

# Research on Strategies to Enhance Tourist Satisfaction at Jianmenguan Scenic Area in Sichuan

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**Abstract:** This study aims to develop a tourist satisfaction evaluation system for the Jianmenguan Scenic Area, considering its actual conditions and relevant case studies. The system comprises five main aspects and 19 indicators. Through a combination of online and offline questionnaire surveys, tourist satisfaction-importance data were collected. Using SPSS software, 209 valid questionnaires were analyzed for reliability and validity. An IPA (Importance-Performance Analysis) matrix was then plotted to identify discrepancies between tourists' perceived importance of various elements and their actual satisfaction, thereby determining key areas for improvement. Based on these findings and the scenic area's current situation, relevant strategies are proposed to enhance tourist satisfaction.

**Keywords:** Tourist Satisfaction, IPA Analysis, Jianmenguan Scenic Area.

## 1. Overview of Jianmenguan Scenic Area

Jianmenguan Scenic Area is located 15 kilometers south of Jiange County, Guangyuan City, Sichuan Province, nestled between Mount Dajian and Mount Xiaojian. The scenic area experiences a subtropical humid monsoon climate with abundant rainfall and distinct seasons. It is situated within the Songlie Forest sub-region of Sichuan Province, boasting a vegetation coverage rate of over 90%. Furthermore, Jianmenguan Scenic Area lies within the folded fault zone of the northern edge of the Sichuan Basin, specifically in the Jianmen Mountain branch of the Longmen Mountain Range. This geological setting has led to its unique peak cluster Danxia landform, characterized by distinctive wall-like conglomerate cliffs. Jianmenguan Scenic Area is conveniently located 21 kilometers from Guangyuan Airport, with accessible transportation routes including stations on the Beijing-Kunming Expressway, Baoji-Chengdu Railway, and Xi'an-Chengdu High-Speed Railway.

The history of Jianmenguan Scenic Area dates back to the Warring States period, when King Shu is said to have excavated the Jinniu Road, forming the precursor to the Jianmen Shu Road. During the Three Kingdoms period, the Shu Han kingdom built a pass here, initially constructing the Jianmenguan tower. The Jianmenguan was formally established during the Tang Dynasty. Subsequently, the Jianmenguan tower was repeatedly destroyed in wars and rebuilt multiple times. The existing Jianmenguan tower was reconstructed after the 2008 Wenchuan earthquake.

Jianmenguan Scenic Area encompasses elements of Three Kingdoms culture, poetry culture, Red culture, as well as unique local customs and intangible cultural heritage. Due to its distinctive natural geography and socio-historical and cultural value, Jianmenguan Scenic Area has been designated a National Scenic Area, a National Natural and Cultural Dual

Heritage site, and is listed in the "Preparatory List of China's World Cultural Heritage." It is also a key national cultural relic protection unit, a national forest park, a Sichuan provincial nature reserve, and a Sichuan provincial geological park.

## 2. Analysis of Tourist Satisfaction at Jianmenguan Scenic Area

### 2.1. Design and Distribution of the Questionnaire

#### 2.1.1. Questionnaire Design

To investigate tourist satisfaction at Jianmenguan Scenic Area, this study designed a questionnaire specifically for this purpose. The questionnaire was developed after extensively reviewing similar tourist satisfaction surveys, considering the actual conditions of Jianmenguan Scenic Area, analyzing factors of particular concern to tourists, and referencing research questionnaires by Fu Mengshuo and Wang Jian [1,2]. The questionnaire primarily consists of two parts. The first part collects basic tourist information, including gender, age, origin, education level, and occupation, primarily used to statistically analyze the demographic profile of tourists at Jianmenguan Scenic Area. The second part is the tourist satisfaction and importance survey. It mainly includes four primary indicators: basic scenic area conditions, infrastructure development, cultural development, and service and management level. These are further divided into 19 secondary indicators (Table 1). This section primarily uses a five-point Likert scale. Specific satisfaction evaluations are: "very dissatisfied," "relatively dissatisfied," "neutral," "relatively satisfied," and "very satisfied." Specific importance evaluations are: "very unimportant," "relatively unimportant," "neutral," "relatively important," and "very important." The corresponding scores are "1, 2, 3, 4, 5" respectively, facilitating statistical analysis<sup>[1]</sup>.

**Table 1.** Evaluation Indicators for Tourist Satisfaction at Jianmenguan Scenic Area

Primary Indicators	Secondary Indicators	Primary Indicators	Secondary Indicators
Basic Conditions	Catering and Accommodation	Cultural Development	Scenic Area Brand Building
	Natural Landscape		Cultural Atmosphere Building
	Transportation Convenience		Folk Cultural Activities
	Special Projects		Tourist Participation
	Pricing Standards	Scenic Area Management & Service	Scenic Area Information Service
Infrastructure Development	Parking Lots, Internet, etc.		Tour Guide Explanation Service
	Public Facilities for Tours & Rest		Scenic Area Shopping Service
	Public Restroom Distribution		Staff Service Attitude
	Tour Guide Signage Setup		Staff Image Management
	Convenience and Efficiency of Complaints & Suggestions		

### 2.1.2. Questionnaire Distribution

This survey utilized a combination of online and offline questionnaire distribution. 43 questionnaires were distributed offline, and 250 online. Offline surveys were primarily conducted in February 2025 at the entrances and exits of Jianmenguan Scenic Area, nearby restaurants, and the nearby Xiashi Town (where the high-speed rail station is located). Concepts such as satisfaction and importance were explained to tourists. A total of 293 questionnaires were distributed online and offline, with 235 returned. After screening, 209 valid questionnaires were obtained, resulting in an effective response rate of approximately 89%. This can effectively reflect tourists' opinions on the satisfaction and importance of tourism products and services at Jianmenguan Scenic Area.

## 2.2. Questionnaire Data Analysis

### 2.2.1. Reliability Analysis

Reliability analysis is a crucial indicator for ensuring the quality of research data, reflecting data consistency and stability. This study primarily used SPSSAU data analysis software to conduct reliability analysis on the collected data using Cronbach's Alpha coefficient. Cronbach's Alpha coefficient, as an indicator for verifying data reliability, ranges from 0 to 1. After calculation and testing using this method, a coefficient above 0.8 generally indicates good overall data reliability. A value between 0.7 and 0.8 is considered acceptable. Below 0.6 suggests potential data issues and necessitates rewriting the questionnaire and recollecting data. This study conducted a reliability analysis on the collected satisfaction-importance comprehensive data, with results shown in Table 2.

**Table 2.** Reliability Analysis Scale

Items	Cronbach $\alpha$ Coefficient
38	0.986

A reliability analysis was conducted on the 38 items concerning tourist satisfaction and importance in this survey using Cronbach's Alpha coefficient. The final Cronbach's Alpha coefficient was 0.986, which is greater than 0.9. This

indicates that the collected data possesses high reliability and stability, making it suitable for further research and analysis.

### 2.2.2. Validity Analysis

Validity analysis measures the extent to which questionnaire survey data can truly and reliably reflect the measured subject. Data with high validity ensures that the collected information is highly relevant to the research objectives, guaranteeing the reliability of the study. This research also utilized SPSSAU software for validity testing and analysis, with results shown in Table 3.

**Table 3.** Validity Analysis Scale

KMO Value		0.978
Bartlett's Test of Sphericity	Approximate Chi-Square	6585.766
	df	703
	p-value	0.000

As can be seen from the data in the table above, the KMO value for the collected data in this survey is 0.978, which is greater than 0.9. Simultaneously, the Bartlett test yielded a p-value of  $< 0.05$ , indicating a high correlation between various factors. Through validity analysis, it is proven that the survey data has high validity and is suitable for data extraction for research.

## 2.3. Tourist Satisfaction Analysis

Based on the previous definition of tourist satisfaction, in this study, the actual tourist satisfaction can be regarded as the difference between their perceived satisfaction and their perceived importance. Next, a paired t-test will be conducted using SPSSAU software after quantifying the collected tourist satisfaction-importance data from the questionnaires, and an IPA analysis will be performed based on this.

### 2.3.1. Jianmenguan Scenic Area Satisfaction-Importance Analysis

Through a paired t-test on the collected importance-satisfaction data, the results are shown in Table 4.

**Table 4.** Paired t-test for Tourist Satisfaction and Importance at Jianmenguan Scenic Area

Name	Mean (Satisfaction)	Mean (Importance)	Difference (Satisfaction - Importance)	t	p
Catering and Accommodation	3.59	3.46	0.13	1.763	0.079
Natural Landscape	3.81	3.72	0.09	1.287	0.2
Transportation Convenience	3.82	3.69	0.13	1.672	0.096
Special Projects	3.78	3.77	0.01	0.135	0.893
Pricing Standards	3.84	3.72	0.12	1.417	0.158
Parking Lots, Internet, etc. Infrastructure	3.44	3.39	0.05	0.673	0.501
Public Facilities for Tours & Rest	3.77	3.75	0.02	0.207	0.836
Public Restroom Distribution	3.56	3.66	-0.1	-1.308	0.192
Tour Guide Signage Setup	3.77	3.64	0.12	1.82	0.07
Scenic Area Brand Building	3.43	3.49	-0.06	-0.931	0.353
Cultural Atmosphere Building	3.66	3.68	-0.02	-0.211	0.833
Folk Cultural Activities	3.66	3.61	0.05	0.675	0.5
Tourist Participation	3.64	3.74	-0.11	-1.286	0.2
Scenic Area Information Service	3.44	3.54	-0.1	-1.493	0.137
Tour Guide Explanation Service	3.89	3.59	0.3	3.736	0.000**
Scenic Area Shopping Service	3.80	3.58	0.22	3.014	0.003**
Staff Service Attitude	3.64	3.60	0.04	0.57	0.569
Staff Image Management	3.65	3.70	-0.05	-0.683	0.495
Convenience and Efficiency of Complaints & Suggestions	3.73	3.50	0.23	3.034	0.003**

\* p < 0.05 \*\* p < 0.01

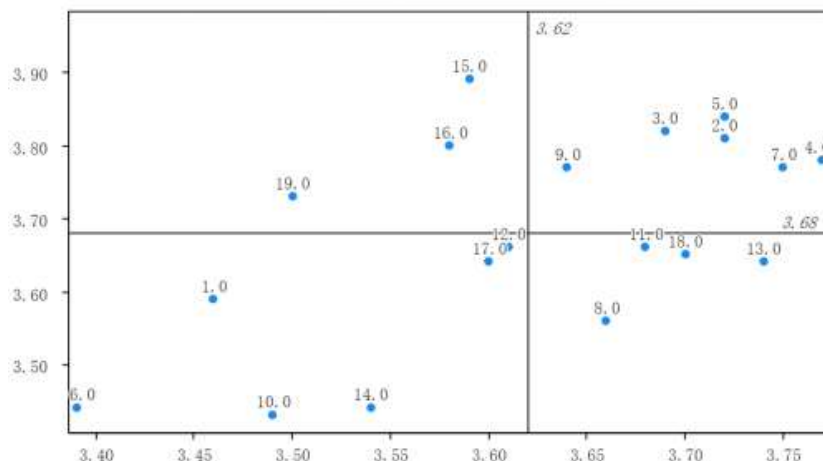
According to the data in the table, in terms of tourist satisfaction, natural landscapes, transportation convenience, pricing standards, scenic area shopping services, and tour guide explanation services all show high tourist satisfaction, with mean values above 3.80. The aspects where overall tourist dissatisfaction is highest include parking lots, internet and other infrastructure, scenic area information services, and scenic area brand building, all with mean values around 3.4. In terms of importance, tourists have high expectations for the scenic area's natural landscapes, special projects, and tourist participation<sup>[2]</sup>.

Regarding the importance-satisfaction difference, the distribution of public restrooms, scenic area brand building, cultural atmosphere building, tourist participation, scenic area information services, and staff image management all have negative values, indicating that they have not met tourists' prior expectations and are key areas for satisfaction

improvement. Conversely, natural landscapes, catering and accommodation, transportation convenience, special projects, pricing standards, transportation and internet infrastructure, public facilities for tours and rest, tour guide signage setup, folk cultural activities, tour guide explanation services, scenic area shopping services, staff service attitude, and the convenience and efficiency of complaints and suggestions all have importance-satisfaction differences greater than 0, indicating that these items generally meet tourist expectations<sup>[3]</sup>.

### 2.3.2. IPA Analysis

The IPA quadrant map for tourist satisfaction at Jianmenguan Scenic Area is composed of four quadrants, with importance on the X-axis and satisfaction on the Y-axis. It is plotted using the mean values of importance and satisfaction for the 19 indicators as the origin, as shown in Figure 1.



**Figure 1.** IPA Quadrant Map for Tourist Satisfaction at Jianmenguan Scenic Area

The IPA quadrant map is divided into 4 quadrants. Quadrants 1, 2, 3, and 4 correspond to the "Advantage Improvement Zone" (high importance-high satisfaction), "Maintain Current Performance Zone" (low importance-high satisfaction), "Future Opportunity Zone" (low importance-low satisfaction), and "Urgent Improvement Zone" (high importance-low satisfaction) respectively.

From Figure 1, the first quadrant, the Advantage Improvement Zone, includes numbers 2, 3, 4, 5, 7, and 9, which correspond to natural landscapes, transportation convenience, special projects, pricing standards, public facilities for tours and rest, and scenic area guide signs. These indicators primarily fall under the basic conditions and infrastructure construction of the scenic area, demonstrating that the basic facilities and infrastructure construction of the scenic area can generally meet tourists' needs and enhance their tourism experience. Specifically, natural landscapes (1) indicate tourists' expectations for the scenic area's unique natural scenery, which is also one of Jianmenguan Scenic Area's main tourism products. The high satisfaction with transportation convenience (2) suggests that the scenic area provides convenient transportation services and corresponding transportation infrastructure, facilitating tourist sightseeing. Special projects (3) indicate tourists' expectations for local characteristic experiences during their travels. Pricing standards (4) mainly reflect tourists' consideration of the scenic area's cost-effectiveness. Both the satisfaction and importance of this item are high, which also indirectly proves the feasibility of Jianmenguan Scenic Area's ticket discounts and package deals. Public facilities for tours and rest, and guide signs (7, 9) both belong to the infrastructure construction of the scenic area, and their high evaluations also indicate the scenic area's achievements in providing comfortable and convenient touring conditions for tourists.

The second quadrant, the Maintain Current Performance Zone, includes numbers 15, 16, and 19, corresponding to tour guide explanation services, scenic area shopping services, and the convenience and efficiency of complaints and suggestions. These three indicators all fall under the category of scenic area management and services, including aspects such as creative cultural product design for the scenic area, setting up online malls through mini-programs, establishing online and offline complaint feedback channels, and providing online voice explanation services. Although tourists have low demand for the importance of these items, their satisfaction is high, providing tourists with unexpected experiences and playing a role in enhancing overall tourist satisfaction.

The third quadrant, the Future Opportunity Zone, includes numbers 1, 6, 10, 12, 14, and 17, corresponding to catering and accommodation, parking lots and internet infrastructure, scenic area brand building, folk cultural experiences, scenic area information services, and staff service attitude. The main issues here may include a limited variety of surrounding catering services and insufficient diversity; insufficient accommodation options and inconsistent quality of guesthouses and hotels; insufficient internal infrastructure within the scenic area, leading to inconvenient related service experiences; and insufficient professional quality of staff, lacking effective management and evaluation systems. This section represents secondary weaknesses of Jianmenguan Scenic Area, with generally low importance and satisfaction, and can be considered an alternative direction for satisfaction

improvement.

The fourth quadrant, the Urgent Improvement Zone, includes numbers 8, 11, 13, and 18, corresponding to public restroom distribution, scenic area cultural atmosphere building, tourist participation, and staff image management. The public restroom issue relates to infrastructure construction, requiring consideration of whether insufficient distribution is due to a lack of quantity or a lack of proper guidance, preventing tourists from finding nearby restrooms. Cultural atmosphere building and tourist participation are both aspects of cultural development within the scenic area, indicating that Jianmenguan Scenic Area has shortcomings in cultural development, such as insufficient attractiveness of cultural experience activities, weak tourist willingness to participate, and a lack of sense of involvement and experience among tourists. Finally, regarding scenic area staff, this primarily reflects insufficient overall service quality and service awareness among staff, requiring the scenic area to strengthen personnel training, improve staff capabilities, and achieve efficient management. Overall, this zone shows high tourist importance but insufficient satisfaction, requiring significant attention and improvement as the most crucial area for enhancing tourist satisfaction at Jianmenguan Scenic Area.

### **3. Strategies to Enhance Tourist Satisfaction at Jianmenguan Scenic Area**

This section proposes specific strategies for improving tourist satisfaction based on the previous IPA analysis of tourist satisfaction at Jianmenguan Scenic Area, combined with its actual situation, addressing each of the four quadrants: Advantage Improvement Zone, Maintain Current Performance Zone, Future Opportunity Zone, and Urgent Improvement Zone.

#### **3.1. Strengthen Focus on the Advantage Improvement Zone**

As a high-importance, high-satisfaction area, indicators in this zone have already performed well in improving scenic area satisfaction. Subsequent measures should primarily focus on strengthening attention and maintaining improvement.

Currently, tourists are highly satisfied with facilities such as transportation and rest areas. Based on this, construction in these areas should be further strengthened. For example, by organizing big data on the usage of various service facilities and the population density of the scenic area, the intelligentization level of the scenic area can be enhanced. The scenic area's current "Recite Shu Dao Nan for Free Entry" activity has been widely acclaimed. According to government data, since the promotion of the activity until February 3, 2025, 222,100 people have participated, with an average daily participation of approximately 1,700. Similar activities, such as reciting Cui Yun Lang for free entry at sections of the Cuiyun Corridor Scenic Area, have also been implemented, demonstrating the high popularity of such activities. These should be continued and promoted to expand the reach of scenic area activities and attract more tourists<sup>[4]</sup>.

#### **3.2. Plan to Maintain the Maintain Current Performance Zone**

Through the analysis of tourist satisfaction, there is still

room for improvement in tourist shopping experience at Jianmenguan Scenic Area. Currently, the surrounding areas within Jianmenguan Scenic Area primarily offer refrigerator magnets, water gourds, Jianmen walking sticks, cypress wood crafts, postal albums, and specialty foods. Overall, the categories are relatively rich, but the design is relatively lacking in combining the natural and cultural characteristics of Jianmenguan Scenic Area. At the same time, a comprehensive analysis of tourists indicates that the main age range of tourists is between 18 and 34 years old, representing a younger tourist group with a high willingness to pay for novel items and creative cultural products with local characteristics. Therefore, in the design of surrounding merchandise, on one hand, it should cater to tourists' preferences and introduce new ideas to ensure its interest. On the other hand, it should combine Jianmenguan Scenic Area's own cultural resources, such as existing cypress wood crafts and Jianmenguan gate tower building blocks, to further strengthen the integration of cultural resources and surrounding creative cultural products. This can both enhance the attractiveness of the scenic area's cultural products, stimulate tourists' desire to shop, and further promote the scenic area's culture, fostering the development of the "Great Shu Road" cultural brand. To enhance tourist satisfaction, Jianmenguan Scenic Area should also strengthen the construction and improvement of its complaint and feedback mechanism.

### **3.3. Actively Improve the Future Opportunity Zone**

Due to its unique geographical location, dining options near Jianmenguan Scenic Area are mostly concentrated in Jianmenguan Town. However, on-site investigations reveal that the ancient town's cuisine is highly similar, mostly featuring "Tofu Feast" as its signature dish, and accommodation is primarily small guesthouses with inconsistent quality. Therefore, market supervision can be strengthened, rigorously enforcing the quality and technical requirements for the geographically protected "Jianmenguan Tofu" to ensure dining quality. At the same time, culinary diversity should be ensured to meet the taste preferences of different tourists. Regarding issues with scenic area information services, the scenic area can improve its own network information system. Building upon existing foundations, the "Smart Travel Jianmen" mini-program can be further improved. In addition to the current paid online explanations, it can incorporate text descriptions, plan routes through tourist data analysis, provide real-time crowd heat map warnings, and offer in-scenic area shop reservation and shopping functions<sup>[5]</sup>.

Furthermore, attention should be paid to ecological protection and sustainable development within the scenic area. Jianmenguan Scenic Area boasts a unique geological structure, rich historical relics, and numerous ancient trees. Ecological protection and development need to be continuously enhanced. Building on existing efforts, the ancient cypress detection and protection project should be advanced, micro-meteorological stations should be set up to monitor the state of ancient trees, drones should be used for spraying vegetation restoration on some cliffs, and equipment installed on rock formations should be inspected.

### **3.4. Key Improvements for the Urgent Improvement Zone**

According to the survey data, the construction of public restrooms within Jianmenguan Scenic Area is insufficient. Scenic area restrooms need improvement in both quantity and signage. During actual tours of the scenic area, public restrooms are generally available at core attractions with prominent signs. However, the capacity of public restrooms is insufficient to handle peak tourist periods. Therefore, additional public restrooms can be added at some popular attractions within the scenic area, such as Liangshan Temple and the upper and lower cable car stations. According to official mini-program inquiries, only three public restrooms are displayed, indicating a disconnect between the mini-program guidance and the actual situation. Mini-program information needs to be updated and synchronized in a timely manner to ensure accuracy and facilitate tourist retrieval.

As a service industry, tourism, in addition to the scenic area's own tourism resources, relies heavily on the quality of staff service as a critical factor directly affecting the tourist experience. To address the shortcomings in staff service quality and image management within the scenic area, it can require the scenic area to optimize its staff training system, focus on talent development, establish a performance evaluation system, and optimize service concepts.

Tourists have low satisfaction with the current cultural atmosphere building in the scenic area. Combining this with the actual situation of Jianmenguan Scenic Area, which possesses rich cultural resources, the scenic area can further develop related cultural products around the "Great Shu Road" core brand. At the same time, the development of normalized cultural experiences needs to be strengthened. For example, the Bird Road and Ape Road within the scenic area, as ancient Shu Road experience projects, can be used to develop activities such as cliff walkway experiences and ancient Shu Road hiking challenges. Additionally, the scenic area can showcase the production processes and cultural origins of local specialties such as Jianmen Tofu and Guangyuan Yellow Tea to promote specialty snacks and creative cultural products like Jianmen walking sticks. Furthermore, technology can be integrated to create unique scenic area features. During the Spring Festival, the scenic area has already implemented low-altitude flying "Fly Over Jianmenguan" experience projects and launched digital spokespersons such as "Guan Jian." Building on this, technological innovation can be leveraged to create experiences such as interacting with tourists through AI robots deployed in the scenic area, and realizing restoration experiences of ancient gate towers through virtual or augmented reality technologies<sup>[6]</sup>.

## **4. Summary**

In summary, Jianmenguan Scenic Area faces both challenges and opportunities in its journey to enhance tourist satisfaction. Through scientific planning and precise implementation, the scenic area is expected to achieve a comprehensive improvement in tourism quality, further consolidate and expand its market influence, and become an ideal tourist destination in the hearts of domestic and international visitors.

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