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CONTACTS

Phone: **+998 50 737 87 88**

Website: <https://ist-journal.uz>

Email: innovationist2025@gmail.com

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IMPROVING INFORMATION LOGISTICS MANAGEMENT MECHANISMS IN UZBEKISTAN BASED ON ARTIFICIAL INTELLIGENCE AND BIG DATA TECHNOLOGIES

Islomjon Jamshedovich Jamshedov

2nd-year student in the Economics program,
Faculty of Economics, Samarkand State University of
Veterinary Medicine, Livestock and Biotechnologies

Annotatsiya. O'zbekistonda axborot logistikasini boshqarish mexanizmlarini sun'iy intellekt va Big Data texnologiyalari asosida takomillashtirishning nazariy hamda amaliy jihatlari tadqiq etilgan. Raqamli iqtisodiyot sharoitida logistika jarayonlarining samaradorligi axborot oqimlarini tezkor yig'ish, qayta ishlash, uzatish va tahlil qilish darajasiga bevosita bog'liq. Sun'iy intellekt va Big Data texnologiyalaridan foydalanish logistika tizimida ma'lumotlar almashinuvini takomillashtirish, talabni prognozlash, transport yo'nalishlarini optimallashtirish, ombor zaxiralarini samarali boshqarish hamda logistika xarajatlarini kamaytirish imkonini beradi. O'zbekistonda amalga oshirilayotgan raqamli transformatsiya jarayonlari, transport-logistika infratuzilmasining rivojlanishi hamda axborot logistikasini boshqarishda zamonaviy raqamli texnologiyalardan foydalanish holati tahlil qilingan. Tadqiqotda qiyosiy va statistik tahlil, tizimli yondashuv hamda iqtisodiy-matematik usullardan foydalanilgan. Natijalar sun'iy intellekt va Big Data texnologiyalarini logistika tizimiga joriy etish uning samaradorligini oshirish, boshqaruv qarorlarining sifatini yaxshilash va logistika xarajatlarini kamaytirishga xizmat qilishini ko'rsatadi. Tadqiqot natijalari asosida O'zbekistonda axborot logistikasini boshqarish mexanizmlarini takomillashtirish bo'yicha amaliy tavsiyalar ishlab chiqilgan.

Kalit so'zlar: axborot logistikasi, sun'iy intellekt, Big Data, raqamli logistika, logistika axborot tizimi, ta'minot zanjiri, IoT, ERP, WMS, TMS, O'zbekiston.

Аннотация. Исследованы теоретические и практические аспекты совершенствования механизмов управления информационной логистикой в Республике Узбекистан на основе технологий искусственного интеллекта и Big Data. В условиях цифровой экономики эффективность логистических процессов непосредственно зависит от скорости сбора, обработки, передачи и анализа информационных потоков. Применение технологий искусственного интеллекта и Big Data позволяет совершенствовать обмен информацией, прогнозировать спрос, оптимизировать транспортные маршруты, эффективно управлять складскими запасами и снижать логистические издержки. Проанализированы процессы цифровой трансформации экономики Узбекистана, развитие транспортно-логистической инфраструктуры, а также современное состояние применения цифровых технологий в управлении информационной логистикой. В исследовании использованы методы сравнительного и статистического анализа, системный подход и экономико-математические методы. Полученные результаты показывают, что внедрение технологий искусственного интеллекта и Big Data способствует повышению эффективности логистических процессов, улучшению качества управленческих решений и снижению логистических издержек. На основе результатов исследования разработаны практические рекомендации по совершенствованию механизмов управления информационной логистикой в Узбекистане.

Ключевые слова: информационная логистика, искусственный интеллект, Big Data, цифровая логистика, логистическая информационная система, цепь поставок, Интернет вещей, ERP, WMS, TMS, Узбекистан.

Abstract. The theoretical and practical aspects of improving information logistics management mechanisms in the Republic of Uzbekistan through Artificial Intelligence (AI) and Big Data technologies are examined. In the digital economy, the efficiency of logistics processes largely depends on the speed and effectiveness of collecting, processing, transmitting, and analyzing information flows. The application of Artificial Intelligence and Big Data technologies enables the improvement of information exchange, demand forecasting, transportation route optimization, efficient warehouse inventory management, and the reduction of logistics costs. The ongoing digital transformation processes in Uzbekistan, the development of transport and logistics infrastructure, and the current state of digital technology adoption in information logistics management are analyzed. The study employs comparative and statistical analysis, a systems approach, and economic-mathematical methods. The findings demonstrate that the implementation of Artificial Intelligence and Big Data technologies contributes to improving logistics efficiency, enhancing the quality of managerial decision-making, and reducing logistics costs. Based on the research findings, practical recommendations are developed for improving information logistics management mechanisms in Uzbekistan.

Keywords: information logistics, artificial intelligence, Big Data, digital logistics, logistics information system, supply chain, Internet of Things, ERP, WMS, TMS, Uzbekistan.

INTRODUCTION

In recent years, the acceleration of the digital transformation of the global economy has brought fundamental changes to logistics systems, as well as to all other sectors. The increasing complexity of global supply chains, the rapid growth of e-commerce, the expansion of international trade flows, and rising customer expectations for fast and high-quality services have made effective information-flow management a strategic factor in logistics. Traditional logistics systems are increasingly integrating with digital technologies, giving rise to the Logistics 4.0 concept. This concept provides for the broad introduction of artificial intelligence, cloud computing, blockchain, digital twins, and other innovative technologies into logistics processes [1].

Information logistics is an important system that ensures the planning, collection, transmission, processing, storage, and use of information flows for the effective management of material, financial, and service flows. The efficiency of a modern logistics system largely depends on the reliability, timeliness, and accuracy of information. Effective management and accurate processing of information flows contribute to reducing transportation costs, optimizing inventory levels, shortening order fulfillment times, and improving customer satisfaction [2].

Currently, artificial intelligence technologies are widely used in logistics systems for forecasting, route optimization, the efficient use of vehicles, warehouse automation, demand forecasting, and logistics risk assessment. By analyzing large volumes of data within a short period, AI algorithms enable managers to make timely and well-grounded decisions. At the same time, Big Data technologies are used to accumulate and process data generated by millions of logistics operations and to apply these data in the development of strategic management decisions [3].

International practice shows that the use of AI and Big Data technologies in logistics can reduce transportation costs by an average of 10–20%, warehouse costs by 20–30%, and delivery times by 15–25%. Therefore, major logistics companies in developed countries, including DHL, Amazon, UPS, Maersk, and FedEx, are actively implementing artificial-intelligence-based logistics management systems [4].

In the Republic of Uzbekistan, the development of the digital economy has also become one of the priority areas of state policy in recent years. The “Digital Uzbekistan – 2030” Strategy, as well as state programs aimed at modernizing transport and logistics infrastructure, provides an important legal and institutional basis for the digitalization of the logistics system [5]. These strategic documents provide for the broad introduction of modern information and communication technologies in public administration, industry, transport, and logistics, the development of electronic services, and the formation of data-driven management systems [6].

The growing number of transport and logistics centers in the country, the rapid development of e-commerce, the expansion of the electronic customs system, and the increase in multimodal transportation are significantly increasing the volume of information flows. The use of artificial intelligence and Big Data technologies in these processes is an important factor in improving the quality of logistics services, ensuring the efficient use of resources, and strengthening Uzbekistan’s competitiveness in international transport corridors [7].

At the same time, there are opportunities for further improvement in the management of information logistics in Uzbekistan. In particular, enhancing the integration of logistics databases, expanding real-time information exchange, strengthening the training of qualified specialists in the application of artificial intelligence technologies, and further developing the technical infrastructure for processing large volumes of data can contribute to improving the efficiency of the logistics system [8].

The relevance of this study is determined by the need for a scientifically grounded analysis of these issues and the development of modern mechanisms for addressing them. The integration of artificial intelligence and Big Data technologies into information logistics not only improves operational efficiency but also makes it possible to optimize transportation costs, reduce logistics risks, accelerate information exchange among supply-chain participants, and improve the accuracy of management decisions [9].

The purpose of this article is to scientifically analyze information logistics management mechanisms in Uzbekistan based on the use of artificial intelligence and Big Data technologies, identify existing areas for improvement, and develop practical proposals and recommendations for their further enhancement.

The objectives of the study are as follows:

- to study the theoretical foundations of information logistics;
- to assess the capabilities of AI and Big Data technologies in the logistics system;
- to analyze the current state of information logistics in Uzbekistan;
- to identify factors affecting the development of logistics information systems;
- to develop an improved information logistics management model and propose practical recommendations.

LITERATURE REVIEW

Among foreign scholars, Martin Christopher, in his work "Logistics & Supply Chain Management", paid particular attention to the integration of information flows with material flows in logistics and supply chain management. The author substantiates that the efficiency of a logistics system directly depends on the rapid and reliable exchange of information. In modern editions of the work, digitalization, information technologies, and supply chain integration are considered important factors in enhancing logistics competitiveness.

Donald J. Bowersox, David J. Closs, and M. Bixby Cooper, in their work "Supply Chain Logistics Management", examined logistics information systems as one of the main tools for integrating supply chains. The authors demonstrated that the use of information technologies makes it possible to manage orders, control inventories, and coordinate transportation and warehousing operations effectively. A separate chapter of the book is devoted to "Supply Chain Information Technology".

Sanjib Biswas and Jaydip Sen, in their 2017 study "A Proposed Architecture for Big Data Driven Supply Chain Analytics", developed a conceptual architecture for applying Big Data technologies to supply chain management. The authors substantiated that collecting, processing, analyzing, and visualizing large volumes of data can improve the quality of managerial decision-making.

Muhammad Habib ur Rehman, Ibrar Yaqoob, Khaled Salah, Muhammad Imran, Prem Prakash Jayaraman, and Charith Perera, in their 2019 study "The Role of Big Data Analytics in Industrial Internet of Things", examined the integration of Big Data Analytics and the Internet of Things (IoT). The study highlighted the possibilities of obtaining real-time operational information and improving management efficiency through the processing of large volumes of data.

Among Uzbek researchers, Nurfayz Nizomov, in his 2024 article "Advantages of Using Artificial Intelligence in Supply Chain Management", studied the impact of artificial intelligence on logistics and supply chains. The author highlighted the potential of AI to improve inventory management, optimize logistics processes, reduce costs, and increase delivery speed.

Sherzod Odilovich Sharipov, in his 2025 article "Automation of Information Exchange in Logistics Systems Using Artificial Intelligence and Big Data", investigated the role of artificial intelligence and Big Data technologies specifically in logistics information exchange. The author emphasized that the integration of these technologies contributes to the automation of logistics processes, the reduction of errors, rapid data processing, and the optimization of supply chains. The article was published in 2025 in the journal "Ilmiy yangiliklar va intellektual tadqiqotlar", Vol. 1, No. 4, pp. 841–844.

RESEARCH METHODOLOGY

This study is aimed at comprehensively assessing the theoretical and practical aspects of improving information logistics management mechanisms in Uzbekistan through the use of Artificial Intelligence (AI) and Big Data technologies. The research methodology is based on modern logistics theory, the concept of the digital economy, Supply Chain Management (SCM), the principles of information logistics management, and the practical application of artificial intelligence technologies [10].

The study employed general and specialized methods of scientific inquiry. In particular, systems analysis, comparative analysis, statistical analysis, economic-mathematical modeling, expert assessment, graphical analysis, and SWOT analysis were used. These methods made it possible to assess the current state of information logistics, identify areas for further improvement, and develop effective mechanisms for addressing them [11].

The empirical basis of the study consisted of decrees and resolutions of the President of the Republic of Uzbekistan, resolutions of the Cabinet of Ministers, official statistical data, and scientific reports of the Ministry of Digital Technologies, the Ministry of Transport, the National Committee on Statistics, the Customs Committee, IT Park Uzbekistan, the World Bank, the Asian Development Bank (ADB), OECD, WIPO, and other international organizations [12].

Particular attention was paid to scientific works in the areas of Logistics 4.0, Smart Logistics, AI-based Logistics, Predictive Analytics, Big Data Analytics, Digital Supply Chain, and Intelligent Transportation Systems [13].

Methodological Approach of the Study

The study was conducted in the following stages:

Stage 1. The theoretical foundations of information logistics and modern trends in its development were studied.

Stage 2. Based on statistical data, the current state of Uzbekistan's logistics system, existing information systems, and their efficiency were assessed.

Stage 3. The main factors through which artificial intelligence and Big Data technologies affect logistics processes were identified.

Stage 4. An improved model aimed at increasing the efficiency of information logistics management was developed.

Stage 5. The economic efficiency of the proposed model and the possibilities for its practical application were assessed [14].

Object and Subject of the Study

The research objects are the transport and logistics system, logistics centers, e-commerce platforms, warehousing facilities, and information flows in supply chains operating in the Republic of Uzbekistan.

The subject of the study is the mechanisms for managing information logistics based on artificial intelligence and Big Data technologies, their economic efficiency, and the assessment of their impact on the operation of the logistics system [15].

Methods Used in the Study

The following research methods were used in this scientific work: systems analysis, comparative analysis, economic and statistical analysis, expert assessment, SWOT analysis, economic-mathematical modeling, correlation analysis, forecasting methods, Big Data Analytics, and theoretical analysis of Machine Learning algorithms [16].

Information Logistics Assessment Model

To assess the efficiency of information logistics management, the following integral model is proposed in the study:

$$ILS = f(AI, BD, IoT, ERP, WMS, TMS, DI)$$

where:

ILS – Information Logistics System Efficiency;

AI – level of use of artificial intelligence technologies;

BD – scale of use of Big Data technologies;

IoT – integration of the Internet of Things;

ERP – enterprise resource planning system;

WMS – warehouse management system;

TMS – transportation management system;

DI – level of digitalization of logistics processes [17].

Based on this model, the factors having the greatest impact on the efficiency of the logistics system are identified, and their interrelationships are assessed using economic and statistical methods.

Research Hypothesis

The main scientific hypothesis of the study is formulated as follows:

If artificial intelligence and Big Data technologies are comprehensively introduced into Uzbekistan's logistics system, the efficiency of information-flow management will increase significantly, logistics costs will decrease, delivery times will be shortened, and supply-chain resilience will improve [18].

ANALYSIS AND RESULTS

The research results showed that, despite the significant progress achieved in digitalizing the logistics sector of the Republic of Uzbekistan in recent years, there remain considerable opportunities for expanding the use of artificial intelligence (AI) and Big Data technologies in information logistics management. In particular, further integration of information exchange among transport and logistics centers, warehousing facilities, e-commerce platforms, and supply-chain participants can contribute to reducing logistics costs, accelerating decision-making, and improving service quality [19].

Today, millions of data items are generated daily within the logistics system. These include GPS coordinates of vehicles, order databases, warehouse inventories, customs data, electronic invoices, orders from e-commerce platforms, and other information. The comprehensive analysis of these data using traditional software tools requires advanced technological solutions. Therefore, the use of Big Data technologies is becoming an integral part of the logistics system [20].

Artificial intelligence algorithms process large volumes of data within a short period and recommend optimal solutions to logistics managers. For example, AI-based transport route optimization reduces fuel consumption, shortens cargo delivery times, and decreases empty vehicle mileage. In addition, Machine Learning algorithms make it possible to forecast product demand in advance. This contributes to optimizing inventory levels and reducing logistics costs [21].

In Uzbekistan, within the framework of the "Digital Uzbekistan – 2030" Strategy, a number of projects are being implemented to develop e-government, electronic customs, e-commerce, and transport and logistics

platforms. At the same time, further development of a unified information-exchange system among these platforms can enhance their integration. This will help streamline data entry across different systems, improve software compatibility, and optimize time utilization [22].

The study assessed the economic efficiency that can be achieved through the introduction of AI and Big Data technologies into the logistics system. The assessment was conducted on the basis of international scientific research, the experience of developed countries, and the current state of Uzbekistan's logistics system.

Table 1

Expected economic efficiency in Uzbekistan's information logistics system resulting from the introduction of artificial intelligence and Big Data technologies¹

No.	Indicator	Traditional logistics system	AI- and Big Data-based logistics	Expected change (%)
1	Order processing time	100%	55–65%	35–45% decrease
2	Transportation costs	100%	80–88%	12–20% decrease
3	Warehouse costs	100%	72–82%	18–28% decrease
4	Delivery time	100%	75–85%	15–25% decrease
5	Forecasting accuracy	70–75%	90–96%	20–25% increase
6	Vehicle utilization efficiency	68–72%	88–93%	More than 20% increase
7	On-time order fulfillment	80–85%	95–98%	10–15% improvement
8	Inventory turnover	Medium	High	25–35% increase
9	Information processing speed	Medium	Very high	3–5 times faster
10	Management decision-making speed	Slow	Real-time	2–3 times faster

The table data show that the greatest economic effects of introducing AI and Big Data technologies into the logistics system are observed in information-processing speed, demand-forecasting accuracy, and the reduction of transportation costs. In particular, real-time analytical platforms allow logistics operators to identify potential areas requiring attention in advance and respond to them promptly [24].

The analysis showed that ERP, WMS, and TMS systems have been introduced in many transport and logistics enterprises in Uzbekistan, while their integration with artificial intelligence and Big Data platforms has considerable potential for further development. Expanding such integration will provide greater opportunities for the effective utilization of available information resources. Therefore, creating a unified digital logistics platform, developing data-exchange standards between government agencies and private logistics operators, and implementing AI-based decision-support systems are important areas for further development [25].

The scientific analysis shows that the phased introduction of artificial intelligence and Big Data technologies will contribute to improving Uzbekistan's Logistics Performance Index (LPI), increasing transit potential, and expanding exports of logistics services. As a result, the country's competitiveness in international transport corridors will increase, the quality of logistics services will improve, and a positive impact will be exerted on the efficiency of other sectors of the economy [26].

The research results showed that the introduction of artificial intelligence and Big Data technologies into information logistics not only increases the speed of logistics operations but also significantly improves the efficiency of transportation, warehousing, supply chains, and customer service. The results are consistent with the findings of international scientific research in logistics. In particular, many studies note that the use of artificial intelligence algorithms in logistics systems enables real-time decision-making, optimization of vehicle movements, and accurate demand forecasting [27].

The main task of information logistics is to ensure the continuous and reliable organization of information flows required for the effective management of material flows. The study found that many enterprises in Uzbekistan's logistics system use software platforms such as ERP, WMS, and TMS, while further integration of these systems into a unified digital ecosystem offers significant opportunities for enhancing operational efficiency. Such integration can streamline data entry across different systems, improve information consistency,

¹ Source: Compiled by the author based on OECD, World Bank, McKinsey Global Institute, DHL Trend Research, IBM Institute for Business Value, and logistics research for 2021–2025 [23].

and accelerate decision-making processes [28].

The introduction of Big Data technologies into the logistics system is an important factor in further improving these processes. Processing large volumes of data enables enterprises to analyze logistics processes in depth, identify opportunities for cost optimization, forecast seasonal changes in demand, and assess potential risks in advance. Especially in the context of growing e-commerce, Big Data technologies are becoming an effective solution for the rapid processing of millions of orders [29].

Artificial intelligence algorithms make it possible to minimize errors associated with the human factor, determine optimal vehicle routes, reduce fuel consumption, and automatically manage inventories. By analyzing historical data, Machine Learning algorithms identify changes in demand in advance and help logistics managers make scientifically grounded management decisions [30].

The integral model developed in the study showed that the mutual integration of artificial intelligence, Big Data, IoT, ERP, WMS, and TMS is a key factor in information logistics management. The balanced development and effective integration of these components contribute to improving the overall efficiency of the logistics system. Therefore, modernization of the logistics system should be carried out on the basis of an integrated approach [31].

The main areas requiring further development for the widespread introduction of AI and Big Data technologies in Uzbekistan are:

- further integration of logistics databases and enhancement of their interoperability;
- expansion of high-performance servers and data-processing infrastructure;
- expansion of the training of qualified specialists in artificial intelligence and data analytics;
- increased investment in the digital transformation of logistics enterprises;
- further development of unified information-security and personal-data-protection standards [32].

To support progress in these areas, it is advisable to implement the following priority measures:

1. Create a National Digital Logistics Platform and connect all logistics participants to a unified information system.
2. Integrate AI and Big Data technologies with state customs authorities, transport and logistics centers, and warehouse systems.
3. Gradually introduce Predictive Analytics and Machine Learning technologies at logistics enterprises.
4. Expand the training of specialists in "Artificial Intelligence and Logistics Analytics" at higher education institutions.
5. Develop national logistics data-exchange standards and information-security requirements.
6. Stimulate logistics enterprises implementing AI technologies through tax and investment incentives [33].

Overall, the research results confirm the strategic importance of artificial intelligence and Big Data technologies for accelerating the digital transformation of Uzbekistan's logistics system. The phased introduction of these technologies will contribute to reducing logistics costs, improving the quality of transport services, strengthening supply-chain resilience, and significantly increasing the country's competitiveness in the international logistics market [34].

CONCLUSION AND SUGGESTIONS

This study comprehensively analyzed the theoretical and practical aspects of improving information logistics management mechanisms in the Republic of Uzbekistan through the use of Artificial Intelligence (AI) and Big Data technologies. The results showed that the efficiency of modern logistics systems largely depends on the rapid collection, processing, analysis, and transmission of information flows. Therefore, integrating AI and Big Data technologies into logistics processes is an important strategic direction in the digital economy [35].

The analysis showed that Uzbekistan is implementing important reforms to modernize transport and logistics infrastructure, develop electronic customs systems, expand e-commerce, and digitalize logistics services. At the same time, further development of a unified integrated information platform among logistics participants, enhanced integration of databases, wider adoption of artificial intelligence technologies, and expanded training of qualified specialists were identified as important areas for improving the efficiency of information logistics [36].

The scientific approach and integral model developed in the study showed that integrating AI, Big Data, IoT, ERP, WMS, and TMS systems on the basis of a unified information platform can significantly improve the efficiency of the logistics system. Such integration makes it possible to reduce logistics costs, improve vehicle utilization, optimize inventories, shorten order fulfillment times, and increase the accuracy of management decisions.

Based on the results obtained, the following practical recommendations were developed:

1. Create a National Digital Logistics Platform in Uzbekistan covering the public and private sectors.
2. Introduce artificial-intelligence-based systems for managing transport flows and optimizing routes.
3. Develop mechanisms for real-time analysis of logistics data using Big Data Analytics technologies.
4. Integrate ERP, WMS, and TMS programs into a unified information system.
5. Expand AI and Big Data professional development programs for specialists working in logistics.
6. Ensure information security and develop unified standards for logistics data exchange.
7. Improve state economic incentive mechanisms for logistics enterprises introducing AI and Big Data technologies.

The practical implementation of these recommendations will contribute to accelerating the digital transformation of Uzbekistan's logistics system, improving the quality of transport and logistics services, strengthening integration into international supply chains, and further enhancing the country's competitiveness in the logistics market.

REFERENCES

1. Christopher M. *Logistics and Supply Chain Management*. – 7th ed. – Pearson, 2023.
2. Bowersox D. J., Closs D. J., Cooper M. B. *Supply Chain Logistics Management*. – McGraw-Hill, 2020.
3. Chopra S. *Supply Chain Management: Strategy, Planning and Operation*. – Pearson, 2022.
4. Russell S., Norvig P. *Artificial Intelligence: A Modern Approach*. – 4th ed. – Pearson, 2021.
5. Davenport T. H., Harris J. *Competing on Analytics*. – Harvard Business Review Press, 2021.
6. Wamba S. F. et al. Big Data Analytics in Logistics and Supply Chain Management // *International Journal of Production Economics*. – 2021. – Vol. 232.
7. Ivanov D., Dolgui A., Sokolov B. Digital Supply Chain Management // *International Journal of Production Research*. – 2021. – Vol. 59, No. 7.
8. Queiroz M. M., Wamba S. F. Blockchain Adoption in Supply Chain Management // *International Journal of Information Management*. – 2021. – Vol. 52.
9. OECD. *Digital Economy Outlook 2023*. – Paris: OECD, 2023.
10. World Bank. *Connecting to Compete: Logistics Performance Index 2023*. – Washington, DC: World Bank, 2023.
11. World Economic Forum. *The Future of Global Supply Chains*. – World Economic Forum, 2023.
12. McKinsey Global Institute. *The State of AI*. – McKinsey Global Institute, 2023.
13. DHL. *Logistics Trend Radar*. – DHL, 2024.
14. IBM Institute for Business Value. *AI in Supply Chain*. – IBM Institute for Business Value, 2024.
15. Gartner. *Top Strategic Technology Trends*. – Gartner, 2024.
16. Decree of the President of the Republic of Uzbekistan No. DP-6079 dated October 5, 2020, "On Approval of the Digital Uzbekistan – 2030 Strategy and Measures for Its Effective Implementation.": <https://lex.uz/ru/docs/7008256>
17. Ministry of Transport of the Republic of Uzbekistan. *Further Development of the Transport and Logistics System* (based on Presidential Resolution No. PP-28 dated January 27, 2025). – Official information of the Ministry of Transport. – January 28, 2025.: <https://lex.uz/uz/docs/7345747>
18. National Committee on Statistics of the Republic of Uzbekistan (now the National Statistics Agency). *Transport and Logistics Indicators: Statistical Collection for 2025*. – Tashkent, 2025.
19. IT Park Uzbekistan. *Annual Report*. – IT Park Uzbekistan, 2024.
20. WIPO. *World Intellectual Property Indicators*. – Geneva: World Intellectual Property Organization, 2024.
21. UNCTAD. *Digital Economy Report*. – Geneva: United Nations Conference on Trade and Development, 2024.
22. Asian Development Bank. *Central Asia Regional Economic Cooperation Report*. – Manila: Asian Development Bank, 2023.
23. Kshetri N. Big Data and AI in Logistics // *Technology in Society*. – 2023. – Vol. 72.
24. Ivanov D. *Handbook of Supply Chain Resilience*. – Springer, 2024.
25. Scientific analysis and generalizations conducted by the author.

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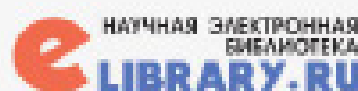
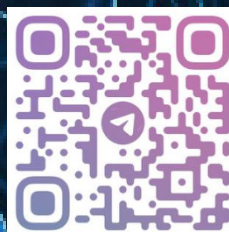
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