

INNOVATIVE POTENTIAL AND EFFICIENCY OF INDUSTRIAL ENTERPRISES IN UZBEKISTAN

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Abstract: This article is devoted to the study of the innovative potential of industrial enterprises in Uzbekistan and its efficiency. The study analyzes the level of development of innovative processes in the country's industry, technological innovations and their economic efficiency. The article considers the factors that hinder the innovative activity of enterprises, as well as ways to eliminate them. Emphasizing the importance of innovations in the economy of Uzbekistan, the possibilities of increasing the competitiveness of the industry through the use of foreign experience and advanced technologies are considered.

Keywords: innovative potential, industrial enterprises, technological innovations, efficiency, economy of Uzbekistan, competitiveness.

Introduction: The main direction of the global economy in the 21st century is the transition to an economic model based on knowledge and innovation. According to the World Bank, more than 60% of gross domestic product (GDP) in developed countries is created due to intellectual capital and innovative technologies. In particular, due to the fourth industrial revolution (Industry 4.0), technologies such as artificial intelligence, big data and the Internet of Things (IoT) are fundamentally changing production efficiency.

Uzbekistan has also identified the development of an innovative economy as one of its priorities during the comprehensive reforms implemented since 2017. The decree of President Sh.M. Mirziyoyev on the "Strategy of the New Uzbekistan" dated January 28, 2022, indicates "making our country competitive in the world market through the development of an innovative economy" as the main task. However, the innovative potential of Uzbek industrial enterprises still does not meet international standards. According to the Statistical Committee, the share of innovative products in industrial enterprises in 2023 will be around 12%, which is significantly lower than in the European Union countries (45%) and South Korea (55%). This article presents an analysis of the main theoretical and practical works of Uzbek and foreign researchers on innovative potential and its effectiveness.

Literature review. The impact of innovative capacity on enterprise performance has been studied in many studies. Nobel Prize laureate Robert Solow, in his neoclassical growth model, identified technological progress as the main source of long-term economic growth. According to his model:

- Traditional resources such as labor and capital only provide structural growth temporarily;
- Innovation (technological progress) increases labor productivity in the long term and leads to sustainable growth;
- According to Solow's calculations, more than 80% of GDP growth in the United States between 1909 and 1949 was due to technological progress.¹

¹Robert Solow "A Contribution to the Theory of Economic Growth" (1956)

From the studies analyzing innovative activity in industrial enterprises in Uzbekistan, it can be seen from the works of Abdurakhmonov and Usmanova that investments in innovation are relatively low due to the priority of the country's mainly resource-based economy. However, in recent years, positive changes have been observed in the introduction of new technologies in the IT, textile, chemical and processing industries.²

Analysis of results. Today, the successful implementation of all strategic plans for the modernization and renewal of our country, the development of the economy on the basis of a qualitatively new, modern structural structure, as well as the comprehensive socio-economic development of regions, directly depends on the rapid development of infrastructure networks and their effective use. It is the expansion and qualitative improvement of infrastructure networks that contribute to the overall economic development of the country, the production creates the basis for achieving high efficiency in the production and services sector, and also serves to ensure economic and social equality between regions. In this regard, the Decree of the President of the Republic of Uzbekistan Sh. Mirziyoyev "On the Strategy of Actions for the Further Development of the Republic of Uzbekistan"³ stipulates that "... reducing the energy and resource consumption of the economy, widely introducing energy-saving technologies into production, expanding the use of renewable energy sources, and increasing labor productivity in economic sectors" is one of the most priority tasks to be solved in our republic in the coming years and in the future. Successful implementation of this priority task sets before industrial enterprises the task of further increasing production capacity, improving product quality, successfully withstanding market competition, expanding the customer base, and also maximizing the profit obtained as a result of these processes. At the same time, improving innovative management methods at enterprises, introducing effective management systems, and increasing their competitiveness remain the main strategic goals.

Nowadays, in a market economy, the process of determining and calculating the effectiveness of the innovative environment is of great importance. This is done, in particular, by using various indicators to assess the innovative environment in enterprises. The following main indicators play an important role in determining the effectiveness of the innovative environment:

1. Innovation Efficiency Index

This indicator is evaluated in relation to the output (result) of investments in innovation:

$$\text{Innovation Efficiency Index} = \frac{\text{Innovative performances}}{\text{inputs}}$$

Innovative outputs - number of patents, new products, commercialized technologies.

Inputs - R&D expenses, funds allocated to innovation projects.

²Rakhimov, O. (2020). Prospects for the development of the innovative economy in Uzbekistan.

Karimov, A. (2021). Management of innovation processes in industrial enterprises.

³Decree of the President of the Republic of Uzbekistan Sh. Mirziyoyev No. PF-4947 dated February 7, 2017 "On the Strategy of Actions for the Further Development of the Republic of Uzbekistan". // Xalq so'zi, February 8, 2017, No. 28 (6722).



2. Integral efficiency - E :

$$E = \sum_{t=0}^{\infty} (\dots - Z) \cdot \dots$$

Here: -next period ;
- t-year result ;
Z - t – cost of innovation ;
is the discounted coefficient .

Integral efficiency can also be referred to as net discounted income, net present value, or net reduced value.

The development of the economy of the Republic of Uzbekistan at the current stage is directly related to the widespread introduction of innovations, new techniques and technologies into production processes. This process, in turn, is carried out on the basis of a combination of modern scientific achievements, theoretical and practical knowledge. A comprehensive and in-depth study of the impact of innovations not only on the activities of individual economic entities, but also on the entire economic system is recognized as one of the most urgent scientific and practical issues of our time. From this point of view, the analysis of measures taken in the Republic of Uzbekistan to support innovative development, introduce advanced technologies, and integrate scientific and research developments into the economy is of great importance both theoretically and practically.

The innovative potential of enterprises of various forms of ownership, it is important to clearly identify a number of factors. First of all, it is necessary to identify the motivating factors that encourage enterprises to embark on the risky path of innovation. These include tax incentives, state grants, subsidies, loans aimed at financing innovative projects, and other economic incentives. Secondly, it is necessary to assess the opportunities for enterprises to implement innovations, that is, the existing scientific and technical potential, qualified personnel, technological infrastructure, external cooperation relations, and the convenience of the market environment. As a third important aspect, it is necessary to analyze the institutional and organizational mechanisms for conducting innovative activities - for example, the openness of the enterprise management to innovation, the flexibility of the management system, and innovative approaches to strategic decision-making. Based on these factors, it will be possible to determine the real level of the innovative potential of enterprises of various forms and determine the directions for its development.

Years	Total innovative products, enterprises, units that produce developments and services	Innovative products, volume of developments and services, billion soums	Innovative products, Expenditures for developments and services billion soums
2016	289	1849	264.4
2017	385	1348.7	372.6
2018	338	3635.9	311.9
2019	683	4614.7	4634.2

2020	1601	7043	3757.4
2021	2134	8023	5528.5
2022	2374	10688.2	2571.4

Table 1. Economic indicators of innovative products, developments and services created by enterprises of the Republic of Uzbekistan.

From the data presented in Table 1, it can be said that in the Republic of Uzbekistan in 2016, 289 enterprises produced innovative products, developments and services worth 1,849 billion soums, while in 2022 these figures amounted to 2,374 and 10,688.2 billion soums, respectively. It is worth noting that if we take the number of these enterprises relative to the total number of enterprises operating in these periods, it was found that enterprises engaged in the production of innovative products, developments and services accounted for only 2.3 percent in 2016 (229.9 thousand units) and 12.0 percent in 2022 (285.3 thousand units).

In the Republic of Uzbekistan, the amount of spending on creating innovative products, developments and services is also changing from year to year. In particular, in 2016, these expenses amounted to 264.4 billion soums, while by 2022 this figure reached 2,571.4 billion soums. However, compared to 2015, in 2022, spending on innovative activities decreased by 53.5%. This indicates that the availability of stable sources of financing is an important factor in the consistent and effective conduct of innovation processes.

Conclusion. The study of the innovative potential of Uzbek industrial enterprises and its efficiency shows that in recent years the country has been taking concrete steps to develop innovative processes. In the period 2016–2022, the number of enterprises producing innovative products increased from 289 to 2374, and the volume of innovative products increased from 1849 billion soums to 10,688.2 billion soums. However, these indicators are still significantly lower than in developed countries, and only 12% of enterprises operating in Uzbekistan are engaged in innovative activities.

To increase innovation capacity, it is important to take the following measures:

1. Introduction of advanced technologies - increasing production efficiency through the use of artificial intelligence, IoT, and automated systems.
2. State incentives - providing tax breaks, subsidies, and cheap loans for innovative projects.
3. Strengthening international cooperation - studying foreign experience and technologies, implementing joint projects

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