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Analysis on Types of Golf Tourism After COVID-19 by using Big Data

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Abstract

Introduction. In this study, purpose is to analyze the types of golf tourism, inbound or outbound, by using big data and see how movement of industry is being changed and what changes have been made during and after Covid-19 in golf industry.

Method Using Textom, a big data analysis tool, "golf tourism" and "Covid-19" were selected as keywords, and search frequency information of Naver and Daum was collected for a year from 1st January, 2023 to 31st December, 2023, and data preprocessing was conducted based on this. For the suitability of the study and more accurate data, data not related to "golf tourism" was removed through the refining process, and similar keywords were grouped into the same keyword to perform analysis. As a result of the word refining process, top 36 keywords with the highest relevance and search frequency were selected and applied to this study. The top 36 keywords derived through word purification were subjected to TF-IDF analysis, visualization analysis using Ucinet6 and NetDraw programs, network analysis between keywords, and cluster analysis between each keyword through Concor analysis.

Results By using big data analysis, it was found out option of oversea golf tourism is affecting on inbound golf travel. "Golf", "Tourism", "Vietnam", "Thailand" showed high frequencies, which proves that oversea golf tour is now the re-coming trends.

Keywords: Golf-Tourism, COVID-19, Big-Data

1. INTRODUCTION

1.1 COVID-19

Covid-19, short form of 'Coronavirus Disease 2019', is caused by the severe acute respiratory syndrome coronavirus 2(SARS-CoV-2). It was first identified in December 2019 in Wuhan, China and has since become

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global pandemic. It critically damaged global economy [5]. Due to Covid-19, tourism industry had been critically affected. It was almost impossible for an outdoor activity. Countries were shut down, resisted on accepting tourists from abroad, governments would halt their citizens from going outside their home by bringing curfews and social distances. But as vaccines being invented, people were willing to be vaccinated and would slowly stretch to go outside. However, golf industry were somehow not very much in dent by Covid-19.

1.2 Golf-Tourism

Before Covid-19, golfers would go overseas like Japan, Thailand, Vietnam, Malaysia and etc. as golf travel as it is cheap and better weather to play than South Korea. But as Covid-19 dominated the world, players who went abroad, had to stay in the country, and they would move their eyes on fields within the country. Golf is a game of small scale number of players, so social distance were not much of a problem. In 2020, people who visited Golf Club increased 12.7% compared to the previous year, which exceed 10%, the growth rate of previous 10 years [7][10] gave the reason for increase in visitors of domestic golf club as change in lifestyle and pattern due to Covid-19, alternatives for oversea golf tourism.

1.3 Importance and Purpose of this Study

Purpose in this study is to analyze the types of golf tourism, inbound or outbound, by using big data and see how movement of industry is being changed and what changes have been made during and after Covid-19 in golf industry.

2. METHOD

2.1 Research Subject

This research selected Naver, Google and Daum(including blogs, news, café, web, and Jisik-in) as data collection channels. The chosen search items for information retrieval were “Covid-19” and “Golf-Tourism”. This decision was made to maximize the date collection by selecting most related keywords to the topic of this study. After individual analyses, the data value were aggregated, and a refinement process was conducted. Furthermore, the data analysis period ranged from 01 January, 2023 to 31 December, 2023. The keywords were limited to 50.

2.2 Research Tool

This study employed Text Mining and Semantic Network Analysis. Text Mining is a process and technique that summarizes vast amounts of text data to meet the user's specific objectives. It utilizes text processing technologies in various fields to structure documents. The structured documents are then analyzed to gain new insights for problem-solving in each respective .

Semantic Network Analysis involves analyzing the meaning of words through the structural relationships of their components in messages. It enables visualizing the interrelatedness between individual nodes and showing which nodes form the discourse, facilitating organizational analysis [12].

Furthermore, this study followed the two refinement procedures proposed by Lee, Jeong Hak, Lee, Jae Moon, Kim, Hoo Yeon [8]. Firstly, in the refinement process, the study examined words connected to key terms to understand the precise meaning of individual words. Secondly, to comprehend the accurate meaning of extracted words, direct searches were conducted aligned with the data collection channels and periods.

2.3 Data processing

This study utilized the social matrix program, Textom, for data collection and analysis. The analysis involved examining the frequency, TF-IDF, and centrality of words. To explore the connection structure and relationships among words, NetDraw function in Ucinet6 was used for visualization, and CONCOR (cluster) analysis was conducted. It's important to note that determining a word as a key word solely based on its high frequency might not be accurate [8].

TF-IDF (Term Frequency-Inverse Document Frequency) is a weight commonly used in information retrieval and text mining. It quantifies the statistical importance of a specific word within a document, considering a collection of documents. It is utilized for purposes such as measuring the similarity between documents, determining search engine result rankings, and extracting keywords from documents (Wikipedia, 2019).

Furthermore, centrality measures how many words are connected to a specific word and quantifies the degree to which the word is central. Higher centrality is associated with a larger number of connected words, indicating the word's importance [9]. CONCOR (Convergence of iterated correlations) analysis, a widely used method in structural equivalence analysis, identifies blocks and relationships among words based on Pearson correlation analysis of the co-occurrence matrix of words. Structural equivalence involves finding words that are structurally equivalent in their connections, indicating similarity among words.

3. RESULT

3.1 Data mining

From 01 January, 2023 to 31 December, 2023, texts were collected from Naver, Google and Daum, including blogs, cafes, Jisik-in, news, and web documents, using the keywords 'golf tourism' and 'covid 19.' The collected texts contained a total of 42,245 words, with a cumulative size of 6.96MB.

3.2 Text Mining Analysis Result

Results from the text mining analysis on covid-19 and golf tourism, including word frequency, TF-IDF, and centrality, are presented in the following Table 1. According to the frequency result, Covid(12,560), Golf(4,865), Tourism(3,440), Confirmed(1,745), Country Club(1,656), Hotel(1,586), Tour(1,524), Isolate(946), Vietnam(756), Visit(713), were in order. In TF-IDF result, Covid(11,853.9), Golf(7395.2), Tourism(5584.7), Hotel(4307.4), Confirmed(4194.5), Country Club(4105.5), Tour(3677), Isolate(2922), Vietnam(2251.7), Visit(2342). Centrality measurements were as follow, Covid(0.06), Golf(0.113), Tourism(0.085), Confirmed(0.030), Country Club(0.029), Hotel(0.039), Tour(0.042), Isolate(0.022), Vietnam(0.026), Visit(0.018).

Table 1. Frequency and TF-IDF of Words

| Word | Frequency | TF-IDF | Word | Frequency | TF-IDF |
|--------------|-----------|---------|-------------|-----------|--------|
| Covid | 12560 | 11853.9 | Golf Tour | 462 | 1631.5 |
| Golf | 4865 | 7395.2 | Clear | 458 | 1596.3 |
| Tourism | 3440 | 5584.7 | Resort | 441 | 1616 |
| Confirmed | 1745 | 4194.5 | Product | 440 | 1586.7 |
| Country Club | 1656 | 4105.5 | Recovery | 392 | 1458.2 |
| Hotel | 1586 | 4307.4 | Jeju | 364 | 1477.5 |
| Tour | 1524 | 3677 | Reservation | 362 | 1361.4 |
| Isolate | 946 | 2922 | Tourists | 319 | 1232.4 |
| Vietnam | 756 | 2551.7 | Hanjin Tour | 307 | 1225.2 |

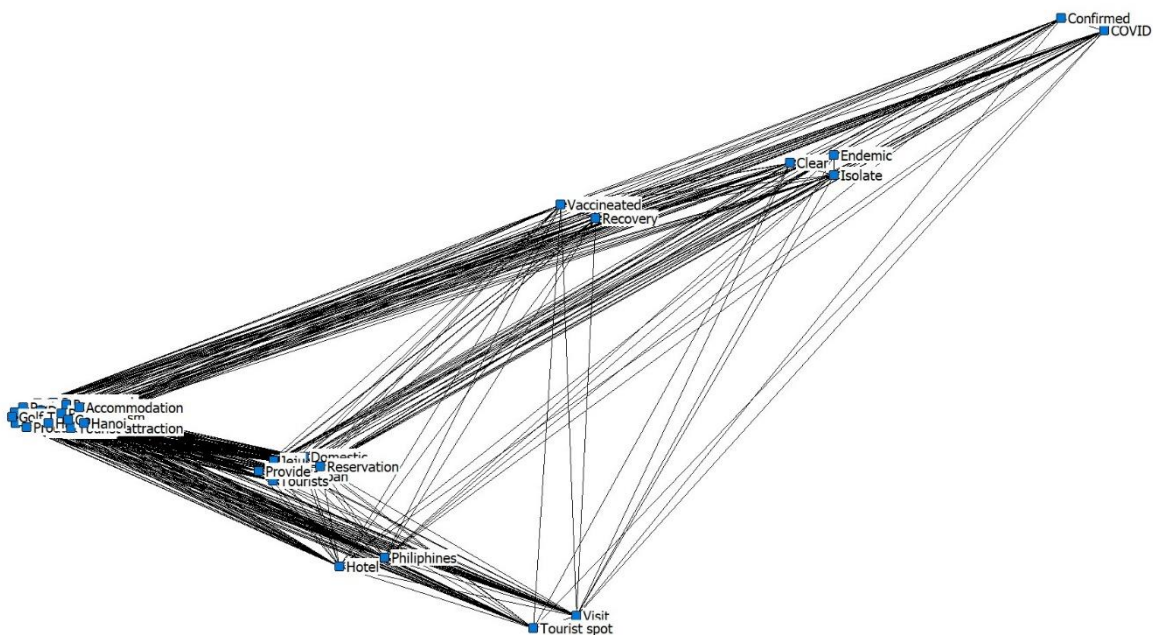


Figure 2. CONCOR Analysis Results

4. CONCLUSION

This study examined the types of Golf Tourism after Covid-19 using big data analysis through Textom. The goal was to understand the shifts in golf tourism and possibly change the marketing concept following the upcoming trend. Text mining was conducted in the range of Jan 2023 to December 2023 due to the end of social distancing was in the middle of this time, and people were freely leaving abroad. Cluster and frequency of words highlights the tourists' interests are now shifting from domestic to abroad.

However, this study doesn't concern with any of demographic information as Textom doesn't include it. Therefore, follow-up study, to cover up the above matter, qualitative study must be done using Delphi Method, Focus Group study and etc. Through this study, we could see the interests of overseas golf tourism, hence individual analysis of destinations would give more diverse outcomes.

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