

Study on Promotion of ESG Tourism in Bhutan through Big Data Analysis - Focusing on comparison with ESG Tourism status in Korea-

Min Kyeong Kim

Master's degree, Department of Management, Hallym University of Graduate Studies, Korea
bluepoppykorea@gmail.com

Abstract

The purpose of this study is to revitalize ESG tourism in Bhutan by comparing and analyzing the ESG tourism status in Bhutan and the ESG tourism status in Korea. Big data analysis using text mining was performed by selecting "Bhutan ESG Tourism" and "Korea ESG Tourism" as keywords. The top 30 keywords were extracted through word purification, and based on this, data visualization was conducted through network analysis and Concor analysis between each keyword. As a result of the analysis, it was confirmed that Bhutan, unlike Korea, did not utilize it even though it had elements to incorporate ESG and the tourism industry into the country itself. As a result, since it is necessary to combine ESG elements owned by Bhutan and combine them with the tourism industry, we would like to suggest the direction of combining ESG and the tourism industry through this study.

Keywords: ESG, GNH, Tourism Industry, SDF

1. INTRODUCTION

Bhutan is well known to the general public as a country with the highest happiness index in the world and as a country with clean air and well-preserved nature. In fact, when you search for Bhutan on Naver; Korea's largest search portal site, the first related search word that pops up is "Bhutan Travel," followed by "Bhutan Happiness Index." Bhutan has less than \$3,000 per capita income, but is a country with better welfare for its people than any other welfare state in Northern Europe, a country that is not only rich, but also happy, provides all public education and medical services, free of charge [1]. Bhutan has a population of about 800,000 and a land area of 47,000 square kilometers. The land, which starts at 300m above sea level on the northern border of India, is a highland of altitude more than 3,000m, a slope toward the north, and high mountain peaks such as 7,554m Kula Kangri on the Tibetan border [2].

Tourism and travel also provide positive effects such as economic growth, job creation, revitalization of the local economy, and tax revenue expansion [3], but on the contrary, they also show negative effects [4]. Reckless development of tourism facilities and tourist-centered policies not only destroy the local environment,

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Corresponding Author: bluepoppykorea@gmail.com

Tel: *** - **** - ****

Master's degree, Department of Management, Hallym University of Graduate Studies, Korea

but also reduce the quality of life of local residents, such as "tourism gentrification," and can bring about various social problems and conflicts between tourists and local residents [5]. In addition, there may be cases such as focusing on the development of tourism industries that are deeply related to the natural environment, causing negative effects on local residents and not distributing appropriate profits to local residents [3]. As a result, the concept of "sustainable tourism" began to emerge, resulting in discussions on various alternative tourism such as responsible tourism, ecotourism, and fair tourism [6]. Therefore, based on keywords "Bhutan ESG Tourism" and "Korea's ESG Tourism," this study will examine the current status of ESG tourism in Bhutan and Korea, focusing on the search frequency of Naver, Google, and YouTube, which are representative Korean search sites. This study conducted a big data analysis using the Text-Mining technique, which is "the process or technology of finding new and useful information from unstructured text data," to compare and analyze the tourism status of the two countries. Based on big data analysis techniques using Textom, data from April 1, 2021 to April 1, 2023 was collected using keywords from Naver, Google, and YouTube, and users' search frequency is checked, and what kind of research should be applied to the global topic of "ESG tourism"

2. THEORICAL BACKGROUND

2-1. ESG

ESG stands for the acronyms of Environment, Social, and Governance, and refers to three key elements of corporate management to achieve sustainability focused on environmental management, social responsibility, and transparent governance. This has become an inevitable strategic inflection point not only in corporate management but also in the tourism industry. Hence, it has become an essential element in maintaining a sustainable tourism industry by properly understanding ESG and applying it to the tourism industry.

2-2. GNH

GNH is a concept proposed in 1972 by the fourth king of Bhutan, Jigme Singye Wangchuck, to replace GDP that evaluates only economic development with the aim of improving the quality of life and happiness of the people based on "Buddhist traditional culture." After the official announcement in 1976 that "I will govern the country based on GNH, not GDP," the fourth king declared that the purpose of Bhutan's state operation is not 'development' but 'happiness' [8]. GNH, served as Bhutan's trademark and led to quantifying non-material factors that affect human happiness and well-being in addition to economic growth. The fourth king takes GNH, the concept of "holistic human development," as a major principle in state administration and proceeds with Bhutan's development and modernization work [9].

2-3. Tourism industry

The tourism industry is an industry that absolutely contributes to the livelihood of people in developing countries by utilizing the beautiful natural scenery, cultural festivals, and their own culture that each country has [10]. According to the KDI Economic Information Center, the foreign currency filling rate of the tourism industry is 88%, far higher than 52% of mobile phones and 43% of semiconductors. In addition, the tourism industry's employment inducement coefficient is 15.5 people per 1 billion won, far higher than 9.2 people in the manufacturing industry, and the job creation effect centered on young people is high, so it has already been verified that it plays a very important role in the Korean economy.

2-4 SDF

SDF, an acronym for ‘Sustainable Development fees’ is one of Bhutan's tourism policies. This SDF fee focuses on the 'High value, Low volume' policy, which charges tourists \$65 per night for sustainable development, used for improving social welfare, development activities, environmental conservation, cultural promotion, and on infrastructure and facilities for tourists [11]. Bhutan which closed its border in March 2020, shortly after the outbreak of COVID-19, allowed foreigners to enter the country from 2022 and significantly raised SDF rates. Previously, the Kingdom of Bhutan charged \$250 for peak season and \$200 for off-season, including the \$65 for SDF, but abolished this in 2022 as the government aimed to fundamentally reorganize Bhutan's tourism model. The new model saw the SDF fee raised to \$200 USD per night. Given that many of the existing tourists in Bhutan were Indians with low income levels, it is feared that the increase in SDF costs will hurt the tourism industry in the long run.

3. BIGDATA ANALYSIS

3-1 Research Methods

The analysis method of this study is as follows. First, using Textom, search frequency information on the ESG tourism industry in Korea and keywords on the tourism type of Bhutan were set to collect their search frequency. Textom is a useful software for network analysis that searches and collects data from portal search sites, provides ranking of related keywords, and provides matrix information according to the frequency of appearance of search keywords. Second, data preprocessing was performed based on the collected search frequency data. Third, for more accurate data than the suitability and view of the study, contents not related to the tourism industry and tourism type were removed through the purification process, and similar keywords were grouped into the same keywords to conduct analysis, and keywords related to this study were derived. Fourth, search frequency analysis and TF-IDF analysis were performed, and the connection, proximity, and mediation centrality between each keyword were derived using the Ucinet6 program. Fifth, visualization using NetDraw was implemented, connection centrality analysis was conducted to identify the network between nodes of key keywords, and finally, a cluster between each keyword was formed through Concor analysis. The analysis process is shown in [Figure.1]



Figure 1. Analysing Process

3-2. Subject and duration of study

The scope of data collection was selected as Naver, Daum, Google, and YouTube. The collection period was

two years of search frequency from April 01, 2021 to April 01, 2023. The background of the selection of the collection period was excluded because search frequency data before 2021 was a period of tourism stagnation not only domestically but also globally due to COVID-19. Textom was used as a tool for collecting the above data, and after collecting search frequency data, the search frequency of keywords derived through morpheme purification and purification process was analyzed. The search keyword was selected as "Korea ESG Tourism" to analyze the current status of ESG tourism in Korea, and "Bhutan ESG Tourism" to analyze Bhutan's tourism type, and data derived using Ucniet6 and Netdraw were visualized.

3-3. Big Data Analysis

After collecting the search frequency of "Bhutan ESG Tourism" and "Korea ESG Tourism," which are keywords from April 1, 2021 to April 1, 2023, through text mining, a total of 7,974 words were derived regarding the current status of Bhutan's tourism industry. Among them, the top 30 keywords with the highest frequency of search were derived and applied to this study, and the results are shown in [Table 1-1] and [Table 1-2] below. As shown in the frequency of words in the table, Bhutan is exposed to keywords such as "culture," "happiness," and "Buddhism" at the top, as known. However, keywords representing Bhutan's natural tourism concepts such as "forest," "environment," "resource," "energy," and "gas" and keywords such as "Thimphu," "Himalaya," "Paro," and "Punakha," which are Bhutan's representative tourist destinations, are exposed, while ESG tourism-related keywords are not shown in the word frequency table. In other words, even though Bhutan already has the resources to implement excellent ESG tourism policies on its own, Bhutan's tourism industry has not introduced ESG tourism policies. On the other hand, it can be seen that ESG tourism-related keywords such as "sustainable," "future," "convention," "eco-friendly," and "exhibition" have appeared in Korea.

Table 1-1. Esg Tourism Status in Bhutan words frequency.

Word	Frequency	Word	Frequency	Word	Frequency
Tourism	1285	Thimphu	216	India	138
Industry	836	Himalaya	190	Tourist attraction	133
Bhutan	474	Paro	185	Tourist	124
Type	389	Covid-19	183	Environment	113
Culture	360	Nature	179	Resource	107
Happiness	333	Forest	163	Government	87
Traveling	335	shopping	162	Camping	84
Area	285	Punakha	155	Festival	76
Buddihsm	242	Gas	155	Energy	76
Policy	220	Development	144	Active	68

Table 1-2. Esg Tourism Status in Korea words frequency.

Word	Frequency	Word	Frequency	Word	Frequency
Tourism	5491	Policy	660	Promotion	269
Industry	4735	Incheon	493	Resource	268
Korea	3820	Seoul	492	Carbon	264
Area	1453	Jeju	466	Spread	262
Culture	1256	Future	430	Busan	244
Support	1114	Eco-friendly	401	Fair	193
Traveling	770	City	316	Leisure	176
Tourism Organization	745	Agreement	316	Festival	163
Environment	742	Coivd-19	310	Energy	159
Sustainable	700	Hotel	288	Tourist attraction	137

4. RESULT AND DISCUSSION

4-1. TF-IDF Analysis

TF-IDF analysis is a value calculated in consideration of the TF-IDF weight by multiplying TF, the frequency of words including keywords, and IDF, the frequency of documents, which indicates the importance of keywords. In other words, TF-IDF is an analysis technique used in the field of information search and text mining, which is a statistical-based technology that shows how important words are within specific documents in various documents. The TF-IDF analysis results are shown in [Table 2-1] and [Table 2-2]. TF-IDF analysis shows that the word frequency and TF-IDF values do not exactly match, but are generally in a similar ranking, and among them, the ranking of TF-IDF analysis values and word frequency of keywords such as 'tourism', 'industry', 'Bhutan' and 'Korea' are not much different from the ranking. Key keywords such as "tourism," "industry," 'Bhutan' and "Korea" are key keywords, so the TF value is estimated to be high due to high search frequency, and the IDF value is also estimated to be high in different documents.

Table 2-1. Esg Tourism Status in Bhutan TF-IDF Analysis.

Word	TF-IDF	Word	TF-IDF	Word	TF-IDF
Tourism	1722.422939	Policy	573.0705123	Tourist attraction	381.1071215
Industry	1167.711397	Buddhism	570.6060311	Tourist	376.9828205
Bhutan	953.0076294	Shopping	526.8285412	Environment	367.4791676
Happiness	787.6735361	Gas	511.1920375	Festival	320.2870947
Culture	782.0351633	Support	507.5347426	Energy	304.2276036

Traveling	780.2211473	Covid-19	493.5947892	Active	246.8257566
Type	721.4239841	India	476.1282846	Government	295.5267313
Area	682.1637083	Himalaya	473.7916627	Nature	182.9144004
Forest	614.5707156	Punakha	438.817342	Resources	369.1719308
Timpu	600.4092377	Development	432.6430973	Camping	332.3438805

Table 2-2. Esg Tourism Status in Korea TF-IDF Analysis.

Word	TF-IDF	Word	TF-IDF	Word	TF-IDF
Toursim	5464.068764	Sustainable	1742.588959	Busan	970.8124102
Korea	3419.373765	Incheon	1645.285735	Gas	933.3051769
Industry	3065.276995	Jeju	1582.598481	Promotion	907.799676
Area	2960.151502	Seoul	1414.486444	Resource	898.8063016
Culture	2405.143492	Future	12317.344974	Spread	869.0778086
Support	2371.981659	Eco-Freindly	1226.181118	Fair	733.7086432
Traveling	2018.898181	City	1058.478044	Leisure	690.9578552
Policy	1866.007846	Agreement	1058.478044	Festival	664.4495904
Environment	1798.203485	Covid-19	1002.152414	Energy	637.6278504
Tourism				Tourist	
Organization	1770.927292	Hotel	986.9488527	Attraction	553.8582905

4-2 Connection Centrality Analysis

In order to confirm the degree and medium of connection between keywords, the centrality of connection between keywords was analyzed, and then visualization was performed as shown in [Figure 2-1] and [Figure 2-2]. Connection centrality analysis can be divided into three categories: connection, mediation, and proximity centrality. As a result of connection centrality visualization analysis, each keyword of 'industry', 'development', 'energy', 'type', and 'empty culture' was determined. [Figure 2-2] shows the connection centrality of ESG tourism status in Korea, and keywords such as 'Tourism', 'Travel', 'Industry', 'area', and 'City' were located around the key keyword 'Tourism', and the size of nodes was also determined in the order of frequency of each keyword. The biggest difference between [Figure 2-1] and [Figure 2-2] is that among the keywords in [Figure 2-2], the keyword 'sustainable' has settled around 'tourism', which is a keyword related to ESG tourism currently introduced by Korea, but cannot be found in the connection-centered analysis related to the current status of ESG tourism in Bhutan.

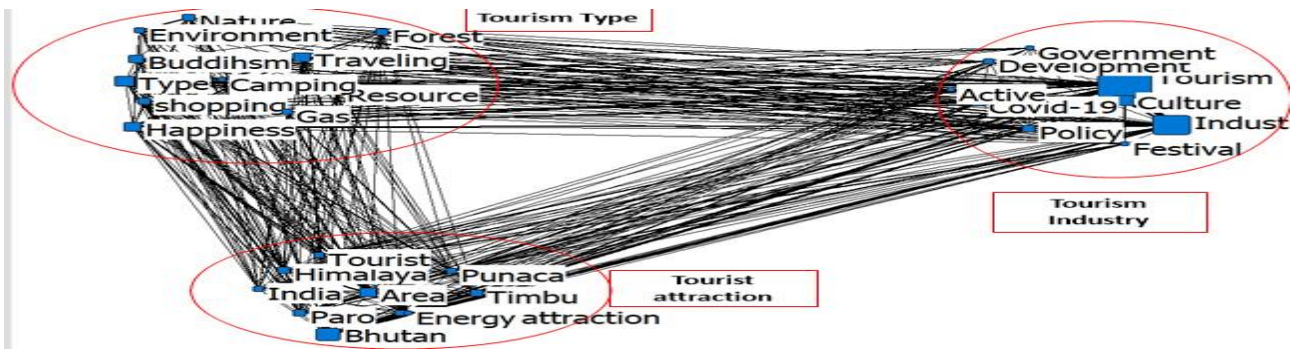


Figure 3-1. Concor Analysis of the ESG Tourism Status in Bhutan

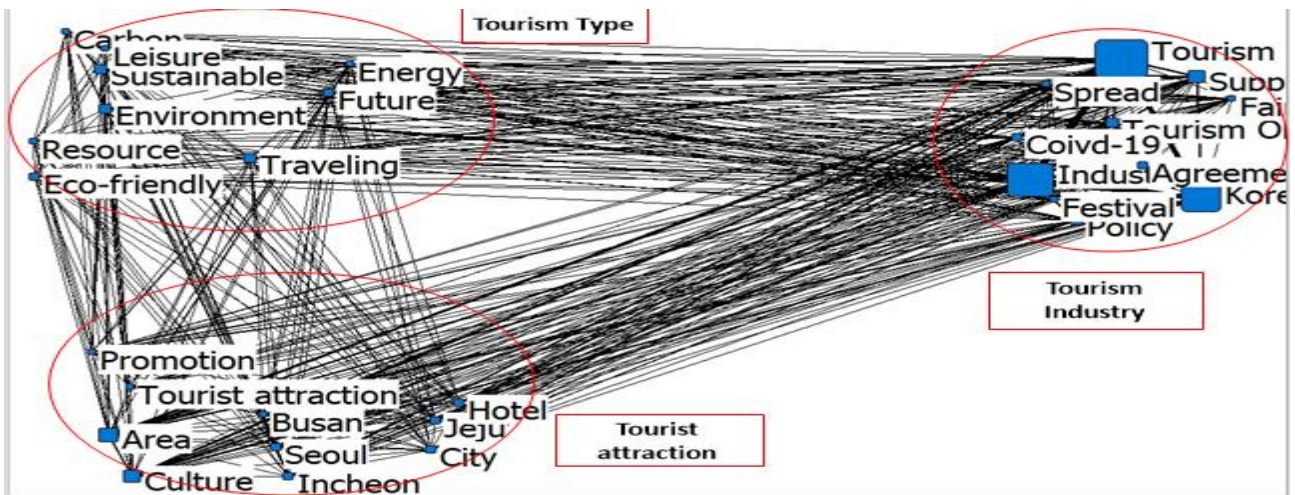


Figure 3-2. Concor Analysis of the ESG Tourism Status in Korea

Table 3. Keywords of the Concor Analysis of Bhutan and Korea

Cluster	ESG Tourism Status in Bhutan	ESG Tourism Status in Korea
Tourism Industry	Tourism, Culture, Energy, Active, Festival, Covid-19, Industry, Policy, Development, Government	Tourism, Korea, Industry, Agreement, Policy, Support, Spread, Tourism Organization, Fair, Festival
	Total 10 Keywords	Total 10 Keywords
Tourism Type	Buddhism, Camping, Environment, Type, Shopping, Resources, Forest, Nature, Traveling, Happiness, Gas	Eco-friendly, Energy, Sustainable, Environment, Future, Carbon, Leisure, Traveling, Resources
	Total 11 Keywords	Total 9 Keywords
Tourist Attraction	Tourist, Thimphu, Tourist Attraction, India, Paro, Himalaya, Bhutan, Area, Punakha	Promotion, Busan, Seoul, Jeju, Culture, Area, Incheon, Tourist attraction, City, Hotel
	Total 9 Keywords	Total 11 Keywords

5. CONCLUSION

This study collected keywords based on the search frequency of representative online portal sites such as Naver, Google, and YouTube based on text mining analysis techniques to compare and analyze the current status of ESG tourism in Bhutan and Korea. The collection keywords were selected as "Bhutan ESG Tourism" and "Korea ESG Tourism," and the collection period was selected from April 1, 2021 to April 1, 2023. During the collection process, duplicate keywords were excluded by crawling the search frequency of online portal sites, and as a result, a total of 7974 keywords for "Bhutan ESG Tourism" and 1,1551 keywords for "Korea ESG Tourism" were derived. The results of the comparative analysis of each search frequency using big data analysis techniques are as follows.

First, it was confirmed that keywords related to the overall tourism industry such as "tourism," "industry," and "culture" were common in both keywords of "Bhutan ESG Tourism" and "Korea ESG Tourism." In addition, it was confirmed that keywords explaining tourism types such as "happiness," "travel," "buddhism," and "nature" and keywords meaning tourist destinations in each country such as "Himalaya," "Thimphu," "Paro," "Seoul," "Jeju," and "Busan" were frequently searched. However, keywords that combine ESG and tourism, such as "sustainable," "agreement," and "exhibition," can be found in search frequencies related to "Korea ESG Tourism," while ESG tourism-related keywords cannot be found in search frequencies related to "Bhutan ESG Tourism." Bhutan is a country that preserves the natural environment well in itself, and even though it has ESG-related elements in the country itself, it seems that it is not being utilized due to the policy of the country called GNH (Gross National Happiness Index).

Second, when comparing the connection between the keywords of "Bhutan ESG Tourism" and "Korean ESG Tourism" through Concor analysis, there were three clusters in both countries, and the classification of clusters could be equally divided into tourism industry, tourism type, and tourist destinations. However, the difference between the keywords classified within the two clusters of tourism industry and tourism type between the two countries is whether ESG tourism is realized. In the tourist attraction cluster, ESG-related keywords such as "Thimphu," "India," "Punakha," "Himalaya," "Seoul," "Jeju," and "Busan" were found, but the results of the analysis of "Bhutan ESG" were not found. What can be confirmed through this is that Bhutan has enough resources to incorporate ESG into tourism, but it is not being utilized.

As a result, Bhutan's tourism industry status uses a policy that limits the development of tourism by emphasizing the happiness of its citizens (GNH) rather than the development of its own tourism industry in the name of protecting its own culture and nature [12]. The development of the tourism industry contributes to the growth of the national economy. In addition, the development of the tourism industry can revitalize the local economy, contribute to job creation, and increase tax revenue in the region. Currently, tourist attractions in Bhutan are being activated mainly in areas with relatively high development and promotion, but the degree of tourism activation in the eastern and southern regions is insufficient. Through this study, it is judged that sustainable tourism planning is necessary for the development of the region by combining ESG elements owned by Bhutan with the tourism industry.

The limitations and future supplements of this study are as follows. This study collected and analyzed data and keywords from cafes, blogs, and news on online portal sites. Unlike surveys, these portal sites have limitations in classifying search frequency by nationality, generation, and gender because they do not reflect demographic characteristics such as the author's age and gender when collecting data. In addition, the Bhutanese tourism sector has had a long standing history of their "High value, Low volume" policy that imposes a sustainable development fee (SDF) on tourists to alleviate the negative impact of public tourism, but no content related to this policy was detected in the text mining conducted by this study. Therefore, in order to compensate for this, it is necessary to derive more in-depth research results using the questionnaire technique, a social science analysis technique. In future studies, to compensate for this, more accurate research results can be presented using questionnaire techniques and emotional analysis inside Textom.

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