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Research on Public Opinion of Potential Tourists in Epidemic Period Based on Semantic Network Analysis

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Abstract

Based on the theme of “tourism" this paper excavates the Weibo data from 2 May 2020 to 13 May 2020, further extracts the emotional words of their opinions, and uses emotional analysis to obtain the opinions, attitudes and other emotions of potential tourists on tourism after the epidemic. The semantic network analysis method is used to study the cognitive relationship between potential tourists and tourism. On the basis of using the natural lexicon, the word segmentation, keyword frequency statistics and semantic network structure analysis based on the co-occurrence word matrix are carried out respectively. The research shows that the impact of the epidemic on people 's willingness to travel is temporary. As the epidemic is gradually controlled, people 's travel demand has recovered, but there is still much room for development. As long as the relevant departments are properly motivated, the recovery of tourism after the epidemic is just around the corner ; the epidemic not only awakened people ' s attention to tourism safety factors, but also further promoted the formation of diversified tourism patterns.

Keywords

Semantic network analysis; Post-epidemic period; Potential tourists; Public opinion.

1. Introduction

The outbreak of novel coronavirus pneumonia in 2020 caused the domestic economy to shut down for a time, and the tourism industry was hit hard. At present, the domestic epidemic situation is basically stable, and the domestic inter-provincial tourism market has gradually recovered. According to the literature published in 2020, during the epidemic and post-epidemic period, tourism [1–4], film and television [5], energy [6], real estate [7], and other industries are formulating development strategies during the epidemic period, and actively summarizing the experience of dealing with this emergency to formulate emergency plans for similar emergencies in the future. There are more and more studies on the impact of epidemics on tourism in China, and the impact of epidemics on tourism and coping strategies are considered from different perspectives. During the epidemic, Liu Zhimin [8] found that the tourism industry had problems such as low industry transparency, imperfect credit system, heavy asset investment and poor product quality. He proposed to gradually change to a capital-friendly industry in accordance with the reform logic of “easy first and difficult later”. Pan et al [9] found that in the post-epidemic period, people paid more attention to health tourism, which increased the demand for health in the tourism market and believed that health tourism in China would usher in rapid development. Under the influence of the epidemic, there are few studies on tourists' attitudes and emotions. Therefore, we choose to start from the perspective of potential tourists, use data mining technology and further extract the emotional words of

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their views, and conduct emotional analysis to understand these potential tourists' views, attitudes and other emotions on tourism after the epidemic, so as to make up for this gap.

This study analyzes the pain points of consumer demand in the post-epidemic market from the perspective of the whole tourism market, and puts forward relevant suggestions for improvement. It is helpful to understand the user feedback and user needs of the tourism market in the post-epidemic period, and also provides the basis for the direction focus, strategy guidance and value judgment of the current tourism market. It has positive reference significance for promoting tourism recovery, formulating development strategies and improving development models.

2. Methodology and Data Sources

2.1. Methodology

This research uses the Internet information crawling technology for data mining. Data mining refers to the use of computing technology and tools to extract information and knowledge that are hidden in a large number of random and incomplete data that cannot be understood in advance but are potentially useful to users. In short, data mining is to discover hidden knowledge and rules from massive data. In addition, with the rapid development of the Internet, the network has become the main public platform for the public to express their views and discuss current affairs. The attendant network public opinion plays an increasingly important role in social life. Therefore, it is of great significance to carry out the research on network public opinion for individuals, enterprises and governments. The current public opinion analysis system mainly uses the general network crawler technology to crawl the webpage information, and uses the keyword-based search technology to classify the text data. This research combines data mining technology with network public opinion analysis, and mines the potential psychological characteristics of tourists from a large number of text data crawled from Weibo platform, and then uses text analysis software ROSTCM6 for sentiment analysis.

2.2. Data Sources

This article uses a crawler tool - Houyi collector for data collection. Using the “advanced search” function of Weibo, the theme is “travel”. In order to collect the data of Weibo as much as possible, the time interval needs to be reduced. Therefore, the author confirms the time from 2 May to 13 May. After selecting “search”, copy the page URL to Houyi collector, and use Houyi”intelligent mode” for data collection.

3. Data Processing and Analysis

3.1. Statistical Analysis of Text Word Frequency and Production of High Frequency Word Cloud Map

Text word frequency statistics is the frequency of words or phrases that constitute the text in the whole when the text is regarded as a unified whole. Text word frequency statistics is the main method of mining the core content of the text, which is the absolute statistics of the number of words in the case of text being disturbed. In this paper, the word frequency analysis mainly focuses on the attention and demand attitude of potential tourists to tourism after the outbreak. ROSTCM6 software is used to extract the feature words with high frequency in crawled microblog texts. The top 20 high frequency words are mainly analyzed, see Table 1.

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Table 1. Top20 High Frequency Word Frequency Statistics

Keyword	Word Frequency	Weight
tourism	20487	6.8813
travel	2201	5.3352
may day	2006	5.271
epidemic	1637	5.1301
scene	1619	5.1225
culture	1523	5.0801
friends	1341	4.992
holiday	1161	4.8922
China	1110	4.8611
world	980	4.7748
onlookers	72	4.7136
scenic spots	870	4.6924
city	848	4.6746
tourism strategy	766	4.6042
income	690	4.5319
happy	654	4.4948
hotel	653	4.4937
Chongqing	620	4.4579

According to the statistics of high frequency words word frequency table 1, we can find that, because the crawl data time period includes may day holiday, the “may day”, “holiday” appears more frequently. Words such as “tourism”, “travel”, “going out”reflect that potential tourists have certain needs for tourism after the epidemic, but at the same time, words such as “epidemic”and “safety”also indicate that potential tourists still have concerns about the travel environment, worry about the safety of tourism, and lack confidence in travel. For example, the words “friend”, “child”and “mother”indicate that potential tourists want to travel with family or friends and enjoy the scenery together. The high frequency words of tourism destination include “China”, “Park”, “Chongqing”, “Beijing”, “Chengdu”, “Wuhan”, “Xiamen”and so on, which reflects that potential tourists tend to travel to these domestic cities and remain cautious about outbound tourism. Words such as “income”and “consumption”show that potential tourists are still sensitive to tourism prices in the context of the economic slowdown caused by the epidemic.

3.2. Semantic Network Analysis

The word frequency analysis can reflect the main characteristics of things by extracting the attributes of phrases, but the connection of phrases in a specific sense and the deep structural relationship of the text still need semantic network analysis to intuitively show. Here, the crawled sample data are extracted by high-frequency words and behavioral characteristics, and then the network construction and matrix construction are carried out. The parameter settings are 400 high-frequency words extracted from the analysis document, 400 high-frequency times extracted from the network and the co-word matrix, and the nature of high-frequency words is set as ordinary high-frequency words.

3.2.1. Tourism Focus on Safety Factors

Keywords such as “safety”, “May Day”, “holiday” and “tourist”are highly correlated, mainly closely related to the time node and background of the survey. These factors together constitute

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the core characteristics of potential tourists ' psychological cognition and demand for tourism, that is, after the epidemic situation is alleviated, there is still a demand for tourism, and May Day tourism is an intuitive mapping of this demand."Safety "reflects the attention of potential tourists to safety factors. The May Day holiday is the first national holiday after the unsealing. This year, due to the epidemic, although there is no grand occasion of national tourism in previous years, it can be seen from the number of travel photos and tourism strategies shared in the crawl data that the potential tourism demand is higher. But people also pay attention to the safety factors in the journey and attractions. Tourism behavior involves a series of objective factors such as public transportation, public safety and accommodation environment. If tourism is expected to recover, it is an important basis to ensure more safety and health of various clothing, food and accommodation in scenic spots and on the journey.

3.2.2. Cultural Tourism As a New Hotspot In Tourism

"Cultural", "national", "orderly"and other keywords are highly correlated. Before the outbreak, most of the tourism purposes were to appreciate the natural scenery. However, after the outbreak, Wuhan and other famous anti-epidemic cities became the that people most wanted to travel after the outbreak because of the anti-epidemic spiritual and cultural factors. Various "tourism cultural festivals"are also vigorously held in various places, showing the general trend of tourism development of"cultural tourism integration".

3.2.3. Increased Demand For Short-distance Travel Such As Parks

"Park", "Epidemic", "Travel" and other keywords are closely related. In the early days of liberation, the people were deeply affected by the epidemic, and more choose to set foot near the address or travel in the province to try out. Bowen expressed the desire to travel to the park.

3.2.4. Tourist Attractions To Take Appointments Open Epidemic Prevention Services

Keywords such as "reservation", "measures", "attractions", "open" are closely related. During the epidemic, many scenic spots have been affected to open. In order to create a more comfortable environment and high-quality services for tourists, many scenic spots have implemented a reservation system for opening to the outside world and strict inspection procedures for safety.

3.3. Statistical Analysis of Tourist Emotional Tendency

In this paper, ROST EA is used to calculate the emotional value of all comments, and the system stipulates that positive emotions are more than 5 points. Less than 5 points to negative emotions ; is equal to 5 divided into neutral emotions. The results show that the effective original microblogs involved in the calculation are 16400, of which 8486 are original microblogs with positive emotions, accounting for 51.74 %. There are 7704 original microblogs with negative emotions, accounting for 46.98 %. There are 210 original microblogs without obvious emotional tendencies, namely, neutral original microblogs, accounting for 1.28 %. It can be seen that the positive emotional tendencies and negative emotional tendencies of microblog netizens for the overall emotional characteristics of tourism under the epidemic are half, and there are still negative emotions for future travel.

3.3.1. Overall Characteristics of Positive Emotions

A total of 8486 original microblogs with positive emotions were further segmented, and (5, 15] was divided into general positive emotions ; (15,25] is divided into moderate positive emotions ; more than 25 points for highly positive emotions. The results show that among the original micro-blogs of micro-blog users ' positive emotions on tourism, the original micro-blogs with high positive emotions account for 22.43 %, the original micro-blogs with general positive emotions and the original micro-blogs with moderate positive emotions account for 18.49 % and 10.82 % respectively. It can be seen that Weibo users ' evaluation of tourism under the

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epidemic shows a high positive emotional tendency, which reflects Weibo users ' willingness to travel in the future to a certain extent.

3.3.2. Overall Characteristics of Negative Emotions

The original micro-blog of negative emotions is further segmented, and the original micro-blog of [-15,5) is defined as general negative emotions ; [-25, -15) is moderate negative emotion original micro-blog ; - 25 points or less for highly negative comments. The statistical results show that among the original micro-blogs with negative emotions, the proportion of the original micro-blogs with general negative emotions is 7.24 %, and the proportion of the original micro-blogs with moderate negative emotions is similar to that with high negative emotions. Based on the statistical results, micro-blog users for tourism negative emotions mainly mild negative emotions, very few extreme negative original micro-blog.

4. Conclusion and Suggestion

4.1. Conclusion

The domestic novel coronavirus pneumonia epidemic began on the eve of the Spring Festival and was basically unsealed nationwide in May, during which domestic and foreign tourism was severely affected. This paper focuses on the analysis of the changes in people ' s choice and attitude towards tourism areas during the epidemic, and the impact of the epidemic on the tourism industry.

a. Domestic people tend to go out to travel after the epidemic has been lifted. On the one hand, after three months of closed study and work, many people want to go out to travel to ease the anxiety caused by the closed life of the epidemic. On the other hand, the domestic economy stagnated under the epidemic, and many local governments began to encourage and stimulate consumption to drive local economic development.

b. Many people are eager to travel, but they do not actually travel. On the one hand, they consider the safety of travel and are afraid of the outbreak of the epidemic again. On the other hand, most people are suspended from duty and salary during the closure period, and cannot bear the economic pressure brought by tourism consumption. In addition, most people are willing to choose to travel at home, which is closely related to the current development of foreign epidemics, and of course, it is also inseparable from the current acceptable consumption level.

c. After the outbreak of tourism, the vast majority of people like scenic cultural tourism, pay more attention to tourism experience satisfaction, including the transparency of tourism prices, the standard management of scenic spots.

d. After the outbreak, the tourism pattern of domestic residents will be diversified, and people will choose higher quality cultural tourism. Future tourism needs to focus on the construction of products and infrastructure[10]. Low-density tourism, ecological tourism and rural tourism have become new directions for the development of the tourism industry and provide consumers with more satisfactory tourism experience.

4.2. Suggestion

Based on the above conclusions, the following suggestions are proposed :

a. The government urges tourism enterprises to implement all preventive work and provide a safe tourism environment. They should restore public confidence and stimulate tourism consumption through transparent channels of information dissemination and communication. After the epidemic, media publicity should be strengthened, tourism quality construction should be strengthened, and domestic tourism economy should be restored.

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b. Due to the great threat of the epidemic to life safety, consumers pay more attention to the safety and health factors in travel. In this case, if the relevant departments can better carry out the prevention and control work of the tourism industry, actively formulate effective epidemic prevention and control and safety production work and measures, provide reservation protection mechanism of scenic spots, and strengthen the disinfection environment of scenic spots, in order to ensure the safety of tourists, so as to give tourists a sense of psychological safety, enhance people ' s travel confidence, and ensure the revival plan of tourism after the epidemic.

c. Promote people 's confidence and willingness in tourism consumption. After the recovery of the epidemic, tourism enterprises can better control costs and attract consumers ' consumption through preferential marketing such as advance purchase or low-cost promotion, including hotel, transportation and scenic spot tickets.

d. Scenic areas should create a free, healthy and comfortable tourist experience environment. The attention of low-density tourism, eco-tourism, rural tourism and health tourism products will be greatly increased, becoming a new direction for the development of the tourism industry.

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