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ABSTRACT

of the dissertation submitted for receiving
the Doctor of Philosophy degree

FORMATION OF MECHANISMS OF INNOVATION ENTREPRENEURSHIP IN THE MODERNIZATION OF THE ECONOMY

Speciality: 5307.01 - Economic theory

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GENERAL DESCRIPTION OF WORK

Urgency of the research topic and the degree of development. It is impossible to talk about the current level of development of our society without considering innovative activity as a priority goal. Although the relationship between economic growth, progress, development and innovation is a new approach, innovation has existed since the beginning of humanity. Over time, we are faced with the results of innovations implemented throughout the history of mankind everywhere. Such qualities as thinking differently, trying to do everything better and improving oneself are normal features of a human being with intelligence and creativity. For many years, innovation was used in a simple, primitive form, influenced only by the skills and abilities of each person, but now innovation is understood in a broader sense, where there is an opportunity to educate (taught as a science), teach and develop innate innovative talent. Now our development seriously depends on the ability to promote and implement innovation in all areas of society, which in turn necessitates the study of the problems and prospects of innovative entrepreneurship for the sake of economic development and the well-being of society.

Globalization is leading to economic, technological, sociological and many other changes in the world. Against the background of processes in information technologies, the increased level of productivity and well-being is of particular relevance not only in developed countries, but also in developing countries, including in the context of the modernization of the Azerbaijani economy. It is generally accepted that growth in modern economies is based on efforts to increase productivity through innovation. Innovation is an essential condition for technological and structural changes that contribute to economic growth and competitiveness. International trade and investment play a much more important role in the economic policies of countries than they did 25-30 years ago. Therefore, the importance of innovative entrepreneurship in the context of the modernization of the economy has increased.

Many important factors specific to countries aiming to modernize their economies are of exceptional importance for the realization of their goals. The factors influencing the modernization process include the readiness of society for modernization, the quality of education, the

formation of civil society principles, and political reforms. At the same time, the modernization option without taking into account the traditional economic structure of society and the sustainability of its principles often becomes a problem in the modern economy and further complicates the process. Modernization, as a process, should ensure the increase in the competitiveness of the economy by making changes in the macroeconomic dynamics of the existing economic system.

Another factor that determines the relevance of the topic is that the development of entrepreneurial activity is very important for economic development. The development of industry, regional development and employment growth depend on the development of entrepreneurship. Innovation-oriented entrepreneurial activity is more desirable in our modern era, when competition is rapidly increasing. Thus, the evaluation of existing regimes of business operations as a result of the search for new ideas and the implementation of more effective and efficient systems are important factors for the modernization of the economy. In the current situation, in the business environment, in the surrounding market entities, in difficult competition and serious changes, the only condition for enterprises to continue their activities is the implementation and development of innovative activity.

The level of study of the problem. Both foreign and domestic economists have conducted research on the topic. Foreign researchers C. Schumpeter, P. Druker, I. Kirzner, R. Nelson, B. Lundvall, C. Edquist, B. Johnson, P. Vindrum, P. Koch and others have devoted most of their research to theoretical issues of innovation, entrepreneurship and the development of the investment environment, and at the same time have conducted research to determine ways to attract financial resources to the economy.

This problem has been investigated by Azerbaijani researchers such as R.I.Guliyev, A.J.Muradov, A.P.Babayev, H.A.Khalilov, U.G.Aliyev, H.B.Rustambayov, G.N.Manafov, A.G.Alirzayev, K.A.Shahbazov, A.Sh.Shakeraliyev, S.A.Abdurrahmanova, S.T.Abasova, R.T.Hasanov, V.A.Gasimli, R.Z.Huseyn, I.Z.Seyfullayev and others.

Objectives and tasks of dissertation work. The purpose of the research is to study the theoretical and practical problems of the importance of the formation and development of innovative

entrepreneurship in ensuring the high competitiveness of the country's economy. To achieve this goal, the following issues have been resolved:

- investigation of factors affecting the formation of innovation entrepreneurship;
- innovative provision of entrepreneurial activity and research of features of using innovative tools;
- conducting a comparative analysis of indicators characterizing innovation entrepreneurship at the macroeconomic level;
- showing criteria for evaluating the efficiency of innovation entrepreneurship;
- innovative in the formation of a competitive economy research of the mechanism of influence of entrepreneurship;
- research of investment-innovation portfolio management features;
- investigation of the improvement of the organizational and economic mechanism of innovation entrepreneurship;

Object and subject of research. The object of the research is an innovative entrepreneurship system that implements innovation-oriented investment projects. The subject of the research is innovation projects in innovative entrepreneurship, theoretical and practical issues of increasing economic efficiency and productivity.

Basic provisions put on defense.

1. 1. Scientific generalizations are made on the essence, place and role of innovative entrepreneurship, as well as on the conceptual approaches to the mechanisms of its formation. The concepts of innovation and entrepreneurship are undoubtedly related to each other. Innovation is a special tool of entrepreneurs, through which they use changes as an opportunity for a different business activity or service. Entrepreneurs should purposefully search for sources of innovation, changes and their signs that create opportunities for successful innovation, and should know and apply the principles of successful innovation.

2. The main factors determining the formation and development dynamics of innovative activity are substantiated. The development dynamics of innovative activity is mainly related to socio-economic transformation. In modern times, this is associated with the formation of entrepreneurial culture. Political, legal, economic, technological, socio-psychological and cultural factors play a significant role in the

development of innovative entrepreneurial activity.

3. The role of innovative entrepreneurship as a factor in ensuring economic growth and competitiveness and the main criteria for conducting assessments in these areas are explained. In the modern era, innovative activity is at the center of theories of economic growth and development. Many methods are considered for calculating the effectiveness and impact of the introduction of innovations. At the same time, the effect is divided into many types: budgetary, social, environmental, economic, scientific and technical, commercial, etc.

4. Assessments were carried out on the basis of comparative analyses of the priority directions of state policy and relevant strategies for stimulating innovative entrepreneurship in the conditions of economic modernization in Azerbaijan. The main mechanisms ensuring the implementation of our country's innovation policy are high-tech and knowledge-based industry, financial and credit mechanisms, mechanisms provided for by legislation and regulatory legal acts, institutional changes, education, export and customs regulation.

5. The directions of effective management of the investment-innovation portfolio by entrepreneurial entities are indicated. The investment-innovation portfolio is a risk and time management tool. Investment in a continuous creative and scientific process is considered essential for the formation and development of new products, services, technological and production processes.

6. Proposals have been made to improve the mechanisms of innovative entrepreneurship in Azerbaijan, taking into account the requirements of accelerating modernization and sustainable development principles. Mechanisms should be determined to improve the innovation ecosystem, create legal regulations to stimulate venture investments, and organize financial inclusion of startups.

Scientific novelty of the research. The scientific novelty of the dissertation study is confirmed by the following provisions:

1.Aspects of special relevance in stimulating innovative entrepreneurial activity, which are an important driver of the progressive development of the economy and society, have been systematized. For this, the formation of entrepreneurial culture, ensuring the development of individual and institutional factors should be considered a priority goal.

2.It is scientifically justified that increasing competitiveness in less developed countries is possible by adopting existing technologies in the first stage, but in countries that have reached the innovation stage of development, this is no longer enough to increase productivity. Competitiveness ensures growth, or at least maintaining that level, through concepts such as uniqueness, difference, quality, and value rather than productivity.

3.Modern development features of innovative entrepreneurial activity in Azerbaijan have been studied. Professional personnel training, solving institutional problems, infrastructure, and improving the legal framework are important in ensuring the efficiency of innovative activities due to imported innovation.

4.In the research work, it was justified that the energy dependence of countries in the modern era will become an innovation-based technological dependence in the future. Reducing this dependence depends on innovative entrepreneurial activity. In such conditions, increasing research and development costs, implementing innovative projects based on science and technology are considered the main goals.

5.It is justified that the realization of investments in effective innovative projects is important in innovative entrepreneurship. Factors of importance include:

- expands the production base, increases the production capacity;
- modernizes production processes, increases cost efficiency;
- allows the production of new and improved products, an increase in added value in production;
- reduces labor demand per product unit, potentially providing higher productivity and lower employment;
- covers international level innovation and quality standards, bridges the gap with developed countries and enables active participation in export-oriented international trade.

Theoretical and methodological foundations of research. The theoretical basis of the research is the provisions of classical and neoclassical economic theory, the researches of representatives of different economic schools. Comparison and material modeling, analysis of theoretical research methods, synthesis, induction and deduction were used as the methodological basis of the research work.

Research database. The information base of the research is the works of foreign and local economists, “Azerbaijan 2020: vision of the future” Development Concept, Strategic Roadmap for the perspective of the national economy of the Republic of Azerbaijan and “Azerbaijan 2030: National Priorities for socio-economic development”’s main provisions related to innovations, international organizations and the State Statistics Committee of the Republic of Azerbaijan. materials.

Theoretical and practical importance of dissertation work. The theoretical provisions of the research can be used as a scientific source in educational institutions where teaching is carried out in the fields of the national economy, improvement courses, as well as in conducting research in the field, and the practical results can be used by innovative business entities in the direction of management of innovation projects and development of innovation entrepreneurship in the Republic of Azerbaijan.

Approval of research results. The main provisions of the dissertation work are reflected in the theses published in the international and republican level conference materials. Among them “Macroeconomic impact of stimulation of innovative entrepreneurship” (Baku, December 2019), “ The main directions of ensuring innovation-based economic development in Azerbaijan at the post-oil stage” (Almaty, 21-22 July 2020), “ Innovation policy in small and medium enterprises” (Baku, 2021) and “ Mechanisms of influence of innovation-based activity of small and medium entrepreneurship in the formation of a competitive economy” (Samsun, May 22-23, May 22, 2021) can be shown.

Application of research results. Based on the main provisions of the dissertation and the proposed proposals and recommendations, the total volume is 15.88 sq.m. 12 articles (including 5 articles abroad) have been published.

The name of the organization where the dissertation work is performed. The dissertation work was carried out at the “Economic Theory” Department of the Azerbaijan State University of Economics, under the scientific guidance of prof. A.P. Babayev.

The structure and scope of the dissertation work. The dissertation consists of an introduction (20586 characters), 3 chapters

(Chapter I - 111366 characters, Chapter II - 82033 characters), Chapter III - 7351 characters), conclusion (7349), a list of literature and abbreviations used in 183 titles. The dissertation, excluding tables, graphs, literature list, etc., is 280 thousand characters long.

STRUCTURE OF THE DISSERTATION WORK

Introduction

Chapter I. Scientific-theoretical foundations of the innovative entrepreneurship system

- 1.1. Conceptual approaches to the study of innovative entrepreneurship activity
- 1.2. Functions of the innovative entrepreneurship system in the context of economic modernization
- 1.3. Development factors of the mechanisms of innovative entrepreneurship formation

Chapter II. Assessment of the place and role of innovative entrepreneurship mechanisms in economic development (international comparison)

- 2.1. Analysis of the impact of innovative entrepreneurship on economic growth
- 2.2. Assessment of the effectiveness of innovative entrepreneurship
- 2.3. The role and opportunities of innovative entrepreneurship in a competitive economy

Chapter III. Directions for the formation of innovative entrepreneurship and improvement of development mechanisms

- 3.1. Improvement of the organizational and economic mechanism of innovative entrepreneurship
- 3.2. Directions of state regulation of innovative entrepreneurship
- 3.3. Ways of effective management of the investment-innovation portfolio

Conclusion

List of used literature

THE MAIN CONTENT OF THE STUDY

1. Disclosure of the conceptual foundations and functional characteristics of innovative entrepreneurship. The systematic study of innovation began after the Austrian economist Joseph Schumpeter developed an original approach aimed at the impact of innovation on economic development. In his opinion, innovation is a driving force that creates qualitative changes in all areas of society, based on existing resources, but combined or used in a different way. This “new combination” of resources leads to the emergence of various innovations. Despite being more than 100 years old, Schumpeter's theory remains relevant today, since it shows that innovation is the basis of the future development of entrepreneurial activities. However, Schumpeter's theory has the following limitations:

- excludes individuals who are engaged in business without performing innovation functions;
- an innovative entrepreneur represents the strongest enterprise. However, such entrepreneurship is rare in developing countries;
- great importance is attached to innovation functions. However, this ignores the aspects of entrepreneurship and the risk of its organization;
- perceives the entrepreneur as a large-scale businessman. He is a person who creates something new. But in practice, an entrepreneur cannot conduct large-scale operations from the very beginning;
- He cannot adequately answer the question “Why are there more entrepreneurial talents in some countries than others?”.

The world economy has undergone major changes in recent years. Competition between market entities has increased in several segments. The main reason for the increase in living standards since the industrial revolution is changes based on innovations. Today, innovative activity appears as an important factor determining competitiveness and national development. At the same time, innovation is considered essential in solving global problems such as climate change and sustainable development.

Today, innovation is not just “creating something new”, but also a means to solve a number of existing problems.

The concepts of innovation and entrepreneurship are undoubtedly

related to each other. Innovation is a special tool of entrepreneurs, through which they use changes as an opportunity for a different business activity or service. It is something that can be learned, presented or applied as a rule. Entrepreneurs should purposefully search for sources of innovation, changes and their characteristics that create opportunities for successful innovation and should know and apply the principles of successful innovation.

Entrepreneurship is an economic activity, because it involves the creation and operation of an enterprise with the aim of creating value or wealth by ensuring the optimal use of sufficient resources. Since this value creation activity is carried out continuously, in the midst of an uncertain business environment, entrepreneurship is considered a dynamic force. Entrepreneurs are constantly searching for new ideas. Entrepreneurship requires a constant evaluation of existing operating modes in order to develop and adopt more effective systems. In other words, entrepreneurship reveals a continuous effort to strengthen mutual relations (optimization of performance) in organizations.

Any innovative activity is entrepreneurship, because the search for the necessary resources, the creation and management of the enterprise, the receipt of monetary income from the results achieved and personal satisfaction constitute entrepreneurial activity as a whole. However, not all entrepreneurship is innovative activity. Only the activity that allows generating entrepreneurial income as a result of the creation, use and distribution of an innovative product is innovative entrepreneurship. Innovative entrepreneurship subjects include enterprises and organizations that carry out innovation activities. Innovative entrepreneurship involves the search for new ways for the development of the enterprise and allows us to talk about the concept of management. Innovative entrepreneurship is based entirely on innovation, and the result of its activities is a new product or a new product with fundamentally new properties or new technologies.

2. The formation of innovative entrepreneurship and the justification of the factors determining the dynamics of the development of innovative activity. The dynamics of the development of innovative activity is mainly related to socio-economic transformation. In modern times, this is associated with the formation of an entrepreneurial culture. The main goal of innovative activity is to increase the efficiency of

the product, create a competitive product that can generate additional profit. Any innovative activity is entrepreneurship, since it is independent, it is associated with the entrepreneur's acceptance of all risks for the implementation of a new project and responsibility.

It is possible to note four factors that contribute to the development of innovative entrepreneurial activity:

- economic, technological: Availability of financial, material and technical resources, advanced technologies, economic and scientific and technical infrastructure, state programs for financing innovative activity, material incentives for innovation;
- political, legal: Legislative measures and state support for innovative activity that promote innovative activity;
- organizational-management: Flexibility of organizational structures, democratic management style, advantages of horizontal information flows, self-planning, acceptance of corrections, decentralization, autonomy, goal setting, problem groups;
- socio-psychological and cultural: Moral motivation, provision of opportunities for public recognition, liberation of creative labor. Formation of a labor collective with a normal psychological environment.

In areas where these factors exist, a strong and consistent increase in entrepreneurship can be observed.

The economic environment has a direct and immediate impact on innovative entrepreneurship. Of the four factors mentioned above, the economic factors that have the most significant impact are the following:

1. Capital: Capital is one of the most important factors of production for the creation of an enterprise. Increasing capital investments in effective projects leads to an increase in income, which helps to accelerate the process of capital formation.

2. Labor: The country's human capital potential will lead to economic growth through its significant role in the development of new forms of technology and efficient and effective means of production. At the same time, investment in human capital as an important component of growth appears as one of the main claims of the endogenous growth theory. In this regard, the presence of professional and qualified workers is a factor affecting innovative entrepreneurship. It affects the emergence

and growth of innovative entrepreneurship not by the quantity of labor, but by its quality.

3. Raw materials: Raw materials are one of the main components required for production. The lack of raw materials negatively affects the entrepreneurial environment. Without a sufficient supply of raw materials, no industry will function properly. In the absence of raw materials, no enterprise can operate and become an entrepreneur.

4. Market: The size and composition of the market have their own impact on innovative entrepreneurship. In practice, a monopoly on a certain product in the market for entrepreneurship is more effective than a competitive market. However, the lack of a competitive market is to some extent eliminated by the improvement of the transport system that facilitates the movement of raw materials and finished products and the increase in demand for producer goods.

5. Infrastructure: If we pay attention to the economies of developed countries, it is possible to see that improving infrastructure activities is of great importance in expanding innovative entrepreneurship. This not only helps expand the market, but also broadens the horizons of the business.

3. Assessment of the role of innovative entrepreneurship in ensuring economic growth and competitiveness in the context of modernization. In the modern era, innovative activity is at the center of economic growth and development theories. Along with traditional factors such as costs, technological products and processes, innovations form the basis of competitiveness and business success. Innovation is also closely related to changes in the structure of the economy, technological modernization in production and the transition to higher value-added activities in global value chains. Based on statistical information prepared by the Global Entrepreneurship Monitor (GEM) in 2017, it can be said that the most important factor affecting job creation in the next 5 years will be the innovation factor. When analyzing the impact of innovation 5 years later against the background of the global pandemic that occurred in 2020, it can be noted that innovative entrepreneurial entities are less affected than classical entrepreneurial entities. The difference in the growth rate of each economy is mainly due to the presence of innovative entrepreneurs. Therefore, an innovative market entity is an important means of growth, innovation and technical development.

Economic growth is mainly measured by taking into account changes in the total value of goods and services produced in the country.

Several basic and important conditions (legal and regulatory framework, financial inclusion, quality of education, etc.) allow for the promotion of innovation and economic growth:

- strong standards and effective enforcement of copyright protection;
- strong competition and competitive markets;
- strong and sustainable fundamental Research and Development (R&D) infrastructure;
- development of information and technology communication;
- strong attention to education at all levels.

According to different assessments of innovative activity, while the specific weight of innovative products in GDP is up to 5% in developing countries, in developed countries this indicator is close to 40-60%. In Azerbaijan, up to 3.8% of GDP is spent on scientific activity in all sectors of the economy. The share of high-tech products in the total volume of world exports is up to 3%. In world practice, the main role in the development of innovative activity is played by “in-house” science integrated into the real sector of the economy. In industrially developed countries, the main volume of scientific research and development, for example, 65% in the European Union, 71% in Japan, 75% in the ABS, is carried out by companies, while in Azerbaijan this figure does not exceed 5%.

Thanks to the introduction of innovation, an increase in the volume of production and sales of products, a reduction in costs, an increase in labor productivity and quality, as a result of which profit and profitability are ensured, and other economic, social and technical indicators of production are improved. Any innovation should be aimed at improving the economic and technical indicators of economic entities. In economic practice, this depends on the level of general economic indicators, the complex of resources in which scientific and technical development plays an important role.

Innovation and entrepreneurship are considered the main blocks of competitive and dynamic economies. Countries and regions with innovation and entrepreneurship ecosystems witness higher productivity rates, which leads to economic growth and the creation of more jobs. As a key driver of dynamic development, innovation boosts prosperity by

stimulating formal employment and wage growth. It should be noted that according to the 2023 Global Innovation Index, Azerbaijan ranks 89th out of 132 countries in the overall ranking and 28th out of 33 countries in the same income group (Table 1).

Table 1. Global Innovation Index for 2023¹

GII rank	Economy	Score	Upper-middle income countries
12	China	55.3	1
36	Malaysia	40.9	2
38	Bulgaria	39.0	3
39	Turkey	38.6	4
43	Thailand	37.1	5
49	Brazil	33.6	6
51	Russian Federation	33.3	7
53	Serbia	33.1	8
54	North Macedonia	33.0	9
57	Mauritius	32.1	10
58	Mexico	31.0	11
59	South Africa	30.4	12
60	Republic of Moldova	30.3	13
65	Georgia	29.9	14
66	Colombia	29.4	15
71	Jordan	28.2	16
72	Armenia	28.0	17
73	Argentina	28.0	18
74	Costa Rica	27.9	19
75	Montenegro	27.8	20
76	Peru	27.7	21
77	Bosnia and Herzegovina	27.1	22
78	Jamaica	27.1	23
80	Belarus	26.8	24
81	Kazakhstan	26.7	25
83	Albania	25.4	26
85	Botswana	24.6	27
89	Azerbaijan	23.3	28
94	Dominican Republic	22.4	29
96	Namibia	21.8	30
98	Paraguay	21.4	31
104	Ecuador	20.5	32

¹ Global Innovation Index 2023: [Electronic resource]. URL: <https://bit.ly/38Jtr2b>.

122	Guatemala	15.8	33
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The successful economic policy pursued in our country is reflected in the field of innovation. The main goals related to innovations are reflected in the Development Concept and Strategic Roadmap “Azerbaijan 2020: A Look into the Future” approved by the President of the Republic of Azerbaijan Ilham Aliyev. Several important steps have already been taken in the country's economic policy to implement an innovative development model, including the improvement of the legislative framework and the creation of industrial and technological parks. High technologies, information and communication technologies play an important role in innovative activity. ICT creates broad opportunities for the application of innovations in education, healthcare, agriculture, production, service, social and other areas. In order to ensure the expansion of innovation and high technology areas based on modern scientific and technological achievements, a “High Technologies Park” was established under the Ministry of Transport, Communications and High Technologies and a “High Technologies Park” in the city of Mingachevir. Tax and customs privileges are applied in these parks. In order to stimulate innovative entrepreneurial activity, a Business Incubation Center was established in the “High Technologies Park”, where more than 30 startup projects are being implemented.

The Azerbaijani economy is in greater need of innovations against the backdrop of declining oil revenues. Empirical studies have proven that the economic growth of countries rich in oil and gas resources lags behind other countries and that they need innovation more for sustainable economic growth (in the period 1960-2006, oil countries had an average annual economic growth of 1.67%, and non-oil countries, respectively, 1.76%). Therefore, the main goal of Azerbaijan’s economic development strategy is to achieve sustainable economic growth through the development of the non-oil sector and diversify the economy. The emergence and development of motivation mechanisms for expanding the sphere of innovative activity is considered one of the priority goals of state policy.

4. Improvements in resource provision for the development of innovative entrepreneurship and opportunities for the formation of new strategies. In order to stand out in the market, it is important to

implement more innovative projects. The innovation portfolio allows the business to introduce new services and products. The innovation portfolio is also a time management tool. It helps to assess the time required to implement a new initiative, as well as to transfer a completed product to the market and even to production. It should be noted that the innovation portfolio does not consist only of a list of projects and initiatives. The innovation portfolio is considered important for comparing these initiatives with others in terms of risk factors, strategic fit, resource requirements, potential return.

The intensity of the development of the Azerbaijani economy directly depends on the speed and quality of modernization of the country's industry. The introduction of innovative activity allows business systems to compete effectively in the market, attract new customers and increase financial indicators.

Market entities invest in innovations to increase market share, reduce costs and generally become more productive. For many enterprises, innovative activity is more important, since consumer demand is more complex and competition is difficult.

On average, firms spend 1-2% of their revenue on various innovation-related activities, but in some countries this share exceeds 5% for large companies¹.

Expenditures on technological innovations in Azerbaijan are shown in Tables 2 and 3, respectively.

¹ Investing in innovation – Firms investing in innovation: [Electronic resource]. – 2010. URL: <https://bit.ly/2CrOfPN>.

Table 2. Expenditures on technological innovations by type of activity in Azerbaijan (in thousand manats)¹

Indicators	2015	2016	2017	2018	2019	2020	2021	2022
All industry	35179.1	27929	16135.7	34353.6	48037.1	35919.8	5848.3	22540.4
from it at the expense of the enterprises' own funds	34779.2	14286.5	16076	34278	47319.7	17631.9	4807.1	184.8
Mining industry	2671.5	179.6	31.7	1386	378.6	1001.1	529.8	19.3
from it at the expense of the enterprises' own funds	2671.5	179.6	31.7	1386	320.2	626.2	10.5	13.6
Processing industry	32492.5	27744.4	16104	32967.6	47658.5	34918.7	5318.5	22521.1
from it at the expense of the enterprises' own funds	32092.6	14101.9	16044.3	32892	46999.5	17005.7	4796.6	171.2
Production, distribution and supply of electricity, gas and steam	15.1	5	-	-	-	-	-	-
from it at the expense of the enterprises' own funds	15.1	5	-	-	-	-	-	-

Table 3. Expenditures on technological innovations in industry by type of innovation (thousand manats)²

Indicators	2015	2016	2017	2018	2019	2020	2021	2022
All industry	35179.1	27929	16135.7	34353.6	48037.1	35919.8	5848.3	22540.4
product innovations	13685.2	20313.8	10439.6	23298.7	38343.5	20059.2	1986.3	18154.3
process innovations	21493.9	7615.2	5696.1	11054.9	9693.6	15860.6	3862	4386.1
Mining industry	2671.5	179.6	31.7	1386	378.6	1001.1	529.8	19.3
product innovations	2528	10	1	679.3	290	638.2	117.4	19.3
process innovations	143.5	169.6	30.7	706.7	88.6	362.9	412.4	-
Processing industry	32492.5	27744.4	16104	32967.6	47658.5	34918.7	5318.5	22521.1
product innovations	11157.2	20303.8	10438.6	22619.4	38053.5	19421	1868.9	18135
process innovations	21335.3	7440.6	5665.4	10348.2	9605	15497.7	3449.6	4386.1
Production, distribution and supply of electricity, gas and steam	15.1	5	-	-	-	-	-	-
product innovations	-	-	-	-	-	-	-	-
process innovations	15.1	5	-	-	-	-	-	-
Water supply, waste treatment and processing	-	-	-	-	-	-	-	-
product innovations	-	-	-	-	-	-	-	-

Since 2015, certain decreases have been observed in the expenditures on technological innovations in Azerbaijani industrial

¹ Azərbaycanın sənayesi: [Elektron resurs] / Statistik məcmuə. – Bakı, – 2020. – 166 p. URL: <https://bit.ly/3s4YpeE>.

² Yəni orada

enterprises. However, in recent years, there have been positive changes in innovation activity. Thus, as a result of the analysis, the share of expenditures on technological innovations in investment expenditures has increased compared to previous years. Between 2015 and 2022, a decrease in investment expenditures on fixed capital and innovation expenditures is observed. (Table 4).

Based on these indicators, it can be noted that there is a positive trend in spending on innovation. However, the spending on modernization of production is not enough for market entities to be competitive in the international market. We believe that the main reasons for this are the lack of financial inclusion and high economic risks.

Table 4. Technological innovations in Azerbaijani industry¹

Years	Investments in fixed capital in industry (in actual prices), million manat	Expenditures on technological innovations, thousand manat	Share of expenditures on technological innovations in investment, %
2015	8499.9	35179.1	0.4
2016	9949.8	27929	0.3
2017	10610.1	16135.7	0.2
2018	8497.2	34353.6	0.4
2019	9258	48037.1	0.5
2020	9065.3	35919.8	0.4
2021	7507.3	5848.3	0.1
2022	7172.1	22540.4	0.3

Research shows that there is a strong correlation between innovation and investment, profitability and growth. Investing in innovation, including R&D, leads to long-term commercial benefits (productivity, competitiveness and ultimately increased sales).

Thus, without resource support for innovation (in scientific, organizational, environmental, social and other areas), it is impossible to create and implement innovations. Only an innovation-oriented approach allows for a material impact and the desired results in these areas. The innovation-investment process begins with the formation of an

¹ Azərbaycanın sənayesi: [Elektron resurs] / Statistik məcmuə. – Bakı, – 2020. – 166 p. URL: <https://bit.ly/3s4YpeE>.

innovation-investment strategy. The formation of an innovation-investment integration strategy for the development of industry in a globalized environment depends on the following: political, legal, financial, economic and infrastructure conditions. The lack of a well-thought-out strategy adapted to the changing internal and external environment is a significant drawback reflecting the weakness of the overall development strategy, which complicates the application of modern technologies and the production of innovative products. The innovation-investment integration strategy is a strategic document for the priority development of the industrial sector of the national economy. It is a source of strategic information and management methods for the sustainable position of the national industrial sector in the future.

5. Directions for stimulating the development of entrepreneurship through an effective innovation policy. Progressive institutional and structural changes in the economy require intensive updating and provision of programs, plans and projects for managing the innovative development of economic entities, the implementation of positive changes, a significant improvement of the regulatory environment, the creation of appropriate conditions for the modernization of industry and enterprises. Ensuring the innovative development of economic entities is impossible without changing and improving the theory and practice of developing management systems for these processes.

In modern conditions, the most important issue for ensuring the development of economic entities on an innovative basis is the intensification of innovation processes in all areas of activity and the direction of the efforts of all elements of the organizational structure to the implementation of the tasks set. The effectiveness of the innovative development of economic entities is determined by the ability of the management system to influence all business processes of the enterprise and to coordinate its internal capabilities with environmental problems in order to ensure its competitiveness and strengthen its market positions.

Innovative entrepreneurship encompasses all functions, activities, and events related to the recognition of opportunities and the creation of organizations to implement them. Some researchers have tried to present the discovery and use of opportunities as the main fundamental principle of entrepreneurship.

In all studies written about entrepreneurship, three main factors of capital have been noted as the main elements of the entrepreneurial process: human, financial, and social. Innovative entrepreneurship is formed from human capital, skills, experience, and education; financial capital consists of debt or own internal funds, and social ties are considered resources that are potentially useful in creating a business.

Promotion policy is the most basic and important policy and plays an important role in the formation of an entrepreneurial culture. Innovative entrepreneurship is the transformation of ideas into commercial behavior, as it stimulates ideas and innovative ideas aimed at entrepreneurial activity.

Entrepreneurship is supported primarily because it contributes to the creation and growth of jobs. Today, the number of new jobs created by new and small enterprises has increased compared to large market entities, and this trend is becoming stronger. Countries that have shown a greater increase in entrepreneurial activity have seen a greater decrease in unemployment rates. In the 1990s, rapidly growing companies began to make significant contributions to employment creation. Although GDP growth is affected by many other factors, research proves that innovative entrepreneurship has a positive impact on economic growth. Entrepreneurship contributes significantly to strengthening social and economic unity, revitalizing economic activities, creating jobs, and integrating people with physical disabilities into working life.

Secondly, promoting entrepreneurship is an important factor in ensuring a competitive environment. New initiatives to create a new enterprise and redirect existing market entities increase productivity. Increased efficiency and innovative activities of market entities serve to increase the competitiveness of the economy as a whole.

The main reasons underlying the innovative activity of innovative entrepreneurs are to anticipate market and consumer needs and meet these needs with new products, services and high quality. When meeting these requirements, it is important to take into account the factors of “consumer”, “competition”, “society” and “organization”.

Innovation is the result of great efforts by market entities to increase the efficiency of their activities and ensure their sustainable profitability. In this sense, innovations are of great importance in the rapid development

and growth of enterprises, especially small and medium-sized enterprises. Entrepreneurs who best assess and evaluate the current situation can successfully implement the innovation process. The innovation process, as a rule, arises from new business ideas and opportunities, as a result of which it results in commercialization and learning, and re-develops itself. Although this process is different, the concept and practice of innovation in enterprises generally manifest themselves strongly in product and process innovations.

One of the most important factors of a progressive national economy is the development and implementation of an effective innovation policy. The main goal of innovative activity is the application of new, advanced technologies (priority fundamental and applied research) based on the achievements of scientific and technological progress.

Activation of innovation-oriented activity at all levels of the economy should be accompanied by reforms, identification of existing organizational and economic mechanisms and their formation on the basis of increasing the efficiency of innovative development and related mechanisms. Scientific and technological potential is an important factor in the innovation process, which is a component of social and individual development processes.

6. Improving the mechanisms for the development of innovative entrepreneurship in the context of ensuring sustainable development. In developed countries, the development and implementation of innovations is an important factor in social and economic development, ensuring economic and national security. The state's sustainable innovative policy is important for sustainable economic development and GDP growth in the country. This policy is important for combining production with science. The state is the developer of many programs to attract innovative activity in entrepreneurial activity.

The main mechanisms ensuring the implementation of our country's innovation policy are high-tech and knowledge-based industry, financial and credit mechanisms, mechanisms provided for by legislation and regulatory legal acts, institutional changes, education, export and customs regulation. The development of entrepreneurship is one of the leading directions of state policy implemented in terms of diversification of the country's economy. This policy is aimed at increasing the level of

regulatory, legal, organizational and financial support for business activity in all sectors of the economy, especially in priority development areas.

The mechanisms of innovative entrepreneurship are stimulated at three main levels: at the macro level, at the regional level and at the enterprise level.

The state supports and stimulates innovative activity in the following ways:

- improving the legislative and regulatory framework for regulating innovations;
- organizing procurement of high-tech products and their advanced technologies for state needs, ensuring their dissemination;
- providing preferential conditions for the implementation of innovative activity and stimulating domestic and foreign investors investing in the implementation of innovation programs and projects.

A lot of work has been carried out in our country recently to stimulate innovative economic activity. By Decree No. 736 of the President of the Republic of Azerbaijan dated November 5, 2012, the High Technologies Park was established in Pirallahi district of Baku city. The High Technologies Park acts as a managing organization for parks to be created in the country. In this format, the first High Technologies Park to support innovative activities in the regions was established in the city of Mingachevir by Decree No. 481 of the President of the Republic of Azerbaijan dated February 26, 2015. Also, by the Decree of the President of the Republic of Azerbaijan No. 2425 dated November 8, 2016 “On the Establishment of the Azerbaijan National Academy of Sciences (ANAS) High Technologies Park”, a High Technologies Park was established under the Azerbaijan National Academy of Sciences to conduct scientific research and experimental design work for the preparation, development or improvement of innovative products and high technologies, and to apply (commercialize) their results in industry, services and other fields. High technology parks established in Azerbaijan are provided with the necessary infrastructure, material and technical base and management structures, and registered residents benefit from tax and customs benefits.

While the proportion of people working in the creative sector in the world was approximately 10% of the total workforce in the past, today

this proportion has reached 30%.

In Graph 1, the dissertationist has compiled an innovation efficiency ranking by finding the ratio of the innovation output sub-index indicators to the input sub-index indicators of countries in the same income group as Azerbaijan based on the data of the GII. Compared to 2013, the efficiency indicator ratio of Azerbaijan in 2022 has decreased. The main reason for this is the low level of research expenditures and knowledge and technological output. Increasing innovation efficiency depends on the result on innovation indicators. The directions that we consider necessary to focus on in Azerbaijan in terms of these indicators are increasing research expenditures and increasing the level of knowledge and technological output.

In order to form sustainable competitive advantages, it is necessary to find new ways and methods in the activities of market entities. One of the important factors affecting the competitiveness of an economic activity is the use of various types of innovations that serve to significantly improve the scientific, technical, social and financial spheres of production in a new institutional environment.

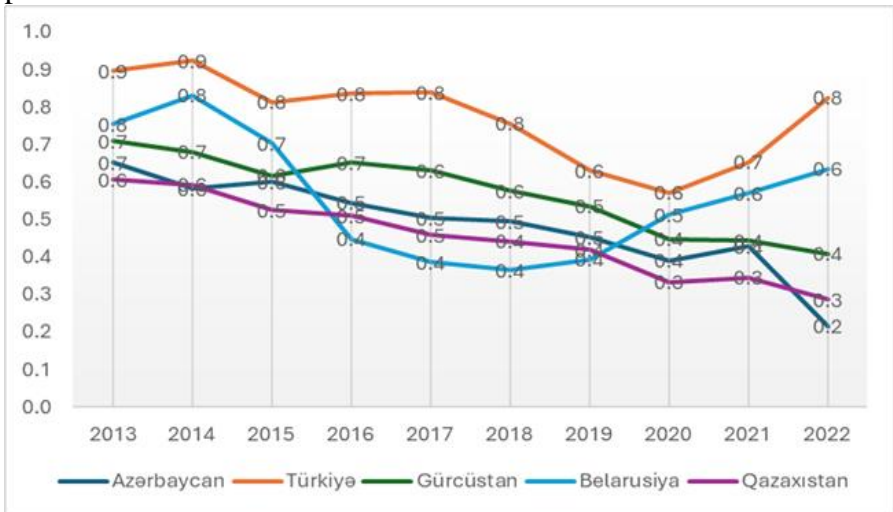


Chart 1. Innovation efficiency ranking¹

¹ The World Bank: [Electronic resource] / – July 18, 2023. URL: <https://bit.ly/4j0WEcS>

Against the backdrop of the new conditions created by the pandemic, the formation of a competitive economy depends on innovation opportunities. Although a positive trend is observed in Azerbaijan, the innovation indicator for competitiveness components is unsatisfactory. Innovation allows for the creation of new jobs, increased productivity, and the emergence of new enterprises. At the same time, such positive activities ensure the sustainability of competitiveness. Innovative economies are more productive, more sustainable, support higher living standards, and adapt to changes more quickly. Market entities benefit from the mechanisms of influence of innovations to ensure and maintain competitive advantage. The use of IT is considered an important factor for competitive advantage.

The main content of the dissertation work is reflected in the following works published by the author:

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