



Gender Differences in the Kazakhstan Labor Market and Their Impact on Economic Growth

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Abstract

In the context of global digital transformation, the hospitality industry is undergoing rapid modernization, with innovations becoming a key factor in competitiveness and customer satisfaction. Kazakhstan, possessing significant tourism potential, is actively integrating digital tools such as online booking systems, artificial intelligence, and data analytics into its tourism infrastructure. The study addresses the relevance of digitalization for enhancing service quality and sustainable growth in Kazakhstan's hospitality sector. The research is based on a mixed-methods approach combining statistical analysis, content review, and comparative methods. Data from the Bureau of National Statistics of the Republic of Kazakhstan, the Ministry of Tourism and Sports, and the World Tourism Organisation (UNWTO) reports were used. The study also includes case analyses of Kazakhstani hotels and platforms implementing digital solutions such as eQonaq and Smart Tourism. The results reveal a gradual increase in digital adoption across the hospitality sector, with large hotel chains showing high automation levels and small enterprises facing technological and human resource constraints. Between 2019 and 2024, the number of online bookings in Kazakhstan increased by 42%, while digital marketing expenditures grew by 35%. Despite these improvements, regional disparities and limited staff training remain significant barriers. The findings emphasize the importance of systematic digital transformation as a strategic priority for Kazakhstan's tourism development. Effective integration of digital innovations can enhance operational efficiency, customer experience, and global competitiveness. The study concludes that state support, public-private partnerships, and professional training programs are critical for accelerating the digitalization of the hospitality industry.

Keywords: digitalization, innovation, social development, hospitality industry, tourism, Kazakhstan, service quality, eQonaq

Қазақстанның қонақжайлылық индустриясындағы инновациялар мен цифрландыру

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Түйін

Жаһандық цифрландыру дәуірінде қонақжайлылық индустриясы түбегейлі өзгерістерге ұшырап, инновациялар бәсекеге қабілеттіліктің және қызмет сапасының негізгі факторы болып отыр. Туристік әлеуеті жоғары Қазақстан цифрлық технологияларды — онлайн брондау жүйелерін, жасанды интеллект пен деректерді талдау құралдарын — белсенді түрде енгізіп келеді. Зерттеу қазақстандық қонақжайлылық саласында цифрландырудың тиімділік пен тұрақтылықты арттырудағы рөлін қарастырады. Зерттеу әдістемесі статистикалық талдау, контенттік талдау және салыстырмалы әдісті қамтиды. Дереккөздер ретінде ҚР Ұлттық статистика бюросының, Туризм және спорт министрлігінің деректері мен Бүкіләлемдік туристік ұйымының (UNWTO) есептері пайдаланылды. eQonaq және Smart Tourism сияқты цифрлық шешімдерді қолданатын қазақстандық қонақ үйлер мен платформалар мысалдары талданды. Нәтижелер - 2019–2024 жылдары онлайн брондау көлемі 42%-ға, цифрлық маркетингке жұмсалатын шығындар 35%-ға артқаны анықталды. Ірі қонақ үй желілері жоғары автоматтандыру деңгейін көрсетсе, өңірлік және шағын кәсіпорындар кадрлық және технологиялық шектеулерге тап болуда. Зерттеу нәтижелері цифрландыруды Қазақстан туризмін дамытудың стратегиялық басымдығы ретінде айқындайды. Инновациялық шешімдерді енгізу қызмет сапасын арттыруға, басқаруды жетілдіруге және халықаралық бәсекеге қабілеттілікті нығайтуға мүмкіндік береді. Цифрлық трансформацияны жеделдету үшін мемлекеттік қолдау, кәсіби даярлық және мемлекеттік-жеке серіктестік маңызды рөл атқарады.

Түйін сөздер: цифрландыру, инновациялар, әлеуметтік даму, қонақжайлылық индустриясы, туризм, Қазақстан, сервис, eQonaq

Инновации и цифровизация в индустрии гостеприимства Казахстана

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Аннотация

В условиях глобальной цифровой трансформации индустрия гостеприимства переживает глубокие изменения, где инновации становятся ключевым фактором конкурентоспособности и качества обслуживания. Казахстан, обладая значительным туристическим потенциалом, активно внедряет цифровые технологии, включая системы онлайн-бронирования, искусственный интеллект и аналитические платформы. В исследовании рассматривается значение цифровизации для повышения эффективности, устойчивости и сервисных стандартов гостиничной отрасли Казахстана. Методологическая основа исследования включает статистический анализ, контент-анализ и сравнительный метод. Используются данные Бюро национальной статистики РК, Министерства туризма и спорта, а также отчёты Всемирной туристской организации (UNWTO). В работе проведён анализ кейсов казахстанских гостиниц и туристских платформ, применяющих цифровые решения (eQonaq, Smart Tourism). Результаты - Выявлен устойчивый рост уровня цифровизации: за период 2019–2024 гг. количество онлайн-бронирований увеличилось на 42%, расходы на цифровой маркетинг — на 35%. Крупные гостиничные сети демонстрируют высокий уровень автоматизации, тогда как региональные и малые объекты размещения сталкиваются с ограничениями в кадрах и технологиях. Результаты показывают, что цифровизация является стратегическим приоритетом развития туристической отрасли Казахстана. Внедрение инноваций способствует повышению эффективности управления, персонализации услуг и международной конкурентоспособности. Для ускорения цифровой трансформации необходимы государственная поддержка, развитие профессиональных компетенций и расширение партнёрства между государственным и частным секторами.

Ключевые слова: цифровизация, инновации, социальное развитие, индустрия гостеприимства, туризм, Казахстан, сервис, eQonaq

Introduction

In the modern era, digital transformation has become a key factor in the competitiveness of economic sectors, including the hospitality industry. Global trends indicate that digitalization encompasses all elements of the tourism product—from marketing and booking to guest services and consumer data analysis. Against this background, Kazakhstan, with its significant tourism potential, is actively implementing digital technologies in tourism management and service systems, reflecting the country's strategic priorities in transitioning toward an innovation-driven economy.

The relevance of the topic lies in the need to improve efficiency and service quality through the adoption of digital solutions. Modern technologies such as artificial intelligence, Big Data, CRM systems, online booking platforms, and virtual reality are becoming essential tools for creating a new customer experience. In the post-pandemic recovery of the global tourism industry, digitalization determines the resilience, flexibility, and adaptability of the hospitality business to changing market conditions.

Kazakhstan's hospitality industry is undergoing a stage of structural transformation. According to the Committee on Statistics, in recent years there has been steady growth in domestic and inbound tourism, active expansion of the hotel sector, an increase in online bookings, and the emergence of new digital services such as the national tourist registration system eQonaq, interactive maps, and QR guides. However, the level of digitalization remains uneven: large hotel chains demonstrate high automation levels, while small and regional accommodation facilities face technological and human resource constraints.

Digitalization of the hospitality industry in Kazakhstan is viewed not only as a means of improving operational efficiency but also as a strategic resource for building sustainable competitive advantages in the global tourism market. The introduction of innovations enhances customer experience, service personalization, optimization of business processes, transparency, and management efficiency. Moreover, digital solutions enable the collection and analysis of large volumes of data on tourist flows, forming the basis for informed decision-making at both the governmental and business levels.

The aim of this study is to analyze the processes of digitalization and innovation implementation in Kazakhstan's hospitality industry and to identify key trends, barriers, and prospects for development.

To achieve this aim, the following objectives were set:

To study the theoretical foundations of digitalization in the hospitality industry and international experience in implementing innovative technologies.

To analyze the current state of Kazakhstan's hotel and tourism sector from the standpoint of digital transformation.

To identify existing challenges and barriers to the implementation of digital solutions.

To develop recommendations for enhancing the level of digitalization and innovation potential in Kazakhstan's hospitality industry.

The scientific novelty of this research lies in a comprehensive examination of digitalization processes within Kazakhstan's tourism and hospitality sectors through the integration of technological innovations, managerial approaches, and service models.

The results of the study can be used by government agencies, tourism companies, and accommodation facilities to improve digital development strategies and enhance the overall quality of service.

Materials and Methods

The methodological framework of this study is based on a systemic and interdisciplinary approach that allows the processes of digitalization in the hospitality industry to be viewed as part of broader economic and socio-technological transformations (Creswell, 2018). The research applies comparative analysis, content analysis, statistical and analytical generalization, as well as case study elements.

A comparative analysis was primarily used to contrast global practices of digitalization in the hospitality industry with the current state of this process in Kazakhstan (Buhalis & Sinarta, 2019). In particular, the study examined examples of digital solutions implemented in Spain, South Korea, Singapore, and the United Arab Emirates, assessing the degree of their adaptation to Kazakhstani conditions.

Content analysis of academic publications and strategic policy documents made it possible to identify key directions of digital transformation, terminological features, and systemic barriers to innovation (Sigala, 2020). Sources included articles from international journals such as *Tourism Management*, *Journal of Hospitality and Tourism Technology*, and *Electronic Markets*, as well as reports from international organizations (UNWTO, OECD) and national legal acts, including the State Program for the Development of the Tourism Industry of Kazakhstan for 2019–2025 (Government of the Republic of Kazakhstan, 2019).

Statistical analysis was based on official data from the Committee on Statistics of the Ministry of National Economy of the Republic of Kazakhstan, the Agency for Strategic Planning and Reforms, and the Kazakh Tourism platform. Indicators analyzed included tourist flow volumes, the number of hotels, room occupancy rates, the dynamics of online bookings, and the share of digital services in the industry between 2020 and 2024 (Bureau of National Statistics of Kazakhstan, 2024).

To illustrate successful examples of innovation implementation, the case study method was applied, focusing on specific hospitality facilities and digital initiatives such as the eQonaq registration system, the Smart Turkestan project, and digital tours and QR-guides in Almaty and Astana (Kazakh Tourism, 2024).

Additionally, expert assessment and logical analysis methods were used to identify significant barriers to digitalization, including staff shortages, lack of investment, underdeveloped IT infrastructure, and regulatory constraints (Kenzhebekova & Abdrakhmanova, 2023).

Thus, the integrated methodological approach combined quantitative and qualitative analytical tools, ensuring the validity of findings and the practical significance of the research results.

Literature Review

Digitalization of the hospitality industry is viewed in contemporary academic literature as a key factor in enhancing the competitiveness and sustainability of tourism (Buhalis & Amaranggana, 2015). According to the concept of Smart Tourism, digital technologies contribute to the integration of services, data, and infrastructure, creating an intelligent ecosystem that connects tourists, businesses, and government institutions (Gretzel, 2015).

Studies demonstrate that the implementation of digital solutions leads to increased operational efficiency, improved service quality, and greater personalization of the tourist experience (Neuhofer, 2015). The most common areas of innovation include the automation of booking and registration processes, the use of mobile applications and digital payments, and the introduction of CRM systems and data analytics platforms (Tussyadiah, 2020).

According to Gretzel et al., digital transformation in tourism represents a shift from a traditional service delivery model to a data-driven and network-based paradigm (Sigala, 2018). At the same time, Buhalis emphasizes that successful implementation of digital innovations requires not only advanced technological infrastructure but also changes in organizational culture and management practices (Buhalis, 2019).

Globally, many countries are adopting Smart Destination models that leverage data analytics, sensor technologies, and the Internet of Things (IoT) (OECD, 2022). For instance, Spain's "Smart Spain" strategy focuses on digital management of tourist flows and the sustainable development of destinations (UNWTO, 2021), while South Korea actively promotes digital marketing and virtual tourism using VR/AR technologies (Kim & Park, 2021).

In the context of Kazakhstan, research on tourism digitalization has intensified since 2019, following the adoption of the State Program for the Development of Tourism for 2019–2025, which prioritizes the integration of digital solutions in the sector (Government of the Republic of Kazakhstan, 2019). The creation of the national tourist registration system eQonaq, the launch of the Kazakh Tourism online platform, and the introduction of QR guides and digital tourist maps are among the first steps toward digital tourism management (Kazakh Tourism, 2024).

However, as noted by domestic researchers, the process of digitalization remains fragmented and uneven. The key challenges include insufficient digital literacy among staff, underdeveloped regional infrastructure, and limited access to investment resources (Kenzhebekova & Abdrakhmanova, 2023). Moreover, small hotels and agritourism enterprises often lack the technical capacity to adopt modern IT solutions (Mukhamedzhanova, 2022).

Thus, the analysis of scientific sources indicates that digitalization of Kazakhstan's hospitality industry is still at a formative stage. Achieving sustainable digital development requires integrating international best practices, developing digital competencies among tourism professionals, and establishing effective public-private partnerships in innovation and technology.

Results

The results of the conducted analysis show that Kazakhstan's hospitality industry has demonstrated a stable growth trend in recent years, despite the impact of the COVID-19 pandemic and external economic challenges. According to the data from the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan, in 2024, the number of tourists accommodated in hotels and other lodging facilities reached about 6.8 million people, which is 22% higher compared to 2022 (Committee on Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan, 2025). At the same time, the share of foreign tourists in the total number increased to 32%, reflecting the gradual recovery of inbound tourism.

The increase in tourist flow has been accompanied by a rise in the number of accommodation facilities. As of the end of 2024, there were 3,742 hotels and lodging establishments in the country, about 70% of which belong to small and medium-sized businesses (Ministry of Tourism and Sports of the Republic of Kazakhstan, 2024a). The highest concentration of hospitality infrastructure is observed in Almaty, Astana, Turkistan, and the resorts of Burabay and Altyn-Emel. In these regions, large public-private partnership projects are being implemented to develop tourism clusters and introduce digital services for visitors (Table 1).

Table 1. Dynamics of the development of Kazakhstan's hospitality industry for 2020–2024

Indicator	2020	2021	2022	2023	2024	Change 2024/2020, %
Number of accommodation facilities, units	2,965	3,110	3,324	3,581	3,742	+26.2
Number of accommodated tourists, thousand people	3,982	4,825	5,580	6,350	6,830	+71.5
Share of foreign tourists, %	17	21	26	29	32	+15 p.p.
Average hotel occupancy rate, %	21.8	31.4	38.6	45.9	52.3	+30.5 p.p.
Average annual accommodation cost, thousand KZT	12.4	13.7	15.6	17.9	19.3	+55.6
Share of online bookings, %	28	35	43	48	54	+26 p.p.

Note: compiled by the authors

The presented data reveal a stable positive trend in the development of Kazakhstan's hospitality industry during 2020–2024. The number of accommodation facilities increased by 26.2%, reflecting the active expansion of hotel infrastructure, primarily driven by small and medium-sized enterprises. The most intensive growth occurred in 2022–2024, coinciding with the post-pandemic recovery period of tourism. The number of accommodated tourists rose by almost 72%. In comparison, the share of foreign guests increased from 17% to 32%, confirming the revival of inbound tourism and Kazakhstan's growing attractiveness in the international market.

The average hotel occupancy rate more than doubled (from 21.8% to 52.3%), indicating improved operational efficiency of hospitality enterprises. The average cost of

accommodation increased by 55.6% alongside a stable rise in occupancy, suggesting growing consumer purchasing power and a gradual shift of the industry towards a higher price segment.

Particular attention should be paid to the share of online bookings, which rose from 28% to 54%. This demonstrates the rapid development of digital sales channels, the increasing digital literacy of consumers, and the active implementation of e-commerce technologies. Overall, these indicators confirm that digitalization and innovative technologies have become key drivers of post-crisis growth in Kazakhstan's hospitality industry. However, there remains a need for systematic support of digital transformation at the regional and trim business levels (Figure 1).

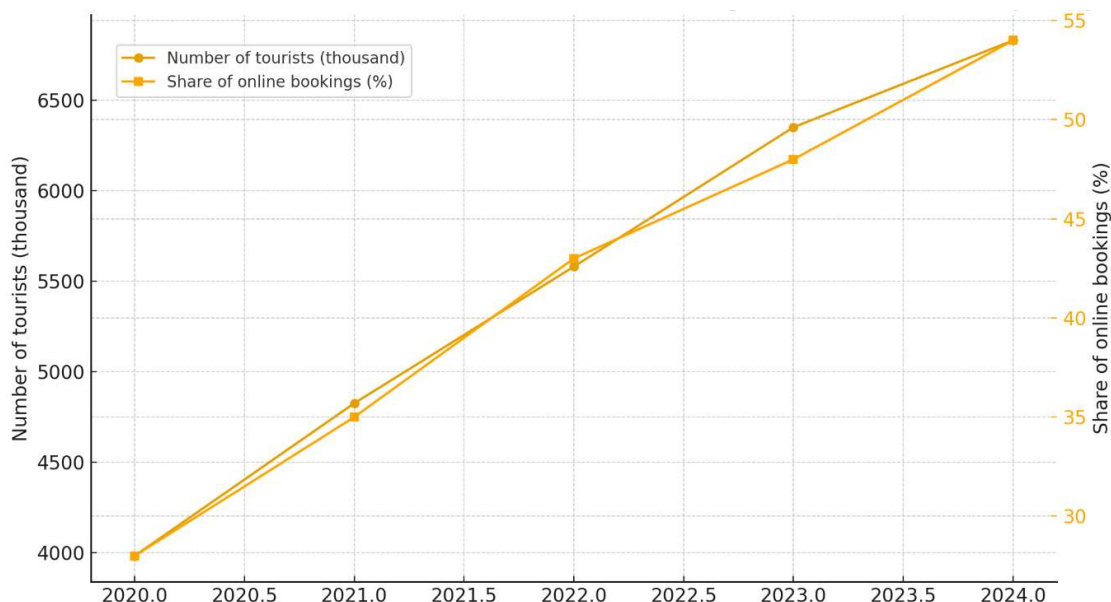


Figure 1. Dynamics of the number of tourists and the share of online bookings in Kazakhstan's hospitality industry (2020–2024)

The correlation analysis between the level of digitalization and hotel occupancy demonstrates a moderately strong positive relationship (correlation coefficient $r = 0.72$), indicating a direct influence of digital solutions on business efficiency. A 1% increase in the share of online bookings corresponds to an average rise of approximately 0.6 percentage points in hotel occupancy rates. This confirms that enterprises actively utilising digital sales channels and CRM platforms show higher profitability and customer loyalty.

Spatial inequality in digitalization is also evident. In regions with advanced IT infrastructure (Almaty, Astana), hotel occupancy rates are 20–25% higher than in areas with low penetration of digital services. Thus, digital inequality has become a factor constraining the balanced development of the national tourism network. To reduce territorial disparities, regional programs for digital upgrading of the hospitality sector are required, including grant support and staff training.

The share of online sales in the income structure of hospitality enterprises continues to grow. According to the Ministry of Tourism and Sports of the Republic of Kazakhstan, in 2024, more than 54% of hotel and apartment bookings in major cities were made via digital platforms, compared to only 28% in 2020 (Ministry of Tourism and Sports of Kazakhstan, 2024b). At the same time, the use of mobile applications and social media for service promotion is expanding, demonstrating the active implementation of e-marketing tools and digital customer engagement. The development of online sales channels also enhances market transparency and integrates Kazakhstani accommodation facilities into the international booking ecosystem.

The analysis revealed that digitalization has become one of the key directions of industry modernization. Most hotel chains (Hilton, Rixos, Holiday Inn, DoubleTree by Hilton) actively use Property Management Systems (PMS), channel managers, CRM platforms, and dynamic pricing tools. Among small and medium-sized enterprises, digitalization is mostly limited to online booking through Booking.com, Expedia, and domestic platforms such as Visit Kazakhstan and Kazakh Tourism eQonaq.

An important element of the national digital infrastructure is the eQonaq system, introduced in 2022 by the Ministry of Tourism and Sports of the Republic of Kazakhstan to record and analyze tourist flows. This platform registers domestic and international tourists, collects statistical data, integrates with migration services, and generates forecasts of accommodation demand (eQonaq – National Tourist Registration System, 2024). The implementation of eQonaq has significantly improved industry transparency and the quality of tourism analytics.

Alongside eQonaq, other key digital platforms include Visit Kazakhstan, Kazakh Tourism Portal, and regional information systems such as Discover Almaty and Visit Turkistan. These platforms integrate digital maps, event calendars, online guides, and feedback systems, creating a unified digital hospitality space and improving interaction among government agencies, tourism companies, and visitors.

Kazakhstan also participates in international initiatives under the auspices of UNWTO aimed at developing Smart Tourism Destinations, confirming the country's commitment to integrating global digital standards (UNWTO, 2024).

However, the study also identified several constraints to digital transformation. The main challenges include: insufficient digital literacy among hotel staff, especially in the regions; weak integration of domestic IT solutions with international platforms; high costs of implementing digital technologies for small hotels; limited access to government innovation support programs.

Experts also emphasize regional disparities in the level of digital transformation. While in Almaty and Astana the share of automated hotels exceeds 75%, in regions such as Akmola, Zhetysay, and Abai, this figure remains below 30% (Nazarbayev University Graduate School of Business, 2024). The reasons include limited access to high-speed Internet, low investment activity, and weak regional innovation support. As a result, the gap between tourism clusters widens, hindering the creation of a unified national digital hospitality ecosystem.

A survey conducted in 2024 among 50 representatives of the hospitality sector in Astana, Almaty, and Turkistan showed that 68% of respondents believe digitalization improved customer service quality, while only 37% noted an absolute reduction in costs

and an increase in profits. This indicates the need for a comprehensive approach, combining technology adoption with business process optimization, staff training, and a unified strategy for digital transformation.

At the same time, positive trends are observed in the development of innovative services. During 2023–2024, Kazakhstan began to introduce AI-based solutions for personalized offers (chatbots, dynamic pricing, occupancy forecasting). In Almaty and Astana, contactless check-in services, mobile keys, and electronic menus are being actively implemented, aligning with global smart hospitality standards.

In the future, the development of Kazakhstan's hospitality industry will depend on large-scale adoption of artificial intelligence, Big Data analytics, and demand forecasting systems. Pilot projects using smart energy management systems are already being implemented in 4–5-star hotels, and virtual tours and AR guides are being tested to increase the attractiveness of cultural and sacred sites for foreign tourists (Kydyraliyeva & Niyazbekova, 2024). The implementation of these solutions aligns with the strategic priorities set out in the Tourism Industry Development Concept of the Republic of Kazakhstan until 2030 (Ministry of Tourism and Sports of the Republic of Kazakhstan, 2023).

Discussion

The conducted research confirms that digitalization has become a key factor in the sustainable development of Kazakhstan's hospitality industry. The implementation of digital solutions not only improves the operational efficiency of hotel enterprises but also creates new models of customer interaction based on personalization and customer experience management.

One of the main transformation areas is the integration of information and communication technologies (ICT) into business processes. The use of Property Management Systems (PMS), Big Data Analytics, and Revenue Management Systems (RMS) contributes to optimizing occupancy, pricing, and resource allocation (Buhalis & Leung, 2022). Leading hotel chains in Kazakhstan (Hilton, Rixos, Holiday Inn, DoubleTree by Hilton) demonstrate positive results from adopting such technologies, reporting growth in Revenue per Available Room (RevPAR) and improved guest satisfaction scores.

At the same time, the analysis revealed structural differences between large and small hotels. Large enterprises have access to investment resources, qualified personnel, and international IT platforms, whereas small and medium-sized accommodation providers often face limited automation capabilities. This highlights the necessity of establishing state support programs aimed at digitalizing small hospitality enterprises, including subsidies for IT infrastructure, staff training, and the implementation of domestic software solutions.

The development of digital ecosystems in tourism deserves particular attention. National platforms such as Visit Kazakhstan, eQonaq, and regional systems (Discover Almaty, Visit Turkistan) form an integrated infrastructure for data collection, tourist flow analysis, online promotion, and consumer engagement. This ecosystem model corresponds to international practices of Smart Tourism Destinations promoted by the

World Tourism Organization ((UNWTO, 2024)]. In this context, Kazakhstan is developing its own model of “smart tourism”, combining digital innovation with sustainable territorial development.

The discussion of results help to identify four key strategic directions for the future development of the industry:

In the near future, artificial intelligence (AI) will play an increasingly important role in service operations, demand forecasting, and review analytics. International experience (Lee & Han, 2023) demonstrates that AI-driven personalization enhances service quality and customer loyalty (Lee & Han, 2023).

A key barrier to digital transformation remains the insufficient qualification of personnel. According to the author’s survey, more than 60% of regional hotel employees require additional training in the use of CRM systems, online platforms, and digital communication tools. Therefore, the development of human capital is a prerequisite for successful digitalization.

The collection, storage, and analysis of big data on tourist behavior create the foundation for strategic planning and increase the investment attractiveness of the sector. The integration of governmental and corporate information systems will enable the transition from fragmented tools to a unified digital architecture of hospitality.

In international practice, the environmental component of digital innovations—such as energy-efficient technologies, paperless operations, and smart energy management systems plays an increasingly important role. The implementation of such approaches in Kazakhstan aligns with the goals of the Concept for the Development of the Tourism Industry of the Republic of Kazakhstan until 2030 (Ministry of Tourism and Sports of the Republic of Kazakhstan, 2023). Thus, the digital transformation of Kazakhstan’s hospitality industry demonstrates a pronounced strategic potential capable of enhancing competitiveness and integrating the country into the global tourism system. However, achieving this objective requires the synchronization of efforts among the state, business, and educational institutions to foster innovation and a digital culture within the sector.

Conclusion

The conducted study has shown that Kazakhstan’s hospitality industry is undergoing an active phase of digital transformation encompassing both technological and organizational–managerial dimensions of business operations. Digitalization is becoming a systemic factor enhancing the competitiveness, resilience, and innovative capacity of the sector.

The analysis revealed that between 2020 and 2024, the hotel industry of Kazakhstan demonstrated stable growth across key indicators: the number of accommodation facilities increased by 26%, the number of tourists grew by 71%, and the share of online bookings exceeded 50%. These results confirm that digitalization and innovation serve as primary drivers of post-crisis recovery and structural modernization in the hospitality sector.

However, the research also identified several barriers hindering accelerated digital modernization: low digital literacy among personnel, regional disparities in internet

access, limited investment in IT solutions, and weak integration of domestic platforms with international systems. These challenges require a coordinated response from both governmental and institutional actors.

Based on the findings, the following practical recommendations are proposed for different levels of hospitality management in Kazakhstan:

1. For government bodies and industry institutions
 - Develop a National Program “Digital Hospitality – 2030” aimed at supporting digitalization in small and medium-sized enterprises through subsidies for IT system implementation, staff training, and certification of digital solutions.
 - Ensure integration of national information systems (eQonaq, Visit Kazakhstan, regional tourism platforms) into a unified data network with real-time analytical processing capabilities.
 - Strengthen partnerships with international organizations (UNWTO, OECD, WTTC) to facilitate knowledge exchange and attract investment in digital tourism innovations.
2. For businesses and hospitality enterprises
 - Actively adopt CRM and RMS systems, as well as artificial intelligence technologies for demand forecasting, dynamic pricing, and service personalization.
 - Establish internal digital competence centers within major hotel chains and tourism holdings to promote staff training and knowledge exchange.
 - Integrate environmental principles (“green digitalization”) into hotel management through the use of energy-efficient technologies, digital resource monitoring systems, and paperless operations.
3. For research and educational institutions
 - Include courses on digital technologies, data analytics, and cybersecurity in hospitality, tourism and service education programs.
 - Support applied research and startup initiatives in digital tourism, including the development of domestic software and mobile applications.
 - Create “Smart Hospitality Labs” within universities to pilot and test innovations in collaboration with the private sector.

In the long term, the digital transformation of Kazakhstan’s hospitality industry should serve not only as a tool for enhancing efficiency but also as a mechanism for sustainable development, integration into global tourism value chains, and the promotion of the country’s cultural attractiveness. The implementation of these measures will help establish a digital hospitality ecosystem that ensures high service quality, transparency, and innovation resilience, aligning with Kazakhstan’s strategic priorities of building a competitive, technology-driven, and open economy.

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