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ABSTRACT

of the dissertation for the degree of Doctor of Philosophy

**IMPROVING THE MANAGEMENT OF SMALL
ENTERPRISES' SUSTAINABILITY IN THE INNOVATION
MARKET**

Speciality: 5308.01 – General economy

Field of science: Economic sciences

Applicant: **Elnur Agshin Aghazade**

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The work was performed at the Department of "Economics" of Baku State University.

Scientific supervisor: Doctor of Economic Sciences, Professor,
Pari Amirahmad Hasanova

Official opponents: Doctor of Economic Sciences, Associate Professor
Fikret Vali Guliyev

Doctor of Philosophy in Economics,
Associate Professor
Turana Vahid Ahmadova

Doctor of Philosophy in Economics
Gulnara Sarxan Jafarova

Dissertation council FD 2.46 of Supreme Attestation Commission under the President of the Republic of Azerbaijan operating at Azerbaijan Cooperation University

Chairman of the
Dissertation Council



Full member of ANAS, Doctor of Economic Sciences, Professor
Ziyad Aliabbas Samadzade

Scientific secretary of the
Dissertation Council

Doctor of Philosophy in Economics, Associate Professor
Samira Yashar Mammadova

Chairman of the scientific
seminar:

A handwritten signature in blue ink, written over a horizontal line.

Doctor of Economic Sciences,
Professor
Elshan Ali Ibrahimov

GENERAL CHARACTERISTICS OF THE WORK

The relevance of the research and the degree of development.

Innovative development of the economy should be considered a priority direction in the economic policy of state bodies, line ministries, management bodies, and also enterprises. Various programs implemented by the government, emphasizing the importance of choosing the innovative path of development of the country's economy, indicate the need to implement serious measures in this area. The technical and economic breakthroughs or crises observed in international experience, as well as bankruptcies, prove that the innovative path of development is without alternative in the modern global economic system. In order to advance the country's economy and become a competitive state, it is imperative to achieve innovative development in the production and service sectors. Diversification and improvement of the non-oil sector in the modern era is one of the important issues. Small enterprises that have a stake in this sector have an important role in the innovation market and in building a sustainable economy.

According to the relevant decrees and orders of the President of the Republic of Azerbaijan, the “Strategic Roadmap for the National Economic Perspective of the Republic of Azerbaijan”¹ approved on December 6, 2016, and also the “Azerbaijan 2030: National Priorities for Socio-Economic Development”² adopted on February 2, 2021, the directions for the transition of our country to socially oriented innovative economic development have been determined. Thus, the issues of competitiveness, increasing the innovation potential and socially oriented economic development of our country have been reflected as future goals in the Strategic Roadmap and National

¹ President of the Republic of Azerbaijan. Decree on approval of the Strategic Roadmap for the perspective of the national economy of the Republic of Azerbaijan // December 6, 2016. – Baku: – 2016.

² Official Website of the President of the Republic of Azerbaijan. Azerbaijan 2030: National Priorities for Socio-Economic Development [Electronic resource] / Official Website of the President of the Republic of Azerbaijan. – February 2, 2021. URL: <https://president.az/az/articles/view/50474>

Priorities, respectively.

For the successful implementation of the innovation process, it is important to involve various resources in the production process. These resources mainly cover the costs associated with the production of new or modernized types of products and are related to their introduction into production, as well as ensuring their large-scale production. Although these resources are directed to various directions of innovative activity in our country, there are serious differences between the expected and achieved results. In general, there are a number of problems that prevent small enterprises from operating sustainably in the innovation market in Azerbaijan, in other words, arising from the role of various internal and external influences in the sustainability of these enterprises. These problems include the low level of competitiveness of small enterprises in the implementation of the innovation process, limited financial resources, poor development of human resources, especially the issue of accessibility to highly qualified personnel, the required state support, legal regulation issues, etc. In the modern globalized world, the innovation process has penetrated various sectors of the economy. Considering the importance given by the state to support measures for SMEs in Azerbaijan, especially in recent years, and the various steps taken in this direction, we can emphasize the relevance of implementing innovations in small enterprises and implementing sustainable innovative development.

In an era when it is necessary to regularly update the product range on the basis of innovative development, preserving the sustainability of enterprises should be a top priority. A sustainable system can maintain the competitiveness of the product for a long time. Even if it loses its competitiveness and, as a result, its sustainability in the short term, the system can return to its previous equilibrium state.

There are various aspects of sustainability, but these aspects are evaluated based on two main prisms: the existence of sustainability potential and ensuring the efficient use of this potential. Sustainability potential, formed on the basis of modern innovative production, makes it possible to restore a sustainable situation. For this reason, many researchers equate sustainability potential with innovation potential.

However, the formation of this potential requires serious financial and other resources from the enterprise, which can jeopardize the sustainability of the enterprise. Also, the implementation of innovation requires a certain amount of time, during which sustainability may also be disrupted.

In order for small enterprises to operate sustainably in the innovation market, their investment provision must also be managed effectively. A number of restrictions in financing innovative projects are considered one of the main problems of small enterprises. In this regard, we can note that the poor access to capital, high risks and market uncertainty, and insufficient institutional mechanisms create difficulties in making investment decisions, making investment provision management relevant.

Therefore, all features and their interrelationships should be taken into account in the study of innovative development and sustainability. However, despite the existence of innovation potential, in order to ensure sustainable development in a changing and uncertain environment, market demand should be monitored at all management levels of the enterprise, the product range should be changed in a timely manner, effective management principles and modern marketing strategies should be applied. It should also be taken into account that errors may occur in making decisions that affect the sustainability of the enterprise. The consequences of such decisions can create problems in the operation and development of enterprises. All this makes it urgent to study the problems of innovative development of the sustainability of small enterprises and to prepare practical proposals and recommendations in this direction.

Many local and foreign scientists have conducted research and studies on the problems of innovative development and competitive sustainability management in enterprises. Various studies have been conducted by economists of the Republic of Azerbaijan, including Samadzade Z.A., Guliyev E.A., Atashov B.Kh., Guliyeva A.E., Mammadov S.M., Alakbarov U.K., Ibrahimov I.H., Balayev R.A., Mammadova E.B., Ibrahimov E.A., Gafarov N.C., Aliyev T.N., Atakishiyev M.C., Alirzayev A.Q., Ganjiyev G.A., Huseynov M.M., Hajiyev N.O., Hasanov R.T., Gasimov A.A., Manafov G.N., Musayev

A.F., Hasanova P.A., Huseynov M.J., Huseynova A.D., Huseynova Kh.M., Huseynova M.S., Imanov A.S., Najafov Z.M., Gasimov F.H. and others.

Among foreign scientists, we can mention Abbade, E. B. de Vargas Mores, G., Spanhol, C.P., Al-Sheyadi, A., Muyltermans, L., & Kauppi, Brammer, S., Hoejmoose, S., & Marchant, K., Brouwer, E., Clemence R.V., Covin, J.G., Slevin, D.P., Fornel, C., Larcker, D.F., Kleinknecht, A., Schumpeter J.A., Zindiye, S., Chiliya, N., Masocha, R., Hair, J.F., Freman, C. and others. Even F. Engels discussed the essence of the concept of "sustainability". However, the problems of "sustainable development of small enterprises" as an economic category became the focus of scientific research immediately after the adoption of this concept. This type of research can be divided into two main groups: The first group of studies was aimed at the sustainable development of the economy as a whole, and the second group covered certain areas of economic activity.

Many different research works have been carried out, articles and monographs have been prepared to solve the problems of sustainable innovative development of small enterprises. Despite the fact that a number of aspects have been studied by the mentioned researchers, some problems still remain. Naturally, the requirements have also changed in accordance with the requirements of each era, including the changing world. This gives reason to say that the study of the dissertation work in this direction is of particular importance.

Object and subject of the study. The innovation market in Azerbaijan and various organizational and legal entities that ensure sustainable development in this area were selected as the object of the study. The subject of the study was the study of the interrelationships of economic, organizational and management mechanisms that affect the sustainability of small enterprises in the innovation market, the study of the socio-economic situation in the regions and the economic relations and regularities in studying the interaction of the environment with macroeconomic indicators within a system.

Goals and aims of the study. The main goal of the research work is to identify problems in the direction of managing the innovative activity of enterprises in Azerbaijan on the basis of a systematic and

extensive analysis, and to prepare scientifically substantiated proposals and recommendations of an experimental nature. In order to achieve the above-mentioned goals, the following tasks are envisaged:

- Study of the theoretical and methodological foundations of the innovation activity of enterprises;
- Study of the theories of enterprise sustainability;
- Study of factors determining the sustainability potential of small enterprises;
- Analysis of the potential of the innovation market and the development of small businesses in Azerbaijan;
- Development of optimal models and strategies for managing the innovative development of small businesses and the efficient use of financial resources;
- Development of a methodology for assessing the effectiveness of innovative activity;
- Study of world experience in improving the sustainability of small businesses in the innovation market;
- Development of proposals and recommendations on the implementation of the above tasks.

Research methods. A complex of conceptual provisions and scientific methodological recommendations in the field of innovative development and sustainability of small businesses constitutes the theoretical basis and methodological basis of our research.

To solve the problems posed in the dissertation work, systematic analysis, analysis, induction, economic modeling, SWOT analysis, etc. were used. The sources of information for the study are reports of the State Statistical Committee of the Republic of Azerbaijan, data of the Ministry of Finance of the Republic of Azerbaijan and the Central Bank of the Republic of Azerbaijan, statistical and reporting materials of various credit organizations, as well as documents of small businesses and organizations providing various services.

Main provisions put forward for defense. The main provisions put forward for defense can be expressed as follows:

- Sustainability management in the activities of small enterprises in the innovation market in Azerbaijan is not systematically

implemented. Therefore, a strategically based and integrative sustainability model should be applied in the management of enterprises;

- An innovation environment in small businesses should be formed by taking advantage of the experience of economically developed countries;
- Since there is no proactive approach to risk management in small innovative enterprises in conditions of market volatility and uncertainty, an adaptive management approach should be provided at the institutional level;
- The insufficient level of digital transformation has a negative impact on the competitiveness of small innovative enterprises. Therefore, a digital sustainability strategy should be applied in order to increase the adaptability of small enterprises to market volatility;
- The application of a unified methodological approach and improvement of management are the requirements of the day to ensure economic sustainability in small enterprises;
- It would be useful to generalize the indicators used in both local and foreign enterprises in the study of the sustainability of small enterprises;
- There is a need for training, skills development, and the formation of an innovation culture to increase the level of human capital development in the sustainable development of small businesses in the innovation market and its management;

Scientific novelty of the research. The scientific novelty of the dissertation work mainly consists in the conceptual substantiation of methodological approaches and tools aimed at creating and implementing a mechanism for increasing the innovative activity of small enterprises in conditions of increasing competition in global and regional markets, and the development of specific methods and tools for their practical implementation. In this regard, the scientific novelty of the research is as follows:

- ✓ Advanced directions for improving the management of the sustainability of the enterprise based on the application of innovation were identified;

- ✓ An econometric assessment of the sustainability of small enterprises in the innovation market was carried out;
- ✓ The impact of key economic indicators on increasing the economic sustainability of small enterprises was assessed;
- ✓ A new state support mechanism was proposed, including tax breaks, subsidies and other financial incentives, to support the innovative activity of small enterprises, adapted to local economic conditions, based on the experience of developed countries;
- ✓ The integration of Blockchain technology into small enterprises was analyzed.

Theoretical and practical significance of the research. The theoretical significance of the research is the formation of systematic, integrative approaches to the sustainable management of innovative small enterprises, the development of a new methodological framework by adapting existing theoretical views to the local economic environment. The practical significance of the work is determined by the fact that the proposals and recommendations presented in the dissertation can be used to provide a scientific and methodological basis for solving practical problems in managing innovation activities in enterprises. The results of the work can also be useful for specialists involved in planning and management in the field of innovative development.

Approval and application. The topic of the dissertation work, corresponding to the general direction of scientific research work at Baku State University, was discussed and appreciated at scientific seminars as a topical issue in modern times.

The applicant has 11 scientific works on the topic of the dissertation work, including 7 articles and 4 theses, 2 of which were published abroad in reputable local and foreign journals recommended by the Higher Attestation Commission under the President of the Republic of Azerbaijan. Author's "The Role of Financial Reporting in the Management System of Economic Entities, its Status and Purpose" (Toronto, 2023), "Methods, Methods And Rules For Analyzing And Evaluating The Financial Situation Of Economic Entities" (Dortmund, 2023), "Theoretical Foundations Of The Formation And Development

Of The Institution Of Small And Medium-Sized Businesses" (Nakhchivan, 2024) and "Analysis of the Modern Situation of Taxation in Small and Medium Enterprises" (Baku, 2024) theses were published.

In addition, the applicant's articles "The role of the cashless economy in the country's development" (Baku, 2022), "Factors influencing the development of small businesses in Azerbaijan" (Baku, 2023), "Theoretical aspects of the study of innovation activity in enterprises" (Baku, 2023), "Directions of increasing the financial stability of small enterprises in Azerbaijan" (Baku, 2023), "Limitations on the financial sustainability of small businesses in Azerbaijan" (Baku, 2023), "Ways Of Strengthening The Financial Stability Of Small Enterprises In Azerbaijan" (Poland, 2024), "Sustainability of innovation activities in small enterprises and risk management principles" (Moscow, 2025) have been published.

Name of the organization where the dissertation work was performed. Baku State University.

Total volume of the dissertation with a sign indicating the volume of the structural sections separately. The total length of the dissertation work is 286929 characters, including the introduction (14714 characters), chapter I (80369), chapter II (73924 characters), chapter III (72654 characters), conclusion (9323 characters) and list of used literature (19734 characters). The number of characters of the dissertation is 250984 characters, excluding tables, figures and list of used literature.

SUMMARY OF THE RESEARCH

The **introductory** section of the dissertation defines the relevance and degree of development of the topic, the object and subject of the research, the goals and objectives of the research, the methods of the research, the main provisions put forward for defense, the scientific novelty of the research, the theoretical and practical significance of the research are commented on, the approval of the research work and the structure of the dissertation are noted.

The first chapter of the dissertation is entitled "**Theoretical and**

methodological foundations of the innovative activity of enterprises” and consists of three paragraphs.

The paragraph entitled “Innovative activity of enterprises as economic categories” of the first chapter states that technological development can be achieved either through the creation of new technology or through the application of technology developed abroad. The first method is called technological innovation, and the second method is called technological diffusion. Although some countries have comparative advantages in the field of raw material processing, they may face an unfavorable situation in the future. The share of natural resources in the exports of these countries is high, and structural changes that increase productivity are carried out on a small scale. One of the main reasons for this is that sectors such as mining and processing industries do not create large-scale employment. Even though these sectors usually show high productivity, it is not possible to attract additional labor from the agricultural sector. Active structural changes occur as a result of the free movement of labor between enterprises and sectors.

The driving force of socio-economic development has always been scientific and technological progress, the main goal of which is to find new ways to satisfy the population with minimal costs and resources, while preserving ecosystems.

The paragraph entitled “Theory of Enterprise Sustainability and the Life Cycle of Small Innovative Enterprises” of the first chapter states that sustainable development is broadly defined as the adaptation and balanced development of economic, social and ecological subsystems in order to meet the needs of present and future generations, based on research on the scientific foundations of the stability of the socio-economic system. One of the most important problems of the current period is to find solutions to ensure sustainable growth of the country's economic sectors. The term “sustainable development” first appeared in economic literature around the end of the 1980s. The term “sustainable development” initially arose in the field of ecological science, but against the background of the current global economic crisis and the role of economic theory, this concept has gained even greater importance. Many researchers note that in the 19th-20th

centuries, a number of scientists laid the foundation for the modern idea of sustainable development in the philosophical and scientific heritage.

Assessment of the sustainable development of an entrepreneurial entity and planning its future strategies are considered important for a more accurate analysis of the current state of the enterprise. Assessment of the efficiency of the economic system and the implementation of comprehensive and significant indicators are of great importance. The more significant aspects of the enterprise's activities and the degree of implementation of its goals are characterized by indicators representing the main periods of activity.

The last paragraph of the first chapter, entitled "System elements and features of the management of innovative activities of small enterprises", emphasizes that small enterprises are a means to achieve these goals, whether they are related to qualitative changes within the system or the type and nature of the system's activities. Its purpose is to add new components and relationships to the system that have the ability to change production capacity. Therefore, achieving a long-term competitive advantage and, as a result, achieving long-term successful operation depends on sustainable development. "Science - production - consumption" is the main driving force of scientific and technological progress as a three-stage and interconnected process. The third stage of this process is considered the initial stage from an economic point of view. At this stage, the scientific potential produced in the previous stages is implemented on a large scale and affects the economy. To achieve these goals, qualitative intra-system changes or the introduction of new elements and relationships into the system that can change the service potential of enterprises are used as the main tools. Naturally, the purpose of implementing innovation processes is to increase the innovation potential of firms and their overall effectiveness.

The second chapter of the dissertation is entitled "**Analysis and assessment of the management of the sustainability of small businesses in the innovation market**" and consists of three paragraphs. This chapter reviews the development indicators of small businesses, discusses the current state and prospects of the sustainable

development process in the innovation market.

The paragraph “Legal basis of the sustainability of small businesses in the innovation market” of the second chapter notes that state policy support for small innovation entrepreneurship requires the creation of an infrastructure that will help it successfully move forward at all stages of the innovation cycle. This can be achieved by making structural changes in the management of small businesses and state support for them. Experience shows that clear mechanisms and organizational support are required to implement state policy. Based on the above, we can include the following tax system factors that can be used to increase the country's competitiveness: - the competitiveness of the country's tax system; - the level of compliance with tax legislation; - the level of education and protection of taxpayers' rights; - application of methods implemented using information technologies that meet transparent and modern standards in tax administration; - implementation of a tax policy that can have a strong impact on the regulation of the economic system, etc.³

The paragraph “**Assessment of the sustainability of small enterprises in the innovation market**” of the second chapter states that the assessment of the sustainability of small enterprises in the innovation market includes an analysis of various aspects of their activities and external conditions. It is important to understand how financially stable the enterprise is, that is, whether it is able to fulfill its obligations and make a profit. The main indicators here are liquidity, profitability and debt levels.

Small enterprises, as a segment of the economy that operates flexibly, play an important role in increasing employment, their role in the socio-economic development of regions, as well as in the formation of a competitive environment. The added value created by these enterprises includes the real results of entrepreneurial activity in the country's economy.

Diagram 1 shows data on the added value created in small

³ Jamil, C.Z.M. Environmental management accounting practices in small medium manufacturing firms / C.Z.M. Jamil, R.Mohamed, F.Muhammad[et al.]// – Procedia: Social and Behavioral Sciences. – 2015. – vol. – 172. p. 619-626.

enterprises for 2021-2024.

The diagram shows that in 2021, the added value created was 2,384.3 million manat, and in 2022, it was 2,796.1 million manat. In 2023, it was 3,254.9 million manat, and in 2024, this figure increased to 3,469.6 million manat. Thus, based on the data mentioned over the past 4 years, an increase in the added value created in small enterprises can be observed.

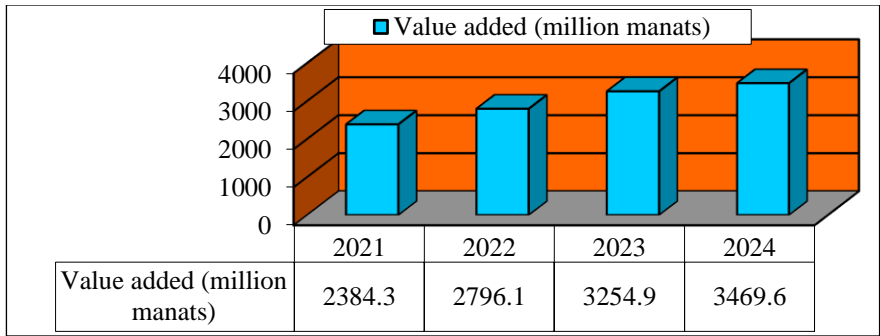


Diagram 2. Number of active small businesses

Source: State Statistics Committee of the Republic of Azerbaijan - <https://www.stat.gov.az/source/entrepreneurship/>

Diagram 2 shows data on the number of businesses operating over the last four years:

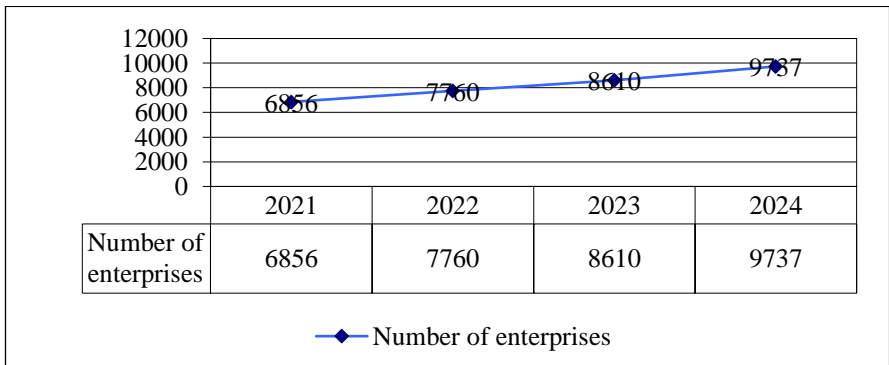


Diagram 2. Number of active small businesses

Source: State Statistics Committee of the Republic of Azerbaijan - <https://www.stat.gov.az/source/entrepreneurship/>

As can be seen, the number of operating enterprises in 2021 was 6856, in 2022 this figure increased to 7760, in 2023 to 8610, and in 2024 this figure increased to 9737. As a result, it can be noted that there has been a continuous increase in the number of operating small enterprises over the past four years.

The expenditures incurred by enterprises on science and research are of great importance in terms of their innovation potential and also in terms of increasing their competitiveness. The diagram below shows the expenditures incurred by small enterprises on scientific research over the past 4 years.

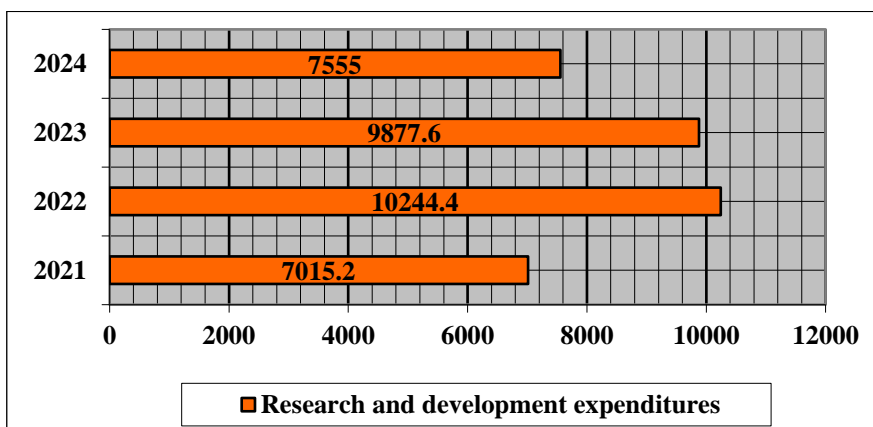


Diagram 3. Research and development expenditures of small enterprises, thousand manats

Source: State Statistics Committee of the Republic of Azerbaijan -- <https://www.stat.gov.az/source/entrepreneurship/>

Diagram 3 shows data on R&D expenditures by small businesses for 2021, 2022, 2023 and 2024: In 2021, R&D expenditures amounted to 7,015.2 thousand manat, and in 2022 this figure increased to 10,244.4 thousand manat. In 2023, it decreased to 9,877.6 thousand manat, and in 2024, a decrease was observed to 7,555.0 thousand manat.

Table 1 reflects the R&D expenditures of individual sectors over 4 years.

Table 1

**Small enterprises' research and development expenditures,
thousand manats**

	2021	2022	2023	2024
Agriculture, forestry and fishing	5.2	-	35.2	-
Industry	2986.5	2784.6	76.6	224.4
Mining	2952.9	2758.1	35.0	90.4
Manufacturing	33.6	26.5	21.6	55.5
Electricity, gas and steam generation, distribution and supply	-	-	-	78.5
Water supply; waste treatment and disposal	-	-	20	-
Construction	938.7	197.4	163.6	252.1
Trade; vehicle maintenance	57.2	173.4	367.7	220.2
Transport and warehouse management	2.9	5.4	-	-
Tourist accommodation and public catering services	-	11.3	-	-
Information and telecommunications	18.1	26	-	-
Real estate operations	0.5	-	-	-
Education	-	0.1	-	-
Provision of health and social services to the population	-	0.4	38.6	-
Other sectors	3006.1	7045.8	9195.9	6858.3

Source: State Statistical Committee of the Republic of Azerbaijan – <https://www.stat.gov.az/source/entrepreneurship/>

An econometric analysis was conducted to assess the sustainability of small businesses in the innovation market in Azerbaijan. For this, the last 10-year indicators covering 2014-2023 were used.

In Table 2, the value added (VAT), number of employees (N), average monthly wage (AMW), fixed capital investments (I) and turnover data (D) created in small enterprises were selected to express the development of enterprises and their stability in the labor market, innovation potential, and innovation initiatives.

Table 2**Statistical data needed for analysis**

Years	Added value created, million manats, total (VAT)	Average monthly nominal wage, manat (MW)	Investments in fixed capital, mln. Man., (I)	Number of employees, thousand people (EN)	Turnover million manat (T)
2014	2362.8	348.0	746.5	115.0	5951.7
2015	2932,5	350.1	2123.2	87.6	4718.4
2016	2928,0	338.6	2461.0	100.9	4666.1
2017	3051,9	331.5	2064.8	101.9	4884.7
2018	1235,5	373.5	1046.7	76.1	2282.0
2019	1423,2	437.0	494.2	85.1	2553.8
2020	1617,9	533.8	380.4	92.1	2918.1
2021	2384.3	528.2	892.7	102.2	4230.0
2022	2796,1	575.6	955.1	104.8	4714.8
2023	3200,8	642.8	794.0	110.3	5778.4

Source: Calculated and compiled by the author based on data obtained from the State Statistical Committee of the Republic of Azerbaijan.

Table 3**Correlation analysis**

	T	VAT	MW	EN	I
D01	1	0.86597577	0.05388634	0.87935104	0.30511869
VAT	0.86597577	1	0.07134421	0.67452961	0.58856747
MW	0.05388634	0.07134421	1	0.27251276	-0.61547326
EN	0.87935104	0.67452961	0.27251276	1	-0.01182100
I	0.30511869	0.58856747	-0.61547326	-0.01182100	1

Source: calculated and compiled by the author.

Table 3 shows the correlation between the variables. The main purpose of applying correlation analysis is to determine the relationship between economic indicators and investments in innovations in small enterprises and to show the direction of this relationship. It is clear from this that there is a strong positive relationship between the value added (V) and turnover (T) created in small enterprises (0.866). This also shows that an increase in one indicator affects the increase in the other indicator. Along with the

value added (V), there is a very weak relationship between the nominal wage (W) indicator and the turnover (T) indicator (0.054). When looking at the relationship between the number of employees (NE) indicator and the turnover (T) indicator, a strong positive relationship is seen, which indicates that the increase in the number of employees affects the increase in turnover (0.879). There is a positive, weak relationship between investments in fixed capital (I) and turnover (D) (0.305). There is a weak positive relationship between the created value added (VAD) and the nominal wage (WW), a weak moderate positive relationship between the number of employees (NW) and fixed capital investments (I) (0.675 and 0.589). There is a weak positive relationship between the average nominal wage (NW) and the number of employees (NW), and a negative relationship between fixed capital investments (-0.615). This negative relationship means that when wages decrease, the number of employees decreases. There is also a weak negative relationship between the number of employees and fixed capital investments (-0.012).

The main purpose of the regression analysis is to identify the economic factors that affect the innovative development of enterprises and assess their impact. This, in turn, has an important role in making decisions and taking more effective steps in management in the future. Table 4 shows that factors such as the created value added, nominal wage and turnover in small enterprises can affect investments in the innovative development of small enterprises. Changes in the value added can act as an important policy and strategy indicator for enterprises, as they have a positive effect. The effect of the number of employees, however, is not significant, as can be seen from this regression table.

Thus, according to econometric analysis, factors such as the value added of small enterprises, nominal wages and turnover affect the development of innovation activity. Value added has a statistically significant and positive effect on the innovative development of the enterprise. In other words, the strength of production and economic sustainability support innovative activity. An increase in nominal wages, on the other hand, leads to a decrease in funds allocated for innovations, since it leads to an increase in the costs of the enterprise.

Table 4**Regression analysis**

Dependent Variable: I
 Method: Least Squares
 Date: 11/01/24 Time: 13:25
 Sample: 2014 2023
 Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D01	-0.428943	0.197935	-2.167087	0.0824
ED	1.361110	0.209300	6.503152	0.0013
EH	-4.169959	0.697513	-5.978328	0.0019
IS	-4.892731	14.91349	-0.328074	0.7561
C	2107.305	870.6461	2.420392	0.0601
R-squared	0.957812	Mean dependent var		1195.860
Adjusted R-squared	0.924061	S.D. dependent var		738.4995
S.E. of regression	203.5079	Akaike info criterion		13.77614
Sum squared resid	207077.3	Schwarz criterion		13.92743
Log likelihood	-63.88070	Hannan-Quinn criter.		13.61017
F-statistic	28.37923	Durbin-Watson stat		3.459678
Prob(F-statistic)	0.001241			

Source: calculated and compiled by the author.

Moreover, although the increase in the number of employees has a positive effect on the increase in turnover, it can be concluded that the number of employees does not have a significant impact on the development of innovation. These results show how important the main indicators are in determining economic policy and strategy for small businesses.

The role of digital technologies in modern innovative development is irreplaceable. The study analyzed the dynamics of the use of computer and information technologies by small businesses in Azerbaijan. Table 5 below contains changes in this area.

Table 5

Dynamics of micro and small enterprises using computers in Azerbaijan (2005-2024)

Years	Number of businesses using computers	Those with 1–4 employees	Those with 5–9 employees	Those with 10–49 employees
2005	4160	302	639	1623
2010	7809	1360	1259	2939
2015	12100	3064	1914	4091
2020	15429	6950	2499	3529
2023	16094	7907	2530	3532
2024	16305	8006	2580	3582

Source: Compiled by the author based on data from the State Statistical Committee of the Republic of Azerbaijan - https://www.stat.gov.az/source/digital_development/

The table shows that the number of micro and small enterprises using computers in our country has increased by 4 times (4-16 thousand). In particular, micro enterprises with 1-4 employees are the main driving force of this growth, increasing this indicator by 26 times. This growth shows that small enterprises in our country have begun to benefit more from the opportunities of technology, which, in turn, indicates an increase in the innovation activity, competitiveness, and also management efficiency of these enterprises.

The paragraph entitled “Analysis of the current state of the formation of the innovation market in Azerbaijan” of the second chapter notes that the formation of an innovative market in Azerbaijan is a process that includes a wide range of measures to stimulate innovations in various sectors of the economy. Support provided by the state, the development of education and science, financial infrastructure, legal guarantees, international cooperation and infrastructure development - all these are the main elements of the successful formation of an innovative market, contributing to the country's stable economic growth and increasing its competitiveness.

Table 6 shows the ratings of Azerbaijan over the past six years. Data availability and changes in the GII model framework affect the comparability of Azerbaijan's GII rankings across years. The statistical confidence interval for Azerbaijan's GII 2025 ranking is between 91st and 97th place.

Table 6

Azerbaijan Global Innovation Index data (2020-2025)

Years	Global Innovation Index	Innovation resources	Innovation results
2020	82	76	86
2021	80	74	91
2022	93	79	110
2023	89	76	104
2024	91	88	95
2025	94	91	96

Source: The table was compiled by the author based on GII data.

The GII 2025 ranking shows that innovation performance in Azerbaijan has improved and then declined over the years. There may be a number of internal and external reasons for this.

Figure 4 shows the relationship between countries' income levels (GDP per capita) and their innovation performance (GII index).

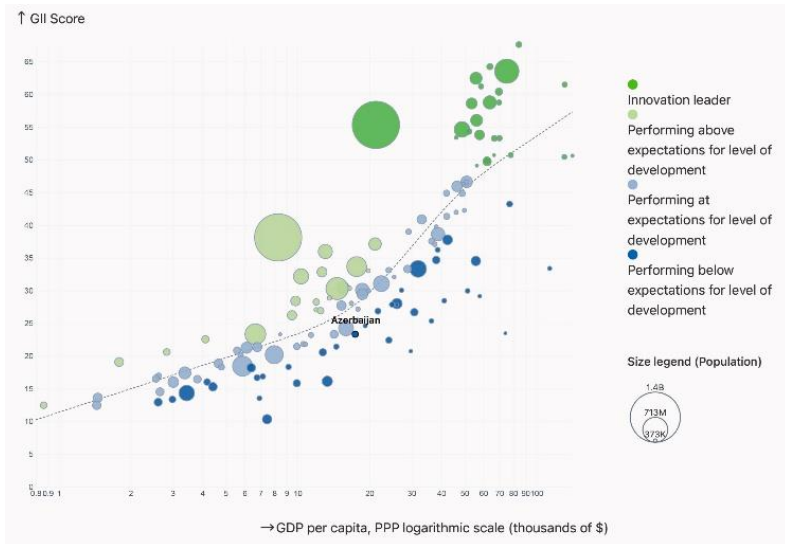


Chart 4. GII expected and observed innovation index (2020-2023)

Source: Prepared based on GII data - <https://www.wipo.int/edocs/pubdocs/en/wipo-pub-2000-2023/az.pdf>.

Here, the horizontal axis (x-axis) shows GDP per capita (in PPP terms), i.e. the level of economic development of the country. The vertical axis (y-axis) shows the Global Innovation Index, i.e. the country's innovation potential and achievements. The trend line shows the expected innovation performance given the income level. Countries above the trend line show better innovation performance than expected given the level of development, while those below show poor results. Here, Azerbaijan's point is below the trend line. This shows that Azerbaijan's innovation performance is lower than expected given the country's income level (GDP per capita).

Diagram 5 is used to compare the performance of countries in the field of innovation.

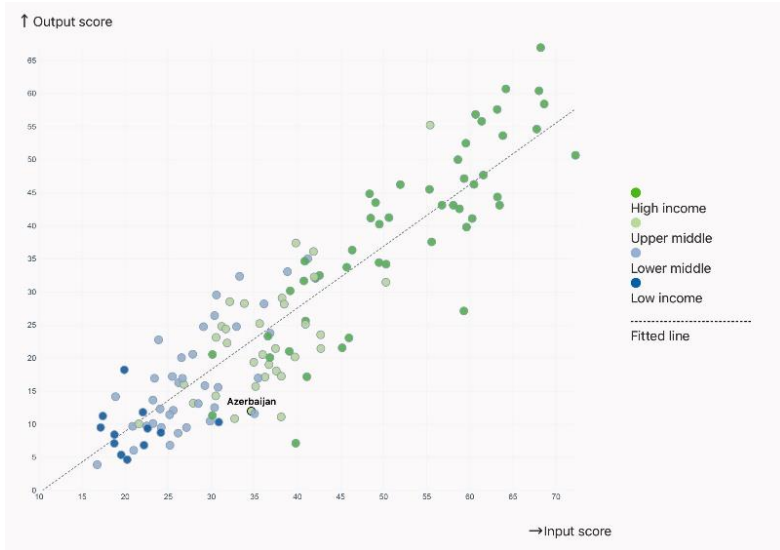


Figure 5. Relationship between innovation resources and outcomes (2020-2023)

Source: Prepared based on GII data - <https://www.wipo.int/edocs/pubdocs/en/wipo-pub-2000-2023/az.pdf>.

Here, the x-axis shows the resources that countries direct to innovation (education, research, technology investment, etc.), in other words, investments, and the y-axis shows the results that these countries obtain from innovation (new technologies, development of

startups, technological products and services, etc.).

The third chapter is called **“Improving the management of the sustainability of small businesses in the innovation environment”** and consists of three paragraphs.

The paragraph of the third chapter called “World experience in managing the sustainability of small businesses in the innovation market and its application in Azerbaijan” notes that financing innovations can be carried out from various sources, but the use of special funds is often more promising. Foreign experience shows that companies with economic independence take innovative steps faster. For example, countries such as Japan and the USA operate in a favorable environment for the development of innovations. In post-Soviet countries, such as Russia and Kazakhstan, the creation of innovation funds that serve the interests of local manufacturers deserves attention. These funds, in which the state and private sectors participate jointly, provide significant advantages in risk sharing.

The paragraph of the third chapter entitled “Formation of financial resources of small enterprises and improvement of investment flows in innovation” states that the effective operation of enterprises depends on the increase of internal financial resources to increase financial stability. The formation of financial resources, optimization of their structures and revealing forms of mechanisms, fulfillment of financial obligations of economic entities, expansion of production using the achievements of science and technology increase the image of cash income and receipts constituting the financial resources of a small enterprise. Correct and efficient distribution of financial resources is one of the main factors increasing financial stability in the era of a market economy. At the same time, the increase in financial resources is associated with scientific and technological progress, improvement of management and support from foreign countries.

In order for small enterprises to operate successfully, their financial resources must be distributed purposefully. This distribution can be further developed in the modern era with the introduction of new financial instruments. In this regard, it is necessary to effectively support small businesses, since there is still a lack of a systematic approach in this area. Therefore, it is advisable to form a multi-faceted

management system for small businesses.

Thanks to the proper organization of financial management of small businesses, financial resources can be used most effectively. This results in the direction of profitable investments and effective operations in the financial market. Tax breaks, incentive measures and the opening of bank branches in the regions are necessary to increase the activity of banks that provide loans to small businesses. Credit security issues make it difficult for small businesses to obtain loans from banks due to the lack of collateral. Therefore, the creation of credit security systems is important.

The paragraph entitled “State support for the innovative development of small businesses in Azerbaijan” of the third chapter indicates that in order to ensure the development of small businesses, it is important for entrepreneurs to seek innovations by taking advantage of the experience of successful companies. The introduction of innovations and changes in business processes are important factors of development. One of the examples implementing this approach in Azerbaijan is the “Electronic Trade” portal.⁴ Over the past 5 years, a number of new institutions and programs have been established in Azerbaijan to support private sector development and stimulate innovation. However, the new policy instruments are not yet fully implemented. Both old and newly established state bodies do not have the full potential to formulate, prepare and implement initiatives. While this is partly a natural process related to the formation of internal capabilities, limited coordination between innovation agents, i.e. business support and innovation agents, high-tech parks, business incubators, etc., limits the overall efficiency and effectiveness of existing programs. Active participation of the private sector in the preparation and implementation of digitalization support programs is very limited. This cooperation is necessary to ensure the quality of the services provided, achieve the participation of potential beneficiaries of support, and increase the sustainability of the services provided.

⁴ President of the Republic of Azerbaijan. Decree on the State Program on Reliable Provision of the Population with Food Products in the Republic of Azerbaijan for 2008–2015 // Approved on August 25, 2008. – Baku: – 2008.

The results, proposals and recommendations obtained at the end of the study are reflected in the **Conclusion** section of the dissertation as follows:

1. At the present stage, despite some economic growth in our country in recent years, the economic situation is not at the required level. This, first of all, indicates the low competitiveness of Azerbaijani products and services, the technological backwardness of industrial production. The process of global change, which will ensure continuous improvement of the situation in enterprises in the near future, is possible only on an innovative, economic and organizational basis based on re-production. This will require the creation and mobilization of all internal development resources in enterprises, and in particular, the creation and development of existing intellectual potential in enterprises focused on technological development.

2. Innovative activity plays a key role in the long-term existence and development of enterprises and at the same time gives an advantage in increasing their competitive opportunities. Modern competitive advantages of enterprises increasingly depend not on the degree of ownership of capital reserves and other material resources, but on the ability of employees to improve and implement innovations, which leads to an increase in investments in intellectual capital and is the basis of economic development.

3. In a globalized world, the concept of competition has shifted from the national to the international level. This change has led to significant changes in enterprises by changing customer requirements. Initially, the competition experienced only between enterprises operating in the local market has turned all enterprises at the global level into competitors as a result of globalization. This situation has forced enterprises to change and develop sustainably. Considering that enterprises that are successful in the field of innovation have greater competitiveness, we can note that small and medium-sized enterprises should innovate, increase their competitiveness and emphasize non-imitative innovations.

4. Based on the results obtained in the research work, we can note that the innovation market in our country is not fully formed. The main shortcomings in this direction are the weakness of the innovation

infrastructure, research and development activities, as well as financial shortcomings. We believe that the elimination of these problems will further accelerate the integration of small enterprises in our country into innovations and will be of great importance in the formation of the market.

5. The study analyzed theoretical and practical approaches to innovative development and identified the main factors affecting the sustainability of the enterprise in a dynamically developing market. It was found that the success of the innovation strategy depends not only on the company's internal resources, but also on its ability to adapt to external changes, cooperation with other market participants, the use of modern digital technologies and the involvement of qualified personnel.

6. Innovative development and corporate sustainability management in a competitive environment require a comprehensive and systematic approach. The research emphasizes the importance of strategic planning and flexibility of management decisions, which allows companies not only to adapt to changes, but also to actively shape market trends. In addition, the recommendations given during the research can be useful in increasing the efficiency of business processes, improving the quality of products and services, as well as strengthening the company's position in the market. The practical implementation of these recommendations will allow us to minimize the risks associated with innovation activities and optimize the costs of introducing new technologies.

7. An important part of the work was the identification and substantiation of the relationship between innovative activities and the financial stability of the enterprise. It was found that the introduction of innovations not only increases competitiveness, but also contributes to the sustainability of the enterprise through product diversification, optimization of production processes and improvement of management quality. Practical recommendations were also presented to improve innovation activities, such as the introduction of an innovation management system, the use of analytical tools for risk assessment and the creation of conditions for continuous training of personnel.

8. Based on the research conducted in the dissertation, we can note that there is an imbalance between innovation resources and results in Azerbaijan. According to the GII (Global Innovation Index), despite the funds spent on innovation, the results achieved in this direction are weak. In other words, innovation performance is lower than expected given the country's income level, and also based on the results obtained, we can note that Azerbaijan should invest more in innovations to increase innovation performance.

9. The study pays special attention to the role of the state in creating favorable conditions for the innovative development and sustainability of enterprises, which is an important factor in the transition to a knowledge economy. State support aimed at stimulating innovation activity can significantly increase the competitiveness of national companies and strengthen their positions in the international arena.

10. Increasing the effectiveness of organizational structures is vital for small businesses to operate successfully in the modern economic environment. This allows them to use their financial resources more efficiently, adapt to market changes, increase customer satisfaction, and specialize in specific areas. Research shows that most small and medium-sized enterprises adopt more defensive innovation strategies.

11. Studies show that most small and medium-sized enterprises apply more defensive innovation strategies. They try to gain a competitive advantage by improving existing products and making design changes. However, these enterprises may encounter various difficulties when implementing innovations in the areas of products, processes, services and marketing. The biggest difficulties in the innovation processes of small and medium-sized enterprises are related to external factors. Among these difficulties, bureaucratic obstacles, lack of government support, insufficient support from banks for innovations, and insufficient application of patent rights and taxes stand out. We can group proposals regarding the types of innovation and strategies for the sustainable operation of small enterprises in a globally competitive environment as follows:

- small enterprises are unable to allocate sufficient investment in innovation projects due to lack of capital. To overcome this problem, they can establish joint laboratories and carry out joint innovative

experiments. This approach can help increase the innovation potential of enterprises;

- it is important to expand the existing financial capabilities of entrepreneurs as much as possible. Small entrepreneurs and business owners operating in this field should have access to financial resources not only through state support but also through private institutions. Small entrepreneurs can take advantage of the created conditions and benefit from preferential loans through commercial banks;

- In addition to financial support, incentives are also possible through special programs. In order to support gender balance in the small business sector, tax breaks can be applied to enterprises headed by women. These practices applied in countries around the world can be applied in our country within certain frameworks;

- Having strong distribution networks and delivering their products to a wide audience is one of the main success factors for enterprises. In this regard, enterprises can develop marketing innovations and establish common market networks;

- it is important to create appropriate environments for the implementation of new ideas from the public and private sectors in order to support innovation applications. Many small enterprises are developing new management mechanisms, but do not have sufficient resources to implement these mechanisms. To solve these issues, simulation studies and the creation of the conditions required for the implementation of new ideas can be useful;

- one of the major obstacles to innovation is the lack of information. Enterprises with sufficient knowledge and information can receive financial support from various organizations to support research and development. Solving the information problem will help overcome many other problems;

- it would be useful to organize management courses on innovation management and support, especially training programs that increase administrative innovation literacy, and to have entrepreneurs operating in relevant fields participate in these trainings;

- one of the most serious problems facing innovative business is the lack of finance. For this reason, independent efforts of small and medium-sized enterprises in the country have failed. It is impossible

to fully ensure the flow of high-level innovation with the existing financing. To solve this problem, National Development Banks should be established, along with venture financing and state support, state incentive measures should be implemented to support private financial institutions for entrepreneurship;

- law, patent, licensing, investment, expert advice, management, technological, research, production, certification and other areas constitute the innovation infrastructure of the future. An innovation service system should be created in which these services are offered;

- taking into account the complexity of the innovation ecosystem and the expansion of innovation activity, we can note the need to regulate innovation infrastructure entities within a single legal mechanism. Therefore, we believe that the adoption of a separate law “on infrastructure provision” in Azerbaijan can contribute to regulating the management structure of innovation activity and a more systematic development of the innovation environment;

- the scope of application of tax breaks for creative efforts should be expanded;

- the free granting and effective implementation of patent rights for the development of innovation would also be useful;

- appropriate changes should be made in the education system for the development of innovative activity, new trends and processes occurring in the economy should be integrated into the education system.

The main content of the research is reflected in the following published scientific works of the author:

1. Aghazade E.A. The role of the cashless economy in the country's development // – Baku: Geostrategy, 2022, № 07(70). – p. 124-127

2. Aghazade E.A. Theoretical aspects of the study of innovation activity in enterprises // – Ganja: "Innovative Economy and Management" journal, 2023, № 2. – p. 49-56.

3. Aghazade E.A. Factors influencing the development of small businesses in Azerbaijan // – Baku: Western Caspian University,

Scientific News (Social and Technical Sciences Series), 2023, № 2. – p. 205-213.

4. Aghazade E.A. Directions of increasing the financial stability of small enterprises in Azerbaijan // – Baku: "Construction Economics and Management" journal, 2023, № 3. – p. 200-206.

5. Aghazade E.A. Limitations on the financial sustainability of small businesses in Azerbaijan // – Baku: Geostrategy, 2023, № 5. – p. 116-118.

6. Aghazade E.A. Methods, Methods And Rules For Analyzing And Evaluating The Financial Situation Of Economic Entities, Word of Conferences VII international scientific conference, development of science in the XXI century – Dortmund (scientific conference), 2023, № 7. – pp. 18-21.

7. Aghazade E.A. The Role Of Financial Reporting In The Management System Of Economic Entities, Its Status And Purpose, World of conferences, V international scientific conferences, innovative scientific conference – Toronto (scientific conference), 2023, № 5. – pp. 22-26.

8. Aghazade E.A. Ways Of Strengthening The Financial Stability Of Small Enterprises In Azerbaijan – Poland: International Journal of Innovative Technologies in Economy (RS Global Journals – ERIH PLUS), 2024, №1(45). – pp. 2-27.

9. Aghazade E.A. Analysis of the Modern Situation of Taxation in Small and Medium Enterprises // – Baku: VI International Scientific Conference of Economics and Management Researches 23-26 may 2024 (scientific conference), 2024, № 6. – pp. 826-834.

10. Aghazade E.A. Theoretical Foundations Of The Formation And Development Of The Institution Of Small And Medium-Sized Businesses // – Nakhchivan: International “Communication in the new world” congress 13-14 june 2024 Nakhchivan State University, 2024, № 12. – pp. 129-135.

11. Aghazade E.A. Sustainability of innovation activities in small enterprises and risk management principles // – Moscow: Economics and law, 2025, №10. – p. 6-10.



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