

A Study on Tourist Satisfaction in Intangible Cultural Heritage Places Based on Web Text Analysis and IPA Analysis—Case Study on Lijiang Old Town

Qinghang Gong^{1,a}, Doudou Bi^{1,2,b,*}

¹Tourism Management Department, South China University of Technology, Guangzhou, China

²Guangzhou Cultural and Tourism Integration Development Research Base, Guangzhou, China

^agongqinghang@outlook.com, ^bddbi@scut.edu.cn

*Corresponding author

Abstract: In the context of integration of culture and tourism, intangible cultural heritage (ICH) has become an important cultural resource for tourism. Based on the old town of Lijiang, a representative intangible cultural heritage tourist destination, this paper investigates tourist satisfaction in intangible cultural heritage tourist destinations through Web Text Analysis and IPA analysis respectively. The study found that the uniqueness and richness of ICH cultural resources have a significant impact on tourist satisfaction, and that tourist satisfaction in terms of infrastructure and tourism consumption in the old town of Lijiang is low and still has much room for improvement.

Keywords: Intangible Cultural Heritage, Tourist Satisfaction, Web Text Analysis, IPA Analysis

1. Literature Review

1.1 Intangible Cultural Heritage

1.1.1 Review of foreign studies

A search of foreign databases such as SCI and SCII was conducted to obtain statistical data on the results of foreign research on intangible cultural heritage based on the analyzing of the results.

In the past ten years, academic research on the theme of "intangible cultural heritage" has been increasing year by year, and the number of studies on intangible heritage has been increasing.

The specific definition of intangible cultural heritage, currently the most widely accepted internationally, is that provided in the Convention for the Safeguarding of the Intangible Cultural Heritage, established by UNESCO, and is defined as follows: "refers to the various social practices, performances, expressions, knowledge systems and skills that groups, communities and sometimes individuals consider to be part of their cultural heritage, as well as their associated instruments, objects, artefacts and cultural spaces." In 2003, items of the intangible cultural heritage of humanity were redefined by UNESCO as "oral traditions, performing arts, social customs, rituals, festive events, knowledge and practices relating to nature and the universe or knowledge and skills for the production of traditional crafts".

According to the available research literature, foreign studies on 'intangible cultural heritage' have focused on the concept of the term. The most representative one is Dawson Munjeri (2004). He argues that the understanding of the concept cannot be limited to its connotation of 'authenticity', especially not limited to 'material authenticity', 'design authenticity' and 'handicraft authenticity'. "In particular, it cannot be limited to the three aspects of 'material authenticity', 'authenticity of design' and 'authenticity of craft'. He therefore suggests that the understanding of 'intangible cultural heritage' should be extended to the social dimension of history and tradition, the personal dimension of psychology and emotion, and the cultural dimension of art and technique ^[1]. The scholar Lourdes Arizpe (2004) provides an in-depth discussion and analysis of the factors and variables that influence the protection of ICH and the setting of safeguarding standards; he also examines the history and process of evolution of the academic concept of ICH in detail. Besides, he examines the history and evolution of the academic concept of "intangible cultural heritage" and suggests methods and measures for the implementation of productive conservation of intangible heritage in France, taking into account the current situation and problems of productive

conservation in France, as well as sociological models. In recent years, foreign scholars have followed the definitions of the Convention and UNESCO in their studies of the concept of intangible heritage, with few subversive views.

1.1.2 Review of domestic research

Although domestic research on intangible cultural heritage started late, it has developed rapidly and achieved remarkable results in recent years. Statistics were obtained by searching and screening journals and papers on ICH from 2011-2021.

The research content of these journal papers focuses on the concept, classification and characteristics of ICH, as well as the study of its conservation status and countermeasures, which are relevant to the topic of this study.

The number of journal papers on the theme of ICH showed a small fluctuation upward during the period of 2011-2021, and the number gradually tended to stabilize, and from 2015 onwards, the number of journal papers distributed each year basically remained above 2000. Statistics on the outstanding dissertations on ICH during the period show that the universities with the most research on ICH are Central China Normal University (104), Chinese National Academy of Arts (98), Xi'an University of Architecture and Technology (85), Minzu University of China (73), Shandong University (61), etc. A CNKI search on the theme of "intangible cultural heritage" yielded 24,800 academic journals, 3,167 dissertations, 1,587 conferences, 4,813 newspapers and 65 books. Together, these documents paint an overall picture of ICH research in China in the past decade.

Using the keyword of "intangible cultural heritage", 644 documents were searched, most of which focused on the definition and methods of defining intangible cultural heritage. According to the Interim Measures for the Assessment of Representative Works of National Intangible Cultural Heritage promulgated by the General Office of the State Council in 2005, intangible cultural heritage refers to "various traditional cultural expressions (such as folklore activities, performing arts, traditional knowledge and skills, as well as instruments, objects, handicrafts related to them) and cultural houses that have been handed down from generation to generation by people of all ethnic groups and are closely related to the lives of the masses." The Measures classify intangible cultural heritage into six areas: (1) oral traditions, including language as a cultural carrier; (2) traditional performing arts; (3) folklore activities, rituals and festivals; (4) traditional folk knowledge and practices concerning nature and the universe; (5) traditional craft skills; (6) cultural spaces closely related to these activities.

In addition, some researchers have also made additions and extrapolations to the concept. The six-point discriminatory criteria proposed by Yuan Li (2018) define the subject of transmission, the time frame of transmission, the form of transmission, the original degree of transmission, the quality of transmission, and the scope of transmission, respectively, and only items that meet the conditions can be recognized as intangible cultural heritage. Yang Yi (2003) discusses and analyses the concepts, manifestations and characteristics of intangible cultural heritage, intangible cultural heritage and world cultural and natural heritage according to the relevant definitions of UNESCO^[2]. Zhang Juwen (2021) adds that conceptually, 'intangible cultural heritage' is a part of 'cultural heritage'. "Cultural heritage" includes both "intangible culture" and "tangible culture"^[3]. However, "intangible culture" and "material culture" are not the same as "spiritual culture" and "material culture". "Intangible cultural heritage" is not only a practical and policy concept, but also a specific political and economic concept at a specific historical stage. Chao and Wang (2014) re-analyze the concept of cultural heritage in a logical context, arguing that cultural heritage has three iconic identities in its formation: cultural object, cultural relic, and cultural property^[4]. In the case of cultural heritage objects, 'culture' is an innate attribute, and it is only with changes in time and values that cultural objects gradually take on the attributes of 'heritage' and 'property', and also 'property'. Both attributes are therefore acquired.

Using the keyword "characteristics of intangible cultural heritage", 184 relevant papers were retrieved. For example, Yang Jianren and Zhong Xin (2018) argue that intangible cultural heritage has intangibility, transmission, extensiveness, diversity and endangerment^[5]. According to Wang (2013), human intangible cultural heritage has seven individual characteristics, including uniqueness, transmission and synthesis, and is an intangible and living cultural heritage that has been handed down from generation to generation by human beings through oral and mental transmission^[6]. According to Migmar Soren (2016), the characteristics of ICH are relative, living and popular^[7]. Lei Jianlian (2013) summarizes the views of scholars and outlines six aspects: living, inherited, creative, intangible, social and pluralistic^[8].

1.2 Tourist satisfaction

1.2.1 Review of foreign studies

The concept of "tourist satisfaction" dates back to 1978, when it was introduced by researchers such as Pizam and was later widely accepted in the tourism industry. Beard (1980) further argues that tourist satisfaction is a 'positive' perception and feeling based on a positive comparison between tourist expectations and actual feelings. Based on the theory of "tourist satisfaction", Oliver (1980) proposed that "tourist satisfaction" is the difference between pre-trip expectations and actual perceptions, and is a psychological feeling rather than a behavioral performance. The American Customer Satisfaction Index (ACSI) model is based on customer satisfaction and is constructed through a causal linkage of six variables: customer satisfaction, customer expectations, perceived quality, perceived value, customer complaints and customer loyalty. This model is also applicable to the study of tourist satisfaction.

1.2.2 Review of domestic research

Consumer evaluation theory is a theory derived from the basic content of management disciplines, such as 'customer satisfaction', and therefore the research is mainly based on the basic concepts of management and the study of customer satisfaction. Meng Yaru et al. point out that tourist satisfaction is mainly a state of psychological pleasure after achieving satisfaction in the travel activity, and does not analyze the 'desired' outcome of the trip, but mainly the difference between the individual feeling effect and the expected outcome. Zhao Ziyue et al. further elaborate on this basis, stating that tourist satisfaction tends to be a psychological feeling that arises from the individual's expectations of the destination during the trip, as opposed to the initial knowledge of the destination after the trip has taken place.

In recent years, with the rise of rural tourism, intangible cultural heritage tourism and tourism + technology, more and more scholars have explored the factors affecting the tourism experience based on surveys of tourist satisfaction and tourist perception. Based on the IPA model of tourist satisfaction analysis of rural tourism scenic spots, Wu Jiang et al. used the Hongcun scenic spot in Anhui Province as a case site, focusing on consumer perception, commercialization and tourism services from the advantageous attributes, proposed improvement methods for low-priority development options, and discussed management and marketing strategies to promote the sustainable development of the scenic spot based on the results of the case site's tourist satisfaction analysis. Using the Hei Zhu Gou scenic area as a typical site, Gong Jian et al. used structural simulation to hypothesis and study the five levels of satisfaction, post-tour satisfaction and post-tour behavioral intentions of people participating in alpine adventure travel activities, and the results showed that except for post-tour satisfaction due to tour traffic and post-tour behavioral intentions due to tour traffic, post-tour satisfaction due to attraction construction, post-tour behavioral intentions due to market experience and post-tour behavioral intentions due to visitor resources, there was no significant effect on post-tour behavioral intentions. The results show that there is no significant impact on post-tourism satisfaction, market experience and visitor resources on post-tourism behavior.

1.3 Tourist satisfaction in intangible cultural heritage tourism places

1.3.1 Review of foreign studies

The following search-style search of foreign language databases such as SCI and SSCI was conducted to obtain statistics of research results on NRM tourism and tourist satisfaction the Table 1.

Table 1: Results of the foreign literature search

Search Engine	Search formula	Number of documents
Web of Science	TS=(intangible cultural heritage AND (tourist satisfaction OR tourist satisfaction degree OR visitor satisfaction))	42
	TS=(intangible cultural heritage AND (tourist satisfaction OR tourist satisfaction degree))	34
	TS=(intangible AND (tourist satisfaction degree))	4
	TI=(intangible cultural heritage AND (rural revitalization))	1

Based on the analysis of the search results, it can be found that foreign studies on tourist satisfaction ICH tourism sites are relatively few and mainly focus on the organic integration of ICH resources with tourism, thus attracting tourists to the city and promoting the development of the local economy. Lopez-Guzman (2016) focuses on the Spanish non-heritage project, the Cordoba Courtyard Festival, to study

its relationship with the development of tourism in the city ^[9]. -Romao, Joao (2015) used Structural Equation Modeling (SEM) to analyze tourist motivation and satisfaction in Amsterdam through a network Tian, Di (2020) also used Structural Equation Modeling (SEM) to find that the authenticity of intangible cultural heritage had a significant positive effect on destination satisfaction and loyalty in a study of the classic scenic spot Celadon Town in Zhejiang Province. Prada Trigo (2017) studied the issue of tourists' motivation to visit ICH destinations, using applied factor analysis, cluster analysis and analysis of variance (ANOVA), using Panama hat, Ecuador, and the results showed that the cultural aspect of motivation was the most important and that the motivation of leisure issues allowed for a better assessment of ICH destinations.

1.3.2 Review of domestic research

The results were filtered through the CNKI and Wanfang academic databases using the search formulae listed in the table below to obtain the required journal papers the Table 2.

Table 2: Search results of relevant domestic literature

Search database	Search formula	Number of documents
China National Knowledge Infrastructure(CNKI),Wanfang Database	SU=Non heritage AND KY=Satisfaction	13
	SU = intangible cultural heritage AND KY = visitor satisfaction	8
	TI = Intangible Cultural Heritage AND KY = Visitor Satisfaction	5
	TI=Non-Heritage Tourism AND KY=Satisfaction	1

From the search results, there are still relatively few studies in China that address the specific direction of tourist satisfaction in NRM tourism places. Zheng Jiu-liang et al. (2021) used the old Tunxi Street in Huangshan City as a survey sample, and used structural equation modelling and SPSS methods to obtain the research results that the sense of place of tourists in historical places of non-heritage projects has a significant positive effect on satisfaction and loyalty, i.e. it plays a partial mediating function on satisfaction ^[10]. Zhang Xiaoyi et al. (2019) conducted a correlation analysis of tourist satisfaction, happiness and attractiveness of scenic spots through a questionnaire survey and found a positive relationship between the three, suggesting that the attractiveness of scenic spots can be actively improved by strengthening their construction and improving service quality, etc ^[11]. Zheng Yangfan (2021) constructed a model called Perceived Value-Tourist Satisfaction-Intention to Revisit with the Intangible Cultural Heritage Expo as the research destination. Through statistical analysis of the questionnaire results, it was concluded that under the influence of tourist satisfaction, the willingness to revisit is indirectly, significantly and positively influenced by aesthetic and social values, while cultural cognitive values cannot have an indirect, significant and positive impact on the willingness to revisit. ^[12].

Domestic research has mainly also focused on the influence of different factors on tourist satisfaction in NRMs, mediated by perceived value and perceived quality. In addition, a number of studies have proposed innovative explorations of the significant relationships between tourist satisfaction and willingness to revisit, and between scenic attractiveness and tourist satisfaction. However, few studies have specifically investigated tourist satisfaction in NRM destinations.

2. An overview of Lijiang Old Town and analysis of web texts

2.1 An overview of Lijiang Old Town

The old town of Lijiang is located in the ancient city of Lijiang, Yunnan Province, also known as Dayan Town, at the intersection of Yunnan Province, Sichuan Province and Tibet, which is an important transportation route and also conducive to the intersection of cultures. The ancient city of Lijiang is one of the two ancient cities in China to have been successfully nominated as a World Heritage Site, and is rich in intangible cultural heritage resources, represented by the Naxi Dongba culture, which was unanimously approved by the UNESCO World Heritage Committee in December 1997 for inscription on the World Heritage List. The rich intangible cultural heritage resources of the ancient city of Lijiang, with its ethnic cultural uniqueness and diversity, have greatly contributed to the development of tourism resources and the development of tourism in the ancient city of Lijiang.

2.2 A study on the perception of the tourism image of the ancient city of Lijiang

Ctrip is currently the largest travel e-commerce website in China, providing a full range of services such as travel and holiday, hotel booking, air ticket booking, ticket booking, business travel services, cruise travel, etc. It also provides tourists with a variety of sharing and feedback methods such as destination tips, travelogues, Q&A, and user reviews. In this paper, we used the text data of user reviews of destination tips in the tips channel of Ctrip.com as the base data, searched for "Lijiang Old Town" on Ctrip.com, and used Octopus crawler software to capture the first 3000 user reviews. A total of 2435 users rated the attraction 5 out of 5, 473 users rated it 4 out of 5, 90 users rated it 3 out of 5, and 1 user rated it 2 out of 5 and 1 out of 5 respectively. The crawled text data was then analyzed by ROST Content Mining 6 text analysis software, using word separation and Chinese word frequency analysis functions to obtain a list of high frequency words, and further analysis of the collected user reviews by social network and semantic analysis and sentiment analysis functions.

2.2.1 Perceptual image composition of destinations - word frequency analysis

The frequency of occurrence of words usually represents the main impressions of tourists about the place, the prepared "Ctrip web reviews of Lijiang Old Town.txt" was imported into ROST CM 6 software, firstly, the text was divided into words, then the meaningless words in the processed text were filtered out, and finally, through word frequency analysis, high frequency words were obtained from the document.

The top 60 word frequencies are mainly composed of nouns, verbs and adjectives. The nouns include "old town", "bar", "evening", "scenery", "inn", "culture", "quadrangle", "street" and "street", "inn", "culture", "Sifang Street", "snowy mountains", "Suohe" etc.; verbs include "feel", "travel", "stroll", "experience" etc.; adjectives include "satisfied", "special", "commercial", "beautiful" and so on.

The analysis of high-frequency words shows that the nouns basically include locations that tourists often experience and visit, with places with a human touch and sentiment such as bars and inns being more attractive to tourists. The majority of tourists consider the beautiful scenery and rich culture of the place to be both suitable for sightseeing and experience in the evening. The verbs reflect the experience process of tourists, who focus more on experiencing Lijiang, observing and experiencing it by strolling through the streets and alleys of the old city, reflecting their main actions and purposes. High-frequency adjectives reflect visitors' perceptions and emotional evaluations of the tourism experience. Among the high-frequency words, positive and positive words occupy the vast majority, with high-frequency words such as "special", "beautiful", "quiet" and "small bridges and flowing water" "lively", "convenient", "tasty", "clean" and "good for eating" are the words that reflect visitors' intuitive feelings towards the natural scenery of Lijiang Old Town, "clean" are tourists' perceptions of the overall environment and services of the scenic area, "worthwhile", "fun", "value for money", "fun", "interesting", "satisfactory", etc. are high frequency words that describe the whole tourist experience after the visit. The words "commercial" and "commercialization" also help to promote the development of the Lijiang Old Town. The words commercial and commercialization were also mentioned a number of times, reflecting the serious dissatisfaction of tourists with the commercialization of the area, and the need for the scenic area to strengthen its supervision in this regard to enhance the tourist experience.



Figure 1: Word Cloud of High-frequency Words in the Online Evaluation of Lijiang Old Town

The top 60 high-frequency words for the tourism image of Lijiang Old Town are visualized in the form of a word cloud Figure 1, where the higher the word frequency, the larger the word size, and the lower the word frequency, the smaller the word size.

2.2.2 Emotional image analysis

Emotional analysis refers to the real emotional experiences and reactions of tourists after they have perceived the tourism experience. It mainly includes positive emotions, neutral emotions and negative emotions. If the frequency of positive emotions is high, it means that tourists are satisfied with Lijiang Old Town, while if the frequency of negative emotions is high, it means that they like it less or even dislike it. In order to analyze the sentiment of tourists more accurately, this paper uses the "Sentiment Analysis Word Collection (beta version)" published by China Knowledge, which is divided into positive evaluation words, negative evaluation words, positive sentiment words, negative sentiment words and other word collections. The sentiment words in "Ctrip.txt" were split and refined, and imported into ROST software to complete the sentiment data analysis.

The software classifies visitors' emotions into positive, neutral and negative emotions, and also classifies positive and negative emotions into average, moderate and high intensity. It can be found that positive emotions accounted for the highest percentage of visitor reviews, at 65.32%; negative emotions accounted for a lower percentage, at 8.95%; and neutral emotions accounted for the lowest percentage, at 25.71%.

Among the positive sentiments, the percentages of average intensity (23.52%), moderate intensity (17.94%) and high intensity (23.85%) are relatively even, while the percentages of average and high intensity are slightly higher, indicating that tourists have a good perception of Lijiang Old Town Scenic Area in general and their evaluation is mainly positive, which is also consistent with the high frequency word list "worthwhile", "fun", "value for money", "interesting", "satisfied" in the high-frequency word list, which echoes the positive emotional words such as "worthwhile", "fun", "value for money", "interesting" and "satisfied", mainly reflecting the feeling of historical heritage and literary atmosphere.

Although the negative reviews are relatively small, they also have a negative impact on the tourism image of Lijiang Old Town and reduce the visitor experience, and should be given high priority by the managers of the scenic spots. The main reason for the negative reviews is the serious commercial atmosphere. With the exception of a few snack shops selling old-fashioned clothing, special snacks and various local specialties, all other shops sell the same obligatory wholesale boutique items, and the Old Town is "one of a kind", with an outstanding homogenization of business and goods, and a serious lack of differentiation and uniqueness.

2.2.3 Overall perceptual image analysis - semantic network construction

The semantic network analysis diagram consists of two parts: nodes and connecting lines, each node is a high-frequency keyword that has connections with other nodes, and the connecting lines indicate the semantic association between each high-frequency keyword. The semantic network diagram can visually reflect the deep structure of the relationship between words, and the denser the lines are, the more frequently the word is co-linear with other words. The social network and semantic network analysis functions of ROST-CM6 software were used to obtain the semantic network analysis map of Lijiang Old Town the Figure 2.

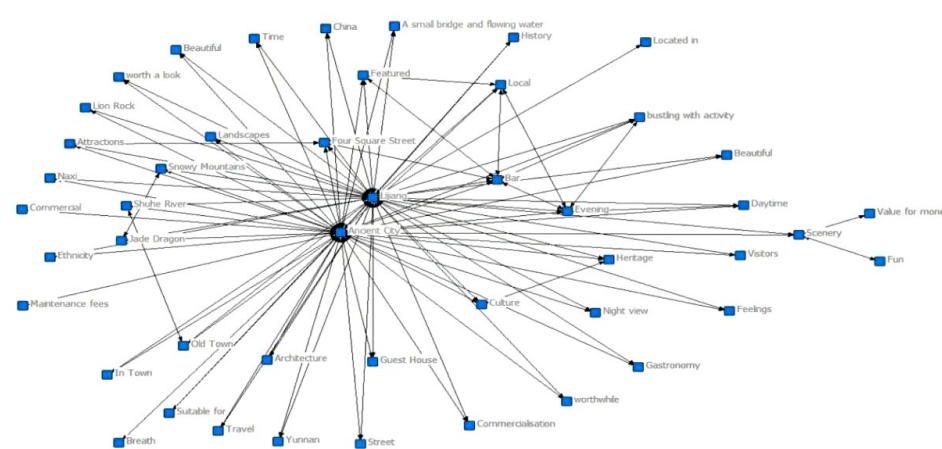


Figure 2: Semantic and Social Network Analysis of Lijiang Old Town

On the whole, the semantic network diagram shows a four-layer structure of "core-sub-core-transition-edge", and the high-frequency words in different layers are shown in Table 3. The first core layer, with "Lijiang" and "ancient city" as the core keywords, is at the core of the diagram and is the area

with the densest lines. "Old Town" as the core radiates in all directions, making the overall structure radially distributed. The second layer is the secondary core layer, which is a further expansion of the core layer, including "night", "bar", "quadrangle", "yulong", "ancient town", "architecture", "guest house", "culture", "heritage" and other elements, indicating that tourists can feel the distinctive features and architectural style of the ancient town when visiting Lijiang Old Town, and showing the famous attractions in Lijiang Old Town in tourists' minds and tourists' perception of the rich historical and cultural heritage and humanistic atmosphere of Lijiang Old Town. The third layer is a transitional layer, "special", "lively", "night scenery", "ethnic", "town", "suitable" and "place" form the transitional layer of the semantic network, which mainly reflects the overall perception and evaluation of tourists on their visit to the Old Town of Lijiang. The overall perceptions of visitors to Lijiang Old Town are generally positive, with a high level of visitor satisfaction. Tourists compare the Old Town with the city and are able to better experience the local ethnic characteristics. A positive experience of the destination can create a desire to revisit on par with good word-of-mouth publicity. The fourth layer is the edge layer, which consists mainly of "food", "worthwhile", "street", "tourism", "Scent", "Business", "Landscape", "Naxi", "Small Bridges and Flowing Water", "historical", "beautiful", "scenic", where scenic in turn derives from "value for money". The words "scenery" and "fun" are derived from these words. This reflects some of the positioning of the ancient city and the purpose of the visit, indicating that the city has a more diverse positioning in the minds of tourists and a strong sense of experience, which is one of the main reasons why tourists choose it as a tourist destination.

Table 3: Different Levels of Vocabulary in the Semantic Network Analysis Map of Lijiang Old Town.

Structural hierarchy	Keywords
Core layer	"Lijiang" "Old Town"
Sub-core level	"Evening" "Bar" "Sifang Street" "Yulong" "Old Town" "architecture" "guest house" "culture" "heritage"
Transitional layer	"Characteristic" "lively" "night scene" "ethnic" "town" "suitable" for "places"
Marginal layer	"food" "worthwhile" "street" "tourism" "scent" "business" "scenery" "naxi" "small bridge and water" "history" "beautiful" "scenery"

3. Fuzzy integrated evaluation method and IPA analysis

3.1 Research Methodology

3.1.1 Fuzzy integrated evaluation method

The fuzzy comprehensive evaluation method is a comprehensive evaluation method developed on the basis of fuzzy mathematics, which was proposed by Professor Zadeh in 1965. It uses fuzzy mathematics to make overall evaluation of objects subject to multiple factors, which can combine qualitative and quantitative factors and better solve problems that are difficult to quantify. The specific calculation steps are:

① Determine the set of evaluation factors (U) for tourist satisfaction in Lijiang Old Town, $U = (U_i)$ ($i = 1, 2, 3, 4, 5$), representing the 5 criterion layers of non-heritage cultural resources, scenic environment quality, scenic tourism facilities, tourism consumption and scenic service quality, each U_i consisting of a secondary indicator U_{ij} respectively. The evaluation set $V = (V_1, V_2, V_3, V_4, V_5)$ (very dissatisfied, dissatisfied, average, satisfied, very satisfied) and the measurement index $H = (1, 2, 3, 4, 5)$ are established.

② Based on the affiliation degree, the quantitative expression of the questionnaire scores was used to obtain a fuzzy comprehensive evaluation matrix (R).

③ Determine the evaluation index weight vector (W) and perform synthetic operations on the matrix (R) and the weights (W) to derive the fuzzy evaluation set (B), i.e. $B = W \times R$.

④ A composite score (E) is calculated by fuzzy evaluation set (B) with measurement indicators (H), i.e. $E = B \times H$.

3.1.2 Relevance analysis

The Pearson correlation coefficient was used to test the influence of each evaluation factor on the

overall satisfaction of visitors and to obtain the significant factors affecting satisfaction. The absolute value of the correlation coefficient is 0.7-1.0 for strong correlation, 0.4-0.7 for moderate correlation, 0.2-0.4 for weak correlation and 0-0.2 for very weak correlation.

3.1.3 IPA Analysis

IPA (Importance performance analysis) is the method of importance and performance analysis, which is more applicable to the study of tourist satisfaction, by placing importance as the horizontal axis and satisfaction as the vertical axis, and reflecting the total average of tourists' evaluation of the importance and satisfaction of tourism product/service attributes in the form of coordinate points (X, Y) in a matrix diagram, respectively. As a splitting point, an IPA analysis matrix diagram is constructed consisting of two axes intersecting vertically in four quadrants. This method of analysis helps to understand tourist satisfaction and to identify priority areas for improvement in the quality of tourism products and services.

3.2 Questionnaire design

The questionnaire is divided into two parts. The first part is the basic information of tourists, including gender, age, education level and occupation, etc. The second part is the satisfaction status of tourists in Lijiang Old Town. The indicator system includes 5 dimensions of non-heritage cultural tourism resources, scenic environment quality, scenic tourism facilities, tourism consumption and scenic service quality, and 23 indicators such as the fun of experience programs, air quality and ticket prices. A 5-point Likert scale was used to assign values of 5, 4, 3, 2 and 1 to very satisfied, satisfied, average, dissatisfied and very dissatisfied respectively, reflecting visitors' satisfaction level with Lijiang Old Town through numerical values.

3.3 Data collection and testing

To ensure the reliability of the survey results and the wide range of respondents, an online questionnaire was distributed from 20 March 2023 to 1 April 2023 to visitors who had visited Lijiang Old Town in the past three years. A total of 210 questionnaires were collected, of which 205 were valid, with a validity rate of 97.62%. Cronbach's alpha reliability and validity analyses were conducted using SPSS 26.0 software; the results showed that the overall reliability coefficient alpha value was 0.923 and the KMO test coefficient was 0.920, indicating that the results of this survey have high reliability and good validity.

3.4 Results and analysis

3.4.1 Basic tourist information data

In terms of the proportion of male and female visitors, 32.38% were male and 62.62% were female; the largest proportion of people aged 21-30 was 62.14%; the largest number of people were employees of state-owned enterprises, accounting for 32.04% of the total number of people; the number of people with undergraduate or college education accounted for more than half of the total number of people, 64.56%; among the accompanying people, classmates, friends and partners accounted for a larger proportion, 30.58% and 27.67% respectively. Among the accompanying people, 30.58% and 27.67% were classmates, friends and partners respectively; the largest number of people had a monthly income range of 3,000-5,000, accounting for 46.12% of the total number of people surveyed.

3.4.2 Weighting analysis

On the basis of the data collection, 15 instructors and postgraduate students in tourism management were invited to fill in the judgment matrix. The 15 questionnaires were collated, one invalid questionnaire that did not meet the consistency test was screened out, and 14 questionnaires with

The validity questionnaire was calculated using the sum and product method to derive the weight values for each evaluation indicator the Table 4.

In the criterion layer, the highest weight is given to non-heritage cultural tourism resources (0.320), followed by scenic environment quality (0.208), indicating that the unique non-heritage culture and quality scenic environment are the main factors in the tourism development of Lijiang Old Town; the lowest weight is given to scenic tourism facilities (0.136), probably due to the fact that Lijiang Old Town is mainly represented by the traditional architecture of the Naxi Dongba culture, with fewer specialized tourism facilities. The three indicators with higher total weights are the uniqueness of the Naxi Dongba

culture (0.101), the diversity of the commercial shops in the Old Town (0.088) and the diversity of the Naxi Dongba culture (0.083), indicating that the uniqueness and diversity of the non-heritage culture and the diversity of the commercial shops have a greater impact on tourist satisfaction.

Table 4: Weights of the evaluation factors.

Target level	Guideline level	Code level weights	Indicator layer	Indicator layer weights	Total weighting
Lijiang Old Town Tourist Satisfaction	Non-Foreign Heritage Cultural Tourism Resources	0.320	The uniqueness of Naxi Dongba culture	0.316	0.101
			The Diversity of Naxi Dongba Culture	0.259	0.083
			Experience the fun of the project	0.149	0.048
			Differentiation of commercial shops in the old town	0.276	0.088
	Environmental quality in the landscape	0.208	Air Quality	0.332	0.069
			Environmental tidiness	0.366	0.076
			Noise Control	0.302	0.063
	Scenic tourist facilities	0.136	Transport facilities	0.323	0.044
			Sanitary facilities	0.207	0.028
			Rest facilities	0.336	0.046
			Communication facilities	0.134	0.018
	Tourism consumption	0.176	Scenic Area Ticket Prices	0.277	0.049
			Dining Prices	0.241	0.042
			Everyday consumer prices	0.198	0.035
	Quality of service in the landscape	0.160	Travel product prices	0.284	0.050
			Service attitude	0.296	0.047
Order maintenance			0.201	0.032	
Quality of service equipment and supplies			0.268	0.043	
			Guided signage and advisory services	0.235	0.038

3.4.3 Visitor satisfaction analysis

The overall satisfaction level of visitors was 4.07, between satisfied and very satisfied, indicating that visitors have a high level of recognition of the tourism resources and tourism facilities etc. in Lijiang Old Town.

In the criterion tier, the highest satisfaction level was 4.16 for non-heritage cultural tourism resources, indicating that the non-heritage cultural resources of the Old Town of Lijiang are highly attractive and the cultural tourism resources are well developed. Satisfaction with the environmental quality of the scenic area was 4.13, second only to the non-heritage cultural tourism resources, reaching a satisfactory level, reflecting the effectiveness of Lijiang's environmental quality management of the Old Town. The level of satisfaction with the service quality of the scenic area is 4.06, which is satisfactory, but still needs to be improved. The satisfaction level for tourism facilities and tourism consumption in the scenic area is 4.02, which is at the bottom of the list, indicating that the tourism equipment and facilities in the scenic area and the consumption market of tourism products cannot effectively meet the needs of consumers, and cannot fully satisfy tourists compared to other factors.

In the indicator tier, the three highest levels of satisfaction are air quality (4.21), uniqueness of Naxi culture (4.2) and diversity of Naxi culture (4.15), reflecting that the cultural resources of Lijiang Old Town are highly attractive and better meet the cultural tourism needs of tourists. The three lower satisfaction items are the price of food and drink (3.95), rest facilities (3.97) and communication facilities (3.97), which may be related to the high price of food and drink and the inadequate infrastructure.

3.4.4 Correlation analysis between evaluation factors and overall satisfaction

The evaluation factors were all highly significantly and positively correlated with visitor satisfaction ($p < 0.01$), with a strong relationship. Correlation analysis using overall visitor satisfaction as the

dependent variable revealed that the significance of each of the three criterion-level factors differed from visitor satisfaction. All three evaluation factors had a significant effect on various aspects of overall satisfaction. Among them, the correlation coefficients of 0.979 and 0.661 for scenic service quality and non-heritage cultural resources respectively were higher, and the influence of these two factors on visitor satisfaction was also more significant, with significance of 0.203 and 0.339 respectively.

3.4.5 IPA Analysis

Using the importance of the evaluation indicators as the horizontal axis and satisfaction as the vertical axis, an IPA analysis chart is drawn the Figure 3.

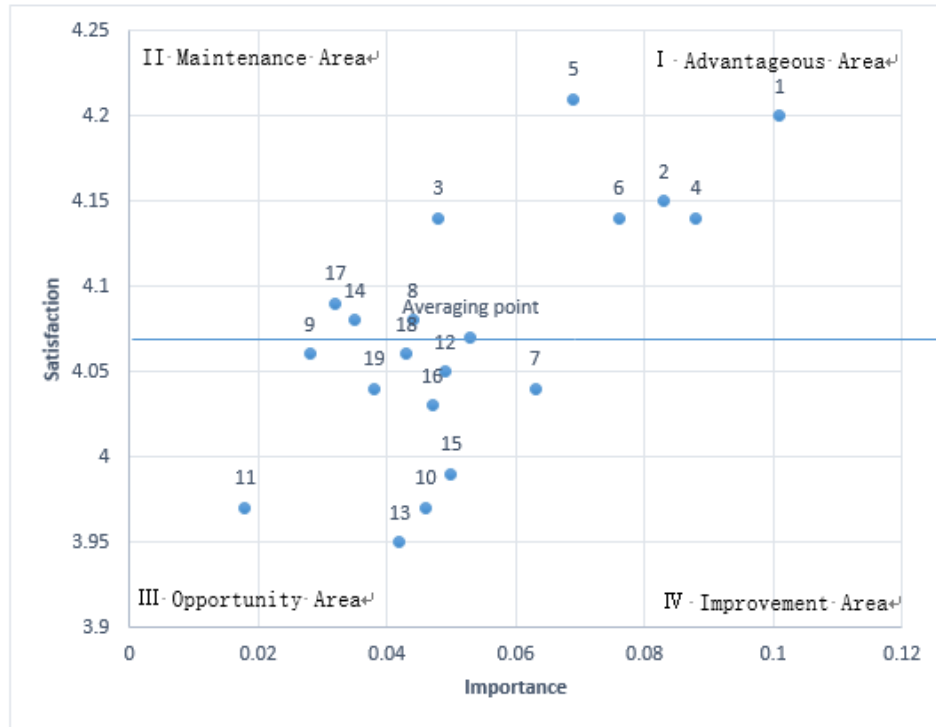


Figure 3: IPA Quadrant.

The indicators in the I quadrant of strengths are the uniqueness of the Naxi Dongba culture (1), the diversity of the Naxi Dongba culture (2), the differences in the commercial shops in the Old Town (4), air quality (5) and environmental tidiness (6), which mainly focus on non-heritage cultural resources and environmental quality, indicating that Lijiang Old Town is effective in the conservation development of non-heritage culture and environmental protection and beautification, and has a high level of recognition by tourists.

The indicators for quadrant II maintenance areas are the interest of experience programs (3), transportation facilities (8), daily consumption prices (14), and order maintenance (17), indicating that visitors are more satisfied with these factors of relatively low importance, especially the diversity of non-heritage cultures, which the scenic spots should continue to maintain and expand their strengths.

The indicators for quadrant III opportunity areas are all indicators of tourist facilities in the scenic area and the price of admission to the scenic area (13), the price of daily consumption (15), the price of tourist products (16), and the quality of service equipment and supplies (19), indicating that tourists are less satisfied with the tourist infrastructure and the price of some tourist products in the scenic area, and that tourist satisfaction should be further improved by improving the infrastructure and adjusting the price of products, etc. .

The only indicator in quadrant IV is noise control (7), indicating that noise control is of high importance to tourists, but the current tourist satisfaction level is low and below average. The probable reason is that with the development of commercialization in the Old Town of Lijiang, there are more tourists and businesses, which can cause serious noise pollution. However, noise control and management is relatively poor. So, the government should carry out more regulations to control the noise by controlling business hours and limiting the number of tourists.

4. Conclusions

Lijiang's ancient city is rich in non-traditional cultural resources and unique, with a deep historical heritage. Based on the analysis of web texts, it can be found that tourists pay more attention to the special tourism resources of the "ancient city" and "ancient town", among which bars, inns and other places with humanistic atmosphere and sentiment are more attractive to tourists. The majority of visitors found the beautiful scenery and rich culture of the area suitable for sightseeing and experiencing at night. Positive perceptions of Lijiang's ancient city dominate, with some visitors indicating that they would compare it to the city and could better experience the local ethnic characteristics. Using questionnaires and IPA analysis to construct a four-quadrant diagram of satisfaction and importance, it can be found that tourists are more satisfied with non-heritage culture, environmental quality and transport facilities, and less satisfied with noise control, tourism product prices and infrastructure, indicating that there is more room for improvement in these areas in Lijiang Old Town.

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