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Impact of the Perceived Quality of Traditional Villages' Cultural Landscapes on Tourists' Loyalty

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Abstract: This study explored the relationship between the perceived quality of cultural landscapes and tourists' loyalty to traditional villages using structural equation modeling (SEM) by collecting data from 463 tourists in Huangdu Dong Village within China's Hunan Province. The results reveal that the perceived quality of traditional villages' cultural landscapes indirectly and significantly affected tourist loyalty; its influence was primarily transmitted through the mediating variable of tourist satisfaction. Meanwhile, no significant difference in loyalty was observed between tourists' gender, occupation, and place of residence, while age, educational background, and income level had significant effects on loyalty. This study reveals the importance of cultural landscapes in traditional village tourism and provides important ideas for traditional village tourism marketing. In doing so, this study enhances the competitiveness and influence of traditional village tourism and provides theoretical contributions to sustainable village development.

Introduction

Traditional villages are an important part of Chinese culture, as they provide both tangible and intangible forms of non-renewable heritage, including historical, cultural, archival, and research values (Gao, Wu, and Zhao 2020; Tang *et al.* 2021). These villages' rich human resources are critical in developing rural tourism (Gao and Wu

2017), which serves as a carrier of regional, traditional characteristics and historical heritage; they also tangibly preserve many historical landscapes and intangibly, many traditional customs, which are key in attracting tourists to rural areas (Li and Wang 2023; Tieskens *et al.* 2017). Coupled with a series of national documents and policies on rural revitalization development, this has contributed to the gradual emergence of traditional villages as important destinations in rural tourism (Demirović *et al.* 2019; Long and Tu 2018). In 2018, of the 5.54 billion domestic tourists to China, approximately 3 billion engaged in some form of rural tourism, and rural tourism accounts for more than half of domestic tourism (Han 2020). Economically, tourism positively impacts local economies and livelihoods (Job and Paesler 2013) by generating higher income, promoting employment, and facilitating foreign trade (Haber and Lerner 1999).

Tourism in particular can generate economic income for rural communities outside of their intensive agricultural production (Buijs, Pedroli, and Luginbühl 2006). Additionally, rural tourism provides financial security toward the conservation of traditional villages to a certain extent, activates a momentum in their endogenous development, and compensates for the lack of industries in traditional villages in the era of the non-agricultural economy (Chi *et al.* 2020; Lv 2017). However, as with other types of tourism, rural tourism faces fierce competition (Chin 2022; Soeswoyo *et al.* 2021). A region that wants to gain a competitive advantage in tourism must ensure that tourists are highly satisfied with their perceptions of the experience (Prayag and Ryan 2012). In this regard, one influencing factor is tourists' perceptions of the quality of services offered (Ranjbarian and Pool 2015). Moreover, understanding visitors' perceptions of quality regarding a region's cultural landscape is essential, and can help managers improve and optimize the quality of tourists' experiences (Liu, Lin, and Chen 2022).

The appearance of tourism is the economy, the core of tourism is culture, and the tourism process is more of a cultural experience (C. Huang 2006). Cultural landscapes provide tourists with different experiences and meanings (Rakić and Chambers 2011), and tourists' behavioral intentions reflect a process in which perceptions trigger emotions and influence behaviors (Chen *et al.* 2016). Moreover, tourists' impressions of the tourism experience are a reliable source of information for judging tourist behavior (Coudounaris and Sthapit 2017). Revisit and recommendation intentions are two forms of behavioral intentions that reflect the degrees of tourists' loyalty to experience an activity again (Baker and Crompton 2000). Enhancing tourists' loyalty to rural tourism is important for improving rural economic income and promoting sustainable rural development; it is an important measure of whether the quality and appearance of rural tourism has improved and rural revitalization is promoted (Oppermann 1998).

Customer loyalty is the key to businesses' survival and success (Charinsarn, Diallo, and Lambey-Checchin 2023), and the key to gaining tourists' loyalty is to provide them with a high-quality, comfortable, and unique experience (Cao, Xie, and Qu 2023). Increased tourist loyalty can promote the sustainable development of scenic spots and enhance tourism competitiveness. In particular, traditional villages have rich cultural characteristics, such as the crystallization of rural cultural heritage (Gao and Wu 2017). Tourists' intuition after a tour--and subsequent loyalty level--is based on their perceptions of traditional villages' cultural landscapes (Suo and Sun 2014). Therefore, it is necessary to explore the influence mechanism between traditional village tourists' perceptions of the cultural landscape and their loyalty, clarify the direction to enhance tourists' willingness to be loyal, and provide a theoretical basis for the optimization and enhancement of the cultural landscape and tourism development in traditional villages.

Tourist loyalty has become an important aspect of rural tourism research. First, current research has focused on the destination's image (Pan, Rasouli, and Timmermans 2021; J. Wang *et al.* 2021; L. Wu and Shimizu 2020), tourism satisfaction (Ma *et al.* 2021; Mouratidis, Ettema, and Næss 2019), tourism motivations (Aebli, Volgger, and Taplin 2022; Khan *et al.* 2019), and value perceptions (Dedeoğlu 2019; Jeong and Kim 2020). However, literature has rarely examined the perceived quality of cultural landscapes from tourists' perspective, and few empirical studies have observed the relationship between the perceived quality of cultural landscapes and tourists' loyalty intentions. Second, few rural tourism studies have explored traditional villages as cultural heritage sites, with exceptions from Li and Wang (2023), and Hidayana *et al.* (2019). For example, Li and Wang (2023) used structural equation modeling to explore the interactions among traditional villages' cultural landscape authenticity, the memorable tourism experience, and place attachment in driving tourists' behavioral imagery and significantly influencing tourists' behavioral intentions. Hidayana *et al.* (2019) explored the relationships between tourism motivation, satisfaction, and the willingness to revisit and found that tourist motivation significantly and positively affected tourist satisfaction, which significantly and positively affected the willingness to revisit; tourist motivation had no significant effect on this willingness.

Third, many studies have examined the relationship between perceived quality and tourist loyalty. For example, Ni *et al.* (2023) analyzed the relationship between tourists' perceptions of the landscape's quality and their loyalty to rural tourism to note that the perceived quality primarily influences tourists' loyalty, with perceived value and satisfaction as mediating variables. In an analysis of consumer purchase intentions, Khan (2019) found that consumer-perceived quality significantly influences loyalty. However, the author did not clarify the relationship between the perceived quality of the traditional village landscape in the cultural heritage tourism context, tourists' loyalty intentions, and the mediating role between them.

This study fills this research gap by exploring the relationship between tourists' perceptions of quality among traditional village cultural landscapes and their loyalty from the cultural landscape perspective, with perceived value and satisfaction as mediating variables. Thus, this study attempts to answer three research questions:

What dimensions of the traditional village cultural landscape do tourists perceive?

Does the perceived quality of traditional villages' cultural landscapes significantly affect tourists' loyalty?

Do perceived value and satisfaction mediate the relationship between the perceived quality of the cultural landscape and loyalty, and if so, which factors are the most significant?

Based on this research gap, this study introduces two mediating variables from the perspective of tourists' cultural landscape perceptions: perceived value and satisfaction. A system to determine tourists' perceptions of quality in the cultural landscape was constructed based on previous studies. A combination of field research, theoretical construction, and empirical testing allows this study to explore not only the relationship between the perceived quality of the cultural landscape in traditional villages and tourists' loyalty intentions, but also the mediating role of perceived value and satisfaction in this structural relationship. The results from an examination of these relationships can help managers better understand tourist psychology and behaviors, and thus, help better provide services that meet tourists' needs.

1. Theoretical Background and Hypotheses

1.1 Perceived Quality of Traditional Villages' Cultural Landscapes

In China, traditional villages convey both tangible and intangible types of cultural heritage (Fu, Zhou, and Deng 2021), and embody thousands of years of cultural and historical roots (Li and Wang 2023). These villages showcase diverse regional cultures and folk customs, with rich historical, cultural, social, artistic, and economic values (J. Zhou *et al.* 2023). Against the backdrop of rural revitalization in China, traditional villages' cultural landscapes have become important tourism resources (Martínez, Sanagustín, and Blanco 2018; W. Yang *et al.* 2022). When these cultural landscapes lead cultural tourism development, they can effectively guide and promote traditional villages' conservation and revitalization (J. Zhou *et al.* 2023).

Current research on traditional villages' cultural landscapes primarily focuses on cultural landscapes' planning and design (Adhika and Putra 2020; An-rong Dang, Zhang, and Chen 2013), evolution (Fang and Liu 2008; Sun and Ou 2021), perception assessments (Li and Wang 2023; J. Zhou *et al.* 2023), and conservation and development (Anrong Dang *et al.* 2020; X. Wang 2022). Research on the perceived quality of traditional villages' cultural landscapes primarily assesses the quality of cultural perceptions from the tourist's perspective. Zhou *et al.* (2023) conducted an online text-based assessment to evaluate tourist perceptions of cultural landscapes in traditional villages; while they observed that tourists generally had positive perceptions of cultural landscapes, their perceptions of the landscapes' cultural significance was lacking. Beeho and Prentice (1997) employed in-depth interviews to analyze tourists' experiential perceptions at New Lanark Village, a World Heritage Site in the United Kingdom. They used an activities, settings, experiences, and benefits (ASEB) grid analysis to note that tourists primarily enjoyed the site's historical and cultural aspects. Yang *et al.* (2023) analyzed tourists' perceptions of the cultural landscape quality of island-based greenways and found that they had better perceptions of the cultural aspects related to slow-walking facilities within the greenways. Although these studies focused on tourists' perceptions of quality, they rarely explored the connections between perception, value, satisfaction, and loyalty, or the relationships among them.

In tourism behavioral research, researchers define perceived quality as tourists' overall perceptions of their tourism experience(Jin, Lee, and Lee 2015). Literature considers this as a multidimensional assessment in which various perceptual experiences help form a final overall vision (Fernandes and Cruz 2016). The overall perceived quality then reflects the tourism destination's various attributes (Park, Lee, and Nicolau 2020). Researchers have suggested the use of multidimensional scales to measure perceptual quality (Kiatkawsin and Han 2017). By combining and summarizing the literature on traditional village cultural landscapes, this study classified the perceived dimensions of traditional village cultural landscapes into 11 categories: architectural, spatial, water

system, plant, paved road, service facility, handicraft, costume, folklore, agricultural, and food culture (Li and Wang 2023; Zhang *et al.* 2023; J. Zhou *et al.* 2023) Appendix A further defines these 11 dimensions.

Previous studies have revealed that multidimensional quality and attribute scales are strong predictors of perceived value (Suhartanto *et al.* 2020). For example, in the context of China's rural tourism destinations, four perceived quality dimensions significantly affect tourists' perceived value (Chi *et al.* 2020). In a study of island-type greenways, it was also proven that tourists' perceptions of their cultural landscape's quality positively impacted value (Y. Yang *et al.* 2023). Researchers have indicated that the study of perceived value can comprehensively reflect tourists' perceived quality of tourism products and their unique value (Jin, Lee, and Lee 2015), which can help tourism destinations seize a competitive advantage while guiding tourism theory and practical research. Academics have also posited that perceived quality is the main variable of satisfaction in the tourism process, and that perceptions of a high-quality experience will enhance tourist satisfaction (Lin and Kuo 2016). Moreover, Jridi *et al.* (2014) discovered that the perceived quality of five dimensions of coastal tourism in Tunisia significantly impacted tourist satisfaction. The perceived quality of festivals and activities at tourist destinations also significantly influenced satisfaction (Pivac *et al.* 2019). Therefore, this study proposes the following Hypotheses 1 and 2:

Hypothesis 1. The perceived quality of the traditional village's cultural landscape significantly and positively affects perceived value.

Hypothesis 2. Perceived quality positively affects tourist satisfaction.

1.2 The Relationship between Perceived Value and Satisfaction

Perceived value is not only key to understanding the consumer experience (S. Huang and Hsu 2009), but also a comprehensive assessment of a product's effectiveness after the consumer perceives it (Zeithaml 1988). In tourism research, the perceived value concept has been developed primarily based on perceived value. It is defined as an individual's evaluation of a tourism product or service based on the ratio of tourism benefits to costs during tourism consumption (Al-Ansi and Han 2019; Li and Wang 2023). Perceived value is also a key factor that influences satisfaction (Oriade and Schofield 2019; Yu *et al.* 2023). It has been found to be a prerequisite for satisfaction in various research settings (Assaker, Hallak, and El-Haddad 2017; Paulose and Shakeel 2022). Therefore, this study proposes the following Hypothesis 3:

Hypothesis 3. Perceived value positively affects tourist satisfaction.

1.3 The Relationship between Satisfaction and Loyalty

Satisfaction is defined as a positive psychological state resulting from the customer's perception of the consumption process, and is considered an integrated, positive response to the product or service experience (Oliver 1980). Numerous tourism studies have extensively validated the relationship between satisfaction and loyalty intentions (Islamy, Trisnawati, and Rahayu 2022; Kusdibyo 2022; M. Zhou and Yu 2022). Satisfaction is typically a significant predictor of tourists' loyalty (Kiatkawsin and Han 2017; Olya *et al.* 2019; H.-C. Wu, Cheng, and Ai 2017). For example, satisfaction is a variable mediating the relationships between the quality of festivals, the event experience, and loyalty in Serbian destinations, while tourists' satisfaction with festivals and events significantly influences their behavioral intentions (Pivac *et al.* 2019). In another study, Tourists' satisfaction with their perception of the cultural landscape has positively affected loyalty in island-based greenway studies (Y. Yang *et al.* 2023). Tourist loyalty includes the willingness to revisit, willingness to recommend, and willingness to convey positive word-of-mouth (Kiatkawsin and Han 2019; Suhartanto *et al.* 2020), all of which are tourist behaviors desired by tourism firms. As measuring actual customer behavior is challenging for many researchers, this study uses visitors' willingness to revisit and recommend as an indicator of loyalty. Therefore, this study formulates the following Hypothesis 4:

Hypothesis 4. Tourist satisfaction positively affects loyalty.

2. Study Case and Data Collecting

2.1. Study Case

Huangdu Dong Village is located southwest of Dong Autonomous County in Huaihua City, Hunan Province, China. The village was selected [for analysis in this study] based on the following criteria:

First, the selected village was listed in the third batch of traditional Chinese villages in 2015, and had rich natural and cultural landscapes and important conservation and research values. It is surrounded by mountains and trees and has an appealing natural scenery. The village's overall appearance is well-preserved, with many exquisite public structures and detailed craftsmanship.

Second, the selected village was built during the Ming Dynasty, has a more than 700-year history, and is located at the core of the 100-mile Dong Cultural Corridor. Additionally, the village has inherited Dong cultural traditions, with rich folk connotations; Dong songs, dances, and costumes; various traditional sports and cultural programs; colorful folk activities; and flavorful Dong food. Collectively, these exemplify the essence of traditional Dong culture.

Third, this village also has a complete spatial pattern and a well-protected historical style, and is well-known in the area.

2.2. Scale Design

First, an initial scale was constructed by combining elements from prior literature, in four parts: perceived quality, perceived value, satisfaction, and loyalty. The research questionnaire contained two parts: 1) tourists' demographic characteristics, including gender, age, educational background, occupation, place of residence, and income; and 2) a questionnaire with four dimensions: perceived quality, perceived value, satisfaction, and loyalty. The latter part was further divided into 18 items, with each scale item scored on a five-point Likert scale that displays good reliability and validity.

2.3. Data Collection and Sample Characteristics

This survey was conducted over two weekends: February 25 to 26 and March 4 to 5, 2023. People typically have more leisure time on weekends, which results in more visitors during these periods. The survey targeted tourists who visited Huangdu Dong Village and employed a random sampling method to distribute the questionnaires.

Table 1. Tourists' Demographic Statistics

Characteristics		Frequency	Percentage
Gender	Female	254	54.9%
	Male	209	45.1%
Age	< 18	28	6.0%
	18–24	65	14.0%
	25–30	27	5.8%
	31–40	165	35.6%
	41–50	136	29.4%
	51–60	35	7.6%
	> 60	7	1.5%
Education	Junior high school or below	96	20.7%
	High school	84	18.1%
	Junior college	138	29.8%
	Undergraduate	115	24.8%
	Postgraduate	30	6.5%
Occupation	Students	82	17.7%
	Enterprise workers	75	16.2%
	Government/institutional personnel	80	17.3%
	Retirees	23	5.0%
	Others	203	43.8%
Place of residence	Rural	197	42.5%
	Urban	266	57.5%
Average monthly disposable income	< 1,000 RMB	76	16.4%
	1,001–3,000 RMB	72	15.6%
	3,001–5,000 RMB	174	37.6%
	5,001–8,000 RMB	104	22.5%
	8,001–10,000 RMB	8	1.7%
	> 10,001 RMB	29	6.3%

Of the 480 questionnaires distributed, the study excluded questionnaires with unclear or incomplete responses to obtain 463 valid responses, with a 96.5% response rate. The number of questionnaires satisfied the sample size requirements for the confirmatory factor analysis. Among the survey participants, 45.1% were male and 54.9% were female, indicating a relatively balanced gender ratio. Most tourists' ages ranged from 31 to 50 (65%). Table 1 presents more specific visitor demographic information.

2.4. Analysis Method

This study employed AMOS 26.0 and SPSS 26.0 software to quantitatively analyze the questionnaire data. Initially, the data were collected using questionnaires, and the questionnaire items' reliability and validity were assessed. Subsequently, the constructed model was subjected to a goodness-of-fit analysis using the collected data. Finally, structural equation modeling was employed to examine the interaction mechanisms among the latent variables.

3. Results

3.1 Common Method Deviation Test

As the questionnaire collected data from the same environment and items were described in a single context, a common method variance bias is likely to arise, creating potentially misleading study results (H. Zhou and Long 2004). To control for common method variance bias, this study began with an exploratory factor analysis of the scale items and used Harman's one-way test based on an exploratory factor analysis to test for common method bias. The exploratory factor analysis was performed using SPSS software for all scale questions corresponding to latent variables, with data extracted using a principal component analysis without rotation. Table 2 displays the obtained results.

Table 2. Total Variance Explanation

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.808	43.378	43.378	7.808	43.378	43.378
2	2.071	11.506	54.884	2.071	11.506	54.884
3	1.387	7.708	62.591	1.387	7.708	62.591
4	1.297	7.206	69.797	1.297	7.206	69.797
5	1.040	5.780	75.578	1.040	5.780	75.578
6	0.831	4.614	80.192			
……						
18	0.153	0.849	100.000			

When performing the Harman's one-way test, if only one factor with an eigenvalue greater than one was obtained, or if the amount of variation explained by the first factor exceeded a critical value of 50%, then this indicates a serious common method variation problem. However, if multiple factors were obtained and the amount of variation in the first factor did not exceed 50%, the common method variation problem is not serious (Podsakoff and Organ 1986). The results revealed that five factors with eigenvalues greater than one were obtained, and the first factor's variance contribution was 43.378%, which was less than the critical value of 50%. Therefore, common method bias is not serious in the sample data, and this does not affect the subsequent model's construction.

3.2. Common Method Deviation Test

Reliability and validity tests were conducted to assess the questionnaire's reliability and consistency, as it is typical to review these two components in literature. According to Hair *et al.* (2021), evaluating a measurement model includes tests to determine internal consistency and reliability, indicators' reliability, convergent validity, and discriminant validity. The internal consistency and reliability was evaluated using Cronbach's alpha and composite reliability. The Cronbach's alpha and composite reliability values represent the lower and upper limits of internal consistency and reliability, respectively. Further, the Cronbach's alpha and composite reliability should be greater than 0.7. Convergent validity is assessed using the average variance extracted (AVE) values greater than 0.5. The indicator reliability is evaluated by measuring the items' outer loadings, and should be greater than 0.7. If the

measurement scale's composite reliability is recommended to be greater than 0.7 and the AVE value greater than 0.5, then measurement items' outer loadings between 0.4 and 0.7 are also acceptable. We used SPSS 26.0 software to first test each latent variable using the Cronbach's alpha coefficient (Cronbach's alpha). Table 3 displays the results.

Table 3. The Measurement Model's Reliability

Latent Variables	Indicators	Load Values	Cronbach's Alpha	CR	AVE
Perceived Quality	PQ1	0.649	0.915	0.927	0.539
	PQ2	0.692			
	PQ3	0.798			
	PQ4	0.763			
	PQ5	0.789			
	PQ6	0.787			
	PQ7	0.653			
	PQ8	0.740			
	PQ9	0.745			
	PQ10	0.653			
	PQ11	0.782			
Perceived Value	PV1	0.882	0.847	0.907	0.766
	PV2	0.866			
	PV3	0.877			
Loyalty	Sat1	0.915	0.775	0.898	0.816
	Sat2	0.891			
Satisfaction	Loy1	0.927	0.802	0.909	0.834
	Loy2	0.899			

In this study, the Cronbach's alpha values were between 0.775 and 0.915 for the perceived quality, perceived value, tourist satisfaction, and tourist loyalty scores. The perceived quality, perceived value, visitor satisfaction, and visitor loyalty scores were 0.915, 0.847, 0.775, and 0.802, respectively, and all of these exceeded the recommended 0.7 threshold. The composite reliability values were between 0.898 and 0.927, both of which exceeded the recommended value of 0.7. The AVE values for convergent validity were between 0.539 and 0.834, and both were greater than 0.5. The outer loadings of the measurement items were between 0.649 and 0.927, and both were greater than 0.6. Therefore, the data within the measurement scales were highly consistent and exhibited good reliability.

Discriminant validity can be assessed using either the heterotrait-monotrait ratio (HTMT) or the Fornell-Larcker criterion. The HTMT value is judged as follows: the HTMT value should be less than 0.85, or more leniently, less than 0.9 (Franke and Sarstedt 2019; J. F. Hair, Howard, and Nitzl 2020). The Fornell-Larcker criterion judges that the square root of each latent variable's AVE should be greater than the maximum correlation coefficient of any other latent variable (Fornell and Larcker 1981). Table 4 displays the results of assessing discriminant validity using the Fornell-Larcker criterion and HTMT.

Table 4. Distinct Validity Test

	Perceived Value	Perceived Quality	Loyalty	Satisfaction
Perceived Value	0.875			
Perceived Quality	0.483 (0.529)	0.734		
Loyalty	0.435 (0.524)	0.479 (0.549)	0.913	
Satisfaction	0.434 (0.535)	0.523 (0.605)	0.508 (0.638)	0.903

* *Note*: The diagonal values are $\sqrt{AVE}$, the lower triangular area is the correlation coefficient between latent variables, and the values in parentheses are the HTMT values.

It can be found that the square root of the AVE on the diagonal (noted in bold) is greater than the correlation between the latent variables, and all the HTMT values are less than 0.85, indicating that this study's research scale exhibits good validity.

3.3. Testing the Model's Goodness-of-Fit

The model's fit was first evaluated using a partial least-squares algorithm (SRMR = 0.069, < 0.08; NFI = 0.915, > 0.90; d_ULS = 2.368; d_G = 0.826; chi² = 2,208.286). The model demonstrates a good fit according to the evaluation criteria developed by Henseler *et al.* (2014).

In summary, the measurement model's reliability, validity, and degree of fit reached an acceptable standard, and a subsequent structural model analysis was conducted.

3.4. Structural Equation Model Testing

The structural model path coefficients' significance was assessed using a bootstrap method by setting the bootstrap samples to 5,000 and selecting a 95% quantile confidence interval. When analyzing the structural model, demographic variables were included as control variables. Table 5 and Figure 1 present the analysis results.

Table 5. Estimation Results for the Structural Model's Path Coefficients

Hypothesis	Paths	Path Coefficients	*t*-value	*p*-value
H1	Perceived Quality -> Perceived Value	0.483	12.720	< 0.001
H2	Perceived Quality -> Satisfaction	0.420	7.741	< 0.001
H3	Perceived Value -> Satisfaction	0.261	4.235	< 0.001
H4	Satisfaction -> Loyalty	0.526	12.522	< 0.001
	Gender -> Loyalty	-0.055	0.631	0.528
	Age -> Loyalty	0.085	1.659	0.097
	Educational Background -> Loyalty	0.052	1.034	0.301
	Occupation -> Loyalty	0.031	0.631	0.528
	Place of Residence -> Loyalty	0.136	1.477	0.140
	Average Monthly Disposable Income -> Loyalty	0.018	0.440	0.660

Figure 1. The structural model's estimation results
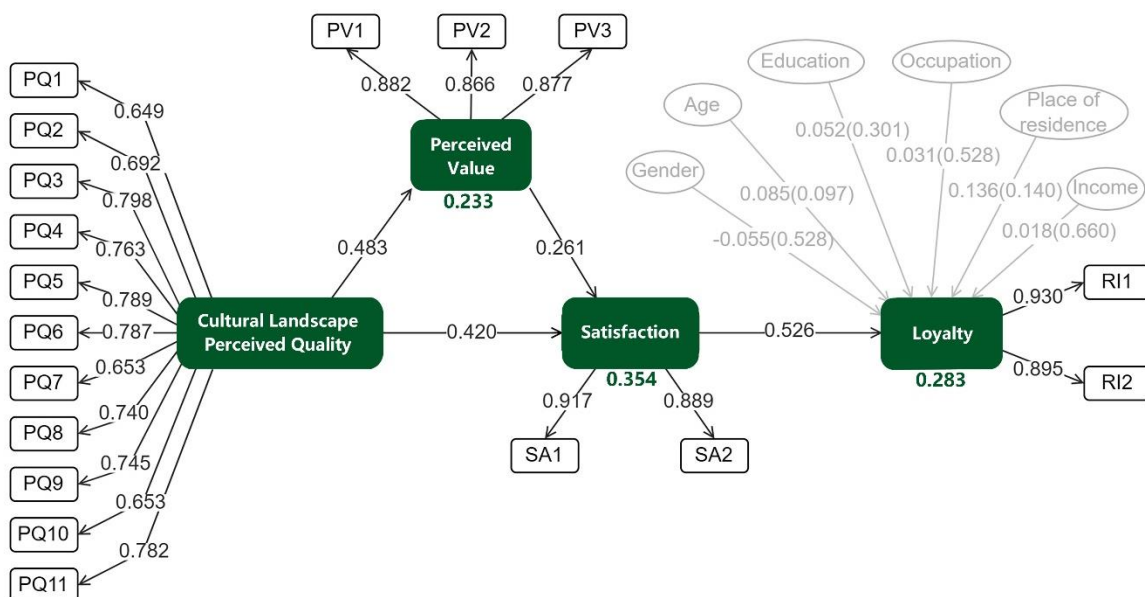
At the 0.05 significance level, it can be observed that the paths corresponding to Hypotheses H1 to H4 are statistically significant, and thus, these hypotheses are all verified.

3.5. Intermediary Effect Analysis

Table 6 presents the findings pertaining to the two mediating paths for the impact of the perceived quality of the cultural landscape on tourist loyalty. The study observed that perceived quality's impact on visitor loyalty was mediated by perceived value and visitor satisfaction, with a path coefficient of 0.066 that accounted for 23.0% of the total effect of perceived quality on visitor loyalty. This study also discovered that perceived quality significantly impacts visitor loyalty through visitor satisfaction, with an effect value of 0.221 that accounts for a substantial proportion (77.0%) of the perceived quality's total effect on visitor loyalty. These findings indicate that the perceived quality's impact on tourist loyalty is primarily conveyed through the intermediary factor of satisfaction.

Table 6. Mediated Path Effect Value Analysis of Perceived Quality's Influence on Tourist Loyalty

Paths	Intermediary Effect Value	t-value	p-value	Percentage
Perceived Quality -> Perceived Value -> Satisfaction -> Loyalty	0.066	3.517	< 0.001	23.0%
Perceived Quality -> Satisfaction -> Loyalty	0.221	6.566	< 0.001	77.0%

3.6. Analysis of Group Differences

To examine each demographic variable's effect on visitor loyalty, an analysis of variance (ANOVA) between the groups used demographic variables as grouping variables. Both gender and residence had only two options, and independent sample t-tests were used, while the ANOVA was used for all other variables. If the ANOVA's F-statistic is statistically significant, it is then used for two-by-two comparisons between groups using Duncan's method. The analysis results are as follows.

Gender

As the comparative results in Table 7 indicate, the sample groups of different genders did not significantly differ in any dimension (p > 0.05) at the level of α = 0.05.

Table 7. Analysis of Differences between Genders

Variable	Gender	N	Mean±Standard deviation	t-value	p-value
Loyalty	Female	254	3.80±0.86	0.815	0.416
	Male	209	3.72±0.97		

Age

As noted in Table 8, at the level of α = 0.05, a significant difference can be observed between the different sample age groups in the visitor loyalty dimension (F= 4.100, $p = 0.001$, < 0.01). The highest loyalty was found among the 50 to 60 sample group age group (4.09±1.02). The sample group of those younger than 18 exhibited the lowest visitor loyalty (3.05±0.96).

Table 8. Analysis of Differences between Ages

Variable	Age	N	Mean±Standard deviation	F-value	p-value
Loyalty	< 18	28	3.05±0.96a	4.100	0.001
	18–24	65	3.87±0.88b		
	25–30	27	3.70±1.13b		
	31–40	165	3.83±0.91b		
	41–50	136	3.72±0.80b		
	51–60	35	4.09±1.02b		
	> 60	7	3.57±0.35b		

Educational Background

Table 9 indicates, at the level of α = 0.05, a significant difference in the visitor loyalty dimension among the sample groups with different educational backgrounds (F= 8.402, p < 0.001). The sample groups with an education of junior high school or below, and postgraduate or above, were relatively less loyal as visitors, while the junior college sample group had the highest visitor loyalty (4.08±0.85).

Table 9. Analysis of the Differences between Educational Backgrounds

Variable	Educational Background	N	Mean±Standard Deviation	F-value	p-value
Loyalty	Junior high school or below	96	3.52±0.96a	8.402	< 0.001
	High school	84	3.85±0.98bc		
	Junior college	138	4.08±0.85c		
	Undergraduate	115	3.60±0.75ab		
	Postgraduate or above	30	3.47±1.01a		

Occupation

As noted in Table 10, at the level of α = 0.05, none of the sample groups in the different occupations significantly differed in terms of loyalty (p > 0.05).

Table 10. Analysis of the Differences between Different Occupations

Variable	Occupation	N	Mean±Standard Deviation	F-value	p-value
Loyalty	Students	82	3.60±0.96	2.316	0.056
	Enterprise workers	75	3.77±0.90		
	Government/ institution personnel	80	3.93±0.88		
	Retirees	23	3.41±0.47		
	Others	203	3.80±0.94		

Place of residence

As indicated in Table 11, at α = 0.05, no significant difference exists in the visitor loyalty dimension between the sample groups from different places of residence (p > 0.05).

Table 11. Analysis of the Differences between Different Settlements

Variable	Place of residence	N	Mean±Standard deviation	t-value	p-value
Loyalty	Rural	197	3.73±0.91	0.607	0.544
	Urban	266	3.79±0.92		

Average monthly disposable income

The results in Table 12 reveal that a significant difference exists in tourist loyalty (F = 2.939, $p = 0.013, < 0.05$) among the sample groups with different average monthly disposable incomes at the level of α = 0.05. The sample group with an average monthly disposable income of 5,001 to 8,000 RMB had the lowest tourist loyalty (3.58±0.81), which significantly differed from the sample groups with an average monthly disposable income of 8,001 to 10,000 RMB and 10,001 RMB and above.

Table 12. Analysis of the Differences between Different Average Monthly Disposable Incomes

Variable	Average Monthly Disposable Income	N	Mean±Standard Deviation	F-value	p-value
Loyalty	< 1,000 RMB	76	3.72±1.09ab	2.939	0.013
	1,001–3,000 RMB	72	3.65±0.85ab		
	3,001–5,000 RMB	174	3.86±0.91abc		
	5,001–8,000 RMB	104	3.58±0.81a		
	8,001–10,000 RMB	8	4.31±0.70c		
	> 10,001 RMB	29	4.10±0.77bc		

4. Discussion

4.1. General Discussions

The previous section's data processing revealed the following relationships among tourists' perceived quality of the cultural landscape, including their perceived value, satisfaction, and willingness to revisit:

First, a significant, positive influence exists in the relationship between the perceived quality of traditional villages' cultural landscape and perceived value and satisfaction. The perceived quality's influence on perceived value is slightly greater than its influence on satisfaction, and the corresponding path coefficient reaches 0.483;

specifically, for every one unit of increase in tourists' perceived quality of cultural landscapes, the perceived value of the traditional villages' cultural landscape accordingly increases by 0.483 units.

The perceived quality of traditional villages' cultural landscape contains 11 dimensions that stimulate tourists' multiple senses through environmental elements, humanistic inculcation, and the activity experience, enabling them to form subjective evaluations. These dimensions are ranked as follows, according to the size of their path coefficients: the aquatic system's cultural landscape (0.798) > paved road cultural landscape (0.789) > service facilities cultural landscape (0.787) > food cultural landscape (0.782) > vegetal cultural landscape (0.763) > handicraft cultural landscape (0.745) > folklore activity cultural landscape (0.740) > space cultural landscape (0.692) > costume cultural landscape (0.653) = agricultural cultural landscape (0.653) > architectural cultural landscape (0.649).

Given this ranking, tourists' perceptions of the aquatic cultural landscape are the most critical factor to enhance tourists' satisfaction and perceived value of the factor. This also implies that tourists currently tend to prefer the aquatic cultural landscape of Huangdu Dong Village. Onsite research indicates that a river runs through the village, and the buildings on both sides are staggered according to the water's flow, forming an appealing aquatic landscape as well as water activities and increasing visitors' perceptions of the quality and value in the cultural experience. The second and third cultural landscape factors involve the paved road and service facilities. In the tourism development process, the village's original roads were repaired and service facilities increased, and their styles coordinated with the village's regional landscape. Therefore, tourists perceive the village as higher quality. The path coefficients demonstrated that architectural, agricultural, and costume-related cultural landscapes had the weakest influence on enhancing tourist satisfaction and perceived value.

Site research revealed that the village's traditional architecture manifested in different building styles, as some more modern buildings were built in the village before it was rated as a traditional Chinese village. This affected the traditional architectural style, thus reducing the perceived quality and value of the traditional village's architectural cultural landscape for visitors. The village's agricultural production crops are relatively singular— primarily rice and corn—and its scale is relatively small. Visitors are unlikely to view the crop landscape from the village's core area, as all the farmland is concentrated in nearby hills. Additionally, few of the cultural landscapes related to the villages' agricultural landscapes. Respondents perceived the costume-related cultural landscape as poor quality because most of the villagers dress in a modern style, and only a few people who need to perform folklore-related activities wear regional costumes. Hence, villages should consider these factors in their future tourism development.

A significantly and positively influential relationship exists between the tourists' perceived value and satisfaction with the traditional village's cultural landscape, but its influence regarding satisfaction is relatively weak compared to the perceived quality of the cultural landscape, with a path coefficient of 0.261. A significantly and positively influential relationship exists between tourists' satisfaction and loyalty; the greater the tourists' satisfaction with the traditional villages' cultural landscape, the greater their loyalty. Their satisfaction was scored with a variance of 0.283. Hence, in developing specific tourism for traditional villages, factors affecting tourists' satisfaction must be considered to improve the tourists' loyalty index. This path of influence is counteracted by the perceived quality of the cultural landscape, which will promote the construction of constituent aspects of perceived quality of the traditional villages' cultural landscape. In this study, the cultural landscape perceptions of traditional villages led to high satisfaction among tourists, which increased their willingness to revisit the place and recommend it to people around them. Ultimately, this reflects these tourists' high loyalty to this village. The mediating effect analysis also revealed that the effect of perceived quality on tourist loyalty through tourist satisfaction was 0.221, or 77.0% of the total effect of perceived quality on tourist loyalty. Therefore, the effect of perceived quality on tourist loyalty is primarily transmitted through tourist satisfaction as the mediating variable.

4.2. Implications

Theoretical implications

This study examined tourists' perceived quality of traditional village cultural landscapes and empirically demonstrated perceived quality's impact on tourist loyalty. It also explored the mediating roles of perceived value and satisfaction in this association. This study provides two theoretical implications for modern rural tourism and cultural heritage preservation. First, although some previous studies have considered the cultural landscape, most have focused on the overall landscape level, with the cultural landscape only as a subset. Additionally, few studies have focused on traditional villages as cultural heritage sites. Therefore, this study extends the application of a theoretical model on the perceived quality of cultural landscapes and tourist loyalty in traditional villages. To a certain extent, it not only bridges the knowledge gap regarding tourists' perceptions of the perceived quality of

cultural landscapes in traditional villages, but also enriches the literature related to cultural landscapes for perceived quality research.

Practical implications

Currently, tourism development for and construction of traditional villages are in a critical transformation period (Li and Wang 2023). A better understanding of tourists' perceived quality regarding the cultural landscape in traditional villages and their subsequent behavioral intentions can help develop tourism in traditional villages. First, as this study indicates, the perceived quality of traditional villages' cultural landscape indirectly, significantly, and positively affects tourist loyalty; positive tourist loyalty can better help managers to value the cultural landscape, adjust management services, and protect villages' cultural landscapes. This has increased the competitive advantage for traditional tourism villages. Therefore, before the development of traditional village tourism, the traditional villages' original appearance should be protected. Simultaneously, the characteristics of villages' cultural landscape resources should be understood. Given this, and combined with the needs of tourists in the cultural landscape, cultural experience projects in line with the village characteristics should be developed. This should improve the quality of tourists' perceptions of the cultural landscape and increase their loyalty while enhancing the traditional village tourism industry's competitiveness. Only then can sustainable development finally be realized for traditional villages.

4.3. Limitations and Recommendations for Future Research

This study has the following limitations: First, only one sample site was selected, and although it has regional characteristics and specific values, it cannot represent all Chinese traditional villages; therefore, this study's results are not conclusive for all Chinese traditional villages. As China has a rich and diverse geographical and natural environment, each specific area can offer different tourism experiences (Chi *et al.* 2020), and thus, subsequent studies should consider their sample sites' diversity. Second, this study did not sufficiently refine the perceived quality dimension in the traditional village's cultural landscape, and the dimension is not specifically divided into subcategories, such as the architectural shape, architectural decorative patterns, and architectural style for evaluation. Future studies should further refine and explore this facet of the cultural landscape. Finally, the study design only targeted Chinese domestic tourists and ignored international tourists; therefore, future studies should consider a comparative analysis of domestic and international tourists to further explore their understanding of traditional villages' cultural landscapes.

Conclusions

Based on the theory of landscape perception, this study takes Huangdu Dong Village as a case study to conduct a measurable examination of the perceived quality of traditional villages' cultural landscape. Subsequently, this study constructs a model to gauge the perceived quality of the cultural landscape, perceived value, satisfaction, and loyalty. A survey of 463 village visitors revealed that the perceived quality of the traditional village's cultural landscape indirectly and significantly affected visitor loyalty; perceived value and satisfaction mediate this relationship. The study also demonstrated that the perceived quality of the traditional village's cultural landscape affects perceived value and satisfaction before positively influencing tourist loyalty. The perceived quality's effect on tourist loyalty was mainly transmitted through the mediating variable of tourist satisfaction. The study also observed that tourists' demographic characteristics influenced loyalty; the respondents' gender, occupation, and place of residence did not result in significant differences in loyalty, while their age, education, and income level had significant effects.

This study unveils the mechanisms through which the perceived quality of traditional villages' cultural landscapes influences tourist loyalty, with a particular emphasis on the mediating roles of perceived value and satisfaction within the context of traditional villages. Through an on-site survey conducted in Huangdu Dong Village, the research not only enriches the theoretical framework of destination loyalty but also identifies key demographic factors affecting loyalty, offering fresh, practical insights for the conservation, marketing strategies, and sustainable development of cultural tourism destinations. Furthermore, by delving into tourists' perceptions and responses to cultural landscapes, the study underscores the urgency of preserving indigenous cultural heritage in the face of globalization and commercial pressures, setting new research directions and practical benchmarks for the field.

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Declaration of Competing Interest

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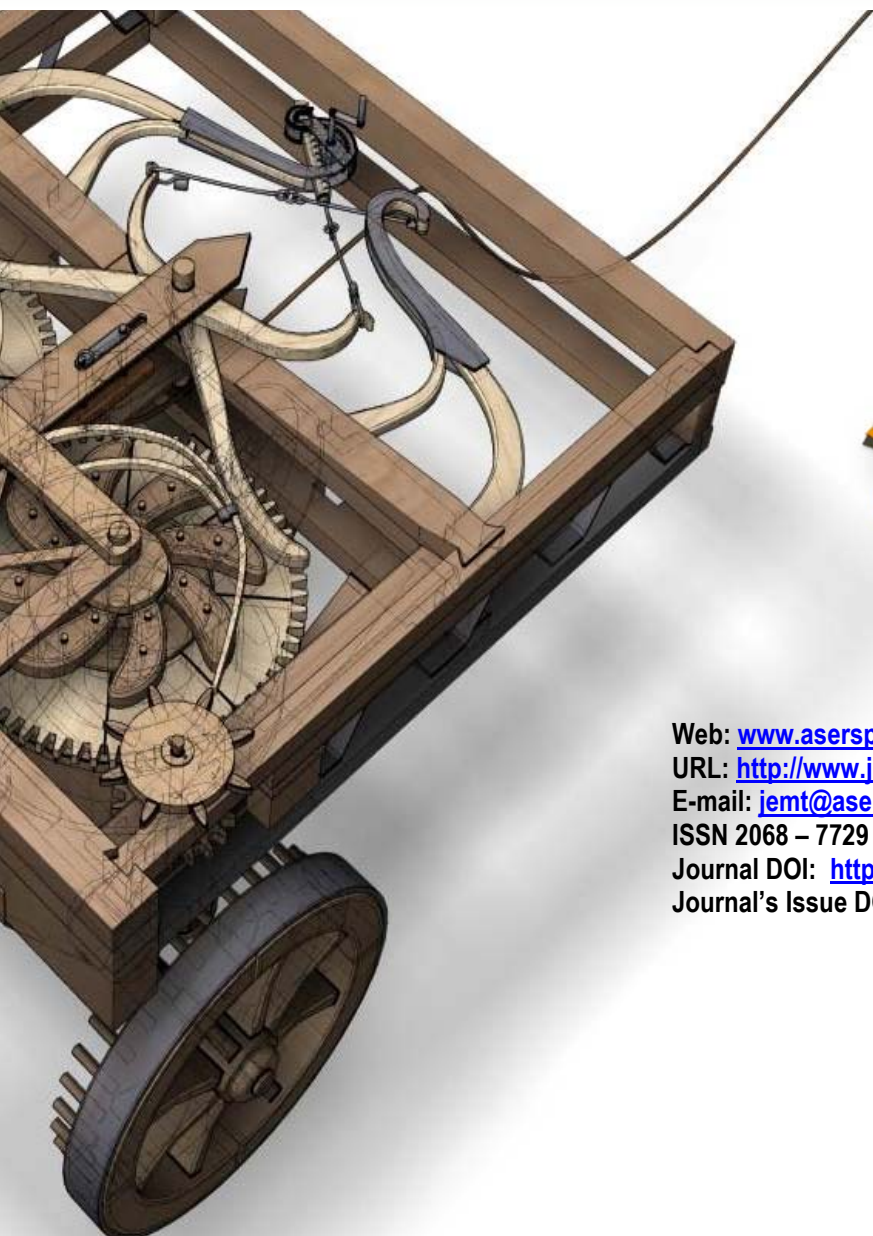
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Appendix A

Table A1. Questionnaire and question code

Dimension	No.	Variable
Demographic variables	1	Gender
	2	Age
	3	Education background
	4	Occupation
	5	Place of residence
	6	Average monthly disposable income
Cultural Landscape Perceived Quality	PQ1	Architectural cultural landscape (architectural shape, type, decorative patterns, style and other features).
	PQ2	Spatial cultural landscape (site selection, layout, street space, etc. of the village).
	PQ3	Water culture landscape (water activities, naming of water systems and legends and stories, etc.).
	PQ4	Plant culture landscape (more characteristic compared with plants in other places, plant legends, etc.).
	PQ5	Cultural landscape of paved roads (antiquity of paving, presence of decorative patterns, etc.).
	PQ6	Cultural landscape of service facilities (how well the facilities such as lamps, garbage cans and signage are coordinated with the village environment).
	PQ7	Cultural landscape of costumes (whether the patterns, designs and accessories of costumes have Dong culture).
	PQ8	Cultural landscape of folklore activities (the degree of excitement and characteristics of folklore performance activities).
	PQ9	Cultural landscape of handicrafts (degree of beauty and characteristics of handicrafts: Dong brocade, cloth weaving, etc.).
	PQ10	Agricultural cultural landscape (the degree of awareness of agricultural landscape, farming tools, crops, farming process, etc.).
	PQ11	Food culture landscape (whether the food has characteristics).
Perceived Value	PV1	Will the trip relieve fatigue or emotions from work, study and life?
	PV2	Will the trip increase your knowledge and experience?
	PV3	Is the time, energy and money invested in this trip worth it?
Satisfaction	Sat1	Overall satisfaction of the trip.
	Sat2	Satisfaction level of the trip compared with the ideal traditional village.
Loyalty	Loy1	The degree of willingness to recommend friends, relatives or colleagues to come to Huangdu Dong Village.
	Loy2	Willingness to visit similar traditional villages again.

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