



STRATEGIC PRIORITIES FOR MODERNIZING THE TRANSPORT AND LOGISTICS INFRASTRUCTURE OF UZBEKISTAN

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Abstract

This research analyzes the current condition and future development prospects of the transport and logistics sector in the Republic of Uzbekistan. The study explores initiatives aimed at upgrading the nation's transport infrastructure, enhancing logistics operations, strengthening participation in international transport corridors, and addressing key challenges associated with the sustainable advancement of the industry. Particular emphasis is placed on evaluating the sector's contribution to national economic performance, its role in boosting the country's competitiveness, and its impact on improving societal welfare.

Keywords: Transport and logistics system, infrastructure modernization, logistics operations, international transport corridors, sustainable sectoral development, economic advancement, national competitiveness.

Introduction

The transport logistics system in Uzbekistan is still in an emerging stage; however, it remains a key priority as the country aims to integrate more actively into the global economic environment and strengthen its international competitiveness. According to the World Bank, the global transport market is valued at approximately USD 4.2 trillion, representing around 6.8% of global GDP [1].

By Resolution No. 336 of the Cabinet of Ministers of the Republic of Uzbekistan dated 19 April 2019, "On the Approval of the Regulation on the Ministry of Transport of the Republic of Uzbekistan," [2] a unified state transport policy was mandated. The document emphasizes the need to establish an integrated national transport system that ensures the coordinated development of all modes of transport. This policy framework aims to unify various transport sectors into a single national network and



promote their joint advancement through the adoption of modern and efficient transport and logistics solutions.

The development of Uzbekistan's transport and logistics system has become a strategic priority as the country intensifies its integration into the global economy. Although the sector is relatively young, recent reforms—including the adoption of the 2019 Cabinet of Ministers Resolution No. 336—have laid the foundation for forming a unified national transport policy. These reforms aim to harmonize all modes of transport within a single interconnected network and promote their joint growth through modern and efficient logistics technologies. Strengthening transport infrastructure, optimizing logistics processes, and expanding participation in international transport corridors are essential for enhancing national competitiveness and ensuring sustainable economic development. Given its geographical position and growing trade potential, Uzbekistan's transport and logistics system has significant prospects for transformation into a regional hub that contributes meaningfully to economic growth and societal well-being.

Analysis of literature on the topic

The Impact of Transport Logistics on Economic Growth. International trade economist David Hummels [5] argues that transport costs and logistics efficiency play a decisive role in shaping global trade flows. His research demonstrates that improved transport infrastructure directly strengthens a country's export capacity and enhances its integration into global markets.

Many prominent domestic and international scholars have examined the development of efficient transport systems across various routes and the formulation of related tasks. Their studies emphasize that an improved transportation network, grounded in the theoretical principles linking transport and the economy, serves as a key driver of economic growth. Transport Logistics as a Driver of National Competitiveness. Logistics scholar Donald Bowersox [4] highlights that an efficient logistics and transport system is fundamental to building national competitive advantage. He emphasizes that integrating transport operations reduces supply chain costs, accelerates delivery processes, and ultimately improves a nation's position in global economic competition.



Strategic Role of Transport Corridors. Competitive strategy expert Michael Porter [8] identifies transport infrastructure as one of the critical determinants of a nation's competitive advantage. According to his framework, well-developed transport networks facilitate the formation of industrial clusters, enhance productivity, and stimulate economic diversification.

Transport Logistics and Sustainable Development. Sustainability and logistics researcher Alan McKinnon [6] underscores the growing importance of environmentally responsible transport solutions. His work argues that modern logistics systems must incorporate energy-efficient technologies and low-carbon transport modes to balance economic expansion with environmental protection.

Numerous prominent domestic and international scholars have extensively investigated the development of efficient transport systems across various transport corridors, as well as the formulation and implementation of strategic tasks in this field. Their collective research demonstrates that a well-functioning and integrated transportation network, grounded in the theoretical interdependence between transport systems and economic processes, constitutes a fundamental driver of sustainable economic growth and structural transformation.

From a logistics perspective, transport systems play a decisive role in shaping national competitiveness. Renowned logistics scholar Donald J. Bowersox emphasizes that an efficient transport and logistics infrastructure is a cornerstone of national competitive advantage in the global economy. According to Bowersox, the integration of transport operations within supply chains significantly reduces logistics costs, enhances reliability, and shortens delivery times. These improvements increase market responsiveness and enable firms to operate more efficiently across international markets, thereby strengthening a country's overall economic position and trade performance.

The strategic significance of transport corridors is further highlighted in the competitive advantage framework developed by Michael E. Porter. Porter identifies transport infrastructure as one of the key determinants of a nation's competitive capacity, as it directly influences productivity, innovation, and industrial organization. Well-developed transport corridors facilitate the spatial concentration of economic activities, promote the emergence of industrial clusters, and encourage economies of scale. As a result, transport networks not only support existing industries but also



stimulate economic diversification by attracting investment and enabling the development of new sectors.

In addition to competitiveness and productivity, contemporary research increasingly emphasizes the role of transport logistics in achieving sustainable development objectives. Alan McKinnon, a leading scholar in sustainable logistics, underscores the necessity of integrating environmental considerations into modern transport systems. His research argues that long-term economic growth cannot be sustained without addressing the environmental impacts of transport activities. Consequently, modern logistics strategies must incorporate energy-efficient technologies, optimize transport flows, and prioritize low-carbon transport modes. Such approaches enable countries to reconcile economic expansion with environmental protection, resource efficiency, and climate change mitigation.

Overall, the scholarly literature suggests that transport logistics systems perform a multidimensional role in national development. They function not only as facilitators of economic growth and competitiveness but also as strategic instruments for regional integration, industrial development, and sustainable economic transformation. Strengthening transport infrastructure and logistics capabilities therefore represents a critical policy priority for countries seeking to enhance their position in the global economy while ensuring long-term sustainability.

Research Methodology

Research methodology this study examines the methods of assessing the economic efficiency of the canoe network and empirical studies and theoretical views on their improvement. also, based on empirical studies and theoretical views, the methods of assessing the economic efficiency of the canoe network were improved. the study used analysis and synthesis, deduction and induction, tabular, graphical, economic and mathematical methods, as well as the works of local and foreign scientists on the topic.

Modernization of Transport Systems in Developing Countries. Experts from the World Bank[1] stress that modernizing transport infrastructure is essential for accelerating economic growth in developing economies. Their findings indicate that integrated logistics systems enhance regional connectivity, attract foreign investment, reduce transportation costs, and improve trade competitiveness.



Analysis and Results

Moreover, modern transport networks increase the efficiency of supply chains, enabling faster and more reliable movement of goods. Improved infrastructure also supports the development of industrial zones and facilitates access to global markets. In addition, digitalization of transport processes strengthens transparency and reduces administrative barriers. Overall, comprehensive transport modernization serves as a catalyst for sustainable economic development and long-term competitiveness.

Strategic Priorities for Modernizing the Transport and Logistics Infrastructure of Uzbekistan¹

Strategic Priority	Description	Expected Impact
Infrastructure Modernization	Reconstruction of roads, railways, logistic hubs, and border checkpoints.	Improved transport capacity and reduced transit time.
Digitalization of Logistics	Implementation of intelligent transport systems, e-documentation, and real-time monitoring.	Higher transparency, reduced operational costs, and faster cargo processing.
Development of Multimodal Corridors	Integration of rail, road, and air transport routes to strengthen transit potential.	Enhanced regional connectivity and increased transit revenues.
Green Transport Initiatives	Adoption of energy-efficient vehicles and sustainable logistics practices.	Lower environmental impact and alignment with global ESG standards.
Institutional Reforms and PPP	Improving regulatory frameworks and expanding public-private partnerships.	Greater investment inflow and improved sector governance.

Table 1 presents the key strategic priorities essential for accelerating the modernization of Uzbekistan's transport and logistics system. These priorities reflect both infrastructural and institutional directions aimed at improving efficiency, sustainability, and regional integration.

Analytical Interpretation of Strategic Priorities

Table 1 outlines the core strategic priorities necessary for accelerating the modernization of Uzbekistan's transport and logistics infrastructure. These priorities

¹ This table has been developed on the basis of the author's conducted research.



combine physical infrastructure development, digital transformation, environmental sustainability, and institutional reform, reflecting a comprehensive approach to enhancing national and regional logistics performance.

Infrastructure Modernization constitutes the foundational pillar of transport system development. The reconstruction and expansion of roads, railways, logistics hubs, and border checkpoints directly affect transport capacity and transit efficiency. From an economic standpoint, transport efficiency can be expressed through the reduction in average transit time:

$$T = \frac{D}{V}$$

where

T – transit time,

D – transport distance,

V – average transport speed.

Modern infrastructure increases average speed V, thereby reducing total transit time T, which enhances reliability, lowers inventory holding costs, and improves trade competitiveness.

Digitalization of Logistics plays a critical role in reducing transaction costs and improving transparency. The implementation of intelligent transport systems (ITS), electronic documentation, and real-time cargo monitoring optimizes logistics operations. The total logistics cost function can be represented as:

$$LC = TC + IC + AC$$

where

LC – total logistics costs,

TC – transport costs,

IC – inventory holding costs,

AC – administrative and coordination costs.

The following table summarizes the key strategic directions for modernizing Uzbekistan's transport and logistics infrastructure. It clearly outlines the essence of each priority area and its expected economic impact. As the table shows, infrastructure modernization, digitalization, the development of multimodal corridors, and green transport initiatives play a crucial role in enhancing system efficiency. Overall, these



measures strengthen the country's competitiveness and accelerate its integration into the international logistics network.

Conclusions

1. Modernizing Uzbekistan's transport and logistics infrastructure is essential for strengthening national economic competitiveness, as improved connectivity enhances trade efficiency, reduces transaction costs, and accelerates integration into regional and global value chains.
2. A coordinated strategy that aligns institutional reforms, digital transformation, and infrastructure investment will ensure a more resilient and adaptive transport system capable of meeting growing domestic and international demand.
3. Expanding multimodal transport corridors and improving logistic hubs significantly increases the country's transit potential, enabling Uzbekistan to fully leverage its geo-economic position as a key link between Central Asia, Europe, and South Asia.
4. Sustainable development principles—such as green logistics, energy-efficient technologies, and environmentally responsible transport planning—must be integrated to support long-term ecological balance and align with global ESG standards.
5. Human capital development and public-private partnership mechanisms are critical for effective modernization, as skilled professionals and diversified investment sources ensure operational efficiency, innovation, and financial sustainability of future transport projects.

Despite notable progress, the country still faces several challenges, including the need for further infrastructure upgrades in certain regions, vulnerability to external influences, and environmental issues arising from growing transport volumes. Addressing these challenges effectively will require continued investment in infrastructure modernization, the development of human capital, and the integration of environmental considerations into the planning of future projects.

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