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Problems and Solutions for the Development of Logistics Services in free Economic Zones of the Republic of Uzbekistan

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Abstract: This article provides a scientifically grounded analysis of the problems associated with the development of logistics services in the free economic zones of the Republic of Uzbekistan and proposes possible solutions. The study examines the economic performance indicators of residents of major free economic zones such as "Navoi," "Jizzakh," and "Urgut" over the period 2021–2025. The analysis identifies several key challenges, including the insufficient development of logistics infrastructure, the limited number of multimodal transport hubs and container terminals, restricted integration of digitalization and information systems, a shortage of qualified personnel, and inadequate investment incentives. To address these issues, the article proposes scientifically substantiated solutions, including the modernization of logistics infrastructure, the development of multimodal transport systems, the implementation of digital platforms, the training of qualified personnel, and the expansion of public-private partnership mechanisms.

Keywords: Free economic zones, logistics services, logistics infrastructure, supply chain, multimodal transportation, environmentally friendly transport, warehouse complexes, container terminals, multimodal logistics centers, cargo flows, export operations.

Introduction

The intensification of globalization processes worldwide, the growth of international trade volumes in the global economy, and the increasing complexity of supply chains are fundamentally transforming the demand for logistics systems. In recent years, disruptions in global supply chains have further highlighted the growing importance of container transportation and multimodal transport systems in ensuring the timely, reliable, and cost-effective delivery of goods[1].

These processes are directly linked to the functioning of free economic zones (FEZs), which serve as important institutional platforms for the development of modern logistics infrastructure.

In the Republic of Uzbekistan, the development of free economic zones is considered one of the priority directions of state economic policy. Particular attention is being paid to the development of comprehensive logistics services within FEZs to support production activities, export-import operations, and foreign trade. Specifically, modern logistics centers, warehouse systems, and infrastructure for cargo sorting, packaging, and consolidation are being actively developed within these zones. As a result, FEZs are evolving not only as production clusters but also as key hubs for the concentration of logistics services[2]. At the same time, the increasing level of containerization and the expansion of multimodal transportation impose new requirements on logistics operators.

These include reducing delivery times, optimizing transportation costs, ensuring the continuity of supply chains, and the widespread implementation of digital technologies. In particular, companies operating along transport corridors associated with FEZs must develop flexible logistics solutions, improve service quality in the container transportation segment, and enhance operational management through IT platforms[3].

The development of logistics services in FEZs increases the efficiency of cargo handling, boosts container flows, and strengthens competition in the logistics services market. This, in turn, leads to changes in tariff policies, the emergence of new types of services, and an increase in investment volumes in transport and logistics infrastructure. However, alongside these developments, several challenges remain, including insufficient integration of logistics systems, low levels of digitalization, underdeveloped transport infrastructure in certain regions, and issues related to service quality and standardization[4].

A comprehensive study of the problems associated with the development of logistics services in FEZs in the Republic of Uzbekistan, as well as the formulation of scientifically grounded recommendations to improve their efficiency, represents an urgent scientific and practical task.

Literature Review

The development of transport and logistics systems in free economic zones (FEZs) is of primary importance, particularly from the perspective of forming internal cargo flows and ensuring the integration of interregional and regional transport and logistics complexes. In this context, the effective functioning of FEZs directly influences not only the performance of resident enterprises but also the overall stability of the national transport and logistics network.

Over the past decades, research conducted within the field of global logistics and supply chain management-particularly the studies of Handfield R., Straube F., Pfohl H.-Ch., and Wieland A.-demonstrates that the efficiency and flexibility of logistics services serve as strategic resources that provide companies with a competitive advantage in the market. According to these scholars, "...the coordination of logistics processes, effective supply chain management, and the strategic planning of transport and warehouse infrastructure are among the key factors determining the performance of FEZs" [5].

In the studies conducted by Hsieh Li-Yang, Lu Yang-Jui, Lin H.-Sh., and Lee Yao-Hsien, the necessity of training global logistics specialists and adapting them to modern operational systems is emphasized. This highlights the critical role of personnel qualifications and knowledge in the development of logistics services within FEZs. Furthermore, the integration of marketing strategies into logistics processes contributes to improving service quality, optimizing costs, and enhancing the investment attractiveness of FEZs.

In his research, A. Aggarwal analyzes the role and global experience of special economic zones in economic transformation. The findings indicate that FEZs function not only as territories providing incentives for enterprises but also as drivers of economic growth through the creation of new market segments, integration of logistics resources, and management of transport flows. Based on Aggarwal's research, it can be argued that marketing strategies play a crucial role in effectively managing both internal and external logistics systems of FEZs, as well as in enhancing competitiveness and market integration.

In recent years, the issue of improving the efficiency of FEZs and transforming them into key drivers of national economic development has been widely discussed in both international and domestic research. The studies of T. Farole and G. Akinci demonstrate that FEZs serve not only as mechanisms for attracting investment but also as tools for enhancing economic efficiency through the integration of transport and supply chain systems. According to their findings, the development of FEZs and their integration into

global markets are directly dependent on the level of their logistics systems and management practices [6].

Russian researchers E.V.Kryukova and E.A.Matsuy have analyzed the strategic importance of developing transport and logistics services in FEZs. According to their conclusions, efficient logistics services not only regulate internal cargo flows but also ensure the integration of FEZs into global supply chains. From this perspective, marketing strategies serve as important tools in FEZ logistics for the rational allocation of resources, improvement of service quality, and optimization of costs.

A. E. Ellinger and A. D. Ellinger, in their research, emphasize the importance of human resource management approaches in developing the competencies of logistics and supply chain managers. In the context of FEZs, this highlights a significant aspect of applying marketing strategies: through marketing-oriented approaches, it is possible to improve logistics planning, reduce delivery times, and enhance the competitiveness of resident enterprises.

Research Methodology

In order to identify the problems associated with the development of logistics services in the free economic zones of the Republic of Uzbekistan and to address them through scientifically grounded solutions, the economic performance indicators of residents of the "Navoi," "Jizzakh," and "Urgut" FEZs were analyzed over the period 2021–2025. These indicators include the number of resident enterprises, the volume of private investment, the level of industrial production, the scale of the service sector, export and import volumes, and the number of jobs created. This approach enabled interregional comparison and the precise identification of existing problems.

The study employed a comprehensive methodological approach, combining several scientific methods. First, the statistical analysis method was used to examine the economic indicators of FEZ residents and the volume of logistics services, allowing for the identification of trends in growth, decline, and fluctuations in regional performance. Second, practical and monographic observation methods were applied, including interviews with transport, warehousing, and logistics enterprises operating within FEZs. This made it possible to identify discrepancies between theoretical analysis and real-world processes.

Results and Discussion

Since the beginning of the 21st century, the rapid development of innovative technologies in the global economy has led to a qualitatively new stage in the evolution of transport and logistics systems[7]. The widespread implementation of digital transformation, automation, and intelligent management systems has made it possible to optimize cargo transportation processes, reduce costs, and improve service quality. In particular, the use of satellite navigation, real-time monitoring systems, digital platform-based management, and environmentally friendly transport vehicles has significantly enhanced the efficiency and safety of logistics systems.

Today, both developed and developing countries are actively applying innovative solutions in the modernization of transport and logistics infrastructure. In particular, digital technology-based logistics platforms for managing cargo flows, systems coordinating multimodal transportation, the concept of "smart warehouses," and automated cargo handling complexes are being widely implemented. These innovations not only increase the speed of transport operations but also ensure transparency and improve the overall efficiency of supply chain management[8].

In the Republic of Uzbekistan, the introduction of modern technologies in the development of logistics services within free economic zones (FEZs) is considered an important strategic objective. The development of transport and logistics infrastructure, the implementation of digital management systems, and the establishment of logistics

centers within FEZs are expanding opportunities for the integrated organization of cargo processing, storage, packaging, and delivery. At the same time, the development of container transportation and multimodal transport systems is strengthening the role of FEZs in the international trade system.

However, several challenges remain in the process of the widespread implementation of advanced technologies in logistics systems. In particular, insufficient development of logistics infrastructure in certain regions, the incomplete formation of technical and institutional conditions necessary for digital transformation, financial constraints associated with capital-intensive innovative projects, and a shortage of qualified personnel act as limiting factors. Furthermore, the lack of integration of logistics systems into a unified information space and the low level of data exchange in transport processes negatively affect overall efficiency.

At the current stage of economic development in the Republic of Uzbekistan, FEZs are becoming an increasingly important structural and strategic component of the national economy. In recent years, both the number and scope of FEZ activities have expanded significantly, increasing their role in regional and sectoral development[9]. As of 2025, the country has 31 special economic zones, 417 small industrial zones, 32 technoparks, and 353 production clusters in operation. Within this infrastructure, 1,070, 3,199, and 3,381 business entities are actively functioning, respectively. The total value of implemented investment projects exceeds USD 2.6 billion, and more than 36,000 new jobs have been created, confirming the significant role of FEZs in economic growth.

The primary functional objectives of FEZs include the development of high value-added production, expansion of export potential, and attraction of foreign direct investment. In this context, several free economic zones in the country are developing based on specific industrial specializations. In particular, the “Navoi,” “Angren,” and “Jizzakh” FEZs are oriented toward priority sectors such as pharmaceuticals, automotive manufacturing, and textiles, contributing to the expansion of competitive export-oriented production[10]. Such specialization enhances production efficiency, deepens clustering processes, and accelerates regional economic development.

The economic performance indicators of residents in major FEZs of Uzbekistan, including “Navoi,” “Jizzakh,” and “Urgut,” have been evolving over time (see Table 1).

Table 1. Economic Performance Indicators of Residents in the “Navoi,” “Jizzakh,” and “Urgut” Free Economic Zones (2021–2025).

Indicators	2021	2022	2023	2024	2025
Navoi Free Economic Zone					
Number of residents	92	90	86	88	80
Volume of private investment (capital investments), mln UZS	517228.1	655195.9	3346225.9	1852162.1	667357.6
Industrial output, mln UZS	3801264.1	4678980.7	5080645.6	5749819.7	7350294.2
Market services provided, mln UZS	164090.5	204769.3	4845.2	92991.8	185389.1
Exports, thousand USD	0	0	0	62.9	0
Imports, thousand USD	13265	11671	1623265	1592858	11672787
Jobs created	3810	2294	1208	1711	4046
Jizzakh Free Economic Zone					

Number of residents	35	37	38	44	39
Volume of private investment (capital investments), mln UZS	45782.6	73249.1	43439.4	1046373.7	827094.7
Industrial output, mln UZS	2252727.6	3255882.7	10923977.1	14110020.4	20249709.6
Market services provided, mln UZS	27927.6	58504.2	560342.2	644318.5	550876.4
Exports, thousand USD	0	0	0	877.15	5105.137
Imports, thousand USD	0	0	0	0	366.795
Jobs created	1835	3885	4473	3402	1977
Urgut Free Economic Zone					
Number of residents	96	110	143	170	174
Volume of private investment (capital investments), mln UZS	218308.3	622526.0	633022.8	2758179.3	2934291.8
Industrial output, mln UZS	2335858.2	4047990.7	4201611.7	4741759.3	8084128.0
Market services provided, mln UZS	318.2	46897.2	70928.8	44583.6	57478.6
Exports, thousand USD	0	0	740.28	0	0
Imports, thousand USD	0	0	0	0	900.44
Jobs created	1004	1515	1584	1566	2886

The data presented in Table 1 indicate that the number of residents in the Navoi Free Economic Zone decreased from 92 in 2021 to 80 in 2025, suggesting a certain degree of consolidation. However, this reduction did not lead to a decline in production output. On the contrary, industrial production increased steadily from UZS 3.8 trillion in 2021 to UZS 7.35 trillion in 2025, indicating improved production efficiency among existing enterprises[11].

At the same time, significant fluctuations are observed in the volume of investments. In particular, a peak of UZS 3.3 trillion was recorded in 2023, followed by a decline in subsequent years. This can be explained by the implementation of large-scale projects within a specific period[12]. The volume of services experienced a sharp decline in 2023 but demonstrated a recovery trend in the following years. Export indicators remain largely underdeveloped, with only a minor volume recorded in 2024, while imports increased significantly, especially in 2025. This suggests a high level of dependence on imported inputs in production processes[13]. Employment dynamics are also uneven, showing a decline until 2023 and a sharp increase in 2025. Based on this analysis, it can be concluded that although production efficiency in the Navoi FEZ has improved, its export potential and service sector remain insufficiently developed. Among the free economic zones operating in the Republic of Uzbekistan, the Jizzakh Free Economic Zone stands out due to its high economic potential and advantageous location within a logistics hub. The number of residents in the Jizzakh FEZ increased steadily until 2024, reaching 44, and then slightly declined in 2025. At the same time, industrial production grew at an exceptionally high rate, increasing from UZS 2.25 trillion in 2021 to UZS 20.2 trillion in 2025, indicating rapid industrialization in this region[14].

The volume of investments rose sharply in 2024, exceeding UZS 1 trillion, which reflects the commissioning of new production capacities. The service sector has also

developed dynamically, particularly since 2023, reaching UZS 550 billion in 2025. Export activity began to take shape only in 2024 and reached USD 5.1 million in 2025. Meanwhile, import volumes remain relatively low, indicating an increasing level of localization[15]. Employment increased until 2023 and then declined, which may be attributed to technological advancements and increased production efficiency. It is particularly noteworthy that in recent years, a significant share of foreign investments in Uzbekistan-especially from Chinese companies-has been directed toward the Jizzakh FEZ. As a result, the zone is distinguished by high industrial growth, the emergence of export activity, and the development of the service sector. In "New Uzbekistan," despite having commenced operations only in 2017, the Urgut Free Economic Zone has demonstrated steady growth in the number of residents, increasing from 96 in 2021 to 174 in 2025. This indicates that the zone is one of the most attractive destinations for investors. Investment volumes have also grown steadily, particularly in 2024–2025. Industrial production increased from UZS 2.3 trillion to UZS 8 trillion, demonstrating a stable growth trend. Although the volume of services remains relatively low, an overall upward trend is observed[16]. Export and import operations are episodic in nature, indicating that foreign trade activities are not yet fully developed. The number of jobs created has also increased steadily, reaching 2,886 in 2025.

Thus, while the Urgut FEZ demonstrates strong expansion and investment attractiveness, the development of its foreign trade and service sectors remains limited[17].

At the same time, the introduction of digital economy elements, the application of innovative technologies, and the development of human capital are becoming increasingly important in the functioning of FEZs. The implementation of modern management systems, the digitalization of production and logistics processes, and the training of qualified personnel are key factors in enhancing the competitiveness and sustainability of these zones[18].

However, despite the positive trends observed, several systemic challenges remain that require further improvement of FEZ operations. These include the insufficient development of engineering and communication infrastructure in certain regions, bureaucratic delays in coordinating investment projects, and the complexity of land allocation mechanisms, all of which create additional barriers for investors. These factors negatively affect the investment attractiveness of FEZs[19].

In this regard, further development of free economic zones requires the improvement of the institutional and legal framework, simplification of administrative procedures, modernization of engineering infrastructure, and acceleration of investment processes. Taking into account advanced international practices, it is also necessary to expand tax and financial incentive systems, develop innovative and research-production clusters, and enhance the capacity of local human resources in order to increase the overall efficiency of FEZs[20][21].

Conclusion

The analysis of the economic performance indicators of residents in the Navoi, Jizzakh, and Urgut free economic zones (FEZs) of the Republic of Uzbekistan over the period 2021–2025 demonstrates that these territories are emerging as important growth points within the national economy. In particular, the steady increase in industrial production, the rise in investment activity, and the creation of new jobs indicate the growing economic efficiency of these zones. At the same time, the level of development of logistics services in these FEZs is not fully aligned with their economic performance. Internal logistics corridors within the FEZs remain insufficiently integrated with international logistics networks, highlighting the existence of several systemic challenges.

The analysis reveals the following key issues. First, the insufficient development of logistics infrastructure hinders the rapid and uninterrupted delivery of goods produced in FEZs. In some zones, the lack of modern warehouse complexes, container terminals, and

multimodal logistics centers limits the effective management of cargo flows. This situation directly affects the low level of export activity.

Second, the level of digitalization of logistics processes remains inadequate. The absence of unified digital platforms for cargo tracking, order management, and transport planning reduces operational efficiency and leads to increased time and cost expenditures.

Third, the integration of transport and logistics systems remains weak. The lack of effective multimodal connectivity between rail, road, and air transport increases delivery times and logistics costs, thereby reducing the competitiveness of FEZs within the global logistics system.

Fourth, there is a shortage of qualified personnel in the logistics services market. The limited number of specialists with competencies in modern logistics technologies, digital systems, and integrated logistics solutions slows down sectoral development.

To address these challenges, the following measures are proposed. First, it is necessary to develop modern logistics infrastructure within FEZs. In particular, the establishment of multimodal logistics centers, container terminals, smart warehouse systems, and cargo handling complexes will enhance the efficiency of logistics processes.

Second, the digitalization of logistics services should be accelerated. This includes the creation of unified information and logistics platforms, the implementation of real-time cargo tracking systems, and the expansion of electronic document management.

Third, integration between transport networks should be strengthened. The development of multimodal transportation, optimization of transport corridors, and active integration of FEZs into international transport corridors will improve the overall efficiency of the logistics system.

Fourth, it is essential to develop human capital in the logistics sector. This can be achieved through strengthening cooperation between higher education institutions and industry, expanding professional training programs, and adopting international best practices to train highly qualified specialists.

Fifth, in order to improve the investment climate, it is important to actively involve the private sector in logistics services, expand public-private partnership mechanisms, and stimulate the financing of logistics projects.

In general, the development of logistics services in free economic zones not only enhances the internal efficiency of these territories but also plays a crucial role in expanding the country's export potential, modernizing the transport and logistics system, and accelerating integration into the global economic system.

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