

THE ROLE OF DIGITAL TECHNOLOGIES IN DEVELOPING TOURISM LOGISTICS IN UZBEKISTAN

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Abstract. This article is devoted to the issue of enhancing logistics business processes in Uzbekistan's tourism sector through digital and innovative mechanisms. The article analyzes the current state of the country's tourism industry and its transport-logistics infrastructure, including statistical data from recent years. In addition, the article discusses the application of digital solutions (mobile applications, online booking systems), IoT and AI technologies, as well as innovative mechanisms such as blockchain and Big Data in tourism logistics. Practical recommendations include the integration of transport and logistics processes, improving service quality, and creating convenient conditions for tourists.

Keywords: tourism, logistics, digital technologies, innovative mechanisms, smart tourism, e-Visa, Big Data, electronic payment systems

Introduction

In the context of the digital economy, the tourism sector is becoming one of the most rapidly developing branches of the global economy. In particular, the effective organization and management of tourism logistics is a key factor in improving the quality of tourism services, increasing tourist flows, and enhancing the competitiveness of regions. In this process, digital technologies contribute to elevating tourism logistics to a new stage by optimizing transport, accommodation, information exchange, booking, and service delivery chains.

In Uzbekistan, tourism development has been identified as one of the priority areas of state policy, and large-scale reforms have been implemented in this sector in recent years. In particular, the Decree of the President of the Republic of Uzbekistan No. PF-5611 dated January 5, 2019, "On Measures to Accelerate the Development of Tourism in the Republic of Uzbekistan," as well as Resolution No. PQ-4095 dated February 7, 2019, provide for the modernization of tourism infrastructure, improvement of logistics systems, and the introduction of digital technologies. These documents emphasize the importance of improving transport and logistics services, expanding the use of information and communication technologies, and developing "digital tourism" platforms.

Furthermore, within the framework of the Tourism Development Concept for 2020–2025, the introduction of electronic booking systems, mobile applications, smart logistics, GIS technologies, big data, and artificial intelligence-based mechanisms for managing tourist flows has been recognized as a priority direction. These measures contribute to reducing time and costs



in tourism logistics, increasing service transparency, and creating a more convenient environment for tourists.

In addition, the “Digital Uzbekistan – 2030” Strategy envisages the digitalization of transport and logistics systems, the implementation of electronic payments, online monitoring, and integrated information platforms, which directly influence the innovative development of tourism logistics. In particular, optimizing transport movements along tourist routes and providing services through electronic ticketing and unified information systems contribute to ensuring the sustainable development of tourism.

Therefore, a scientific analysis of the role and importance of digital technologies in the development of tourism logistics in Uzbekistan, the identification of existing problems, and the formulation of proposals and recommendations based on advanced international experience are of significant scientific and practical relevance.

Tourism logistics represents a comprehensive system aimed at coordinating tourists' movements, transportation, accommodation, catering, information support, and other services. It encompasses not only transport networks but also service delivery, communication, and information infrastructure. Today, digital and innovative solutions are considered key tools for optimizing these processes.

In recent years, Uzbekistan's tourism sector has been developing rapidly. According to 2023 statistics, the number of foreign tourists visiting the country reached 8.3 million, while the number of citizens participating in domestic tourism amounted to 15 million. These indicators highlight the growing importance of tourism infrastructure, particularly transport and logistics services [5].

Tourism includes the following types: recreational tourism, cultural (cognitive) tourism, religious (pilgrimage) tourism, business tourism (MICE), extreme tourism, medical and wellness tourism, sports tourism, agritourism (rural tourism), and educational tourism.

Logistics processes play a significant role in tourism in the following areas:

- efficient organization of tourist mobility through transport modes, ensuring coordination among air, rail, and road transport services;
- logistics-based management of accommodation facilities, ensuring service continuity in hotels and resorts;
- planning and optimization of tourist routes and balanced regional distribution of tourist flows;
- management of information flows in tourism services through the effective use of electronic booking, online payment, and digital information systems;
- reduction of logistics costs and improvement of service quality to enhance the competitiveness of tourism products;
- strengthening integration among tourism infrastructure facilities and stimulating regional development.

Analysis



An analysis of tourism logistics development processes in Uzbekistan indicates that significant positive changes have been observed in the introduction of digital technologies. The expansion of electronic booking systems, online payment platforms, and digital information resources has simplified tourism service logistics and increased the speed and convenience of service delivery. This is particularly important in managing both international and domestic tourist flows.

However, the ongoing digitalization processes have not yet acquired a fully comprehensive and systematic character. According to the analysis, while digital technologies are actively used mainly in booking and payment stages, their potential has not been sufficiently exploited in areas such as transport movement monitoring, load forecasting, and intelligent management of tourist routes. This limitation acts as a constraining factor on the overall efficiency of the logistics system.

The analysis of the data presented in Table 1 shows that although the digitalization of tourism logistics in Uzbekistan has begun, it has not yet reached a fully integrated and systematic level. Currently, digital technologies are primarily applied in electronic ticketing and booking services, whereas integrated systems covering all stages of the logistics chain have not been adequately developed.

From a regional perspective, the analysis reveals that while digital logistics elements are being actively implemented in major tourist centers, this process is progressing more slowly in remote areas. This situation leads to uneven distribution of tourist flows and prevents the full utilization of existing tourism potential.

Table 1

Directions for improving tourism logistics based on digital technologies

Area of Analysis	Current Situation	Problems and Limitations	Opportunities Through Digital Technologies
Transport logistics management	Electronic ticketing and online booking systems have been introduced	Transport flows are not sufficiently monitored in real time	Optimization of transport movement based on GPS, GIS, and artificial intelligence
Tourist route planning	Traditional routes dominate	Intelligent planning mechanisms are insufficiently developed	Creation of “smart routes” through digital maps and mobile applications
Information exchange and integration	Separate digital platforms exist	Low level of integration between information systems	Implementation of a unified digital tourism-logistics platform
Interregional logistics	Developed mainly in central regions	Digital infrastructure in remote regions is underdeveloped	Ensuring regional logistics equality through cloud technologies
Tourist flow management	Statistical data are limited	Demand and load forecasting capabilities are weak	Development of demand and load forecasts based on big data



Service transparency and control	Partial electronic control systems are in place	The share of the shadow economy remains significant	Expansion of digital monitoring and electronic accounting systems
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At the same time, the opportunities for implementing digital technologies presented in the table indicate that tourism logistics has the potential to move to a qualitatively new stage of development. In particular, the use of big data and artificial intelligence technologies makes it possible to forecast tourist flows, balance transport loads, and reduce logistics costs.

The conducted analysis demonstrates the necessity of introducing digital technologies in a comprehensive and systematic manner in the development of tourism logistics in Uzbekistan. Reforms implemented in this direction play a crucial role in enhancing the competitiveness of the tourism sector and ensuring its sustainable development.

The importance of digital and innovative mechanisms in the development and improvement of tourism logistics in Uzbekistan has been steadily increasing. The growing complexity of transport, accommodation, information, and service delivery processes in the tourism sector requires logistics systems to be organized based on modern management approaches. In this context, digital technologies enable the integrity of logistics chains, improve service quality and speed, and optimize operational costs.

The research findings confirm that although certain legal, institutional, and technological foundations for the digitalization of tourism logistics have been established in the country, their practical implementation has not yet achieved a sufficiently systematic and integrated character. Differences in the level of development of digital logistics infrastructure between regions, weak integration of information systems, and insufficient human resource capacity remain key factors hindering the full development of this sector.

Practical Recommendations

- Expanding the implementation of digital platforms by integrating all tour operators and hotels into a unified system. This will enhance convenience for tourists and improve the quality of services.
- Strengthening transport and logistics integration by connecting bus, railway, urban, and international transport services within a single coordinated framework.
- Developing human capital through training and professional development, including the preparation of qualified specialists in logistics and tourism and the organization of internationally certified training courses.
- Wider adoption of innovative solutions, such as the introduction of IoT and AI technologies into tourism infrastructure, including hotels, transport systems, and excursion services.

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