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## Awareness and Resolution of Touristification in Korea Using Social Media Big Data Analytics

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### ABSTRACT

**Purpose:** This study aimed to evaluate the resolution of touristification and the SNS user's perception of the phenomenon through analysis of social big data.

**Design/methodology/approach:** Data were collected from a 'café' and a blog on social media platforms (Naver, Daum) that were collected as analysis channels. It was analyzed using social network analysis and semantic network analysis.

**Findings:** Sixty of the 986 entries were selected using the keyword 'touristification' for social media big data research. First, various keywords recognized by tourists, such as 'tourist destination', 'citizen', 'gentrification', 'phenomenon', 'Bukchon', were extracted. Second, convergence of iteration correlation (CONCOR) analysis distinguished five groups.

**Research limitations/implications:** The study assessed the implications of touristification's resolution. This study used social big data before Covid-19, and there was a limit to sample collection.

**Originality/value:** Existing studies related to touristification were conducted mainly on qualitative and empirical research, but this study expanded the research methodology to big data research that combines social network analysis and semantic network analysis.

*Keywords: Touristification, Social Media Big Data, Social Network Analysis, Semantic Network Analysis, Overtourism*

## I. Introduction

Global tourism has intensified rapidly in recent decades. Increasing numbers of tourists attracted by the revitalization of destination areas have yielded economic benefits for residents and contributed significantly to the development of infrastructure, such as architecture and transportation (Freytag & Bauder, 2018). Despite the positive aspects of the

increased tourism, several adverse side effects are also associated with this expansion. Among these is 'touristification'—a compound word of 'touristify', which denotes touristic conversion, and gentrification, which denotes the phenomenon whereby residents of popular areas are driven out as a result of local development. When areas attract visitors in large numbers, local inhabitants' residential space may become a tourist destination and their residential environment may become violated and threatened (Herrera, Smith, & Vera, 2007).

Touristification affects several major tourist destinations worldwide. In the Italian city of Venice, conflict between tourists and residents is escalating,

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while Barcelona in Spain has implemented a viewing restriction policy (Marais & Gravari-Barbas, 2017). Increased numbers of tourists to Ewha Mural Village, located in Ewha-dong, Seoul, Korea, are also infringing on local residents' privacy, and the popularity of Jeju Island as a destination is adversely affecting the lives of local residents owing to rising crime rates and increased waste emissions (Lee, 2018).

Recent research on Santa Cruz de Tenerife in Spain's Canary Islands has explored strategies aimed at promoting urban redevelopment and tourism and overcoming the problem of gentrification (Herrera et al., 2007) and tourism gentrification in European cities; this research identifies the impact of touristification on urban tourism and urban structure (Sequera & Nofre, 2018). Another recent study focused on Paris, France, explored the correlation between tourism growth and urban change, and the limitations of existing tourist attractions in the city (Freetag & Bauder, 2018). More recently, a study has examined how the revitalization of tourism has changed the social structure of urban areas in Seville, Spain's fourth-largest city (Jover & Díaz-Parra, 2020).

Touristification-related research in Korea has centered on preventive measures and countermeasures in the Daegu Susung amusement park (Lee, 2018) and the case of the Gamcheon Culture Village, Busan, where local residents report experiencing the adverse impact of touristification. Another study identified the potential inconveniences and implications that may ensue from tourism-based urban regeneration projects (Kang, Park, & Seo, 2018), and a case study of Bukchon Village in Seoul investigated the impact of the touristification phenomenon, tourism support, and life satisfaction (Min & Lee, 2020).

Most studies have focused on individual tourist attractions or destinations to assess the phenomenon of touristification's impact on local residents in the form of qualitative research. While research on touristification is expected to continue expanding, no studies hitherto have aimed to understand the phenomenon from the SNS user's perspective and propose solutions.

Therefore, the present study aimed to examine

the SNS user's overall perception of touristification by identifying keywords related to touristification collected from social media and analyzing unstructured big data. Through a step-by-step analysis of unstructured big data from social media, we examine the SNS user's perceptions of touristification in depth. This will highlight academic implications for touristification research and practical implications for the tourism industry.

## A. Theoretical Background

### 1. *The Touristification Concept*

To understand touristification, a comprehensive understanding of gentrification is first required. The term 'gentrification' denotes a social phenomenon whereby an area's existing residents are alienated by rising real estate prices (Smith, 2002). Gentrification commonly occurs in early European and North American metropolises and is now a feature of major cities worldwide, including cities in Korea and throughout Asia (Kang et al., 2018). The layers of society that contribute to gentrification are called 'gentrifiers'. Middle-class 'gentrifiers' primarily affect commercial areas, while if the primary contributors to gentrification are tourists, tourism areas will experience the greatest impact (Zukin, 1987).

Several scholars distinguish between gentrification and touristification, arguing that gentrification is a phenomenon whereby residents and commercial tenants are driven to other areas by rising land prices while touristification is limited to tourist attractions, posing a combination of risks to low-income residential areas in association with rising housing prices as well as various adverse effects, such as garbage dumping, noise, and privacy invasion caused by tourists (Kang et al., 2018). In particular, touristification denotes the addition of a tourism component to gentrification. The process of transforming a residential space into a tourist destination and any ensuing conflicts between local residents and tourists should be closely monitored in the future (Lee & Kang, 2018).

Touristification has been highlighted as a key negative effect of mass tourism that ultimately threatens local inhabitants' residential environments, often forcing them to migrate to other areas. Touristification takes place at the point of contact between top-down tourism development and urban development and is a phenomenon that occurs when residential-oriented spaces change into tourist-oriented destinations (Gotham, 2005). When used as a residence for existing workers, the place in the city center is transformed into a tourist destination. In particular, it is a phenomenon in which existing natives leave as existing residences are converted into commercial areas such as accommodations and entertainment facilities needed by tourists (Mendes, 2018). This comprehensive concept of touristification is the economic and cultural change that occurs when the expansion of tourist culture caused by the interaction between urban development and tourism development infringes upon the resident's culture (Freytag & Bauder, 2018).

However, tourism is not necessarily a negative phenomenon. If small-scale or upward touristification occurs rather than tourism development, including large-scale investment, it can be seen as a net function through the inflow of tourists through regional revitalization due to the formation of existing tourist attractions and shopping malls (Novy, 2010). Therefore, touristification is a tourism phenomenon that requires research and understanding from a variety of perspectives, not just focusing on negative functions.

Internationally, Barcelona and Spain are the city and country that have experienced touristification most intensely. More than 3,000,000 tourists visit Barcelona annually, with the result that numerous hotels and restaurants have been constructed and rents in traditionally residential areas have increased substantially, while local residents who can no longer afford them are pushed out to the suburbs (Jo, 2017). Santa Cruz De Tenerife, Spain's Canary Islands, has invested enormous capital in settlements on the southern edge of the island to create a new tourist complex. As a result, existing residents had to leave the area, and nearby areas suffered from real estate

speculation and inflation in housing prices (Herrera et al., 2007). Portugal's Lisbon faced a crisis due to the Great Recession from 2008 to 2014 and wanted to make a breakthrough through tourism and urban reconstruction. Since the early 2000s, tourism has become more advanced, resulting in the loss of residence for existing residents. Recently, Airbnb services have preserved the residence of existing residents, but lower classes have been driven out of the city (Sequera & Nofre, 2020).

Among Korea's tourist attractions, Bukchon Village in Jongno-gu, Seoul, attracts up to 7,400 foreign tourists a day. Bukchon continues to make efforts at the local level to enhance its unique regional identity, which has resulted in spiraling rents and deteriorating living conditions. The Mural Village in Ihwa-dong, Seoul, was transformed into an attractive tourist destination through the Art in City project launched in 2006. The rapid increase in the number of group tourists has violated the privacy of residents, and residents are leaving their residential areas to avoid tourists. The number of visitors to Jeju Island increased to 16 million a year, more than 20 times that of the 660,000 Jeju residents. As a result, per capita waste emissions also ranked first in the country, and the crime rate also increased significantly (kim et al., 2017).

As mentioned above, touristification is a recent phenomenon associated with overtourism, and qualitative and quantitative studies are gradually increasing. Qualitative studies have predominated hitherto, while quantitative studies are also performed based primarily on surveys conducted among local residents. The present study collected keywords related to touristification from major social media providers in Korea with the aim of conducting unstructured big data analysis.

## 2. Research Trends of Tourism Big Data

The term 'big data' refers to collections of tens or hundreds of terabytes of data, far exceeding everyday manageable levels of use, the size of which is ever-changing (Gantz & Reinsel, 2011). 'Big data'

may be defined as a large set of structured or unstructured data that cannot easily be collected, stored, managed, and analyzed using the management tools of existing databases (Snijders, Mattzat, & Reips, 2012). Unstructured big data extracted from social media can help identify various opinions expressed online. It is particularly convenient about collecting opinions directly from the SNS user's as social network service (SNS) marketing has expanded considerably in recent years (Lee & Jeon, 2015). Social media-based big data research in the tourism sector is mainly divided into quantitative research, such as visiting tourist attractions, expenses, and activity logs to illustrate tourists' behavior in detail, and qualitative data, such as the satisfaction and interest that tourists experience directly after visiting attractions (Oh, Lee, & Chon, 2015).

Big data theory, which is mainly applied to big data research in tourism, is social network theory. Social networks are a combination of society and networks, meaning relational networks where people are connected (Christakis & Fowler, 2009). Social network theory is to understand human behavior and social structure centered on the relational concept of man and can identify the consciousness and behavior of members in a specific type of network. Based on social network theory, social network analysis includes density analysis, centrality analysis, and structural equability analysis. Density refers to the degree of connection between nodes in the entire network, and centrality refers to the degree to which it is centrally located in the entire network (Freman, 1978).

Semantic network analysis is a methodology that applies social network analysis to relationships between languages that make up the text and is conducted in the form of analyzing interaction relationships by applying text instead of social network actors (Waserman & Faust, 1994). Semantic network analysis is conducted in the form of analysis in contents with social network analysis or content analysis. The semantic network analysis analyzes the relative properties between the words and the words that appear in the text and displays it as a link to

interpret the phenomenon through the strength of the connection (Poping, 2000)

Regarding international studies on big data in the tourism sector, Stepchenkova and Morrison (2006) collected Russia-related tourism keyword data from travel agencies and travel information websites and applied big data analysis to derive various implications for travel-related marketing and promotion management. They found that Russian tourism websites generally require improvement with respect to technology and content and that Russia's western region is a key tourist destination. In an analysis of tourist sites' branding and image, Koltringer and Dickinger (2015) collected 5,719 items of unstructured data from an online travel community website and a tourism organization's website to identify the main properties that represent the image of Vienna, Austria, and to suggest means of capitalizing on these properties to activate branding. Tran and Purabedin (2016) conducted a social network analysis of major travel agencies and travel agencies in Hanoi, Vietnam. No social network analysis up to that point had targeted the distribution channels of tourism services, and Tran and Purabedin's study was distinguished in its adoption of such an approach. They found that a certain network pattern formed between travel agencies and provided an opportunity to provide in-depth information on actors who had major future implications for travel agencies. Mark (2017) conducted visual content and unstructured big data analyses on various big data generated by tourists and tourism organizations in eastern Taiwan and confirmed the hypothesis that photographic content is generally more effective in conveying emotional attributes.

In Korea, Ryu and Yoo (2017) conducted big data analysis on keywords concerning travel to Gangwon Province collected from social media. Their findings confirmed that interest in traveling to Gangwon Province was concentrated in the summer vacation season between June and August and that keywords associated with one-night and two-day visits occurred most frequently. Lee, Park, and Kim (2018) divided the period into before and after the Hanhanryeong (限韓令) period, when a sharp drop in visitors to

Jeju Island was observed. They collected major keywords relating to tourism to Jeju Island from social media and compared and analyzed them according to period. This analysis confirmed that words relating to food both before and after Hanhanryeong (限韓令) exerted a significant influence, and some of their results demonstrated different influences before and after Hanhanryeong (限韓令).

In the present study, we collected keywords relating to touristification from social media with the aim of conducting unstructured big data research in stages, in accordance with analytical procedures. We also sought to provide academic implications for big data research in the tourism sector along with practical implications for the tourism industry.

## II. Materials and Methods

### A. Research Questions

This study was conducted using social network analysis and semantic network analysis on key keywords accompanied by Naver's blogs, cafés, and Daum blogs and cafés, which are major portal sites in Korea, for four years (from Dec. 30, 2016 to Dec. 31, 2020). Below, we detail the research tasks that were devised to facilitate a step-by-step approach to the analysis.

**Research Task 1:** What are the frequencies and characteristics of the main keywords related to touristification that have been found through major portal sites?

**Research Task 2:** What important keywords related to touristification were identified from major portal sites as the centrality results and community models and, furthermore, what are the specific solutions?

### B. Analysis Procedures and Methods

In this study, we collected unstructured data from

social media and analyzed it step by step to assess the SNS user's perceptions of touristification. Tourism research using this approach has recently gained traction because the characteristics of unstructured data are composed of characters, unlike formal data, such as numbers. The study procedure comprised five stages in total. In the first stage, In order to collect a single keyword for touristification has been entered on the Textom(<http://www.textom.co.kr>) site, which provides data collection and related services through social matrix programs, and the period has been set to the past four years. The collection channel chose Naver, Daum's blog, and cafe, which are major portal sites. The final 60 collected touristification-related companion keywords were selected by reflecting opinions from a professor majoring in tourism and a Ph.D.-level researcher who has a lot of experience in tourism big data research. These accompanying keyword collection procedures followed procedures used primarily for social network analysis and semantic network analysis (Oh et al., 2015). The text mining process was conducted along with the collection of crucial keywords using the KrKwic program developed by researchers at Yeung Nam University (Park, 2004). During the second stage, we selected 60 keywords that were particularly relevant to touristification and formed a one-mode matrix. In the third stage, frequency analysis and centrality (degree, closeness) analysis were conducted using the UCINET program. Degree centrality evaluates centrality by the number of all edges connected to the central node. Closeness centrality assesses centrality with a close location where the path to the central node reaches (Freeman, 1978). In the fourth stage, the UCINET program was applied to check tourists' awareness of touristification and analyze social and semantic networks. Based on these studies' results, visualization was also performed in parallel. During the fifth and final stage, convergence of iteration correlation (CONCOR) analysis was performed using the UCINET program and visualization was performed.



**Table 1.** Analysis of the frequency and centrality of key keywords related to touristification

Keyword	Frequency	C.D	C.C	Keyword	Frequency	C.D	C.C
Tourist	360	.096	95.161	Issue	35	.009	73.750
Tourist destination	286	.110	95.161	Lately	35	.012	72.840
Citizen	256	.158	93.651	World	32	.018	74.684
Gentrification	210	.044	86.765	Society	31	.017	71.951
Phenomenon	204	.093	89.394	Continuation	30	.004	59.000
Bukchon	171	.049	88.06	Attractions	29	.008	61.458
Region	149	.119	90.769	Tourist attraction	29	.001	55.140
Overtourism	138	.033	80.822	Village	28	.054	85.507
Problem	136	.061	90.769	Fair travel	28	.002	56.731
Resident	90	.044	76.623	Worldwide	27	.011	56.190
City	83	.023	74.684	Development	26	.011	67.045
Seoul	77	.023	86.765	Seochon	26	.007	67.816
Life	77	.019	75.641	Threat	25	.009	64.130
Jeju	73	.023	70.238	Thinking	24	.005	61.458
Native	71	.027	76.623	Town	24	.005	59.000
Migration	68	.038	79.730	Damage	24	.011	68.605
Meaning	64	.017	79.730	Rental fee	23	.008	70.238
Occur	56	.023	75.641	Inflow	23	.009	63.441
Residential area	54	.034	76.623	Noise	22	.012	67.816
Travel	53	.010	80.822	Solution	22	.012	74.684
Jeju Biennale	48	.004	55.66	Rejection	22	.002	54.128
Dwelling	47	.075	85.507	Inconvenience	22	.009	62.766
Urban regeneration	46	.007	57.843	Garbage	21	.011	64.835
Local residents	44	.019	67.045	Increment	21	.007	67.045
Venice	42	.009	65.556	Population	20	.008	63.441
House	42	.022	78.667	New word	20	.006	62.105
Representation	39	.017	73.750	Italy	17	.006	62.105
Residence	39	.052	83.099	Ikseon-dong	19	.001	53.636
Traditional village	35	.032	78.667	Counterplan	19	.005	59.000
Busan	35	.008	61.458	Germany	14	.003	53.636

\* C.D: Degree Centrality, C.C: Closeness Centrality

of the social and semantic network analyses based on the analysis of the degree and closeness centrality of the main keywords relating to touristification.

## B. The Results of the CONCOR Analysis

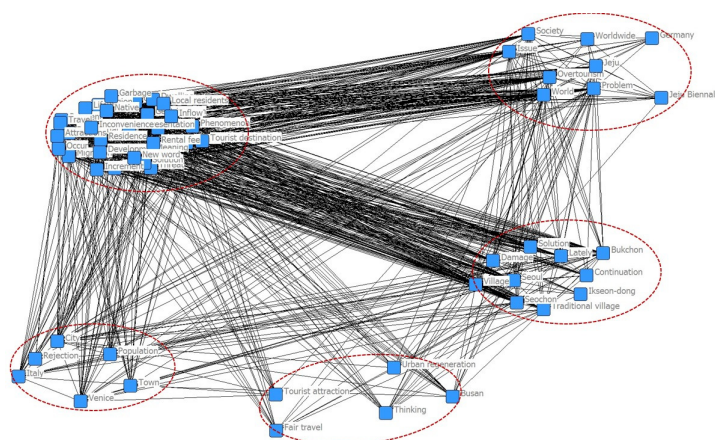
CONCOR analysis was employed in this study to interpret cluster formations of the main keywords

relating to tourist-driven gentrification collected through Korean portal sites. The CONCOR method analyzes relationship patterns based on the correlation of actors and interprets clustering and its meanings through structural satellites (Breiger, Boorman, & Arabie, 1975; Cho, Choi, & Park, 2012). The central group was divided into tourist attractions, phenomena, local residents, inconvenience, new words, inflow, rent, development, occurrence, natives, and counter-



**Table 2.** Analysis of the CONCOR of key keywords related to touristification

	Cluster name	Key keywords
Central cluster	touristification phenomenon and characteristics	Tourist destination, Phenomenon, Local residents, Inconvenience, New word, Inflow, Resident, Rental fee, Development, Occur, Life, Native, Migration, Counterplan
Surrounding cluster	world and tourist site touristification	Worldwide, Society, Issue, Overtourism, Jeju., Problem, Germany
	Seoul touristification	Seoul, Ikseon-dong, Bukchon, Seochon, Traditional village, Continuation, Damage
	Busan touristification	Busan, Urban regeneration, Attractions, Thinking, Fair travel
	Italian Touristification	Italy, Venice, Population, Rejection



**Figure 2.** Visualization of CONCOR analysis related to touristification

measures, and the cluster was named ‘touristification phenomenon and characteristics’. The surrounding villages were first divided into the world, society, issues, overtourism, Jeju, and Germany, and the cluster was named ‘world and tourist site touristification’. Second, the cluster was divided into Seoul, Ikseon-dong, Bukchon, Seochon, Hanok Village, and damage, and was named ‘Seoul touristification’. Third, it was divided into Busan, urban regeneration, and fair travel, and was named ‘Busan touristification’. Fourth, it was divided into Italy, Venice, population, wealth, etc., and the cluster name was ‘Italian touristification’. The results of the CONCOR analyses are summarized in Table 2. Figure 2 visualizes the results of the social and semantic network analyses based on the analysis of the CONCOR of the main keywords relating to touristification.

#### IV. Discussion and Conclusion

To determine users’ general perceptions of touristification, the study collected essential keywords closely related to tourism from the major portal sites—Naver and Daum—and applied unstructured big data analysis, social network analysis, and semantic network analysis. The collection period was from December 30, 2016, to December 31, 2020, during which keywords related to touristification that had been stored on major portal sites for a total of four years were collected. We applied unstructured big data analysis programs, such as Krkwic, KrTitle, UCINET, and Netdraw, at the analysis stage and performed text mining, relational matrix composition, frequency analysis, central analysis, and CONCOR

analysis. To understand the study's findings more fully, the main results of the analyses were visualized.

The key findings confirmed through these research stages are detailed below.

First, regarding the recognition of touristification, tourists showed high recognition of keywords, including 'tourist', 'tourist destination', 'citizen', 'gentrification', 'phenomenon', 'Bukchon', and 'overtourism'. Tourists were keenly aware of the distress that overtourism can cause to local residents and were cognizant of the phenomenon whereby local residents find themselves alienated and their ways of life threatened. Second, as a result of the centrality analysis of touristification, keywords such as 'citizen', 'tourist destination', 'tourist', 'phenomenon', 'dwelling', 'problem', 'village', 'residence', and 'Bukchon' showed high centers of connectivity. Keywords that included 'tourist', 'tourist destination', 'citizen', 'region', 'problem', 'phenomenon', 'Bukchon', 'gentrification', 'Seoul', and 'village' also showed high proximity centrality. 'Citizen' and 'region' were both connected and proximity-centric, and tourists were keenly aware of how residents were impacted by touristification and of serious social issues in the region. In particular, Seoul showed a relatively high Closeness Centrality compared to the Degree Centrality. This may be attributable to the serious occurrence of touristification in Korea in Bukchon and Seochon, centered on Seoul, which is perceived as a serious social phenomenon that has caused a decline in the quality of life of local people living in Seoul over a long period. Third, as a result of cluster analysis using the CONCOR method, a total of five highly related clusters were formed. A cluster was formed with one central group and four neighboring groups. Key keywords that are highly related to the phenomenon and characteristics of touristification were clustered in the main cluster. It was well reflected in the phenomenon of increasing rents as a result of touristification and impoverished lives through migration that local people could not avoid. The surrounding clusters were divided into the world, domestic tourist attractions, and urban areas in which touristification was mainly generated. In particular, tourists understood the extreme side

effects of touristification in Seoul, Jeju, and elsewhere in the Korean context.

The academic and practical implications of this study are as follows.

First, many earlier touristification studies applied qualitative research methodologies to assess the impact of the touristification phenomenon on residents at tourist attractions in Europe such as Spain and France (Freytag & Bauder, 2018; Herrera et al., 2007; Jover & Díaz-Parra, 2020). Additionally, several studies examined the side effects of touristification by conducting surveys among local residents (Kang, Park, & Seo, 2018; Min & Lee, 2020). This study discussed the SNS user's comprehensive recognition of touristification and proposed solutions through the analysis of unstructured big data collected from social media. Through this, touristification-related research has been expanded from existing qualitative and empirical research to big data research that combines social network analysis and semantic network analysis. Second, based on major analysis results, such as frequency analysis of touristification, the tourism operation policy, which was carried out in terms of revitalizing the local economy, was accompanied by many side effects. Establishing and implementing policy improvement measures of touristification emerged as important in allowing tourists to enjoy more valuable and enjoyable tourism. In particular, since local inhabitants suffer considerably as a result of tourism, it is important to engage in close communication with them and to elicit their opinions at both the government and local government levels with a view to establishing a mid- to long-term strategy for improvement. Third, the results of the CONCOR analysis facilitated a more profound understanding of touristification's main phenomena and characteristics, particularly regarding areas in which touristification occurs both worldwide and in Korea specifically. Therefore, to address touristification effectively, it is necessary to spread awareness and expand policy point campaigns aimed at mitigating the adverse effects of touristification using major social media sites. Additionally, comprehensive efforts are needed at the government, industry, and

pan-national levels to ensure that the prevention of touristification can be converted into sustainable tourism. Fourth, to minimize the touristification phenomenon, it is also necessary to consider limiting the number of tourists in certain tourist destinations. Garbage, noise, and resolution identified in keywords are side effects caused by indiscriminate visits to tourist destinations. In the case of Venice, Italy, the number of daily tourists is being adjusted. It is also necessary to calculate the appropriate number of tourists per day and consider policy measures related to local tourism that can be applied to Bukchon and Jeju in Korea. Fifth, the rental fee identified in the keyword is a large part of the side effects caused by tourism. In the case of Barcelona, Spain, government approval of hotels or rental apartments is partially delayed. In Korea, areas with severe tour gentrification phenomena need to be reviewed to adjust the part of the development of new hotels and resorts so that residents can live more stably.

## V. Limitations and Future Studies

In this study, a four-year study period was imposed, including the COVID-19 outbreak period. The significance of our study will be greater if a comparative study is conducted in future on differences in perceptions of touristification, in the periods before and after the COVID-19 outbreak. To overcome the physical limitations of the study, the population of keyword collection related to touristification was limited to the major portal site. In future studies, we expect more complete research to be carried out by combining online data collection and offline data collection.

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