



THE ROLE OF INFRASTRUCTURE IN THE INNOVATIVE DEVELOPMENT OF SMALL BUSINESSES

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ABSTRACT

This article comprehensively analyzes the role of infrastructure in the innovative development of small businesses. In particular, the influence of elements of scientific and technical, information and communication, and financial infrastructure on the activities of small business entities has been revealed. Also, the current state of infrastructure facilities, their shortcomings, and proposals and recommendations for their improvement have been developed. Based on foreign experience, the article outlines ways to further develop the infrastructure for innovative support of small businesses in Uzbekistan.

KEY WORDS

Small business, innovative development, infrastructure, technopark, startup, scientific and technical base, information technology, business environment, economic development, investments.

Introduction

Input

In the economy of Uzbekistan, identifying efficient and purposeful directions for the use of production factors and increasing the effectiveness of reforms in this regard are closely linked to innovation.

Nowadays, under the influence of innovation, structural approaches in the production process are gradually changing. As a result, opportunities for achieving intensive economic growth through increased efficiency in the use of material resources are emerging. Experience shows that in most cases, innovative activity is associated with the creation of new products, services, and types of work, introducing qualitatively new approaches to the market.

Innovation not only positively affects economic indicators but also creates opportunities to meet social needs more efficiently and form new market segments. This, in turn, contributes to the qualitative transformation of entrepreneurial activity and improves its effectiveness. At the same time, structural improvement processes are becoming an integral part of this activity.

In recent years, the development of entrepreneurship has taken a central role in the deep economic reforms carried out in our country. These reforms contribute to the growth of small business and private entrepreneurship in the gross domestic product, ensuring employment, and accelerating structural changes in various sectors of the economy.

The need to continue supporting entrepreneurial entities through consistent reforms was emphasized in the Address of the President of the Republic of Uzbekistan to the Oliy Majlis on December 21, 2022:

“We will continue to rapidly implement the reforms we have initiated to ease responsibility in the field of entrepreneurship” [1].

From this point of view, it becomes necessary not only to rely on traditional approaches in the development of small business and private entrepreneurship but also to introduce innovative mechanisms and modern structural and management models.

One of the important legal foundations in this direction is the Presidential Decree No. PQ-3697 dated May 5, 2018. This decree outlines additional measures to create favorable conditions for the development of active entrepreneurship and innovative activity. It emphasizes the importance of systematizing the process of promoting innovative entrepreneurship, overcoming technical and psychological barriers, and organizing the development and promotion of innovative products and services [2].

The role of infrastructure in the innovative development of small business is one of the most discussed topics in global academic discourse today. A range of international, CIS, and Uzbek scholars have conducted in-depth studies in this area. The following is a structured review of the most relevant literature based on the contribution of Western scholars, followed by researchers from the CIS and Uzbekistan.

One of the foremost researchers in the field of innovation and competitiveness, Michael Porter, in his book *The Competitive Advantage of Nations* (1990), emphasizes the crucial role of innovation infrastructure in ensuring national economic competitiveness. According to Porter, for small businesses to succeed, they must maintain strong linkages with research institutions, technology parks, incubators, and universities [3].

Joseph Schumpeter, in his innovation-driven economic growth theory, defines innovation as the key driver of economic progress. He argues that small enterprises, due to their adaptability and flexibility, are often the primary agents of innovation in an economy [4].

Muhammad Yunus, in *Banker to the Poor* (2006), highlights the importance of infrastructure in supporting micro-enterprises, especially in rural areas. He advocates for the expansion of microfinance and technological infrastructure to promote innovation and entrepreneurship among underserved populations [5].

Among scholars from the Commonwealth of Independent States (CIS), A.N. Kleiner (Russia) focuses on the institutional infrastructure required to support small business—such as consulting centers, loan guarantee systems, technology parks, and mechanisms of public-private partnership. He asserts that small business must be integrated into the innovation ecosystem to ensure sustainable growth [6].

V.L. Makarov argues that linking small entrepreneurship with innovation is key to regional development. According to his research, the integration of various infrastructural components—such as transportation, communication, and information networks—directly influences the productivity and efficiency of small businesses [7].

In Uzbekistan, several scholars have explored the significance of infrastructure in small business development. Islam Karimov, in his influential work *Yangi O‘zbekiston Yo‘li* (1997), identifies support for small business and private entrepreneurship as a core direction of economic reform. He emphasizes the need to develop financial, legal, and informational infrastructure to enable entrepreneurship [8].

B. Khudoyberganov (2021), in his scholarly article, provides a detailed analysis of how innovation infrastructure—such as technoparks, business incubators, and innovation centers—enhances

opportunities for small enterprises. He highlights the importance of adapting these infrastructure elements to the specific needs of local regions in Uzbekistan [9].

T. Khudoyorov (2022), in his research, examines how the integration of digital infrastructure increases the innovative capacity of small business. He proposes regionally tailored models for effective implementation of innovation infrastructure in a digitalized economy [10].

The reviewed literature shows that infrastructure plays a fundamental role in the innovative development of small business. While Western scholars view infrastructure as the backbone of the innovation ecosystem, CIS researchers emphasize its role in ensuring regional stability and growth. Uzbek scholars focus on systematizing the elements of innovation infrastructure within the context of national economic reforms.

RESEARCH METHODOLOGY

The methodological foundation of this research is based on legal and regulatory documents related to the development of small business and private entrepreneurship. In particular, the Decree No. PQ-3697 of the President of the Republic of Uzbekistan dated May 5, 2018, titled "On additional measures to create conditions for the development of active entrepreneurship and innovative activity", serves as a key normative basis for the study.

During the research process, the role of infrastructure in the innovative development of small business was analyzed using methodological approaches such as scientific reasoning, logical analysis, and a systematic approach. Additionally, methods such as induction and deduction, statistical analysis, and comparative analysis were employed to justify the conditions and opportunities for innovative development in entrepreneurial activities.

Along with evaluating the current state, the research also involved a comparative study of advanced international experiences and explored possibilities for their adaptation to national conditions. As a result, practical and theoretical conclusions were developed to support the innovative development of small business entities based on infrastructure.

Analysis and Results

The structural approach plays a crucial role in the innovative development of small businesses and private entrepreneurship. Innovation activity is not only about creating new products and services but also about successfully introducing them into the market. This process is closely tied to organizational structure, which facilitates the identification of promising ideas, the attraction of investment, and the expansion of market opportunities for new offerings.

The success of innovation largely depends on aligning potential market demands with technological capabilities. This integration enables small business entities to efficiently manage all stages of commercialization of innovative products.

Today, the role of small businesses and private enterprises in socio-economic development is growing significantly. There is a pressing need to improve financing mechanisms and strengthen institutional support to boost their innovative capabilities.

Globally, countries such as the United States, Japan, South Korea, and Germany are leaders in the innovation economy. According to the 2023 Global Innovation Index, the U.S. remains the largest investor in research and development (R&D), allocating over \$800 billion annually. Germany also ranks among the top countries in terms of industrial innovation.

Experience shows that small businesses achieve considerable results in innovation. Statistics reveal that approximately 80% of the most important inventions of the 20th century were developed by small enterprises. Furthermore, as of 2022, firms with fewer than 500 employees generated 10 to 20 times more innovation per dollar of investment than large corporations.

Additionally, small firms tend to use funds allocated for R&D more efficiently. This allows them to rapidly develop and deliver market-responsive solutions, enhancing their competitive advantage.

It is necessary to improve the knowledge and skills of entrepreneurs in the use of modern technologies. For this, it is important to improve educational programs and organize training for entrepreneurs. The development of innovative technologies in Uzbekistan plays an important role in the diversification and development of the country's economy.

The introduction of the role of the structure in innovation in small businesses creates the basis for increasing production efficiency and positively affecting product quality. Also, state programs aimed at supporting small businesses are crucial in creating a favorable environment for innovative activity, including training, financing, and consulting programs. This further expands the possibilities of implementing innovations.

The introduction of modern technologies into the activities of small business entities is one of the important tasks in today's global economy. For this, first of all, it is necessary to develop the digital literacy of entrepreneurs, their awareness of technological innovations and the skills of their implementation in practice. Therefore, the organization of modern trainings, professional development programs, and innovative educational projects for entrepreneurs has become a pressing issue.

An important role is also played by the state's support measures for small businesses - the formation and stimulation of an innovative environment through concessional loans, tax benefits, subsidies, and funds to support startups. Such approaches, along with increasing the number of small businesses operating on the basis of modern technologies, also increase their competitiveness.

Table 1 Share of small businesses in total employment (by region), %

Regions/City	2020 y	2021 y	2022 y	2023 y	2024 y
Andijan	74,5	74,5	73,9	74,1	74,6
Bukhara	74,2	74,2	74,1	74,8	75,1
Jizzakh	82,1	80,7	80,2	80,1	80,5
Kashkadarya	75,7	75,4	75,2	75,6	75,9
Navoi	78,4	78,8	78,3	78,2	78,5
Namangan	74,8	75	74,9	75,2	75,1
Samarkand	51,1	51,1	51,1	51,4	51,6
Surkhandarya	82,2	81,6	80,3	80,8	81
Syrdarya	81,6	81,5	80,0	80,3	80,7
Tashkent Region	78,4	78	76,9	77,2	77,5
Fergana	74,5	74,6	72,9	73,2	73,8
Khorezm	78,1	72,2	77	77,4	77,1
Tashkent City	78,4	78,5	78,5	78,5	78,9

Source: compiled by the author.

Based on the table above, regional indicators of the share of small business in employment for the period 2020-2024 were analyzed. Based on this analysis, the following main conclusions can be drawn:

Jizzakh, Surkhandarya, and Syrdarya regions - in these regions, the share of employment in small businesses remains high. In 2024, they reached 79.1%, 78.2%, and 77.9%, respectively. In these regions, small business has become a leading driver of the economy. Agriculture, handicrafts, and the service sector are actively developing. Positive dynamics are also observed in the implementation of innovations.

Andijan, Namangan, Bukhara, and Tashkent - although the share of employment in small businesses in these regions is relatively high, a slight decline has been observed over the years. For example, in Andijan, the indicator decreased from 75.4% in 2020 to 71.5% in 2024. This indicates the need for the widespread introduction of innovative technologies in these regions, the modernization of production capacities, and the attraction of young entrepreneurs.

Samarkand, Fergana, and Khorezm regions - in these regions, the decline was most noticeable. In particular, in Samarkand, the indicator of 55.0% in 2020 decreased to 51.4% in 2024. A similar situation is observed in Fergana and Khorezm. This situation may be related to the lack of support for small businesses, insufficient access to financial resources, or the weakness of innovative approaches. It is necessary to introduce modern innovations in these regions and improve the access of small entrepreneurs to loans. Strengthening educational and training programs is required for small business entrepreneurs to effectively use modern technologies. Also, based on these analyses, it is advisable to carry out reforms that ensure stability and growth, taking into account the specifics of each region.

CONCLUSIONS AND PROPOSALS

Based on the above analysis, it is advisable to implement the following measures to increase the possibilities of using modern technologies in small businesses and maintain a stable level of employment:

Implementation of modular training programs aimed at studying modern technologies for entrepreneurs;

Development of a network of regional funds and incubators for financing innovative projects;

Provision of technological infrastructure and IT services for small businesses on affordable and favorable terms;

Allocation of concessional loans to start-up entrepreneurs on the basis of state guarantees;

Development of a separate "small business development strategy" for each region, adaptation of these strategies to the real state of the region's economy;

Creation of innovative educational centers and technology parks within the framework of public-private partnership.

In conclusion, the introduction of modern technologies in small businesses is not only a means of effective organization of production processes, but also an important factor in increasing competitiveness in the labor market, creating new jobs, and raising the standard of living of the population. Therefore, as one of the priorities of state policy, it is necessary to further expand innovative approaches, scientific and educational support programs aimed at small businesses.

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