



DIGITAL TRANSFORMATION OF THE TOURISM INDUSTRY AND ITS IMPACT ON EXPORT POTENTIAL: EVIDENCE FROM KAZAKHSTAN

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Article History:
Received: 3 February 2025
Revised: 13 March 2025
Accepted: 14 March 2025

ABSTRACT. *Digital tourism in Kazakhstan is a rapidly developing field that is actively incorporating modern technologies to enhance the tourism experience and improve management. This article analyzes the evolution of the tourism industry in Kazakhstan within the context of digital transformation. Various research methods, including content and comparative analysis, were employed to assess the impact of digitalization on the tourism and hospitality sectors. Additionally, a SWOT analysis has been conducted to identify the main tasks for enhancing the tourism sector. This research outlines a concept for developing the tourism and hospitality industry, which consists of four key elements: government policy, digital banking, digital promotion, and digitalization in the hotel business.*

KEYWORDS: *digital technologies, tourism, artificial intelligence, digital banking.*

INTRODUCTION

Tourism is a crucial sector of the economy, significantly influencing regional development and job creation. Kazakhstan boasts diverse natural landscapes and a rich cultural heritage, offering unique tourist attractions. The tourism sector has substantial growth potential in the country, but realizing this potential requires addressing current trends and challenges related to global digitalization.

Digital transformation is altering traditional business practices and customer interactions across all industries, including tourism. Modern tourists are increasingly demanding, favoring digital solutions that offer convenience, speed, and a personalized experience. Therefore, the integration of digital technologies into Kazakhstan's tourism industry is becoming essential for enhancing its competitiveness both domestically and internationally.

The concept of digital tourism includes the integration of innovative technologies, the improvement of digital infrastructure, the use of data and artificial intelligence for analysis and forecasting, as well as the creation of new digital services and products for tourists. An important aspect is also the training of personnel capable of working effectively in the digital economy and implementing modern solutions in the tourism business.

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JOURNAL OF
**CENTRAL ASIAN
STUDIES**
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The introduction of digital technologies into the tourism industry in Kazakhstan will open up new opportunities to attract tourists, improve the quality of services provided, and increase customer satisfaction. At the same time, it will require serious investments, changes in management approaches, and the willingness of all industry participants to adapt to new conditions.

To date, Kazakhstan has made notable strides in digital tourism. Projects have been launched to establish user-friendly booking and payment platforms, mobile travel planning applications have been developed, and systems for feedback and recommendation have been introduced.

Numerous studies have examined the impact of digital technologies on tourism. For instance, an empirical study by Bănescu et al. (2021) found a positive association between digitalization in the tourism industry and individual well-being, as well as the availability of secure Internet servers. Natocheeva et al. (2020) identified digital technologies as a key driver for the growth of the tourism sector. Buhalis and Law (2008) explored the relationship between economic growth, technology penetration, employment rates, and costs in the tourism industry. However, Shilibekova et al. (2024) studied the current stage of digital tourism in Kazakhstan and identified the challenges that hinder the sector's development. The main purpose of this article is to analyze the current state of digital tourism in Kazakhstan, identify key achievements and challenges, and explore future prospects in light of global trends. To accomplish this, the following tasks have been outlined: 1. Analyze the theoretical aspects of the relationship between digital tourism and export; 2. Identify the ecosystem of digital tourism; 3. Determine the driving factors for digital tourism in Kazakhstan.

LITERATURE REVIEW

Digital tourism and economic growth

Digital technologies have significantly transformed the way businesses operate. According to Samira (2011), web technologies are an integral part of the digital economy and have a vital impact on the tourism industry (Hojeghan & Esfangareh, 2011). Additionally, the development of digital finance fosters international tourism (Lee et al., 2025). An advanced digital infrastructure enhances the tourism industry and contributes to economic growth. Research by Castro et al. (2020), Kumar et al. (2019), and Farhadi et al. (2012) demonstrate a strong relationship between information and communication technology (ICT), tourism, and economic growth. Their findings indicate that, over the long term, the expansion of ICT positively affects the total number of travelers (Alao-Owunna et al., 2023).

Moreover, the advancement of digitalization has an indirect positive impact on employment, innovation, and education, all of which contribute to the sustainable development of the tourism sector (Wu et al., 2024; Tang, 2024). Key factors for sustainable tourism, identified by Xu et al. (2024), include the development of fintech, digital infrastructure, and foreign direct investments. The research suggests that digitalization is a significant factor among these elements. Furthermore, digital tools such as mobile applications, booking platforms, and e-commerce play a vital role in

promoting sustainable development and are essential to the decarbonization process. (Wu et al., 2024)

The study results show that digital platforms drive digital convergence, aiding in achieving sustainable development. Polukhina et al. (2025), and Rhena and Kraugusteeliana (2024) emphasize that the development of digital infrastructure enhances tourism competitiveness on a global scale, while research by Meta Ayu indicates that well-developed ICT infrastructure promotes economic growth (Kurniawati, 2022). In other words, an increase in the number of Internet users and mobile phone subscriptions positively correlates with the sustainable development of the economy. Mambetova et al. (2021) highlight that digital platforms are becoming primary distribution channels and catalysts for innovative development. In addition, digital financial inclusion is a key factor that positively impacts tourism development (Luo et al., 2024). Based on the literature review of digitalization's impact on the tourism industry, the development of ICT infrastructure has a positive effect on both the tourism sector and sustainable development. In other words, a higher ICT penetration rate correlates with increased tourism income.

Digital tourism ecosystem

The digital tourism ecosystem refers to the complex of digital tools used in the tourism and hospitality industry. These tools include online booking platforms, mobile applications for travel planning, and virtual tours of historical sites, among others. (Baggio, 2022). Another perspective on the digital tourism ecosystem is that it serves as a technological infrastructure designed to support the network between enterprises and clients (Baggio & Del Chiappa, 2014).

Research by Almeida-Santana et al. (2020) demonstrates that using online booking platforms such as Expedia and Booking.com positively correlates with the use of sharing economy platforms for obtaining information about travel tours. Additionally, the digital ecosystem provides opportunities for expanding markets to export services, and the automation of business processes can help reduce costs for travel agencies (Yekimov et al., 2021).

Popova's research highlights that the digital ecosystem, characterized by innovative organizational and business models, positively impacts sustainable tourism development (Popova et al., 2023). Moreover, Norman argues that new technology players like Airbnb introduce innovative services for tourists (Schaffer et al., 2021). Shrestha et al. (2021) have examined the practical aspects of the digital tourism business ecosystem model, stating that digital technologies enhance service quality and, in turn, boost intellectual competitiveness (Pencarelli, 2020).

However, the digital tourism ecosystem also entails several risks. Popova et al. (2023) classified these risks into seven groups: strategic, organizational, technological, social, cultural, economic, and ecological. Despite these risks, the digital tourism ecosystem offers numerous benefits. According to Khatami et al. (2024) research, the level of digitalization, including cloud infrastructure and tourist-based apps, enhances tourism effectiveness and sustainability. Kuo et al. (2019) identified mobile apps as the primary tool for choosing travel destinations. Based on the collected research, the main components of the digital tourism ecosystem include big data, the Internet of Things,

mobile applications, and more. Furthermore, the digital tourism ecosystem enhances the efficiency and competitiveness of the tourism and hospitality sector.

METHODOLOGY

Given the complexity of digital tourism and its impact on export potential, a variety of research methods were employed. An interdisciplinary approach enables a comprehensive study of the factors influencing the development of digital tourism.

Content analysis was utilized to assess government programs dedicated to developing digital tourism. The authors collected and systematized texts from official documents, laws, strategies, development programs, and other materials related to digital tourism. Analyzing the regulatory framework allows for the identification of key areas necessary for the development of digital tourism.

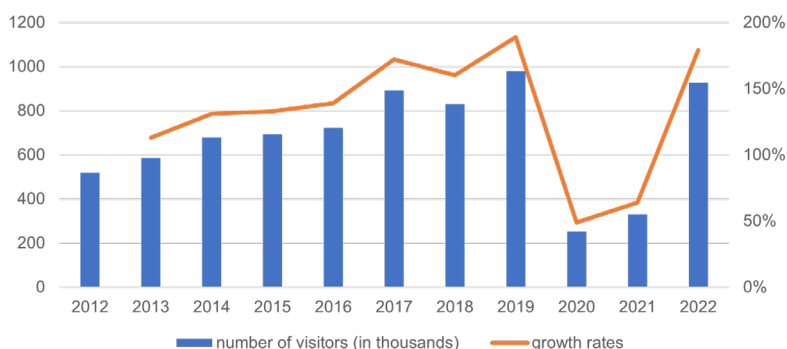
To define the concept of digital tourism, the authors used comparative and trend analyses. These methods provide opportunities to study and monitor global and local trends in tourism and digital technologies, including the analysis of current technological innovations and the digitalization of the banking system, as well as the application of digital tools in the hotel business.

A SWOT analysis was conducted to identify the strengths and weaknesses of developing digital tourism in Kazakhstan. This method highlights the challenges that impede the growth of the tourism sector.

ANALYSIS AND RESULTS

Kazakhstan, rich in historical and natural heritage, is becoming an increasingly attractive destination for tourists from around the globe. The country boasts significant tourism potential, and in recent years, there has been a noticeable increase in tourist activities as the government actively develops this sector of the economy. Kazakhstan offers a wealth of natural and recreational resources, as well as numerous cultural and historical monuments. Additionally, its convenient geographical location further supports tourism development.

Figure 1. The number of foreign tourists in Kazakhstan from 2012-2022 (thousand people)

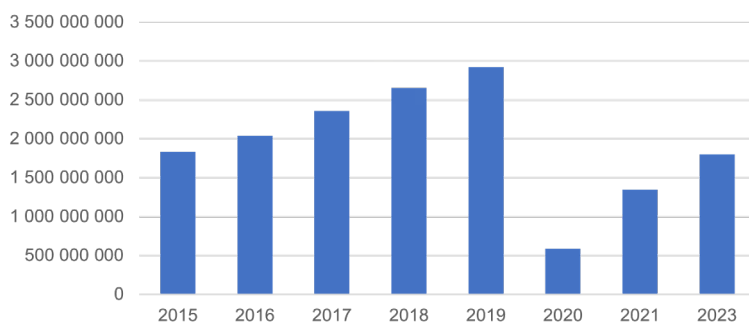


Source: Development of the tourism industry in the Republic of Kazakhstan (World Economic Forum, 2024)

In 2022, the number of tourists visiting Kazakhstan increased by 10%, (Sultanbekova, 2023) totaling 8.5 million. By 2025, the goal is to raise this number to 10 million. The country has established a range of tourist types, including cultural, educational, ecological, health, religious, and business tourism.

It is important to highlight that from 2012 to 2022, Kazakhstan saw a moderate increase in the number of foreign arrivals. However, during the COVID-19 pandemic, specifically between 2020 and 2021, the tourism industry experienced a sharp decline due to border closures and quarantine measures. Nevertheless, growth resumed in 2022 (Statistical Committee of the Republic of Kazakhstan, 2023). As of 2023, citizens from 83 countries can enter Kazakhstan visa-free, while residents of 109 countries are eligible to apply for electronic visas (eVisa Kazakhstan, n.d.). Additionally, special investor visas are available to support further development of the industry.

Figure 2. International tourism receipts in U.S. dollars for Kazakhstan from 2015 to 2023



Source: World Bank Open data (World Bank, n.d.)

As illustrated in Figure 2, international tourism receipts for Kazakhstan steadily increased from 2015 to 2019. However, the COVID-19 pandemic and the resulting border closures and quarantine measures significantly impacted tourism income, leading to a sharp decline. Fortunately, government initiatives aimed at promoting the tourism industry have contributed positively to the recovery. International tourism expenditures have begun to rise, approaching pre-pandemic levels. Importantly, the digital transformation of the tourism sector has positively affected tourism export volumes and improved Kazakhstan's trade balance. According to Statista (Statista, 2025), Kazakhstan's trade surplus reached approximately 17.88 billion U.S. dollars in 2023.

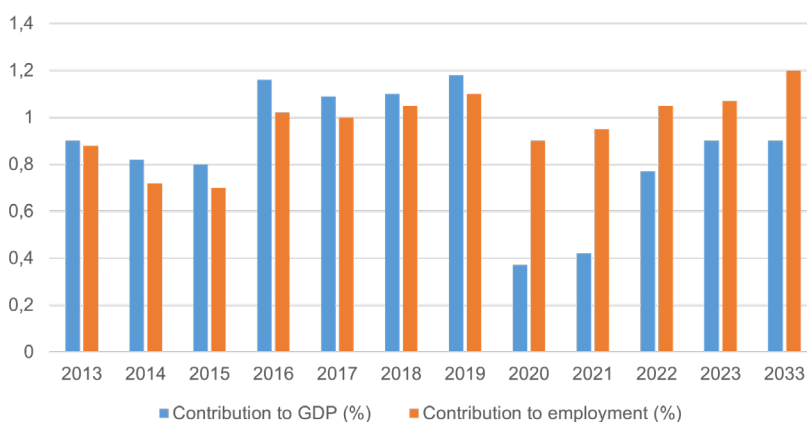
In the Global Travel and Tourism Development Index, Kazakhstan is ranked in the middle. In 2021, the country held the 66th position and improved to 52nd by 2024 (World Economic Forum, 2024). These rankings reflect the country's commitment to enhancing its tourism and hospitality sector. Kazakhstan ranks second among countries on the Balkan Peninsula and in Eastern Europe and demonstrates high ICT readiness across all three categories of the sub-index regarding "Conditions for the Development of Travel and Tourism" (including prioritization of tourism, openness to tourism, and price competitiveness).

In 2020, Lonely Planet recognized Kazakhstan as the best in the "Best Tourist Accommodation" category. That same year, the country was listed among the top five travel choices for British travelers, and the New York Times praised Kazakhstan for its exceptional tourism public relations campaign (*Ob utverzhdenii Kontseptsii razvitiya turistskoy otrasli Respubliki Kazakhstan na 2023–2029 gody, 2023*).

In 2021, The Guardian awarded Kazakhstan the title of "Best Places to Visit", and Le Figaro included it in its "Recommended to Visit in 2021" list. The video "Imagine Travelstan" won recognition at the 14th ART&TUR International Tourism Film Festival (*Ob utverzhdenii Kontseptsii razvitiya turistskoy otrasli Respubliki Kazakhstan na 2023–2029 gody, 2023*).

In 2022, The Telegraph identified Almaty as the top destination for budget holidays, and Kazakhstan was also highlighted by the reputable Conde Nast Traveler. In February 2023, the country received the award for "Best Trending Destination for Travelers from India" according to Travel Scapes (*Ob utverzhdenii Kontseptsii razvitiya turistskoy otrasli Respubliki Kazakhstan na 2023–2029 gody, 2023*).

Figure 3. Direct contribution of the tourism industry to the country's economy



Source: *Travel and Tourism Economic Impact 2023*
(European Investment Report, 2023)

The tourism industry plays an important role in the development of Kazakhstan's economy. Since 2016, the tourism and hospitality sector has contributed to the country's GDP. However, in 2019-2020, the industry faced substantial losses due to the COVID-19 pandemic, which resulted in the closure of borders, the implementation of quarantine measures, and the shutdown of tourist attractions. This led to a decrease in the number of foreign tourists visiting Kazakhstan.

It is noteworthy that government initiatives aimed at restoring the tourism sector to pre-pandemic levels have shown positive results. Since 2020, there has been a moderate increase in employment within the tourism industry, although the number of jobs has sharply declined during the pandemic.

The advancement of digital technologies and their integration into the tourism sector have become crucial for the industry's recovery. Online services, virtual tours, and other innovative solutions have emerged as key drivers of development in this field.

State Program for the Development of Digital Tourism

Government policies for advancing digital tourism typically include strategic actions and initiatives designed to harness technology to develop the tourism sector. The following table shows the main regulatory acts related to the development of this industry.

Table 1. Regulatory documents on the development of the tourism industry in Kazakhstan

Title of the document	Content
The Law of the Republic of Kazakhstan dated June 13, 2001 "On tourism activities in the Republic of Kazakhstan"	A fundamental document regulating tourism activities and defining the economic, legal, and social foundations of the tourism industry.
Resolution of the Government of the Republic of Kazakhstan dated March 28, 2023 "On approval of the Concept of Development of the tourism industry of the Republic of Kazakhstan for 2023-2029"	One of the priorities is to create a favorable climate, improve the quality of service, and develop digitalization. One of the main tasks is to expand the list of countries using the e-visa system, further introduce the e-Qonaq information system and mobile applications, introduce online booking, and increase the online presence of tourist facilities (hotels, museums, national parks, etc.).
Order of the Minister of Culture and Sports of the Republic of Kazakhstan dated March 2, 2017 "On approval of the Regulations of the State institution Committee of the Tourism Industry of the Ministry of Tourism and Sports of the Republic of Kazakhstan"	The main tasks, rights, duties, status, and powers of the Committee of the Tourism and Sports Industry of Kazakhstan are defined.
Order of the Minister of Culture and Sports of the Republic of Kazakhstan dated December 15, 2021, "On the Approval of the Rules for Subsidizing Tour Operators' Expenses in the Field of Incoming Tourism for Each Foreign Tourist"	Tour operators are eligible for subsidies to offset expenses related to organizing inbound tourism. These subsidies are allocated for each foreign tourist attracted and serviced by a tour operator. This mechanism aims to stimulate and support companies involved in inbound tourism to increase the flow of foreign visitors to Kazakhstan.
Resolution of the Government of the Republic of Kazakhstan dated November 23, 2023 "On accession to the Agreement between the Governments of the Member States of the Shanghai Cooperation Organization on the Development of cooperation in the field of tourism"	The parties contribute to the organization of cooperation in promoting the travel brands of the states by holding international conferences, forums, seminars, and exhibitions, as well as publications in the media and on the Internet.

Resolution of the Government of the Republic of Kazakhstan dated December 29, 2021 “On approval of the Development Plan of the National Company Kazakh Tourism Joint Stock Company for 2022-2031”	<p>The main tasks for the digitalization of the tourism industry have been identified:</p> <ol style="list-style-type: none"> 1. e-Qonaq information system, national tourism portal Kazakhstan.travel (MICE, Marketplace, Photobank modules). 2. Digitalization of sacred places is provided (creation of a mobile application). 3. The Tourstat Information System Plans to integrate mobile operator data from the e-Qonaq (eHotel) information system and exchange information with passenger carriers. 4. The "Tourism online" information system serves as a single platform where stakeholders in the tourism market can connect. 5. The "View Project" information system is designed for online monitoring and interaction with local authorities (akimats) in implementing infrastructure and innovative projects in tourist destinations across Kazakhstan.
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Source: compiled by the authors

In 2017, Kazakhstan adopted the state program «Digital Kazakhstan 2018-2022» (Ob utverzhenii Gosudarstvennoj programmy "Cifrovoj Kazahstan", 2017), the main objective of which is to accelerate the country's economic growth. The main focuses of this strategy include:

- Digitalization of Economic Sectors: transforming various sectors of the economy, including services, financial technologies, agriculture, mining, and oil. This aims to enhance productivity through the integration of digital technologies.
- Transition to a Digital State: delivering public services to citizens via a unified online platform.
- Implementation of the Digital Silk Road: ensuring the population has access to high-quality, continuous 4G mobile coverage, and facilitating companies' access to global data transmission networks.
- Human Capital Development: improving the digital literacy of the population.
- Creation of an Innovation Ecosystem: supporting the establishment of innovation platforms.

In 2024, the Government of Kazakhstan adopted the “Concept of Artificial Intelligence Development for 2024-2029” (Ob utverzhenii Kontseptsii razvitiya iskusstvennogo intellekta na 2024–2029 gody, 2024). The purpose of this strategy is to foster and regulate legal aspects related to artificial intelligence. The key areas of this concept include:

- Data;
- Infrastructure;
- Human Capital;
- Research and Development Activities;
- Regulation of Legal Relations in the Field of Artificial Intelligence;
- Acceleration Programs.

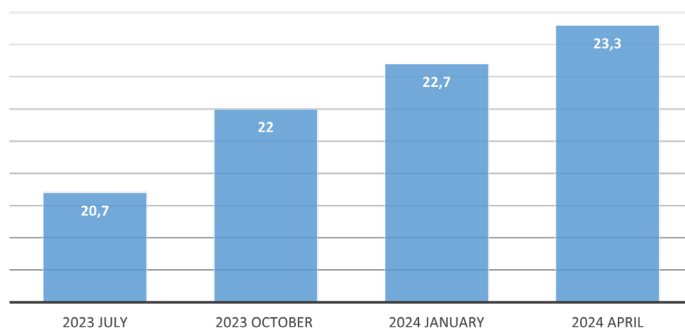
Kazakhstan is actively working on the digitalization of its tourism industry. Digital technologies and platforms provide solutions to traditional challenges in destination management while enhancing competitiveness. According to a report from the World Travel and Tourism Council, Kazakhstan is performing well on the "ICT Readiness" indicator, scoring 5.42 in 2024, nearly 50% higher than in 2019 (World Economic Forum, 2024). Notably, Kazakhstan ranks second among countries in the Balkans and Eastern Europe, just behind Georgia, indicating strong progress in developing digital tourism.

Digitalization of the Banking Sector in Kazakhstan

The digitalization of Kazakhstan's banking sector is progressing rapidly and significantly impacts the country's financial system. This process involves the introduction of new technologies, improving user experience, and expanding access to financial services through digital channels. The digital transformation in banking also benefits the tourism industry by providing travelers and travel companies with convenient and effective financial solutions.

A major advantage of digital banking is the rise of contactless and mobile payments. For tourists, this means greater convenience when paying for services. Contactless payments using smartphones and NFC-enabled cards are becoming standard in Kazakhstan, simplifying the payment process and enhancing safety for foreign tourists, especially in a pandemic where contactless methods are preferred.

Figure 4. The number of users of online banking services (million units)



Source: *DKnews.kz*, 2024

Mobile banking in Kazakhstan has become a key component of the country's financial system. According to data from the first half of 2023, the number of active users of online banking services surpassed 22 million. The most popular mobile applications in Kazakhstan include Kaspi.kz and Halyk Bank. Kaspi Bank is a leader in the country's digitalization efforts, offering a wide range of services through its Kaspi.kz platform. These services include mobile banking, online payments, e-commerce, and lending, as well as support for QR payments and non-cash transactions. Halyk Bank, one of the largest banks in Kazakhstan, provides a digital platform called Homebank. This platform allows customers to perform various online banking operations, such as making transfers, paying utility bills, and purchasing tickets. Homebank also offers services for small and medium-sized businesses.

The main advantages of digital banking for tourists are:

1. Convenient access to finances
2. Fast and secure payments
3. International card support
4. Currency conversion
5. 24/7 customer support
6. Online registration of insurance policies.

Kazakhstan is home to several international payment systems that facilitate financial transactions for both local residents and foreign tourists. The primary systems include Visa, Mastercard, American Express, PayPal, and Japan Credit Bureau.

Visa is one of the largest and most widely accepted international payment systems in the world, and it is extensively used in Kazakhstan. Visa cards are accepted in over 200 countries and regions, making them a convenient payment method for tourists, as they are available in all retail outlets. Visa cards can also be linked to mobile wallets like Apple Pay and Google Pay, allowing users to make purchases using their smartphones (Visa, n.d.).

Mastercard is another major international payment system that is actively used in Kazakhstan for both local and international transactions. Mastercard cards are widely accepted in hotels, restaurants, shops, and car rental services, providing convenience for tourists.

American Express focuses primarily on the premium segment and is often used for business and travel purposes. While it is accepted at large hotels, restaurants, and some upscale stores, it is not as widely used as Visa or Mastercard. American Express Gold Card holders enjoy 24/7 access to a concierge service that assists with visa processing, hotel reservations, and ticket purchases (Investopedia, n.d.).

PayPal is an international electronic payment system used for online purchases, money transfers, and service payments. In Kazakhstan, PayPal can be used for international purchases and fund transfers, supporting over 25 currencies, which makes it convenient for conducting transactions abroad. PayPal can also be used for contactless payments via mobile wallets such as Apple Pay and Google Pay, which is particularly helpful when traveling (PayPal, n.d.).

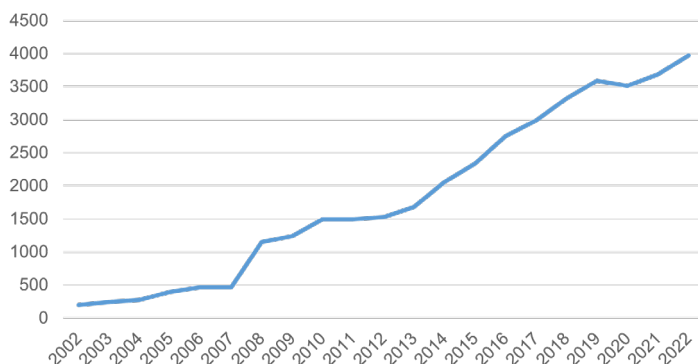
Japan Credit Bureau (JCB) is a Japanese payment system that is gaining popularity in Kazakhstan, especially among tourists from Japan. JCB cards are widely accepted in Asian countries such as South Korea, China, Taiwan, and Singapore. They support contactless payment technology, making the payment process faster and more secure (JCB, 2017).

Digitalization of Hotels in Kazakhstan

The digitalization of hotels in Kazakhstan is part of a broader trend of integrating technology in the hospitality industry, aimed at improving service quality, optimizing processes, and improving customer experiences. In recent years, the country has begun attracting international hotel chains due to increased interest as a tourist and business

destination. High-quality hotels are emerging in major cities such as Almaty, Astana, and Shymkent.

Figure 5. Number of hotels in Kazakhstan 2002-2022



Source: UNWTO Tourism Statistics

Currently, Kazakhstan hosts 26 international brands from 10 different hotel chains, including Marriott International, InterContinental, Hilton Hotels & Resorts, Accor, Wyndham Hotels & Resorts, Best Western Hotels & Resorts, Fabulous Abu Dhabi, Dedeman, Golden Tulip Hospitality Group, and Reikartz Hotel Group. According to the Statistical Committee of Kazakhstan, as of 2022, the country had 26 five-star hotels, 57 four-star hotels, and 42 three-star hotels. It is noteworthy that most of the five-star and four-star hotels are located in Astana and Almaty (Looking for Booking, n.d.).

A key aspect of the digitalization of the hotel industry in Kazakhstan is the adoption of property management systems (PMS). These software solutions automate the processes of booking, guest accounting, financial management, and other operational activities. By utilizing PMS, hotels can effectively manage room availability, monitor pricing, and analyze data to make informed decisions. Examples of such systems include Opera, Protel, and RoomRaccoon.

One innovative digital solution in the hospitality sector is the digital lock service for hotels. Porte is a Software as a Service (SaaS) solution that replaces traditional magnetic room keys with digital ones, allowing guests to unlock their rooms using their smartphones. This service operates through mobile and web applications and provides additional conveniences for hotel guests (Digital Business Kazakhstan, 2023).

Online booking platforms such as Booking.com and Airbnb, are also crucial for digitalization in hotels. These platforms assist in expanding their audience and simplifying the booking process for customers.

In Kazakhstan, the Alfred product for AI-powered hotels has been introduced. This application addresses guests' inquiries and supports 20 languages, helping to overcome communication barriers. Additionally, using chatbots to interact with guests and handle requests enhances customer service and reduces staff workload (Digital Business Kazakhstan, 2024).

Digital marketing plays a vital role in the growth of the hotel industry. Hotels are increasingly leveraging social media, content marketing, search engine optimization, and other strategies to promote their services, attract customers, and strengthen their brand presence. Effective digital marketing enables hotels to boost their visibility and competitiveness in the market.

Table 2. SWOT analysis of developing digital tourism in Kazakhstan

<p>Strengths:</p> <ol style="list-style-type: none"> 1. Kazakhstan has a sufficient number of unique natural and cultural attractions that can be effectively presented through digital platforms, which provide an opportunity to attract more tourists (Kazakhstan National Statistics Committee, 2023). 2. Developing digital infrastructure enables travel companies to offer travel services through digital platforms and the adoption of digital payment systems supports the development of digital tourism (Center for Strategic and International Studies, 2024). 3. Government support has focused on developing national programs to enhance digital tourism, including the implementation of the E-visa accounting system, E-Qonaq. 	<p>Weaknesses:</p> <ol style="list-style-type: none"> 1. Less developing digital infrastructure and digital literacy in rural areas limit the potential of digital tourism (KzVesti, 2024). 2. Kazakhstan lacks a full-fledged ecosystem of digital services that would connect tourists with local operators, providing comprehensive services for booking, route planning, and recommendations. 3. The lack of tourist awareness regarding digital services limits demand for these products (Shilibekova et al., 2024).
<p>Opportunities:</p> <ol style="list-style-type: none"> 1. Kazakhstan can become an important player in the international digital tourism market among Central Asian countries by offering unique travel products through online platforms aimed at foreign tourists (World Economic Forum, 2024). 2. Cooperation with international platforms allows Kazakhstan to promote its travel services on the global market. 3. The integration of artificial intelligence into the tourism sector allows for personalized recommendations for travelers. 	<p>Threats:</p> <ol style="list-style-type: none"> 1. Threats connected with data security may reduce trust in Kazakhstan's digital tourism platforms. 2. Neighboring countries with more established digital tourism infrastructures may attract potential tourists, posing a competitive threat to Kazakhstan. Staying competitive requires continuous innovation and investment in digital technologies.

Source: compiled by the authors

Key Factors in the Development of the Tourism Industry in the Era of Digitalization

The tourism industry has seen significant development due to several key factors in the age of digitalization:

1. **E-Visa Applications:** the introduction of e-visa applications for tourists from over 100 countries has streamlined the visa application process making it easier for travelers and attracting more visitors.
2. **Social Media and Online Advertising:** promoting tourism destinations through social media and web portals allows for broader outreach, informing potential tourists around the globe about available attractions and experiences.
3. **Diversified Payment Systems:** various payment options have made it more convenient for international travelers to plan their trips without financial hurdles.

Kazakhstan's tourism sector has been significantly transformed by the integration of ICT. This has enhanced operational efficiency, customer engagement, and international competitiveness. The introduction of the e-Qonaq system in 2021 highlights Kazakhstan's commitment to digitalizing tourism operations. This platform automates tourist registration, consolidates accommodation data, and facilitates migration control, thus streamlining administrative processes and improving service delivery.

Digital tools have reshaped how customers interact with the tourism industry. Online booking systems and mobile applications enable tourists to conveniently plan and reserve services. These platforms provide comprehensive information on attractions, accommodations, and services, often featuring itinerary planning, ticket booking, and navigation assistance, which enhances the overall travel experience.

The adoption of digital marketing has broadened Kazakhstan's reach to a global audience. By utilizing social media platforms, search engine optimization (SEO), and online advertising, tourism businesses can engage with potential tourists worldwide, effectively promoting Kazakhstan as a diverse travel destination.

The use of data analytics tools allows stakeholders to analyze tourist behavior, preferences, and trends. This data-driven approach supports informed decision-making regarding marketing strategies, service enhancements, and infrastructure development, aligning offerings with tourist expectations and fostering sustainable growth.

Despite these advancements, challenges remain. Studies have identified a digital divide within the tourism sector, characterized by varying levels of ICT adoption across different industry segments. Some businesses struggle with a lack of ICT-savvy staff, and there tends to be a predominant focus on web presence over website performance. Consumers have expressed concerns about the shortage of tourism professionals with digital skills, indicating the need for enhanced digital literacy and training within the industry. The implementation of electronic tools in Kazakhstan's tourism industry has positively influenced tourism trends by enhancing operational efficiency, improving customer experiences, and increasing international engagement. Addressing current challenges related to digital skills and infrastructure will further strengthen the sector's growth and competitiveness.

Table 3. Travel and Tourism Development Index 2024 in Central Asia

Country (Rank)		Kazakhstan (52)	Uzbekistan (78)	Tajikistan (99)	Kyrgyz Republic (102)	Turkmenistan
Enabling Environment	Business Environment	3,93	4,06	3,60	3,45	N/A
	Safety and Security	5,69	6,17	6,08	5,65	N/A
	Health and Hygiene	5,98	5,00	4,71	5,01	N/A
	Human Resources and Labour Market	4,46	4,35	3,69	4,12	N/A
	ICT Readiness	4,46	4,35	3,69	4,12	N/A

T&T Policy and Enabling Conditions	Prioritization of T&T	4,31	3,30	3,21	3,51	N/A
	Openness to T&T	3,15	3,38	2,65	3,13	N/A
	Price Competitiveness	6,14	5,49	5,90	5,87	N/A
Infrastructure and Services	Air Transport Infrastructure	3,19	3,05	2,38	2,53	N/A
	Ground and Port Infrastructure	2,82	3,44	2,94	2,22	N/A
	Tourist Services and Infrastructure	3,14	1,45	1,63	1,26	N/A
T&T Resources	Natural Resources	3,64	2,49	2,37	2,03	N/A
	Cultural Resources	2,07	1,85	1,46	1,71	N/A
	Non-Leisure Resources	2,22	1,43	1,14	1,20	N/A
T&T Sustainability	Environmental Sustainability	3,95	3,08	3,93	3,43	N/A
	T&T Socioeconomic Impact	5,50	4,80	4,66	3,84	N/A
	T&T Demand Sustainability	3,55	4,13	4,46	4,12	N/A

Source: World Economic Forum, 2024

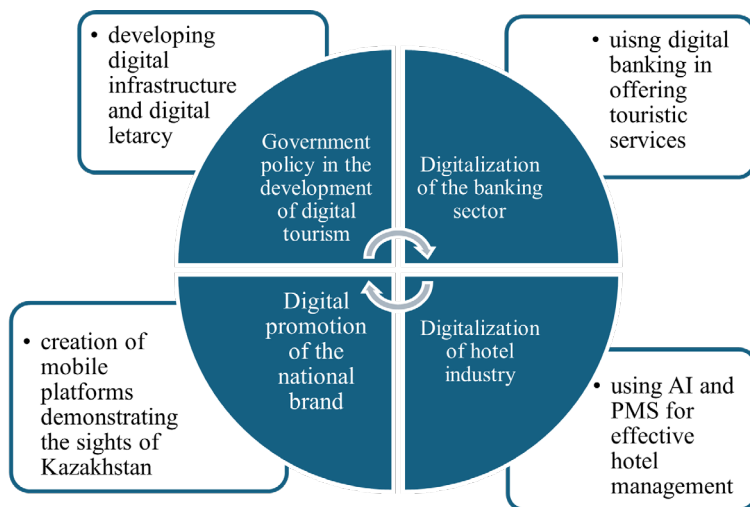
According to the Travel and Tourism Development Index, Kazakhstan scored 5,69, placing it second among Balkan and Eastern European countries. This result underscores the effectiveness of the government's strategy aimed at developing the tourism industry. Moreover, the ICT Readiness in Tourism and Travel Development Index measures how prepared a country is to leverage ICT to promote and enhance its tourism industry. Kazakhstan has demonstrated high results in this area, confirming that the digital transformation of its tourism sector positively impacts its export potential. Moreover, among Central Asian countries, Kazakhstan took the leading position in tourism development.

DISCUSSION

Electronic tools, such as digital booking systems, mobile applications, and virtual tours, have the potential to enhance the tourism experience within Kazakhstan. The development of e-tourism tools could simplify the process of booking accommodations, finding local attractions, and obtaining information, making tourism more accessible to local travelers. For example, digital platforms could provide tourists with real-time data on transport, weather conditions, and tourist hotspots, which could improve the quality and efficiency of domestic travel. As a result, Kazakhstan's tourism sector showed steady growth, with a significant increase in domestic and foreign visitors. In the first nine months of 2024, the number of domestic tourists rose by 562,000 to

six million, while income from accommodation facilities grew by 27%, reaching 224 billion tenge (US\$439.1 million) (Nakispekova, 2024).

Figure 6. The Concept of Digital Tourism Development



Source: compiled by the authors

For international visitors, the availability of digital tools such as online visa applications, mobile payment systems, and travel apps could streamline entry and navigation in Kazakhstan. This could lead to an increase in the number of international tourists, as these tools lower the barriers to travel. Kazakhstan's digital infrastructure could also serve as a competitive advantage in attracting foreign tourists, who increasingly rely on e-services when traveling abroad. The development of e-tourism platforms that cater to international users in multiple languages could make the country more appealing as a travel destination.

One of the primary objectives of the government's push for e-tourism is to enhance the accessibility and convenience of tourism services through digital infrastructure, including platforms for booking, information dissemination, and e-payment systems. Despite these goals, there may be significant gaps in digital infrastructure, especially in remote or rural areas of Kazakhstan. While major cities like Almaty and Astana may have the technological infrastructure to support e-tourism tools (such as online booking platforms or virtual tour services), rural areas might still lack reliable internet connectivity or advanced digital services. These infrastructure disparities create a two-tier system where only urban tourists or high-end international visitors benefit from these technologies, leaving out local tourists or those visiting more remote locations.

A key goal of the digitalization initiative is to empower local tourism businesses (hotels, tour operators, and cultural sites) to engage with tourists using digital tools, thereby improving the overall tourist experience. This can be achieved through training in digital marketing, e-booking systems, and other online platforms. Despite

the availability of digital tools and platforms, many small to medium-sized enterprises (SMEs) within the tourism sector in Kazakhstan struggle to use these tools effectively. A lack of training in digital literacy among local business owners and their staff means that many do not take full advantage of the technologies available to them.

The broader goal of digitalization is to make tourism more accessible and inclusive, allowing a wider range of people to participate in the tourism economy, whether through access to digital tools, easier payment systems, or more efficient information access. While digital tools can improve accessibility, Kazakhstan's diverse socio-economic landscape means that there are significant gaps in who can benefit from these tools. For instance, digital tools may be less accessible to lower-income populations or older generations who might be less familiar with technology.

Based on the SWOT analysis, one of the main tasks for enhancing digital tourism is the development of digital infrastructure. This includes providing ICT not only in urban areas but also in rural regions, as well as increasing digital literacy among tourists and tour operators. Another important aspect is the creation of a digital tourism ecosystem for both tourists and tour companies, which entails developing a single platform that integrates all travel services, including online ticket sales and reservations.

In the realm of digital tourism, promoting the national brand is crucial. Kazakhstan is actively developing its digital promotion strategies that utilize modern technologies to enhance its international standing. This involves leveraging digital platforms, social media, and online advertising to create a positive image of Kazakhstan, showcase its cultural and economic accomplishments, and attract both investment and tourists.

The National Tourism Portal, Kazakhstan.travel, plays a key role in promoting the nation's tourism potential. The portal provides users with information on tourist destinations, cultural attractions, events, and services, along with valuable resources for trip planning. It helps strengthen Kazakhstan's image as an appealing tourist destination and provides a convenient way for travelers to explore the country's unique offerings.

As part of the Visit Kazakhstan campaign, videos and promotional materials highlighting the country's natural and cultural heritage, as well as unique tourist offerings, have been shared across social media and video hosting platforms.

Addressing the challenges and opportunities related to the digital transformation of the tourism industry in Kazakhstan and its impact on the country's export potential requires a multifaceted approach. A thorough analysis can be structured around key themes such as infrastructure development and global competitiveness.

Infrastructure Development and Technological Advancements

The digital transformation of the tourism industry in Kazakhstan presents a unique opportunity to enhance the country's global competitiveness. The development of digital platforms, such as online booking systems, virtual tours, and mobile apps, is crucial for modernizing the tourism sector. However, the challenge lies in ensuring that these platforms are accessible and efficient, especially in rural or remote areas,

which could benefit from the tourism boom. The integration of Artificial Intelligence (AI) and Big Data can allow for more personalized travel experiences and better customer service, which can attract international tourists and expand Kazakhstan's tourism appeal. Moreover, blockchain technology could enhance trust and security in transactions, boosting Kazakhstan's position as a safe and reliable destination for international travelers. It is important to notice that, limited internet infrastructure in certain regions and the digital divide between urban and rural areas can impede the effective deployment of digital services. There is a need for widespread high-speed internet and the development of digital infrastructure to support e-commerce, digital marketing, and the tourism ecosystem in general.

Global Competitiveness and Export Potential

Kazakhstan's digital transformation can also influence its export potential. By embracing digital tools and strategies, Kazakhstan could become a competitive player in the global tourism market. This would involve attracting both international tourists and foreign investment in the tourism industry, potentially contributing to increased revenue and economic growth. Digital marketing campaigns targeted at international audiences can create awareness about Kazakhstan's unique cultural and natural attractions, driving tourism. By leveraging social media, travel bloggers, influencers, and virtual tours, Kazakhstan could appeal to a wide audience globally. Kazakhstan's unique geographic and cultural position could be marketed digitally to target niche markets such as eco-tourism, adventure tourism, and cultural tourism, creating a distinct brand identity that resonates with global tourists. However, Kazakhstan faces strong competition from other well-established tourism destinations in Europe and Asia. Developing a unique value proposition and digital presence that resonates with international travelers is a major challenge. Moreover, International tourism trends, such as the growing preference for personalized travel experiences and seamless digital interactions, may require significant investments in the adaptation of digital services, making it a capital-intensive process for local businesses.

CONCLUSION

To summarize, it is important to note that the government is actively promoting digitalization within the tourism sector. The digital transformation of tourism in Kazakhstan represents a critical step toward modernizing the industry, significantly enhancing the country's export potential. The introduction of digital technologies in tourism, such as online booking, mobile applications, virtual tours, and the use of big data, has improved the accessibility and appeal of travel services for both foreign and local customers. These advancements contribute to the growth of international tourism, boost the country's competitiveness in the global tourism market, and improve Kazakhstan's image.

However, despite these positive trends, the digital transformation also encounters certain challenges. Insufficient digital literacy among local tour operators, high costs associated with implementing new technologies, and the need to overcome cultural and linguistic barriers may limit the speed and scale of these digital solutions in the industry. Therefore, to effectively develop and increase export potential, it is crucial

to continue investing in education, improve digital infrastructure, and engage with international partners.

In summary, digital transformation in Kazakhstan's tourism sector opens up new avenues for growth and export potential. However, it will require an integrated approach and coordinated efforts among government agencies, private companies, and educational institutions to address existing challenges and fully realize the industry's potential.

FUNDING

There is no allocated funding for this research paper.

CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest related to this research.

AUTHORS' CONTRIBUTIONS

FS: conceptualization, methodology, writing – original draft, data curation, formal analysis. LT: project supervision, final manuscript revision.

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