IJIBC 24-2-5

Research on Changes in the Coffee and Tourism Industries After the End of COVID-19 Through Big Data Analysis

Hyeon-Seok Kim*, Gi-Hwan Ryu**

Ph. D. Student, Department of Immersive Content Convergence, Graduate School of Kwangwoon University, Seoul, Korea*
Professor, Department of Tourism and Food Industry, Graduate School of Smart Convergence, Kwangwoon University, Seoul, Korea **
{2021155010, allryu} @kw.ac.kr

Abstract

In early 2020, as the COVID-19 pandemic hit the world, widespread changes occurred throughout society. COVID-19 also brought changes in consumers' consumption behaviors and preferences. This study aims to find out how the current status of the tourism industry and the coffee industry has changed since the end of COVID-19 by conducting big data analysis focusing on the search frequency of Naver, Google, and the following, which are representative social networks in Korea. Designating "Coffee Industry + Tourism Industry" as the representative keyword, January 1, 2020 to December 31, 2020, the time of each COVID-19 outbreak, was set before the COVID-19 type, and January 1, 2023 to December 31, 2023 was set after the end of COVID-19. Based on the analyzed search binder big data analysis within the period, we would like to find out how the current status of the tourism industry and the coffee industry has changed since the end of COVID-19. Finaly, the coffee and tourism industries are on the path of recovery and growth. In particular, the rise in coffee consumption, the recovery of the number of tourists, the emphasis on local tourism, and the strengthening of links with global markets are prominent.

Keywords: Coffee Industry, Tourism Industry, Big Data, Covid-19

1. Introduction

1-1 Research background

At the beginning of 2020, the COVID-19 pandemic hit the world, bringing widespread changes across society. It also posed a major challenge to the coffee industry, which was expected to grow to a scale of W9 trillion. With contact between people to be minimized, quarantine authorities implemented a strong social distancing campaign, which directly led to a decline in sales in the food service and coffee industries.

The impact of COVID-19 has gone beyond a simple economic contraction, breaking with existing practices in all areas of society, including labor, education, healthcare, consumption, culture, and industry, and accelerating new changes. In particular, social change centered on millennials who are familiar with digital technology has formed a new lifestyle called the "COVID-19 New Normal" [1].

The unmanned service can be expected to have a long-term effect of reducing manpower, saving labor costs, and reinvesting the saved costs into service improvement by mechanizing simple tasks such as ordering and calculating. The spread of the untact (non-face-to-face) culture has also changed the way commercial facilities operate, such as installing kiosks at the entrance of stores and introducing delivery services to the door through delivery apps [2]. These changes have led companies to move toward agile adaptation to the new normal and seeking long-term stability and cost reduction.

Social changes since the COVID-19 pandemic have also affected the coffee consumption culture. With the rise of contactless services, there has also been a change in the way coffee is enjoyed. The kiosk installation at the entrance of the store or delivery services using Internet of Things (IoT) technology are part of these changes, allowing consumers to purchase and enjoy coffee more conveniently and safely.
The tourism industry can be negatively affected not only by economic problems but also by non-economic problems. Examples of the negative impact of the tourism industry on political issues include China's ban on its citizens' tourism to Korea under the so-called Terminal High Altitude Area Defense (THAAD) in retaliation for Korea's deployment of Terminal High Altitude Area Defense (THAAD) as an advanced missile defense system. Examples of the negative impact of the tourism industry on infectious diseases such as COVID-19 include SARS, which occurred from November 2002 to July 2003 in Hong Kong, and MERS, which occurred from May 2015 to July 2015 in Korea [3].

Infectious diseases have a negative impact on the tourism industry because infectious diseases are diseases that spread rapidly by people's contact, and in the case of new infectious diseases without vaccines or therapeutic drugs, reducing people's movement and interaction is the only way to block infectious diseases. It emphasizes that the direct contribution to the spread of infectious diseases is the interaction of people's movement and exchange. Since countries around the world have implemented policies to block contact between people due to travel restrictions in the event of an infectious disease such as COVID-19, the negative impact on tourism activities has been more serious than other disasters [4]. From January to May 2020, when COVID-19 began in earnest, the number of global tourists decreased by 56% compared to the same period last year, and the number of global tourists is expected to decrease by 850 million to 1.1 billion in 2020. In addition, the Philippines' assistant secretary of tourism said that the number of global tourists to the Association of Southeast Asian Nations (ASEAN) decreased by 23% and tourism revenue by 36% in the first quarter due to COVID-19. The number of foreigners visiting Korea between April and June 2020 decreased by 97.8% compared to the same period last year, and the number of Koreans who went abroad during the same period decreased by 98.4% (Yonhap News, September 8, 2020). This outlook and the decrease in the number of tourists show that COVID-19 is negatively affecting the tourism industry.

1-2 Purpose of Research

Along with these technological changes, COVID-19 has also brought changes in consumers' consumption behaviors and preferences. The prolonged pandemic has created a new consumption trend to relieve stress and depression in everyday life. This has been shown to be an increase in demand for comforting products such as coffee, and consumers have been spending more on products that reduce anxiety and increase happiness In this study, we will conduct a big data analysis focusing on the search frequency of Naver, Google, and Daum, Korea's representative social networks, to find out how the current status of the tourism and coffee industries has changed since the end of COVID-19. Designating "coffee industry + tourism industry" as the representative keyword, each COVID-19 outbreak period from January 1, 2020 to December 31, 2020 was set before the COVID-19 type, and from January 1, 2023 to December 31, 2023 was set after the end of COVID-19. Based

on the analyzed searchbinder big data during the period, we would like to find out how the current status of the tourism industry and the coffee industry has changed since the end of COVID-19.

2. Theory

2-1. Tourism Industry

Regarding the definition of tourism, scholars and international organizations presented various perspectives, which changed depending on the researcher's perspective, the purpose of tourism, the period, distance, and the emphasis on specific functions. For example, Leiper defined tourism in 1979 as "a system with the content of freely traveling away from the usual residence and temporarily staying for at least one night, excluding activities for employment purposes," and the five elements of the tourism-related system were tourists, target areas, traffic lines, destinations, and industries. It was said that these five elements were spatially and functionally interconnected.

Smith defined tourism in 1988 as "the aggregate of all industries that directly provide goods and services for business, relaxation, and leisure activities away from daily life." Lundberg et al. defined tourism in 1995 as "the concept encompassing travelers and businesses away from home, and those who serve to make travel easier and more enjoyable."

The UNWTO described the definition of tourism in 1982 as "the act of leaving one's country for the purpose of pleasure, entertainment, vacation, sports, business and work, friends and relatives, meetings, health, research, and religion (excluding migration and employment) and visiting and staying at a tourist destination for a period of more than 24 hours and less than one year."[5] Lee Dong-soo said in 2012 that among the UNWTO's tourism concepts, demand-side tourism refers to the role of visitors in the activities of visitors and the use of services of goods, and supply-side tourism can be considered a production activity that provides services (food, etc.) to visitors. In order to understand the structure of the tourism industry, it is necessary to consistently explain the relationship between related industries that supply products and services generated by tourism activities.

2-2 Coffee Industry

The German etymology of "Industrie" comes from the Latin word "Industria," which means activity, diligence, and diligence. It is characterized by manufacturing physical products and performing additional work using factories and facilities in a field of economy or industry. In particular, Industrie is closely related to a high level of mechanization and automation, and the development and progress of this manufacturing method is called "Industrialization."

In English, "Industry" is a term that means the production of a service or product within the economy and is used as a broader concept encompassing various fields, such as not only the manufacturing industry but also the service industry and the art industry. This recognizes diversity in the economic field and suggests that not only product production but also the creation of various services and cultural values is considered part of industrial activities .

Therefore, when defining the coffee industry, it is not limited to simply the production, sale, and consumption of coffee products. The coffee industry, in a broad sense, includes all processes related to coffee, from the production of all types of ingredients to sales and consumption, as well as the intangible culture created by coffee [6]. In the sense of consultation, the focus can be on the cafe industry. This definition shows that the coffee industry is a complex industry that encompasses various aspects, such as economic value, socio-cultural influence, and lifestyle changes, beyond the manufacturing and selling of products. The coffee industry

is globally connected, and its scope continues to expand.

Coffee has become a cultural symbol and social phenomenon beyond simple beverages in Korea, which has a positive impact on the continued growth and development of the coffee industry [7].

2-3 Bigdata Analysis

The concept of "big data" was first introduced in the "The Data Deluge" report released by The Economist in 2010 [8]. The term was originally used to refer to vast amounts of unstructured data, but in modern times it is being used in a broader sense, including technologies and organizations related to the processing and analysis of complexly accumulated data. The rapid development of digital technology and the popularization of mobile devices have accelerated the speed of information generation and dissemination unprecedentedly. These changes have led society to the era of big data. Compared to the analog era, this era is much larger in volume and the cycle of data generation is much shorter. Big data technology focuses on creating new business value by analyzing large amounts of text or video data generated during a specific period. This includes the analysis of vast amounts of data that far exceed the size of existing data, and of structured and unstructured data that are difficult to collect, analyze, and store in traditional ways [9].

Big data is based on the three main characteristics of the data: 'Volume', 'Velocity', and 'Variety'. 'Volume' refers to the amount of data, 'Speed' refers to the speed at which the data is created and processed, and 'Diversity' refers to the various forms and sources of the data. These characteristics mean that big data poses new types of data problems that are difficult to process with traditional database management tools and technologies. In addition, big data includes two additional dimensions: 'Veracity' and 'Value'. 'Accuracy' emphasizes the reliability and accuracy of the data, and 'Value' emphasizes the ability to extract useful information from the data [10].

3. Bigdata Analysis

3-1 Analysis Method

The analysis method of this study is as follows. First, by using TEXTOM, keywords related to the current status of the coffee industry and tourism industry before and after COVID-19 were set and their search frequencies were collected. Second, data preprocessing was performed based on the collected search frequency data. Third, for the suitability and more accurate data of the study, contents not related to the tourism industry and the coffee industry were removed through a purification process, and similar keywords were grouped with the same keywords for analysis. Through this, keywords related to this study were derived. Finally, a comparative analysis of search frequency was performed to analyze the current status of the tourism industry and coffee industry before and after the end of COVID-19.

3-2 Comparative analysis of word frequency

The top 30 search frequencies were derived from before and after COVID-19 and applied to this study by applying the keyword "coffee industry + tourism industry" from January 1, 2020 to December 31, 2020, and from January 1, 2023 to December 31, 2023, respectively, through text mining. The results are shown in Table 1 and Table 2 below

Table 1. Word Frequency about Coffee and Tourism Industry Before End of Covid-19

Word	Frequency	Word	Frequency
Tourism Industry	5870	**Corporation**	342
Coffee	3929	**Beverage**	341
Coffee Industry	3098	**Training**	339
Covid-19	1122	**Gangneung City**	335
Hotel	1008	**Investment**	325
Travel	947	**Event**	324
Region	757	**Tourist Spot**	307
Tea	690	**Government**	305
Café	647	**Plan**	293
Tourist	638	**Coffee Shop**	291
Korea	530	**Online**	290
Culture	484	**Cultivation**	287
Business	471	**Barista**	286
Support	427	**Export**	280
Jeju	357	**Brand**	275

Table 2. Word Frequency about Coffee and Tourism Industry After End of Covid-19

Word	Frequency	Word	Frequency
Coffee	5106	**News**	546
Tourism	3735	**Growth**	543
Coffee Industry	3708	**Support**	539
Tourism Industry	2719	**China**	524
Tourist	1330	**Global**	425
Region	1249	**Corporation**	398
Travel	1081	**Attraction**	394
Busan	881	**Utilization**	387
Economy	845	**Possible**	344
Culture	837	**Foreigner**	343
Café	793	**Photo**	336
Hotel	758	**Content**	335
Vietnam	640	**Expo**	320
World	640	**Thailand**	302
Business	637	**Tourist Spot**	289

Post-Ending Changes: The frequency of keywords related to the coffee industry ('coffee', 'coffee industry') has increased. This means that people's interest in and consumption of coffee has increased since the COVID-19 pandemic. In particular, the significant increase in mentions of 'coffee' may reflect the spread of coffee culture and the everydayization of coffee consumption.

The frequency of the keyword 'cafe' has also increased, indicating that people have begun to enjoy cafe culture again.

4. Discussion

Considering that the frequency of keywords related to 'tourism industry' and 'tourism' has changed, it suggests that the tourism industry is recovering. In particular, the significant increase in the mention of 'tourists' means that the demand for domestic and international travel is increasing.

The increase in the keyword 'regional' indicates that the importance of local tourism is being emphasized more. In particular, the emergence of specific regional names such as 'Busan' reflects that a specific area has succeeded in attracting tourists or is drawing attention to revitalizing local tourism.

The emergence of keywords such as "Vietnam," "World," "China" and "Global" shows that the coffee and tourism industries are becoming more closely linked to international markets. This could mean a recovery in international tourism and increased business opportunities in global markets.

Since the end of COVID-19, the coffee and tourism industries have been on the path of recovery and growth. In particular, the rise in coffee consumption, recovery in the number of tourists, emphasis on local tourism, and strengthening of links with global markets are prominent. These changes suggest that people's lifestyles and economic activities are forming a new pattern different from before the pandemic.

5. Conclusion

The results of this study are as follows. In early 2020, as the COVID-19 pandemic hit the world, widespread changes occurred throughout society. COVID-19 also brought changes in consumers' consumption behaviors and preferences. This study aims to find out how the current status of the tourism industry and the coffee industry has changed since the end of COVID-19 by conducting big data analysis focusing on the search frequency of Naver, Google, and Daum, Korea's representative social networks. Designating "coffee industry + tourism industry" as the representative keyword, January 1, 2020 to December 31, 2020, the time of each COVID-19 outbreak, was set before the COVID-19 type, and January 1, 2023 to December 31, 2023 was set after the end of COVID-19. Based on the analyzed searchbinder big data analysis during the period, we would like to find out how the current status of the tourism industry and the coffee industry has changed since the end of COVID-19.

The changes in the tourism industry and the coffee industry since the end of COVID-19 are as follows. First, the frequency of keywords related to the coffee industry ('coffee', 'coffee industry') increased. This means that people's interest in and consumption of coffee has increased since the COVID-19 pandemic. In particular, the large increase in mentions of 'coffee' can reflect the spread of coffee culture and the dailyization of coffee consumption.

Second, the frequency of keywords related to 'tourism industry' and 'tourism' has changed, suggesting that the tourism industry is recovering. In particular, the significant increase in the mention of 'tourists' means that the demand for domestic and international travel is increasing.

Third, the emergence of keywords such as 'Vietnam', 'World', 'China' and 'Global' shows that the coffee and tourism industries are more closely linked to the international market. This could mean the recovery of international tourism and increased business opportunities in the global market.

In other words, the coffee and tourism industries are on the path of recovery and growth. In particular, the rise in coffee consumption, the recovery of the number of tourists, the emphasis on local tourism, and the strengthening of links with global markets are prominent. These changes suggest that people's lifestyles and economic activities are forming a new pattern different from before the pandemic.

References

[1] Kwon, H.-b. (2020). "Covid-19 New Normal" Era: Quick Response Improves Community Efficiency. Busan Development Forum, pp. 28-37.

[2] Choi, Y.-r. (2020). A Study on the Status of Ready-to-Drink Coffee Consumption and Nutritional Knowledge Related to Sugar among Some University Students in the Metropolitan Area. Master's thesis, Suwon University, Gyeonggi Province.

[3] Kim, D.-j., Choi, H.-j., Cho, H.-k., & Kim, K.-y. (2020). A Study on the Development of the Tourism Industry after the Corona Pandemic. Hotel Management Research, 29(4), 129-144.

[4] Choi, J.-c. & Kim, Y.-m. (2020). Analysis of Differences in Perceptions of COVID-19 on Tourism and Leisure Activities. Tourism and Leisure Research, 32(7), 159-177.

[5] UNWTO. (1999). Tourism Satellite Accounts (TSA): The Conceptual Framework. World Tourism Organization.

[6] Ki, D.-w. (2019). "An Analysis and Prospect of the Coffee Industry in the Era of the Fourth Industrial Revolution." Domestic Master's Degree Papers, Seoul Graduate School of Venture, Seoul.

[7] Yoon, S. (2017). The Influence of Coffee Quality of Coffee Shops on Brand Attitude, Brand Image, and Brand Loyalty. Tourism Research Journal, 31(12), 237-258. DOI: 10.21298/IJTHR.2017.12.31.237

[8] Cuckier, K. (2010). "Data, Data Everywhere. A Special Report on Managing Information." London: The Economist.

[9] Heo, J.-s. (2019). "Focusing on Trends in Consumer Evaluation Based on the Web of Fashion Brands Using Big Data: Focusing on the Linkage with Brand Marketing Strategies," Master's thesis at Kookmin University, p.6. Korean Society for IT Policy Management, 11(3).

[10] Eom, K.-h., & Oh, I.-k. (2017). "A Study on the Importance of Design for Big Data - Based Fashion Curation Services: Focusing on the Lifestyle of Korean Men in the 3·40s." Journal of the Korean Society of Design and Culture, Vol.23, No.4, pp.560-561.