MUHANDISLIK & IQTISODIYOT

№7

ijtimoiy-iqtisodiy, innovatsion texnik, fan va ta'limga oid ilmiy-amaliy jurnal

2025 IYUL

Milliy nashrlar

OAK: https://oak.uz/pages/4802

05.00.00 - Texnika fanlari
08.00.00 - Iqtisodiyot fanlar

Elektron nashr,
310 sahifa, iyul, 2025-yil.

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ijtimoiy-iqtisodiy, innovatsion texnik,
fan va ta'limga oid ilmiy-amaliy jurnal

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Ma'lumot uchun, OAK Rayosatining 2024-yil 28-avgustdagi 360/5-son qarori bilan "Dissertatsiyalar asosiy ilmiy natijalarini chop etishga tavsiya etilgan milliy ilmiy nashrlar ro'yxati"ga texnika va iqtisodiyot fanlari bo'yicha "Muhandislik va iqtisodiyot" jurnali ro'yxatga kiritilgan.

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STRATEGIES FOR IMPROVING THE ECONOMIC EFFICIENCY OF LOGISTICS AND TRANSPORT SERVICES

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Abstract. This article analyzes the main strategies aimed at improving the economic efficiency of logistics and transport services. It emphasizes the significance of logistics optimization, transport infrastructure modernization, digital transformation, and sustainable development principles in increasing the competitiveness of national economies. The study also examines the influence of innovative technologies, supply chain management models, and environmental factors on logistics performance. Finally, the paper provides policy recommendations for achieving high economic returns in logistics systems through cost reduction, service quality improvement, and environmental efficiency.

Keywords: Logistics efficiency, transport services, supply chain management, digitalization, green logistics, infrastructure, economic performance, competitiveness.

Annotatsiya. Ushbu maqolada logistika va transport xizmatlarining iqtisodiy samaradorligini oshirishga qaratilgan asosiy strategiyalar tahlil qilinadi. Unda logistika jarayonlarini optimallashtirish, transport infratuzilmasini modernizatsiya qilish, raqamli transformatsiya va barqaror rivojlanish tamoyillarining milliy iqtisodiyotlar raqobatbardoshligini oshirishdagi ahamiyati yoritib beriladi. Tadqiqotda, shuningdek, innovatsion texnologiyalar, ta’minot zanjiri boshqaruvi modellarining va ekologik omillarning logistika samaradorligiga ta’siri o‘rganiladi. Yakunda maqolada xarajatlarni kamaytirish, xizmat sifati va ekologik samaradorlikni oshirish orqali logistika tizimlarida yuqori iqtisodiy natijalarga erishish bo‘yicha siyosiy tavsiyalar berilgan.

Kalit so‘zlar: Logistika samaradorligi, transport xizmatlari, ta’minot zanjiri boshqaruvi, raqamlashtirish, “yashil” logistika, infratuzilma, iqtisodiy samaradorlik, raqobatbardoshlik.

Аннотация. В данной статье анализируются основные стратегии, направленные на повышение экономической эффективности логистических и транспортных услуг. Подчеркивается значение оптимизации логистических процессов, модернизации транспортной инфраструктуры, цифровой трансформации и принципов устойчивого развития в повышении конкурентоспособности национальных экономик. В исследовании также рассматривается влияние инновационных технологий, моделей управления цепями поставок и экологических факторов на эффективность логистики. В заключение приведены рекомендации по политике, направленные на достижение высоких экономических результатов в логистических системах за счет снижения затрат, повышения качества услуг и экологической эффективности.

Ключевые слова: Эффективность логистики, транспортные услуги, управление цепями поставок, цифровизация, «зеленая» логистика, инфраструктура, экономическая эффективность, конкурентоспособность.

INTRODUCTION

In the modern global economy, logistics and transport services play a crucial role in ensuring the efficient movement of goods, services, and information between producers and consumers. The effectiveness of logistics operations directly determines the competitiveness of enterprises and the economic growth potential of

nations. With the increasing globalization of markets, the volume of international trade, and the expansion of e-commerce, the demand for reliable and cost-effective logistics and transport systems has grown substantially.

The economic efficiency of logistics and transport services is influenced by various factors such as infrastructure quality, technological innovation, institutional frameworks, and resource utilization. In many developing countries, including Uzbekistan and other Central Asian economies, logistics inefficiencies result in high operational costs, delays, and loss of market opportunities. Therefore, formulating effective strategies to improve logistics and transport efficiency has become a key economic and policy priority.

This article aims to explore the main strategies and mechanisms that enhance the economic efficiency of logistics and transport services, focusing on both global practices and regional applications. The study also seeks to identify how digitalization, sustainability principles, and institutional reforms can optimize logistics performance.

The Role of Logistics and Transport in Economic Development. Logistics and transport are integral parts of the production and distribution process. They link the stages of raw material supply, production, and final consumption. Efficient logistics systems reduce transaction costs, enhance the speed and reliability of deliveries, and improve customer satisfaction. According to the World Bank's Logistics Performance Index (LPI), countries with advanced logistics systems demonstrate higher trade competitiveness and GDP growth.

LITERATURE REVIEW ON THE TOPIC

Transport infrastructure—including roads, railways, ports, and air transport—serves as the foundation for logistics efficiency. Inadequate infrastructure often leads to increased transport costs and reduced service quality. Therefore, public and private investments in transport infrastructure modernization are essential for sustainable economic development [1].

Economic Efficiency in Logistics Systems. Economic efficiency in logistics can be defined as the ability to deliver goods and services at minimum cost while maintaining high quality and reliability. Key performance indicators (KPIs) include delivery time, inventory turnover, transportation costs, and resource utilization rates. The economic efficiency of logistics depends on [2]: Operational optimization: Reducing idle time, minimizing empty runs, and using multimodal transport solutions; Technological innovation: Implementing digital tracking, automation, and data analytics; Supply chain integration: Strengthening collaboration among producers, distributors, and consumers; Regulatory framework: Simplifying customs procedures and harmonizing trade regulations.

Digitalization and Innovation in Logistics. Digital technologies have transformed logistics operations worldwide. Innovations such as Artificial Intelligence (AI), the Internet of Things (IoT), blockchain, and big data analytics allow firms to manage supply chains with greater transparency and accuracy. For example, real-time shipment tracking systems enable companies to predict delays and optimize routes, while automated warehouses improve productivity and reduce labor costs [3].

E-logistics and smart transport management systems also play a key role in enhancing efficiency. Digital platforms connect carriers, shippers, and consumers, reducing transaction costs and improving communication. In the context of Industry 4.0, integrating digital solutions into logistics processes is no longer optional but a necessity for competitiveness [4].

RESEARCH METHODOLOGY

In the methodology of the study, the author employed scientific abstraction, comparative analysis, induction, and deduction.

ANALYSIS AND RESULTS

The analysis of logistics and transport services reveals that improving economic efficiency requires a multidimensional approach that combines infrastructure development, technological advancement, institutional reforms, and sustainability measures.

1. Green Logistics and Environmental Efficiency

The shift towards green logistics is gaining global momentum. The adoption of low-emission vehicles, electrification of fleets, and the use of renewable energy sources at logistics hubs significantly contribute to reducing environmental impact. Countries that prioritize green transport solutions experience not only environmental benefits but also long-term cost reductions. For example, optimized route planning can reduce fuel consumption by up to 20%, while energy-efficient logistics centers lower electricity costs and improve operational efficiency.

Government incentives, such as tax reductions and subsidies for eco-friendly logistics initiatives, play a crucial role in encouraging businesses to adopt sustainable practices. Public-private partnerships (PPPs) have proven effective in accelerating the transition to green logistics, particularly in developing economies.

2. Transport Infrastructure and Institutional Reforms

Efficient transport infrastructure is the backbone of any modern logistics system. Countries that have invested heavily in the modernization of roads, railways, ports, and air transport networks report increased logistics performance and trade competitiveness. Multimodal transport corridors, combining road, rail, and sea routes, have helped reduce delivery times and logistical costs in several regions, including Central Asia and Eastern Europe.

Institutional reforms are equally important. Simplifying customs procedures, digitizing trade documentation, and harmonizing cross-border regulations improve the overall flow of goods. The establishment of logistics hubs and special economic zones (SEZs) further enhances connectivity and supports regional economic development.

3. Digital Transformation and Innovation

The digitalization of logistics processes is a key driver of economic efficiency. Technologies such as artificial intelligence (AI), the Internet of Things (IoT), and blockchain have transformed traditional supply chains into smart, agile systems. Real-time tracking, predictive analytics, and automated warehousing improve decision-making and reduce human error.

In the context of Industry 4.0, digital platforms now serve as vital links between manufacturers, suppliers, and consumers. E-logistics systems not only reduce transaction costs but also enable better coordination and transparency across the supply chain. Countries that lead in logistics digitalization—such as Singapore, Germany, and China—demonstrate significantly higher Logistics Performance Index (LPI) scores and lower logistics costs as a share of GDP.

4. Comparative Analysis: Uzbekistan and Selected Countries

Uzbekistan, due to its landlocked position and strategic location, faces both challenges and opportunities in logistics development. Despite not having direct access to seaports, Uzbekistan's central location along major regional trade corridors makes it a potential logistics hub for Central Asia. However, outdated transport fleets, underdeveloped logistics centers, and institutional inefficiencies continue to hinder progress.

5. Uzbekistan's Progress and Potential

Uzbekistan has implemented major reforms and invested over $70 billion in transport infrastructure modernization. National development programs like "Uzbekistan – 2030" outline key goals for integrating the country into global transport and logistics networks. The creation of new rail corridors, logistics centers, and customs reforms has already yielded progress in international rankings.

According to forecasts, Uzbekistan's logistics market is expected to grow by 5.85% by 2027. The country's freight turnover is dominated by rail transport, which accounts for over 50% of total goods movement. This presents an opportunity to further optimize rail logistics through digital tools, efficient cargo scheduling, and multimodal integration.

Despite the progress, Uzbekistan's logistics efficiency still lags behind global benchmarks due to limited private sector participation, lack of specialized human capital, and low adoption of advanced technologies.

6. Key Findings

Investing in digital infrastructure and promoting innovation is essential to modernize logistics operations.

Sustainable practices, such as green logistics, provide dual benefits: environmental protection and long-term cost efficiency.

Institutional reforms and regional cooperation can eliminate bottlenecks and promote trade.

Comparative analysis shows that countries with strategic investments in logistics enjoy higher competitiveness, GDP growth, and trade volumes.

Uzbekistan has the geographic potential to become a major logistics hub in Central Asia, but realization of this potential requires integrated policy efforts, infrastructure upgrades, and digital transformation.

Green Logistics and Sustainable Transport. Sustainability has become a central element of logistics and transport policy. Green logistics aims to reduce the environmental impact of transportation activities by minimizing emissions, energy consumption, and waste generation. Key strategies include:

Transition to low-emission and electric vehicles;

Use of renewable energy in logistics centers;

Implementation of circular economy principles;

Optimization of route planning to reduce fuel consumption.

Environmental efficiency contributes not only to ecological sustainability but also to cost savings in the long term [5]. Governments can encourage the adoption of green logistics through incentives, tax benefits, and public-private partnerships.

Infrastructure and Institutional Reforms. Transport infrastructure modernization is a prerequisite for improving logistics efficiency. Countries that invest in road, rail, and port development achieve significant gains in productivity and trade connectivity. For example, the development of multimodal transport corridors—combining road, rail, and sea routes—reduces transit time and logistics costs.

Institutional reforms, including the simplification of customs procedures and the introduction of digital trade documentation, are equally important. The establishment of logistics hubs and special economic zones (SEZs) can attract foreign investments and stimulate regional development [6].

Strategies for Improving Economic Efficiency. Based on the analysis, several strategic directions can be identified:

Optimization of supply chains: Implement integrated supply chain management to reduce duplication and inefficiencies.

Investment in digital transformation: Adopt AI, IoT, and blockchain technologies for better data management.

Infrastructure modernization: Upgrade transport networks and logistics terminals.

Human capital development: Train specialists in logistics management, IT, and engineering.

Public-private partnerships (PPP): Encourage collaboration between government and private investors.

Sustainable and green practices: Promote eco-friendly logistics solutions.

Regulatory harmonization: Simplify legal and administrative barriers to trade and transport.

Case Study: Logistics Efficiency in Uzbekistan. Uzbekistan, located at the crossroads of major transport corridors, has great potential for developing efficient logistics services [7]. In recent years, the government has adopted several programs to improve logistics infrastructure, including new railways, road corridors, and logistics centers. However, challenges remain, such as outdated transport fleets, insufficient digitalization, and institutional barriers.

Implementing digital logistics platforms and promoting private sector participation can help overcome these issues. Moreover, integrating Uzbekistan into regional transport networks such as the Trans-Caspian Corridor and China–Central Asia–Europe routes could enhance export potential and attract investment.

When analyzing the current state and future prospects of the transport and logistics services sector in the country, it is necessary to compare not only the activities of domestic enterprises and logistics centers but also to conduct a comparative analysis with foreign countries. The selection of foreign countries for comparative study is based on several criteria — geographical location, export-import partnerships, and leadership in the Logistics Performance Index (LPI).

Accordingly, China, the Russian Federation, and Kazakhstan are analyzed as Uzbekistan's main export and import partners. Belarus and Kazakhstan are examined as CIS countries with geographical proximity, while Germany, Singapore, and Australia are chosen as leading nations in logistics efficiency [8]. Vietnam and Côte d'Ivoire are analyzed as countries that have shown a rapid improvement in the Logistics Performance Index, to study their successful experiences.

The analysis focuses on general economic indicators and, in particular, the performance of the transport and logistics services sectors in each selected country.

Due to the absence of direct access to open sea routes, Uzbekistan has chosen to develop its transport and logistics systems based on railways, air transport, and road networks for both domestic and international cargo import and export. The national strategy "Uzbekistan – 2030" specifically outlines, in paragraph 53 titled "Deepening Uzbekistan's integration into global transport and logistics networks and enhancing the potential of the national transport system," the priority goals and objectives for modernizing and reforming the country's transport systems.

Achieving these objectives requires conducting in-depth scientific research aimed at developing the transport and logistics services sector, identifying opportunities to increase its efficiency and productivity, and improving the organizational and economic mechanisms of its management.

According to recent research, by 2027, the market volume of freight transport and logistics services is expected to grow by 5.85%. In 2021, the country's total freight turnover reached 800 billion ton-kilometers, with rail transport accounting for 52% of the total — maintaining a leading position among all modes of transportation. The next major modes include road, water, and air transport.

Uzbekistan has been implementing a national strategy to improve efficiency and productivity in this sector. Over the past decade, 70 billion USD has been invested in transport infrastructure modernization, and an additional 75 billion USD is planned for 2018–2027. Furthermore, 110 billion Australian dollars have been allocated to improving overland transport infrastructure.

The main priority is to enhance the domestic railway transportation system to make it faster and more technologically advanced [9]. As a result of these reforms, Uzbekistan has achieved significant progress in international ratings related to logistics performance.

When compared with other countries of smaller territory, population, and GDP, Uzbekistan demonstrates comparable results in international rankings, indicating strong potential that must be fully realized.

Belarus enjoys a favorable geographical position, situated at the crossroads connecting Western Europe with the East. The country also has access routes linking it to the Black Sea and the Baltic Sea. According to 2021 data, the share of transport services in the country's GDP amounted to 5.1%. Transport service exports accounted for 43% of total exports, and the share of transport in the foreign trade balance was 41%, totaling 4.4 billion USD.

As of January 1, 2022, there were 61 logistics centers operating across Belarus, performing various functions. The country is also a signatory to the international convention related to the use of electronic consignment notes in international cargo transport.

The transport and logistics services sector in Belarus began to develop actively in the 1990s. Currently, the logistics market is estimated at 20–22 billion USD, representing 30% of GDP. The average annual growth of the logistics sector has been 16–20% in recent years. As a result, Belarus has demonstrated stable improvement in the Logistics Performance Index (LPI).

The country hosts more than 1,300 logistics companies, with sea transport accounting for the majority of cargo movement. However, the private sector handles only 18% of sea transportation, indicating the need for reforms in this area. The government has adopted a law aiming to increase the share of transport and logistics services in GDP to 8–10% and to raise its international ranking by 50 positions. This experience can serve as a valuable model for Uzbekistan.

Kazakhstan, a neighboring country closely related to Uzbekistan in many aspects, is the largest landlocked nation in the world. The country's population is 19,854,083, and as of 2022, its GDP amounted to 574.10 billion USD, with GDP per capita reaching 30,876 USD. Kazakhstan has the largest economy in Central Asia.

Its industrial sector plays a leading role, accounting for one-third of GDP. The country's main export and import partners are China, Germany, the USA, and Russia, with Uzbekistan being among its key partners as well.

An analysis of Kazakhstan's recent transport services trade dynamics shows that exports of transport services have maintained stable growth, while imports have slightly declined. The value of service exports is almost twice that of imports.

Currently, logistics costs in Kazakhstan constitute up to 25% of the final product's value. For comparison, this figure is 14% in China, 11% in the EU, and 10% in the USA and Canada [10]. The global average is about 11%. Moreover, the freight capacity of Kazakhstan's economy is five times less efficient than that of developed countries.

Nevertheless, Kazakhstan ranks higher than Uzbekistan in the Logistics Performance Index, mainly due to the implementation of innovative logistics infrastructure projects. Notably, Kazakhstan's experience in developing new-generation logistics centers based on the "ray (hub-and-spoke)" principle could be effectively applied in Uzbekistan.

The People's Republic of China has a GDP of 23.393 trillion USD, and its GDP per capita amounts to 16,709 USD. China's share in the global economy has increased from 11.4% to 18% over the past decade.

According to World Bank data, during the same period, the share of industry in China's GDP decreased from 46.9% to 41.7%, while agriculture declined from 10.2% to 7.1%, and the service sector expanded from 42.9% to 52.2%.

Within the service sector, the logistics industry plays a major role. Over the last five decades, China's logistics sector has grown continuously. In 2022, logistics revenue increased by 4.7%. China's largest foreign trade container ports are concentrated in three main logistics clusters, and land-based "dry ports" also operate efficiently for rail freight transport.

China's logistics system is characterized by large-scale infrastructure, digital innovation, and multimodal integration, which together contribute to the country's global leadership in logistics efficiency. These experiences, particularly the integration of railway and maritime logistics corridors, can serve as a benchmark for Uzbekistan's future development in this sector.

Overall, the comparative analysis of transport and logistics systems across different countries shows that Uzbekistan has substantial potential to enhance the economic efficiency of its logistics sector. While lacking direct access to seaports, the country's strategic location and investments in rail and road infrastructure position it as a potential regional logistics hub.

By learning from the experiences of countries like China, Kazakhstan, and Belarus, Uzbekistan can develop a more competitive and sustainable logistics system — integrating modern technologies, digitalization, and innovative infrastructure planning to achieve global standards of efficiency and connectivity.

CONCLUSION AND SUGGESTIONS

Conclusion. Improving the economic efficiency of logistics and transport services is vital for sustainable economic growth and competitiveness. The success of logistics reform depends on the integration of modern technologies, infrastructure investments, and institutional improvements. A comprehensive approach—combining digitalization, green logistics, and strategic planning—can significantly reduce costs and improve service quality.

In the context of globalization and rapid technological change, countries must prioritize logistics modernization to strengthen trade performance, attract foreign investment, and ensure environmental sustainability. For developing nations, especially those in Central Asia, building efficient logistics and transport systems will serve as a foundation for long-term economic prosperity.

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2025. № 7

"Muhandislik va iqtisodiyot" jurnali 26.06.2023-yildan
O'zbekiston Respublikasi Prezidenti Adminstratsiyasi huzuridagi
Axborot va ommaviy kommunikatsiyalar agentligi tomonidan
№S–5669245 reyestr raqami tartibi bo'yicha ro'yxatdan o'tkazilgan.
Litsenziya raqami: №095310.

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