

Big Data Promotes Government Governance of the Tourism Industry: Motivation Analysis, Realistic Challenges, and Policy Suggestions

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Abstract

Big data technology is an important engine for improving government governance. By analyzing massive tourism data, the government can better understand the social situation, make scientific decisions, improve efficiency and service quality, and promote the improvement of governance level. This article will explore the promotion of government governance by big data from two aspects: motivation and practical challenges, and propose some targeted policy recommendations based on this, aiming to improve the government's governance level in the tourism industry.

Keywords

Big Data; Government Governance; Tourism Industry.

1. Introduction

How to efficiently govern and promote economic development by the government has become a key issue in the tourism industry. The tourism industry has enormous potential to drive economic mobility and growth[1], and create a large number of job opportunities. However, due to poor governance by local governments, some problems have begun to emerge, such as tourism overcharging, tourism ecological environment, and tourism industry combination, which can have a negative impact on the sustainable development of the tourism economy[2, 3]. The act of tourist slaughter undermines the credibility of the tourism market, causing tourists to lose confidence and thus reducing tourism consumption. The issue of tourism ecological environment affects the tourist experience and satisfaction, resulting in the loss of tourists. The combination of tourism formats limits the development potential of the tourism industry, leading to a single dependence of the tourism economy and increasing economic risks. As a regulatory executing agency, if the government can timely predict risks and make reasonable decisions, and take effective governance measures, it can optimize and promote the development of the industrial economy.

Big data technology provides new ideas and means for government governance. As an emerging technology, it can monitor risks in the tourism industry in real-time and analyze feedback to government personnel, thereby improving the level of government governance, and has been highly valued by academia and government departments[4]. Scholars[5-7] believe that the rapid development of big data technology has positive implications for promoting government governance. Governments around the world are also actively promoting the application of big data in government governance[8]. In 2022, China issued the "Guiding Opinions of the State Council on Strengthening the Construction of Digital Governments" (Guo Fa [2022] No. 14), which pointed out strengthening the monitoring and analysis of big data in economic operation, enhancing economic regulation capabilities, improving the mechanism of big data assisting scientific decision-making, and coordinating the construction of decision-making information resource systems; In 2017, the United States established the National Science and Technology

Commission with the goal of promoting a more intelligent digital government[9]; In 2014, Singapore proposed the "Smart Nation 2025 Plan", which aims to establish a national data connection and enhance government public services through big data analysis[10]; The UK introduced the "Government Transformation Strategy" in 2017, proposing the development of a digital route to enhance government services[11].

Promoting government governance of the tourism industry through big data technology is a trend and an inevitable choice. The application research of big data in government governance mainly focuses on tax auditing, public service regulation, and government performance, while there is currently no research on government governance and big data in the tourism industry. This article interprets and studies the promotion of government governance by big data from the perspectives of motivation analysis, practical challenges, and policy recommendations, which has certain practical significance in promoting government governance of the tourism industry.

2. Analysis on the Motivation of Big Data Promoting Government Governance of the Tourism Industry

2.1. Optimize Resource Allocation

Big data can help the government better allocate resources, as it can provide accurate data support and conclusions for the government by analyzing and mining massive amounts of data, helping the government to allocate resources reasonably[12].

2.1.1. Optimize the Construction of Tourism Infrastructure

By collecting large-scale data, such as the number of tourists, their preferences, and the popularity of tourist attractions, the government can conduct analysis and mining to gain a deeper understanding of the demand and development trends of the tourism market, and provide data support for the development of the tourism industry. At the same time, using big data technology for simulation and prediction can evaluate the effectiveness and impact of different construction plans, making more scientific and reasonable construction decisions, and optimizing the construction of tourism infrastructure. For example, analyzing tourist traffic and preferences through big data technology can help governments design more reasonable and tailored tourist routes, improve tourist satisfaction, and enhance the efficiency of the tourism industry. In addition, big data technology can also assist the government in making decisions on the construction of public facilities, such as public toilet construction and transportation route design, making financial use more reasonable and avoiding waste of funds. Overall, big data technology has a positive impact on the overall improvement of government governance efficiency, improving decision-making efficiency and accuracy, reducing governance costs, and promoting the improvement of government governance level[13].

2.1.2. Optimize the Construction of the Tourism Market

The government uses big data to analyze tourist information, such as age, gender, hometown, route, and mode of travel, to not only explore potential tourism consumers, but also divide tourism groups and formulate corresponding promotion methods, market positioning, and promotional accounts, thereby optimizing the construction of the tourism market. By optimizing the construction of the tourism market, it can bring many benefits. For example, the government can attract more tourists and investment to obtain more financial resources and promote economic growth; Enterprises can obtain more business opportunities and development space; Tourists can enjoy a better travel experience. In addition, the government can monitor changes and trends in the tourism market through data analysis, adjust tourism policies and strategies in a timely manner, and ensure market stability and sustainable development. In short, using big data to analyze tourist information can not only optimize

market construction, but also bring many benefits to the government, enterprises, and tourists, promoting the prosperity and development of the tourism industry.

2.2. Strengthen Supervision

The tourism industry involves numerous entities and links, and there are certain regulatory and risk management challenges. Big data technology has the following advantages in practical applications: real-time monitoring: Big data technology can collect and analyze various types of tourism data in real time, such as scenic area evaluation, scenic area passenger flow, tourism transportation, hotel occupancy rate, etc. The government uses these data for real-time monitoring, timely identifying and solving problems in the tourism industry, and improving regulatory efficiency; Early warning mechanism: Big data technology helps the government predict problems and promotes the establishment of early warning mechanisms. For example, if the evaluation data of a scenic area is abnormal, there may be issues with attraction overcrowding or service quality; If the passenger flow data in the scenic area is overloaded, there may be problems with transportation and accommodation. The government can take timely measures to protect the rights and interests of tourists and the normal operation of the tourism industry. In summary, big data technology has the advantage of real-time monitoring and early warning mechanisms in practical applications, which can effectively improve the regulatory efficiency and risk management capabilities of the tourism industry.

3. The Realistic Challenge of Big Data Promoting Government Governance of the Tourism Industry

3.1. The Challenge of Data Quality

3.1.1. The Challenge of Unreliable Data Sources

Although big data applications have enormous potential in many fields, the reliability of data sources has always been one of the important challenges faced by applications. Due to the fact that big data comes from various sources, including public data, social media, sensors, and different functional departments, there may be information barriers and conflicts of interest when providing data. This may affect the reliability and accuracy of data information, thereby limiting the potential and practical effectiveness of big data applications.

3.1.2. The Challenge of Missing and Incomplete Data

The challenge of missing and incomplete data is that organizations may encounter situations such as data corruption, loss, or failure to update in a timely manner when organizing data, which can lead to incomplete and missing data. These missing or incomplete data can bias or mislead the analysis results.

3.1.3. Data Redundancy and Duplicate Challenges

In big datasets, there may be identical or similar data records, which can lead to duplicate or redundant analysis results, thereby affecting the accuracy and credibility of the analysis.

3.2. The Challenge of Data Analysis

3.2.1. The Challenge of Data Organization

The challenge of data organization lies in the fact that the tourism industry involves multiple data sources, such as travel booking data, flight information, hotel evaluations, etc. Integrating these data from different sources for analysis is a daunting challenge that requires addressing inconsistencies in data format and structure. In addition, the quality of data from different data sources also varies, and some data may have missing or incorrect issues, which can also increase the difficulty of data organization.

3.2.2. Challenges in Data Processing and Storage

The data scale of the tourism industry is enormous, including a large amount of order data, user behavior data, and complex correlation relationships. Therefore, processing and storage need to consider issues such as technology and storage costs, which is a significant challenge for the government.

3.2.3. The Challenge of Talent Shortage

One of the important challenges that the tourism industry needs to address is the lack of talent in big data analysis. In order to better meet user needs, the industry needs to utilize data mining and machine learning technologies to mine and predict user behavior and needs, and make corresponding decisions. However, due to the emerging nature of big data technology, the corresponding talent is relatively scarce, and it also faces high labor costs. How to attract excellent data analysis talents and retain them is a challenge faced by the tourism industry.

3.3. The Challenges of Data Regulation

3.3.1. The Challenge of Data Privacy

The challenge of data privacy lies in protecting the integrity and confidentiality of data to ensure that it is not accessed or abused by unauthorized third parties. However, as the complexity of data transmission and analysis increases, data work involves multiple institutions and personnel, which increases the risk of data leakage. In addition, the high commercial value of data can also induce some data workers to leak data for personal gain. At the same time, the frequent transmission and transfer of data also increases the risk of data workers leaking data due to work negligence.

3.3.2. Challenges in Legal Compliance and Ethical Issues

When using big data for regulation, the government not only needs to comply with data protection and privacy regulations to ensure that data usage is legal and transparent, but also needs to consider the ethical issues that may arise from data usage, such as the protection of personal rights. Government departments need to consider how to strengthen the promotion and enforcement of data privacy protection laws and regulations, establish data usage norms and transparency, and conduct relevant training to enhance the legal and ethical awareness of government officials. In addition, government departments also need to consider how to encrypt and desensitize data to protect security and privacy. This poses significant challenges for government regulation.

4. Policy Recommendations for Promoting Government Governance of the Tourism Industry Through Big Data

4.1. Establishing a Data Sharing and Open Platform

Establish a data sharing and open platform to promote collaborative supervision and cooperation among the government, tourism enterprises, and regulatory authorities, and promote the development of the tourism industry. It will contribute to collaborative regulation and cooperation among the government, tourism enterprises, and regulatory authorities, ensuring the orderly and healthy development of the tourism market. By sharing data and information, all parties can better understand the situation of the tourism market, identify potential problems, and take corresponding measures. In addition, data sharing and open platforms can also improve service quality and efficiency, providing tourists with a better travel experience. For enterprises, this platform also provides business opportunities and development opportunities, promoting innovation and upgrading. Overall, establishing a data sharing and open platform will bring enormous potential to the development of the tourism industry.

4.2. Improve Data Security and Privacy Protection Regulations

Improving data security and privacy protection regulations is crucial. The government should strengthen the supervision of big data security and privacy protection in the tourism industry, and formulate stricter laws and regulations to regulate the data collection, storage, use, and sharing behavior of tourism companies and platforms. In addition, the government should also strengthen measures to protect the personal information of tourists, ensuring that their information is not leaked or abused. This not only protects the security and privacy of big data in the tourism industry, but also enhances tourists' trust in the industry and promotes its healthy development.

4.3. Define Data Standards and Specifications

The government should establish a unified platform for tourism industry data standards and norms to ensure that all relevant departments and institutions use the same standards and norms to collect, store, and share tourism industry data. This will help improve the quality and consistency of data, enabling the government to better understand the development trends and needs of the tourism industry, and provide more accurate data support for the formulation of tourism policies. At the same time, tourism enterprises can also obtain more market information and competition through this platform, providing data support for formulating more accurate marketing strategies and business decisions. In addition, the platform can also improve the circulation and sharing of tourism data among different departments and institutions, promoting innovation and development in the tourism industry.

4.4. Strengthen the Cultivation of Government Big Data Talents

Firstly, to strengthen the training of government officials on big data, online big data course training can be provided, and offline big data expert seminars can be held to understand the latest technologies and application methods. Secondly, establish a big data cooperation platform to promote opportunities for collaboration between government officials and professionals, and promote knowledge sharing and technological innovation. Thirdly, encourage practical exchanges between universities, enterprises, and the government, promote the integration of industry, academia, and research, and cultivate local big data information technology professionals who are "sustainable" and "affordable"[6].

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