REPUBLIC OF AZERBAIJAN

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ABSTRACT

of the dissertation for the degree of Doctor of Philosophy

PROCESSING OF THE REPUBLIC OF AZERBAIJAN INNOVATION IN THE INDUSTRY OF ENTREPRENEURSHIP DEVELOPMENT DIRECTIONS

Speciality: 5312.01 - "Field economy"

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GENERAL CHARACTERISTICS OF THE RESEARCH WORK

Relevance and degree of development of the topic. The systematic socio-economic reforms successfully implemented in Azerbaijan over the past 20 years are aimed at ensuring the sustainability of the national economy, strengthening its financial security and rapid modernization, accelerating integration into the global value chain, and finally, as a result, innovation-oriented development. In order to achieve the above, "Azerbaijan-2030: National Priorities for Socio-Economic Development" was approved and the "Socio-Economic Development Strategy for 2022-2026" based on these priorities was developed. It should be noted that Azerbaijan's rating on the "Global Innovation Index" in 2023 improved by four places compared to 2022, reaching 89th place, and on the "innovation resources" sub-index, improving by three places, reaching 76th place. This progress was achieved as a result of the work carried out in the country in the areas of infrastructure reforms, macroeconomic stability, labor market organization, use of ICT in social spheres, and energy security. Of course, Azerbaijan has the potential to be in a better position. Currently, the share of innovation products in the total industrial output of Azerbaijan's manufacturing industry is 0.12 percent, and its share in GDP is 0.07 percent, which is significantly lower than the threshold recommended in international practice. On the other hand, 85.8% of the business entities actually operating in the manufacturing industry have the status of micro and small enterprises and do not participate in the process of manufacturing innovative products. Due to the lack of an organic connection between labor remuneration and the final result of production in manufacturing enterprises, the average level of employee turnover is 20.7 percent.

Until now, no law on the regulation of innovation activity and a targeted state program for its development have been adopted. Existing studies do not include a systematic approach to the development directions of innovation entrepreneurship. An advanced National Innovation System has not been created in Azerbaijan. All

these facts have a negative impact on the development of innovative entrepreneurship in the processing industry.

The development of entrepreneurship in Azerbaijan, its state regulation, the formation of a national economic development model, the creation of progressive management forms and innovation infrastructure, project management, information provision of innovation activities, the development of the non-oil sector, the efficient use of intellectual capital and other aspects are separately studied in the context of the elements of innovation entrepreneurship by Azerbaijani economists-scientists: Z.A. Samadzadeh, A.Kh. Nuriyev, Sh.M. Muradov, N. Muzaffarli, T.H. Huseynov, Sh.S. Gafarov, T.N. Aliyev, Sh.T. Aliyev, A.B. Aliyev, E.M. Hajizadeh, M.A. The work of Mammadov, Z.M. Najafov, G.S. Suleymanov, G.A. Safarov, I.A. Aslanzade, R.K. Isgandarov, A.D. Huseynova, R.P. Sultanova, G.Z. Yuzbashiyeva, A.N. Muradov, N.B.Kamalov, E.E. Mammadzade and others should be highly appreciated.

The study of the listed problems in all spheres of economic activity was also studied by foreign scientists: V.A. Barinova, K.A. Barmuta, R.O. Bugubaeva and E.B. Begezhanov, M.A. Bunchuk, Y.V. Bulanova, L.M. Votchel, P.F. Druker, A.Y. Gorokhova and A.N. Zotov, S.A. Ivanov, P.A. Kanapukhin, G.V. Kadakoyeva, D.M. Krupsky, N.Y. Lapin, A.F. Naumov and A.A. Zakharova, Y.S. Pinkovetskaya, M.A. Sazonova, S.V. Terebova and others. However, without diminishing the theoretical and practical importance of the research of Azerbaijani and foreign scientists, it should be noted that the scientific research of these scientists has not formed an authoritative opinion on the essence, scope, management, infrastructure provision, development strategy formation, and the ratio of product and process innovation of innovative entrepreneurship.

The solution of the mentioned problems requires the modernization of innovative entrepreneurship in the processing industry of Azerbaijan from organizational-economic and technical-technological aspects, and all this once again shows the relevance of the chosen topic.

Purpose and objectives of the study. The main purpose of the study is to develop theoretical-methodological and practical

recommendations that will allow for the effective organization and management of innovative entrepreneurship in the processing industry in order to ensure a rapid transition to an innovation-oriented economy.

To achieve this goal, the following tasks were set in the research:

• • Studying the essence, content, types and infrastructure of innovative entrepreneurship based on studying and summarizing the existing literature on the problem under study;

• Studying the theoretical and methodological aspects of the mechanism of organizing and managing innovative entrepreneurship in the processing industry;

• To generalize international experience in the development of innovative entrepreneurship in the processing industry and to determine the possibilities of their use in the reality of Azerbaijan;

• To analyze and evaluate the system that forms the current state of innovative entrepreneurship in the processing industry of Azerbaijan based on quantitative and qualitative indicators, using long-term statistical data, as well as the results of sociological research, to identify economic, production and other factors that hinder its development and to reveal relevant reserve opportunities;

• Improving the existing mechanism for managing innovation risks in business entities;

• Developing recommendations on adapting the forms and methods of state regulation of innovation entrepreneurship to international practice and formulating its development strategy;

Object of the study. Business entities in the processing industry of the Republic of Azerbaijan.

The subject of the study is the organizational and economic mechanisms for improving the process of organizing and managing innovation entrepreneurship in the processing industry of the Republic of Azerbaijan.

The theoretical and methodological basis of the study is the Laws of the Republic of Azerbaijan, Decrees and Orders of the President of the country, Decisions of the Cabinet of Ministers, Azerbaijan 2030 - National Priorities and the socio-economic development strategy until 2026 based on them, as well as materials

of republican and international scientific and practical conferences held in recent years.

Research methods. When carrying out the dissertation work, the methods of economic statistical grouping, comparative economic analysis, system approach, mathematical and statistical modeling, and sociological research were used.

The main provisions defended:

1. The essence of innovative entrepreneurship, its stages, phases and methods have been formulated with a preference for a systematic approach;

2. The inclusion of other organizational and economic types in the product, technological and social types of innovative entrepreneurship will necessitate its comprehensive assessment.

3. The use of a general model of organizing the innovation process in entrepreneurial entities and new mechanisms necessary for activating their activities will allow improving their export and investment opportunities.

4. Improving the system of group, quantitative and qualitative indicators for assessing the level of innovation activity in the processing industry, as well as innovation entrepreneurship, will ensure sustainable development, a decrease in the number of liquidated enterprises, and the implementation of targeted projects and programs.

5. The formation of a different conceptual scheme of interaction between the state's innovation entrepreneurship development strategy and the innovation market, the creation and development of MIS, and the formation of new infrastructure will ensure.

6. Taking into account the specific characteristics of the processing industry, a mechanism has been developed to neutralize the risks that may arise in the process of organizing innovation entrepreneurship. Its practical use will allow for the diversification of innovation activities, reduction of losses and excess costs, and ensuring the financial stability of entities;

7. The creation of innovation-oriented clusters in sub-sectors of the processing industry, technology transfer centers in medium and large enterprises will ultimately lead to the development of

innovative infrastructure, minimizing the volume of residual products in participating companies, efficient use of human resources, development of investment-innovation projects, innovative development strategies, and a high synergy effect as a whole.

The scientific novelty of the research work consists of the following:

- An improved definition of entrepreneurship has been formed on the basis of a systematic approach; (5, p.93-94)
- A general model has been developed that includes its essence, types, stages, phases and organization, considering innovation entrepreneurship as a complex process; (5, p.94-95; 3, p.351)
- The principal structure of new mechanisms and development models necessary for expanding the innovation activity of entrepreneurial entities has been given; (12, p.85)
- The innovative potential of business entities in the processing industry was assessed using new system indicators; (9, pp. 24-25; 15, pp. 7)
- A mathematical-statistical model of the dependence between the main economic and technical-technological indicators affecting the volume of innovation output in the industrial sector was built; (4, pp. 88-89)
- A principal model of the formation and development of innovation entrepreneurship activity was proposed; (5, p. 96)
- A mechanism for risk management in innovation entrepreneurship in the processing industry was developed, its methods were classified, the feasibility of creating innovation-oriented clusters in sub-sectors was justified and its classification was given. (11, pp. 99-100)

Theoretical and practical significance of the research. The main theoretical and conceptual provisions and scientific results of the research work, the formulated proposals and recommendations can be used in improving the existing structure of effective organization and management of innovation entrepreneurship in the processing industry of Azerbaijan, in developing an innovative development program for the sector, in improving the existing

incentive mechanism for innovation entrepreneurship, in expanding the innovation infrastructure network, in assessing the activities of entrepreneurial entities, in systematizing organizational, technical, technological and social factors affecting their innovation activity, in adapting the forms and methods of state regulation of innovation entrepreneurship to international experience, in determining the development strategy of entities, in forecasting the volume of innovation products, as well as in the process of teaching relevant subjects in higher education institutions.

Approval and application. The main theoretical, methodological and practically significant provisions of the dissertation work, the developed proposals and recommendations were reported at seven scientific conferences of national and international importance, published as theses and conference materials, and awarded the corresponding certificates and first-class diplomas.

17 articles and theses with a volume of 9.4 printed sheets were published on the topic of the dissertation work in scientific journals and conference materials recommended by the AAK, 5 of which were published abroad (3 of which were in journals and conference materials indexed in a high-level international database).

The structure and total volume of the dissertation work with marks.

The dissertation work consists of an introduction, 3 chapters, a conclusion, a list of used literature in 118 names, abbreviations and appendices. For the purpose of analysis and evaluation in the work, 26 tables, 18 figures, 13 diagrams and graphs were used.

The total volume of the dissertation work is 392,306 characters, including the title page and table of contents 2,936 characters, the introduction 20,199 characters, Chapter I 89,697 characters, Chapter II 70,806 characters, Chapter III 69,820 characters, the conclusion 15,299 characters, the list of used literature 17,274 characters, the list of appendices and abbreviations 6,275 characters. The volume of the dissertation work, excluding tables, figures, diagrams and the list of used literature, is 249,106 characters.

The content of the dissertation work

Introduction

CHAPTER I. Theoretical and methodological bases of the organization of innovation entrepreneurship in the processing industry

1.1. The nature, content, types and infrastructure of innovation entrepreneurship

1.2. Methodological aspects of the formation of the innovation entrepreneurship organization mechanism in the continuous growth of industrial production

1.3. International experience in the development of innovation entrepreneurship in the processing industry

CHAPTER II. Analysis and assessment of the current state of organization of innovation entrepreneurship in the processing industry of the Republic of Azerbaijan

2.1. Evaluation of the impact of changes in the structure of business entities on the economic development of the field

2.2. Evaluation of the current state of innovation entrepreneurship organization based on quantitative and qualitative system indicators

2.3.Evaluation of the factors influencing the innovation activity of entrepreneurial subjects based on the results of econometric and sociological studies

CHAPTER III. **Improvement of economic methods and mechanisms of efficient organization of innovation entrepreneurship in the processing industry of the Republic of Azerbaijan**

3.1. Adapting the forms and methods of state regulation of innovation entrepreneurship to international practice

3.2. Improvement of the innovation risk management mechanism in entrepreneurial subjects

3.3. Formation of innovation entrepreneurship development strategy

CONCLUSION

BIBLIOGRAPHY

LIST OF ABBREVIATIONS

ADDITIONS

MAIN CONTENT OF THE WORK

In the Introduction to the dissertation, the relevance of the topic, the degree of development are justified, the object and subject, goals and objectives, research methods, the main provisions put forward for defense are determined, information is provided about its scientific novelty, theoretical and practical significance, approval and application, the name, structure and volume of the organization in which it is carried out.

The first chapter of the dissertation, entitled "Theoretical and methodological foundations of the organization of innovative entrepreneurship in the processing industry", reflects the essence, content, types and scope of infrastructure of innovative entrepreneurship, methodological aspects of the formation of the mechanism for organizing innovative entrepreneurship in the sustainable growth of industrial production, as well as international experience in the development of innovative entrepreneurship in this area.

Taking into account the multifaceted scope of the research, the work first reviewed the changes that have occurred in the concepts of entrepreneurship and innovative entrepreneurship through evolution, and systematized the views and approaches of classics and numerous economists.

It has been determined that their main focus is on the features of the organization of the entrepreneurial process, the use of elements involved in the implementation of these processes, as well as the results of the activity, and it is noted that innovative entrepreneurship is the process of creating and using technical-technological, organizational-economic and social innovations for commercial purposes. It is difficult to agree with these ideas, at least because in the process of globalization, the scope of innovative entrepreneurship is expanding year by year, and the features characterizing the personal quality of the entrepreneur are becoming richer. Therefore, when explaining the essence of innovative entrepreneurship, preference should be given to a systematic approach. In our opinion, in this context, *innovative entrepreneurship is a creative process*

(management activity) that includes the main goals of sustainable development and creativity, is formed and developed under the influence of intellectual capital, numerous factors of an economic, technical-technological, political, legal, organizational, socio-psychological nature, and is aimed at the production of competitive (new, improved) products and high-quality services. The current technical-technological state of the processing industry of Azerbaijan and its low innovation activity necessitate the development of innovative entrepreneurship there, taking into account numerous factors and dividing it into phases as a complex process.

In general, three models of innovative entrepreneurship are distinguished in practice:

1. Innovative entrepreneurship based on internal organization;
2. Innovative entrepreneurship based on external organization through the conclusion of agreements (contracts);
3. Innovative entrepreneurship with the help of ventures, where external organization is preferred.

However, for the effective management of innovative entrepreneurship, in addition to the mentioned models, it is necessary to distinguish its stages and phases. For this purpose, the stages, phases and models of innovative entrepreneurship are classified in the work, and their principal structure is reflected in the appropriate scheme.

In economic literature, innovation entrepreneurship is distinguished only into product, technological and social. However, these types do not fully reflect the content and scope of innovation entrepreneurship. Therefore, it is important to include economic, environmental, marketing and management activity types in their range so that a comprehensive assessment of the results of innovation entrepreneurship is possible. Taking them into account, the classification of types of innovation entrepreneurship specific to the processing industry and the scope of each of them are reflected in figure 1.

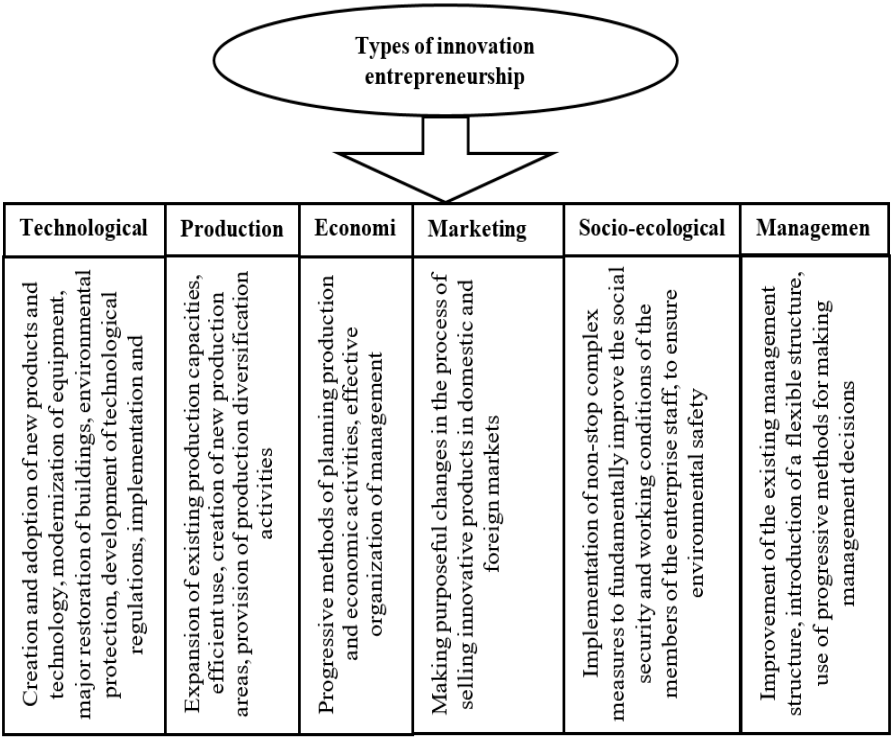

Figure 1. Types of innovation entrepreneurship and a brief description of their content,(*https://studopedia.ru/3_166571; https://creativeconomy.ru/lib/10066;)* compiled by the author based on information from sources.

One of the important conditions for the effective organization and management of innovation entrepreneurship is the creation of an appropriate innovation infrastructure. Such infrastructure plays a unique role as a bridge between the results of scientific research and development, the state, the market and business. *In our opinion, the development of innovation infrastructure in the areas of economic activity of our country is important in terms of the formation* and development of an innovation-oriented economy as a whole, and as a result, the creation of innovation products, increasing their volume and assortment, their full-scale sale, and the provision of quality services will ensure the expansion of innovation activity.

Our research has shown that the existing mechanisms should include mechanisms for improving relevant legal and regulatory-technical acts on innovative entrepreneurship and stimulating the innovation process, as well as their providers. Their full classification is reflected in figure 2.

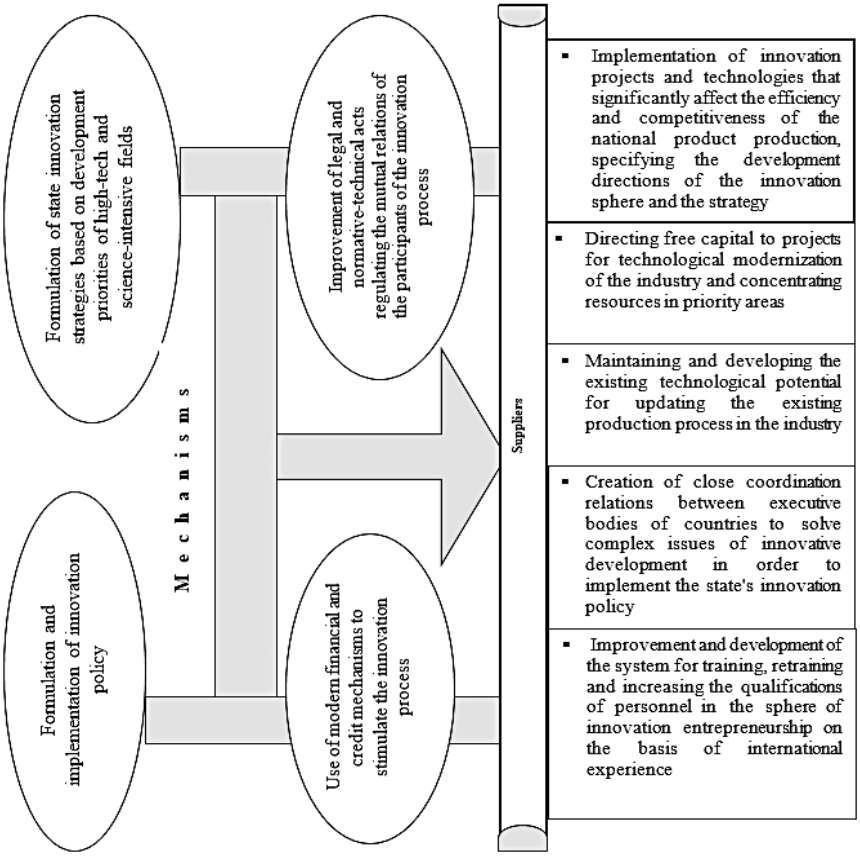

Figure 2. The structure of new mechanisms and their providers necessary for activating the innovation activity of business entities (https://urait.ru/book/innovacionnoe-predprini matelstvo 442427; https://www.asau.ru/biblioteka/4327-naumov-in-deyat-predpriyatiya) compiled by the author based on information from sources.

The low innovation activity of the processing industry, its export potential, lack of investment, lack of competitiveness, slow diversification of production, continued negative impacts on the environment, and the existence of sharp differences between the final result of production and (its quality) remuneration of labor require the development and implementation of more advanced mechanisms there.

For the implementation of these mechanisms, the regulation of innovative entrepreneurship in the processing industry should be based on progressive principles.

It would be appropriate to use system indicators to assess the level of innovative entrepreneurship in small and medium-sized entrepreneurial firms that will be formed as a result of the successful implementation of the proposed mechanisms.

In order to achieve sustainable development of the processing industry in the context of the requirements of the fourth industrial revolution, the innovation and creative potential of the sector should be determined by the existence of its appropriate model, based on the interaction of the parameters **"innovation potential - competitiveness - economic security"**, and innovation potential should be formed on the basis of material, information, financial and intellectual resources.

In the second chapter of the dissertation, entitled **"Analysis and assessment of the current state of the organization of innovative entrepreneurship in the processing industry of the Republic of Azerbaijan"**, taking into account the data of multi-year statistical, primary accounting and reporting documents and the results of sociological research, the impact of changes in the structure of entrepreneurial entities in the country on the economic development of the sector was analyzed, the current state of the organization of innovative entrepreneurship was investigated based on system indicators that calculate quantitative and qualitative changes, as well as the factors affecting the innovation activity of entrepreneurial entities were evaluated based on the results of econometric and sociological research, numerous reserve opportunities were revealed and ways of their effective use were shown.

Calculations show that in 2015-2023, fundamental changes occurred in the structure of business entities operating in the country's processing industry (table 1).

Table 1

Changes in the structure of business entities operating in the processing industry of Azerbaijan

Indicators	Years					2015-2023 deviation in years (+-)
	2015	2017	2019	2022	2023	
The number of operating enterprises is from:	1778	1826	2330	3130	3660	+1882
state	144	117	124	103	102	-42
non-state	1634	1709	2206	3027	3558	+1924
small (micro)	964	1218	1494	2603	3142	+2178
medium	639	427	503	390	380	-259
big	175	181	233	137	138	-37
individual entrepreneurs, people	15711	17154	19842	25663	27123	+11412
foreign invested enterprises	88	103	134	151	170	+82
joint ventures	78	91	121	134	148	+70

Source: Table "Statistical Indicators of Azerbaijan"; "Industry of Azerbaijan"; "Social and economic development" was compiled and calculated based on the data of from Statistical Collections (https://www.stat.gov.az/).

As a result, the non-oil refining industry has been developed, numerous joint processing enterprises, technoparks, which are of exceptional importance for the country's economy and are based on modern techniques and technologies, as well as newly created

industrial parks in the cities of Sumgayit and Mingachevir, in the Balakhani and Pirallahi settlements of Baku, in the Garadagh district, and industrial districts in the regions have allowed innovation entrepreneurship to transition to a qualitatively new stage of development. However, in reality, it can be observed that a number of negative trends are present in the institutional process. Thus, the absolute majority of micro, individual and small business entities operating in the refining industry do not produce innovative products. 9-11% of industrial products (services) fall to individual entrepreneurs. Consumer goods produced by entities from all three categories are sold in the domestic market, some of them replace imports, and the increase in the number of business entities liquidated for various reasons has had a negative impact on the innovation activity of the studied industry sector (Table 2).

Table 2

The level of overshooting of the number and ratio of newly created and liquidated business entities in Azerbaijan

Indicators	**Years**				**2015-2023 in years total**
	2015-2020	**2021**	**2022**	**2023**	
Newly created	64783	12223	16254	16439	109699
Including:	3090	876	1012	1127	6105
in the manufacturing industry	3769	518	557	738	5582
Abolished	179	17	32	50	278
Including:	17,2 times	23,6 times	29,2 times	22,3 times	19,6 times
in the manufacturing industry	17,3 times	51,5 times	31,2 times	22,5 times	21,9 times

Source: The table was compiled and calculated by the author based on the data of "Social and economic development" monthly statistical compilations (https://www.stat.gov.az/).

More than 95% of all business entities liquidated in the processing industry in recent years were privately owned. Among the latter, 686 foreign and joint ventures (X and MM) were liquidated, and their share in the composition of all private entities varied between 12.2% in different years.

Calculations show that out of 5582 units of business entities liquidated in 2015-2023, 3773 units or 67.6% were micro and small enterprises, and the amount of conditional product loss for these enterprises was 437.8 million manat, the number of conditional job losses in a single-shift mode was 30854 units, and for X and MMs, respectively: 16688 million manat and 38940 units; the amount of conditional tax and payment losses was 2.20 million manat. As a result of the liquidation of business entities from both categories, the specific weight of the total amount of conditional product loss in GDP varied between 1.66% and 2.97%.

In the mentioned years, the amount of investments in technological innovations in the country's processing industry increased and decreased, totaling 230.8 million manat.

Expenditures on technological innovations in the manufacturing industry were mainly targeted at product innovation and had a negative impact on the structure of costs.

In the processing industry, the necessary amount of funds is not allocated for conducting new marketing research, organizing joint ventures, training personnel for innovation activities, and studying the relevant work experience of leading companies. Our calculations show that out of 24 sub-sectors of the processing industry, relatively active innovation activity is observed in 8 sectors. Of these sub-sectors, no innovative products were produced in 2 in 2015-2018, in 8 in 2019, in 7 in 2020, and in 8 in 2021-2023.

The fact that the specific weight of innovation products in the country's processing industry is significantly lower than the internationally recommended threshold makes it inevitable that this process is negatively affected by numerous organizational-economic, technical-technological (production) factors. In order to classify these factors and determine the degree of their impact on the innovation activity of enterprises, we have preferred to use the results

of sociological research conducted in two aspects. The first of them is the survey conducted annually by AKDSK among line managers and specialists of medium and large business entities, and the second is a sociological research conducted by us using a special questionnaire.

As a result of grouping factors by nature, it was determined that in 2010-2023, 55.4% of the average statistical level of factors hindering the innovation activity of medium and large business entities were economic; 28.4% were production and 16.2% were of other organizational nature. During those years, the specific weight of economically determined factors leveled off, production decreased by -7.0%, and the share of other organizational factors increased by -7.0%. (Table 3).

Table 3

Factors hindering the innovation activity of business entities in the processing industry of Azerbaijan

Classification of factors	Years					2010-2023-deviation in years (±)
	2010	2019	2021	2022	2023	
Total:	100	100	100	100	100	-
including	55,4	55,5	45,9	48,3	55,4	-
Economic	35,4	26,2	33,9	34,6	28,4	-7,0
Production	9,2	18,3	20,2	17,1	16,2	+7,0

Source: The table was compiled and calculated by the author based on the data of "Industry of Azerbaijan" statistical collections for 2015-2024 (https://www.stat.gov.az/).

27.2% of respondents in the processing industry identified the following important economic factors hindering the introduction of innovations: the lack of own funds of the enterprise, 17.9% the high cost of innovations, 14.4% the lack of sufficient financial assistance from the state; 15.0% the high economic risk factor, and 10.4% the

long payback period for the costs incurred on newly manufactured products.

Among the production factors, 17.9% of respondents identified the lack of information about new technologies; 16.9% the need for highly qualified workers; 13.5% the lack of information about sales markets; 16.5% the difficulty of adopting innovations by the enterprise; and 11.7% the weak cooperation between the enterprise and scientific organizations.

In order to assess the innovation activity of medium-status business entities in the processing industry, we conducted a special survey to study and summarize the opinions of more than 150 line managers and managers of 52 business entities. 76% of the respondents were men; 24% were women entrepreneurs.

According to them, the following realities hinder the production of knowledge-intensive products at the enterprise:

- high financial requirements for the protection of intellectual property (35.6%);
- high cost of funds raised for the application of information technologies (29.1%);
- high costs incurred for knowledge-intensive products (27.1%);
- low level of qualification of personnel (10.2%).

22.5% of respondents believe that it is difficult to implement a new idea in an enterprise; 21.2% need to spend a lot of time on implementing innovations; 15.0% do not have enough patience, strength and time to implement innovations; 18.7% do not have financial incentives; 8.8% stated that they do not believe that innovations will be effective.

In addition to the above, a mathematical-statistical regression analysis was conducted using ready-made software packages - EViews, MatLab, MS Excel, MathCad, etc., among the technical and economic indicators affecting innovation activity in the processing industry based on multi-year statistical data. For this, the volume of industrial products was calculated as **X1**, the active part of fixed production assets as **X2**, the costs incurred on technological innovations as **X3**, and the volume of innovation products as **Y** as the result factor, and the following results were obtained.

Y=0.05421x1+0.405x2+0.839x3+58.923

The adequacy of the mathematical dependence was confirmed to be positive by means of the Fisher criterion and the Determination coefficient and it was determined that a one percent increase in the volume of industrial products in Azerbaijan leads to a 0.02% increase in the volume of innovation products, a one percent increase in the active part of fixed production funds leads to a 0.141% increase in the volume of innovation products, and a one percent increase in expenditures on technological innovations leads to a 0.649% increase in the volume of innovation products. As a result of the mathematical and statistical calculation, a forecast of the innovation product likely to be released in the processing industry by 2030 was given.

In the third chapter of the dissertation, entitled **"Improvement of economic methods and mechanisms for the effective organization of innovative entrepreneurship in the processing industry of the Republic of Azerbaijan"**, the main attention is paid to adapting the forms and methods of state regulation of innovative entrepreneurship to international practice, improving the mechanism for managing innovation risks in business entities, and formulating a development strategy for innovative entrepreneurship in the processing industry.

Over the past 20 years, a number of organizational-economic, infrastructure and promotional measures have been implemented in Azerbaijan to support the innovation economy, and successful results have been achieved. Nevertheless, the task of creating favorable conditions for promoting innovation in the country is one of the long-term priorities. The application of new financing mechanisms to be created in the context of its implementation in processing industry enterprises will give impetus to the development of innovative entrepreneurship.

To ensure the sustainable development of innovative entrepreneurship in Azerbaijan, it is important to adopt the law "On Regulation and Development of Innovation Activities" and develop and implement long-term innovative development programs in the main sub-sectors of the processing industry. This program should take into account the elements of the innovative development

priorities of the economy, and the implementation of the measures included in the program should be based on a comprehensive and systematic approach, and should include the state's overall development strategy aimed at innovation. The main issue here is the creation of a mutual and organic connection between the state's innovation strategy and the innovation market. The process of applying scientific research in production in Azerbaijan is slow, and a direct organic connection between science and production has not yet been fully established.

In our opinion, a new legal framework should be formed for the activities of the "Science-Education-Production-Market" strategic alliance so that the Azerbaijani economy can be formed at the level of a development model within the framework of a new organizational-economic mechanism. To achieve this, a close organic connection should be created between the driving forces of economic development and inclusive development in the microeconomic aspect so that it is possible to implement the startup change necessary for economic diversification and competition. Therefore, an entrepreneur must have the ability to successfully and at lower cost implement all the functions ahead and become one of the developing subjects of the market economy. The organically interconnected elements of that ability (competence, skill) can be classified as follows: strategic thinking, professionalism, initiative, organization, moral quality, diligence and personal organization. The directions reflecting the scope of each of them are reflected in the principal model developed by us.

The main condition for forming an innovation-oriented economy in the country is to create a National Innovation System (NIS) and develop it through evolution. The formation of a real NIS in Azerbaijan is in its initial stage and is not systematic and consistent.

In the context of changes taking place in the economies of countries embarking on the path of innovative development, *it can be said that the MIS, which will act as an important form of state regulation of innovation entrepreneurship, is a complex socio-economic system based on national traditions, roots, political and cultural values, consisting of a complex of legal, financial and social*

institutions, which is a set of interactions between organizational structures engaged in the production and commercialization of scientific knowledge and technologies within national borders.

We believe that the formation of this system in Azerbaijan and its use in the process of developing innovative entrepreneurship in the processing industry can serve as a methodological basis.

In a globalizing world, the stability of the economy of each country is characterized by the level of development of small and medium-sized businesses (SMEs). In economically developed countries, the share of SMEs in GDP is more than 50%, and in employment - more than 60%. However, in Azerbaijan, the risk factor for SME entities is high, which limits their access to financial resources. According to the results of sociological research, 15.0% of respondents noted that they face high economic risk as a factor that hinders the implementation of innovations. As a result of the negative impact of these and other economic and production factors, 686 foreign and joint ventures that had the potential to apply innovations more effectively in Azerbaijan in 2015-2023 alone ceased their activities.

Such real facts have conditioned the necessity of improving the existing mechanism for managing innovation risks in business entities operating in the country's processing industry. *In this work, a principled scheme has been proposed that includes the organic components of the elements of that mechanism and is fundamentally different from existing approaches.*

In our opinion, in the context of the mechanism for managing innovation risks, the creation of a guarantee fund, ***unsecured financing mechanisms related to financing micro****, small and medium-sized businesses within the scope of SME activities, and the diversification of innovation activities as a whole may ultimately allow for risk regulation.*

The widespread use of ICT in business entities can also act as a basic tool in reducing risks, regulating economic and technological risks. The creation of an "innovation risk bag" in enterprises will create favorable conditions for reducing the cost of risk.

As a logical result of the research conducted, there is a need to form an innovative development strategy, the implementation of which will be ensured by evolution in order to increase the unsatisfactory innovation activity of the processing industry, which should act as a tool and method for achieving a freely formulated strategic goal, be aimed at the continuous implementation of innovations in business entities operating in various forms of ownership, include the life cycle process and take into account its position in the market. For this, the opportunities for using existing resources (economic, marketing, scientific-technical, technological, personnel, intangible and financial resources, the state of ICT use, etc.) should be kept in the spotlight.

We believe that in the context of the low technical and technological status and weak innovation activity of the sub-sectors of Azerbaijan's processing industry, the development and implementation of targeted innovation and investment projects should constitute an important element of the innovative development strategy. According to the International Project Management Association, the practical application of relevant tools in this direction saves 20-30% of time and 15-20% of costs. In our opinion, the easiest way to achieve success in this area *would be to create a constantly operating working structure (group) in medium and large enterprises, and in large entities, a Technology Transfer Center, which is widely used in international practice.*

Conclusion

The results obtained as a result of the conducted research are as follows:

• In the research conducted so far, a unanimous opinion on the organization and management of innovative entrepreneurship has not yet been formed, the definitions and approaches given in most cases contain a local element and are outside the systematic approach, there is a need to clarify the types of innovative entrepreneurship and the scope of its infrastructure.

• It is considered important to give priority to the project approach that stimulates innovative development in small and medium-sized enterprises.

• In the microeconomic environment of Azerbaijan, the processing industry, consisting of numerous sub-sectors, occupies an important position in ensuring the country's economic and food security, in the development of the non-oil industrial sector, in ensuring employment, and in improving the social welfare of the population.

• A decrease in the added value created in the processing industry and its share in GDP is observed;

• Over the past 10 years, only 2.0% of foreign investments directed to fixed capital in the country's economy have fallen to the processing industry. This targeted investment is not directed to individual sub-structures of the sector.

• Although the total volume of product output in the processing industry and the number of individual entrepreneurs engaged in industrial activities there are increasing year by year, the innovation activity of the sector is fundamentally low. The current state of the organization and management of innovation entrepreneurship in the leading sub-sectors of the sector - innovation activity, does not create a fundamental opportunity for a qualitative change in the country's economy, the value chain principle is not yet observed, and priority is given to the export of raw materials there.

• There is a need to develop and implement a law on “Regulation of Innovation Activities” and a State Program on Innovative Development of the Processing Industry in Azerbaijan;

• There are a number of organizational and economic gaps in product quality management in the processing industry. International standards of the ISO type are poorly applied there. The specific weight of the active part of fixed production assets in the mentioned industry is decreasing from year to year, and their wear rate is high.

• Every year, numerous processing enterprises, including foreign and joint ventures, which cannot withstand the competitive struggle, cease their activities, which leads to the loss of a large amount of products and a large number of jobs.

• In processing industry enterprises, attention is not paid to the organization of highly paid jobs, there is a high employee turnover, and there is an urgent need to introduce progressive mechanisms in the labor motivation system.

Proposals and recommendations

It is necessary to implement the following proposals and recommendations on the effective organization, management and development of innovation entrepreneurship in the processing industry.

• The use of the experience of financing, stimulating innovation entrepreneurship, development concepts, models, infrastructure formation, technology transfer, commercialization and insurance of innovations in the processing industry of our country can yield high socio-economic results.

• The establishment of a National Innovation System in the country, the transition of innovation policy to the "education-research-innovation" direction, the transition to the 5th-6th generation technological system in the near future, the intensification of the clustering process, the creation of interaction between the development strategy and the innovation market, and the increase in the volume and range of non-oil refined products can ensure the dynamic development of an innovation-oriented economy as a whole.

• Development and implementation of a targeted state program for the innovative development of the processing industry, and, if necessary, the formulation and implementation of the program of the same name in sub-sectors of the processing industry with close cooperative relations, will ultimately ensure the sustainable development of the sector;

• The low innovation activity of the processing industry and the slow pace of qualitative change in it highlight the importance of forming a development strategy that includes the systematic and comprehensiveness of innovative entrepreneurship.

• Due to its special participation in providing all sectors of the country's economic activity with cheaper raw materials, materials, consumer goods, reagents, paints, etc., as well as ensuring food security, the transformation of the processing industry - chemical,

petrochemical, food and pharmaceutical sub-sectors - into areas with comparative advantage;

• Formalizing the rules for placing state orders for processing enterprises producing innovation-oriented products, as well as ensuring export diversification by encouraging the participation of small and medium-sized enterprises in the production process of import-substituting and export-oriented non-oil products;

• In order to regulate the possibility of bankruptcy, as well as liquidation, of individual, micro and small enterprises and ensure their sustainable activities, including them in the structure of technoparks, industrial districts and agroparks in the territories where they are located, creating joint ventures, pilot entities in high-density industrial zones, developing business incubators, and intensifying the work of transforming the field into a sphere of application of Startup and purposeful innovation projects will ultimately allow achieving a high synergy effect;

• Widespread use of information and communication technologies in processing enterprises and stimulation of the application of international accounting standards there;

• Subsidization of loans received by micro, small and medium-sized enterprises for the production of innovative products;

• Formation of a guarantee fund to support the implementation of innovation projects and prioritization of the use of venture capital, as well as organizational and economic mechanisms for reducing risks for the development of innovative entrepreneurship;

The formation and development of clusters, in addition to playing an important role in attracting foreign investments to the country through technology transfer and commercialization, is characterized by a high synergy effect as a result of proper management of the costs of participating companies. Therefore, the creation of industry clusters with high technological potential, integrated organizational structures, encompassing all links of value chains in sub-sectors of the Azerbaijani processing industry with close cooperative ties will allow for an increase in innovation activity, export opportunities, improvement of investment opportunities, implementation of targeted projects and programs, diversification of innovation

activities, development of innovative infrastructure, minimizing the volume of residual products, ensuring the financial stability of entities, efficient use of human resources, and development and implementation of an innovative development strategy for innovation entrepreneurship.

The main provisions of the dissertation work, the obtained results and proposals are reflected in the following published articles and theses of the author:

1. Abdurrahmanova A.F. Organization of innovation entrepreneurship in the processing industry of Azerbaijan "Modern state of the industry and development problems: the impact of technological parks and industrial districts on the economic development of the country" Materials of the Republican EPK. Baku, AMIU, 2019, pp. 126-129
2. Abdurrahmanova A.F. Social aspects of the organization of innovation entrepreneurship in the manufacturing industry. Materials of the Republican Scientific Conference on "Personality, community, state: modern approaches to mutual relations". Mingachevir, 2019, pp. 371-374
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