

Analysis of tourist attraction image based on user evaluation data: A case study of Yellow Crane Tower

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Abstract. This research focuses on the yellow Crane Tower scenic area with a long history, uses big data analysis technology to extensively collect online comment data from different tourism platforms, uses ROST Content Mining tools to analyze the word frequency, accurately capture the high-frequency words in the comments, and makes in-depth discussions with the help of social network and semantic network analysis technology. At the same time, the emotion analysis method is used to evaluate the consistency between the actual tourist experience and the official tourism image. The study finds that there is a significant difference between tourists' perception and the official image of the attraction, which may be caused by the modernization of the Yellow Crane Tower, that its commercial operations do not match tourists' expectations of historic sites, and the inadequacy of transportation and infrastructure. Based on these, the study puts forward targeted suggestions to improve tourist experience and enhance the image of scenic spots.

1 Introduction

According to the 53rd Statistical Report on The Development of Internet in China released by China Internet Network Information Center (CNNIC), by December 2023, the scale of China's Internet users reached 1.092 billion, 24.8 million new Internet users compared with December 2022, and the Internet penetration rate reached 77.5% [1]. The popularity of the Internet enables tourists to obtain rich information of tourist destinations through online channels and provide support for their decision-making. With the advent of new media and Web2.0 era, user-created content (UGC) has become an important way for tourists to recognize and spread the image of a tourist destination. UGC, authentic, free and open, has become an important source of information trusted by tourists [2]. Based on these, this paper takes the Yellow Crane Tower scenic spot as an example, and uses the network

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text analysis method to deeply discuss the difference between the tourists' perception of the scenic spot and the official publicity, in order to provide improvement suggestions for the management of the scenic spot.

2 The necessity of using user evaluation data for image analysis in Yellow Crane Tower scenic area

As the landmark historical building of Wuhan, the Yellow Crane Tower has a extremely high cultural and tourism value. In the digital age, the way visitors access information and share experiences has shifted from traditional word of mouth to comments and feedback on online platforms. Through the analysis of these user evaluation data, scenic spot managers can directly understand the real needs of tourists, accurately identify the advantages and disadvantages of scenic spots, so as to optimize the tourist experience, improve the service quality, and enhance the market competitiveness. At the same time, this analysis can also help the scenic spots to achieve personalized and fine management, timely response to the market dynamics, to ensure that the management and the needs of tourists are synchronized. In addition, by deeply understanding tourists' cognition of the cultural value of the Yellow Crane Tower, the scenic spot can be promoted more effectively in terms of brand building and cultural communication, thus further enhancing its popularity and influence at home and abroad. Therefore, image analysis based on user evaluation data is not only a key measure to enhance the competitiveness of the Yellow Crane Tower scenic area, but also an important means to protect and spread its cultural heritage.

3 Analysis method of user evaluation data

3.1 Network text analysis method

Network text analysis technology is a method of information extraction through online text, which is an extension of content analysis, which involves collecting and screening network text, and conducting characteristic analysis of the screened data. The core process includes transforming valuable text and non-numerical information in the network into measurable numerical data and constructing the corresponding classification system. By analyzing the characteristics of sample data, the mining of network text content is realized, so as to carry out objective, systematic and quantitative analysis.

3.2 Data acquisition and collation

Using Python to crawl the yellow crane tower scenic spot online comment data, web crawler is a kind of according to certain rules, automatically grab the world wide web information program or script [3], it can start from one or a group of url, access to all the associated url, and can be extracted from each url corresponding page required, valuable data [4].

The data of this paper comes from the four platforms of Ctrip, Qunar, Tongcheng and Tuniu Tourism, and 12,498 visitor feedback are preliminarily collected, and the data set covers from June 2024 to January 2015 (see Table 3.1 for a detailed list). In order to ensure the accuracy of the analysis, the data after multi-step cleaning and sorting, including delete repeated comments, clear invalid content (such as only contain emoticons, code and comments are too long or too short), correct wrong characters and grammatical errors, standard language (such as traditional Chinese, English and network language into standard Chinese), remove copy and paste content, and processing punctuation marks and space. In

Tower is a highlight of Wuhan tourism, which has important historical and cultural significance. Words such as "convenience", "service" and "ticket" reflect the tourists' attention to the infrastructure and service quality of the scenic spots. Most comments were emotionally neutral, accounting for 83.62% of the total comments. This may indicate that visitors are generally satisfied with the experience, but do not show a particularly strong emotional response. The proportion of positive sentiment comments was 5.31%, indicating that although the scenic spot performs well in some aspects, it has not yet stimulated significant positive sentiment among most tourists. For both positive and negative emotions, the overall low intensity of emotion in the reviews indicates that the experience of most tourists, although emotionally inclined, is not strong.

4.2 Problems

- The controversy over modernization and commercial operation: the emergence of words, such as "queuing", "weather" and "not worth", indicates that some tourists are dissatisfied with the modernization and commercial operation of the scenic spot, believing that these are not consistent with their expectations of historical relics, leading to the deviation and dissatisfaction in experience.
- Lack of infrastructure and services: Words such as "time" and "regret" reflect some problems that tourists may encounter during the tour, such as the long queue time, and the weather affects the experience. These factors may affect the overall satisfaction of tourists.
- There is a certain proportion of negative emotions: this emotion accounts for 11.07%, indicating that there are some problems or deficiencies in the services, facilities or other aspects of the Yellow Crane Tower scenic area, which affects the satisfaction of some tourists.
- Lack of emotional connection: The proportion of positive emotional comments is low, and the emotional intensity is generally not high, indicating that the Yellow Crane Tower Scenic Area has not yet established a deep emotional connection among most tourists, and may need to be further strengthened in experience design and emotional marketing.

5 Conclusions and suggestions

5.1 Research conclusion

As a landmark scenic spot in Wuhan, the historical and cultural value of Yellow Crane Tower has been widely recognized by tourists. However, in the context of modernization and commercial operation, there are significant differences between the official publicity image of Yellow Crane Tower and the actual perception of tourists. The scenic spot needs to further improve its infrastructure and service quality to meet tourists' expectations and improve their overall experience.

5.2 Suggestions for improvement

- Reasonable development and protection of the historical and cultural resources of the Yellow Crane Tower: regular professional monitoring and daily maintenance of the Yellow Crane Tower, provide safety personnel to supervise the behavior of tourists, set up warning signs and delimit safe areas to ensure the integrity of the structure and cultural relics and prevent improper behavior.

- Provide unique tour experience: through drama reappearance, AR / VR technology, personalized tour, multilingual service, intelligent tour system, instant feedback, and customized souvenirs and social media sharing, to comprehensively improve the cultural experience and service quality of tourists.
- Enhance emotional connections: Build emotional connections with visitors by telling historical stories, interactive cultural activities, multimedia displays, souvenir development, and social media promotion.
- Optimize and improve the infrastructure and services: by optimizing the traffic layout, improve tickets and admission efficiency, update infrastructure, improve service quality, set up information center, establish feedback mechanism and strengthen safety management, comprehensively improve the scenic spot liquidity, convenience and tourist experience, at the same time ensure the safety and service quality.
- Considering weather factors and reasonable control of human flow: Yellow Crane Tower Scenic Area should flexibly adjust tour activities through real-time weather monitoring and early warning, provide convenient facilities, disperse people, and strengthen information communication and emergency plan, so as to ensure that tourists can enjoy a safe and pleasant experience in any weather.
- The historical and cultural value of the Yellow Crane Tower is maintained by protecting and restoring historical structures, introducing modern safety facilities, holding cultural and educational activities, rationally planning commercial activities, and using technology to provide immersive experience.

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References

1. China Internet Network Information Center. The 53rd Statistical Report on Internet Development in China [EB / OL] March 22, 2024. <https://www.cnnic.cn/n4/2024/0321/c208-10962.html>
2. Fang Yu, Huang Xiang. Research on image perception of Wuhan tourist destination: Based on network text analysis method [J]. Journal of Central China Normal University (Natural Science Edition), 2017, 51 (5): 709~714.
3. Liu Yu, Cheng Xuelin. A crawler recognition technology based on the decision tree algorithm [J]. Software, 2017, 38 (7): 122-125.
4. Mao Yiheng. Web page information acquisition technology based on web crawler [J]. Communication World, 2018 (6): 11-12.
5. Fu Yeqin, Wang Jianxin, Zheng Xiangmin. Research on tourism image based on network text analysis — Take Gulangyu Island as an example [J]. Tourism Forum, 2012, 5 (4): 59-66.