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Review

Regulation mechanisms of smart tourism development in Kazakhstan

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Abstract: The process of digitalization within the realm of tourism is not merely a trend but rather a significant catalyst that is rapidly propelling the comprehensive transformation of the tourism industry into a new era of technological advancement. This intricate process fundamentally involves the seamless integration and application of cutting-edge digital technologies across various tourism-related activities and services. The advent of innovative solutions that harness the immense capabilities of artificial intelligence, the analytical power of big data, the security features of blockchain, and the interconnectedness provided by the Internet of Things primarily serves to enhance the overall quality of services offered, optimize pricing strategies to align with market demands, and improve risk management protocols within the industry. This paper methods uses 100 Scopus indexed papers about Smart Tourism Development in Kazakhstan. It is imperative to underscore the fact that the ongoing digitalization process, while offering numerous advantages, simultaneously imposes rigorous new requirements concerning the qualifications and competencies of staff members, as well as the paramount importance of data security measures and the protection of consumer rights in the digital environment. The effective management of this digital transformation necessitates a holistic and integrated approach that encompasses not only the development of robust infrastructure but also the enhancement of digital literacy among employees and the establishment of a dynamic and innovative ecosystem that encourages creativity and adaptability.

Keywords: social research; tourism; Kazakhstan; state regulation

1. Introduction

Furthermore, it is essential to recognize that digitalization mandates a certain degree of flexibility from businesses operating within the tourism sector, as they must be willing and able to adapt to the new digital landscape. In order to facilitate a smooth transition to digital platforms, it is crucial to ensure that there is a reliable and robust infrastructure in place, as well as to prioritize the training and development of digital skills among personnel to meet the evolving demands of the industry. Moreover, the advent of virtual and augmented reality technologies has the remarkable potential to create immersive emotional experiences, thereby enabling prospective tourists to virtually explore and interact with their desired destinations from the comfort of their own homes. Additionally, the implementation of blockchain technology offers a myriad of advantages, including the provision of secure and transparent transactions,

which in turn bolsters trust and enhances efficiency in the processes of booking and payment within the tourism sector. (Yesbergen et al., 2022; Zhamiyeva et al., 2022; Zhanbayev et al., 2023; Zhang et al., 2023; Zhunussova et al., 2020).

The research gap is Regulation Mechanisms of Smart Tourism Development in Kazakhstan.

The contemporary paradigm known as Tourism 4.0 represents an innovative approach to the comprehensive analysis and processing of extensive data accumulated through meticulous investigations of a multitude of tourist destinations, with the ultimate objective of establishing a highly personalized informational ecosystem pertaining to tourism resources. This advanced concept of Tourism 4.0 can be systematically categorized into four distinct yet interrelated components: innovations, technologies, environment, and applications, which may be conceptually depicted as a model that draws upon the underlying principles and mechanisms inherent in Industry 4.0, thereby fostering the enhancement and growth of various tourist destinations and facilitating the formulation of an effective tourism policy through the means of digitalization and the automation of numerous processes. The significance of this concept lies in its foundational role in the establishment and transition towards a novel economic landscape, which empowers stakeholders to reevaluate the service sector by adopting a perspective that views it through the lens of a sophisticated technological platform (Kuatova et al., 2020; Kulanov et al., 2020; Kuzhabekova, 2020; Lakbayev et al., 2020; Li et al., 2023; Linnenluecke and McKnight, 2017; Majeed and Jamshed, 2023).

In regard to the current state of tourism endeavors within Kazakhstan, particularly in the context of digitalization, it is pertinent to note that the domestic tourism market is estimated to encompass approximately 6 to 8 million individuals annually. Nevertheless, it is important to highlight that the proportion of online transactions for travel services remains remarkably low, which serves as a clear indicator of the substantial potential for growth and expansion within this sector. To illustrate this point further, roughly 400 thousand individuals engage in the procurement of air tickets via online platforms, a statistic that underscores the nascent stage of the shift towards digital purchasing behaviors. Alarmingly, only a mere 2 to 3 percent of tourist destinations within Kazakhstan are capable of attracting foreign visitors, which consequently elucidates the pressing necessity for the development of a more sophisticated and diverse array of tourist offerings (Osiyevskyy and Dewald, 2018; Ozenbayeva et al., 2022; Pan et al., 2020; Petrenko et al., 2020; Pieper, 2021; Rapposelli et al., 2023; Seitzhanov et al., 2020; Serebrennikova et al., 2020; Shaimenova et al., 2020; Singh et al., 2023; Siregar et al., 2004; Soltangazinov et al., 2020; Song et al., 2023; Stepanova et al., 2024; Taleb, 1998; Tang and Chen, 2014; Tasmaganbetov et al., 2020; Teng and Shang, 2018; Tutumlu and Rustemov, 2021; Wang et al., 2023a).

2. Related literature

The expansion of online sales is widely acknowledged as one of the most significant factors that contribute to the overall advancement of the market, which includes not only the collaboration between various companies aimed at fostering

market development but also entails a thorough comparison with international best practices, as well as a concerted effort to enhance the quality of tourism services and the infrastructure that supports them. The eQonaq system, which has been implemented in Kazakhstan, stands as a paramount example of the successful integration of digital technologies within the tourism sector, playing a crucial role in both elevating the standard of tourist services and enhancing the efficiency with which tourist flows are managed, alongside migration control measures (Akhmetzharov and Orazgaliyev, 2021; Alimkhanova, 2020; Altynbassov et al., 2020; Amirbekova et al., 2022; An and Mikhaylov, 2020; An et al., 2024; An, Mikhaylov et al., 2020; Ashurov et al., 2020; Akhmetov and Howie, 2024; Baldakhov and Heim, 2020; Batten et al., 2019; Baubekova et al., 2021; Bespalyy, 2021; Bonato et al., 2020; Bouri, 2023; Boute, 2020; Buribayev et al., 2021; Butova et al., 2022; Chatzis et al., 2018).

The first area of impact is that the eQonaq system significantly streamlines the process involved in the registration of foreign tourists, thereby relieving foreign nationals from the obligation of having to physically visit the migration police for such purposes. This particular functionality not only dramatically reduces the administrative burden placed upon both the tourists themselves and the employees working within hotels but also serves to increase the overall convenience and allure of Kazakhstan as a preferred tourist destination, ultimately making it more appealing for international visitors.

The second notable aspect pertains to the eQonaq system's capability to collect, analyze, and interpret data regarding the movements of tourists, which provides invaluable insights for government agencies and businesses operating within the tourism sector, enabling them to make well-informed decisions regarding the planning and development of tourism products, as well as necessary improvements in both infrastructure and service offerings (Wang et al., 2023b; Wang et al., 2023c; Werner and Sotskov, 2006; Xu and Shang, 2018; Xu et al., 2018; Yerkinbayeva et al., 2021).

The third area of focus revolves around the enhancement of security measures; the system is designed to deliver effective migration control.

The domain we are examining includes not only the enhancement of service quality provided by hotels but also the capacity for conducting comprehensive marketing research to identify emerging trends and preferences among tourists. It is also establishes a conducive environment for the overall growth of the tourism sector, thereby augmenting its competitive edge on an international scale (Chikanayev, 2021; Cui and Maghyereh, 2023; De Clerk and Savelev, 2021; Doern, 2016; Finta and Aboura, 2020; Gulis et al., 2021; Guliyev, 2024; Howie et al., 2020; Jiang et al., 2018; Jiang et al., 2019; Jun et al., 2017; Janenova and Knox, 2020; Junussova and Beimisheva, 2021; Kassenova, 2020; Khamitov et al., 2023; Khamzina et al., 2020; Kinateder and Papavassiliou, 2019; Kratz, 2019; Krugman, 1979; Igaliyeva et al., 2020).

3. Materials and methods

This paper methods uses 100 Scopus indexed papers about Smart Tourism Development in Kazakhstan (Mandal and Thakur, 2023; Mei et al., 2017; Mikhaylov, 2021; Mikhaylov, 2023; Mikhaylov et al., 2023a; Mikhaylov et al., 2023b; Mitskaya,

2020; Moiseev et al., 2023; Movkebayeva et al., 2021; Mutalimov et al., 2021; Nukusheva et al., 2023; Nurgozhayeva, 2020; Omirbayev et al., 2021) (**Tables 1** and **2**).

Table 1. Methodological process for searching and selecting the articles.

State	Research quantity	Target words	Timeframe
Kazakhstan	42	Smart tourism	2007–2024
United States	17	Smart tourism	2007–2024
EU	14	Smart tourism	2007–2024
China	10	Smart tourism	2007–2024
Russia	10	Smart tourism	2007–2024
Kyrgyzstan	3	Smart tourism	2007–2024
Uzbekistan	2	Smart tourism	2007–2024
Tajikistan	2	Smart tourism	2007–2024

Source: authors.

The methodology is described properly in the next papers (Aday et al., Izatullayeva et al., 2024; Matyusupov et al., 2024; Moldagaliyeva et al., 2024; Rakhimov and Kobilov, 2024; Rakhimov and Kobilov, 2024; Tsapova et al., 2024; Tassilova et al., 2024; Uaisova, 2024; Urdabayev et al., 2024; Yessimova et al., 2024).

Table 2. High citable papers about smart tourism.

State	Authors	Target words	Timeframe
Kazakstan	Uaisova, 2024	Smart tourism	2007–2024
Kazakstan	Moldagaliyeva et al. 2024	Smart tourism	2007–2024
Kazakstan	Aday et al. 2024	Smart tourism	2007–2024
Kazakstan	Yessimova et al. 2024	Smart tourism	2007–2024
Kazakstan	Rakhimov and Kobilov 2024	Smart tourism	2007–2024

Source: authors.

4. Results

On the date of 30 September 2023, the remarkable milestone of registering the millionth tourist was achieved within the highly efficient eQonaq information system, which has been instrumental in tracking and managing tourist data. Among the various nationalities represented within the tourist demographic, it has been observed that individuals hailing from both Russia and Uzbekistan are leading the way in their utilization of this modern system, thereby sharing the prestigious first position in terms of engagement.

Notably, the city of Almaty has emerged as the most popular destination for foreign visitors, attracting a remarkable total of 343 thousand tourists, while the capital city of Astana follows closely behind with 174 thousand tourists recorded. Additionally, the top five regions that have garnered significant attention include the Almaty region, which welcomed 62 thousand tourists, as well as the Atyrau region, which hosted 58 thousand tourists, and the Mangystau region, which saw an influx of

52 thousand tourists. This data underscores the regional appeal of these areas and highlights the growing interest in Kazakhstan as a whole.

The eQonaq information system has proven to be a transformative tool, providing substantial enhancements in the efficiency of processing data related to foreign tourists, thus streamlining the entire experience. Specifically, this innovative system has facilitated a more straightforward registration process for hotels accommodating foreign guests, effectively eliminating the previous necessity for an extensive number of 287 guests to make a visit to the migration police for formal registration. Currently, over a thousand accommodations have successfully integrated their operations with this efficient system, reflecting its broad acceptance and implementation within the hospitality industry.

Since the inception of the eQonaq system, an impressive cumulative total of 1,829,733 tourists have been officially registered, signifying its effectiveness and widespread usage. In the month of September 2023 alone, there were approximately 118 thousand notifications recorded, which serves as a compelling indicator of a notable increase in both tourist inflow and overall activity within the tourism sector across Kazakhstan. This upward trend is indicative of a revitalized interest in exploring the country as a tourist destination.

Moreover, the eQonaq system adeptly addresses and eliminates the traditionally lengthy registration procedures that have previously plagued the industry, resulting in a significant reduction in waiting times and an overall simplification of the process for both guests and hotel staff alike. Furthermore, it enhances the migration control procedures, thereby contributing positively to the overall experience of foreign tourists during their stay in Kazakhstan.

In a broader context, the advent of the eQonaq system within Kazakhstan's tourism sector represents a significant leap forward in the realms of digitalization and the simplification of tourist-related protocols. The adoption of such a digital system not only enriches the overall tourist experience of visiting this beautiful country but also serves to stimulate growth within the tourism industry, consequently positioning Kazakhstan as a more appealing destination for global travellers seeking new adventures.

5. Conclusions

In conclusion, the digitalization of tourism within Kazakhstan stands as a pivotal direction for the ongoing development and enhancement of the national tourism sector's competitiveness on an international scale in personalizing offers, and effectively managing risks associated with tourism.

Innovative solutions such as the eQonaq system for monitoring foreign tourist activity not only demonstrate significant advancements in data processing but also facilitate the simplification of procedures for both tourists and hotel operators. Additionally, these developments contribute to the fortification of security measures and migration control protocols. Collectively, these changes enhance the appeal of Kazakhstan as a prime tourist destination, stimulate economic growth, and encourage the broader adoption of digital platforms within the local population and tourism enterprises alike. It is essential to recognize that the process of digitalization

necessitates that the industry adapt to emerging technologies, cultivate necessary skills, and establish a comprehensive legal framework aimed at ensuring data security and protecting consumer rights. The paper confirms that the smart tourism growth is very quick in Kazakhstan now.

The future research directions are regulation Mechanisms of Smart Tourism Development in Russia and other countries.

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