Research of Tourism Destination Image Based on Web Text: a Case Study of Yellow Crane Tower*

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Abstract—**This paper takes the Yellow Crane Tower as the research object, uses the network crawler program, collects the scenic spot official propaganda image and the domestic traveling website community to publish the tourist comment content, unifies the SPSS/EXCEL statistical analysis method and the text analysis method, using ROST CM6 software to identify the perceived image and propaganda image of Yellow Crane Tower Scenic, and further using IPA model to obtain the similarities and differences between the propaganda image and the perceived image and find out the reasons. Based on this, this paper provides strategies for the positioning and sustainable evolution of tourism destination image from three aspects: holistic tourism, cultural tourism integration and experience tourism.**

Keywords—web text; Yellow Crane Tower; destination image; IPA

I. INTRODUCTION

As time goes, Internet has enabled us to obtain outside information without leaving home, and netizens have changed from passively accepting information to actively collecting and publishing information. Tourists share travel experiences, exchange transportation, travel methods, inquiries about tourist routes, tourist destinations, and so on. Therefore, the role of web texts is becoming more and more obvious, and it is gradually being used by researchers in the study of the perception of tourist destinations.

Taking the Yellow Crane Tower scenic spot as an example, this study uses the Octopus data collection tool to collect the officially designed publicity image network text of the Yellow Crane Tower Scenic Spot and the network image of the tourist image of the tourist travels. The four-quadrant depth is carried out through the ROST CM6 software. Analyzing and systematically summarizing the similarities and differences between the tourist destination tourism image and the tourists' actual perception image, so as to provide appropriate suggestions for the official image design of the scenic spot to help optimize and improve its tourism image.

II. THEORETICAL BACKGROUND

Barich and Kolter (1991) divided the destination image into a launching image and a receptive image. The former is the destination to actively convey its image to the tourists, while the latter is the perceived image of the tourists after the field tour. Relevant scholars gradually began to use the online text content such as travel commentary or travel guide to explore the behavior of tourists and the image recognition characteristics of tourism. Stepchenkova and Morrison (2006) conducted a comparative study based on the image of American tourism, and believed that the content of network communication would affect the tourism image of Russian countries; Zhang.et.al (2011) analyzed the relevant network logs and found that cultural heritage and geological resources Huashan Scenic. Wang and Chen (2017) deeply explored the image perception characteristics and evaluation of Weizhou Island based on the short commentary texts of tourists. Yang and Zhang (2017) used the travel comments from ctrip as an example to find that Tianmu Mountain's Image perception of tourists presents a positive trend.

Based on this, this paper will use the text analysis method, combined with the Octopus network data collection tool, ROST CM6 software to analyze the tourism propaganda image and the Yellow Crane Tower scenic spot. This paper also puts forward reasonable opinions on the image design of tourism destinations, and helps to optimize and improve the image of tourism destinations.

III. RESEARCH OBJECTS AND METHODS

A. Research Object

The Yellow Crane Tower is located at the foot of the Snake Mountain in Wuhan, Hubei Province, China. It was built in the second year of Dongwu, 223 AD. It is known as the "Three Famous Buildings in the South of the Yangtze River" with the Yueyang Tower of Hunan and the Tengwang Pavilion of Jiangxi.

B. Research Methods

This paper uses the network text analysis method to collect information sources such as web pages, forums, blogs, travel notes, and guides through big data collectors, using ROST CONTNET MINING (referred to as ROST CM6) to

find the similarities and differences between the destination propaganda image and the perceived image.

C. Data Gathering

The research data comes from two parts as shown in "Table I". The first part is the official propaganda data of the network media of the Yellow Crane Tower Scenic Area, mainly from the official website of the Yellow Crane Tower, the relevant websites of the Wuhan Municipal Government and the tourism department, and the Yellow Crane Tower Scenic Area, and 102 articles were collected. The second part is the 20,400 raw data of Yellow Crane Tower Scenic Spot on Baidu Tourism, Qunar.com, and other famous travel websites, 20,400 original data on the hornet's nest and other famous tourist sites, covering the period from April 2015 to April 2018, after screening, the effective data is 10,979.

TABLE I.   SOURCE OF TEXT DATA

	Official propaganda image of the Yellow Crane Tower	Tourist perception of Yellow Crane Tower
Text data source	the official website of the Yellow Crane Tower, Ctrip, eLong, Qunar, etc.	Baidu Travel, Qunar.com, Ma Honeycomb's Visitor Evaluation section
Total text entry (valid)	102	10979

Through the Octopus data capture tool, the official propaganda data of the Yellow Crane Tower Scenic Spot and the effective tourist perception data of the typical website are separately sorted and imported into the ROST software for segmentation analysis.

IV. DATA ANALYSIS

A. Word Frequency Analysis

Using the words after the word segmentation, the word frequency analysis is carried out to obtain the high-frequency word statistics of the tourism publicity image of Yellow Crane Tower Scenic Area (see "Table II") and the high-frequency word statistics of the tourist perception image (see "Table III").

TABLE II.   HIGH-FREQUENCY WORDS STATISTICS OF PROPAGANDA IMAGE ON YELLOW CRANE TOWER

Vocabulary	Word frequency	Vocabulary	Word frequency	Vocabulary	Word frequency	Vocabulary	Word frequency	Vocabulary	Word frequency
Yellow Crane Tower	191	Founded	12	Glazed tile	7	Thousand years	5	And beauty	4
Wuhan	43	military	12	Tang Dynasty	7	Jiangcheng	5	Reiki	4
Poetry	42	White clouds	11	Bottom layer	7	Make up	5	Ascend	4
Wuchang	27	Bridge	11	Three towns	7	country	5	Population	4
building	24	And called	10	mural	7	Ink	5	Close	4
Yangtze	24	country	10	Resort	6	Literati	5	flat	4
Park	20	Attractions	10	Far from	6	Couplet	5	charm	4
Scenic spot	20	Cui Wei	10	Old site	6	magnificent	5	delicate	4
China	17	pagoda	9	hall	6	Boutique	5	style	4
Famous building	17	Male	9	Scenery	6	Jiang Shang	5	Reputation	4
Three countries	16	culture	9	tour	6	Beautiful	5	Guqin	4
Three major	16	history	8	legend	6	classical	5	Charm	4
Tourism	16	soul	8	Roof	6	Eternal swan	5	Ancient architecture	4
Yueyang Tower	16	poet	8	Li Bai	6	Warp angle	5	century	3
reconstruction	16	Famous place	8	Fly	6	Full view	5	Iconic	3
Historical	14	modern	8	celebrity	6	Grass	5	Four names	3
Main building	13	Imagery	8	Archway	6	famous	5	Characteristic	3
Jiangnan	12	Jiangxi	7	Ticket	5	Famous	4	Wood structure	3
The world	12	design	7	natural	5	Cultural relics	4	Beautiful	2

TABLE III.   HIGH-FREQUENCY WORDS STATISTICS OF PERCEIVED IMAGE ON YELLOW CRANE TOWER

Vocabulary	Word frequency	Vocabulary	Word frequency	Vocabulary	Word frequency	Vocabulary	Word frequency	Vocabulary	Word frequency
Yellow Crane Tower	7313	culture	324	tourism	232	Imagine	135	Guishan	93
Wuhan	2993	Spectacular	324	Wuchang	232	Disappointed	135	impression	93
Attractions	2508	The world	318	Overlooking	227	Scenery	130	Bus	92
Yangtze	2132	Cheap	318	Iconic	219	Full view	129	Monument	91
Ticket	1601	regret	297	play	160	That's it	128	model	91
Worth going	1388	elevator	296	Yueyang Tower	160	Half price	126	snack	91
Bridge	1209	East Gate	294	Thousand years	160	Not big	104	stairs	78
Convenience	1141	Far from	292	South gate	158	Top	104	Founded	78
Building	896	Fun	288	friend	157	attitude	101	Riverside	78
Famous building	716	Hubu Lane	284	the weather	157	breath	101	Hubei Province	77
Landscape	642	regret	278	Lookout	156	explain	100	Connotation	76
Yellow crane	629	landmark	271	majestic	156	Beautiful view	98	Surrounding	76
History	606	service	261	poet	150	Ink	97	that's it	76
Reconstruction	421	Fame	261	Li Bai	145	Passing by	97	Original site	75
Three major	416	not worth	244	Three towns	143	at night	97	Guqin	75
Decoration	382	Big four	240	Literati	142	momentum	96	The world's first	74
Service	356	Suggest	237	tour	138	traffic	95	style	74
Park	353	unfortunately	232	Visit	137	the best	95	Cui Wei	74
Jiangnan	337	country	232	Ascend to the top	137	Hubei	93	Four famous buildings	73

B. Parts of Speech Analysis

From the perspective of part of speech (see "Table IV"), the propaganda image of the scenic spot of Yellow Crane Tower and the part of the perceptual image of tourists have a 2% difference in nouns, and the perceived image is less than 2%, mainly composed of scenic spots and derivatives of the Yellow Crane Tower; on tourists 'image in higher than official propaganda image of 5.5%, mainly reflecting the details of the flow of tourists and tourism process; on the adjective, tourists' image vocabulary below the official propaganda image of 3.5%, mainly reflecting the administration with the summary and generalization of local tourism characteristics, there are more negative vocabulary in the perception of tourists.

TABLE IV.   THE PARTS OF SPEECH ANALYSIS

Project	Promotional Image of Yellow Crane Tower	Perception Image of Yellow River Tower
Noun	57, accounting for 60%;	55, accounting for 58%;
	Such as the Yellow Crane Tower, ancient architecture, Cui Wei, scenery and other words	Such as Yellow Crane Tower, Bridge, Yangtze River, Hubu Lane, Guishan and other words
Verb	10, accounting for 10.5%;	15, accounting for 16%;
	Such as reconstruction, vision, tour and other words	Such as overlooking, reconstructing, overlooking, ascending and looking up
Adjective	28, accounting for 29.5%;	25, accounting for 26%;
	Words such as majestic, magnificent, fine, exquisite, and popular	Such as not worth, best, just like, regret, worth going, etc.

C. Propaganda of the Yellow Crane Tower Scenic Spot: Analysis of Common Words of Perceived Image

Taking the official propaganda image of the Yellow Crane Tower scenic spot as a comparison object, it is found that 34 vocabulary of the tourist perception image overlaps with the official propaganda image (see "Table V"), occupying about 36% of the statistical table. The frequencies of Yellow Crane Tower, Wuhan, scenic spots, Yangtze River, tickets, bridges, buildings, famous buildings, history, reconstruction, etc. appear much higher than other words, reflecting the fact that the Yellow Crane Tower, the Yangtze River and the bridge have become the symbol of Wuhan. Sex elements form the true characteristics of Wuhan tourism, which is not only the consensus of tourism enterprises and government agencies, but also highly recognized by tourists. From the perspective of part of speech and category, common high-frequency words are mostly composed of

nouns, such as the Yangtze River, the bridge, the park, Wuchang, Libai, Sanzhen, Wenren, Moke, Cui Wei. In addition to nouns, there are some summary adjectives, such as iconic, famous buildings, the world, thousands of loads, etc., as well as some verbs highlighting the location and appreciation of the Yellow Crane Tower, such as overlooking.

TABLE V.   SAME AND DIFFERENT WORDS BETWEEN PROPAGANDA IMAGE AND PERCEIVED IMAGE

Same Words	Different Words of Propaganda Image	Different Words of perceived Image
Yellow Crane Tower, Wuhan Attractions, Yangtze River, Ticket Bridge, Buildings, Historical Reconstruction, Three Great Parks, Tourism Wuchang iconic, Yueyang Tower, Poets Li Bai, Three Town, Literati, Visiting the scenery	mind, the modern image, the Jiangxi design, the glazed tile, the Tang Dynasty, the bottom layer of the murals, the old site, the legendary roof, the flying celebrity, the celebrity archway, the natural city, the beautiful, the beautiful, the river, the beautiful, the ancient, the eternal singer, the famous singularity, the famous reputation. Cultural relics and beautiful spirits ascend to the heights of the population, close to the plane, the charm, the exquisite reputation, the ancient architecture, the four famous buildings, the famous wooden structure, the beautiful	Worth a visit, convenient scenery, Yellow crane decoration, spectacular, cheap, regret, elevator, East Gate, fun, household, alley, regret, landmark service, fame, not worthy of the four recommendations, but unfortunately overlooking the South Gate friends, the weather, the majestic visit, ascending to the horizon, the disappointment, the half price is not too big. Attitude and atmosphere to explain the beauty of the road through the evening, the best traffic, Hubei, Guishan, impression, bus, monument, model, snack, stairway, the edge of the river, Hubei Province, the surrounding area, the original site of the world's first four famous buildings

D. Analysis of Propaganda-perceived Image Differences

In the statistics of the high-frequency words of the network text of the propaganda image attribute of the Yellow Crane Tower, the word vocabulary with the difference of the propaganda image is obtained (see "Table V"). From the perspective of part of speech and category, this table is mainly composed of five parts. One is historical and cultural nouns, such as poetry, three countries, murals, Tang Dynasty, legends, couplets, cultural relics, and centuries; secondly, the related nouns of scenic spots, such as the main building, pagodas, glazed tiles, halls, roofs, flying plaques, arches, etc.; the third is the description of adjectives such as heroes, magnificence, classical, famous, popular, ingenious, etc.; the fourth is the macro description of terms such as China, the country and Jiangcheng etc.; the fifth is to summarize the adjectives, such as modern, natural and so on.

From the perspective of part of speech and category, this table is mainly composed of five parts (see "Table V"). The first is emotional adjectives, such as worthy of a visit, regret, regret, worthless, unfortunate, disappointing, and so on. Secondly, tourists are perceptive adjectives, such as convenience. Spectacular, cheap, fun, best, etc.; the third is to visit scenic nouns such as Yellow Crane, Dongmen, Hubu Alley, Landmark, South Gate, Guishan, etc.; the fourth is the movement and detail words during the tour, such as overlooking, play, look, visit, ascend to the distance, etc.; the fifth is the tourism public service perception term, such as elevators, services, explanations, transportation, public transport and so on.

E. Tourist Perception Satisfaction Analysis

The ROST CM6 software can be used to analyze the data of the visitors' perception network text, and the sentiment analysis conclusions can be obtained (see "Table VI"). After tourists visited Yellow Crane Tower, the positive sentiment reached 40%, which was much higher than the 14% of the negative emotions. This indicates that tourists are more satisfied with the tourism of Yellow Crane Tower and have a stronger sense of tourism image. However, it should not be overlooked that in the classification of negative emotions, the highly negative classification is far superior to the general, which means that the unsatisfied people who come to the Yellow Crane Tower scenic spot tend to be highly dissatisfied.

TABLE VI.   SENTIMENT ANALYSIS OF NETWORK TEXT DATA ON PERCEIVED IMAGE

Emotional type	Quantity	Percentage
Positive emotion	4391	40%
Neutral mood	5050	46%
Negative emotion	1538	14%
Positive emotional segmentation statistics		
General	1405	32%
Moderate	1271	29%
Height	1715	39%
Negative emotion segmentation statistics		
General	354	23%
Moderate	584	38%
Height	600	39%

V. CONCLUSION

A. *Global Tourism Management Cooperation Mechanism*

In the follow-up development process, such landmarks as the Yellow Crane Tower can be used in the planning and construction of scenic spots, urban environmental improvement, tourism supporting facilities, tourism management services, tourism promotion and other aspects to strengthen the construction of core scenic spots. It has become a magnet for global tourism, driving the cluster development of surrounding industries and exerting the comprehensive driving effect of the core scenic spots.

B. *Exploring Deep Integration of Culture and Tourism*

For example, such as the Yellow Crane Tower, the author proposes to integrate cultural elements into tourism products, or to realize the penetration of the tourism industry into the cultural industry. Through the complementation of industrial functions, the integration of culture can be deepened and tourism to create a high-end cultural tourism brand can be realized to change the scenic spot's (point) lacking the status quo of entertainment projects, enhance the value of the tourism industry, and achieve sustainable tourism development.

C. *Promoting the New Development of Experiential Tourism*

With the increase of tourism experience and the change of tourism awareness, tourists are no longer satisfied with the traditional tourism and sightseeing mode, they want to participate in it, and this tourism mode is in line with the characteristics of experience tourism. Taking the Yellow Crane Tower as an example, it is possible to combine the construction of the Yangtze River main axis and promote the construction of the riverside ecological landscape tourism belt such as the right bank avenue, the landscape balcony, the river beach park, and the railway ruins cultural park to construct a modern urban experience zone.

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