

Community Perception of Amenities in Tourism-oriented Traditional Villages

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Abstract Exploring the creation of comfortable objects in traditional tourism villages from the perspective of tourists can help reveal the essence of these amenities. Taking Yidoushui Ancient Village in Jiaozuo City, Henan Province as an example, this study applied the five-element theory of rural amenities to the research on the tourism-oriented traditional villages. With the help of text analysis tools and field investigations, it identified the objects, indicators, and elements of amenities in Yidoushui Ancient Village. Based on this framework, a survey questionnaire was designed for field research, followed by data analysis. The results indicated that tourists primarily focused on ecological amenities in traditional tourism villages; overall, visitors exhibited relative high perception and positive evaluation of the amenities; there were significant differences in the impact of different amenities indicators on tourist experience, and multiple indicators of ecological amenities showed significantly positive correlation with tourists' mood, satisfaction, and revisit intention, making them core factors in enhancing tourist experience. Cultural amenities significantly improved mood and satisfaction, but showed no significant effect on revisit intention.

Keywords Rural amenities, Rural tourism, Yidoushui Village, Rural development, Tourist perception

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National policies have bolstered the development of tourism in traditional villages, with the implementation of the *Tourism Law of the People's Republic of China* in 2013 playing a positive role in promoting the development of rural tourism^[1]. Rural tourism, with its unique appeal, has increasingly gained popularity among tourists who have a crucial impact on the development of tourist destinations. The emotional connection between tourists and destinations positively affects their perceptions and reactions to destination tourism^[2]. Tourist perception, defined as the comprehensive impression, beliefs, and thoughts tourists hold about a destination, directly reflects the development level of tourism services^[3]. At the same time, negative perceptions of tourists can effectively help tourist destinations improve their service quality^[4], thereby fostering long-term positive outcomes for regional tourism development^[5]. The theory of rural amenities further propels traditional village tourism. Starting in 1954, American economist Ullman explored the relationship between amenities, population migration, and regional growth, establishing the theory of amenities^[6]. At this time, issues like environmental pollution, rising crime rates, and traffic congestion in many large cities drove migration to suburbs and rural areas with better natural amenities, sparking Western academic interest in amenity studies^[7-8]. The aesthetic, leisure, entertainment and other consumer values of rural areas has

become increasingly prominent. The theory of rural amenities promotes the development of traditional village tourism^[9]. With the introduction of rural amenities theory, scholars' research on amenity and tourism mainly focuses on the relationship between amenities and the planning and development of characteristic towns. Michael Woods posited that rural amenities not only stimulated population influx but simultaneously boosted tourism growth and external investment^[10]. Li Yan et al. proposed a development strategy and system for establishing characteristic towns from 4 perspectives: market amenities, social amenities, integrative amenities, and cultural amenities^[11]. Similarly, Li Gan believed that emphasizing the cultivation of intrinsic cultural qualities was conducive to the sustainable development of tourism industry, and constructed a social-economic consumption framework for the construction of characteristic towns from the perspective of amenities^[12].

1 Research methods and data sources

1.1 Overview of study area

Yidoushui Village, located in the northern mountainous area of Xiuwu County, Jiaozuo City, Henan Province, covers an area of about 9.7 km² with an altitude of 1,000 m. The administrative village has 3 natural villages, with 55 households and a population of 211 people. With a cultivated land area of 17 hm², the village is traversed by the Baixing Ancient Trail, one

of the Eight Ancient Passes (Baxing) of the Taihang Mountains. Renowned for its stunning natural scenery and historic stone dwellings, Yidoushui Village is known as the "Stone Village on Mount Yuntao". Yidoushui Village was once a provincial-level poverty-stricken village. Formerly designated as a provincial-level impoverished village, Yidoushui Village has leveraged its geographical advantages since 2008. Adhering to the principles of scientific development, the village focused on transforming its agricultural model with the primary goals of enhancing agricultural efficiency and increasing farmers' income. Centering its tourism appeal around the theme of "Eating farmhouse meals, staying in farmhouse lodgings, experiencing farmhouse chores, picking farmhouse fruit, and enjoying farmhouse leisure," Yidoushui Village dedicated efforts to developing distinctive leisure and resort tourism, which forged a unique path to development and prosperity for this deep-mountain village, culminating in its complete lift out of poverty by 2018. In January 2019, Yidoushui Village was listed among the 7th batch of China's Famous Historical and Cultural Villages. However, the ancient village experienced a downturn in tourism revenue during the COVID-19 pandemic in 2020. This study aims to objectively analyze the tourism amenity level of Yidoushui Village by investigating tourists' awareness and evaluation of its amenities, so as to provide recommendations for the tourism-oriented development and scenic area

management of traditional tourist villages.

1.2 Structure of rural amenities of Yidoushui Village

The study on the structure of amenities of Yidoushui Village was conducted from 2 aspects: one was based on the theory of urban amenities and “Five Revitalizations” framework of rural revitalization, combined with the actual situation of Yidoushui Village, dividing the tourism amenities of the village into 3 major types—ecological amenities, cultural amenities, and industrial Amenities—further subdivided into 13 specific indicator levels. The other utilized ROST software, textural data from preliminary fieldwork interviews and user-generated content (including comments and posts) on social media platforms (Tiktok, Xiaohongshu, and WeChat Official Accounts), extracting 24 representative objects of amenities through text mining and high-frequency keyword identification. Finally, the table for the structure of amenities of Yidoushui Village (Table 1) was established by systematically cross-referencing the empirically derived objects of amenities with the theoretically defined indicators of amenities.

1.3 Research methods and data sources

The main task of the research was to measure tourists' attention and evaluation of the amenities in Yidoushui Village. In the specific survey, a questionnaire was designed based on the objects of amenities listed in Table 1 and conducted within the community. The questionnaire primarily included 3 aspects: first, tourists' attention and evaluation of amenities in Yidoushui Village; second, the measurement of tourists' emotional attitudes towards the village; third, personal information. The attention measurement scale adopted the Likert 5-point scale method, with response options set as ‘‘Not

concerned at all’’, ‘‘Not concerned’’, ‘‘Neutral’’, ‘‘Concerned’’ and ‘‘Very concerned’’, assigned scores from 1 to 5, respectively. The evaluation used a 3-level scale of ‘‘Good’’, ‘‘Neutral’’, and ‘‘Poor’’, assigned scores of ‘‘1, 0, -1’’, respectively. The research team distributed a total of 600 questionnaires in Yidoushui Village, with 525 valid responses collected, yielding an effective rate of 87.50%, which provided a data source for subsequent analysis. The reliability of the survey data was tested using SPSS 26.0, resulting in a Cronbach's Alpha coefficient of 0.927, indicating high reliability.

2 Research results

2.1 Basic information of samples

The demographic information of the respondents primarily includes gender, age, education level and monthly income, place of origin, information sources, and transportation modes. Among the sampled community residents, the gender distribution was relatively balanced, with males accounting for 52.95% and females for 47.05%. The age distribution exhibited a ‘‘bimodal’’ structure, while education levels showed a ‘‘spindle-shaped’’ distribution. Most adult respondents (excluding minors under 18) reported monthly incomes exceeding ¥3,000, indicating a relatively high-income tourist profile. The predominant transportation mode was private vehicles, influenced both by the local geographical location and tourists' financial capacity. Geographically, 197 tourists originated from county-level areas within Jiaozuo City, and 259 came from other parts of Henan Province outside Jiaozuo, collectively representing 86.86% of respondents. Word-of-mouth recommendations from relatives or friends served as the primary information source

(43.05%), followed by online media (31.62%). These findings suggested Yidoushui Scenic Area maintained considerable recognition and effectively utilized social media to promote local tourism advantages, fostering village tourism development.

2.2 Perception and evaluation of rural amenities

2.2.1 Attention to amenities. Building upon the conceptual frameworks of amenities proposed by both Chinese and Western scholars, and considering the distinctions between rural and urban contexts, this study employed 3 primary indicators—ecological amenities, cultural amenities, and industrial amenities—to reflect the development level of rural tourism. Typically, ratings above 3.50 on a 5-point Likert scale represented a high level, while scores above 3.00 indicated a relatively high level. According to the mean attention scores for rural amenities, only ecological amenities scored above 3.50 (mean=3.67), indicating that tourists placed significant emphasis on the natural environment and ecological resources of the village. Cultural amenities and industrial amenities followed with scores of 3.30 and 3.53, respectively, suggesting that tourists' recognition of cultural and industrial amenities in Yidoushui Village remained relatively high, though lower than for ecological amenities. This demonstrated that tourists acknowledged the cultural uniqueness and industrial activities in the village, revealing promising development potential.

2.2.2 Evaluation on objects of amenities. In this questionnaire survey, tourists had 5 options to indicate their degree of attention toward each amenity, namely, ‘‘Not concerned at all’’, ‘‘Not concerned’’, ‘‘Neutral’’, ‘‘Concerned’’, and ‘‘Very concerned’’. ‘‘Very concerned’’, ‘‘Concerned’’ and ‘‘Neutral’’ were assigned a value of 1, while the other 2 options were assigned 0. Using Excel, the frequency of favorable attention was calculated and then converted into a percentage-based attention level (ranging from 0 to 100), which was subsequently ranked from highest to lowest. The conversion formula is as follows:

$$Y=X/N \times 100$$

Where, Y is the degree of attention; X is the frequency of attention; N is the total number of samples.

The attention degree ranging from 85.00 to 100.00 was ‘‘High’’, 75.00 to 84.99 for ‘‘Relative high’’, 60.00 to 74.99 for ‘‘Average’’, 40.00 to 59.99 for ‘‘Relatively low’’, and 0.00 to 39.99 for ‘‘Low’’. Ultimately, tourists' preferences for the objects of amenities in rural areas were obtained.

Table 1 Structure of amenities index system in rural areas

Rural amenities	Indicators of rural amenities	Objects of rural amenities
Ecological amenities	S ₁ Sanitary facilities	Public restrooms, Trash cans
	S ₂ Natural landscape	River water area, Terraced field landscape
	S ₃ Ecological health	Air quality, Forest vegetation
	S ₄ Geographic location	City distance
	S ₅ Village environment	Road cleanliness status
Cultural amenities	S ₆ Folk legends	Dragon Manifestation Stone Legend, Goddess Cave Legend, Millennium Willow Tree Legend
	S ₇ Humanistic quality	Hospitality of villagers, Operator attitude
	S ₈ Historical buildings	Guandi Temple, Courtyards of Jia Family and Li Family
	S ₉ Ancient spring site	Yidoushui Spring
Industrial amenities	S ₁₀ Living service facilities	Supermarkets, Shops, Homestays, Hotels, Restaurants, Public rest areas
	S ₁₁ Transportation service facilities	Parking lot, Landscape trail
	S ₁₂ Local featured products	Featured products
	S ₁₃ Information guidance system	Navigation system

In the questionnaire design, when tourists selected options indicating attention ("Neutral", "Concerned", or "Very concerned"), their evaluations of the corresponding amenity object were also collected. For amenities categorized as "High degree of attention" or "Relatively high degree of attention" based on the above formula, descriptive statistics were performed using Excel 26.0 to calculate the total evaluation score for each amenity object. In this sample data, Evaluation score ≥ 150 is regarded as positive evaluation, $150 > \text{Evaluation score} \geq 0$ is neutral evaluation, and Evaluation score < 0 is negative evaluation (Table 2).

Based on the analysis in Table 2, the distribution of tourist evaluation scores revealed the satisfaction levels associated with different amenities in rural tourism. Ecological and cultural amenities generally received positive feedback, while industrial amenities showed room for improvement. Negative evaluations specifically highlighted areas requiring focused attention in rural tourism development. Within

the positive evaluations, ecological amenities—such as air quality, forest vegetation, and road maintenance—demonstrated tourist' high regard for the natural environment. The positive evaluations for villagers' hospitality and the Yidoushui Spring underscored the significant role of cultural experiences in enhancing tourist satisfaction. The industrial amenities in the neutral evaluation category—including restaurants and eateries, scenic walkways, and signage systems—suggested potential for enhancement in service quality and tourism infrastructure. The negative evaluations targeting river water conditions and public restroom sanitary conditions highlighted challenges in environmental conservation and public sanitation management.

2.3 Attention to amenities and tourist experience index

To further explore the relationship between tourists' perception of tourism amenities and their emotional experience during travel, the questionnaire included a "Tourism experience

index" for their visits to Yidoushui Village, which mainly included tourist mood rating, satisfaction rating, and revisit rate rating. Each option was scored from 1 to 10 points. The indicators of amenities were then subjected to correlation analysis with these 3 ratings (mood rating, satisfaction rating and revisit rate rating) using SPSS. The results were as shown in Table 3.

According to the Pearson correlation test results in Table 3, there were significant differences in the impact of different amenities on tourist experiences. The research results found significant differences in the impact of different indicators of amenities on tourist experience. Indicators such as Ecological health (S_3), Ancient spring sites (S_9), and Local featured products (S_{12}) were significantly positively correlated with tourist mood, satisfaction, and revisit rates, indicating that natural ecology and cultural heritage played a core role in enhancing tourist experience. Infrastructure-related indicators such as Sanitary facilities (S_1) and Geographical location (S_4) positively affect satisfaction and revising rates but had limited impact on immediate mood status. Historical buildings (S_8) and Folk legends (S_6) boosted mood and satisfaction ratings yet showed no significant effect on revisit rates, suggesting their appeal may be short-lived. Overall, optimizing ecological and cultural resources, improving service facilities, and strengthening distinctive marketing are critical strategies to enhance tourist satisfaction and promote revisits.

3 Conclusion

(1) The ultimate goal of shaping rural amenity is to enhance the competitiveness of rural tourism and boost tourism-driven rural economies by attracting tourists and cultural-tourism enterprises. In the context of tourism, rural amenity can be categorized into 3 dimensions: ecological amenities, cultural amenities, and industrial amenities. A validated measurement scale for rural amenity in tourism settings consists of 3 dimensions, 13 indicators, and 24 objects, demonstrating ideal reliability and validity. This study provides a valuable macro-to-micro, object-to-subject interpretation of rural amenity through the interaction of theory and case studies.

(2) Analysis of tourist attention distribution reveals that ecological and cultural factors are key drivers of rural tourism appeal, while talent and organizational factors require further exploration and promotion. Although industrial factors receive moderate attention, they play

Table 2 Evaluation of amenities objects for tourists

Evaluation	Objects of amenities	Evaluation score//point
Positive evaluation (+)	Air quality	326
	Hospitality level of villagers	183
	Forest vegetation	177
	Road cleanliness condition	175
	Operator attitude	174
	Yidoushui Spring	153
Neutral evaluation (\pm)	Restaurant	148
	Terraced landscape	121
	Landscape trail	109
	Navigation system	100
	Number of trash cans	93
	Parking lot	87
Negative evaluation (-)	City distance	78
	River water area	-60
	Cleanliness of public restrooms	-89

Table 3 Correlation Test

Amenities	Positive mood index correlation	Satisfaction index correlation	Revisit rate index correlation
S_1 Sanitary facilities	0.101*	0.117**	0.174**
S_2 Natural landscape	0.082*	0.092*	0.047
S_3 Ecological health	0.204**	0.160**	0.089*
S_4 Geographic location	0.101*	0.117**	0.174**
S_5 Village environment	0.118**	0.109**	0.088*
S_6 Folk legends	0.092*	0.144**	0.071
S_7 Humanistic quality	0.140**	0.112**	0.079*
S_8 Historical buildings	0.158**	0.144**	0.024
S_9 Ancient spring site	0.185**	0.203**	0.103**
S_{10} Living service facilities	0.122**	0.125**	0.038
S_{11} Transportation service facilities	0.135**	0.118**	0.064
S_{12} Local featured products	0.132**	0.153**	0.103**
S_{13} Information guidance system	0.103**	0.053	0.050

Note: ** suggests significant correlation at the level of 0.01 level (single tailed); * suggests significant correlation at the level of 0.05 (single tailed).

a crucial role in enhancing visitor experiences. Evaluation score distributions indicate generally positive feedback for ecological and cultural amenities, while industrial amenities show room for improvement, with negative evaluations highlighting specific areas needing attention in rural tourism development.

(3) Pearson correlation tests demonstrate significant differences in how different amenity indicators affect tourist experiences. Multiple indicators of ecological amenities show strong positive correlations with tourists' mood, satisfaction, and revisit intention, confirming their central role in enhancing experiences. Cultural amenities significantly improve mood and satisfaction but show no significant impact on revisit rates.

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5 Protection and development strategies for traditional villages

5.1 Maintaining prototype elements of the villages

With the social development and increasing population, new villages have been built nearby the old Nuogang Village and Wengji Village, the prototype elements in the old villages must be maintained properly. During the protection, regional cultural characteristics carried by the buildings must be respected, traditional functions and forms preserved, architectural types extracted in this study also protected and inherited reasonably. Proper design strategies can be adopted to realize the modern translation and innovative application of traditional architectural types, to cater for modern living needs, and inherit regional cultural context.

5.2 Protecting ecological environment

Traditional village is an organic whole, of which the village characteristics, architectural features and landscape characteristics co-present the features of village type. In the conservation of traditional villages, the coordination between buildings and neighboring environment must be stressed, the strategies of rural revitalization must be implemented, original ecological,

landscape and cultural background of the villages maintained and restored. The conservation must stress the ecological conservation measures, establish tourist flow management mechanism, reduce the negative impact of human activities on environment, and realize the ecological revitalization.

5.3 Coordinating development and protection

Protection of traditional buildings in the Jingmai Mountain must follow the principle of coordinating development and protection. First, traditional static protection model should be broken, "living inheritance and development" and villagers as the main force must be highlighted, and villagers' benefits in the protection and development of traditional villages must be guaranteed, their consciousness of cultural inheritance must be enhanced, to transit from passive protection to active protection. Second, the goal of sustainable development must be followed, tourism and commercial projects can be developed properly, excessive commercialization must be avoided to protect original architectural styles and natural landscapes, so as to realize the balanced improvement of both tourism development and village prototype protection, and achieve the

"development in protection, and inheritance in development" of traditional villages.

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