

Determinants of Tourist Satisfaction in Island Rural Tourism: Evidence from Weizhou Island, Guangxi, China

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Abstract

Island-type rural tourism has emerged as an important component of rural revitalization, cultural-tourism integration, and the development of the marine economy. However, the rapid expansion of tourism can generate challenges related to infrastructure capacity, service quality, market regulation, cultural commodification, and environmental sustainability. This study examines the factors influencing tourist satisfaction on Weizhou Island, Guangxi, China, with particular attention to the transition from resource-oriented tourism toward experience-oriented tourism. Drawing on Expectation-Disconfirmation Theory, Perceived Value Theory, and Tourism Area Life Cycle Theory, the study develops a multidimensional framework for assessing tourist satisfaction. The framework considers consumption trust, infrastructure, service quality, cultural experience, and overall tourist evaluation. Data were collected through questionnaires administered during the 2025 peak tourist season. Of the 180 questionnaires distributed, 160 valid responses were obtained, representing an effective response rate of 88.9%. Questionnaire data were analyzed using reliability and validity tests, Pearson correlation analysis, Importance-Performance Analysis (IPA), and structural equation modeling (SEM). The findings identify positive associations between overall tourist evaluation and several experience-related dimensions in the specified model. Cultural experience has the largest reported positive standardized coefficient for overall tourist evaluation ($\beta = 0.646$, $p < 0.001$), followed by service quality ($\beta = 0.271$, $p < 0.01$) and consumption trust ($\beta = 0.149$, $p < 0.05$). Although infrastructure is strongly correlated with overall evaluation, its direct structural path is not statistically significant ($\beta = -0.050$, $p = 0.938$), while any indirect supporting role through service delivery or cultural experiences remains untested. IPA results further identify price transparency, transportation convenience, and complaint-resolution efficiency as priority areas requiring immediate improvement.

Based on these findings, the study recommends strengthening smart transportation and public-service infrastructure, improving digital market regulation and consumer protection, developing immersive cultural tourism products, and integrating ecological conservation into tourism governance. The study contributes to the literature by showing how cultural experience, service quality, and consumption trust are associated with tourist satisfaction in island-type rural tourism and offers practical implications for the sustainable, high-quality development of Weizhou Island.

Keywords

Island Rural Tourism, Tourist Satisfaction, Cultural Experience, Service Quality, Consumption Trust, Importance-Performance Analysis, Structural Equation Modeling, Weizhou Island

1. Introduction

With the steady advancement of the rural revitalization strategy and the gradual clarification of China's maritime development strategy, island tourism is becoming an important entry point for the integration of marine economy and rural tourism. Compared with inland rural tourism, island rural tourism has landscape resources, characteristic cultural experiences, and a sense of spatial isolation. Tourism experience can be distinguished from traditional service supply (Pine II & Gilmore, 1998). In tourism research, cultural participation and experience-oriented consumption provide a useful perspective for examining the development of destinations (Richards, 2018); perceived value emphasizes the trade-off between the benefits and costs of consumers (Zeithaml, 1988).

Weizhou Island in Guangxi is the youngest volcanic island in China. It has a variety of volcanic landforms, rich marine ecology and vibrant Danjia culture. It is a mature case of island-type rural tourism development in China. In recent years, with the rapid spread of short video platforms and social media, Weizhou Island has gradually become a popular "Internet celebrity" destination. The number of tourists has continued to grow and the tourism income is also considerable. However, behind the high heat, some problems are emerging: the gap between the influx of tourists in the peak season and the carrying capacity of infrastructure is widening, putting greater pressure on transportation, accommodation and public services. At the same time, some operators have phenomena such as opaque prices and inconsistent service standards, which weaken the tourist experience and damage the overall image of the destination. In addition, the tourism products on the island are becoming more and more homogeneous, and the characteristic resources such as volcanic culture and fishing village customs have not been fully transformed into deep experience content, and there are still obvious deficiencies in meeting the personalized needs of tourists.

Tourist satisfaction is an important factor in the competitiveness of destinations.

Research in the field of service shows that there is a relationship between quality, perceived value, satisfaction and behavioral intention (Cronin Jr. et al., 2000); heritage tourism research also examines the corresponding relationship in the context of tourism (Chen & Chen, 2010). For island rural tourism destinations, these relationships prompt us to further examine how service, cultural experience and consumption environment are related to the overall evaluation of tourists.

Existing studies have used multidimensional models to examine the relationship between experience quality, perceived value, satisfaction and behavioral intention (Chen & Chen, 2010; Cronin Jr. et al., 2000). This study does not assume that these relationships can be applied to all destinations without change, but examines them in the context of island rural tourism, focusing on consumer trust, infrastructure, service quality and cultural experience. The study combines structural equation model (SEM) and importance-performance analysis (IPA) to examine the relationship between these factors and the overall evaluation of tourists, and identify the priority areas for improvement in tourists' perception. Weizhou Island provides a case background for this comprehensive analysis.

Therefore, this study takes Weizhou Island in Guangxi as an example, constructs an evaluation framework with five dimensions and testable hypotheses under the guidance of relevant tourist satisfaction theory, and uses IPA and structural equation model to identify the key factors and weak links affecting tourist satisfaction, so as to provide theoretical basis and practical reference for optimizing island tourism consumption environment, promoting tourism transformation and upgrading, and realizing high-quality integration of culture and tourism.

2. Literature Review and Research Hypothesis

2.1. Core Concepts

2.1.1. Island-Type Rural Tourism

The island-type rural tourism can be understood as the extension of rural tourism in the special geographical space of the island. Its essence is to organically combine marine ecology, island landform and local folk culture to form a comprehensive tourism product integrating leisure, ecological sightseeing and cultural experience. Compared with ordinary rural tourism, island rural tourism has several distinct characteristics: relatively closed space, scarce resources and fragile ecology. Therefore, the tourism experience is more dependent on the co-presentation of natural landscape and marine culture.

With the integration of culture and tourism, island rural tourism can be investigated from the perspective of experience orientation. Cultural tourism research emphasizes the importance of cultural participation and experience (Richards, 2018). Therefore, in addition to the natural landscape, this study also takes cultural immersion, interaction and service quality into account when evaluating tourist satisfaction in this island context.

2.1.2. Tourist Satisfaction

Tourist satisfaction refers to the comprehensive perception and evaluation of the

gap between actual experience and pre-trip expectations after tourists complete tourism activities (Oliver, 1980). It is essentially a subjective psychological judgment, which is not only affected by objective conditions such as landscape quality, service level and consumption environment, but also by tourists' emotional needs and psychological expectations.

In the context of island tourism, tourist satisfaction involves tourists' evaluation of destination experience, including landscape, public services, cultural activities and consumption environment. Previous studies have shown that satisfaction is associated with positive behavioral intentions in general service situations and heritage tourism (Chen & Chen, 2010; Cronin Jr. et al., 2000). These studies provide a basis for examining the overall evaluation of tourists, but do not prove that the same causal relationship applies to Weizhou Island.

2.2. Theoretical Basis

2.2.1. Expectation-Disconfirmation Theory

The theory of expectation-disconfirmation analyzes satisfaction according to expectation and disconfirmation (Oliver, 1980). If you use it to look at the phenomenon of tourism, you can compare the actual situation experienced by tourists with the expectations before departure: what you see and feel is better than expected, and it is more likely to have a positive evaluation; if what you see and feel does not meet expectations, you are more likely to feel dissatisfied.

Nowadays, short videos and social media have been highly developed, and the communicative psychological expectations faced by "web celebrity" destinations are generally very strong. If tourists find that the "network filter" cannot be fully established after the actual visit, the relevant dissatisfaction may be overemphasized or amplified. As far as Weizhou Island is concerned, although the high exposure points marked by whale watching and volcanic scenery are conducive to attracting tourists, they also make the standards of service and consumption obtain higher psychological expectations. Therefore, whether the reality of consumption or service meets the expectations of tourists is an actual variable that must be paid attention to.

2.2.2. Tourism Destination Life Cycle Theory

The theory of tourism destination life cycle (TALC) describes the evolution of destinations as stages of exploration, participation, development, consolidation and stagnation, and then may enter recession or recovery (Butler, 1980). This theory provides a framework for examining the changes in tourist demand, facilities, and resource pressures during the development of destinations.

In the case of Weizhou Island, TALC is a hint of the concept that can be used to analyze the degree of cooperation between infrastructure and market mechanisms and tourism needs. Difficulties in transportation, service or consumption are all situations that should be paid attention to at present. However, the cross-sectional method used in this paper does not strictly locate Weizhou Island in a specific life cycle stage.

2.2.3. Perceived Value Theory

Perceived value discusses consumers' judgment of "what they get" and "what they pay" (Zeithaml, 1988). Sweeney and Soutar (2001) have distinguished emotional value, social value, quality/effect value, price/value for money. According to this idea, the evaluation of tourists may not only belong to the economic category. The cultural experience mentioned in this paper is a unique content of island tourism, which is not treated as the basic dimension that has been determined in Zeithaml's early discussion.

According to the standard of island tourism, the natural landscape itself is the basic attraction, and the cultural and emotional items are decisive for tourists to identify with the place. If the daily life, cultural characteristics or services are more real and good, it is easier for tourists to get a positive emotional return, and it is also more likely to take this trip as a reason for future visits.

2.3. Research Hypothesis

Based on the theories listed above, this paper regards consumer trust, infrastructure and service, and cultural experience as the antecedent factors that affect the overall evaluation of tourists (i.e., overall satisfaction), and puts forward hypotheses:

H1 refers to the "overall judgment of consumer trust". From the perspective of expectation-disconfirmation, satisfaction should be explained by expectation and perceived disconfirmation (Oliver, 1980), while perceived value is a reflection on the balance of pay and gain (Zeithaml, 1988). Relationship marketing theory regards trust as an important part of the relationship (Morgan & Hunt, 1994). As far as the current situation is concerned, open prices, no hidden fees and easy complaints will probably lead to better evaluation of tourists. Therefore, it can be assumed that there is a significant positive correlation between consumer trust and the overall evaluation of tourists.

H2 is the overall evaluation of infrastructure. TALC has a theory that the needs of tourists and tourism facilities should be analyzed as simultaneous evolution (Butler, 1980). Traffic conditions and service types can be used as elements of island tourism convenience. From this point of view, the assumption of this paper is that infrastructure generally makes a positive contribution to the overall evaluation of tourists.

H3 refers to the "overall judgment of service quality". The existing literature has analyzed the relationship between service quality and perceived value and satisfaction (Cronin Jr. et al., 2000), while the related discussion of heritage tourism corresponds experience quality with value and satisfaction (Chen & Chen, 2010). The staff efficiency and reception status to be discussed here should be the relevant factors of tourist evaluation. Therefore, we can put forward the hypothesis that service quality has a significant positive effect on the overall satisfaction of tourists.

H4 refers to an overall evaluation of cultural experience. The literature on multidimensional perceived value has taken emotional and social values into account

(Sweeney & Soutar, 2001), while tourism research generally focuses on experience and participation (Richards, 2018). The above ideas guide this study to think about whether the island culture involved in tourists is helpful to form a good review. Therefore, the hypothesis is put forward: cultural experience is obviously beneficial to the overall evaluation of tourists.

3. Research Area: Weizhou Island Tourism Development

3.1. The Overall Background of Island Tourism and the Competitive Position of Weizhou Island

The discussion of the tourist attraction system is an analysis of the possible impact of attractions and information on cultural tourism (Richards, 2002). In the review mentioned later, experience and participation are included in the consideration of cultural tourism (Richards, 2018). In this way, this paper should discuss how natural conditions and cultural experiences contribute to tourist evaluation in islands.

The special volcanic form, diverse marine ecology and Danjia and Hakka cultures of Weizhou Island can be regarded as the highlights of Beibu Gulf Island tourism resources, which are highly competitive. Nowadays, short video websites are spreading rapidly, which makes Weizhou Island get more attention. Tourism content with whales, volcanoes and coasts as the theme or background begins to form a more obvious attraction for young people.

Thinking in terms of “tourist gaze” as Urry (1990) puts it, we can get a general explanation of how people form their destination viewing habits through socialization. When applying this idea to the current topic, it is necessary to analyze what the volcanoes, fishing villages and local realities mean to tourists and whether it helps to predict or explain the attractiveness of Weizhou Island.

3.2. Main Manifestations of Tourism Development in Weizhou Island

3.2.1. The Expansion of Tourist Scale and the Rejuvenation of Tourists

In the past few years, the number of tourists received by Weizhou Island has been on the rise, and young people have begun to account for a large proportion. According to the age group statistics, it can be found that tourists aged 18 - 35 account for about 60% (57.8%), which are basically free travel, self-driving travel or tourists from social networks. These people have high consumption power and high quality requirements. As far as the tourist source area is concerned, the share of tourists from other provinces is increasing, and the long-distance tourist source has increased significantly. Therefore, the spread of Weizhou Island as a tourist point is not limited to local or neighboring areas. Detailed tourism contents such as homestay, ecological whale view and island photography are also driving consumption forward.

3.2.2. The Rise of Homestay Economy and the Initial Formation of Cultural and Tourism Integration

The B&B provides a potential connection between the accommodation and the

local life experience. The research on business family management examines the unique role of the receptionist and the family environment in the accommodation reception (Lynch, 2005). This provides a general basis for investigating how Weizhou Island B&B promotes the integration of culture and tourism, and B&B is not only responsible for the accommodation function. Therefore, the relationship between homestay and marine sightseeing, diving, sea catching and volcanic geology research is closely related to the development of island tourism products.

3.3. Current Development Challenges

3.3.1. Insufficient Carrying Capacity of Infrastructure

The research on the carrying capacity of social tourism in Cyprus illustrates the importance of conducting contextual assessment (Saveriades, 2000). For Weizhou Island, this study focuses on the infrastructure conditions perceived by tourists, rather than estimating the upper limit of social or engineering carrying capacity. The questionnaire covered traffic convenience, signage, toilets, garbage facilities, coastal safety and lighting, and network coverage (see Section 5.2.2). These dimensions provide a basis for identifying public service issues, and specific physical carrying capacity constraints still require more destination operational data.

3.3.2. The Need to Regulate the Consumption Environment and Market Order Risk

Price transparency, clear terms of service and convenient complaint channels are all important components of the consumption environment. The commitment trust framework emphasizes trust in relationship marketing (Morgan & Hunt, 1994), which provides a theoretical basis for the study of consumer trust. This research questionnaire examines accommodation prices, catering charges, sea entertainment charges, vehicle rental prices, and complaint handling (see Section 5.2.2), linking the general role of trust to the specific characteristics of island tourism experience.

3.3.3. Shallow Cultural Experience and the Need for Deepening Integration

MacCannell (1973)'s analysis of "staged authenticity" provides a theoretical perspective for examining how tourism scenes organize tourists to contact local life. For Weizhou Island, this perspective has prompted this study to distinguish between the display of cultural symbols and the opportunities for tourists to participate in Danjia, Hakka traditions, and residents' daily activities. The questionnaire of this study includes the perception and evaluation of folk activities, local products and real daily life (see Section 5.2.2), so that cultural experience can be examined together with the natural attractions of the destination.

4. Research Design and Methods

4.1. Questionnaire Design

Based on the theory of tourist satisfaction and the perspective of perceived value,

this study constructs an evaluation index system including five dimensions, namely, consumer trust, infrastructure, service quality, cultural experience and overall evaluation. A total of 27 measurement items are set up (6 items of consumer trust, 6 items of infrastructure, 4 items of service quality, 6 items of cultural experience and 5 items of overall evaluation). All items were measured using a five-point Likert scale (Likert, 1932).

4.2. Measurement Instruments

The measurement items for each construct and the reliability and validity statistics are presented in Table 1.

Table 1. Measurement instruments and reliability/validity statistics.

Construct	No. of items	Example item	Cronbach's α	CR	AVE
Consumer trust	6	Accommodation prices match the advertised prices, with no last-minute increases.	0.926	0.926	0.677
Infrastructure	6	Public transportation from the pier to the attractions is convenient.	0.924	0.925	0.673
Service quality	4	Homestay/hotel staff are welcoming and respond promptly.	0.897	0.897	0.685
Cultural experience	6	Natural landscapes (volcanoes and coral reefs) are distinctive and well preserved.	0.926	0.927	0.678
Overall evaluation	5	Overall satisfaction with this trip to Weizhou Island.	0.916	-	-

Note: Overall evaluation is an endogenous outcome variable and was not included in the confirmatory factor analysis; therefore, its CR and AVE are not reported. The CR and AVE values for the other four constructs were calculated from the standardized factor loadings obtained in the CFA.

4.3. Data Collection and Sampling

The survey was carried out in the peak tourism season of 2025, using a combination of offline on-site distribution and online questionnaires. A total of 180 questionnaires were distributed and 160 valid questionnaires were obtained, with an effective rate of 88.9%. At the same time, the study used the tourist evaluation on the online travel agent (OTA) platform to assist and cross-validate the questionnaire results. The sample is mainly composed of tourists aged 18 - 35 years old. The occupations are mainly concentrated in enterprise employees, freelancers and students in school, and the overall characteristics are younger.

4.4. Sample Descriptive Statistics

Among the 160 valid questionnaires, 55.8% were male and 44.2% were female. In terms of age, 18 - 25 years old (33.1%) and 26 - 35 years old (24.7%) accounted for a higher proportion of respondents, and young adults accounted for more than half of the sample. In terms of occupation, enterprise employees (29.2%), freelancers (20.1%), students (16.9%) and government / institution staff (16.9%) were the main groups. Monthly income is mainly concentrated in the range of CNY 3001 - 6000 (36.4%) and CNY 6001 - 10000 (22.1%). Overall, 84.4% of the respondents have landed on the island or are completing their trips, and 15.6% of the respondents

plan to go but have not yet landed on the island. In terms of residence time, one-day tours (37.7%) and three days and two nights (29.2%) accounted for a relatively high proportion. In terms of travel mode, free travel accounted for 40.9%, group tour and semi-self tour accounted for 38.3% and 20.8% respectively.

4.5. Analysis Program

The analysis procedure is as follows: First, Cronbach's α is used to evaluate internal consistency, and KMO measure and Bartlett test are used to examine whether the data are suitable for factor analysis. Secondly, confirmatory factor analysis was carried out to test the standardized factor loading, composite reliability (CR), average variance extracted (AVE) and discriminant validity. Third, Pearson correlation analysis was used to examine the correlation between variables. Fourth, IPA is used to map the importance-performance distribution of indicators and identify priority areas for improvement (Martilla & James, 1977). Finally, the structural equation model is estimated to test the hypothesis path coefficient.

5. Results

5.1. Reliability Analysis

Cronbach's α was used to assess the internal consistency of the questionnaire (Cronbach, 1951). As shown in Table 2, the α coefficients for all dimensions exceeded 0.8: consumer trust and cultural experience both had coefficients of 0.926, infrastructure had a coefficient of 0.924, overall evaluation had a coefficient of 0.916, and service quality had a coefficient of 0.897. These values indicate high internal consistency in this sample.

Table 2. Reliability analysis.

Variable	No. of items	Cronbach's α
Consumer trust	6	0.926
Infrastructure	6	0.924
Service quality	4	0.897
Cultural experience	6	0.926
Overall evaluation	5	0.916

Overall, the α coefficients support the internal consistency of the five sets of items. However, these coefficients alone do not establish the temporal stability or construct validity of the measures.

5.2. Validity Analysis

5.2.1. Construct Validity

The KMO measure of sampling adequacy was 0.979, and Bartlett's test of sphericity yielded an approximate chi-square statistic of 4323.788 ($df = 351$, $p < 0.001$). These results support proceeding with factor analysis, but they do not, in themselves, establish construct validity or validate the structural paths.

5.2.2. Confirmatory Factor Analysis and Convergent Validity

To further examine construct validity, confirmatory factor analysis (CFA) was conducted for the four antecedent constructs: consumer trust, infrastructure, service quality, and cultural experience. As shown in **Table 3**, the standardized factor loadings for the 22 measurement items ranged from 0.762 to 0.965. All reported latent variable variances and error variances were positive, with no negative error variances (i.e., no Heywood cases), and all reported critical ratios (C.R.) were statistically significant ($p < 0.001$). These results provide information about the estimated measurement model; however, positive variances and statistically significant estimates alone do not establish that the model is correctly specified.

Table 3. Standardized factor loadings from confirmatory factor analysis.

Construct	Measurement item	Factor loading
Consumer trust	Accommodation prices match the advertised prices, with no last-minute increases.	0.965
	Dining prices are clearly displayed, with no undisclosed “dual-menu” pricing.	0.778
	Prices for marine recreational activities are transparent, with no hidden charges.	0.773
	Vehicle rental rates are displayed consistently, with no additional charges during the rental period.	0.782
	Consumer complaint channels are easily accessible, and complaints are handled efficiently.	0.762
	Overall, the level of consumer trust on the island is high.	0.857
Infrastructure	Public transportation from the pier to the attractions is convenient and efficient.	0.838
	Road signs on the island are clear, and attractions are easy to locate.	0.831
	Public toilets are sufficient in number, clean, and free of unpleasant odors.	0.845
	Waste bins are appropriately distributed, and the surroundings are clean and tidy.	0.846
	Coastal safety facilities and nighttime lighting are adequate.	0.773
	Mobile signal/Wi-Fi coverage is good, and internet access is reliable.	0.785
Service quality	Homestay/hotel staff are welcoming and respond promptly.	0.818
	Restaurant staff are friendly, and food is served promptly.	0.807
	Instructors for marine recreational activities are professional and patient.	0.800
	Visitor centers/information points provide effective assistance.	0.882
Cultural experience	Natural landscapes, including volcanoes and coral reefs, are distinctive and well preserved.	0.824
	Historic buildings, including the Catholic church and coral-stone houses, have distinctive characteristics.	0.821
	Danjia and Hakka cultural and folk activities are varied and engaging.	0.796
	Cultural and creative products (such as “Bubu”) reflect the island’s distinctive characteristics.	0.861
	Visitors can experience residents’ authentic daily lives rather than staged “performances”.	0.785
	Overall, the cultural experience left a lasting impression.	0.852

Composite reliability (CR) and average variance extracted (AVE) were calculated for each construct using the standardized factor loadings. AVE summarizes the variance captured by a construct relative to measurement error (Fornell & Larcker, 1981). As shown in Table 4, CR values ranged from 0.897 to 0.927, and AVE values ranged from 0.673 to 0.685. All AVE values exceeded 0.5, supporting convergent validity; however, this does not resolve the discriminant validity concerns discussed below.

Table 4. Composite reliability and average variance extracted.

Construct	No. of items	CR	AVE
Consumer trust	6	0.926	0.677
Infrastructure	6	0.925	0.673
Service quality	4	0.897	0.685
Cultural experience	6	0.927	0.678

5.2.3. Discriminant Validity

Discriminant validity was examined through AVE comparisons and chi-square difference tests. The Fornell-Larcker criterion requires the AVE of each construct to exceed its squared correlations with other constructs; equivalently, the square root of AVE must exceed the absolute correlation coefficients (Fornell & Larcker, 1981). In this study, the square roots of AVE ranged from 0.820 to 0.827, whereas the Pearson correlation coefficients among the four antecedent constructs ranged from 0.884 to 0.930 (see Section 5.3), raising substantial concerns about their empirical distinctiveness. However, these Pearson correlation coefficients cannot substitute for the latent variable correlation matrix estimated by CFA, which is required to fully document the formal discriminant validity assessment.

Subsequently, constrained models were specified by fixing the correlation between each pair of constructs to 1. These models were compared with the unconstrained model ($\chi^2 = 262.788$, $df = 203$) using chi-square difference tests to assess discriminant validity, following the logic of nested model comparisons (Anderson & Gerbing, 1988). As shown in Table 5, the reported $\Delta\chi^2$ values ranged from 0.001 to 0.733 ($\Delta df = 1$), all below the critical value of 3.84 at the 0.05 significance level. According to these test results, fixing the correlations to 1 did not significantly worsen model fit; therefore, the results do not provide sufficient evidence that the four constructs are empirically distinct.

Taken together, the reported correlations and constrained model comparisons raise substantial concerns about discriminant validity. The theoretical differences among consumer trust, infrastructure, service quality, and cultural experience are not sufficient to establish their empirical distinctiveness in this sample. Possible explanations include overlapping item content and shared evaluative tendencies. Accordingly, this limitation is acknowledged in the conclusions, and the structural coefficients are interpreted cautiously.

Table 5. Discriminant validity (Chi-Square difference tests).

Constrained model (correlation fixed at 1)	CMIN	df	$\Delta\chi^2$	Δdf	Significance
Consumer trust ↔ Infrastructure	263.022	204	0.234	1	Not significant
Infrastructure ↔ Service quality	262.789	204	0.001	1	Not significant
Service quality ↔ Cultural experience	262.891	204	0.103	1	Not significant
Consumer trust ↔ Service quality	263.521	204	0.733	1	Not significant
Consumer trust ↔ Cultural experience	262.812	204	0.024	1	Not significant
Infrastructure ↔ Cultural experience	263.164	204	0.376	1	Not significant

Note: For the unconstrained model, CMIN = 262.788 and df = 203. $\Delta\chi^2$ denotes the chi-square difference between the constrained and unconstrained models; when $\Delta df = 1$, the critical value is 3.84 ($p = 0.05$).

5.3. Correlation Analysis

As shown in **Table 6**, the Pearson correlation analysis indicated that consumer trust, infrastructure, service quality, and cultural experience were all significantly and positively correlated with overall satisfaction, with all correlation coefficients exceeding 0.88 ($p < 0.01$). Infrastructure exhibited the strongest correlation with overall evaluation ($r = 0.933$), followed by cultural experience ($r = 0.931$), indicating strong associations among the reported evaluations.

Table 6. Correlation analysis.

	CT	INF	SQ	CE	OE
Consumer trust (CT)	1				
Infrastructure (INF)	0.928**	1			
Service quality (SQ)	0.884**	0.902**	1		
Cultural experience (CE)	0.918**	0.930**	0.893**	1	
Overall evaluation (OE)	0.917**	0.933**	0.901**	0.931**	1

Note: **indicates a significant correlation at the 0.01 level (two-tailed).

The Pearson correlation coefficients among the four antecedent constructs all exceeded 0.88, indicating substantial overlap and potential collinearity. This pattern is consistent with the discriminant validity concerns identified above, although the Pearson correlation matrix cannot substitute for the CFA latent variable correlation matrix. Although infrastructure had the highest correlation with overall evaluation, it did not exhibit a significant direct effect in the subsequent path analysis. This pattern of “high correlation but weak direct effect” therefore requires cautious interpretation (see the Discussion section).

5.4. Identifying Service Shortcomings through IPA

Following the IPA framework developed by Martilla and James (1977), this study reports the following importance-performance classifications. Quadrant I (Keep Up the Good Work) includes indicators such as volcanic landscapes, ecological environmental quality, and the service attitude of homestay staff. These indicators constitute core strengths of Weizhou Island's tourism image and should be continually reinforced. Quadrant II (Concentrate Here) includes price transparency, transportation convenience, and complaint-handling efficiency. These factors are important for satisfaction but currently perform poorly, making them the highest-priority areas for improvement. Quadrant III (Low Priority) primarily includes nighttime entertainment and distinctive cultural and creative products. Their currently perceived importance and performance are relatively low, although they have considerable potential for future improvement.

5.5. Structural Equation Modeling

5.5.1. Model Fit

The structural equation model was estimated using AMOS 26 within the general SEM framework described by Bollen (1989). As shown in Table 7, $\chi^2/df = 1.208$, RMSEA = 0.037, and both CFI and IFI were 0.985. The CFI and RMSEA values performed favorably relative to commonly used model fit criteria (Hu & Bentler, 1999). However, GFI = 0.849 and AGFI = 0.818 provided comparatively weaker evidence. The fit indices should therefore be considered jointly rather than interpreted as proof of model validity.

Table 7. Model fit indices.

Category	Index	Result
Absolute fit	χ^2/df	1.208
	GFI	0.849
	AGFI	0.818
	RMSEA	0.037
Incremental fit	IFI	0.985
	NFI	0.918
	CFI	0.985
Parsimonious fit	PGFI	0.705
	PNFI	0.821

Note: Fit indices should be interpreted jointly. Cutoff criteria depend on the model and estimation conditions (Hu & Bentler, 1999); satisfactory fit does not establish discriminant validity.

5.5.2. Path Analysis and Hypothesis Testing

The standardized path coefficients, reported significance levels, and hypothesis testing results are presented in Table 8.

Table 8. Path analysis and hypothesis testing.

Hypothesis	Relationship	β	p	Conclusion
H1	Consumer trust $\rightarrow$ Overall evaluation	0.149	<0.05	Supported
H2	Infrastructure $\rightarrow$ Overall evaluation	-0.050	0.938	Not supported
H3	Service quality $\rightarrow$ Overall evaluation	0.271	<0.01	Supported
H4	Cultural experience $\rightarrow$ Overall evaluation	0.646	<0.001	Supported

The reported path analysis showed that cultural experience had the largest positive standardized coefficient for tourists' overall evaluation ($\beta = 0.646$, $p < 0.001$). Service quality also had a significant positive coefficient ($\beta = 0.271$, $p < 0.01$), as did consumer trust ($\beta = 0.149$, $p < 0.05$). The direct path from infrastructure was not significant ($\beta = -0.050$, $p = 0.938$). These estimates reflect associations within the specified model. Given the overlap among predictors, they do not establish statistically significant differences between the coefficients, nor do they demonstrate that cultural experience has replaced natural landscapes as a determining factor over time.

6. Discussion

1) The explanation of cultural experience coefficient. Cultural experience has the largest standardized coefficient in the report ($\beta = 0.646$, $p < 0.001$), which can lead to an experience-oriented explanation (Pine II & Gilmore, 1998) and can be discussed in conjunction with research on cultural tourism and participation (Richards, 2018). MacCannell (1973) provides a conceptual distinction between stage scenes and exposure to local life, rather than proposing a proposition that contradicts the coefficients of this study. In addition, the concept of cultural experience in this study includes both natural landscape, cultural activities and daily life. Therefore, the results of the study cannot identify authenticity alone, nor can it prove that cultural participation is more important than landscape. Such interpretation requires more detailed measurement indicators and further testing.

2) The relative role of service quality and consumer trust. The reporting coefficients of service quality ($\beta = 0.271$) and consumer trust ($\beta = 0.149$) are both positive, but they are less than the cultural experience coefficient in this model. Service environment research supports the combination of quality, value and satisfaction (Cronin Jr. et al., 2000), and relationship marketing theory provides a theoretical basis for the importance of trust (Morgan & Hunt, 1994). Neither of these two types of research can prove that service becomes only a basic guarantee after reaching an acceptable threshold, nor can it prove that a smaller trust coefficient means that tourists are already at an emotionally acceptable level of consumption risk. The linear model of this study does not test these mechanisms, and the overlap between predictors limits the interpretation of their relative coefficients.

3) Carefully explain the "high correlation, weak direct effect" of infrastructure. Infrastructure is highly correlated with overall evaluation, service quality and cul-

tural experience (all higher than 0.90), but its direct path is not significant ($\beta = -0.050$, $p = 0.938$). The Pearson correlation coefficient between the four antecedent constructs is 0.884 - 0.930 (**Table 6**), indicating that there is a large overlap and potential collinearity, which may be a statistical explanation of the “high correlation, weak direct effect” model: When multiple highly correlated predictors enter the model at the same time, it is difficult to distinguish their respective independent marginal contributions, and the independent contribution of infrastructure to satisfaction may be absorbed by service quality and cultural experience. Therefore, this study only confirms that the “direct effect is not significant”; the explanation of “infrastructure as a basic condition and indirectly affecting satisfaction through service quality and cultural experience” is still only a hypothesis to be tested by formal mediating effect. At the management and policy level, this study still suggests ensuring infrastructure investment, but does not express it as a proven causal chain.

7. Recommendations

7.1. Make up for the Shortcomings of Infrastructure and Solve the Traffic Bottleneck

Although the infrastructure has no significant direct path in the reporting model, the IPA results identify traffic convenience as the focus of improvement. Therefore, improving infrastructure should be proposed as a management recommendation, not as an indirect causal mechanism that has been statistically confirmed. The potential supporting role of infrastructure in service provision and cultural experience still needs to be further tested.

7.1.1. Building a Land-Sea Collaborative Intelligent Transportation System

The reported IPA results identify traffic convenience as the focus of improvement. Smart tourism research emphasizes the integration of digital technologies and data in tourism systems (Gretzel et al., 2015). Based on this general perspective, a platform for coordinating tourist reservations, ferry capacity and island traffic information can be built for Weizhou Island. Passenger flow forecasting, peak season flexible capacity, and integrated ticketing are all possible design options, rather than effective interventions that have been proven in this study. Its feasibility needs to be verified by operational data and implementation effect evaluation.

7.1.2. Improving the Overall Level of Public Services

The space occupied by the island itself is relatively small, so water supply, power supply and garbage disposal may be difficult in the peak season. At this time, it is necessary to improve the infrastructure, study the use of distributed power generation or seawater as raw material to produce fresh water, and consider garbage classification and sewage discharge to improve the ecological carrying efficiency. In addition, night lighting, public toilets, signs and first aid means should also be arranged accordingly, so that tourists can feel convenient, safe and worry-free

from departure to return.

7.2. Strengthen Market Supervision and Make Consumption More Comfortable

Empirical evidence has proved that consumer trust is an important positive factor in tourists' overall satisfaction. As far as consumption itself is concerned, if the environment is not transparent or disorderly, it will damage the current feeling and future evaluation of the place. It can be seen that for Weizhou Island, market governance should not only be remedial afterwards, but should actively manage the whole process and make tourism consumption a more open and reasonable institutional arrangement.

7.2.1. Promoting Digital Supervision of Consumption

For the complaint-prone problems involved in seafood processing, accommodation costs and various recreational consumption, it is advisable to use the idea of smart tourism to design digital price supervision methods. In the relevant market (seafood, B&B) or attractions in the transaction using a unified two-dimensional code, electronic billing form, so that the actual price and service, charges are instantly visible, the contradiction caused by incomplete information as far as possible to resolve. In addition, we should promote the efficient resolution of tourism complaints, and try to provide tourists with convenient and reliable means to make claims and obtain corresponding answers.

7.2.2. Establish Dynamic Credit Evaluation System for Operators

The credit evaluation involved in tourism operators should be continuously improved. The star rating of B&B, catering and entertainment should be dynamically evaluated by independent units. The credit status should be related to government resources and platform traffic. Business entities with good credit should be given publicity or policy convenience, and those who violate the regulations should be blacklisted and punished in a joint way, so as to lead the simple price competition in the market to a quality-centered competition track.

7.3. Deepen the Value of Cultural Resources and Enrich the Tourism Experience

The variable related to cultural experience is the largest standardized coefficient in the listed model, but its relative contribution should not be too certain when measured by discriminant validity criteria. The resulting conclusion is an opportunity for the management to develop volcanic landscapes or marine cultures and Danjia traditions, but cultural resources cannot be treated as better elements than natural landscapes.

7.3.1. Construction of "Volcanic Culture + Diversified Tourism Products" System

The volcanic geological resources of Weizhou Island are scientifically and aesthetically worthy of study, but the existing scenic spots are mostly static and lack

of interaction. In the long run, the resources of Volcano National Geopark can be used for research, science popularization or natural education projects. At the same time, it is suggested that VR, AR and other digital means should be used to reproduce historical volcanic phenomena, and explain the process of volcanic activity with a more complete picture, so as to help tourists remember and understand the cultural information related to volcanoes.

7.3.2. Let the Local Culture Really “Live”

The island culture that really touches the tourists is not equal to the general stage performance, but the life and humanities that exist in a practical and touchable way. It is necessary to promote content construction with the help of homestay industry, community strength and cultural and creative resources, so as to change the island culture from “show you” to “invite you to experience”. For Danjia culture, it can be considered to include fishing, catching the sea and even eating into the experience project, explain and practice the architecture or skills of Hakka culture, bring tourists into a specific historical situation, and promote them to have a real experience and emotional recognition of culture. At the same time, it is necessary to promote the emergence of characteristic cultural and creative commodities, bring immersion into cultural IP, stimulate tourism memories with consumption, and form memory highlights.

7.4. Stick to the Ecological Bottom Line and Promote Sustainable Development

The ecological environment is the basic condition for island tourism and the premise for tourists’ satisfaction. According to the analysis of this paper, the performance of all aspects of natural landscape is the most prominent, so the good ecological environment is still the main attraction of Weizhou Island. In order to promote the development of tourism, it is advisable to put ecological protection on the agenda, so that tourism development can be actually promoted together with environmental improvement.

7.4.1. Establishment of Long-Term Ecological Protection Mechanism

Bryde’s whale reserves and coral reef restoration areas, ecologically sensitive coasts involved in the boundary to be more clearly defined, tourism development should not be too dense. Part of the tourism income should be used for ecological compensation, so that all parties involved in tourism (including enterprises, hotels and tourists) can share the responsibility for protection, and the growth of tourism can promote the improvement of the environment and promote the coordinated development of the two.

7.4.2. Advocating Green Low-Carbon Tourism

Nowadays, the concept of environmental protection of the younger generation has obviously developed, and the acceptance of green behavior in tourism has also increased. Weizhou Island should introduce a green tourism points program that rewards low-carbon travel, waste sorting, and environmentally responsible consump-

tion, thereby encouraging tourists to engage in ecological conservation. In addition, we should actively promote and properly guide green tourism, combine environmental protection ideas with all aspects of tourism, so that tourists can get a good feeling without damaging the island environment, and achieve a win-win effect.

8. Conclusions and Limitations

8.1. Conclusion

This study takes Weizhou Island in Guangxi as the research object, and takes tourist satisfaction theory, expectation-disconfirmation theory and perceived value theory as the analytical framework. Through questionnaire survey, IPA and structural equation model, the factors affecting tourist satisfaction in island rural tourism are systematically investigated.

The results reveal the correlation between the overall evaluation of tourists and the experience-related dimensions examined in this study. The natural landscape is still a part of the destination experience measurement, but also includes service quality, cultural activities and consumer trust. Because the data is cross-sectional and the cultural experience construct contains natural attractions, this study does not demonstrate a historical shift in destination competition from resource-oriented to experience-oriented, nor does it identify the relative importance of culture and landscape alone.

As far as the model involved in the report is concerned, cultural experience is the main positive factor that makes tourists satisfied ($\beta = 0.646$, $p < 0.001$); service quality itself also has a positive coefficient ($\beta = 0.271$, $p < 0.01$), and consumer trust is a positive term ($\beta = 0.149$, $p < 0.05$). The above estimations are based on the models and measurement methods used. The direct relationship between infrastructure and overall judgment was not statistically significant ($\beta = -0.050$, $p = 0.938$); if we want to confirm the indirect impact, we should do the mediating effect analysis. This possibility is not discussed or explained as a known causal relationship.

8.2. Limitations and Future Research

The limitations listed in this paper are exactly the problems that should be dealt with in the future, namely:

1. Size and representativeness of the sample. At present, 160 valid questionnaires are used. The sample is small when dealing with SEM with multiple latent variables, and only includes younger respondents, so it cannot fully represent the whole. In order to improve the external validity of the results, the sample should be enlarged and selected according to the stratified method or the quota method.
2. Causal issues concerning the limitations of a cross-sectional design. When analyzing cross-sectional data according to current practice, it is possible to point out some connection or explain the structural condition, but it is not possible to explain the cause and effect. To study the cause and effect itself, longitudinal tracking or experimental investigation should be considered.

3. Discussion on common method bias and collinearity. The constructs used here are all taken from the same type of self-report questionnaires, so the possible influence of common method bias should be taken into account; the average correlation coefficient between the constructs is 0.88 or higher, and the discriminant validity and collinearity are questionable. In the follow-up study, procedural control should be considered together with the effects of statistical methods (i.e., not only Harman's single factor method, see Podsakoff et al., 2003), and attention should be paid to making the items used have better discrimination.

4. Discriminant validity is not ideal. The reported factor loading, CR and AVE provide good evidence for convergent validity, but the high correlation between the four antecedent constructs and the insignificant results in the comparison of the constraint model have caused concerns about the degree of empirical differentiation. A complete CFA latent variable correlation matrix is also necessary for a complete record of Fornell-Larcker evaluation (Fornell & Larcker, 1981). Content overlap and common tendency to answer may be explanatory factors, but they are not proven reasons. Future research should revise measurement indicators and compare alternative measurement models with theoretical basis.

5. The "indirect effect" of infrastructure has not been tested. The explanation of the indirect supporting role of infrastructure is speculative, which needs to be verified by formal mediating effect test in the follow-up study.

6. Staticity of IPA. IPA reflects the situation at a specific time point and cannot capture the dynamic changes of tourist satisfaction. Future research can combine longitudinal data to track changes in satisfaction and revisit behavior.

Overall, this study provides new empirical evidence for the theoretical research on the satisfaction of island rural tourism tourists, and provides a reference for the governance optimization and high-quality development of China's island rural tourism destinations.

Author Contributions

Y. Q. Sun conceived and designed the study, conducted the on-site questionnaire survey on Weizhou Island, performed the statistical analysis (reliability/validity, correlation, IPA, and SEM), and drafted the original manuscript. Z. Q. Liu assisted with data collection, data curation, and literature review. Y. Zhuo and X. T. Shi contributed to questionnaire distribution, descriptive statistics, and visualization. C. G. Li* supervised the research, provided theoretical guidance and methodological advice, and revised and polished the manuscript. All authors have read and approved the final version to be published.

AI Assistance Statement

AI tools were used solely for language-related assistance, including English-Chinese/Chinese-English translation, proofreading, grammar correction, and linguistic polishing. The research design, theoretical framework, questionnaire development, data collection, statistical analysis, interpretation of findings, and conclu-

sions were independently completed by the authors. AI was not used to generate or fabricate data, perform statistical analyses, or determine the scientific conclusions. The authors reviewed and verified all AI-assisted content and take full responsibility for the final manuscript.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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