,
- 4- The sum of the present values of the lease payments is a value greater than 90% of the current value of the economic asset.

According to the fifth article of the Financial Leasing Law, movable and immovable properties may be subject to the financial lease agreement. However, intellectual and industrial rights such as patents cannot be the subject of this agreement.

Types of leasing transaction

Financial Leasing – Financial leasing is the most common form. Financial leasing involves long-term leasing of property and sale of this property to the lessor at the end of the contract period (in the legislation of our country, ownership goes directly to the lessor at the end of the contract). In financial leasing, the property is usually selected by the customer (lessee) and orders the leasing company to purchase this property. In a finance lease, since the property is in the use of the lessee, the profits and losses associated with the property usually belong to the lessee. Financial leasing is a type of financing and consists in the purchase by the lessor of the equipment selected by the lessee and given to the lessee for use. This type of leasing service is widely used in Azerbaijan, and according to the country's legislation, only taxpayers can use this product.

Operating lease – An operating lease is an agreement to use and operate an asset without transferring ownership. Leased objects are property, cars, equipment, heavy equipment, etc. can be. Assets taken under an operating lease may be recorded on the balance sheet as operating expenses. In this type of leasing, compared to financial leasing, the contract period is shorter, and

the lease payments are higher than the interest cost of financial leasing. Usually, properties with a high value and intended to be used by the lessee for a short period of time are acquired through operating leases.

Leaseback – Sale and leaseback. It is one of the most profitable financial services that meet the financial needs of Leasingala. Thus, the lessee can sell the property owned and used to the leasing company and at the same time lease it back. At the same time, the lessee keeps the property, uses it, and at the same time receives cash to meet other needs.

Financial leasing contracts can be arranged in the form of transferring the fixed asset to the lessee free of charge after the lease period or by transferring it with a symbolic price. Financial lease agreements are different from regular lease agreements. There are generally two parties in a normal leasing transaction. First, the lessor leases the asset; Second, the lessee leases the asset in exchange for lease payments [4, 111]. There are three parties in financial leasing contracts. These are the seller business, the lessee business, and the leasing company. It is seen that the financial leasing contract has a different quality from the normal leases in terms of its non-cancellability, the leasing price and the rights granted to the lessee at the end of the leasing period.

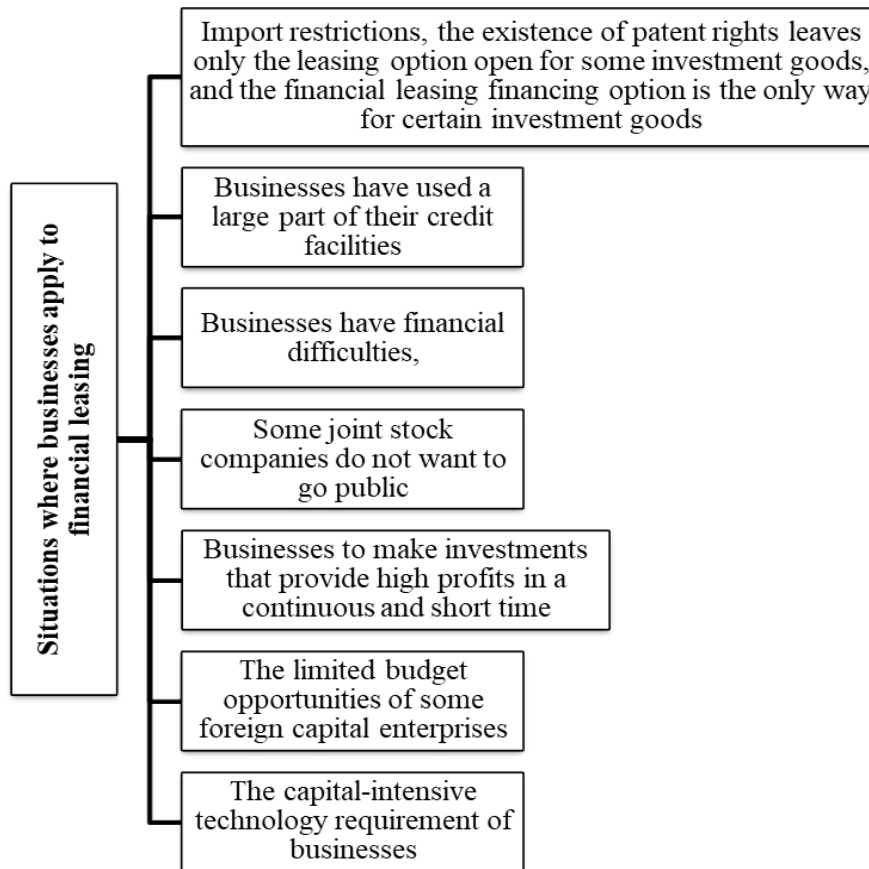
Financial leasing is the purchase of a fixed asset, such as machinery, plant, vehicle, determined by the investor or the lessee, from the seller company by a company engaged in financial leasing. The company then transfers any fixed asset to the lessee business in return for a rental fee. Naturally, this process is done by contract. At the end of the contract period, the fixed asset is transferred to the lessee with a symbolic value. This process can be demonstrated as follows [4, 17]:

- 1-Selection of the machine,
- 2-Making a contract between the lessee and the financial leasing company,
- 3-Purchase of the machine,
- 4-Payment of the machine cost by the financial leasing company,
- 5-Delivery of the machine,
- 6-Lease installment payments,
- 7-Transfer of the right to use the machine by the financial leasing company,

First, the lessee business selects the machine it needs and makes a contract with the leasing company to finance the machine. The financial leasing company purchases this property and pays the seller immediately. The seller who collects the price delivers the machine to the lessee. The lessee, on the other hand, continues to pay the lease payments to the financial leasing company, according to the contract, by obtaining the right to use the property.

Businesses choose to provide financing for some of their investments through financial leasing. It is seen that businesses mostly resort to financial leasing in the following situations:

Figure 1. Situations where businesses apply to financial leasing.



Source: [3, 17]

In general, financially distressed businesses do not always apply for financing through leasing. Businesses that are constantly engaged in investment projects and are in good financial standing also use this method. In particular, companies can benefit from leasing to build additional facilities and to invest in fixed assets such as some machinery and vehicles.

Financial leasing has advantages for companies. These:

- a) Lease payments are determined between the company and the financial leasing company.
- b) Provides 100% financial support to investments; Because, by means of financial leasing, companies buy by financing the entire investment amount, in other words 100% of it, without spending any equity. Since there is no cash outflow from the firm, working capital is evaluated in other areas. Thus, the profitability and liquidity of the firm increases.
- c) Possibility to provide medium and long-term financing to investments; The fact that banks generally prefer to give short-term loans has caused companies to try to make their long-term investments with non-bank resources for many years. Leasing is a suitable financing method especially for companies that cannot obtain medium and long-term loans from the bank, and since 1987, the non-bank leasing sector has started to fill this gap. Since financial leasing contracts are not generally terminated for 4 or 5 years in our country, this is a medium and long-term investment and financing alternative for companies.

d) Financial leasing transactions are faster and easier than credit transactions.

e) Financial ratios are positive. The debt/equity ratio shows how much lenders lend in return for the capital invested by the shareholders. The fact that this ratio is one means that the lenders lend one lira for each lira deposited by the shareholders.

Since the debts are not shown in the financial statements in leasing, the balance sheet and financial ratios are positive from the real situation, since the amount of debts in the ratio does not change. Thus, the financial situation of the company can be positively received by the banks that evaluate the loan demands. At the same time, rental costs are not shown as debt in the financial statements since there is no credit. Therefore, an indication that the financial condition of the business is good may occur.

a) Flexible lease payment schedule. Companies can plan convenient and flexible rental installments according to their own cash flows. Flexible terms and repayment plan suitable for seasonal sellers are among the reasons for choosing leasing.

b) Purchase of leased property. The leased investment properties can be purchased by the lessee at a nominal price at the end of the contract period.

c) Confidence environment against changes in inflation and interest rates. Since the lease term, lease payments and other conditions are determined in advance with leasing, the lessee companies are not affected by inflation or changes in government decisions. Thus, tenants have a chance to adjust their budgets in the financial leasing agreement, since the cost is certain [2, 110 - 111].

d) Provides tax advantage; Since the rents paid to the leased goods with financial leasing are recorded as expense, they are deducted from the profit and provide tax advantage. In addition, machinery, equipment, etc. with the financial leasing method. The general VAT rate is 1 percent on goods such as However, this rate is applied as 8% for commercial vehicles.

In addition, there are exemptions from duties, fees and stamp tax in financial leasing contracts. Thus, the cost of machinery and equipment is significantly reduced. Other advantages of financial leasing financing option to businesses can be listed as follows:

In sectors where technological development is fast, the enterprise gets rid of dead investments; The expired credit limits of the lessee enterprises will be expanded with financial leasing, and the companies that have the opportunity to use new technology will have expanded their production capacities by leasing new technology by getting rid of production with the old technology.

The lessee's credit limits expand with financial leasing. In addition to these, as the properties provided by financial leasing are not the property of the lessee, they are excluded from the bankruptcy estate in case of liquidation. Financial leasing Provides operational convenience; The leasing company provides great convenience to the companies as they carry out all the operations related to the import transactions by their expert staff. Accounting records are also made by the leasing company.

Despite the advantages of the financial leasing financing method, it is seen that it also has some disadvantages. These:

The cost of financial leasing is high. Because hidden commissions and interest rates in rental agreements can be high. Therefore, cost research should be done well.

Some investment incentives provided by the government may be more profitable. Not benefiting from these incentives may occur through financial leasing. However, this negative situation is eliminated in the investment incentive legislation. If an investment belonging to investment

incentive projects is leasing, the leasing company assumes the responsibilities related to the incentive and great conveniences are provided by considering the leasing offer prices and the incentive for the rent payments of the lessee.

Especially in inflation periods, price increases in fixed assets or increases in exchange rates make the purchase alternative more attractive instead of financial leasing.

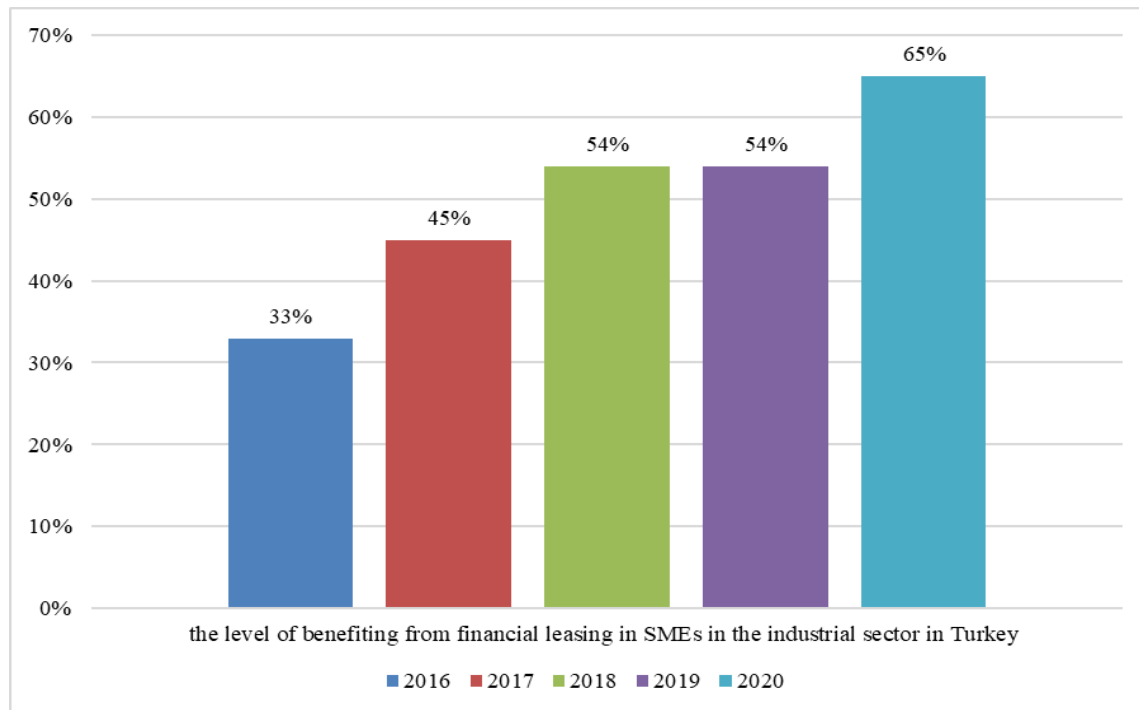
Another disadvantage of a financial lease is that it does not allow the lessee to use accelerated depreciation.

High guarantees are required for the property subject to financial leasing [2, 189-190].

When the leasing payments are delayed by the lessee, the lessee is obliged to deliver the property to the lessor financial leasing company immediately, and is also obliged to indemnify the losses.

Research shows that in recent years, the level of benefiting from financial leasing in SMEs in the industrial sector in Turkey has been 33% in 2016, 45% in 2017, 54% in 2018 and 2019, and 65% in 2020.

Figure 2: The level of benefiting from financial leasing in SMEs in the industrial sector in Turkey



Source: It was prepared based on the data of the State Statistical Committee of Turkey.

In a study conducted in Turkey, 15 companies using the financial leasing method were asked what the risks or problems they encountered during the implementation were, and the following answers were received.

First, financial leasing companies do their transactions through banks, bank employees do not have much knowledge about leasing or banks direct customers to leasing companies; secondly, they face exchange rate risk when making financial leasing contracts in foreign currency; thirdly, financial leasing companies require high guarantees other than putting mortgages on the property,

fourthly, bureaucracy is excessive; the fifth is the thought that legal problems will arise when rent payments are delayed for a short time; the fifth is that the lease terms are generally 24 months in our country, although all the lease payments are completed, machinery and so on. goods are not invoiced immediately.

Since financial leasing contracts are not terminated for 4 or 5 years after delivery, the invoice is not given immediately. Without spending any equity, like paying rent, they can buy machinery and so on. Stating that fixed assets such as financial leasing increased their production capacity and working with new technology, companies said that they were generally satisfied with this method.

Large-scale enterprises do not have much difficulty in financing investments. However, it is known in many studies that small and medium-sized enterprises are faced with various financing problems, especially lack of equity.

The financial leasing method, which is an important method that can be used to overcome financing problems, provides the opportunity to acquire fixed assets of the desired quality as if paying rent, without spending any equity. Equity resources can be evaluated in working capital financing.

In economy, where capital is scarce and high interest rates and inflation prevail, the benefits of this method in business investments are obvious. As an example, the following results were obtained from the financial leasing survey study conducted on 112 companies in Turkey: 1- 98% of the companies participating in the survey are in the small and medium-sized enterprises class.

2-The rate of those who have sufficient knowledge about the financial leasing financing method is 34%. Together with the sum of those who have partial knowledge, it is 63%. Again, there are those who do not have enough information with a rate of 37%. In other words, those who think that financial leasing is a normal leasing process are in the majority. However, it is clear that there is a lack of information.

3- Firms initially financed their construction equipment investments by leasing with 73%. In the second place, land transportation vehicle was preferred with 20%.

4- It has been observed that the cost of financial leasing is 18% lower than the cost of bank loan. The rest stated either that they had no opinion or that there was no difference. This situation shows the lack of information.

5- As the reason for not using the financial leasing method, 39% of the companies claimed that they did not have enough information, 37% said they did not need, 16% more collateral was requested, and 6% had too much bureaucracy.

6- Firms have stated that they will use this method after they have information.

7- It has been understood that companies, especially joint stock and limited companies, apply to financial leasing, and that private companies do not know this method due to their micro-scale and lack of information. Because 1 out of 34 sole proprietorships has made financial leasing.

8- The increase in financial leasing transactions is also very important for the country's economy. Thanks to financial leasing, companies can increase their production capacity and achieve growth. Thanks to these fixed asset investments, production will increase and gross national product will increase. For this reason, financial leasing transactions should be introduced to the business world and tax relief measures should be taken for financial leasing companies.

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METHODOLOGY FOR ASSESSING THE IMPACT OF INNOVATIONS ON THE PRODUCTION OF THE REGION'S FINAL PRODUCTS

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ABSTRACT

The article developed an algorithm for calculating the coefficient of the impact of innovations on the growth rate of the final product. This mathematical apparatus is a tool for adequate adjustment of the economic system, taking into account the potential of its innovative development. Next, the problem of predicting the regional final product is solved using the Cobb-Douglas(innovation) model. In the calculations, the values of the parameters are determined by the Gradient method. The result obtained indicates the adequacy of the approach used. In addition, the assumptions and hypotheses put forward in the study create prerequisites for further expanding the amount of knowledge in the field of studying the innovative impact on the economy. The practical significance of the proposed models of innovative development of economic systems lies in the emergence of new opportunities for building the innovation policy of the state.

Keywords: innovation activity, fuzzy model, Gradient method, innovation index

Introduction

Innovation impact at the macroeconomic level has been relevant for many decades. Particular interest in it is manifested during various economic crises, which is associated with the search for new directions of development. Mathematical models that describe innovation processes and their impact at the macroeconomic level are an indispensable tool for building policy in the innovation sphere. However, despite the great attention to the study of the problem, the availability of systematic research in this direction and the degree of mathematical formalization of the qualitative processes of innovative development is still at an extremely low level.

The relevance of the research topic is due, first of all, to the need to develop a mathematical apparatus with the ability to search and justify the optimal way to manage the development of the economy.

The conceptual problems of innovation in the economy are the subject of the works of B. Godin, F. Damanpour, J. Allen, H.G. Burnett, P.F. Drucker, E. Mansfield, E. M. Rogers. Of practical importance are the studies of the German scientist G. Mensch, who tried to draw a parallel between the rate of economic growth and cyclicity with the advent of basic innovations. The key idea of Mensch's metamorphosis model is the relationship between depression (stagnation) and innovation[1]. The ideas of G. Mensch underlie the mathematical model of the change of technological generations developed by J. Norton and F. Bass and made it possible to make the transition from a theoretical analysis of the processes of the impact of innovations on the economy to their mathematical formalization[2].

In 2006, the Japanese economist M. Hirooka proposed the idea of synthesizing the above ideas about the nature of the influence of various factors on economic development.

A feature of Hirooka's approach is that he considers the dynamics of scientific and technological progress as a relatively independent factor in economic development that forms the actual economic trends. Hirooka was the first researcher to identify and analyze the developmental trajectory. Kalecki reinforces the idea of a cyclical trend effect that "innovations have on the investment function" [3].

In the models discussed above, aggregate demand was assumed to be known. However, uncertainty in aggregate demand can affect aggregate investment. Costrell proposes a model that includes both definite and uncertain demand [4]. In the paper Lee C.F., Tzeng G. there is shown the application of the Fuzzy modeling method in solving the problem of scenario forecasting of regional development, based on the analysis coordination of the expert evaluation data and the data of regional statistics[5].

Despite the abundance of empirical studies, as many authors note, there are certain difficulties associated with the interpretation of the results of these studies. Until now, there is no generally accepted approach to the economic and mathematical modeling of innovation processes in macroeconomic systems.

Calculation of the final product of the region using a production function that takes into account the innovation factor

The purpose of the article is to develop an algorithm for determining the innovation index by region and to determine the impact of scientific and technological progress on the volume of the final product in the Cobb-Douglas production function.

At the next stage, based on these indicators, the problem of predicting the regional final product is solved using the fuzzy (innovation) Cobb-Douglas model. The factor of technological progress must be taken into account in the process of assessing the use of resources in the manufacturing sector of the Azerbaijani economy using the Cobb-Douglas production function. Other factors, such as changes in levels of management and changes in relative prices over time, affect the change in the value of individual factors of production. Technical progress must be taken into account in the form of a time trend (t), which is part of a specific time function. In the model, labor costs (L) and the average annual cost of fixed assets (K) are taken as resources used to produce a product. Taking into account the factor of technical progress, the Cobb- Douglas production function takes the following form:

$$Y = A \times L^{\alpha} \times K^{\beta} \times e^{\lambda t} \quad (1)$$

where, A is technological coefficient; α , β are coefficients of elasticity of capital and labor resources; t-time, λ characterizes the impact of scientific and technological development on the growth of the final product over time, L and K show labor payments and the cost of fixed assets (average annual cost of fixed assets).

The growth rate of technological progress is defined as the increase in labor productivity in year t + 1 compared to year t. This kind of production function is the simplest kind of dynamic production function[6]. Logarithmic differentiation of this function gives the expression:



$$y = \alpha l + \beta k + \gamma \text{ or, } 1 = (\alpha l + \beta k) / y + \gamma / y \quad (2)$$

where y – is the average annual growth of the national product, l – labor growth, k – capital appreciation, γ – increase in national product due to technological progress.

According to the applied methodology, the general structure of indicators for evaluation and comparative analysis of the changed scientific, technical and innovative activities in Azerbaijan was determined.

An algorithm for determining the innovation index and, on its basis, calculating the rate of scientific and technological progress has been developed and shown in Figure 1. Economic zones were taken as the object of study. The object of study can be taken by states, ministries, organizations, research institutes, universities, etc.

Figure 1. Calculation algorithm.

Stage	Models for determining indicators
1.	Inclusion of source data by group
2.	Calculation of G_{ij} indicators (G_{ij} is the i -th indicator in the j -th group)
3.	Normalization of indicators $G_{ij}, i=1, n; j=1, m$; $G_{ijnor} = \frac{G_i - G_{min}}{G_{max} - G_{min}}$
4.	Calculation of special indicators $\bar{G}_i = \frac{\sum_{j=1}^m G_{ij}}{n}, i=1, n; j=1, m.$
5.	Calculation of the innovation index $I_i = \frac{\sum \bar{G}_i}{n}, i=1, n.$
6.	Calculation of the final innovation index $I = \frac{\sum I_i}{n}, i=1, n.$
7.	Calculation of the impact of innovation on the growth rate of the final product $\lambda_{req} = Y/y = I_i \cdot \frac{\sum_{t=1}^t q}{t}$, here, $t=1, n; i=1, n.$ (t – the years under consideration, q – growth rate of the final product).

The system of indicators characterizes the scientific and technical complex and the socio-economic environment of the economic zone. When developing the methodology, indicators of scientific and technological development and the socio-economic environment, their interaction and complex compatibility, assessment and analysis methods using the proposed system of indicators and indicators were taken into account. The instrument of this methodology is the multivariate statistical method.

As can be seen from the algorithm, at the first and second stages, the indicators necessary for calculating the innovation index are selected. The indicators are grouped by characteristics. Here, 19 indicators were used, uniting 3 groups.

At the third stage - the normalization of indicators is carried out by the method of linear scaling. Here G_{nor} is the normalized value of the indicator; G_i – initial value, G_{min} and G_{max} – smallest and largest values, respectively. The linear replacement procedure puts the data on the same scale. All values are in the interval [0; 1]. At the next stages, regression models are developed that show the relationship between the indicators of innovative activity included in different groups of factors.

As a result, equality was obtained for all blocks. SPSS software was used to construct regression equations. Here, an input variable and a factor variable are given in the input.

In output:

1. Correlation matrix;
2. Coefficients of regression equations;
3. R-coefficients of quadratic equations;
4. Values defining the level of importance of the model.

Note that the determination coefficient completely depends on the innovation index, and the Durbin-Watson coefficient is less than 2, which means that the autocorrelation of the indicators included in the equation is adequate.

The innovation index is calculated on the basis of indicators characterizing the activity of the region in the innovation sphere. As an external factor, indicators of the socio-economic environment are considered. External factors directly influence the formation of the innovation index. The methodology for calculating factor indicators is shown in Figure 1. It is the regression model based on factor indicators that makes it possible to determine the influence of each factor on the innovation index.

The goal is to determine the impact of scientific and technological progress on the volume of the final product in the Cobb-Douglas production function. The final innovation index is a ratio of costs and effect, which allows you to objectively assess the effectiveness of efforts to develop innovation in a particular region.

At the last – 7th stage of the algorithm, dividing the innovation index for the period under review by the average growth rate of the final product in this period, we determine the impact of scientific and technological progress on the volume of the final product (λ_{req}).

Table 1 shows the calculated innovation index for the regions of Azerbaijan and the “rate of scientific and technological progress” indicator determined on its basis.

Table 1. Regional innovation index and the coefficient of the impact of innovations on the growth rate of the final product.

Regions	Indicators					
	I_1	I_2	I_3	...	I	λ_{req}
Sheki-Zagatala	0,148734	0,145204	0,355347	...	0,091283	0,082062
Guba-Khachmaz	0,102209	0,17371	0,143004	...	0,130358	0,122528
Ganja-Gazakh	0,15121	0,225259	0,248108	...	0,167315	0,141339
Absheron	0,407642	0,234816	0,312987	...	0,176137	0,141449
Aran	0,119099	0,104973	0,109372	...	0,112921	0,103055
Lankaran	2,337267	0,129577	0,117459	...	0,13629	0,126332
Nakhchivan Autonomous	0,395726	0,228631	0,120869	...	0,23837	0,215472
Mountainous-Shirvan	0,282043	0,048597	0,037363	...	0,180792	0,16747
Baku city	0,18815	0,40469	0,087007	...	0,380019	0,364197

For the assessment, official data from the indicators of the Statistical Committee of Azerbaijan for the period from 2010 to 2020 were used. The indicators were calculated in comparable prices and recalculated taking into account the impact of the inflation rate.

Using the given tables and indicators of the statistical committee, we determine the values of α and β in equation (1). Several approaches have been used to solve the problem. In the



calculations, the results obtained by the non-linear optimization method by the Gradient method more accurately reflected the reality. In the course of the study, calculations were made for each region that makes up the economy of Azerbaijan. **Table 2.** shows the final results of several of them.

Table 2. Production function by regions of Azerbaijan and the level of its adequacy.

	Regions	Production function by regions of Azerbaijan	Standard deviation Y from data
1.	Sheki-Zagatala	$Y = 4,442346592 \times L^{0,723085567} \times K^{0,1} \times e^{0,082062}$	12,8%
2.	Guba-Khachmaz	$Y = 2,095451455 \times L^{0,888137304} \times K^{0,05} \times e^{0,122528}$	9,78%
3.	Ganja-Gazakh	$Y = 0,1 \times L^{0,89027} \times K^{0,212276} \times e^{0,141339}$	7,24%
4.	Absheron	$Y = 0,122 \times L^{0,14892687} \times K^{0,9} \times e^{0,141339}$	6,08%
5.	Aran	$Y = 0,548711154 \times L^{0,890078} \times K^{0,174390563} \times e^{0,10305}$	5,53%
6.	Lankaran	$Y = 1,600581 \times L^{0,42916} \times K^{0,57084} \times e^{0,126332}$	16,07%
7.	Nakhchivan Autonomous	$Y = 0,5089 \times L^{0,9} \times K^{0,295168605} \times e^{0,215472}$	9,27%
8.	Mountainous-Shirvan	$Y = 1,702906 \times L^{0,1001} \times K^{0,84618841} \times e^{0,16747}$	13,68%
9.	Baku city	$Y = 207 \times L^{0,1001} \times K^{0,84618841} \times e^{0,16747}$	8,56

The value of the technical progress component $e^{0,141339}$ in the function indicates that about 15.3% of the increase in final production in the Ganja-Gazakh region is provided by technical progress, while in Sheki-Zagatala this figure does not exceed 9%.

Thus, the goal in the first part of the study is to build an econometric model to explain the impact of innovation on the production of final products in the regions of Azerbaijan. For example, using the data in Table 1, the value of the final product in the Ganja-Gazakh region was determined. The calculation results are given in Table 3.

Table 2. Results of calculations for the Ganja-Gazakh region.

Years	Actual values of the final product (Y)	The value of the final product determined by the Gradient method (Y')
2010	1835.53	2259.70
2011	2230.55	2672.69
2012	2561.73	2935.22
2013	2734.36	3168.87
2014	2689.16	3307.31
2015	2757.39	3237.50
2016	3005.08	3359.41
2017	3699.75	3432.10
2018	3724.21	3443.02
2019	4150.72	3713.03
2020	4348.45	3779.34

The standard deviation of the results obtained by this method, relative to the actual indicator, was 17%. This shows that, using the proposed method, it is possible to predict the volume of the final product with acceptable accuracy.

Conclusion

The main scientific results of the study obtained by the authors and possessing scientific novelty are as follows:

1. The structuring of the theoretical views of scientists on the issue of innovative development of regions has been carried out. Features and problems of mathematical formalization of approaches to the study of innovative processes in economic systems are revealed. The main problems of mathematical formalization of technical and economic development are the fragmentation of the theory of innovative development, the lack of comprehensive approaches to taking into account the impact of innovative processes on macroeconomic dynamics, and the uncertainty of the structural and organizational specifics of the innovation process, leading to the limitation of the use of traditional optimization methods.
2. An algorithm for determining the innovation index and, on its basis, calculating the temp of scientific and technological progress has been developed and verified. According to the applied methodology, the general structure of indicators for evaluation and comparative analysis of scientific, technical and innovative activities in Azerbaijan was determined. Based on the calculation of the impact of innovations on the growth rate of the final product, the problem of forecasting the regional final product is solved.

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MODERN APPROACH TO THE CLINICAL VIEW, PATHOGENESIS AND TREATMENT METHODS OF ENDOMETRIOSIS

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Objective

Endometriosis is a progressive estrogen-dependent widely spread disease especially among women suffering of chronic pelvic pain (40-80%) and infertility (25-80%). Pathogenesis is multifactorial, but ectopic dissemination of endometrial tissue with forming of endometrioid implants is doubtless. The role of stem cells in its pathogenesis is proved. The choice of therapeutic approaches is wide, however the unique approach has not been worked out yet. The management is determined with the aim of therapy (treatment of pelvic pain or infertility).

Results

Laparoscopic surgery and excision of endometriomas are associated with decreasing pelvic pain. Therefore there is a number of patients for those surgery is the primary approach in endometriosis treatment. Bowel endometriosis is conjugated with severe pelvic pain and high risk of complicated surgery. Pharmacological agents (Gonadotrophin-Releasing Hormone analogs, progestagens, oral contraceptive pills, androgens, non-steroid anti-inflammatory drugs, etc.) are commonly applied ongoing for endometriosis of various location. They control pelvic pain syndrome effectively, but every of them has its advantages and disadvantages.

Conclusion

Elagolix treatment may become the basis of new strategy, which core is partial estrogen depression, therefore further research is required. Angiogenesis inhibition also represents a new line in endometriosis management. Sorafenib effects on stem cells proliferation, invasion and HIF-1 activation help to suppose new possibilities for its application. Anti-angiogenic drugs may show good result separate or being combined with hormone therapy and provide high efficacy of complex pharmacological approach.

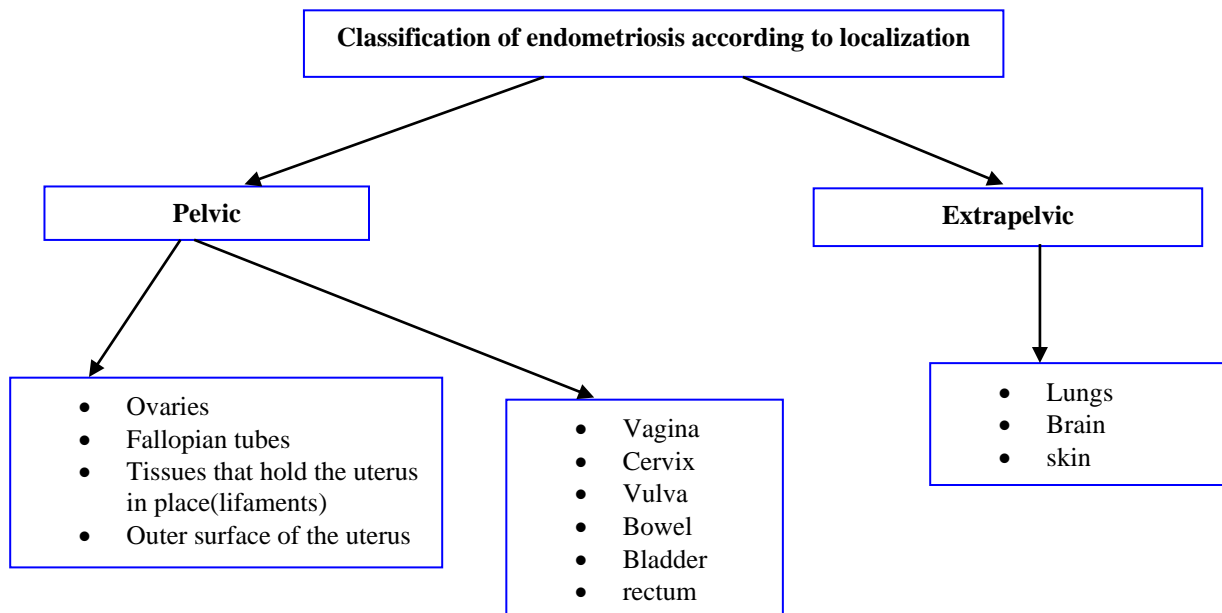
Keywords: pelvic pain, endometriosis, infertility, stem cells, Gonadotrophin Releasing Hormone, oral contraceptive pills.

The relevance of the problem

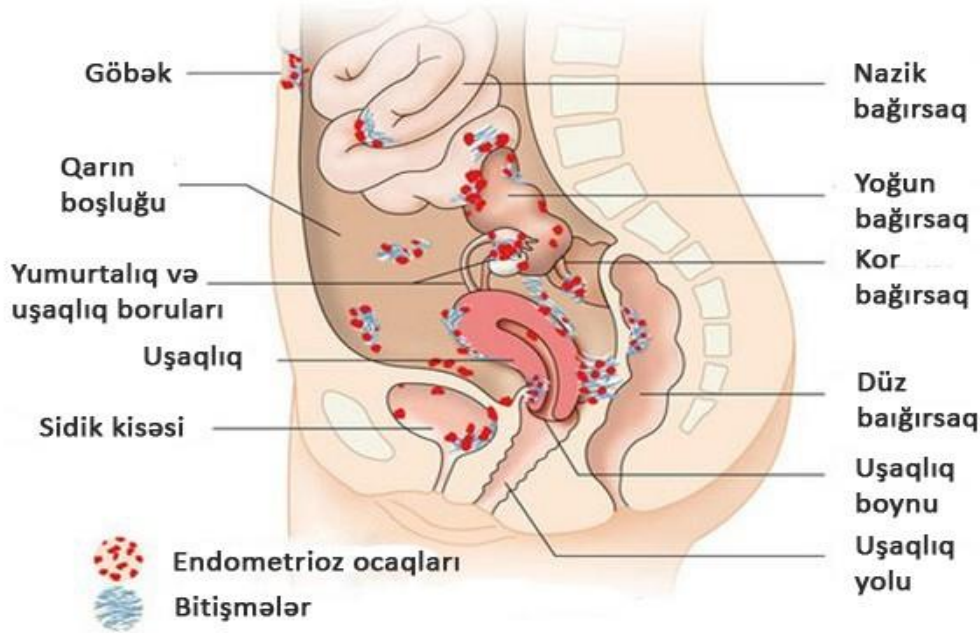
Endometriosis is an estrogen-dependent chronic progressive disease that is widespread in women with pelvic pain (40-80%) and infertility (25-80%). Although the pathogenesis of the disease is multifactorial, the spread of the endometrium to ectopic areas and the subsequent formation of endometrioid heterotopies are undeniable. The role of stem-shaped cells in this process has also been proven. Despite the wide range of treatment methods for endometriosis, a unified approach to them is not defined by specialists, and the choice of treatment method is determined individually by the goal (treatment of pelvic pain or infertility). Endometriosis remains an actual scientific and clinical problem, and its main controversial issues are: is endometriosis a disease; mechanisms of its formation and classification; genetic and immunological aspects; internal and external endometriosis and adenomyosis; diagnostic criteria, etc.

Terminology and classification: Endometriosis is a pathology characterized by the fact that endometrial tissue, normally found only in the inner lining of the uterus, is found in other membranes of this organ and other genital and extragenital organs outside the uterus. In most cases it is found in women of reproductive age (20 to 40 years old), but it rarely occurs in postmenopausal women as well. Although it manifests itself in very frequent cases with pelvic pain and infertility, sometimes it can also be asymptomatic. It is usually found in the genitals and pelvic organs, but it can also appear in other areas. Since the endometrioid tissue contains receptors for hormones, the changes in the normal endometrium occur in that tissue and are manifested by bleeding once a month. There are several classifications of endometriosis. The most widespread classification is the one proposed by the American Veterinary Society (R-AFS) in 1979 and revised in 1985 and 1986. It is based on the calculation of the number of heterotopias expressed in points [I stage (minimal changes) - 1-5 points; II stage (moderate changes) – 6-15 points; III stage (acute changes) – 16-40 points; Stage IV (gross changes) – more than 40 points]. At the same time, clinical practice uses the classification of endometriosis based on its location. From this point of view, endometriosis is divided into two groups - genital and extragenital. Genital endometriosis can be located in the myometrium (adenomyosis), peritoneum, ovaries, cervix, uterus, and perineum. Extremal endometriosis, on the other hand, is not topographically related to the organs and tissues of the reproductive system, and mainly includes the organs of the abdominal cavity (appendix, rectum, small and large intestine), lungs and pleural cavity, skin (post-operative scars, extremities, lymphatic nodes).

Diagram 1



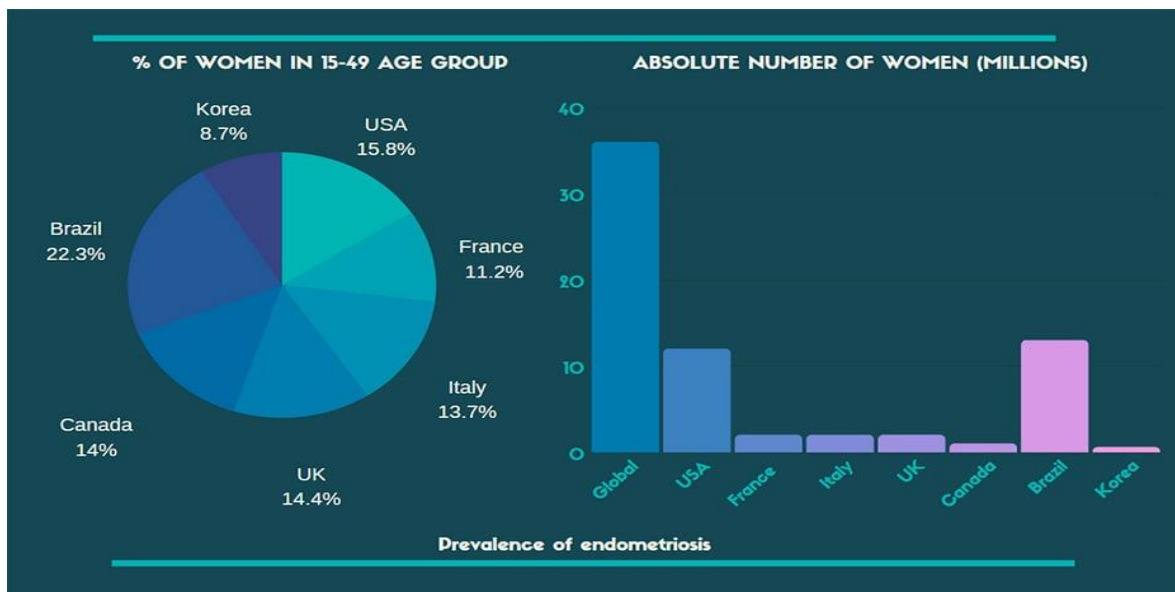
Picture 1



Epidemiology

Endometriosis ranks 3rd in prevalence after genital inflammatory diseases and uterine fibroids. It is observed in 7-50% of women. It occurs in 2-10% of women who apply for the first time, and in 30% of women who have undergone gynecological surgery. 20-50% of women suffering from infertility also have foci of endometriosis.

Picture 2. Prevalence of endometriosis in different countries.



Pathogenetic factors

Hormonal disorders; immune system dysfunction and impaired biological response of endometrial cells to sex hormones; constitutional hereditary genetic predisposition; deficiency of the antioxidant system of the body; long-term tension of protective-adaptive reactions; prolonged use of intrauterine contraceptives; stressful situations.

Hormonal

The secretion and effect of progesterone is disturbed in patients. An elevated level of estrogens is noted, which stimulates the increased reproduction of endometrial cells. Most often, in such women, an increase in prolactin secretion and a violation of the function of the adrenal gland are observed.

Immunological

An imbalance in the growth and death of cells is characteristic. Intensified secretion of endothelial growth factor leads to the development of vessels and the spread of endometriosis foci. At the same time, the activity of killer cells decreases, apoptosis (genetically programmed death of cells) slows down. They investigated the inability of the immune system to cope with the cycle cell of retrograde mens fluid. If the immune system copes with endometriosis, then endometriosis is related to allergic and autoimmune pathologies. And the causality of this theory has not been fully investigated.

Retrograde theory (implantation theory) – it is the most widely accepted theory. It was first proposed by John Sampson. According to the theory, during menstruation, a part of the endometroid cells flows into the fallopian tubes, into the abdominal cavity, attaches to the peritoneal surface and develops there, but it appeared in women without mensis, in pre-pubescent girls (the theory did not justify itself), and endometriosis was also found in the lungs and brain, and this distanced us from this theory.

In addition, it is noted that endometroid cells differ from normal endometrial cells in their biochemistry, hormonal response and immunology. It is assumed that endometroid cells are a subset of endometrial cells.

Theory of endometrial formation – according to the theory, endometrial cells pass into the uterine wall during abortions, intrauterine diagnostic procedures, operations, that is, during manipulations accompanied by a violation of the integrity of the intrauterine mucous membrane. Moving to the muscle layer, endometrial cells begin to increase and multiply and create an endometriosis focus. This theory explains the appearance of foci of endometriosis in organs located far away by the proliferation of endometrial cells through blood vessels during operations on the uterus.

Other theories; stem-like cells; environment; müllerionosis (embryonic); coelomic metaplasia; autoimmune; oxidative stress theories. Although the exact cause of endometriosis is unknown, many theories have been presented to better understand and explain its development. These concepts do not necessarily exclude each other. The pathophysiology of endometriosis is most likely multifactorial and involves an interaction between several factors.



Symptoms of endometriosis. The course of endometriosis can be different: at the beginning the disease passes symptom-free and can be detected only as a result of preventive examinations. However, there are also acute symptoms of endometriosis. One of them is **pelvic pain** and is identified in about 16-24% of patients. The nature of the pain (mild, severe, spastic, stabbing pain), localization (lower back, rectum, lower abdomen), the degree of pain does not depend on the degree and stage of proliferation of endometrioid tissue, the pain is associated with menstruation. It usually occurs 1 week before menstruation, during menstruation and 1 week after menstruation. If there is inflammation and adhesions, the pain is permanent and unrelated to menstruation, it becomes chronic. Pelvic pain has a significant negative impact on women's mental health and quality of life; especially in women suffering from pelvic pain, a high level of anxiety and depression, loss of working capacity, and restrictions on social activities are identified.

Dysmenorrhea — painful menstruation — it is found in 40-60% of patients. Most often it intensifies in the first 3 days of menstruation and is often due to bleeding into the cavity of the cyst and, as a result, its increased pressure; irritation of the peritoneum; and endometriosis bleeding from foci; are associated with compression of the blood vessels.

Dyspareunia (painful intercourse) — pain during defecation and urination. Discomfort and pain during sexual intercourse, which occurs when endometriosis is localized in the uterus, rectovaginal partition, omentum in the area of the uterine ligaments, and uterus-rectum cavity.

Menorrhagia — heavy and continuous menstruation — it is found in 2-16% of patients. It is often accompanied by adenomyosis and related diseases: uterine fibroids, ovarian polycystosis.

Infertility — it occurs in 25-40% of women with endometriosis. Gynecologists still do not know exactly what the mechanism of infertility in endometriosis is. It is assumed that inflammation and adhesions cause infertility. The main reason of infertility is the presence of adhesions in the pelvic organs, thereby the violation of normal anatomy.

Table 1. Main symptoms of localization of endometriosis.

Localization	Symptoms
Genital organs	Dysmenorrhea Pelvic pain Infertility Lumber-sacral pains Menstrual irregularity
Gastro-intestinal tract	Tenesmes and rectal bleeding Diarrhea, constipation
Urinary system	Hematuria (related to menstruation) Urethra obstruction
Scar area, umbilicus	Bleeding and pain associated with menstruation
Lung	Menstrual hemoptysis

Endometriosis and pregnancy

Endometriosis reduces the chances of pregnancy termination, so pregnant women with endometriosis should be constantly monitored. The probability of pregnancy after the first 6-14

months of endometriosis treatment is 15-56%. Main risks;; ectopic pregnancy; placental abruption - 1.5-6 times more common than other women; miscarriages; premature birth; preeclampsia according to recent evidence. In pregnant women with endometriosis, the prognosis is alleviated, the reason: an increase in progesterone level reduces the growth of endometric tissue; absence of menstruation; due to low levels of estrogen during lactation.

Diagnosis

To diagnose the disease, a gynecological examination is carried out. By means of colposcopy examination, the location and shape of the damage with endometriosis are clarified. The most valuable of radiological methods is spiral computed tomography. Because, by means of it, it is possible to accurately determine the nature of endometriosis, its localization, interaction with neighboring organs, as well as to clarify the state of the small pelvis cavity. One of the most informative research methods is magnetic resonance, which provides accurate visualization of small pelvic organs and their structure thanks to the high resolution of magnetic resonance imaging. Using this method, ovarian endometriosis is determined with an accuracy of 96%. One of the most accessible and widespread methods for diagnosing endometriosis is the ultrasound examination method. The method helps to clarify the location, dynamics, etc. of the focus under the influence of therapy.

Currently, one of the most accurate methods of diagnosing the disease is laparoscopy (puncture of the abdominal wall with the introduction of a special device - a laparoscope). For example, this method provides the diagnosis of ovarian endometriosis with an accuracy of 96%. Laparoscopy also assesses the degree of endometriosis; lesions may appear dark blue, powdery black, red, white, yellow, brown, or non-pigmented; detects the size of lesions; names endometriosis areas by various names, such as implants, lesions, or nodules. Larger lesions may appear inside the ovaries as endometriomas or "chocolate cysts", "chocolate", because they contain a thick brown liquid, mainly old blood.

The identification of various tumor markers in the blood serum is becoming increasingly important. Currently, most of the existing ones are the determination of CA-125, REA and SA 19-9 markers, as well as the RO-test (universal diagnostic test of tumor growth), carried out by the method of immunoenzyme analysis. It was determined that the concentrations of oncomarkers CA 125, CA 19-9 and REA in the blood serum of healthy people were on average 8.3, 13.3 degrees and 1.3 mg/ml, respectively. During endometriosis, these indicators are on average 27.2, 29.5 degrees and 4.3 mg/ml, respectively.

Treatment

In recent years, the treatment of endometriosis has been the most discussed aspect of the problem. The provision that is indisputable to this day — it is impossible to eliminate the anatomical substrate of endometriosis by means of any effect, except for surgical operation, at the same time, other procedures reduce the severity of disease symptoms in a limited number of patients and restore the functions of various parts of the reproductive system. The main goal of treatment — hormonal treatment aimed at preventing the growth of endometrioid cells and slowing down the progression of the process; treatment of infertility; surgical operation aimed at eliminating the hearth.

The most common variants of surgical intervention during pathology: destruction of foci in the cervix and uterus with laser, cold or electric current; removal of the uterus with or without

increments; ablation (endoscopic resection) of endometriosis foci; laparoscopic removal of foci in the ovaries and peritoneum. Most often, hormonal treatment is prescribed before and after surgery. Hormonal therapy is also prescribed at times when there are contraindications to surgery. The goal of treatment is inhibition of ovulation, lowering of estrogen level, stopping of menstrual bleeding. All this leads to the atrophy of the endometrium and the reduction of the size of endometrioid foci.

However, surgical treatment is not always appropriate or acceptable to the patient. Alternatively, it can be considered a method of treating minimal and moderate endometriosis (without diagnostic testing), or rather, symptoms that are likely to be the cause of this disease. This therapy can be accepted only after a thorough examination of the patient, provided that there are no possible causes of other (non-gynecological) symptoms, with the exception of volumetric formations in the abdominal cavity, and only by a doctor who has extensive experience in the treatment of endometriosis.

The most commonly used drugs for the treatment of endometriosis are: progestagens; estrogen-gestagenic preparations; agonists of gonadotropin-releasing hormone; antigestagens.

Symptomatic treatment of endometriosis includes the following group of drugs: non-steroidal anti-inflammatory agents; spasmolytic drugs; iron preparations for the correction of anemia.

A socially significant complication of endometriosis is infertility. For its treatment, in vitro fertilization is widely used (IVF). IVF is effective during endometriosis only in 10-20% of cases. It is most commonly indicated in women over 35 years of age, for severe disseminated forms of the disease, in severe lesions of the fallopian tubes.

Prevention

avoid excessive physical stress during childhood and youth; taking combined oral contraceptives; reducing abortions and other intrauterine manipulations; avoiding contact between healthy and damaged tissues during surgical treatment of endometriosis.

Prognosis

Endometriosis tends to recur. During the last year's 5 years of treatment, this disease occurs in 40% of women, and in the next 5 years-in 75%. When menopause begins, the probability of recurrence of the disease decreases. In the case of radical removal of the organ damaged by the disease, the process does not progress.

Conclusion

Thus, for endometriosis, paradoxical aspects of etiopathogenesis and their clinical contrasts, the cause of which has not yet been found, are characteristic. In fact, in the benign nature of the disease, local invasion, an aggressive course with wide spread of foci is possible; minimal endometriosis is often accompanied by severe pelvic pain, large endometrioid cysts are asymptomatic; the cyclic effect of hormones causes the development of endometriosis, while continuous use stops the development of the disease. Such enigmas stimulates further deepening and expansion of fundamental and clinical research in all areas of the problem of endometriosis.

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THE ROLE OF MESENCHYMAL SECRETOME ON THE SKIN DURING PHOTOPROTECTION, HAIR GROWTH AND PSORIASIS

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Introduction

Ultraviolet (UV) radiation can cause some skin problems, especially photoaging. Photoaging is skin aging caused by excessive UV exposure, which causes morphological and physiological changes of the skin such as the appearance of wrinkles and reduced skin elasticity.[1] Research into the secretome as a therapy to prevent the influence of photoaging has been reported. Several in vitro models of skin cells, HDFs and HaCaTs, both of which are cells that function against defenses due to UVB radiation, were used.[2] UV radiation can cause inhibition of the cell proliferation rate and reductions of collagen I, collagen III and elastin due to downregulation of expression of mRNA. UV radiation can also cause increased levels of MMP1 and MMP9, resulting in inhibited synthesis of procollagens and triggering activation of various signaling pathways, namely mitogen activated protein kinase (MAPK), protein activator 1 (AP-1) and nuclear factor kappa B (NF- κ B), which contributes to cell damage due to ROS formation and can trigger the apoptosis of skin cells, so as to inhibit skin regeneration and be able to inflict DNA damage in keratinocytes.[3] Various studies have been conducted to investigate the effects of secretome as an agent in the fight against photoaging. In vitro testing was done by various methods.

Methods that were used looked at cell proliferation. The secretome of ADSCs had the effect of providing photoprotection. This is related to the content of biological factors that play a role in particular platelet-derived growth factor AA (PDGF-AA), which can promote deposition and remodeling of the extracellular matrix. This effect is also associated with the content of TGF- β 1 in the secretome, which can stimulate mRNA expression and increase collagen production. This mechanism is also related to the upregulated expression of wnt3a and catenin in the Wnt/ β catenin signaling pathway, which is associated with increased expression of TGF- β 2 (which is important for the synthesis of procollagen type I).[4] Other tests performed on the test animals, which were generally nude mice, pertained to UVB exposure.

The results revealed a reduction in wrinkles and skin distress by improving skin hydration after macroscopic use of secretome and increased collagen synthesis based on Masson trichrome analysis. In some studies, it has been reported that secretome can be used as an active ingredient in cosmetics, reminding us of its benefits in regenerating the skin. Generally, research utilizes secretome as a skin care therapy to prevent various aging factors, including photoaging.

Amirthalingam et al formulated secretome as an antiaging cosmetic product in the form of semi-solid serum preparations, with the following doses used 0.25%, 0.5% and 1%. Similar research by Kim et al utilized secretome as raw material in the manufacture of cosmetics applied using an air brush, with secretome concentration as high as 5%. The results showed a reduction in test parameters, such as wrinkles, and increased skin moisture.[5] Similarly, Kim et al also used secretome as a raw material cosmetic material in the form of cream preparations. The secretome concentration used was 1%, which was contoured in 3D culture. The use of secretome can increase collagen synthesis greater than control and reduced aging by improving skin elasticity. Hair Growth-Alopecia is a term used to state the condition of baldness or hair loss due to abnormalities in the scalp that can be caused by various factors.[6] This condition causes the active phase of hair growth (anagen stage) to be inhibited, while the rest phase (telogen stage) becomes faster in the hair growth cycle. So, a lot of research focuses on understanding the cycle of hair growth. The effect of secretome therapy on hair growth has been reported in various studies. In vitro testing is generally conducted to determine the proliferation ability of hair cells. Used human papilla cells of human follicles (HFDPCs), outer root sheath cells (ORCs) and human epithelial keratinocytes (HEKs),[7] which are types of cells located in hair follicles that can stimulate hair growth and regeneration through reciprocal communication processes with epithelial cells. Zhang et al investigated the paracrine factors that may be involved in hair follicle regeneration using secretome from dermal papilla cells (DPCs). The results showed that the use of the secretome of DPCs in passage 3 secreted a large amount of CXCL12, MMP3 and biglycan, which played a role in the activation of the Wnt/ β -catenin signaling line, as well as LTBP1.[7] Activation of this pathway is known to trigger the proliferation of hair follicle cells. The use of secretome is able to trigger the proliferation of HFDPCs and ORCs, to accelerate the telogen phase to anagen and ex vivo can induce proliferation of the hair matrix. In the application using animal models in the form of mice C3H/HeN, secretome was able to induce hair follicle growth. Pu et al also reported that secretome was able to trigger proliferation and increase hair follicle growth in mice ischemia/reperfusion- (I/R-) models. Psoriasis- Psoriasis is a chronic inflammatory condition of the skin that causes increased levels of expression of interleukin (IL-17). In psoriasis, Langerhans cells represent a disorder in the migration of epidermis cells that serve as an immuneresponse associated with T cell responses, particularly Th17-mediated. This condition also causes abnormalities in cytokine production that can cause epidermis hyperplasia as well as abnormal keratinocyte apoptosis (KCs).[8] Psoriasis is characterized by the appearance of patches or rashes with thick white scales on the skin and nails. Studies on secretome in the treatment of psoriasis have been conducted. Psoriasis modeling can be used using imiquimod with Wistar rats models. Imiquimod causes inflammation characterized by the presence of coarse lamella and excoriation. The use of secretome is able to reduce the effects of inflammation caused by the use of imiquimod (IMQ) better than control. Zhang et al stated that exosomes (secretome) is able to decrease psoriasis score in IMQ rats model through inhibiting of maturation and activation of dendritic cells (DC) and IL-17 in HaCaTs.[9] Seetharaman et al reported that the secretome of adipose tissue, which is administered topically, showed a significant decrease in the amount of erythematous plaque and silver scales on the scalp of the sufferer after administration of the secretome for 2 weeks and disappeared after one month of administration.[10]

Conclusion

Secretome, a bioactive factor secreted by MSCs, has a variety of benefits on the skin as a therapeutic agent for various regenerative diseases. Research on the use of secretome for skin applications and formulation development are still very limited. Several studies reported that the process to obtain secretome from MSCs was through isolation from various adult tissues and cultured in a medium of growth. The culture process can affect the level of expression of the resulting factors. Applications of the secretome for skin include wound healing, photoprotection, promotion of hair growth, psoriasis treatment, and other application as antimicrobial. Considering the various constituents of secretome, it has a lot of potential in various diseases needing the development of and more indepth studies in order to be maximally used.

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<https://bsj.fisdd.org/index.php/pahtei>

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ETM Equipment, Technologies, Materials

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SOCIO WORLD-SOCIAL RESEARCH & BEHAVIORAL SCIENCES

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Economics

<https://scia.website/index.php/ecs>

Society of Azerbaijanis living in Georgia. NGO. (Georgia, Tbilisi) is publishing scientific papers of scientists on Website and in Referred Journals with subjects which are mentioned below:

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The Caucasus-Economic and Social Analysis Journal of Southern Caucasus

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Mostly Papers starts with introduction. It contains the brief idea of work, requirement for this research work, problem statement, and Authors contribution towards their research. Sufficient recent reference citation [1] from last 2 years should be included for showing the existing challenges and importance of current work. This section should be succinct, with no subheadings unless unavoidable [2, 3]. State the objectives of the work and provide an adequate background related to your work, avoiding a detailed literature survey or a summary of the results.

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Mathematical Expressions and Symbols (Times New Roman, 12)

Mathematical expressions and symbols should be inserted using **equation tool** of Microsoft word. References may be added for used equations to support its authenticity, e.g. this result has been analysed using Fourier series [5].

$$f(x) = a_0 + \sum_{n=1}^{\infty} \left(a_n \cos \frac{n\pi x}{L} + b_n \sin \frac{n\pi x}{L} \right) \quad (1)$$

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This section may each be divided by subheadings or may be combined. A combined Results and Discussion section is often appropriate. This should explore the significance of the results of the work, don't repeat them. Avoid extensive citations and discussion of published literature only, instead discuss recent literature for comparing your work to highlight novelty of the work in view of recent development and challenges in the field.

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Authors are supposed to embed all figures and tables at appropriate place within manuscript. Figures and tables should neither be submitted in separate files nor add at the end of manuscript. Figures and Tables should be numbered properly with descriptive title. Each Figure/Table must be explained within the text by referring to corresponding figure/table number. Any unexplained or unnumbered Figure/Table may cause rejection of the paper without being reviewed.

Formatting Tables (Times New Roman, 12)

Table should be prepared using table tool within the Microsoft word and cited consecutively in the text. Every table must have a descriptive title and if numerical measurements are given, the units should be included in the column heading. Formatting requirement has been summarized in the Table 1.

Table 1: Summary of formatting requirement for submitting paper in this journal. (Times New Roman, 12)

Layout	Size	Margin (Normal)	Header	Footer	
Single column	A4 (8.27" X 11.69")	Top=1" Bottom=1" Left=1" Right=1"	Do not add anything in the header	So not add anything in the footer	
Font	Article Title	Headings	Subheadings	Reference list	Text
	Times New Roman, 16 pt, Bold, centred	Times New Roman, 11 pt, Bold, Left aligned	Times New Roman, 10 pt, Bold, Left aligned	Times New Roman, 8 pt, Justified	Garamond, 11 pt, Justified
Line Spacing	1.15	1.15	1.15	1.15	1.15
Page number	We will format and assign page numbers				

(Times New Roman, 10)

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All figures should be cited in the paper in a consecutive order, author may be asked to provide separate files of the figure. Figures should be used in bitmap formats (TIFF, GIF, JPEG, etc.) with 300 dpi resolution at least unless the resolution is intentionally set to a lower level for scientific reasons. If a bitmap image has labels, the image and labels should be embedded in separate layer. Figure 1 shows the logo of AIJR Publisher.

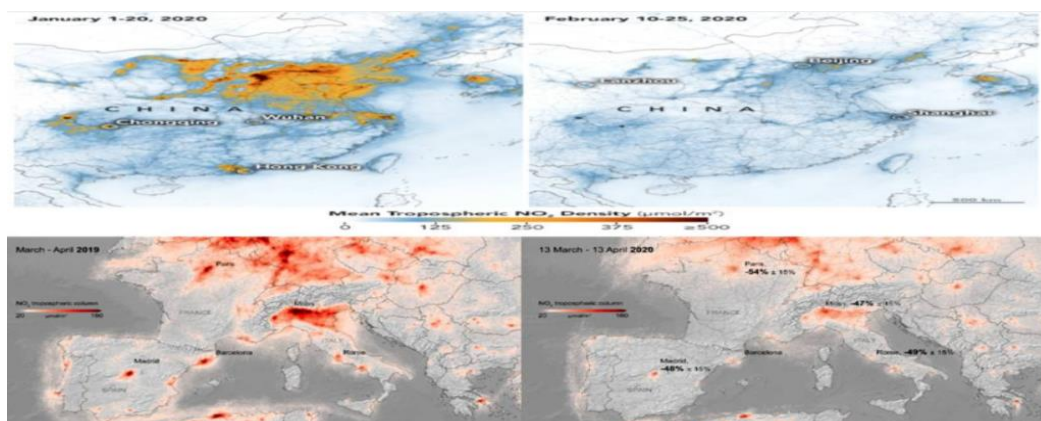


Figure 1: Logo of the AIJR Publisher (Times New Roman, 12)

Conclusions (Times New Roman, 12)

Each manuscript should contain a conclusion section within 250-450 words which may contain the major outcome of the work, highlighting its importance, limitation, relevance, application and recommendation. Conclusion should be written in continuous manner with running sentences which normally includes main outcome of the research work, its application, limitation and recommendation. Do not use any subheading, citation, references to other part of the manuscript, or point list within the conclusion.

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Study Limitations (Times New Roman, 12)

Provide all possible limitation faced in the study which might significantly affect research outcome, If not applicable write, none.

Acknowledgements (Times New Roman, 12)

All acknowledgments (if any) should be included in a separate section before the references and may include list of peoples who contributed to the work in the manuscript but not listed in the author list.

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Provide funding source, supporting grants with grant number. The name of funding agencies should be written in full, if no funding source exist, write, none.

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Write a statement of informed consent taken from the participants to publish this research work. The editor may ask to upload scan copy if required.

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Author(s) are responsible for ensuring that the information in each reference is complete and accurate. **Do not use grey literature (unauthentic website, news portal, social media, Wikipedia etc) as reference, only scholarly literature (Journal, online books, proceedings, patents, authentic websites with permanent archival policy) are acceptable references.** Author should include sufficient recent (last 2 years) references in the article. All references must be numbered consecutively and citations of references in the text should be identified using numbers in square brackets (e.g., “as explained by AIJR [1]”; “as discussed in many reports [2]-[6]”). All references should be cited within the text correctly; do not add only list of references without citation within the text. All cited references should be listed after declarations section in the following style-

1. W. S. Author, “Title of paper,” Name of Journal in italic, vol. x, no. x, pp. xxx-xxx, Abbrev. Month, year. <https://doi.org/10.21467/ajgr>
2. Bahishti, “Peer Review; Critical Process of a Scholarly Publication”, J. Mod. Mater., vol. 2, no. 1, pp. 1.1-1.2, Oct. 2016. <https://doi.org/10.21467/jmm.2.1.1.1-1.2>
3. Bahishti, “A New Multidisciplinary Journal; International Annals of Science”, Int. Ann. Sci., vol. 1, no. 1, pp. 1.1-1.2, Feb. 2017. <https://journals.aijr.in/index.php/ias/article/view/163>
4. W. S. Author, “Title of paper,” Name of Journal in italic, vol. x, no. x, pp. xxx-xxx, Abbrev. Month, year. Access online on 20 March 2018 at <https://www.aijr.in/journal-list/advanced-journal-graduate-research/>
5. W. S. Author, “Title of paper,” Name of Journal in italic, vol. x, no. x, pp. xxx-xxx, Abbrev. Month, year. Access online on 5 March 2018 at <https://www.aijr.in/about/publication-ethics/>
6. M. Ahmad, “Importance of Modeling and Simulation of Materials in Research”, J. Mod. Sim. Mater., vol. 1, no. 1, pp. 1-2, Jan. 2018. DOI: <https://doi.org/10.21467/jmsm.1.1.1-2>

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Sokhumi State University is the winner in Jean Monnet Module

For the first time at Sokhumi State University, Jean Monnet Module (Jean Monnet Activities - Erasmus+ Program (ERASMUS) ERASMUS-JMO-2022-HEI-TCH-RSCH – Project number 101083295 - CSREU) was selected for co-financing by the European Commission. The coordinator of the three-year Jean Monnet Module "Corporate Social Responsibility in the European Union: Experience for Georgia" is Professor Larisa Takalandze (Faculty of Business and Social Sciences). The Module includes a new study course "Corporate Social Responsibility in the European Union" for undergraduate students and a summer school "Corporate Social Responsibility in the context of Relations between the EU and Georgia" for both undergraduate and postgraduate students; the Module includes research studies and a number of events in CSR. The Jean Monnet Module aims to expand knowledge about European integration processes through teaching, research and debate on topics related to the history, politics, economics and law of the European Union, as well as the EU's relations with other regions of the world. The main task of the program is the involvement of the European dimension in the higher education system; It was opened in 1989 and got its name in honor of the famous French statesman Jean Monnet, one of the "architects" of the European Union.

Currently, the activities of the program extend to 78 countries, and the educational network includes more than 800 universities. Since 2013, the Jean Monnet program has been integrated into the Erasmus+ program.

Promotional Event - Georgia and European Union: Opportunities for Cooperation

On October 27, 2022, within the framework of the project (Jean Monnet Module) "Corporate Social Responsibility in the European Union: Experience for Georgia" supported by the EU ERASMUS+ program, a promotional event "Georgia and European Union: Opportunities for Cooperation" was held at Sokhumi State University (SSU). The meeting was attended by students and academic staff of SSU, as well as by the representatives of the Georgian Technical University, Iv. Javakhishvili Tbilisi State University, National Center for Educational Quality Enhancement, and various public institutions and private companies. Prof. Zurab Khonelidze, the Rector of SSU, the President of the Academy of Educational Sciences, welcomed the participants of the meeting and then presented the report "European Perspective of Georgia: New Mission of the University". In his report, the Rector emphasized the need to identify the potential opportunities that are due to the integration with the European Union and noted that one of the tools for achieving this goal is the Jean Monnet module. Professor Lia Akhaladze, the Head of the Department of Scientific Research, spoke to the participants of the meeting about the importance of the Jean Monnet Module in developing students and young researchers into highly qualified specialists. Indira Dzagania, Associate Professor, the Head of International Relations and Intercultural Communications Department introduced the ERASMUS+ program and current projects at the University to the audience. Professors Eka Kardava and Guranda Chelidze (Caucasus University, Georgia), coordinators of several Jean Monnet Modules and participants in other Jean Monnet Activities, congratulated Sokhumi State University on obtaining the Jean Monnet Module, wished its successful implementation, and spoke about the importance, goals and objectives of the mentioned project. Trocikowski Tadeusz, Dr h., Doctor of Economic Science,

Doctor of Management Sciences, Rector's plenipotentiary at the Cuiavian University in Włocławek (Poland), project participants - Didenko Nina, Jean Monnet Chair, Professor of Department of Health Management and Public Administration at Shupyk National Healthcare University of Ukraine (Kiev, Ukraine), and Simanavičienė Žaneta, Professor Habil., Dr., The Head of Lab. Sustainable Innovations at Mikolas Romeris University (Vilnius, Lithuania) also greeted the audience by joining the event virtually. Coordinator of the Jean Monnet Module, Professor Larisa Takalandze introduced to the students, academic staff and invited guests the purpose of the three-year project, its target groups, tasks, main activities and expected outcomes, as well as the theme of the summer school and the professors and experts participating in it. The audience had the opportunity to get comprehensive answers to important and interesting questions in the event's final segment. At the end of the promotional event, the Head of SSU Administration, project participant, Associate Professor Nino Tophuridze gave a closing speech.





NOTES

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