

A Study On The Perception Of Dinghu Mountain As A Tourist Destination Based On Tik Tok Comments

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Abstract:

Background: This study takes the Dinghu Mountain Scenic Area in Zhaoqing, Guangdong Province, as a case example to explore how short video platforms (TikTok) influence the dissemination and construction of a tourist destination's image. Using the Webscraper plugin and a Python crawler program, we scraped user comments and shared content on the TikTok platform from January 2023 to May 2024 using the keyword "Dinghu Mountain." After filtering the data, we employed network text analysis methods (high-frequency word statistics and sentiment analysis) to analyze tourists' cognitive perceptions and emotional responses toward the scenic area.

Materials and Methods: This study is a prospective observational study that collected 39,874 user comments on the TikTok platform from January 2023 to May 2024 using the keyword "Dinghu Mountain." After excluding duplicates and advertisements, an effective sample was formed. All comments were randomly divided into two groups in a 1:1 ratio: Group A (Cognitive Image Group) used ROST high-frequency word extraction combined with THULAC part-of-speech tagging to extract the top 110 keywords, analyzing visitors' cognitive frameworks from dimensions such as functionality, experience, time, and social interaction; Group B (Emotional Image Group) utilized an emotional vocabulary database and point mutual information algorithms to score comments based on emotional tone, categorizing them into positive, neutral, and negative categories to assess visitors' emotional tendencies. The study aims to explore how short video comments contribute to the construction of a tourist destination's image, providing empirical evidence for digital communication strategies.

Results: In Group A's cognitive dimension, "experience design" terms accounted for 55.37%, significantly higher than other factors; the proportions of other dimensions such as scenic spot characteristics, feelings, time, social relationships, and services were all below 30%. Group B's emotional analysis showed that positive emotions accounted for 81.3%, neutral emotions 12.8%, and negative emotions only 5.9%. High-frequency terms such as "landing," "making a wish," and "thank you" prominently reflect the blessing experience, while negative feedback is primarily associated with crowded crowds and lengthy waiting times.

Conclusion: The research findings indicate: (1) Network text analysis can effectively reveal the cognitive and emotional imagery of tourist destinations; (2) Visitors are most concerned about the experiential design and tourism activities of scenic areas, with experiential factors being the core dimension in shaping perceptions of destination imagery; (3) The emotional image of Dinghu Mountain Scenic Area is predominantly positive, with neutral and negative emotions accounting for a relatively low proportion. Based on this, the scenic area should leverage its own resources and unique characteristics to create more attractive tourism experience content through short video platforms, strengthen user interaction and UGC dissemination, optimize the path of destination image construction, and thereby enhance its competitiveness in the digital communication environment.

Key Word: Short video dissemination; tourism destination image; online text analysis; cognitive image; emotional image; Dinghu Mountain Scenic Area

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I. Introduction

Currently, with the rapid development of digital tourism, "cloud tourism" is gradually becoming an integral part of everyday life, and the rise of live-streaming tourism has made short video interactions an important medium for audiences to perceive distant destinations. Empowered by new media technology, digital cultural and tourism formats such as online museums and cloud exhibitions have broken through spatial and temporal constraints, enabling audiences to "cloud experience" global landscapes. In particular, the vigorous development of short video platforms has further driven the new trend of "understanding the world through video." The vast amount of user-generated travel short videos on platforms not only document personalized travel experiences but also serve as an important medium for constructing the image of travel destinations, influencing the public's collective perception and emotional impressions of scenic areas.

In the short video era, the sudden popularity of Dinghu Mountain is a clear example of the dissemination effect of new media platforms. Through short videos and comments, users have gradually constructed a cognitive framework and emotional tags for the Dinghu Mountain scenic area, propelling it to become a “top-tier” destination within Guangdong Province in a short period of time. Additionally, data from the TikTok platform shows that 92% of cultural and tourism content users actively tag or save related videos, indicating that short videos are not only a source of information but also a critical node in image shaping.

However, tourism-sharing content, due to its personalized and fragmented nature, may also introduce cognitive biases and information noise while shaping destination imagery. Therefore, conducting in-depth research on how user comments and shared content on short video platforms contribute to the construction of a destination's cognitive and emotional imagery is of significant importance for understanding the mechanisms of tourism communication in the digital age.

II. Material And Methods

This study takes the Dinghu Mountain Scenic Area in Zhaoqing, Guangdong Province, as an example. First, using the Webscraper plugin and a Python crawler program, to extract all online comments containing the keyword “Dinghu Mountain” from TikTok short videos between January 2023 and May 2024. Valid comments were then selected as the data source. By comprehensively applying high-frequency word analysis and sentiment analysis methods from network text analysis, the study obtained users' perceptions of the Dinghu Mountain Scenic Area's image through TikTok short videos, thereby revealing the influence of online comments on the image of tourist destinations. The results of the database analysis are then analyzed and summarized to examine the research pathways for studying the impact of TikTok short videos on destination image.

Study Design: Prospective observational study

Study Location: TikTok

Study Duration: January 1, 2023 to May 31, 2024.

Sample size: All user comments with the keyword “Dinghu Mountain” totaled 39,874 after being sorted according to the ranking criteria.

Theoretical model: Travelers' perceptions of travel destinations are constructed through multiple information sources, with media content being a significant influencing factor. As an emerging media format, TikTok short videos can shape and disseminate the image of travel destinations through visual and auditory elements. Travelers form cognitive, emotional, and motivational perceptions of travel destinations by watching TikTok short videos and reading comments. This study examines how the cognitive and emotional dimensions presented in TikTok user comments collectively construct the destination image of Dinghu Mountain Scenic Area, thereby providing empirical evidence for destination digital communication strategies.

Research methods^{Error! Reference source not found.}:

The analysis of tourists' comments on TikTok is divided into two parts: data preparation and web text analysis. Data preparation includes data acquisition and cleaning, as well as corpus construction. Web text analysis includes high-frequency word analysis and sentiment analysis.

(1) Data acquisition and cleaning

This paper will use the Webscraper plugin and Python crawler program to crawl all online comments with the keyword “Dinghu Mountain” from short videos on TikTok from January 2023 to May 2024, and store these data in a MySQL database. After cleaning the data with SQL statements, a total of 39,874 valid comment data were obtained.

(2) Corpus processing

This paper uses a word segmentation algorithm to split text into individual words or phrases. English text can be segmented using spaces, but Chinese text is a continuous string of characters and cannot be distinguished using spaces. A corpus is required as a label to assist with word segmentation.

(3) Online Text Analysis

Online text analysis is a research method for extracting information and making effective inferences from text in a specific context. To address the issue of destination image, this study employs high-frequency word analysis and sentiment analysis to reveal the cognitive and emotional images of tourist destinations.

First, high-frequency words in TikTok comments are counted and categorized. Word frequency refers to the number of times a word appears in comments; a higher frequency indicates greater attention from tourists. To identify the high-frequency words most closely watched by tourists, this study not only establishes a scenic spot word segmentation corpus but also filters out stop words, i.e., removes words with high frequency but little meaning. After extracting high-frequency words, this study will analyze them from the perspectives of part of speech and word frequency, and then categorize high-frequency words based on the analysis results into destination image dimensions to extract the perceptual characteristics of tourist destination images that tourists care about.

Second, sentiment analysis is conducted. Language is the expression of human emotions. By quantitatively scoring the emotional expressions in the comments, the emotional image of the destination as perceived by tourists is obtained. Analyzing tourists' emotional attitudes toward tourist destinations helps uncover the causes of various emotions, enabling destination managers to understand tourists' emotional tendencies and promptly identify and improve aspects of the destination image that dissatisfy tourists. Sentiment analysis first requires preparing a sentiment lexicon, which should include vocabulary labeled with positive, negative, and neutral emotions; then, the point mutual information algorithm Error! Reference source not found. is used to calculate the similarity between words in the comments and the labeled vocabulary in the sentiment lexicon. The calculation formula is:

$$D(w_1, w_2) = \log_2 \left(\frac{p(w_1, w_2)}{p(w_1)p(w_2)} \right)$$

In this formula: $D(w_1, w_2)$ represents the similarity between words w_1 and w_2 ; the smaller the absolute value, the greater the similarity between the two words; $p(w_1)$ and $p(w_2)$ represent the number of times words w_1 and w_2 appear individually in the target review; $p(w_1, w_2)$ represents the number of times words w_1 and w_2 appear together in the target review. Based on this, the sentiment comment score is calculated using the following formula:

$$S = \sum_{i=1}^{num(p)} D(w_i, w_p) - \sum_{i=1}^{num(n)} D(w_i, w_n)$$

In this formula: $num(p)$ and $num(n)$ represent the number of positive and negative sentiment words in the sentiment word database, respectively; $D(w_i, w_p)$ represents the similarity between the word (w_i) in the test comment and the positive word (w_p); $D(w_i, w_n)$ represents the similarity between the word (w_i) in the test comment and the negative sentiment word (w_n); S represents the sentiment score, where $S > 0$ indicates positive sentiment, $S < 0$ indicates negative sentiment, and $S = 0$ indicates neutral sentiment.

III. Analysis Of Empirical Case Study Results

This study used the open-source Chinese word segmentation library jieba in Python to extract keywords from 39,874 comments and selected the top 200 keywords in order of importance to store in the corpus. As shown in Table 1: Top 40 keywords in all valid comments on Dinghu Mountain Scenic Area, the following contains the top 40 keywords in order of importance for Dinghu Mountain Scenic Area.

Table no 1 : Top 40 keywords in terms of importance among all valid reviews of Dinghu Mountain Scenic Area

sorting	Dinghu Mountain Scenic Area		sorting	Dinghu Mountain Scenic Area	
	keyword	importance		keyword	importance
1	Landing	0.147063249	21	Happiness	0.009329388
2	Gratitude	0.141069369	22	Good health	0.00927923
3	Tears	0.061217836	23	Make a wish	0.009128756
4	Smooth sailing	0.021893966	24	Health	0.008827808
5	College entrance examination	0.021718413	25	Go in	0.006971962
6	Specialized to bachelor's degree	0.021392386	26	May your wishes come true	0.006746251
7	Dinghu Mountain	0.015724532	27	Always	0.006721172

8	Hope	0.015498821	28	Good luck	0.006671014
9	Success	0.01527311	29	Once	0.006595777
10	Bachelor's degree	0.014972162	30	Handan	0.006595777
11	Zhaoqing	0.014570898	31	Get rich	0.006570698
12	Passing the exam	0.013668054	32	Like	0.006470382
13	No side effects	0.013066158	33	Get rich quick	0.006319908
14	Single enrollment	0.012564578	34	Wish	0.006069118
15	Public	0.012138235	35	2024	0.005743091
16	Possible	0.012088077	36	Please	0.005567538
17	Family	0.011736971	37	Yourself	0.005492301
18	Examination	0.011461102	38	This year	0.005417064
19	Peace	0.010608417	39	Peace and safety	0.005141195
20	high school entrance examination	0.010232232	40	Admission	0.004865326

Cognitive image analysis :

Travelers often form their initial impressions of a destination in everyday situations, which are shaped by the continuous influence of various media information on their cognitive frameworks and emotional evaluations Error! Reference source not found.. TikTok travel-related short videos can further extend users' access to travel information, and travelers gradually form a cognitive image of the destination through the collection of keywords, symbols, and other information related to the destination Error! Reference source not found.. To understand the destination image that travelers focus on, this paper employs high-frequency word analysis to deeply explore the cognitive image of destinations that travelers pay attention to. Based on the word segmentation results from the ROSTContentMining software, some meaningless words were removed, and 110 high-frequency words related to the Dinghu Mountain Scenic Area were extracted. The Chinese morphological analysis tool THULAC, developed by the Natural Language Processing and Social Humanities Computing Laboratory at Tsinghua University, was used to annotate the part-of-speech tags for these high-frequency words. (Table 2: The top 110 high-frequency words in online reviews of the Dinghu Mountain Scenic Area).

In terms of part-of-speech, the high-frequency words primarily include verbs, nouns, adjectives, adverbs, as well as some place names, time words, directional words, locative words, and numeral words. Due to their identical part-of-speech, some place names were analyzed as nouns. In the valid comments about the Dinghu Mountain Scenic Area, verbs dominate, accounting for 50.96% of the total word count, primarily reflecting the experiential design of the scenic area and tourists' travel activities; nouns account for 31.20%, primarily highlighting the scenic area's recreational and wish-making tourism functions; adjectives and adverbs account for 14.49%, primarily describing the experiences or states tourists hope to gain from their activities at the scenic area; other words account for 3.36%. This indicates that tourists are most concerned with the scenic area's experiential design and the tourism activities they engage in within the scenic area^[5].

In terms of word frequency, the top five most frequently mentioned words in TikTok comments about the Dinghu Mountain Scenic Area are "landing," "gratitude," "tears," "smooth," and "college entrance exam." These five keywords primarily reflect the scenic area's experiential design—wish-making tourism activities—indicating that tourists perceive this tourism function most strongly. "Landing," "college entrance exam," "associate degree to bachelor's degree," good health," "wishing," "smooth," and 'peace' are among the top-ranked high-frequency terms, indicating that tourists believe visiting Dinghu Mountain Scenic Area or participating in certain tourist activities there can bring them good luck or positive energy, revealing the purpose of their visit; the appearance of terms like "Dinghu Mountain" and "Butterfly Valley" directly reflects tourists' focus on specific attractions; Terms like "this year," "now," "May Day," and "summer vacation" show that tourists have a particular interest in travel experiences during specific time periods, which may be their primary travel times; the frequent appearance of terms like "family," "friends," and "everyone" indicates that tourists' travel experiences at the Dinghu Mountain Scenic Area are often related to family and friends, emphasizing the importance of social elements in travel activities.

Through the analysis of high-frequency words, it can be observed that the image perception of the Dinghu Mountain Scenic Area can be categorized into scenic area characteristic factors (Dinghu Mountain, etc.), experience design factors (disembarking, college entrance exam, associate degree to bachelor's degree, physical health, etc.), time factors (this year, now, May Day, summer vacation, etc.), social relationship factors (family, friends, everyone, etc.), feeling factors (beautiful, handsome, etc.), tourism service factors (tickets, activity level, etc.), and other factors (achievement, going up, finding, etc.). According to Table 3: Dinghu Mountain Scenic Area Image Composition Table, the experience design factors of Dinghu Mountain (accounting for 55.37%) are the most core dimension in shaping visitors' perceptions of the destination, followed by emotional factors (26.72%).

Table no2 : Top 110 high-frequency words in online reviews of Dinghu Mountain Scenic Area

sortin g	Dinghu Mountain Scenic Area			sortin g	Dinghu Mountain Scenic Area		
	Vocabulary	Part of speech	Frequency of occurrence/tim es		Vocabulary	Part of speech	Frequency of occurrence/t imes
1	Landing	Verb	5864	56	Impressive	Adjective	147
2	Gratitude	Verb	5625	57	Pass every exam	Noun	143
3	Tears	Verb	2441	58	First-class university	Noun	139
4	Smooth	Adjective	873	59	Sleeping	Verb	137
5	College Entrance Examination	Noun	866	60	Graduate school entrance exam	Verb	137
6	Specialized to Bachelor's Degree	Noun	853	61	Happy	Adjective	136
7	Dinghu Mountain	Place name	627	62	Teacher qualification exam	Noun	135
8	Hope	Verb	618	63	Rain	Verb	134
9	Success	Noun	609	64	University	Noun	132
10	Bachelor's Degree	Noun	597	65	Everything goes smoothly	Adjective	131
11	Zhaoqing	Place name	581	66	Transfer to a four- year university	Verb	127
12	Admission	Verb	545	67	Now	Time word	126
13	No Side Effects	Noun	521	68	Forever	Adverb	124
14	Single Enrollment	Noun	501	69	Nursing exam	Verb	124
15	Public	Noun	484	70	May Day	Time word	121
16	Possible	Noun	482	71	Ticket	Noun	114
17	Family	Adverb	468	72	Summer vacation	Time word	114
18	Examination	Noun	457	73	Activity level	Noun	114
19	Peace	Noun	423	74	Like this	Adverb	111
20	High School Entrance Examination	Adjective	408	75	Can't	Adverb	111
21	Happiness	Noun	372	76	Great King	Noun	110
22	Good Health	Adjective	370	77	A sudden idea	Noun	108
23	Wish	Noun	364	78	Go up	Verb	106
24	Health	Verb	352	79	Find	Verb	105
25	Enter	Adjective	278	80	Everything goes well	Adjective	105

26	Wish Come True	Verb	269	81	Happy every day	Adjective	102
27	Always	Noun	268	82	Take a look	Adjective	101
28	Good luck	Adverb	266	83	Go smoothly	Noun	101
29	Once	Noun	263	84	Happy	Adjective	100
30	Handan	Quantifier	263	85	Rich	Adjective	100
31	Get rich	Place name	262	86	Good-looking	Adjective	99
32	Like	Verb	258	87	So	Adjective	99
33	Get rich quickly	Verb	252	88	Feel	Adverb	97
34	Wish	Verb	242	89	Next time	Verb	96
35	2024	Noun	229	90	Dinghu Mountain	Time word	95
36	Please	Noun	222	91	Friends	Place word	93
37	Yourself	Verb	219	92	Everyone	Noun	93
38	This year	Noun	216	93	Achieve	Noun	92
39	Peace and safety	Time word	205	94	Sad	Verb	92
40	Admission	Adjective	194	95	Reunite	Adjective	91
41	Feel	Verb	186	96	Physical exam	Verb	88
42	Cheer up	Verb	183	97	Thank you	Noun	87
43	Must pass	Verb	177	98	Thought	Verb	85
44	Get your name on the list	Verb	176	99	Past	Verb	85
45	So handsome	Noun	175	100	Think	Time word	85
46	Guangdong	Adjective	172	101	Actually	Verb	84
47	Place	Place name	172	102	A lot	Adverb	83
48	Grades	Place word	168	103	TikTok	Adjective	82
49	Active	Adjective	167	104	Graduation	Noun	82
50	Work	Noun	166	105	Seems like	Verb	82
51	Smoothly	Adjective	164	106	Butterfly Valley	Adverb	81
52	First	Quantifier	158	107	Local people	Place word	81
53	Volunteer	Noun	157	108	Want	Noun	81
54	Wish	Noun	156	109	See	Verb	81
55	Healthy	Adjective	148	110	Inside	Verb	80

Table no 3 : Composition of the cognitive image of Dinghu Mountain Scenic Area

Image perception	Dinghu Mountain Scenic Area	
	Frequency/time	Proportion/%
Scenic spot characteristics	1838	4.90
Experience design factors	20774	55.37
Time factors	1422	3.79
Social relationship factors	954	2.54
Emotional factors	10025	26.72
Tourism service factors	395	1.05
Other factors	2113	5.63

Emotional Image Analysis

Tourism emotional image refers to travelers' intuitive reactions to their experiences at tourist destinations, which significantly influence their expectations and satisfaction levels^[6]. Under the influence of online comments on TikTok, travelers' emotional responses to their experiences at tourist destinations are a dynamic process. Positive comments reinforce positive emotional impressions, while negative comments weaken favorable feelings, and both collectively shape the emotional image of Dinghu Mountain. Using formula (2), this study employs sentiment analysis to compare the sentiments expressed in all valid comments about the Dinghu Mountain scenic area. As shown in Table 4: Composition of Dinghu Mountain Scenic Area's Emotional Image, positive emotions (81.3%) reinforce tourists' emotional identification with Dinghu Mountain, aiding the destination in forming a positive emotional label; neutral and negative emotions (18.7%) indicate that the scenic area still needs to address potential pain points and optimize image details^[7].

Table no 4 :Emotional Image Composition of Dinghu Mountain Scenic Area

Dinghu Mountain Scenic Area				
Emotional categories	positive emotions	neutral emotion	negative emotions	Total
Emotions of tourists who leave reviews	81.3	12.8	5.9	100.0

IV. Discussion

Summary of Marketing and Communication Strategies for Dinghu Mountain Scenic Area Based on Corpus Analysis Based on corpus research, it is evident that network text analysis can accurately outline the cognitive and emotional profiles of tourist destinations. Among these, the core focus of tourists at Dinghu Mountain Scenic Area is on experience design and specific activities, and the scenic area's emotional image is predominantly positive. Based on this, the scenic area can optimize its marketing management strategies from three aspects:

Strengthening experience design is the core strategy for differentiated competition. Leveraging Dinghu Mountain's natural resources and cultural heritage, the scenic area can develop outdoor adventure projects such as rock climbing and hiking, combine VR technology to create immersive historical scene recreations, and use the “throwing wish balls for blessings” IP as a foundation to continuously incubate diverse business models such as Characteristic homestay and ecological agriculture experiences. This personalized experience design not only enhances visitor satisfaction but also reinforces a positive image through word-of-mouth and expands the potential audience.

Emotional marketing is the key driver of consumer decision-making. In the context of consumption upgrading, scenic areas should use color and lighting to create emotional scenes, incorporate cultural symbols into homestays and cultural-commercial-tourism districts, and convey positive emotional values through festivals and performances. Particular emphasis should be placed on strengthening emotional resonance with visitors, such as analyzing user comments to identify pain points, transforming Dinghu Mountain's natural ecological advantages into “healing” emotional tags, and fulfilling visitors' deeper spiritual needs.

Community interaction is the core link in activating social media dissemination. On platforms like TikTok and Xiaohongshu, create an “Dinghu Mountain Experience” interactive topic. Official accounts should participate in user discussions using everyday language, package scenic spot highlights with ‘storytelling’ content, and highlight high-quality comments with tags. Simultaneously, establish a public opinion monitoring mechanism to promptly address negative feedback, convert user-generated content (UGC) into decision-making references for potential visitors, and form a marketing closed loop of “experience sharing—word-of-mouth amplification—visitor conversion.” This strategic framework centers on visitor needs, reinforces product foundations through experiential innovation, activates emotional resonance through emotional value, amplifies market visibility through social media dissemination, and ultimately achieves sustainable development for the scenic area by transitioning from “traffic attraction” to “brand consolidation.”

V. Conclusion

Based on corpus analysis, the following conclusions can be drawn: (1) Web text analysis can effectively reveal the cognitive and emotional image of a tourist destination; (2) Tourists are most concerned about the experience design of the scenic area and the tourist activities they engage in within the scenic area, meaning that the experience design factors of Dinghu Mountain are the primary factors reinforcing tourists' perception of the scenic area's experiential value and emotional resonance; (3) The emotional image of Dinghu Mountain Scenic Area is predominantly positive, with small proportions of neutral and negative emotions.

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