BG Pulse Journal USA
ISSN:1947-2536 http://www.bgpulseusa.com/index.php/bg
BG PULSE JOURNAL

THE IMPACT OF ARTIFICIAL INTELLIGENCE ON ECONOMIC GROWTH IN UZBEKISTAN: OPPORTUNITIES AND CHALLENGES

Axmadova Fayyoza Sobir qizi
Tashkent State University of Economics,
Student of the Faculty of Economics
E-mail: fayozaahmadova06@gmail.com

Doi: https://doi.org/10.5281/zenodo.22642208

Abstract: This article examines the impact of artificial intelligence (AI) on economic growth in Uzbekistan, focusing on the opportunities and challenges associated with the development and adoption of AI technologies. The study analyzes the potential role of AI in increasing labor productivity, improving business efficiency, accelerating digital transformation, and creating new economic opportunities. Particular attention is given to the application of AI in key sectors of the Uzbek economy, including finance, industry, agriculture, education, and public services. The article also identifies major challenges, such as the shortage of qualified specialists, limited digital infrastructure, data security risks, high implementation costs, and potential changes in employment patterns. Based on the analysis, the study highlights the importance of developing human capital, strengthening digital infrastructure, supporting innovation, and creating an appropriate regulatory framework for the responsible use of AI. The findings suggest that effective integration of artificial intelligence can contribute significantly to productivity growth, economic diversification, and the long-term sustainable development of Uzbekistan.

Keywords: artificial intelligence, economic growth, digital economy, labor productivity, innovation, digital transformation, human capital.

INTRODUCTION

Artificial intelligence (AI) has emerged as one of the most important general-purpose technologies shaping the modern global economy [6]. Unlike traditional information and communication technologies, AI is capable not only of automating routine operations but also of performing analytical, predictive, and decision-support functions that traditionally require human cognitive input. Therefore, its economic significance is associated with its potential to increase total factor productivity, reduce transaction and production costs, improve the allocation of capital and labor, accelerate innovation, and create new markets and high-value-added services. For developing economies, the effective application of AI can become an important mechanism for overcoming productivity constraints and accelerating structural transformation, provided that technological diffusion is supported by adequate human capital, digital infrastructure, data availability, and institutional capacity.

For Uzbekistan, the relevance of AI should be considered against the background of the country's relatively rapid economic expansion and ongoing structural transformation. According to World Bank data, Uzbekistan's real gross domestic product (GDP) grew by 7.7% in 2025, compared with 6.7% in 2024. In 2025, private consumption increased by 9.2% in real terms, while investment grew by 10.5%, and economic activity was supported by the expansion of services, agriculture, and industry. The country's nominal GDP reached approximately USD 147.0 billion in

2025, compared with USD 114.97 billion in 2024. These indicators suggest that Uzbekistan is entering a period in which maintaining high economic growth will increasingly depend not only on expanding physical capital and labor resources but also on improving productivity and technological efficiency.

Artificial intelligence systems depend on reliable digital infrastructure, computing resources, interoperable databases, cybersecurity, data governance, and qualified specialists. Uzbekistan's improvement in the Network Readiness Index—from 81st place in 2024 to 72nd place in 2025—indicates progress in the broader digital environment [3]. Nevertheless, a considerable gap remains between digital connectivity and advanced AI capabilities. Internet access alone does not guarantee the effective adoption of AI; firms must also possess the organizational capabilities and human capital required to integrate AI into production and decision-making processes.

2030-Looking toward 2030, the potential contribution of artificial intelligence to Uzbekistan's economic growth can be considered not as a deterministic forecast but through a productivity-based scenario. If the country successfully combines AI investment with the development of digital infrastructure, workforce retraining, research and development, startup financing, and appropriate regulation, AI adoption may lead to significant productivity gains and support the transition toward a higher-value-added economic structure. Conversely, if technology adoption remains concentrated among large firms and public institutions while small enterprises face financial and skills constraints, technology may deepen productivity gaps rather than reduce them. Consequently, the expected outcome will depend on the interaction among technology adoption, human capital, capital accumulation, institutional quality, and innovation capacity.

LITERATURE REVIEW

Artificial intelligence and its impact on economic growth have been studied by both international and domestic researchers. Filippucci et al. (2024) found that artificial intelligence could increase annual total factor productivity growth by 0.25–0.60 percentage points and labor productivity growth by 0.4–0.9 percentage points.

Among Uzbek researchers, B.B. Valiyev (2025) examined the potential of artificial intelligence in the Uzbek economy and emphasized its role in increasing productivity, innovation, and competitiveness. D.M. Karimov and U.F. Baxshalieva (2025) studied the adoption of artificial intelligence in Uzbekistan's financial sector and highlighted the importance of infrastructure, qualified specialists, and cooperation between the public and private sectors. I.A. Sayfiddinov (2024) analyzed the impact of artificial intelligence on Uzbekistan's economy, focusing on modernization, efficiency, and sustainable development.

RESEARCH METHODOLOGY

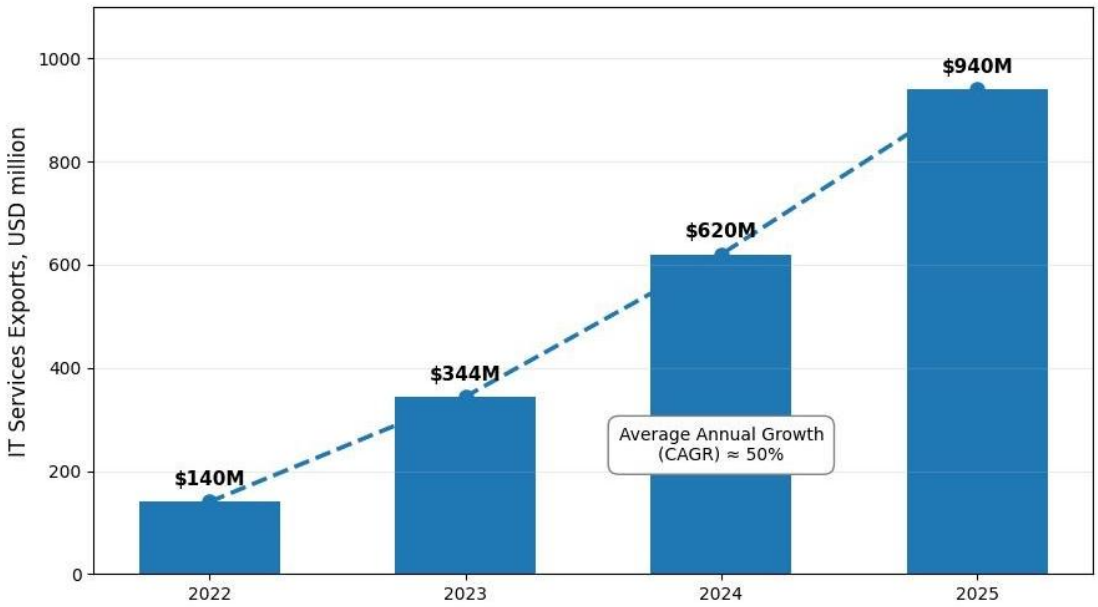
Systematic, statistical, and comparative analysis methods were used to assess the impact of artificial intelligence technologies on economic growth in Uzbekistan. The information base of the study consisted of data from the National Statistics Committee of the Republic of Uzbekistan, the Ministry of Digital Technologies, international organizations, and scientific research. Economic and digital development indicators for 2023–2025 were analyzed. The impact of artificial intelligence on economic growth was assessed through labor productivity, the level of digitalization, the volume of IT services, investment, employment, and GDP dynamics. In addition, a SWOT

analysis was used to identify the main opportunities and challenges for the development of AI technologies in Uzbekistan. Comparative analysis was employed to compare Uzbekistan's AI development indicators with international trends. The study was also based on the Strategy for the Development of Artificial Intelligence Technologies in the Republic of Uzbekistan until 2030 and contemporary concepts of economic and digital development.

ANALYSIS AND RESULTS

To assess the impact of artificial intelligence (AI) technologies on economic growth in Uzbekistan, official statistical data for the period 2022–2025 were analyzed. Following the adoption of the Strategy for the Development of Artificial Intelligence Technologies until 2030, signed by the President in October 2024, the country rose by 25 positions to 62nd place in the international Government AI Readiness Index [1]. The strategy sets the goal of entering the world's top 50 countries in this indicator by 2030, as well as increasing the volume of AI-based software products and services to USD 1.5 billion [2].

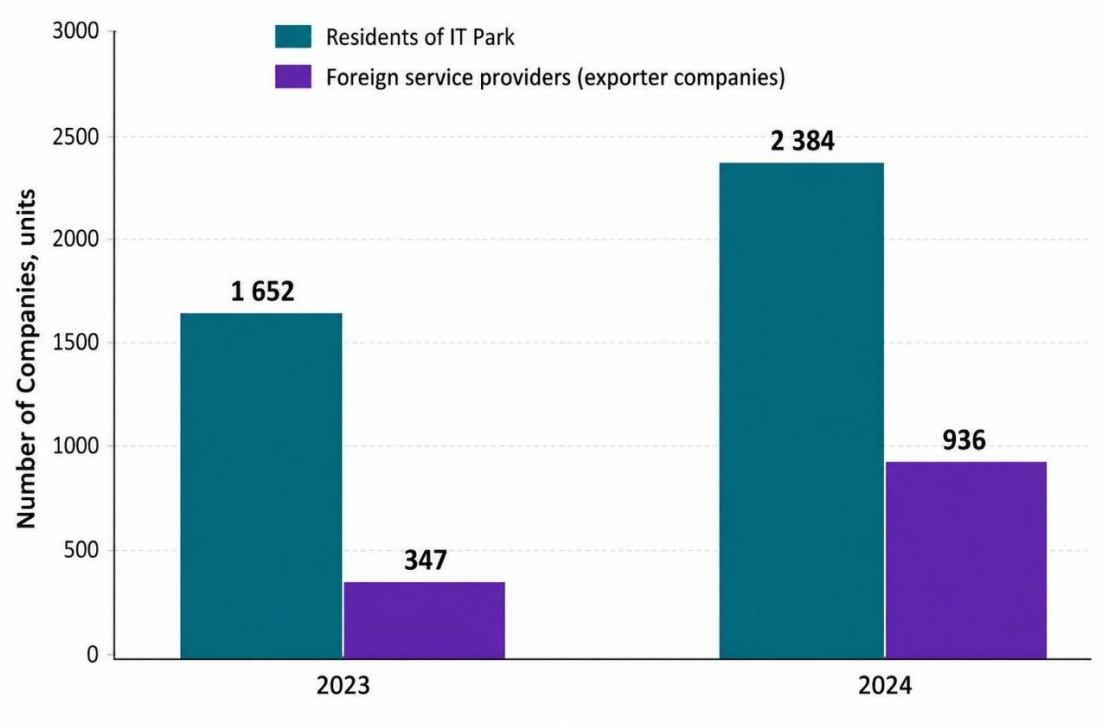
Diagram 1. Dynamics of Digital Economy and Artificial Intelligence-Related IT Services Exports, 2022–2025



Source: Data from IT Park Uzbekistan and the Ministry of Digital Technologies (pivot.uz, 2026)

Exports of IT services increased from USD 140 million in 2022 to USD 940 million in 2025, with an average annual growth rate (CAGR) of approximately 50% [5]. A significant share of this growth is accounted for by AI-based software solutions and IT outsourcing services. At the same time, maintaining the current growth rate is necessary to achieve the strategic target of USD 5 billion by 2030; otherwise, the plan may remain only about 19% fulfilled.

Diagram 2. Expansion of the IT Park Ecosystem in the Digital Economy and Artificial Intelligence Sector, 2023–2024



Source: Data from IT Park Uzbekistan (it-park.uz, 2024)

Diagram 2 reflects the rapid expansion of the IT Park ecosystem: the number of resident companies increased from 1,652 at the end of 2023 to 2,384 by the third quarter of 2024, while the number of companies providing services abroad (exporting companies) grew by approximately 170% during the same period, reaching 936 [4]. This indicates the rapid formation of institutional infrastructure for the commercialization of artificial intelligence and digital technologies.

The impact of artificial intelligence on Uzbekistan's economy is currently manifested mainly through IT service exports and the digital ecosystem; however, fully realizing this potential requires further development of computing infrastructure, qualified human resources, and the regulatory system.

CONCLUSION

An institutional and legal framework for the development of artificial intelligence has been established in Uzbekistan, including the adoption of a national strategy through 2030. As a result, Uzbekistan rose by 25 positions to 62nd place in the Government AI Readiness Index. This indicates that consistent policy actions at the state level have begun to produce results.

Statistical analysis confirmed the rapid growth of IT service exports directly related to artificial intelligence: from 2022 to 2025, the figure increased from USD 140 million to USD 940 million, or nearly 6.7 times (average annual growth of approximately 50%). At the same time, the number of resident and exporting companies in the IT Park ecosystem increased significantly, indicating the continued expansion of digital and innovative infrastructure.

In conclusion, artificial intelligence offers significant opportunities for Uzbekistan's economy in terms of sustainable growth, increased international competitiveness, and the creation of new high-technology jobs [7]. However, fully realizing this potential requires continued and consistent

state policy aimed at developing computing infrastructure, modernizing the workforce training system, and improving the regulatory and legal framework.

REFERENCES

1. On the Approval of the Strategy for the Development of Artificial Intelligence Technologies in the Republic of Uzbekistan until 2030 // Gazeta.uz. — 2024. — October 17.
2. President of the Republic of Uzbekistan. Resolution No. PQ-358, “On the Approval of the Strategy for the Development of Artificial Intelligence Technologies until 2030,” October 14, 2024.
3. United Nations Development Programme (UNDP). Digital Economy of Uzbekistan: The State of Digital Entrepreneurship and Artificial Intelligence. 2025.
4. The Geography of Exports from Uzbekistan Expanded to 78 Countries: Third-Quarter Results // Official Website of IT Park Uzbekistan. — 2024.
5. Artificial Intelligence and Digital Transformation: A New Stage in the Development of Uzbekistan's Economy // UZA.uz. — 2026.
6. The Importance of the Digital Economy and Artificial Intelligence Technologies in the Development of Society: Proceedings of the International Scientific and Practical Conference. — Tashkent, 2024. — November 22.
7. Artificial Intelligence Technologies in the Economy: Opportunities, Implementation Methods, and Results // InLibrary.uz. — 2025.