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A Study on Development of a Tourism Course in Seosan using Social using Media Big Data

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Abstract

Big data has recently been used in various industries such as tourism, medical care, distribution, and marketing. And it is evolving to the stage of collecting real-time information or analyzing correlations and predicting the future. In the tourism industry, big data can be used to identify the size and shape of the tourism market, and by building and utilizing a large-capacity database, it is possible to establish an efficient marketing strategy and provide customized tourism services for tourists.
This paper has begun with anticipation of the effects that would occur when big data is actively used in the tourism field. Because the method of use must have applicability and practicality, the spatial scope will be limited to Seosan, Chungcheongnam-do, and research will be conducted. In this paper, to improve the quality of tourism courses by collecting and analyzing the number of mention data and sentiment index data on social media, which reflect the tourist's interest, preference and satisfaction. Therefore, it is used as basic data necessary for the development of new local tourism courses in the future. In addition, the development of tourism courses will be able to promote tourism growth and also revitalizing the local economy.

Key words: *Social Media, Big Data, Tourism Course, Mention Frequency, Sentiment Index.*

1. INTRODUCTION

Big data has recently been used industrially, politically, administratively, and academically in various industries such as tourism, medical care, distribution, and marketing[1]. And it is evolving to the stage of collecting real-time information or analyzing correlations and predicting the future[2]. Through big data analysis, it is possible to create new jobs, new technologies, and develop trends[3,4]. Big data is actively used

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in the tourism industry, it is possible to provide customized tourism services for tourists through a more accurate understanding of tourism patterns and tourism consumption patterns. It can improve the satisfaction of tourists[5]. In addition, it is used for efficient marketing strategies by identifying the size and shape of the tourism market and building a database based on large-capacity cloud computing[6]. According to appear tourism related products based on the social media environment, that use the purpose, motivation, travel route, taste, etc. as information and also invigorate the tourism industry to link with tourism sales. As such, interest in social media big data is increasing recently. With the development of information technology, the use of social media through interactive communication has increased[7], and social media-based data of a huge scale and various forms are being generated. Social media is becoming a means of acquiring and sharing information related to tourism, such as accommodation, destination, and transportation[7]. Accordingly, social media plays an important role in information retrieval and decision-making process in tourism industry[8]. Social media big data analysis is being used in a variety of ways, such as providing advertisements and information, and identifying interest and reactions to specific products or people[9]. And social media is also used as a means of providing information and marketing in tourism industry, such as airlines and travel agencies[10].

This paper has begun with anticipation of the effects that would occur when social media big data is actively used in the tourism field. The development of tourism courses will be able to promote tourism growth and also revitalizing the local economy. Therefore, the purpose of this paper is to develop tourism courses by collecting and analyzing tourism keyword mentions and sentiment index data on social media, which are indicators that reflect tourist's interest, preference and satisfaction. In addition, it will be used as basic data necessary for the development of tourism courses in new regions in the future. In this paper, the study area will be set Seosan, Chungcheongnam-do, and data collection period will be from April 1, 2020 to April 1, 2021. Use the Textom Program to collect and analyze the data of Social Media, and development tourism courses through the mention frequency analysis and sentiment index analysis.

2. METHODS

This paper intends to research and present a method that can utilize big data in the tourism field. Because the method of use must have applicability and practicality, the spatial scope will be limited to Seosan, Chungcheongnam-do, and research will be conducted. In addition, this paper intends to use social media mention data and sentiment index data as big data. This is because social media is the system most closely related to the lives of modern people, and the activities displayed by users in social media reflect the user's interest, preference and satisfaction.

This paper will collect and analyze data recorded through Social Media such as Naver's Blog and Cafe, Daum's Blog and Cafe, Facebook, Twitter, and Youtube. Data collection will use the Textom program, and the data collection period will be set for 1 year (12 months) from April 1, 2020 to April 1, 2021.

The specific research procedure is shown in Figure 1. First, a list of tourist destinations(tourist keywords) in Seosan, Chungcheongnam-do is organized. Second, use the Textom program to collect and analyze the number of mention data and sentiment index data of keywords appearing in social media. As a result of the analysis, a course is developed based on the distance and connection of tourist spots that appear at the top. Table 1 Shows the purpose and scope of social media analysis.

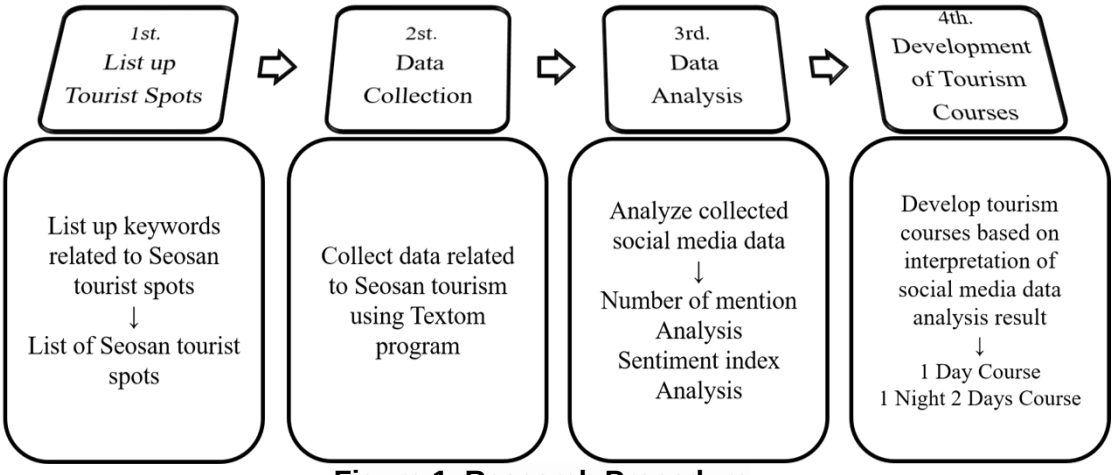

Figure 1. Research Procedure

Table 1. Purpose and Scope of Social Media Analysis

Purpose and Scope of Social Media Analysis	
Analysis Purpose	Development of tourism course in Seosan using Social Media Big Data
Analysis Data Collection Period	April 1, 2020 ~ April 1, 2021 (12months)
Analysis Channel	Naver·Daum(Blog, Cafe), Facebook, Twitter, Youtube
Analysis Method	1. Seosan Tourism keyword data collection using Textom Program 2. Analysis : Analysis of the number of mentions of Seosan tourism keywords on social media 3. Sentiment word : Analysis of sentiment index data of Seosan tourism on social media
Analysis Search Word	Seosan Tourism Spots

3. RESULT

3.1. Trend Analysis of Tourism Keyword according to the Number of Mention

As a result of analyzing the mention frequency by tourist spots using the Textom program, the mention frequency of each tourist spot was found as shown in Figure 2. As shown in Table 2, the top 10 tourist spots of mention frequency were Gayasan Mountain(4,114), Hwanggeumsan Mountain(4,001), Haemieupseong Fortress(3,914), Palbongsan Mountain(3,799), Buseoksa Temple(3,658), Gaesimsa Temple(3,618), Ungdo Island(3,551), Ganwoldo Island(3,540), Munsusa Temple(3,459) and Samgilpohang Port(3,294).

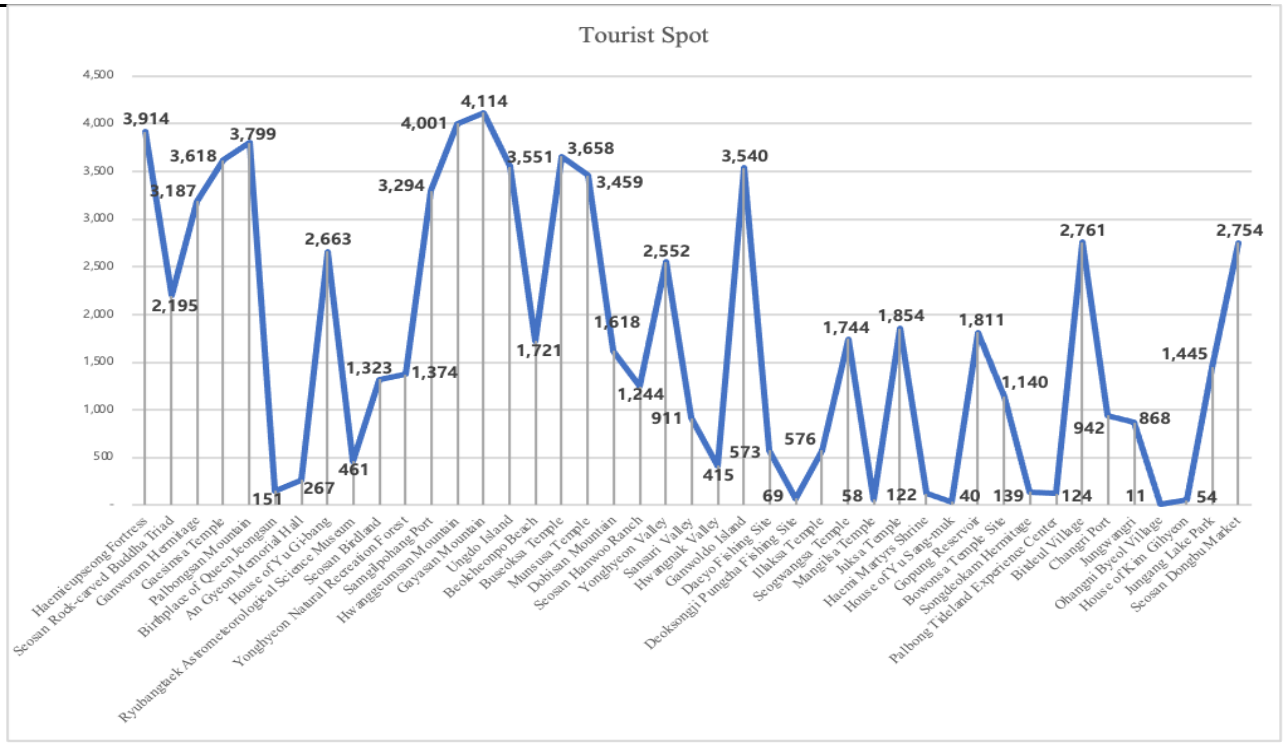

Figure 2. Seosan Tourist Spot Mention Frequency

Table 2. Seosan Tourist Spot Mention Frequency

Ranking	Tourist Spot	Number of Mentions	Ranking	Tourist Spot	Number of Mentions
1	Gayasan Mountain	4,114	16	Seosan Rock-carved Buddha Triad	2,195
2	Hwanggeumsan Mountain	4,001	17	Juksa Temple	1,854
3	Haemieupseong Fortress	3,914	18	Gopung Reservoir	1,811
4	Palbongsan Mountain	3,799	19	Seogwangsa Temple	1,744
5	Buseoksa Temple	3,658	20	Beolcheonpo Beach	1,721
6	Gaesimsa Temple	3,618	21	Dobisan Mountain	1,618
7	Ungdo Island	3,551	22	Jungang Lake Park	1,445
8	Ganwoldo Island	3,540	23	Yonghyeon Natural Recreation Forest	1,374
9	Munsusa Temple	3,459	24	Seosan Birdland	1,323
10	Samgilpohang Port	3,294	25	Seosan Hanwoo Ranch	1,244
11	Ganworam Hermitage	3,187	26	Bowonsa Temple Site	1,140
12	Bitdeul Village	2,761	27	Changri Port	942
13	Seosan Dongbu Market	2,754	28	Sansuri Valley	911
14	House of Yu Gi-bang	2,663	29	Jungwangri	868
15	Yonghyeon Valley	2,552	30	Illaksa Temple	576

3.2. Tourism Keyword Analysis according to Sentiment Index

The result of setiment analysis by Seosan tourist spot using Textom program, the result is shown in Figure 3. Gayasan Mountain and Buseoksa Temple had high index of positive words such as natural and artistic, and negative words such as messy and feeble. Haemieupseong Fortress had a high index of positive words such as enjoyable, and negative words such as boring and hesitate. Ungdo Island had a high index of positive words such as marvelous, beautiful and good, and negative words such as boring and cumbersome.

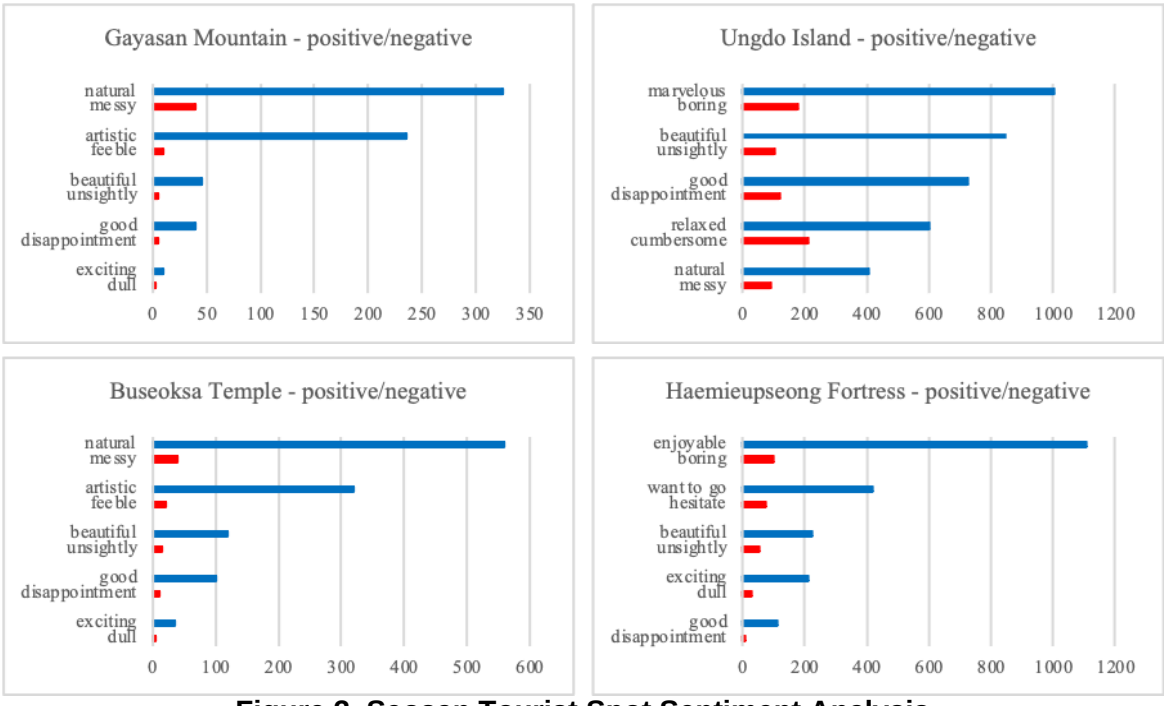

Figure 3. Seosan Tourist Spot Sentiment Analysis

3.3. Analysis of Tourism Course Development by Social Media Mention

Figure 4, Figure 5, Figure 6 and Figure 7 are course developed based on the analysis of metion frequency and sentiment index. Course 1 is a one day course with the theme of “Nature”. The keywords that Seosan has adopted as symbol are clean and eco-friendly, the course was developed with the theme of “Natural” as a reflection of these keywords. With a total length of 67.4km, visitors will visit Jungang Lake Park, Yonghyeon Natural Recreation Forest, Bitdeul Village and Seosan Birdland. Course 2 is a one day course with the theme of “History”. It is a 31.4km course that visit House of Yu Gi-bang, Seosan Rock-carved Buddha Triad, Bowonsa Temple Site, Gaesimsa Temple and Haemieupseong Fortress. Course 3 is one night two days course. On the first day, tourists visit Seosan Rock-carved Buddha Triad, Bowonsa Temple Site, Gayasan Mountain and Haemieupseong Fortress, and on the second day, they visit Ganwoldo Island/Ganworam Hermitage, Dobisan Mountain/Buseoksa Temple and Seosan Dongbu Market. It is 36km on the first day and 31.2km on the second day, totaling 67.2km. Course 4 is one night two days course with Temple Stay(Buseoksa Temple). It is temple tour course that visits Juksa Temple, Buseoksa Temple, Gaesimsa Temple and Munsusa Temple. Seosan has been established as an advanced area of Buddhist art since the Baekje period, the course was developed to reflect this.

Figure 4. Course 1

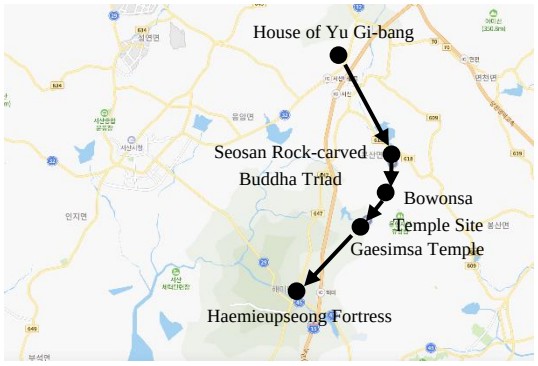

Figure 5. Course 2

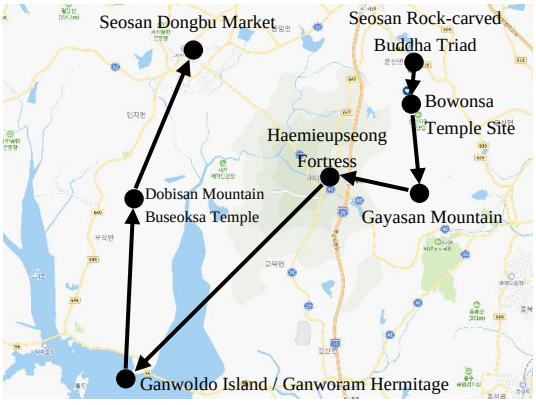

Figure 6. Course 3

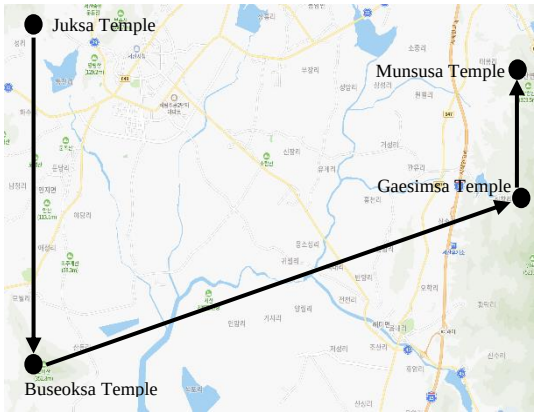

Figure 7. Course 4

4. CONCLUSION

This paper developed a tourism course by collecting and analyzing the mention frequency data and sentiment index data of Seosan tourist spots. The number of mention data reflects the interest, preference, frequency of visits and satisfaction of a large number of tourists, so the result will be an efficient and realistic development of tourism courses. Using the Textom program, data on the number of mentioning tourist attractions in Seosan were collected for 1 year from April 2020 to April 2021 using for blogs, news, cafes, intellectuals, academic information by Naver and Daum which is Web documents, and Google Web, news, Facebook, Baidu, YouTube, and Twitter for analysis and also frequency analysis and emotional analysis were conducted to produce results. First, as a result of analyzing the frequency of mentions by tourist spots in Seosan, Gayasan Mountain(4,114), Hwanggeumsan Mountain(4,001), Haemieupseong Fortress(3,914), Palbongsan Mountain(3,799) and Buseoksa Temple(3,658) appeared at the top. Second, as a result of sentiment analysis by tourist spots in Seosan, showed high positive word indexes such as natural, artistic, enjoyable and marvelous. Based on the results of mention frequency analysis and sentiment analysis, four Seosan tour course development analysis were conducted based on distance and association. Classifying tourist spots based on distance and association would provide tourists with a wide range of options. However, the limitation of this paper is that it was based on the researcher's arbitrary judgment when selecting tourist spots in the course development. Therefore, it is deemed necessary to study the criteria for selecting reasonable and efficient tourist spots in subsequent studies.

Nevertheless, the process of developing a tourism course in Seosan in this paper will be used as a methodology

in the field of tourism course development and will be used as a basic data necessary for the development of tourism courses in new regions in the future.

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