

IJASC 24-1-12

A Study on User Perception of Tourism Platform Using Big Data

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Abstract

The purpose of this study is to analyze user perceptions of tourism platforms through big data. Data were collected from Naver, Daum, and Google as big data analysis channels. Using semantic network analysis with the keyword 'tourism platform,' a total of 29,265 words were collected. The collection period was set for two years, from August 31, 2021, to August 31, 2023. Keywords were analyzed for connected networks using TexTom and Ucinet programs for social network analysis. Keywords perceived by tourism platform users include 'travel,' 'diverse,' 'online,' 'service,' 'tourists,' 'reservation,' 'provision,' and 'region.' CONCOR analysis revealed four groups: 'platform information,' 'tourism information and products,' 'activation strategies for tourism platforms,' and 'tourism destination market.' This study aims to expand and activate services that meet the needs and preferences of users in the tourism field, as well as platforms tailored to the changing market, based on user perception, current status, and trend data on tourism platforms.

Keywords: Tourism platform, Smart Tourism, Travel Destination Recommendations Attributes, Big data, Text mining

1. Introduction

Information was delivered and shared more quickly as intelligence and hyperconnectivity were added to the existing information and communication technology-oriented knowledge and information society, which was represented by computers and the Internet. Furthermore, as convergence with other fields begins in earnest, new business models that transcend the existing traditional category of industrial areas are also being mass-

Manuscript Received: January. 25, 2024 / Revised: January. 31, 2024 / Accepted: February. 8, 2024

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produced in the tourism industry[1]. Smart tourism can expand the experience by collecting and utilizing necessary information and tourism in the process of traveling to smart devices connected to the Internet anytime, anywhere using ict technology[2]. As the tourism industry changes, tourism-related companies are providing various contents through tourism information platforms as a new business strategy to enable continuous development by preempting the advantage in competition[3]. It is becoming all business platforms in the digital age through the Fourth Industrial Revolution[4]. Therefore, in order to develop a tourism platform, research is needed to enhance the understanding of the tourism industry on the tourism platform. This paper attempted to analyze the perception of users using the platform by analyzing tourism platform keywords on social media. Based on the analyzed data, the tourism platform is analyzed for images and trends to provide data for using and supplementing the tourism platform. This paper aims to analyze the perception of users on a tourism platform that provides information on travel destinations to travelers. The purpose is to activate the tourism platform through the analyzed basic data. Furthermore, it is to provide a customized tourism platform for consumers.

2. Related Work

2.1 Smart Tourism

Smart tourism encompasses the attributes of information technology and the technical aspects of smart tourism. It can be defined as the exchange of information, continuously connected to the internet, enabling the collection of necessary tourism-related information and providing personalized tourism information services in real-time to individuals[5]. With the advancement of Information and Communication Technology (ICT), smart tourism information technology influences the attitudes and intentions of tourists and allows the prediction of developmental directions. Defining it as a platform comprehensively addressing smart tourism information, a tourism platform can be described as a website or application that includes all the necessary tourism information for tourist activities[6].

2.2 Big Data

Big data analysis refers to the process of collecting, classifying, and analyzing massive amounts of data to uncover hidden patterns, relationships between undisclosed variables, and valuable information and knowledge. This involves exploring large datasets to discover insights from sources such as databases, the internet, mobile phone records and locations, and sensor-captured information[7].

3. Research Methods

This paper analyzes tourism platform keywords to analyze the perceptions of users who use the tourism platform using the big data program Textom. For big data analysis, data collection was collected from blogs, cafes, knowledge in, and Facebook of Internet portal sites posted by users using tourism platforms[8]. Data for this study were collected with Textom, a data collection program. The keyword for data collection was selected as 'tourism platform'. Through the correlation between the extracted major keywords, the perception of users about the tourism platform was finally clustered. It was set as a total of two-year collection period from August 31, 2021 to August 31, 2023. In order to select a keyword suitable for the purpose of the thesis, it was refined when it was not related or stopword. Based on refined data, frequency keywords classified according to keyword patterns were extracted through text mining techniques to create matrix visualization analyzed as a matrix according to frequency. The Ucinet network program confirmed the influence of other keywords and

the degree of connection frequency of keywords [9, 10].

4. Semantic Network Analysis

The results of extracting keywords related to the tourism platform yielded a total of 29,265 entries. Through text mining analysis, 30 keywords were selected. The word frequency analysis revealed that the keyword most closely associated with tourism platforms is 'Platform' with a frequency of 6561. This indicates that platforms are utilized not only in the field of tourism but also in various areas such as reservation, promotion, culture, art, and performances. Following closely are 'Tourism' with a frequency of 3942, 'Travel' with 2290, and 'Diverse' with 1151 showing high frequencies. Table 1 presents the word frequency analysis table for tourism platforms.

Table 1. Tourism Platform keyword frequency analysis

Keyword	Frequency	Keyword	Frequency	Keyword	Frequency
Platform	6561	Area	893	Hosting	620
Tourism	3942	the United Kingdom	756	Culture	615
Travel	2290	Information	745	Korea	612
Variety	1151	Build	737	Possibility	585
Online	1147	Progress	693	Tourist attraction	574
Service	1113	Operation	686	Product	561
Tourist	1070	Hotel	684	Business	548
China	1062	Application	670	Development	541
Reservation	1052	Data	635	Active	540
Provision	1034	Promotion	621	Support	535

Figure 1, which illustrates the connection relationships and patterns among keywords through semantic network analysis, presents the visualization of the analysis results focused on 100 keywords centered around the core nodes in tourism platform analysis. This visualization was conducted using Netdraw, based on the centrality of the connection relationships of completed core nodes. The size of each node signifies its frequency. The thickness of the connected lines between nodes is proportional to the strength of the connection relationships of each word [11]. The core keyword, 'Tourism Platform' is positioned at the center of the keyword cluster, with the highest identified connection strength among nodes.

The present study conducted CONCOR analysis among keywords associated with tourism platforms, resulting in the formation of four clusters such as 'platform information,' 'tourism information and products,' 'activation strategies for tourism platforms,' and 'tourism destination market.' Similar keywords related to user perception of tourism platforms were clustered, and their characteristics were identified. [14]

Cluster 1, named 'platform information,' consists of keywords such as data, apps, programs, services, smart, and metaverse, indicating their association with platform information. Through original data, it is evident that platforms are utilized in various fields such as education, culture, media, tourism, and sports.

Cluster 2, labeled 'tourism information and products,' is distinguished by keywords like hotels, accommodations, collaboration, products, and experiences. Original data reveals the importance of respecting and understanding each other's cultures and forming relationships through cultural exchange programs and tourism activities, offering platforms for cooperation and harmony.

Cluster 3, identified as 'activation strategies for tourism platforms,' is characterized by terms such as marketing, digital, activation, promotion, and utilization. From the original data, it is noted that efforts are being made to activate domestic tourism through marketing campaigns targeting foreign tourists and promoting tourism complex projects.

Cluster 4, named 'tourism destination market,' comprises keywords including Jeju, Gyeongju, city, region, and market, indicating a focus on regional markets. Original data suggests the establishment of regional development and cultural tourism cities through region-specific platforms.

5. Conclusion

This paper attempted to analyze the trends of tourism platforms and the perceptions of users. Until recently, the information and service areas provided by the tourism platform to users were identified to confirm how the tourism platform is being used. In this paper, CONCOR analysis can be seen that the tourism platform is clustered with keywords such as 'platform information', 'tourism information and products', 'activation strategies for tourism platforms', and 'tourism destination market'. Based on this, tourists using tourism platforms perceive them as convenient for easily accessing information and content. It has been confirmed that platforms are utilized not only in tourism but also in various fields such as culture and art. Basic data was prepared by providing a necessary methodological approach to the platform through data and presenting various keywords related to smart tourism. Based on the results, it will help to supplement and develop platform services to meet the needs and preferences of users in the tourism field. It will be able to contribute to expanding the area of tourism information research on tourism platforms. This study did not reflect foreign data by analyzing domestic data.

In future studies, a comparative analysis of domestic and foreign tourism platforms and a close review using various quantitative and qualitative research methods will lead to valuable research results. If analyzed through various methods, it will be an opportunity to effectively utilize the tourism platform.

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