

# Research on Tourism Experience Optimization under the Background of Smart Tourism

Jiduo Sun

Heilongjiang Vocational and Technical College of Architecture, Harbin, 150025, Heilongjiang, China

damonsjd@163.com

**Keywords:** Smart tourism; Optimization of tourism experience; Information technology; Personalized service

**Abstract:** The purpose of this article is to discuss the optimization of tourism experience under the background of smart tourism. Through literature review, questionnaire survey and in-depth interview, this article systematically analyzes the development process, technical support system and its influence on tourism. It is found that there are many problems and challenges in traditional tourism experience, and the development of smart tourism provides a new opportunity for the optimization of tourism experience. This article puts forward the application strategies of information technology in the optimization of tourism experience, including the design and implementation of personalized tourism experience and the construction and optimization of smart tourism service system. The results show that these strategies are expected to significantly improve the satisfaction and loyalty of tourists. Finally, this article looks forward to the future trend of tourism experience optimization under the background of smart tourism, and puts forward corresponding suggestions.

## 1. Introduction

With the swift progression of information technology, smart tourism has emerged as a novel tourism mode, gradually transforming people's travel habits and experiences [1]. Leveraging advanced technologies like cloud computing, big data, and the Internet of Things, smart tourism offers tourists more convenient and personalized services, while also presenting new avenues for tourism transformation and upgrading [2-3]. Investigating the enhancement of tourism experience within the context of smart tourism holds significant theoretical and practical importance, as it aids in boosting tourist satisfaction and loyalty, and fostering high-quality tourism development [4].

Recent years have seen extensive research on smart tourism, focusing on its conceptual definition, technological applications, service model innovations, and tourism experience optimization [5]. Nevertheless, despite the abundant research outcomes, there remains a paucity of systematic investigations into optimizing tourism experience within the smart tourism paradigm [6].

This study aims to comprehensively examine the optimization of tourism experience in the context of smart tourism. It clarifies the definition, characteristics, and impacts of smart tourism, analyzes the prevalent issues in current tourism experiences, and proposes pertinent optimization strategies. The novelty of this article lies in several aspects: Firstly, it systematically organizes the development trajectory and technical support system of smart tourism, providing a foundational theory for further research; Secondly, it conducts a profound analysis of smart tourism's influence on the tourism sector, uncovering the underlying economic and social motivations; Lastly, it presents specific strategies and practical pathways for optimizing tourism experience within the smart tourism framework.

## 2. Overview and development of smart tourism

### 2.1. Definition and characteristics of smart tourism

Smart tourism refers to a new tourism form that uses modern information technologies such as

cloud computing, big data and Internet of Things, integrates tourism resources and innovates tourism service mode to provide tourists with convenient, personalized and high-quality tourism experience. Its characteristics are mainly reflected in the following aspects: first, informatization, that is, the comprehensive digitalization and networking of tourism information; The second is intelligence, that is, using intelligent technology to provide personalized tourism services; The third is synergy, that is, to achieve seamless connection and collaborative operation of all links in the tourism industry chain.

## 2.2. Development course and technical support system of smart tourism

The development of smart tourism has gone through many stages from germination to maturity [7]. In the early days, with the popularity of the Internet, digitalization and networking of tourism information began to rise. Subsequently, with the rapid development of mobile communication technology, mobile travel service has gradually become the mainstream [8]. In recent years, with the wide application of advanced technologies such as cloud computing and big data, smart tourism has entered a new stage of all-round development, the service model has been continuously innovated, and the tourism experience has been significantly improved.

The technical support system of smart tourism mainly includes cloud computing platform, big data center, Internet of Things technology, mobile communication technology and artificial intelligence technology, as shown in Table 1.

Table 1 Technical Support System for Smart Tourism

Technology Category	Specific Technology	Description
Information Technology	Cloud Computing	Provides robust data processing and storage capabilities, supporting the efficient operation of smart tourism platforms
	Big Data	Collects, analyzes, and mines tourism data to provide personalized services and support decision-making
	Internet of Things	Enables interconnectivity between tourism facilities and equipment, providing intelligent tourism experiences
Communication Technology	Mobile Communication	Supports tourists' access to tourism information and services anytime and anywhere, enhancing travel convenience
	Wireless Networks	Provides wireless coverage in tourist areas, allowing tourists to connect to the internet and use mobile devices
Artificial Intelligence Technology	Machine Learning	Analyzes tourist behavior and preferences to provide personalized tourism recommendations and services
	Natural Language Processing	Enables intelligent customer service and voice navigation functions, enhancing tourist experiences
	Computer Vision	Applies image recognition technology in tourist attractions to provide enhanced reality experiences
Other Technologies	Virtual Reality /Augmented Reality	Creates immersive tourism experiences, allowing tourists to preview attractions in virtual environments
	Geographic Information System	Provides geographic location information and services, supporting navigation and mapping functions
	Blockchain	Used for secure and transparent tourism transactions, such as ticketing and payments

These technologies provide smart tourism with powerful data processing capabilities, information perception capabilities and intelligent service capabilities, making tourism services more convenient, efficient and personalized.

The influence of smart tourism on tourism is far-reaching and extensive. It has changed the traditional tourism service mode and promoted the transformation and upgrading of tourism. Specifically, smart tourism improves the efficiency and quality of tourism services and enhances the satisfaction and loyalty of tourists; Promote the integration and optimal allocation of tourism

resources; Promote the innovation and sustainable development of tourism; At the same time, it also provides new means and methods for the supervision and management of tourism.

### 3. Tourism experience theory and current situation analysis

Tourism experience refers to a series of psychological feelings and cognition produced by tourists in the process of tourism by participating in various tourism activities and interacting with the tourism environment. It is the core of tourism activities and an important factor for tourists to decide whether to travel or not. The elements of tourism experience mainly include tourism environment, tourism activities, tourism services, individual characteristics and psychological needs of tourists, as shown in Figure 1.

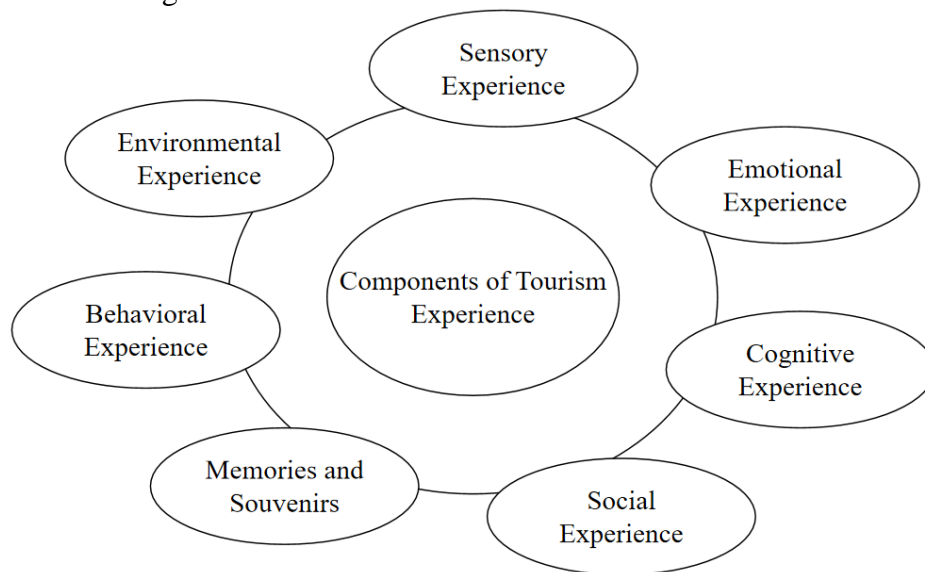


Figure 1 Elements of tourism experience

There are many problems and challenges in traditional tourism experience. On the one hand, the access to tourism information is limited, and it is often difficult for tourists to obtain comprehensive and accurate tourism information; On the other hand, the quality and efficiency of tourism services need to be improved, and tourists may encounter various inconveniences and troubles in the process of tourism. In addition, the traditional tourism experience lacks personalized and customized services and cannot meet the increasingly diverse needs of tourists.

Under the background of smart tourism, tourists put forward new demands for tourism experience. They hope that tourism information will be more convenient and comprehensive, and they can get the necessary tourism information anytime and anywhere. I hope that the travel service will be more efficient and personalized, and I can customize my travel itinerary according to my own needs and preferences. At the same time, they also hope that the tourism environment will be more comfortable and safe, and they can get better tourism protection.

## 4. Tourism experience optimization strategy under the background of smart tourism

### 4.1. The application of information technology in the optimization of tourism experience

Information technology holds a pivotal role in enhancing the tourism experience. By harnessing advanced technologies like cloud computing, big data, and the Internet of Things, we can achieve comprehensive perception, analysis, and processing of tourism information, ultimately offering tourists more convenient and personalized services. For instance, big data analysis enables us to grasp tourists' preferences and needs, facilitating the recommendation of more suitable tourism products. Moreover, the Internet of Things technology enables intelligent management of tourism facilities, thereby enhancing the efficiency and quality of tourism services.

#### 4.2. Design and implementation of personalized travel experience

Personalized tourism experience is one of the important characteristics of smart tourism. In order to realize personalized travel experience, it is necessary to deeply analyze tourists' needs and preferences, and customize tourism products and services according to their characteristics and needs. For example, you can customize personalized travel itineraries for tourists according to their preferences and budgets; Can provide customized tour guide services, so that tourists can get more intimate care and service during the tour.

#### 4.3. Construction and optimization of intelligent tourism service system

Smart tourism service system is the core support of smart tourism. In order to build and optimize the intelligent tourism service system, it is necessary to integrate tourism resources and build a one-stop tourism service platform; It is necessary to introduce advanced technology and equipment to improve the intelligent level of tourism services; It is also necessary to strengthen the analysis and application of tourism data to provide tourists with more accurate and personalized tourism services.

#### 4.4. Evaluation and feedback mechanism of tourism experience quality

The evaluation and feedback mechanism of tourism experience quality is an important guarantee for the optimization of tourism experience under the background of smart tourism. The evaluation and feedback mechanism of tourism experience quality under the background of smart tourism is shown in Table 2.

Table 2 Tourism Experience Quality Evaluation and Feedback Mechanism

No.	Evaluation and Feedback Stage	Specific Content	Importance
1	Data Collection	Collect various types of data from tourists during the tourism process through smart devices and technologies	High
2	Real-time Evaluation	Tourists can provide real-time evaluation of their tourism experience through mobile applications or smart devices	High
3	Multidimensional Analysis	Conduct multidimensional analysis of the collected data, including satisfaction, behavior patterns, emotional responses, etc.	High
4	Timely Feedback	Provide timely feedback to tourists and tourism service providers based on the analysis results, allowing for quick response and improvement	High
5	Personalized Suggestions	Offer personalized tourism suggestions and service optimization plans based on tourist evaluations and feedback	Medium
6	Continuous Improvement	Establish a continuous improvement mechanism, regularly assess the quality of tourism experience, and make adjustments based on feedback	High
7	Tourist Participation	Encourage tourists to participate in the improvement process of tourism experience, such as through surveys, community discussions, etc.	Medium
8	Transparency and Trust	Ensure transparency and fairness in the evaluation and feedback process, enhancing tourists' trust in tourism services	High

This table reflects the key links and specific contents of the evaluation and feedback mechanism of tourism experience quality under the background of smart tourism, and the importance of each link. Through the effective implementation of these links, we can optimize the tourism experience, enhance the satisfaction of tourists and promote the continuous improvement of tourism services.

By establishing a scientific evaluation system and feedback mechanism, we can objectively evaluate the quality of tourism experience and find out the existing problems and deficiencies in time. At the same time, according to tourists' feedback and suggestions, we can continuously improve and optimize tourism products and services to improve tourists' satisfaction and loyalty.

## 5. Conclusions

This study centers on optimizing tourism experience within the context of smart tourism. Through a comprehensive approach involving literature review, questionnaire surveys, and in-depth interviews, the article systematically outlines the development trajectory and technical support system of smart tourism, while also conducting a thorough analysis of its impact on tourism. Furthermore, the research uncovers the issues and challenges inherent in traditional tourism experiences and explores the evolving demands of tourists in the era of smart tourism. The article proposes strategies for applying information technology to enhance tourism experience, encompassing the design and implementation of personalized tourism experiences and the construction and refinement of smart tourism service systems. Notably, the advancement of smart tourism presents a novel avenue for enhancing tourism experience, with the potential to significantly boost tourist satisfaction and loyalty.

Anticipating future trends, the optimization of tourism experience within the smart tourism paradigm is poised to exhibit several developments: firstly, the comprehensive intelligence of tourism information will facilitate easier access and utilization of tourism data by tourists; secondly, personalized customization of tourism services will emerge as the dominant approach to cater to the growing diversity of tourist needs; thirdly, smart tourism service systems will undergo continuous improvement and optimization to enhance the efficiency and quality of tourism services; lastly, the evaluation and feedback mechanisms for tourism experience will become more robust, offering crucial support for the ongoing refinement of tourism practices.

## References

- [1] Koo C, Cantoni L. Special issue on informatics/data analytics in smart tourism[J]. *Information Processing & Management*, 2019, 55(4):1373-1375.
- [2] Buhalis D, O'Connor P, Leung R. Smart hospitality: from smart cities and smart tourism towards agile business ecosystems in networked destinations[J]. *International Journal of Contemporary Hospitality Management*, 2023, 35(1):369-393.
- [3] Chen S, Zhang M, Law R, et al. Bibliometric and visualized review of smart tourism research[J]. *International Journal of Tourism Research*, 2022, 24(2):298-307.
- [4] Li C Y, Fang Y H, Sukoco B M. Value proposition as a catalyst for innovative service experience: the case of smart-tourism destinations[J]. *Service Business*, 2021, 15(2):281-308.
- [5] Muniz E C L, Dandolini G A, Biz A A, et al. Customer knowledge management and smart tourism destinations: a framework for the smart management of the tourist experience—SMARTUR[J]. *Journal of knowledge management*, 2021, 25(5):1336-1361.
- [6] Arenas A E, Goh J M, Urueña A. How does IT affect design centricity approaches: Evidence from Spain's smart tourism ecosystem[J]. *International Journal of Information Management*, 2019, 45:149-162.
- [7] Vecchio P D, Mele G, Ndou V, et al. Creating value from Social Big Data: Implications for Smart Tourism Destinations - ScienceDirect[J]. *Information Processing & Management*, 2018, 54(5):847-860.
- [8] Bastidas-Manzano A B, Sánchez-Fernández J, Casado-Aranda L A. The past, present, and future of smart tourism destinations: a bibliometric analysis[J]. *Journal of Hospitality & Tourism Research*, 2021, 45(3):529-552.