

Research on the Development Patterns of Shandong Urban Night Tourism in the Context of an Intelligent Society

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Abstract. This study investigates the developmental dynamics of nighttime tourism in Shandong cities within the context of a smart society. Employing a mixed research approach involving questionnaire surveys and in-depth interviews, the research captures a comprehensive understanding of the multifaceted impact of smart technology on nighttime tourism. Results reveal that the advent of a smart society has profoundly propelled the industry, fostering innovation and enhancing visitor experiences. Professionals, government officials, smart technology representatives, and nighttime tourism participants exhibit positive attitudes toward the integration of smart technologies, particularly innovations such as smart navigation systems and virtual experiences. The study proposes strategies for sustainable development, emphasizing collaborative innovation, optimized policy support, increased public participation, and the prioritization of safety and privacy. This study contributes valuable insights and recommendations for the advancement of nighttime tourism in the digital era, aiding the industry in meeting challenges and achieving sustainable growth.

Keywords: Shandong urban; Night tourism; Intelligent society

1 Introduction

In the context of an intelligent society, the development patterns of urban night tourism are significantly influenced [1]. Shandong, being one of the prominent tourist destinations in China, holds immense potential for urban night tourism. Therefore, studying the evolving development patterns of urban night tourism in Shandong under the backdrop of an intelligent society becomes crucial. This research aims to delve deep into the subject, exploring the changes and influences on the development patterns of urban night tourism in Shandong. Furthermore, it intends to provide recommendations for relevant policies and management strategies.

With the rapid advancement and widespread application of intelligent technologies, an intelligent society is gradually taking shape [2]. The extensive use of these technologies has revolutionized people's lifestyles and urban functioning, profoundly impacting the tourism industry. Night tourism, as an emerging form of tourism, has also started to integrate with the development trends of an intelligent society [3][4]. However, research on the development patterns of urban night tourism in Shandong, under the backdrop of an intelligent society,

remains relatively limited, necessitating a comprehensive exploration of its changes and influencing factors.

The significance of studying the development patterns of urban night tourism in Shandong under the backdrop of an intelligent society is threefold. Firstly, gaining an in-depth understanding of the changes in development patterns and the application of intelligent technologies can provide theoretical and practical guidance for achieving sustainable development in urban night tourism in Shandong [5]. Secondly, studying the application and effectiveness of intelligent technologies in night tourism can serve as a reference for other regions and tourism stakeholders [6]. Lastly, analyzing the impact of development patterns on public management in the context of an intelligent society can offer policy recommendations and management strategies to public management departments [7].

The objectives of this research are to conduct a thorough investigation of the development patterns of urban night tourism in Shandong under the influence of an intelligent society. It aims to explore the application of intelligent technologies in night tourism and analyze the key elements and influencing factors in the development of night tourism. By studying these development patterns, the research aims to provide professional advice and policy support for the sustainable development of urban night tourism in Shandong.

This research will address the following questions:

1. In the context of an intelligent society, what are the changes in the development patterns of urban night tourism in Shandong, and which factors are crucial for its development?
2. How is intelligent technology applied in urban night tourism in Shandong, and what impact does it have on the tourist experience and management?
3. What is the influence of the development patterns of night tourism on public management, and how can the sustainable development of urban night tourism in Shandong be promoted in the context of an intelligent society?

By conducting an in-depth study on the aforementioned questions, this research aims to provide empirical and theoretical support for the development patterns of urban night tourism, the application of intelligent technologies, and public management. It is of significant importance in promoting the sustainable development of urban night tourism in Shandong, enhancing the quality of tourist experiences, and fostering innovative development in urban tourism under the backdrop of an intelligent society.

2 Methods

2.1 Data Collection

This study aims to comprehensively understand the development patterns of nighttime tourism in Shandong cities under the backdrop of a intelligent society. To obtain comprehensive and profound data, a mixed research method combining questionnaire surveys and interviews is employed. Through the integration of these two methods, both quantitative and qualitative data will be collected, enabling a more comprehensive analysis of nighttime tourism development patterns.

The questionnaire survey is one of the primary data collection methods in this study. A questionnaire will be designed to gather information about the impact of a intelligent society on the nighttime tourism development in Shandong cities, as well as the public's expectations and demands for nighttime tourism. The questionnaire will cover aspects such as the application of intelligent technology in nighttime tourism, the attractiveness and participation levels of nighttime tourism activities, satisfaction with nighttime tourism facilities and services, and opinions and suggestions regarding nighttime tourism development models. The questionnaire will be distributed through online platforms and various channels to ensure the coverage of diverse respondent groups, including residents, tourists, and professionals, selected through random sampling.

Interviews constitute another significant data source in this study. Interviews will be conducted with professionals in the nighttime tourism industry, local government officials, representatives from intelligent technology companies, and participants in nighttime tourism activities. Through interviews, more detailed and specific information will be obtained, including support for nighttime tourism development at the policy level, innovative applications of intelligent technology in the nighttime tourism industry, and the influence of social culture on nighttime tourism experiences. Interviews will be conducted in a semi-structured manner to maintain flexibility and ensure the exploration of interviewees' perspectives and experiences.

2.2 Data Analysis

For questionnaire data analysis, statistical analysis software SPSS will be utilized. After importing the questionnaire data, the initial steps involve data cleaning, including checking for missing values, outliers, and data entry errors^{[7][8]}. Subsequently, data will be organized to ensure consistent data formats and prepare for further analysis. Descriptive statistical analysis will be conducted, calculating means, standard deviations, frequency distributions, etc., to summarize the basic characteristics of the sample. This aids in gaining a preliminary understanding of the overall impact of an intelligent society on nighttime tourism development. Correlation analysis will explore relationships between different variables, revealing mechanisms of influence, such as analyzing the correlation between the application of intelligent technology and the attractiveness of nighttime tourism activities. Regression analysis, if necessary, will delve deeper into the impact of various factors on nighttime tourism development, identifying key factors and providing more specific recommendations for policy formulation^{[9][10]}.

Qualitative analysis software Nvivo will be employed for processing interview data. Interviews, whether recorded or transcribed, will be imported into NVivo for organization. Content analysis will be applied to preliminarily classify interview material and identify key themes, aiding in distilling core viewpoints on the development patterns of nighttime tourism in Shandong cities under a intelligent society. A coding system will then be devised to systematically code themes, facilitating in-depth exploration of interviewees' perspectives and forming more specific analytical conclusions.

To enhance feasibility, a variety of approaches will be employed to promote both questionnaire surveys and interviews, ensuring diversity and representativeness in the sample.

Additionally, trust-building measures and privacy safeguards will be implemented during interviews to minimize the likelihood of untruthful responses.

3 Results

3.1 Quantitative Results

This study distributed a total of 500 questionnaires, successfully collecting 460 responses, of which 431 were deemed valid, resulting in an effective response rate of 86.2%. Within the pool of 431 valid responses, participants from diverse demographic groups were covered, including residents, tourists, and professionals. The detailed information is as follows: residents accounted for 60%, with 45% being male and 55% female; tourists constituted 25%, with 80% being domestic tourists and 20% international tourists; professionals represented 15%, covering various domains within the nighttime tourism industry.

The questionnaire survey results indicate that 80% of the respondents have a certain level of awareness regarding the development of nighttime tourism in Shandong cities under the context of an intelligent society. They perceive the application of intelligent technology as providing more convenient services and richer experiences in nighttime tourism. Regarding the attractiveness and participation levels of nighttime tourism activities, the survey reveals that 70% of respondents believe these activities have become more appealing in the backdrop of an intelligent society, and 60% actively participate in nighttime tourism activities. In terms of satisfaction with nighttime tourism facilities and services, 75% of respondents express a high level of satisfaction, attributing it to the enhanced convenience and quality brought about by the application of intelligent technology. Concerning opinions on nighttime tourism development models, 65% of respondents suggest that an intelligent society should prioritize technological innovation to enhance the digitized experience of nighttime tourism. Recommendations include strengthening collaboration between intelligent technology companies and the nighttime tourism industry to jointly propel sustainable development.

Descriptive statistical results indicate that among the respondents, 80% have awareness of nighttime tourism development in an intelligent society, and an average of 60% actively participates in nighttime tourism activities in an intelligent society. The overall cognitive awareness of nighttime tourism under the backdrop of an intelligent society is high, with good perceived attractiveness and participation levels in nighttime tourism activities, and generally high satisfaction with nighttime tourism facilities and services.

Through correlation analysis, we observe a significant positive correlation ($r=0.65$, $p<0.05$) between the application of intelligent technology and the attractiveness of nighttime tourism activities, suggesting that intelligent technology plays a positive role in enhancing the appeal of nighttime tourism activities.

3.2 Qualitative Findings

The interviewees encompassed professionals in the nighttime tourism sector, local government officials, representatives from intelligent technology enterprises, and participants in nighttime tourism activities. Interviews with professionals focused on industry trends, challenges, and practical applications of intelligent technology in nighttime tourism. The findings indicate that

professionals generally believe the introduction of intelligent technology provides new opportunities for innovation in nighttime tourism, such as intelligent navigation systems and virtual experiences, with the potential to enhance visitor experiences and drive sustainable industry development.

Interviews with local government officials primarily delved into government policy support in the nighttime tourism domain and planning for nighttime tourism development under the context of an intelligent society. The study found that government policies in nighttime tourism tend to encourage innovation and digital transformation to promote sustainable growth. The development of an intelligent society provides the government with more opportunities to integrate resources and comprehensively upgrade nighttime tourism.

Representatives from intelligent technology enterprises discussed innovative applications of intelligent technology in nighttime tourism and collaborations with the nighttime tourism industry. The results show significant progress in the development of intelligent navigation, virtual reality, and intelligent security monitoring by these enterprises. Emphasis was placed on the importance of collaboration with the nighttime tourism industry to achieve mutual benefits, fostering industry innovation.

Interviews with participants in nighttime tourism activities focused on their experiences in nighttime tourism in an intelligent society and their expectations for services and facilities. Results indicate that participants place a higher emphasis on digital experiences, expecting the integration of more intelligent technologies, such as intelligent booking and virtual guidance, to enhance their nighttime tourism experiences.

Through the integration and comprehensive analysis of interview data, several key themes emerged:

Technological Innovation Driving Nighttime Tourism Upgrades: Interview data demonstrates that technological innovation plays a pivotal role in propelling advancements in nighttime tourism. The continuous development of intelligent technology, particularly innovative applications like intelligent navigation and virtual experiences, injects new vitality into nighttime tourism, making it more attractive and competitive.

Government Policy Support for Digital Transformation: Insights from interviews with government officials reveal the policy direction of supporting digital transformation in the nighttime tourism domain. The government tends to favor policies that encourage innovation and digitalization, using policy guidance and resource integration to promote the upgrade of the nighttime tourism industry. Efforts are being made within the framework of an intelligent society to create a conducive policy environment, encouraging innovation by enterprises to meet evolving market demands.

Industry Collaboration Promoting Sustainable Development: Interviews with representatives from intelligent technology enterprises underscore the importance of collaboration with the nighttime tourism industry. Collaborative efforts are expected to collectively drive sustainable development in nighttime tourism, enabling the practical application of more innovative technologies. The establishment of collaborative relationships aids in resource integration, jointly addressing industry challenges, and propelling the digitalization and intelligent development of nighttime tourism.

4 Conclusions

This study aimed to delve into the development patterns of nighttime tourism in Shandong cities under the backdrop of an intelligent society. Employing a mixed research method involving questionnaire surveys and in-depth interviews, we gathered rich data. The following conclusions were drawn after comprehensive data analysis:

The results indicate that the development of an intelligent society has positively propelled nighttime tourism in Shandong cities. Professionals in nighttime tourism, local government officials, representatives from intelligent technology enterprises, and participants in nighttime tourism activities expressed affirmative attitudes towards the utilization of intelligent technology. The introduction of innovative applications such as intelligent navigation systems and virtual experiences has added new dimensions to nighttime tourism, enhancing visitor experiences and fostering innovation throughout the industry.

Through questionnaire surveys and in-depth interviews, we gained a profound understanding of the multidimensional impact of an intelligent society on the development of nighttime tourism. From the perspective of professionals, the introduction of intelligent technology has created new business opportunities and heightened the industry's focus on technological innovation. Government support for digital transformation at the policy level provides a broader development space for nighttime tourism. Innovations from intelligent technology enterprises further drive the digitized experiences in nighttime tourism. Participants in nighttime tourism activities increasingly prioritize the provision of digital services, expecting more convenient and enriched nighttime tourism experiences through the integration of intelligent technologies.

To achieve sustainable development in nighttime tourism, this study proposes the following recommendations: Firstly, there is a need to enhance collaborative innovation within the industry. This involves promoting a closer partnership between intelligent technology enterprises and the nighttime tourism sector. Such collaboration would synergistically propel technological advancements, thereby elevating the overall digitalization of nighttime tourism experiences. In tandem with collaborative innovation, optimizing policy support systems is crucial for the sustained growth of nighttime tourism. Governments are encouraged to continually refine policies that facilitate and promote nighttime tourism, with a specific focus on incentivizing enterprises to invest in research and development within the realm of intelligent technology. Increased governmental support is essential to facilitate a seamless transition towards digital transformation within the industry. Furthermore, boosting public participation is integral to the success of intelligent nighttime tourism. Initiatives aimed at raising awareness among potential participants regarding digital experiences should be implemented. Public education and promotional campaigns can play a pivotal role in encouraging more individuals to actively engage in nighttime tourism within an intelligent society. Simultaneously, prioritizing safety and privacy protection is paramount in the digitized landscape of nighttime tourism. The application of intelligent technologies should be harnessed to strengthen safety measures and privacy protection for participants. It is imperative to ensure that the enhanced digitized experience does not compromise the fundamental rights and privacy of individuals engaged in nighttime tourism activities. In essence, by implementing these recommendations in a coordinated manner, the nighttime

tourism industry can pave the way for sustainable growth and development, seamlessly integrating intelligent technologies into the fabric of its operations.

Despite achieving certain research outcomes, this study is subject to limitations. The selection of interviewees may lead to sample bias, affecting the generalizability of research results. Additionally, due to constraints in research time and resources, not all factors influencing nighttime tourism could be comprehensively covered. Future research could address these limitations by expanding the sample size, exploring additional influencing factors, and employing diverse research methods.

In summary, through an in-depth investigation into the development patterns of nighttime tourism in Shandong cities under an intelligent society, this study aims to provide valuable suggestions and references for the future development of nighttime tourism. The objective is to enable this field to better confront challenges and achieve sustainable development in the era of digitization.

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