

Research on the Identification of Hotspots in Wenzhou City Brand Construction and Its Communication Strategies

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Abstract: In the context of accelerated urbanization and intensified global urban competition, city branding has become a core strategy for enhancing urban competitiveness. As a region with advanced private economy and a renowned cultural city, Wenzhou faces both opportunities in industrial upgrading and cultural dissemination, as well as challenges such as homogenized competition and insufficient communication efficiency in its brand building. Based on city branding theories, this study utilizes multi-source data analysis methods, incorporating optimized communication strategies and practical cases, to provide theoretical references and practical insights for Wenzhou's city branding. This research integrates multi-source data from social media texts and news platform data, and employs natural language processing techniques for text analysis to identify public perception hotspots and propose targeted communication strategies.

Keywords: City brand construction; Communication strategies; Multi-source data; Social media texts.

1. Introduction

In the era of accelerating globalization and continuous improvement of urbanization, cities have become the core hub of global economic, cultural, and social activities. However, the rapid advancement of urbanization has also brought a series of severe challenges. On the one hand, the phenomenon of homogenization among cities is becoming increasingly serious, with many cities showing high similarity in functional layout, industrial structure, and other aspects, lacking unique personality and recognition. This homogenization competition has led to great pressure on cities in attracting key resources such as investment, talent, and tourists, making it difficult to form sustainable competitive advantages. On the other hand, with the improvement of people's living standards and the change of consumption concept, the requirements for urban quality are increasingly diversified and personalized. People are no longer satisfied with the basic material living conditions provided by the city, but also pursue high-quality cultural experiences, a good ecological environment, convenient public services, and unique regional cultural charm. Therefore, how to stand out in the dual waves of globalization and urbanization, and shape a unique and competitive urban image, has become a key issue that needs to be urgently addressed in the development of contemporary cities.

From an economic perspective, a strong city brand can attract a large amount of domestic and foreign investment, promote industrial agglomeration and innovative development, and promote the optimization and upgrading of the city's economic structure. In the cultural field, city brand helps to inherit and promote the historical culture of the city, and enhance the cultural soft power and international influence of the city. In terms of social development, a good city brand can enhance residents' sense of belonging, identity, and pride, and promote social harmony, stability, and sustainable development.

As a millennium commercial port and an important node of

the Maritime Silk Road, Wenzhou's urban brand construction is rooted in a profound historical and cultural soil. The excavation of the Shuomen Ancient Port Site in 2022 has confirmed that Wenzhou had already formed a commercial pattern of "port to the world" during the Tang and Song Dynasties. The unearthed shipwrecks, docks, porcelain and other cultural relics vividly outline the prosperous scene of "a prosperous sea". This gene of "trading all over the world" is deeply integrated with the spirit of "daring to be the first" of Wenzhou people, forming the core positioning of "a millennium trading port and a happy Wenzhou". In terms of cultural heritage, historical relics such as the prehistoric cultural sites on Nanji Island and the ancient fishing village on Jiangxin Island, together with four UN intangible cultural heritage skills such as Yongjia Kun Opera and Yueqing fine-line paper carving, have created a unique cultural IP matrix.

With the vigorous development of emerging technologies such as Internet plus, mobile Internet, big data, and artificial intelligence, a massive amount of multi-source data has been generated during the operation of cities. These data cover multiple dimensions of urban spatial layout, population flow, economic development, cultural activities, ecological environment, etc., providing rich information resources for a comprehensive and in-depth understanding of cities.

2. Literature Review

2.1. Urban brand research

The theory of urban branding originates from the extension of brand marketing theory. Keller proposed that urban branding is a process of conveying the unique value of a city to the audience through symbols, images, and associations. The core lies in building a differentiated urban identity system [1]. MacFadyen studied the investment forms of urban brands and the value brought by the shaping of urban brands. The cultivation and promotion of urban brands are key means for urban economic and social development. Domestic research has further expanded the connotation of urban brands,

emphasizing their attributes as geographical brands, covering diverse elements such as historical culture, industrial advantages, and ecological environment [2]. He Guoping conducted research from the perspective of stakeholders, proposing that urban positioning needs to stimulate and reflect the demands and recognition of stakeholders, and carry out urban marketing activities to extend the strategy of urban image communication [3]. Wang Leilei, Zhou Ganghui et al. conducted research on the branding of cities such as Qingdao, Hangzhou, and Chengdu from the perspectives of brand building, value construction, cultural tourism integration, and sports event promotion. The city brand is an important symbol to measure the competitiveness of a city, and the research on city brand is crucial. However, there are few studies on the city brand of Wenzhou.

2.2. Research on urban brand communication in the new media environment

In recent years, with the rapid development of the Internet, the communication strategy of city brands in the new media environment has attracted much attention. Mo found out that the dissemination of city image needs to integrate creative new media resources, and achieve the integration of content, media and communication tools. Xu Tianbo showed that the use of different communication media has a significant impact on people's physical and emotional cognition of urban spaces [4]. Wang Yong'an explored the relationship between mobile short video and the construction and dissemination of city image, as well as its communication effect, by taking the example of the TikTok App's promotion of Xi'an [5]. Liao Shengwu et al. explored the characteristics of diversification of urban brand communication subjects, differentiation of content, integration of channels, and continuity of processes from the perspective of media construction. From the above literature, it can be found that most of the relevant research is descriptive and case studies, with relatively few empirical studies.

2.3. Research on data-driven urban brand communication

With the rapid development of information and communication technology, society has entered the era of big data. In 2015, Wang Jianyan and others used big data to accurately target audiences, deeply explore their relevant needs, and improve the efficiency and accuracy of urban brand image communication [6]. Song Kai based on big data and social network analysis, summarized the content dissemination patterns and audience topic attitude tendencies during cultural communication through massive data analysis and typical case focus [7]. Yu Haitao utilized social media comment data to analyze the public's emotional orientation and focus on the city's image. Based on the analysis method of social semiotics, Huang Yajun combines the multimodal characteristics of urban brand communication to explore the construction of a multimodal corpus of Quanzhou urban brand with social media short videos as the corpus [8]. Yan Xinjie studied the communication strategy of urban brand image driven by big data, and proposed that the effectiveness of urban brand image communication in the era of big data can be improved by subdividing target audience needs, accurately positioning urban brand image, optimizing and integrating communication channels, and real-time evaluating communication effects[9]. From this perspective, this study needs to combine the current Internet environment

and use big data methods to analyze Wenzhou's urban brand. Xie Shuijiang and other scholars found through CiteSpace visual analysis that the research hotspots of domestic urban brands are focused on "urban marketing", "urban image" and "brand communication", while foreign countries are more concerned about "user participation" and "social environmental impact"[10]. This provides a basis for Wenzhou to choose research dimensions based on local characteristics.

3. Data Analysis

3.1. Data collection

This study selected five well-known accounts related to Wenzhou, including Wenzhou Culture and Tourism, Eat Drink Play in Wenzhou, and Wenzhou Urban Construction Fans, through the index platform. It collected relevant data from the home page videos and notes of the accounts on the TikTok and RedNote platforms, screened the top 15 records with the highest number of likes for each account, and obtained their comment texts. A total of 4,685 pieces of data were collected. In order to effectively use Python to analyze the review text, we preprocessed collected reviews. After a series of operations such as eliminating duplicate comments, correcting typos, and unifying names, 3,610 valid comments were finally selected as the analysis sample. These samples cover many aspects of Wenzhou's urban construction, food culture, tourist attractions, etc., and can more comprehensively reflect the presentation and dissemination of new media on the city's brand image.

3.2. Data Analysis

3.2.1. Cognitive analysis

This article uses Python and natural language processing (NLP) technology to perform a series of processing on the collected review data. First, use the Jieba word segmentation library to perform Chinese word segmentation to achieve accurate segmentation of the review text. Secondly, the Pandas library is used to clean and preprocess the word segmentation results to remove invalid characters and stopwords, thereby enhancing the purity of the data. Finally, the Collections library is used to perform word frequency statistics on the processed vocabulary, and the word cloud is generated using WordCloud library, as shown in Figure 1.



Fig.1 Word cloud of review text

From the perspective of the most frequently mentioned words, "Wenzhou" was mentioned the most frequently, with 1056 times. From the perspective of food, the most mentioned are "delicious", "glutinous rice", and "duck tongue". From the perspective of entertainment experience, the mention frequency of "fun" and "hahaha" is 168 and 126 respectively, which shows that some local attractions have a strong attraction to tourists. From the perspective of tourist

attractions, the mention frequency of "Wuma Street", "Yandang Mountain" and "Jiangxin Island" is 59, 31 and 24 respectively. It can be seen that Wenzhou has a variety of natural landscapes that can attract tourists with different interests. From the perspective of service facilities, users mentioned words such as "taking photos", "checking in" and "tourists" with high frequency. It is worth mentioning that Hangzhou and Ningbo are mentioned frequently. As the economic centers in Zhejiang Province, Hangzhou and Ningbo have close economic ties with Wenzhou and other surrounding cities. It can be seen that there are frequent interactions between Wenzhou and them in terms of economic cooperation, trade, or personnel flow.

3.2.2. Sentiment Analysis

Based on the extraction of high-frequency words, the emotional image of users towards Wenzhou brands was analyzed using the Python sklearn library. The results are shown in Figure 2. As shown in Figure 2, positive emotions account for the highest proportion, reaching 41%. Among positive emotions, high-intensity emotions account for the highest proportion, indicating that social media has stimulated the audience's yearning and expectations. The proportions of neutral and negative emotions were 39.7% and 19.3% respectively, indicating that the audience's perception was relatively rational. Overall, the audience's emotional image of Wenzhou's city brand is mainly positive and neutral, and short videos of food and scenery have strengthened the city's brand image.

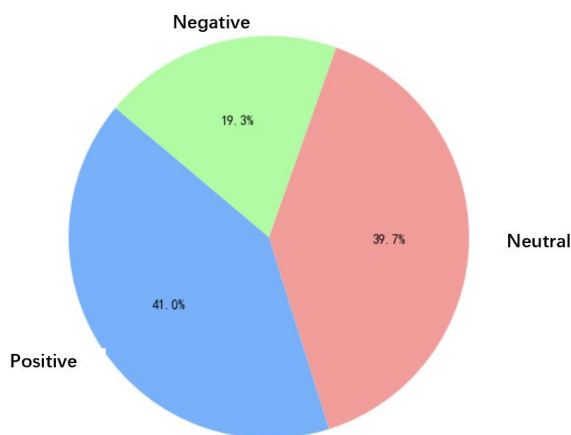


Fig.2 Result of sentiment analysis

4. Discussion

This study is based on user-generated content on the TikTok and RedNote platforms. Through multi-source data mining and natural language processing techniques, it conducts an in-depth analysis of the public perception of Wenzhou's city brand image, and draws the following core conclusions:

First, The core perceptual elements of Wenzhou's urban brand are concentrated in food culture, natural and cultural landscapes, and experiential consumption scenarios. These high-frequency words reflect the strong public attention to Wenzhou's "Ouwei flavor on the tip of the tongue", "landscape and cultural tourism", and "Internet celebrity check-in spots", forming a brand perception centered on "life experience". In addition, the high frequency of mentions of surrounding cities such as "Hangzhou" and "Ningbo" reveals the linkage effect of Wenzhou in the regional economic network, highlighting its position as the economic hub of

southern Zhejiang.

The emotional analysis shows that the public's feelings towards Wenzhou's urban brand are mainly positive (41%) and neutral (39.7%), with high-intensity positive emotions such as "yearning" and "expectation" accounting for a prominent proportion, indicating that social media content effectively stimulates emotional resonance among the audience. Although the negative sentiment of 19.3% is relatively low, it is still necessary to pay attention to service details such as infrastructure and optimization of tourist experience to enhance brand reputation.

Expressions in user comments reflect the role of new media platforms in shaping Wenzhou's "entertainment-oriented" and "fragmented" brand image. The platform transforms Wenzhou's regional characteristics into communicable social currency through visual and interactive content such as check-in videos and food discovery, "strengthening the recognition of the city brand's youthfulness and liveliness.

4.1. Suggestions

The research results provide data support for Wenzhou to refine differentiated brand labels. For example, we can focus on the characteristics of "the city of delicious food and scenery" and integrate the resources of the historical district of "Wuma Street" and the natural landscape of Yandang Mountain to create an integrated experiential brand system of "food, accommodation, transportation, travel, shopping and entertainment", avoiding homogenization competition.

Based on high-frequency words and sentiment analysis, it is suggested that Wenzhou strengthen the creation of scenario-based content on short video platforms, such as planning series topics such as "Wenzhou Check-in Guide" and "Intangible Cultural Heritage Food Shop", and using user-generated content to stimulate secondary dissemination; In response to the high-frequency connections with neighboring cities, cross-city collaborative marketing can be designed, such as the "Southern Zhejiang Cultural Tourism Ring", to amplify the regional synergy effect.

Pay attention to negative feedback, such as service facilities and transportation convenience, and optimize public services accordingly, turning user experience into an endogenous driving force for brand building. For example, by improving the supporting facilities in scenic spots and enhancing the service quality of merchants, we can turn neutral and negative evaluations into positive word-of-mouth, and consolidate the city's image as a "livable and tourist-friendly" city.

4.2. Limitations and Future Research

This study has certain innovations. Firstly, this study combines social media UGC data with NLP technology to break through the limitations of traditional literature analysis, capturing the dynamic perception of urban brands from real-time public feedback, providing a micro perspective for "data-driven urban brand management". In terms of practice, focusing on the composite attributes of Wenzhou, a strong manufacturing city and a city with cultural tourism characteristics, reveals the potential connection between industrial brands and city brands, providing a reference for similar cities to build brands driven by both industry and culture.

However, the research also has limitations. Firstly, the data source is single, focusing only on UGC data from new media platforms such as Tiktok and RedNote, lacking integration of

multi-source data such as policy texts and traditional media reports. Secondly, the sample scope is limited. This study only selected the high-liked content of five specific accounts, which may have sample bias and not cover the differential perception of different user groups. Thirdly, the depth of sentiment analysis is insufficient, based only on basic sentiment classification, without refining the emotional dimensions, and lacking semantic attribution for negative comments, which limits the accuracy of strategy optimization.

Subsequent research can integrate government policy documents, corporate annual reports, economic statistics such as GDP, fixed assets investment, and social media data to build a three-dimensional analysis framework of "policy orientation-market response-public perception" to comprehensively evaluate the systematic impact of urban brand building. In addition, a long-term effect evaluation system should be established to track and analyze the long-term impact of short video communication on Wenzhou's tourism economy and investment attractiveness, and to evaluate the actual effectiveness of brand communication activities through econometric models, forming a closed-loop mechanism of "strategy formulation-effect feedback-dynamic adjustment".

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