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A Sustainable Tourism Study in Underdeveloped Areas Using Big Data Analysis Techniques

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Abstract

We Design The problem of underdeveloped areas is emerging as a social problem. Industrialization drove the population to the cities, creating underdeveloped areas. Underdeveloped areas are causing social problems such as population decline and aging. It is necessary to study the continuous tourism development of underdeveloped areas through development and improvement projects. Using social media big data to investigate keywords in underdeveloped areas and see the connection between keywords. The purpose of this study was to conduct core research divided by type and to investigate the keywords of tourism in underdeveloped areas through concor analysis of underdeveloped areas. As a result of the study, keywords were connected for each type of redevelopment, regional development, regional economy, and underdeveloped areas. Through this, the keywords for sustainable tourism in underdeveloped areas were identified. It is hoped that this study will develop sustainable tourism for the keywords of underdeveloped areas.

1. Introduction

The development of region is becoming an important factor. In April 1970s, the development of rural areas in rural areas Starting with local development to promote regional development, the government-friendly development is promoting continuous regional development. However, the regional development gap is emerging as an important social problem. To find jobs to find jobs as industrialization, the outside of urbanization began to find jobs [1].

Urban areas contribute to the development of industry and society as transportation and infrastructure facilities develop. On the other hand, urban suburbs, especially underdeveloped areas with high problems, are

experiencing population decline, aging, job insecurity, facility aging, and local extinction [2].

Underdeveloped areas mean areas with significantly lower levels of development compared to other areas. Because of other regions, the nature of the unemployment rate is higher than in other regions, and the rate of growth is faster [3].

There is a prior study on tourism to develop and improve underdeveloped areas. Kim Se-hyun and Kim Ok-hee (2021p.12) suggested, "The experience of visiting tourist attractions in underdeveloped areas plays an important role in the development of tourist attractions in underdeveloped areas [4]".

Therefore, various strategies and approaches are needed for the sustainable development of the tourism industry in underdeveloped areas. This paper aims to understand the characteristics and public interests of underdeveloped areas using social media big data analysis, and to be helpful to the characteristic tourism industry suitable for tourism based on this.

2. Theoretical analysis

2.1 Underdeveloped areas

Underdeveloped areas are "some aspects of the economy at a given point in time are at a disadvantage compared to other regions, especially the country as a whole." It is defined as 'reverse', and approaches it as a relative and variable concept [5]".   For the development of underdeveloped areas, the government has shown a steady interest in support and development for the development of underdeveloped areas, including the Act on Promotion of Remote Development (1988), the Act on Balanced Regional Development and Promotion of Local Small and Medium Enterprises (1994), the Border Region Support Act (2000), the Act on Balanced National Development (2016), and the Act on Decentralization of Local Autonomy and Balanced Regional Development (2023). The government provides various laws and support for the development of these regions, but the actual direction and speed of development are still insignificant.   A representative example of an overseas underdeveloped area means the Yubari city area in Japan. Yubari city is a representative coal mine area in Japan, with a population of 116,775 (person) in 1960. However, now that local finances were bankrupt due to corruption of government agencies, it was reduced to 9,409 (person) in January 2015 [6].   Through this, the development of underdeveloped areas is an important task in preventing local extinction and fiscal bankruptcy.

2.2 Big Data

Big data is defined by SAP (SAP Business Technology Platform) as "a sea of information consisting of vast zettabyte-class data flowing from the computers, mobile devices, and machine sensors we use every day [7]". The importance of big data lies in analyzing the data and measuring it according to the degree to which it can be understood. Anonymous is guaranteed in that data is collected and utilized by utilizing anonymous data on social media, and it is important in that it uses vast amounts of data [8].

2.3 Sustainable tourism

Sustainable tourism refers to a form of tourism in which tourism activities are carried out by maintaining ecological balance based on the beauty and characteristics of given cultural and natural resources, and sustainable tourism development is necessary. The Korea Tourism Organization said, "Sustainable tourism development "protects and enhances tourism opportunities for future generations. It refers to development that meets the needs of tourists and visited areas [9]". The importance of sustainable tourism is important for

promoting the lives of residents in underdeveloped areas and contributing to the development of underdeveloped areas.
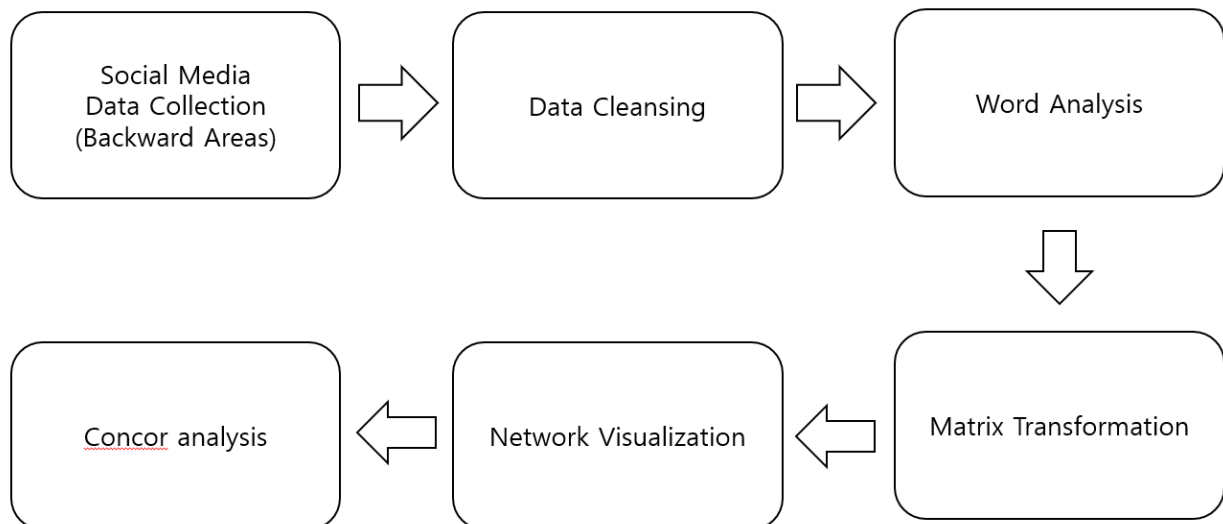
3. Research design

3.1 Research Defense

The purpose of this study is to analyze major keywords in underdeveloped areas and find out the keywords for tourism development through this. And it is to collect social media data using big data, designate a cluster name for a cluster where keywords are gathered, analyze words in which cluster factors affect similarity, and analyze factor correlations between words to identify important keywords related to tourism.

3.2 Research Methods

This study utilized the social media big data analysis system TEXTOM. The collection period was collected for a total of 1 year and 11 months from January 1, 2022 to December 1, 2023. The words were collected from Naver's blogs, news, cafes, web documents, intellectuals, and Daum's blogs, news, cafes, web documents, and Google's web documents, news, and Facebook, with the 'abandoned area' as the main keyword. The results were derived using the program UCINET6, and clustering between them was performed through Concor analysis. The analysis procedure is shown in (Figure 1).

Figure 1. Big data analysis Procedure

4. Research and results

4.1 Analysis of words

As for the word analysis, 22277 keywords were collected as a result of the keyword collection in the. ' falling area' from January 2022 to December 1, 2023. Among them, the top 50 keywords were refined.

and derived using the original text data and refined data and applied to this study.

The results are shown in (Table 1).

Table 1. Word analysis

Word	frequency	Word	frequency	Word	frequency	Word	frequency	Word	frequency
underdeveloped area	671	propulsion	384	zone	180	cohort	158	Incheon	138
Business	646	economy	342	Problem	177	case	157	Balanced Development	122
development	629	Border Areas	232	China	177	living	156	scale	111
redevelopment	571	capital	230	CBD	174	facilities	146	National	111
Seoul	552	environment	216	Busan	167	neighborhood	145	Residential Environment	111
reclamation	469	Gyeonggi-do	216	policy	165	health care	144	Obsolescence	109
improvement	435	composition	195	traffic	163	village	142	Korea	105
inhabitant	407	government	189	plan	163	expectation	140	Local Economy	104
city	396	provincial area	188	clinic	163	culture	140	job	104

The analysis results of underdeveloped areas, residents, residents, and village improvement was highlighted as major interest.

As a response book keywords for this, balanced development, the government support and policies.

Local economy was mainly focused on economic, medical, medical, medical, and job creation. Reconstruction, development, development, and traffic was highlighted. As a result of these analysis, the development keyword was derived from the development keyword.

4.2 Network Visualization Analysis

Based on the results of word frequency analysis, the connection between keywords was analyzed as shown in (Figure 2)

in the visualization. When looking at the connection centrality as a standard, it appeared as a key keyword centering on the underdeveloped areas.

These key keywords showed the connection centrality with the redevelopment keyword. This indicates that redevelopment is a key factor in inducing tourism in underdeveloped areas.

Figure 2. Network visualization

4.3 CONCOR Analysis

CONCOR analysis is a method of grouping keywords with a high co-occurrence frequency into the same cluster by grasping the relevance of key keywords on a text. Through this, the main keywords appearing in online texts can be classified into a small number of groups [10]. The analysis results are as shown in (Figure 3).

Figure 3. CONCOR Analysis

As for the analysis result, 4 clusters were derived. Cluster 1 regional development and tourism area development in underdeveloped areas In this cluster, the development of tourism areas in underdeveloped areas is highlighted as an important topic. Cluster 2 Revitalization of regional economy and tourism development This cluster deals with important topics in the direction of revitalizing the local economy through tourism development. Cluster 3 The entire underdeveloped area and the answer This cluster deals with the entire underdeveloped area and is identified as a topic that presents answers. Cluster 4 redevelopment, regional development, and regional economic revitalization cluster 4 are closely related to clusters 1 and 2, and deal with the main contents of regional development and regional economic revitalization through redevelopment.

5. Discussions

This paper investigated various information using social media big data analysis for an in-depth understanding of sustainable tourism development. The results obtained through this mainly point to 'regional development' and 'improvement' as key keywords for tourism development in underdeveloped area. As a result of the study, the words that appeared most frequently in the top 50 keywords were analyzed, and the relationship between keywords was examined through CONCOR analysis. As a result, 'regional development', 'redevelopment', and 'regional economy' were the most prominent. These results show that tourism development is not only related to simple infrastructure construction or service improvement, but also to the development of the entire community and economic revitalization. In particular, this study confirmed that in order to revitalize the tourism industry in underdeveloped areas, it is important not only to attract tourists but also to improve the quality of life of local residents and to revitalize the local economy. Therefore, it is emphasized that regional development and regional economic revitalization are important factors that must be considered in tourism development.

6. Conclusion

In conclusion, through this study, it was found that for the sustainable development of the tourism industry, it is necessary to obtain close connection and cooperation with the local community and active participation and support from local residents. This approach is expected to increase the sustainability of the tourism industry in the long run and have a positive impact on the local economy and society. The results reaffirm the importance of cooperation and win-win with the local community when formulating a regional tourism development strategy. In particular, the participation and support of local residents are essential, and careful consideration is required for the impact of tourism development on the local economy and society as a whole. Therefore, regional development and tourism strategies should take into account the unique culture and resources of the region and move toward promoting the comprehensive development of the local community. As a limitation, this study uses social media big data to ensure anonymity, so gender and age are not known. In addition, keywords such as positive, neutral, and negative were not investigated through emotional analysis. I hope the next research will be done through this.

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