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CURRENT STATE AND MODERNIZATION PROSPECTS OF TRANSPORT INFRASTRUCTURE IN KHOREZM REGION



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Abstract: This article analyzes the state of transport infrastructure in Khorezm region, its development trends, and modernization prospects. The study examines the existing problems in the transport sector and their solutions. Research findings indicate substantial opportunities for increasing the region's economic potential through transport infrastructure modernization.

Keywords: transport infrastructure, modernization, Khorezm region, motor transport services, transport potential, economic development.

XORAZM VILOYATIDA TRANSPORT INFRAUZILMASINING HOZIRGI HOLATI VA UNI MODERNIZATSIYA QILISH ISTIQBOLLARI

Annotatsiya: Ushbu maqolada Xorazm viloyatining transport infratuzilmasi holati, uning rivojlanish tendensiyalari va modernizatsiya istiqbollari tahlil qilingan. Transport sohasidagi mavjud muammolar va ularning yechimlari, shuningdek, mintaqaning transport salohiyatini oshirish bo'yicha takliflar keltirilgan. Tadqiqot natijalariga ko'ra, transport infratuzilmasini modernizatsiya qilish orqali mintaqa iqtisodiy salohiyatini oshirish imkoniyatlari aniqlangan.

Kalit so'zlar: transport infratuzilmasi, modernizatsiya, Xorazm viloyati, avtotransport xizmatlari, transport salohiyati, iqtisodiy rivojlanish.

ТЕКУЩЕЕ СОСТОЯНИЕ И ПЕРСПЕКТИВЫ МОДЕРНИЗАЦИИ ТРАНСПОРТНОЙ ИНФРАСТРУКТУРЫ ХОРЕЗМСКОЙ ОБЛАСТИ

Аннотация: В данной статье анализируется состояние транспортной инфраструктуры Хорезмской области, тенденции ее развития и перспективы модернизации. В исследовании рассматриваются существующие проблемы в транспортном секторе и пути их решения. Результаты исследования указывают на существенные возможности для увеличения экономического потенциала региона за счет модернизации транспортной инфраструктуры.

Ключевые слова: транспортная инфраструктура, модернизация, Хорезмская область, автотранспортные услуги, транспортный потенциал, экономическое развитие.

INTRODUCTION

Transport infrastructure development serves as a fundamental cornerstone for regional economic growth and social development in modern economies. The Khorezm region, strategically positioned in northwestern Uzbekistan, represents a crucial hub within Central Asia's complex transport network [1]. The region's unique geographical location at the crossroads of ancient trade routes continues to define its contemporary significance in international trade and logistics systems.

The region's transport infrastructure has undergone significant transformations since Uzbekistan's independence. The Tashkent-Urgench-Khiva railway line, completed in recent years, has dramatically improved connectivity with the capital and other major economic centers. International highways crossing the region serve as vital arteries for both domestic and international cargo transportation, while Urgench International Airport facilitates growing passenger and cargo air traffic, connecting the region to major international destinations.

Recent statistical data underscores the growing importance of the transport sector in the regional economy. In January-April 2023, transport services reached a remarkable volume of 794.9 billion UZS, demonstrating a growth rate of 101.5% compared to the previous year [2]. Notably, automotive transport services contributed significantly to this figure, amounting to 744.2 billion UZS. These indicators reflect not only the sector's current vitality but also its potential for further expansion and modernization.

METHODOLOGY AND LITERATURE REVIEW

The research methodology employed in this study follows a comprehensive analytical framework, combining qualitative and quantitative approaches to examine transport infrastructure development in the Khorezm region. The primary methodological tools include systematic analysis of statistical data, comparative analysis of regional development indicators, and critical review of existing literature and policy documents. This multi-faceted approach enables a thorough understanding of both the current state and future prospects of transport infrastructure in the region.

The data collection process primarily relied on official statistics from the State Statistics Committee of Uzbekistan [3], reports from the Ministry of Transport, and regional government documentation. Statistical analysis focused on key performance indicators including transport service volumes, infrastructure capacity utilization, and economic growth metrics.

The literature review reveals a rich body of research examining various aspects of transport infrastructure development in Uzbekistan and Central Asia. Sirojiddinov [4] provides a comprehensive analysis of transport infrastructure development trends across Uzbekistan's regions, emphasizing the unique challenges and opportunities faced by different geographical areas. His research particularly highlights the correlation between infrastructure development and regional economic growth rates, suggesting that a 1% increase in transport infrastructure investment leads to approximately 0.3% growth in regional GDP.

Khodjayev [5] contributes significant insights into the economic efficiency of transport-logistics systems modernization. His research employs econometric modeling to evaluate the cost-benefit ratio of various modernization strategies, finding that digital

transformation initiatives in transport infrastructure yield the highest return on investment. The study particularly emphasizes the importance of integrating modern logistics concepts with traditional infrastructure development approaches.

Alimov [6] presents a detailed examination of regional transport system digitalization, offering valuable perspectives on technological integration in transport infrastructure. His work specifically addresses the challenges of implementing smart transport solutions in regions with varying levels of technological readiness, providing practical recommendations for staged implementation of digital technologies.

Recent research by Mamatov [7] specifically focuses on the Khorezm region's transport infrastructure, providing valuable local context and detailed analysis of regional specificities. His work identifies key bottlenecks in the current infrastructure system and proposes targeted solutions for improvement.

The international perspective is represented in the work of several scholars who have studied similar developments in other developing regions. This comparative analysis helps identify best practices and potential pitfalls in infrastructure modernization efforts. For instance, World Bank studies have demonstrated the crucial role of integrated transport systems in regional development, particularly in areas serving as international transport corridors.

RESULTS AND DISCUSSION

The comprehensive assessment of Khorezm region's transport infrastructure reveals a complex system with significant achievements and areas requiring improvement. The region's transport network consists of 4,100 kilometers of automobile roads, including international highways connecting Uzbekistan with neighboring countries. The 400-kilometer railway network, particularly the Tashkent-Urgench-Khiva line, serves as a crucial element in the region's transport system, facilitating both passenger and freight transportation. Urgench International Airport functions as a vital air transport hub, handling both domestic and international flights, though its cargo handling capacity remains underutilized [7].

Recent data indicates significant growth in transport service volumes. The sector achieved 794.9 billion UZS in service volume during January-April 2023, representing a 101.5% growth rate compared to the previous year. Automotive transport services, accounting for 744.2 billion UZS of this total, demonstrate the dominant role of road transport in the region's transportation system [3].

The analysis of infrastructure quality reveals varying conditions across different transport modes. While main highways generally meet international standards, secondary and local roads often require significant improvements. The railway infrastructure, though relatively new, faces challenges in maintenance and operational efficiency. According to Khodjayev's research [5], infrastructure utilization rates show seasonal variations, with peak loads during agricultural harvest periods creating significant strain on the transport system.

Modernization Prospects and Challenges The study identifies several key directions for modernization:

Digital Transformation. The implementation of digital technologies presents significant opportunities for improving transport efficiency. Smart transport systems,

including automated traffic management and real-time monitoring capabilities, could potentially reduce transport delays by 25-30% according to Alimov's calculations [6]. However, the successful implementation of these technologies requires substantial investment in both infrastructure and human capital development.

Multimodal Integration. The development of multimodal transport hubs emerges as a critical priority. Current facilities handle only 60% of potential cargo volumes, indicating significant room for expansion. Sirojiddinov's analysis [4] suggests that improved multimodal integration could reduce logistics costs by up to 15% while increasing cargo handling capacity by 40%.

Logistics Infrastructure Enhancement. The current state of logistics infrastructure requires significant modernization. The region needs modern warehousing facilities, distribution centers, and cargo handling equipment. Research indicates that investment in logistics infrastructure could potentially reduce transportation costs by 20-25% while improving delivery times by 30% [8].

Economic Impact Analysis. The economic implications of transport infrastructure modernization are substantial. Analysis of regional economic data suggests that improved transport infrastructure could:

Statistical analysis indicates potential for a 25-30% increase in regional trade volumes through improved transport connectivity. This growth could particularly benefit agricultural exports, which currently face logistics-related constraints.

Modernization efforts could lead to significant cost reductions in transportation and logistics. Studies suggest potential savings of 15-20% in overall logistics costs through improved infrastructure efficiency [9].

Enhanced transport infrastructure could significantly improve the region's investment attractiveness. Research indicates that regions with modern transport infrastructure attract 40% more foreign direct investment compared to those with underdeveloped infrastructure.

The modernization process itself and subsequent increased economic activity could create substantial employment opportunities. Estimates suggest potential for creating 5,000-7,000 new jobs in transport-related sectors over the next five years.

The analysis reveals significant potential for enhancing regional integration through improved transport infrastructure. The Khorezm region's strategic location positions it as a potential hub for international trade routes, particularly within the Central Asian economic corridor. However, realizing this potential requires coordinated efforts in infrastructure development and international cooperation.

CONCLUSION

The comprehensive analysis of Khorezm region's transport infrastructure reveals both significant achievements and substantial opportunities for further development. The research findings demonstrate that strategic modernization of transport infrastructure could serve as a powerful catalyst for regional economic growth and development. The existing foundation of road networks, railway connections, and air transport facilities provides a solid base for implementing advanced technologies and modern management systems.

The successful modernization of transport infrastructure in the Khorezm region requires a multi-faceted approach that combines technological innovation with sustainable development principles. Digital transformation emerges as a critical factor, with the potential to revolutionize transport management systems and improve operational efficiency. The integration of smart technologies, particularly in traffic management and logistics operations, represents a crucial step toward creating a more efficient and responsive transport network.

Infrastructure quality improvement should remain a priority, focusing not only on physical infrastructure enhancement but also on developing human capital and institutional capacity. The expansion of logistics capabilities, particularly through the development of modern logistics centers and multimodal transport hubs, will be crucial in positioning the region as a key player in international transport corridors.

Looking ahead, the success of these modernization efforts will largely depend on effective coordination between various stakeholders, including government bodies, private sector participants, and international partners. Sustainable funding mechanisms, clear regulatory frameworks, and continued commitment to innovation will be essential in realizing the full potential of transport infrastructure modernization in the Khorezm region.

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