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ABSTRACT

of the research for the degree of Doctor of Philosophy

THE ROLE AND DEVELOPMENT PERSPECTIVES OF THE PROCESSING INDUSTRY IN THE FORMATION OF THE INNOVATIVE ECONOMY

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Applicant: **Fuad Mammad Badirov**

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The research was performed at Azerbaijan Cooperation University.

Scientific supervisor (consultant): doctor of economic sciences, professor
Eldar Allahyar Guliyev

Official opponents: doctor of economic sciences, associate professor
Muslimat Allahverdi Allahverdiyeva

doctor of philosophy in economic sciences, associate professor
Mushfiga Ajdar Mammadova

doctor of philosophy in economic sciences, associate professor
Gulnara Sadi Hajiyeva

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GENERAL CHARACTERISTICS OF THE RESEARCH

The actuality of the research and the degree of problem development. According to the Decree of the President of the Republic of Azerbaijan, Mr. Ilham Aliyev, dated December 6, 2016, in the Strategic Road Maps covering the years 2016-2020 and including long-term goals for the period after 2025 on the perspective of the national economy and in the concept “Azerbaijan 2030: National Priorities for socio-economic development” (February 2, 2021), among the strategic goals of the country's economy, issues such as increasing the specific weight of innovation products in the total volume of industry, increasing productivity in sectors that increase the competitiveness of the economy, forming a new technological base at the expense of high-tech production complexes, increasing the share of regions in industrial production, developing the non-oil industry in an export direction, a steadily growing competitive economy, a society based on dynamic, inclusive and social justice, competitive human capital and a place of modern innovation, a large return to territories freed from occupation, a clean environment and a “green growth” country, etc. are priorities.

At the same time, expansion of diversification of the economy and strengthening of industrial potential have been set as a task in the objectives section of the “1st State Program on the Great Return to the territories freed from occupation of the Republic of Azerbaijan” (November 16, 2022).

Achieving the set tasks is determined to a significant extent by the innovation activity of the country's industrial enterprises.

At the current stage, the main goal for our country is to increase the competitiveness of priority areas of the economy and processing industry enterprises by increasing productivity.

Therefore, the development of the country's economy in the medium and long term is related to the strengthening of its innovation character, modernization and improvement of the structure of the industry, increase of its export potential, expansion of science-intensive and innovative activities. This requires modernization of the economy adequate to the new economic model

and strategic goals, and in this process, strengthening the role of the industry, including the processing industry, and the formation and improvement of its innovation strategy, the expansion of efficient and innovative production, and the deepening and development of the existing scientific and research base.

At the modern stage, many issues, including the determination of factors affecting the increase of the competitiveness and export potential of the industry, substantiation of the priority development directions of the industry and the formation of a perfect mechanism for supporting their activities, determining the directions of development of industrial clusters, improving the legislative base in this direction, determining the directions for the stable development and export potential of the industry, increasing the innovation activity in the processing industry, as well as the development of the methodology for evaluating the results of the industrialization process, etc., attract attention with their relevance and make it necessary to include them in the subject of scientific research.

All of these factors make it necessary to develop the processing industry, which is the leading sector of the country's economy, on the basis of a high-tech base that meets the trends and laws of the globalized modern world and this requires conducting a scientific study of the theoretical-methodological and practical aspects of the development of the industry, especially the processing industry, taking into account the requirements of the new economic development model. The topic of the dissertation was chosen and justified in this context.

As for the degree of development of the subject, it can be stated that in recent times, such problems as the formation of an innovation-oriented economy, the development of the processing industry, and the improvement of its competitiveness and innovation activity have been widely studied by the world's and country's economists.

A number of economists, especially Z.A. Samadzade, E.A. Guliyev, B.Kh. Atashov, Z.M. Najafov, I.A. Aslanzadeh, M.M. Huseynov, I.H. Aliyev, G. A. Manafov, A. Sh. Shekaraliyev, A. P. Babayev, V. T. Novruzov, S. M. Yagubov, T. N. Aliyev, Sh. T. Aliyev, A. H. Taghiyev, G. A. Ahmadov, E. N. Karimov, A.H.

Nagiyev, etc., have made a great contribution to the research and study of the theoretical and methodological problems of the formation of the innovative economy and the development of the industry in the country, and the improvement of its innovation activity.

I.Schumpeter, M.Porter, P.Druker, R.A.Fatkhutdinov, D.I.Kokurin, V.Y.Gorfinkel, Y.P.Morozov, E.A.Karpov, I.T.Balabanov, V.K.Kondratev among the economists of foreign countries, studied the theoretical and practical aspects of the innovation process, the development of the industry, and the improvement of its innovation capabilities and competitiveness.

It should be noted that in the defined strategic goals of the development of the country's economy, the strengthening of the innovation orientation and the strengthening of the role of the country's industry, especially the processing industry, are defined as priority tasks in this process. This made it necessary to pay more attention to the research of the theoretical, methodological and practical aspects of forming an innovative development model, determining the role of the processing industry and development directions in this process, increasing competitiveness and expanding innovation opportunities. Although certain aspects of these problems have been studied by economists, the multifaceted nature of this process suggests that there are aspects of it that are still not sufficiently studied.

The object and subject of the research. The object of the study is the industrial sector of the economy of the Republic of Azerbaijan, especially its processing industry, and the set of enterprises and organizations included in it. The subject of the research is the set of methods and tools used in the process of discovering the development features and innovation opportunities of the country's processing industry, as well as economic relationships and regularities at the macro and micro levels.

Goals and tasks of the research. The purpose of the study is to determine the possibilities of the processing industry and the priority directions of its development in the formation of an innovative economic development model in the country.

In order to achieve the set goal, it was considered necessary to fulfill the following tasks:

- to examine the theoretical foundations of innovation as an important factor in ensuring sustainable economic growth;
- to examine the current state of the world processing industry and identify development trends;
- justify the main directions of the country's industrial policy in the conditions of new economic realities;
- to analyze the current state of the country's industry, including the processing industry;
- to classify the factors determining the innovation possibilities of the processing industry;
- to investigate the directions of increasing the innovation activity of Azerbaijan's processing industry;
- to determine the factors influencing the increase of competitiveness and export opportunities of the country's processing industry;
- to develop theoretical and practical recommendations on the justification of the opportunities of the processing industry and its development priorities in the process of strengthening the innovation orientation of the country's economy.

Research methods. Observation, systematic approach, economic statistical analysis, comparison, logical generalization, forecasting and synthesis methods were used in the research work, according to the purpose and task.

The theoretical-methodological base of the research is made up of the works of the economists of our country and foreign countries dedicated to the role of the manufacturing industry and development prospects in the formation of the innovative economy, the official internet resources of the State Statistics Committee of the Republic of Azerbaijan, Ministry of Economy of the Republic of Azerbaijan and other central executive authorities.

Scientific novelty of the research:

- innovation activity is an important factor of modernization of the national economy, provision of sustainable economic

growth and increase of the country's competitiveness in the world market. Therefore, the relationship between the factors of innovative development and the growth of the added value of the industrial sector and the formation of a reliable, quality and efficient industrial policy in this context are of particular importance.

- global challenges and the development of the world market require the development of an export-oriented high-tech industry. The processing industry acts as a strong driver of research and development, and the integration and synergistic effect of scientific potential, production and business play an important role at this time;
- a deep and comprehensive analysis of innovation development requires the formation of an up-to-date and reliable information base on the results and structure of innovation activity. That set of indicators should allow to characterize the resources of innovation activity implementation and its results.
- compared to other areas of industry in Azerbaijan, the level of application of the factors that ensure the operational efficiency and competitiveness of the processing industry and the efficiency as a whole is weak. Thus, 17.1% of the Gross Domestic Product produced in the country in 2021 fell to the share of the processing industry. At the present stage, the existence of economic, production and other important factors that hinder innovative development in the country's processing industry and their elimination should always be in focus;
- assessment of the dependence between the level of innovative development and competitiveness is determined by the correct selection of criteria (indicators). Therefore, in order to increase the operational efficiency and competitiveness of the country's processing industry, priority must be given to innovative and high-tech criteria in the systematic measures implemented in accordance with the strategic tasks of economic development.

Scientific novelty of the research:

- the theoretical foundations of the formation of the innovative development model were investigated and certain generalizations were made;
- the development trend and dynamics of the world processing industry, structural changes were investigated and important features were revealed;
- priorities of the country's industrial policy have been developed in conditions of increased influence of global competition and external environmental factors;
- within the possibilities provided by the information base, the modern state of the country's industrial sector, including the processing industry, was analyzed and its development trends were justified;
- a system of statistical indicators was formed for the analysis of innovative development;
- the classification of the factors affecting the innovation activity and export possibilities of the processing industry has been specified in terms of new requirements;
- The main directions of increasing the processing industry in Azerbaijan, its innovation activity, and increasing its competitiveness have been determined.

Theoretical and practical significance of the research.

In terms of its scientific and theoretical importance, the dissertation can be a valuable source for future research on this topic. The theoretical, methodical and practical results, proposals and recommendations obtained in the research process can be used in the implementation of strategic tasks for the formation of an innovative development model in the country, in the development of the priority directions of the industrial policy in the context of current realities, in the preparation of specific projects and programs for strengthening the innovation activity in the processing industry and increasing its competitiveness.

In addition, it is possible to use the scientific-theoretical propositions put forward in the dissertation in the preparation of

textbooks and teaching aids, lecture texts in economics-oriented higher education institutions.

Approbation and application of the research. During the research period, the subject of the dissertation was in accordance with the general direction of the scientific-research works of the “Economy of Agrarian and Industry” department of the Azerbaijan Cooperative University and was discussed and approved in the scientific seminars that are constantly operating.

The main scientific-theoretical claims, results and proposals of the dissertation are reflected in 7 articles and 4 theses published in prestigious journals and conference materials recommended by the High Attestation Commission under the President of the Republic of Azerbaijan. Among the conference materials, the theses “Directions of increasing the competitiveness of the processing industry of Azerbaijan” (Baku, 2017), “Innovative potential of the processing industry and factors of its development” (Moscow, 2020), “The role of Heydar Aliyev in the development of the processing industry in Azerbaijan” (Baku, 2023) can be mentioned.

During the research, the author's articles entitled “Evaluation of the innovation potential of industrial enterprises” (Baku-2017), “Some issues of the development of innovative economy in the conditions of global competition” (Baku-2017), “Structural world industry: trend and strategy development” (Moscow-2017), “Directions of increasing the export opportunities of the processing industry in Azerbaijan” (Baku-2018), “Creation of innovation clusters in the conditions of the development of the processing industry” (Baku-2023) were published.

The recommendations and suggestions made as a result of the dissertation were submitted to Az-Granata LLC of the Republic of Azerbaijan and accepted for use (reference No. 96 dated November 14, 2017).

Name of the organization where the research is carried on. Dissertation work was performed at the Azerbaijan Cooperation University.

The total volume of the dissertation with a sign indicating the volume of the structural sections of the dissertation separately.

Dissertation consists of introduction, three chapters, conclusion and list of used literature. The total volume of introduction (12670 characters), chapter I (75621 characters), chapter II (64076 characters), chapter III (75792 characters), conclusion (8977 characters) and bibliography (17314 characters) is 276048 characters. The mark number of the dissertation is 237136, excluding tables, charts, graphs, and the list of used literature.

THE MAIN CONTENT OF THE RESEARCH

In the **introductory** part of the research work, the relevance of the topic and the degree of development, the object and subject of the research, goals and tasks, methods, the main propositions defended, the scientific novelty, theoretical and practical importance of the research, as well as its approval and application are reflected.

In the **first chapter of the thesis called “Theoretical foundations of the innovative development model and the formation of industrial policy”**, the important role of innovation in ensuring sustainable economic growth, the main contours of industrial policy, and the issues of contemporary international practice in the world processing industry were investigated.

In modern conditions, the problem of innovative development and, in connection with it, increasing the competitiveness of the economy, is very important from the point of view of both scientific research and practical economic activity. This is conditioned by the significant change in the conditions of economic activity due to the globalization of the economy, the transformation of the activity of the classic factors of production into the limitation of development resources, political, demographic and environmental problems, as well as the increase in regional differentiation¹. In such circumstances, not only profit maximization and efficiency improvement, but also economic stability and security, and positive

¹ Turgaev, S.A. Project approach in managing innovative development as a factor in increasing the competitiveness of an enterprise, diss. economic sciences, St. Petersburg: – 2014, – 169 p.

dynamics of business value come to the fore in the competitive struggle. The experience of economically developed countries shows that the factor of innovation is in the first place in the competition. The innovative way of development is one of the main directions of increasing competitiveness. In other words, in modern times, the formation and operation of innovation elements are considered important attributes of a highly competitive economy.

Technical progress is one of the main drivers of long-term growth. With great probability, it can be confirmed that in the coming period, as a result of innovative development, the production process will radically change and people's quality of life will increase. The process of industrialization without technical progress and innovation, and development is impossible without it. Undoubtedly, as a result of technology, the production process becomes more efficient, the competitiveness of the country increases and the dependence on market fluctuations decreases. Structural change, that is, the transition of the economy from labor intensive to technological intensive, is a factor of economic modernization. As a result of structural changes, the country manages to obtain the necessary opportunities for stable and long-term development².

Research shows that the development of the modern world, the provision of stable and long-term economic growth is mostly determined by scientific and technical progress and the level of intellectualization of the main factors of production, which brings out the competitiveness of the national economy.

E.A.Ibrahimov, Doctor of Economic Sciences, writes about the global importance of innovations: *“With the expansion of innovation and modernization activities to a qualitatively new level in the conditions of globalization, the rate of change of economic and economic processes, the spread of innovative innovations, and their application in the field of production are*

² Bayramov V. Issues of industrial diversification in Azerbaijan // - Baku: News of ANAS, Economy series, - 2015(6), - p. 142-152.

accelerating all over the world."³

Therefore, it is possible to solve the problems of ensuring the country's economic security, increasing the competitiveness of the economy in a strategic plan, and strengthening the export position in the world market only on the basis of innovative development.

Researchers point out the importance of the harmonious relationship between sustainable economic development of the country and the factor of innovation. Honored scientist, one of the country's well-known economists, Prof. B.Kh. Atashov in his monograph entitled "Problems of structure and efficiency in the agricultural sector (theory and practice)" notes: *"...the purpose of innovation is to change the object of management, to achieve new scientific-technical, economic and social efficiency. Innovation is considered as the commercialization of scientific knowledge embodied in the form of a new or improved product (service), technique, technology, organization of production and management and giving various effects. It is possible to successfully solve the problems that have arisen in modern society, economy, social processes, environment only thanks to innovative development strategy."*⁴

The initial stage of the innovation process is information. Informatization of public production has led to the creation of an innovation model of economic growth. All innovation occurs in a certain information environment. At the initial stage of the innovation process, the goals and directions of future development are determined. As a rule, the need to develop a specific innovation is dictated by the demands of consumers.

The formation and accumulation of knowledge takes place in the second stage of the innovation process. Universities, scientific-research institutes and centers, laboratories, etc. act as objects that implement this process. Doctor of Economic Sciences M.M.

³ Ibragimov E.A. Innovation and modernization as a necessary condition for sustainable economic development in the context of globalization. // Economics and Entrepreneurship, Moscow, No. 9 (110) 2019, pp. 50-59.

⁴ Atashov, B.Kh. Structural and efficiency problems in the agricultural field (theory and practice). B.Kh. Atashov / Baku: - 2017, - p. 474.

Huseynov in his monograph dedicated to the problems of innovative development of the agrarian sphere notes: *“In general, the innovation process can be thought of as a process that includes a whole period in which scientific knowledge, scientific ideas, discoveries and inventions turn into innovation.”*⁵

In modern times, the USA, Japan, Germany, Great Britain, France etc. belong to the countries with technological and economic advantage and developed innovative economy. Those countries carry out active work in the field of fundamental scientific research, which leads to the creation of various innovative products capable of securing their leading positions in the world.

In most of the developed countries of the world, the reconciliation of innovation, export and social orientation and the conceptual development of the innovation policy based on the concept of the national innovation system are constantly carried out.

In accordance with the concept of socio-economic development, the formation of an innovation-type economy in the country is envisaged, which is related to the creation of an innovation environment, a national innovation system, and the emergence and operation of efficient and active innovative enterprises and organizations. An important direction of increasing the competitiveness of the country's economy is the development of high-tech industry. Scientifically based, balanced industrial policy plays a special role in this.

The research and analysis of the activities of economic sectors, enterprises and organizations shows that in the modern era, it is necessary to solve a number of basic tasks for the development of industrial policy: supporting the areas that ensure the national security of the country and ensuring their balanced development, ensuring the social orientation of the sectoral policy, developing infrastructure areas, increasing the competitiveness of industrial products. These and other factors have a significant impact on the development of enterprises, sectors and the economy as a whole.

⁵ Huseynov, M.M. Problems of innovative development of the agrarian sphere. Monograph. Baku, "Kooperasiya" publishing house, 2023, - 304 p.

Therefore, more attention should be paid to the issues of rational industrial policy and the development of innovative economy in the modern era.

In the documents of international development institutes, industrial policy is interpreted as a state policy aimed at improving the structure of economic activity or the business environment by sectors and technologies. Such an approach is believed to provide a more favorable prospect for public welfare and economic growth than no such intervention.

It is also important to form a monitoring system that allows the assessment of the current state of the implemented industrial policy and its results, the justification of perspective directions, and the identification of regional characteristics. Countries that have achieved success in the implementation of industrial policy are characterized by such features as orientation to the world market, attracting foreign investment, and global competitiveness. Globalization requires the establishment of a global chain of value creation, the expansion and transfer of modern competences and skills, the selection of strategic partners and the creation of international technological alliances. Therefore, it is necessary to consider these aspects in the country's industrial policy.

At the end of the 20th century and the beginning of the 21st century, the rapid development of the service sphere, the growth of labor productivity in the industry and the strengthening of international competition in the world market led to the actual decrease of the specific weight of the second sector, the direct processing industry, in the world's GDP. However, since the beginning of 2000, the special weight of the second sector of the economy, directly the processing industry, has started to increase. This was primarily caused by the rapid development of industry in China and other countries, such as South Korea, Singapore, Malaysia, India, Brazil, Mexico, Indonesia, etc., and the increase in the employment of the population in the second sector of the economy, in the production service sphere [102, 143]. Today, the idea that the manufacturing industry is more important to the economy than the service sphere is less relevant when the distinction

between these sectors is removed, and the role of net production in providing innovation and industrial opportunities is more complex. In modern times, 16% of the world's Gross National Product is accounted for by the processing industry. In a number of world countries, this indicator was 10% in Great Britain, France, 12% in USA, 13% in India, 14% in Russia, 15% in Italy, 17% in Mexico, 19% in Germany, 20% in Japan, 25% in Indonesia, 28% in South Korea and 33% in China. The importance of the processing industry in the national economy depends on a large number of factors - the level of economic development, the demand for processing industry goods, the degree of outsourcing of individual elements of the added value chain from the processing industry areas to the service sphere areas, the nature of industrial policy, directions for stimulating the processing industry, innovation activity, etc. In this period, the volume of conditional net product (gross product consists of net product minus current material costs incurred in production and depreciation calculated on fixed production assets) increased.

Even today, the manufacturing industry acts as a powerful driver of research and development. The manufacturing industry continues to play an important role in the economy of both developed and developing countries, stimulating the increase in labor productivity and innovation, as well as the increase in the level of well-being of the population. The efficient structure of processing areas is a permanent object of the state's active industrial policy and acts as a factor of international competitiveness in the global market.

Global industrialization continues. Over the past 20 years, the growth of added value created in industrially developed countries has been slightly lower than the annual growth of GDP of those countries. Despite this, the industry has successfully developed in developing countries where production forces have been transferred from developed regions. The specific weight of this group of countries in world industrial production and export is constantly increasing and this trend will be maintained in the future. Therefore, the fundamental territorial change of this segment of the economy in developing countries characterizes the main world trend.

In the second chapter of the research, the current situation of

the processing industry in Azerbaijan was analyzed in detail with the extensive use of tables, schemes and pictures, the system of information provision and statistical indicators in the study of innovation activity in the country was clarified, the innovation potential of the processing industry and the factors affecting it were studied.

The industrialization of the country's economy within the framework of innovation projects is based on industry, which acts as an important factor in the economic development of any state. Industrial production is a solid foundation of any material production, a complex and multi-level system that forms the main part of the country's gross domestic product. In economically developed countries, the specific weight of industrial production in the gross domestic product fluctuates between 20-40% and has a positive effect on the dynamics of a number of macroeconomic indicators of the countries.⁶

The share of the processing area in the total volume of industrial products produced in the country was 20.4% in 2010, 21.9% in 2018, 25.1% in 2019, 31.8% in 2020, and 28.8% in 2021 (table 1).⁷

The data of the official statistics show that the level of application of the factors ensuring efficiency in the operation of the processing industry and the efficiency as a whole are weak compared to other areas of the industry. Thus, in 2021, those working in the mining industry accounted for 0.8% of the total number of wage earners in the country's economy and created 65.6% of the total volume of industrial output, while in the processing industry these indicators were 5.4% and 28.8%, respectively (table 2). About 20.8 billion manats, ie 74.3% of the industrial product produced in the country in 2010, 20.8 billion manats, ie 74.3%, fell to the share of the mining industry, 5.7 billion manats, ie 20.4%, to the processing industry. In 2021, these indicators amounted to 55.2 billion manats, including the mining industry 36.2 billion manats, i.e. 65.6%, and 15.9 billion

⁶ Kondratiev, V. Global manufacturing industry: shifts in competitive costs, "World Economy and International Relations", – No. 7, – 2015, – pp. 22-27

⁷ Ermolaeva, E.V. Industrial-innovative economic development and industrial modernization in Russia, –2016, –185 p.

Table 1.

The main indicators of the processing industry in the Republic of Azerbaijan in 2010-2021

Indicators	2010	2017	2018	2019	2020	2021	% in 2021 compared to 2010
Number of operating enterprises	1909	1826	2034	2330	2515	2777	145.5
Volume of industrial product (works, services), bln. manats	28,0	29,4	47,7	47,0	37,3	55,2	197.1
The part of the area in the total volume of industrial products produced in the country, %	20,4	24,4	21,9	25,1	31,8	28,8	181.1
Number of employed population, thousand people	208,9	249,1	254,8	262,6	258,3	269,1	128.8
The part of field workers in the total number of employees in the industry, %	68,2	72,1	70,1	72,2	72,4	73,0	107.0
Investments in fixed capital, mln. manats	510,2	652,6	756,8	1148,0	1414,2	1193,7	2.3 dəfə
The part of investments in the field in the total volume of investments directed to the industrial sector, %	11,9	6,8	8,9	12,4	15,6	14,9	125.2

manats, i.e. 28.8%. As can be seen, the share of the processing industry in 2021 compared to 2010 has increased by 8.4 points. At the same time, a continuous increase in the volume of the product of the processing industry was observed during the analyzed period.

As can be seen from the data of table No. 2, the dynamics of labor

productivity in the mining industry in 2010-2021 was characterized by neither a steady increase nor a steady decrease.

At the modern stage of innovation development of the country's economy, one of the important tasks of innovation statistics is to provide timely, reliable and complete statistical information about various aspects of the development of innovation spheres. The entire set of indicators applied at this time should be consistent with the 10 basic principles adopted by the UN General Assembly. Therefore, the formation and development of the information system about innovation activity is an urgent issue for the country.

The information provision of the study of innovation activity in the country should allow the creation of an information-analytical system of the state's innovation policy.

One of the important issues of the statistical study of innovation activity is the development of statistical observation forms. They act as the main sources of obtaining information on innovation activity and should provide a complete overview of statistics in this field in accordance with international recommendations.

Thus, the investigation of the information provision system of the innovation sphere allows to determine the minimum set of indicators necessary for the analysis of the innovation development of the country. In our opinion, it is possible to comprehensively and reliably characterize innovation processes in the country (regions) with the help of a defined system of statistical indicators.

Some researchers characterize the innovation potential as “a set of innovation resources, including intellectual, financial and material resources, necessary for innovation activity and directed to the implementation of innovation in the production of new and improved products and the technology of their acquisition.”

A. Mazin considers the innovation potential as one of the important indicators reflecting the possibilities of the enterprise to implement innovation activities.⁸

⁸ Mazin, A. Classification of indicators for assessing the innovative potential of an enterprise / A. Mazin // Alma mater. – No. 5(11), – 2015, – p.57-60

Table 2.

Some indicators characterizing the activity of the processing industry in the Republic of Azerbaijan in 2010-2021

	2010	2017	2018	2019	2020	2021	% in 2021 compared to 2010
The specific weight of those employed in the mining industry in the total number of those employed in the country's economy, %	1,0	0,8	0,8	0,8	0,8	0,8	-0.2 item
The specific weight of those employed in the manufacturing industry in the total number of those employed in the country's economy, %	4,8	5,2	5,2	5,3	5,3	5,4	+0.6item
Volume of mining industry output, mln. manats	20862	28034	34932	32858	22836	36222	173.6
The number of people engaged in the mining industry, thousand people	41,5	37,9	40,3	40,4	40,1	39,4	95.0
Labor productivity in the mining industry, thousand manats	502,7	739,7	866,8	813,3	569,5	919,3	182.9
Volume of manufacturing industry product, mln. manats	5736	9724	10465	11794	11848	15887	2.7 times
The number of people employed in the processing industry, thousand people	208,9	249,1	254,8	262,6	258,3	269,1	128.8
Labor productivity in the processing industry, thousand. manats	27,5	39,0	41,1	44,9	45,9	59,0	2.1 times

In order to form the organizational-management potential as an integral part of the innovation potential, it is necessary that the organizational structure of the management corresponds to the tasks of the innovation processes. This factor implies: the degree of formation of the existing organizational structure, the innovation independence of structural units and individual employees, the possibility of forming a purposeful working group, the presence of a structural unit engaged in innovation work in the organizational structure, the presence of a structural unit in the organizational structure that carries out the management of the innovation activities of the enterprise.

Thus, the classification, systematization, clarification and further completion of the factors that directly affect the innovation potential of the enterprise lays the groundwork for the development of a complex system of indicators that allows determining and regulating its level. and at the same time it allows to improve the methods of evaluating the innovation potential of industrial enterprises and the processing industry as a whole.

In the third chapter of the research called “Priority directions of innovative development of the processing industry in the Republic of Azerbaijan”, the ways of increasing the innovative activity of the processing industry in Azerbaijan were determined, the directions for improving the mechanisms of increasing the export opportunities of this field and increasing its competitiveness were developed.

The increase in the economic role of innovation and innovation activity, the change in the pace of development, directions and mechanisms of innovation processes are important factors that determine the development trends of most countries of the world. In modern conditions, an important task of the country's economy is to move to the innovative path of development. In the “Azerbaijan 2020: A vision of the future development concept” approved by the Decree of the President of the Republic of Azerbaijan No. 800 dated December 29, 2012, conditions have been created for the realization of the diversification of the economy and the creative potential of the personality and in the concept “Azerbaijan 2030:

National Priorities for socio-economic development” adopted by the order dated February 2, 2021 the issues of sustainable growing competitive economy, dynamic, inclusive and social justice-based society, competitive human capital and modern innovation space, great return to territories freed from occupation, clean environment and “green growth” country were mentioned.⁹ Achieving the set tasks is determined to a significant extent by the innovation activity of the country's industrial enterprises. Changes in economic conditions have shown that the existing factors determining the management strategy of industrial enterprises are ineffective. As long as the country's industrial enterprises do not build their management strategies on the basis of innovation, they will not be able to overcome their technological backwardness and will not be competitive in the world market.

The innovation activity of the enterprise is determined by many factors. In our opinion, the factors of innovation activity of the enterprise can be divided into two groups. First, external environmental factors such as competition, institutional environment, and government policy, and second, internal environmental factors of the organization. For example, the availability of financial, technological and organizational resources of the enterprise, as well as its size, field affiliation, structure of ownership.

In our opinion, the application of the concept of open innovation in local manufacturing enterprises in modern times is difficult due to a number of problems. One of them is the low level of transparency. In addition, the open innovation model is also associated with the risks of losing control and competitive boundaries.

Comprehensive measures are needed to increase the export potential of the country's economy, including the processing industry, and to use it more effectively.

In order to assess the development process of the processing

⁹ Azərbaycan 2030: sosial-iqtisadi inkişafa dair Milli Prioritetlər. // Azərbaycan Respublikası Prezidentinin 02 fevral 2021-ci il tarixli Sərəncamı. – Bakı: 2021.

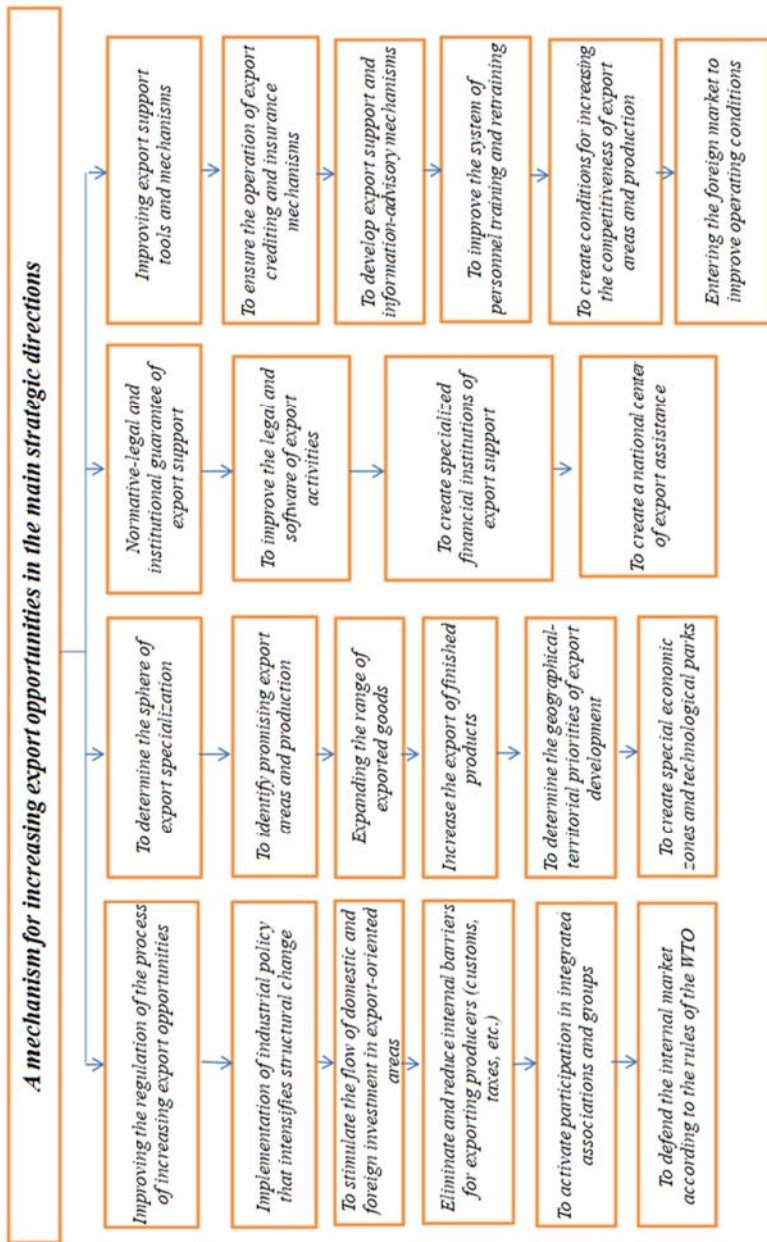
industry, the innovation-based industry as a whole, its efficiency, the possibilities of producing competitive export products that meet international standards, a qualitative and reliable statistical database should be formed and a complex system of indicators should be used. In our opinion, it is appropriate that the minimal set of formed indicators covers 5 sections. These divisions include the power of industrial production (the ability to produce and export manufacturing products), the level of industrialization (technological development and adaptation), the export of industrial products (the place and role in the production of world manufacturing products), the quality of export products and the efficiency of industry.

In general, the directions for increasing the export opportunities of the industry, especially the processing industry, can be given as in scheme No. 1.

One of the important aspects of the analysis of the industrial sector is the assessment of resources and its sources of growth. At this time, special attention is paid to indicators such as technological innovation expenses, investments directed to the main capital, the value of the main production funds, etc., which lead to a change in the structure of the industry, an increase in the volume of production and its export opportunities.

The data of official statistics show that the volume of investment directed to fixed capital, main industrial production funds, expenses directed to technological innovations, which have a positive effect on the dynamics of a number of indicators (fund yield, fund supply, labor productivity, etc.) characterizing the technological level of the industry, including the processing industry, is increasing at a certain pace. (table 3). In comparison with 2010, in 2021 there was a 2.8 times increase in the volume of the product of the processing industry, and in comparison with 2020 there was a 34.1% increase.

An important factor of the successful activity of economic entities in the conditions of the market economy is its competitiveness. A high level of competitiveness of the enterprise is a guarantee of profit. In the current model of socio-economic development of the country, increasing competitiveness occupies one of the main places.



Scheme 3.2.1. A mechanism for increasing the export potential of the country's industry, including the processing industry

Table 3.**Some indicators characterizing the development of Azerbaijan's processing industry in 2010-2021**

Years	Volume of manufacturing industry product, mln. manats	The amount of investment directed to fixed capital in the processing industry, million manats	The number of people employed in the manufacturing industry, thousand people	Expenditures on technological innovations in the processing industry by types of activities and application directions, thousand manats
2010	5735,7	510,2	208,9	8128
2011	6392,4	847,9	203,7	29319
2012	7031,8	861,2	201,5	8083
2013	7243,8	888,9	212,4	4066
2014	8071,6	644,6	217,6	17384
2015	7880,4	482,9	229,8	32493
2016	8899,4	424,3	211,6	27744
2017	9723,5	652,6	249,1	16104
2018	10465,4	756,8	254,8	32968
2019	11793,8	1148,0	262,6	47659
2020	11848,3	1414,2	258,3	34919
2021	15887,0	1193,7	269,1	5319

Competition is an attribute of the market and at the same time a necessary condition for its existence and development. The existence of competition in the market of goods and services in which the enterprise operates requires it to ensure certain competitiveness. Otherwise, there is a danger that it will be squeezed out of that market. In other words, the nature of competition determines the degree of competitiveness.

Competitiveness is a complex system consisting of three parts - the competitiveness of the country, the competitiveness of the field or region, and the competitiveness of the enterprise. All three elements must work harmoniously for the whole system to work well.

In modern times, the country's processing industry enterprises are in difficult competitive conditions in many cases. Although positive results have been achieved on a number of indicators, no serious

structural changes have occurred in this sphere. In terms of solving the problems of innovative development and increasing competitiveness, it is necessary to monitor the processes taking place in the processing industry (table 4).

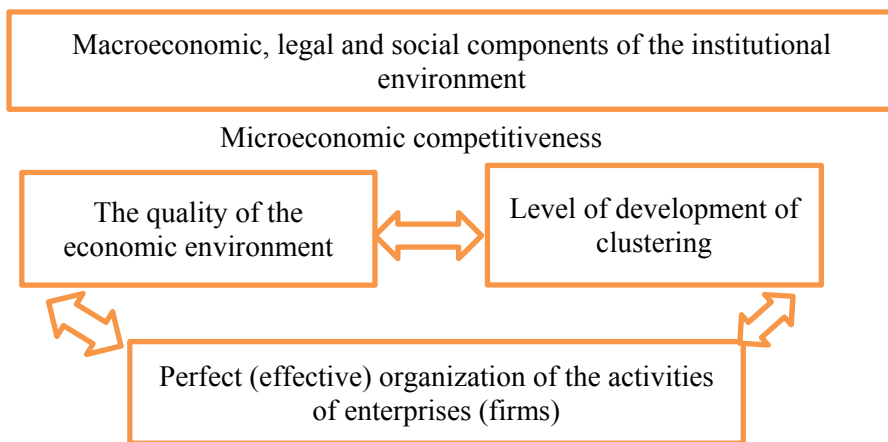
Table 4.

The main indicators characterizing the development and competitiveness of the processing industry in the Republic of Azerbaijan in 2010-2021

	2010	2017	2018	2019	2020	2021
Production index of the manufacturing industry, compared to the previous year, %	109,4	98,0	108,0	111,5	110,6	119,6
The part of the processing industry in the total volume of industrial production,%	20,4	24,4	22,0	25,1	31,6	28,8
The specific weight of the added value of the processing industry in the total added value, %	5,1	5,1	5,0	5,5	6,7	7,5
The volume of added value per person of those engaged in the processing industry, thousand manats	21,2	30,1	14,5	15,6	17,1	23,5
Rate of change of added value per capita of those engaged in the manufacturing industry, %	111,1	101,7	48,2	107,6	109,6	137,4
Specific weight of those employed in the processing industry in the total employed population, %	6,1	5,2	5,2	5,3	5,3	5,4
The rate of change of investment in fixed capital, %	104,3	111,5	116,0	151,7	123,2	84,4
The part of investment in fixed assets in the manufacturing industry in the total volume of investments in fixed assets, %	11,9	6,8	8,9	12,4	15,6	14,9
Specific weight of the intermediate consumption of the processing industry in the total output, %	65,0	66,5	64,7	65,3	62,5	61,1
Volume of added value per manat of intermediate consumption of processing industry, manat	0,54	0,50	0,55	0,53	0,60	0,68

From the data of the table, it can be seen that in 2010-2021, certain changes are observed in the volume of manufacturing industry production and the amount of added value per person of those engaged in the manufacturing industry. Thus, in 2010, compared to 2009, the production of the processing industry increased by 9.4%, while the increase in added value per those engaged in this field was 11.1%. Compared to 2016, in 2017, the production of the processing industry decreased by 2%, while the added value of those engaged in this field, on the contrary, increased by 1.7%. Compared to 2020, the growth of these indicators in 2021 was 19.6% and 37.4%, respectively.

The research shows that there are problems related to the competitiveness of the country's processing industry. Increasing the competitiveness of this sector depends on the correct identification of its self-determining factors. As we mentioned, competitiveness is influenced by many factors. In general, the factors that determine competitiveness can be given as in scheme 2.



Scheme 2. Factors determining competitiveness.

Based on the research materials, we found it necessary to summarize the following **results, new scientific approaches, suggestions and recommendations:**

The examination of the modern state of the country's processing industry and its development characteristics, its role in the formation of an innovation-oriented economy, as well as the factors of increasing the innovation and export opportunities and competitiveness of this sector, made it possible to formulate the following results, proposals and recommendations of theoretical, methodological and practical importance:

1. An important factor of modernizing the national economy, ensuring sustainable economic growth and increasing the country's competitiveness in the world market is the intensification of innovation activity. The main quality factor of production modernization is the innovation process. Despite the application of numerous and various tools and measures aimed at forming the national innovation system, expanding its scope of activity and increasing its efficiency, the results achieved are still not significant and encouraging. Therefore, it is important to strengthen and coordinate innovation activities by the state and processing enterprises in order to achieve high efficiency from the point of view of the national economy as a whole.

2. It is clear from our research that the industrial sector has a very significant impact on all aspects of the social development of each country and the world economy as a whole. Despite the rapid development of the third sector of the economy in modern times, approximately 1/3 of the world's GDP and 1/5 of the economically active population are accounted for by the industry. The manufacturing industry acts as a powerful driver of research and development. The processing industry plays an important role in increasing productivity, competitiveness and innovation activity in the economy, as well as the level of welfare of the population. The efficient structure of processing areas is a permanent object of the state's active industrial policy and acts as a factor of international competitiveness in the global market.

3. In the conditions of global challenges and the development of the world market, one of the main tasks of increasing the competitiveness of the country's economy is the development of import-substituting and export-oriented high-tech industry. The

integration of scientific potential, production and business plays an important role in this. Carrying out research in the priority directions of scientific, technological and educational development of scientific structures, as well as training highly qualified specialists for industry, is one of the important directions of forming an innovative economy.

4. Our research shows that the industrial sector cannot achieve the necessary level of competitiveness without the state's participation in solving important tasks of infrastructure, investment and innovation, and cannot provide a competitive advantage in the domestic and foreign markets. The development of this important sector of the economy requires the development and implementation of an effective industrial policy that ensures the raising of its modern technological, innovation and management level, defines strategic goals and priorities in the industrial sphere, and forms development strategies of industrial areas and means of their implementation.

Effective formation of innovative economy is possible only in the case of full coordination of the state, science and business. That is why it acts as a connecting link between science and production spheres in developed countries. World experience shows that the requirements of the industrial policy (especially the manufacturing industry policy) and its possibilities change from time to time. Adaptation to changing conditions requires adding new ideas and decisions to industrial policy. The formation and implementation of innovative state management and policy play an important role in solving these issues.

5. We believe that the main tasks of the policy leading to increasing the role of the manufacturing industry in the formation of an innovation-oriented economy can be attributed to:

- to form a modern technological structure of the processing industry based on the active use of advanced industrial technologies and innovation potential that form the market of new innovative products;

- to assist in placing the national processing industrial capital in the high-tech and competitive segments of the market, increasing their efficiency;

- to strengthen the innovation orientation of investment activity;

- to stimulate the production and export of high value-added products in the leading areas of the processing industry;
- to ensure the optimal development of the sectoral and institutional structure of the processing industry;
- to ensure the cooperation of small, medium and large businesses and to support high-tech areas that are on the initiative of increasing their productivity, etc.

6. Against the background of global processes, it is important to continuously implement reforms in order to increase the competitiveness of the country's economy and reduce its dependence on imports, to ensure the fundamental development of the export-oriented non-oil economy, and for this purpose, numerous socio-economic decisions were made in the years of independence in Azerbaijan, laws, concepts, strategies, State Programs were prepared, they were successfully implemented. Macroeconomic stability has been achieved, state support for the development of non-oil sectors, especially for the development of entrepreneurship has been strengthened, a favorable business and investment environment has been formed, and the social welfare of the population has continuously improved. Therefore, in accordance with the defined strategic goals, it is extremely necessary to develop all areas of the economy, especially the industry and its innovation-creative area, the processing industry, which can positively affect the country's export parameters, in the direction of modernization, diversification, and renewal of the technical and technological level of production.

7. According to our opinion, the diversity of the socio-economic status of economic subjects in the country leads to significant differences in their innovative development, which requires consideration in the development and implementation of measures aimed at improving innovation, industrial policy. All this makes it necessary to improve the methodology of analyzing innovative development and monitoring its results at the level of the country and economic subjects. The solution of these problems allows to choose the priorities of innovative development and the mechanisms of its implementation, and enables the formation of an excellent and economically justified innovation policy at different levels.

8. It is important to classify the factors affecting the innovation potential according to various signs, especially the sources of origin, composition, degree of spread, degree of influence on the result, relation to the production system, formation possibilities, duration of influence, nature of influence on the innovation potential, degree of controllability, etc. Such a classification of the factors affecting the innovation potential of the enterprise allows for the development of a complex system of indicators that allows determining and regulating its level, and at the same time for improving the methods of evaluating the innovation potential of industrial enterprises and the processing industry as a whole.

9. In modern conditions, there are a number of problems that prevent the efficient use and efficient development of the country's industry, including the processing industry. They can be attributed to the high level of obsolescence of the fixed assets of manufacturing enterprises, the low competitiveness of many local industrial products, the lack of encouraging financial conditions and innovation activity of most enterprises, etc.

10. In our opinion, in order to achieve structural change in the industry, to increase the technological level of the processing industry and export opportunities, it is appropriate to improve the tax legislation that allows to reduce the tax burden of the processing industry enterprises, to change the direction of movement of capital between industrial sectors, to implement continuous measures aimed at increasing the attractiveness of the processing industry for both local and foreign investors, to implement an industrial policy that allows eliminating the dependence of the technological base of the processing industry on imported machines and equipment, vehicles, to expand cooperative relations, to stimulate the innovative development of the processing industry, etc.

11. An important factor of the successful activity of economic entities in the conditions of the market economy is its competitiveness. A high level of competitiveness of the enterprise is a guarantee of profit. In our opinion, it is necessary to implement the following systematic measures in order to increase the operational efficiency and competitiveness of the country's processing industry

and local producers:

- to strengthen the macro-economic, legal and social components of the country's institutional environment, improve the business environment, move to a cluster type of development and intensify economic development in the regions;

- to ensure the financial stability of processing industry enterprises, to activate internal resources of increasing efficiency and to reduce the cost of manufactured products;

- to improve management efficiency and develop motivational mechanisms for increasing productivity;

- to change and modernize the structure of the industry, to improve the state property management system, to implement a complex investment program aimed at increasing the production, innovation and export capabilities of the processing industry and increasing its competitiveness.

12. In our opinion, the proposals and recommendations put forward in the research work can be useful during the reintegration of the territories freed from occupation, including the formation and development of the processing industry, in accordance with the goals of the 1st State Program on the Great Return.

The main provisions of the research, the obtained results and proposals are reflected in the following published works of the author:

1. Sustainable economic growth and innovation. News of the National Academy of Sciences of the Republic of Azerbaijan. Economics series. Baku, 2017, № 2, p. 45-51.
2. Analysis of the modern state of the industry of the Republic of Azerbaijan. Labor and Social Problems, a collection of scientific works. Baku, 2017. № 2 (20), p. 123-131.
3. Evaluation of the innovation potential of industrial enterprises. News of the National Academy of Sciences of the Republic of Azerbaijan. Economics series. Baku, 2017, № 3, p. 87-93.

4. Some issues of the development of innovative economy in the conditions of global competition. "Cooperation" scientific and practical journal, Baku, 2017. № 3 (46), p. 25-30.
5. Structure of global industry: trend and development strategy. Economics and entrepreneurship. Moscow, 2017. № 7 (84), p. 184-187.
6. Some issues of statistical evaluation of innovation activity. International scientific-practical conference on "Strategic Roadmap of Azerbaijan's economy: accountability and transparency problems". Baku, September 21, 2017, p. 225-227.
7. Directions for increasing the competitiveness of Azerbaijan's processing industry. Materials of the international scientific-practical conference on "Strategic economic reforms: Preventive tax policy". Baku, October 12, 2017, p. 271-272.
8. Directions for increasing export opportunities of processing industry in Azerbaijan. "Cooperation" scientific-practical magazine, Baku, 2018, № 1 (48), p. 58-64.
9. Innovative potential of the manufacturing industry and factors of its development. LXIV International Scientific and Practical Conference "Innovative approaches in modern science". Moscow, 2020, № 4 (64), p. 49-54.
10. Creation of innovation clusters in the conditions of the development of the processing industry. Scientific-practical magazine "Cooperation". Baku, 2023, № 2 (69), p. 47-53.
11. The role of Heydar Aliyev in the development of processing industry in Azerbaijan. International scientific-practical conference on "Heydar Aliyev and the modern Turkish world" dedicated to the 100th anniversary of the birth of national leader Heydar Aliyev. Baku, 2023, p. 479-483.



The defense of the research will be held on 20 December, 2023 at 14:00 at the meeting of the Joint Dissertation Board ED 2.46, operating under Azerbaijan Cooperation University and Baku Business University in accordance with the order of the Higher Attestation Commission under the President of the Republic of Azerbaijan

Address: AZ1106, Republic of Azerbaijan, Baku city, Najaf Narimanov street, 93.

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