

A Study on Consumption Intentions for Poetry-Themed Cultural Tourism among Hangzhou Residents and Tourists

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Abstract

This study examines the willingness to consume poetry-themed cultural tourism among Hangzhou residents and tourists. It further examines the factors and mechanisms that influence their willingness to consume. A preliminary survey was first conducted to determine the sample size and collect initial data. Subsequently, structural equation modeling (SEM) was employed to analyze the relationships among consumption experience, infrastructure, cultural-tourism value, satisfaction, and consumption willingness. Based on these findings, strategic recommendations are proposed to promote the sustainable development of the poetry-themed cultural tourism market.

Keywords

Poetry-Themed Cultural Tourism, Structural Equation Model, Consumption Intention

1. Introduction

The report to the 20th National Congress of the Communist Party of China proposed the strategic principle of “leveraging culture to shape tourism and tourism to promote culture, advancing the deep integration of cultural and tourism development” (Xi, 2022). Guided by this policy, the Hangzhou municipal government has capitalized on the poetic cultural heritage of the Qiantang River, Fuchun River, and Xin’an River basins to develop the “Three Rivers and Two Banks” waterway into a premier tourism route, transforming cultural resources into experiential consumption opportunities.

Previous research on poetry-themed cultural tourism has primarily focused on cultural value assessment, resource excavation, and regional development strate-

gies. For instance, Jiang et al. (2022) conducted a quantitative evaluation of the cultural tourism resources along the Eastern Zhejiang Tang Poetry Trail using the Analytic Hierarchy Process (AHP) and Fishbein-Rosenberg Model, subsequently proposing tailored development strategies for four cities based on the findings. Cheng (2023) leveraging the rich poetic resources of five poetry routes in the Yangtze River Delta, outlined three integrated cultural-tourism pathways to revive the cultural legacy of Tang poetry. This approach aims to fulfill tourists' spiritual needs while advancing principles of sustainable development.

Regarding tourism product development, Xu (2023) examined the status and challenges of tourism development along the Lishui Oujiang Landscape Poetry Route using the Product-Market-Resource (PMR) Theory, proposing targeted strategies to drive innovative product development in the Lishui section. Chen (2022) developed a four-tier experiential design strategy based on scenario theory, leveraging digital cultural-creative products to integrate cultural resources of the Grand Canal Poetry Route.

In research on consumption willingness, Li et al. (2018) employed structural equation modeling (SEM) to reveal that tourists' ecological values positively influence eco-consumption behaviors through the mediating role of consumption willingness, yet face a "knowledge-behavior gap" requiring policy interventions to strengthen behavioral translation. Separately, Li et al. (2020) developed an SEM framework demonstrating that service delivery experiences in rural lodging constitute the core factor affecting consumer loyalty, with satisfaction mediating the experience-loyalty relationship.

2. Sample Size Determination

To determine the sample size, a pilot survey was conducted in Xiaoshan District, Hangzhou, yielding an observed variance of 0.6084 against a theoretical variance of 0.5069. The design effect (Deff) was therefore calculated as 1.2.

$$\text{Deff} = \frac{V_{\text{complex}}}{V_{\text{SRS}}} = \frac{0.6084}{0.5069} \approx 1.2$$

In the pilot survey, 71 out of 78 contacted potential respondents completed the survey, yielding a preliminary response rate of 91.3%.

$$\begin{aligned} \text{Response rate} &= \left(\frac{\text{Number of people who completed the survey}}{\text{Total number of people contacted}} \right) \times 100\% \\ &= \frac{71}{78} \times 100\% = 91.3\% \end{aligned}$$

As the survey concerns satisfaction measurement, this can be treated as a proportion estimation problem. Targeting a 95% confidence level with a 4% margin of error, we employ the most conservative approach by setting $\hat{P} = 0.5$.

With $z = 1.96$ (95% confidence level) and $e = 0.04$ (4% margin of error), we define N as the permanent resident population of Hangzhou's nine core districts at the end of 2024: Chun'an County, Jiande City, Tonglu County, Fuyang District,

Shangcheng District, Binjiang District, Xihu District, Xiaoshan District, and Qiantang District. The sample size was calculated using the finite population correction formula as follows:

$$n = \frac{z^2 \times p \times (1-p)}{e^2 + \frac{z^2 \times p \times (1-p)}{N}} \approx 600$$

Employing a stratified sampling design (DEFF = 1.2), we calculated the adjusted sample size using the formula:

$$n_{adjusted} = 600 \times 1.2 = 720$$

Accounting for anticipated non-response factors (e.g., invalid questionnaires) with a conservatively projected 90% response rate, the final sample size was adjusted as follows:

$$n_{final} = \frac{720}{0.913} \approx 789$$

To ensure questionnaire validity, the sample size was strategically increased, resulting in a finalized requirement of 800 complete responses.

3. Sampling Methods

To ensure sample representativeness and result accuracy, we employed multiple sampling methods—including stratified sampling, random sampling, and quota sampling—for different research stages, as detailed below:

First, the stratified sampling method was employed, dividing the survey area into strata. The sample size for each stratum was determined according to the population proportion of each region based on data from the Hangzhou Municipal Bureau of Statistics, as detailed in **Table 1**.

Table 1. Sample size allocation for Hangzhou's nine districts.

District	Population (10,000)	Proportion (%)	Sampled Individuals
Chun'an County	32.1	3.95	31
Jiande City	44.3	5.45	44
Tonglu County	45.9	5.65	45
Fuyang District	85.7	10.55	84
Shangcheng District	139.0	17.11	137
Binjiang District	54.3	6.68	54
Xihu District	117.1	14.41	115
Xiaoshan District	214.0	26.34	211
Qiantang District	80.2	9.86	79

Within each stratum, two Poetry Road cultural-tourism sites were randomly

selected. Following site confirmation, questionnaires were equally allocated across all sites; convenience sampling was then employed to administer surveys to visitors at respective locations. The distribution of questionnaires for attractions in each district and the actual number of questionnaires collected are shown in **Table 2**, with a final questionnaire recovery rate of 97.75%.

Table 2. Sampling sites of poetry road cultural-tourism attractions by district

Stratum	District	Attraction Site	Sampled Individuals	Actual Questionnaires Collected
1	Chun'an County	Qinchuan Ancient Village	15	14
		Qiandao Lake National Forest Park	16	16
2	Jiande City	Yanzhou Ancient Town	22	22
		Xinye Ancient Village	22	20
3	Tonglu County	Yan Ziling Fishing Terrace Scenic Area	22	22
		Tongjun Traditional Medicine Culture Site	23	22
4	Fuyang District	Fuchun Mountain Residence Digital Poetry Road Experience Hall	42	42
		Fuchun Mountain Gallery	42	41
5	Shangcheng District	Qinghefang Historic Block	68	68
		Qiantang River Cultural Cruise Experience	69	69
6	Binjiang District	Cherry Blossom Scenic Running Track	27	27
		White Horse Lake Park	27	27
7	Xihu District	Song Dynasty Town	57	55
		Art Innovation Town	58	54
8	Xiaoshan District	Linpu Old Street	106	102
		China Water Conservation Museum	105	104
9	Qiantang District	Shunan Cultural Exhibition Hall	39	39
		Wensli Silk Industrial Park	40	38

4. Structural Equation Modeling

An In-depth Analysis Using Structural Equation Modeling: Relationships Among Consumer Experience, Infrastructure, Cultural-Tourism Value, Satisfaction, and Consumption Intention.

4.1. Model Assumptions

Based on theoretical and empirical foundations, we propose the following model hypotheses:

H1: Consumer experience has a positive effect on satisfaction.

H2: Infrastructure has a positive effect on satisfaction.

- H3: Cultural-tourism value has a positive effect on satisfaction.
- H4: Consumer experience has a positive effect on consumption intention.
- H5: Infrastructure has a positive effect on consumption intention.
- H6: Cultural-tourism value has a positive effect on consumption intention.
- H7: Satisfaction has a positive effect on consumption intention.

The conceptual model is presented in **Figure 1**.

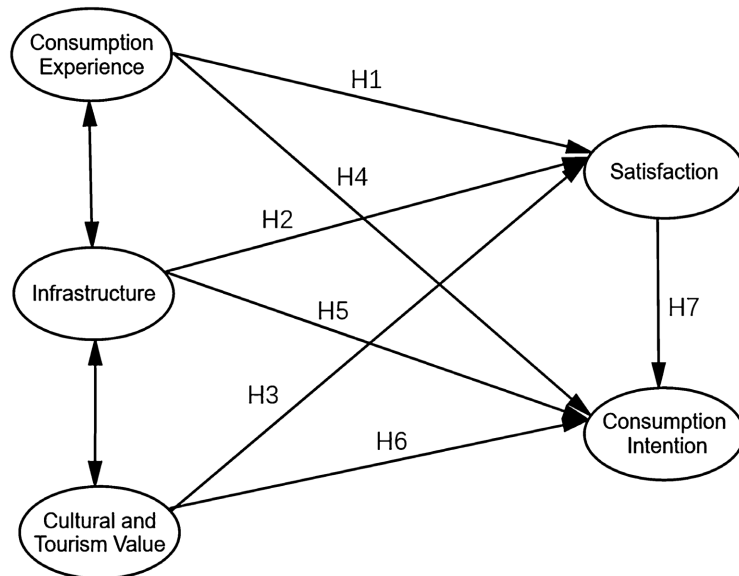


Figure 1. SEM conceptual model diagram.

4.2. Reliability and Validity Assessment

This study assessed reliability through Cronbach’s alpha coefficients. As presented in **Table 3**, all constructs demonstrated alpha values exceeding 0.7, indicating excellent internal consistency. Factor analysis suitability was evaluated using the Kaiser-Meyer-Olkin (KMO) measure and Bartlett’s test of sphericity, with detailed results presented in **Table 3**.

Table 3. Results of KMO and Bartlett’s test.

	Kaiser-Meyer-Olkin (KMO) test	0.921
	Approximate chi-square	16489.893
Bartlett’s test of sphericity	df	179
	Sig	0.000

The KMO value of 0.921 in the above table substantially exceeds the recommended threshold of 0.6, confirming the data’s suitability for factor analysis. Bartlett’s test of sphericity further validated this appropriateness with statistical significance ($p = 0.000 < 0.05$). The rotated factor loading pattern is presented in **Table 4**.

Common method bias was assessed using Harman’s single-factor test. Principal

component analysis without rotation was conducted on all 23 measurement items. As shown in **Table 5**, the primary factor accounted for 38.2% of variance (<40% critical threshold). Five factors with eigenvalues exceeding 1.0 were extracted. The Cumulative variance explained reached 66.6%. This factor solution corresponds to the number of theoretical constructs, indicating no substantial common method bias concerns.

Table 4. Factor loading and coefficients results table.

Latent variable	Observed variable	Factor Loading					Cronbach's alpha
		1	2	3	4	5	
Consumer Experience	TY1	0.762					0.904
	TY2	0.803					
	TY3	0.794					
	TY4	0.741					
Infrastructure	JT1		0.745				0.882
	JT2		0.834				
	JT3		0.801				
	JT4		0.721				
Cultural Value	WL1			0.792			0.896
	WL2			0.748			
	WL3			0.804			
Satisfaction	MY1				0.853		0.913
	MY2				0.802		
	MY3				0.901		
	MY4				0.798		
Consumption Intention	XF1					0.832	0.899
	XF2					0.714	
	XF3					0.795	
Full Scale							0.872

Table 5. Harman's single-factor test results table.

Factor Number	Eigenvalue	Percentage of Variance (%)	Cumulative Percentage of Variance (%)
1	8.92	38.2	38.2
2	2.15	9.2	47.4
3	1.87	8.0	55.4
4	1.42	6.1	61.5
5	1.18	5.1	66.6

4.3. Confirmatory Factor Analysis (CFA)

As evidenced in **Table 6**, all standardized factor loadings exceeded 0.5 and were statistically significant ($p < 0.05$). Composite reliability (CR) values surpassed the 0.6 threshold, demonstrating adequate internal consistency. Average variance extracted (AVE) measures all exceeded 0.5, confirming that the observed variables effectively captured their respective latent constructs.

Table 6. Confirmatory factor analysis results.

Latent variable	Observed variable	Factor Loading	CR	AVE
Consumer Experience	TY1	0.721	0.742	0.581
	TY2	0.783		
	TY3	0.762		
	TY4	0.705		
Infrastructure	JC1	0.719	0.793	0.654
	JC2	0.765		
	JC3	0.733		
	JC4	0.707		
Cultural Value	WL1	0.734	0.786	0.626
	WL2	0.712		
	WL3	0.781		
Satisfaction	MY1	0.792	0.723	0.562
	MY2	0.785		
	MY3	0.843		
	MY4	0.740		
Consumption Intention	XF1	0.776	0.775	0.603
	XF2	0.703		
	XF3	0.744		

4.4. Hypothesis Testing

After establishing measurement model validity, we examined the structural relationships using Amos 26.0. As summarized in **Table 7**, all fit indices met recommended thresholds: $\chi^2/df = 2.739$; GFI = 0.947, NFI = 0.959, CFI = 0.976, IFI = 0.958, RMSEA = 0.074, indicating good model-data fit. The finalized structural model with standardized path coefficients appears in **Figure 2**.

Standardized path coefficients between latent constructs are reported in **Table 8**. All critical ratios exceeded $|1.96|$ with p -values < 0.05 , providing empirical support for the hypothesized relationships.

4.5. Structural Equation Modeling Results Analysis

1) Consumer Experience Positively Impacts Satisfaction and Consumption Intention

Table 7. Structural equation modeling (SEM) fit statistics table.

Fit Indices	Model Fit Statistics	Recommended Thresholds
χ^2/df	2.739	<3.00
GFI	0.947	>0.90
NFI	0.959	>0.90
CFI	0.976	>0.90
IFI	0.958	>0.90
RMSEA	0.074	<0.08

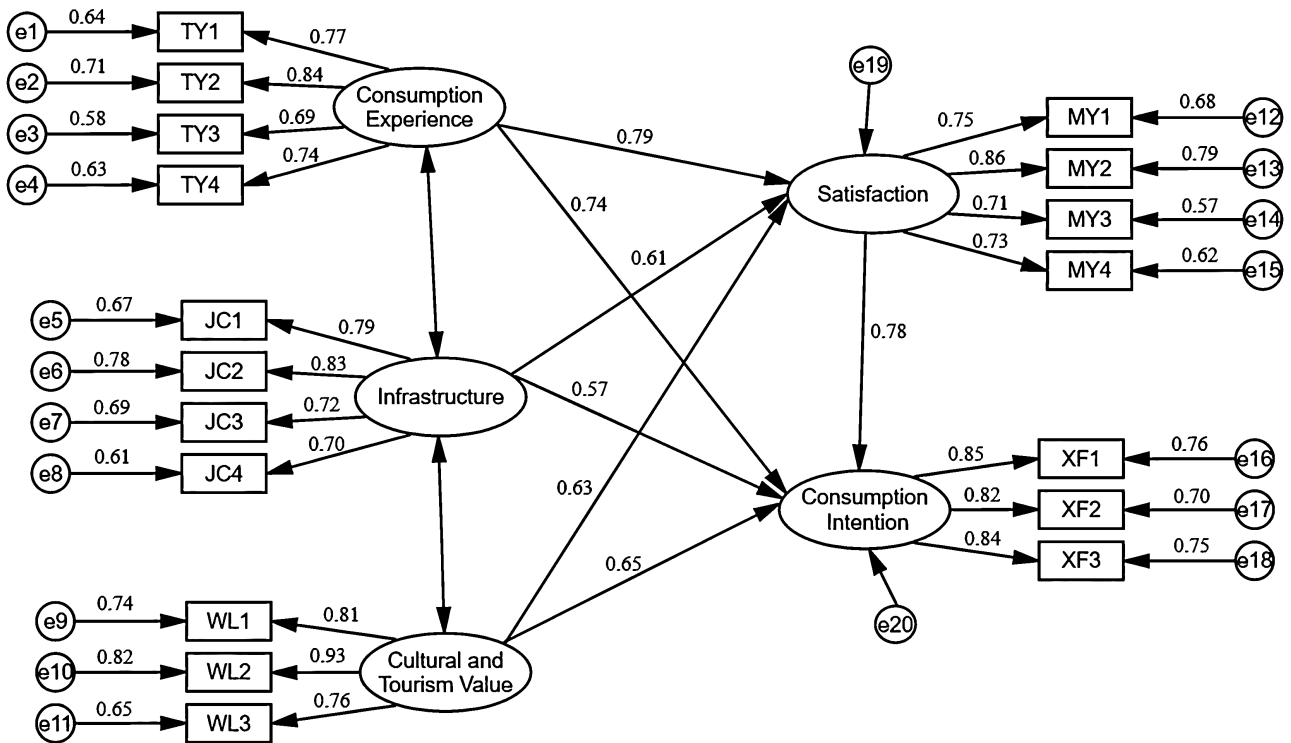


Figure 2. Structural equation diagram with parameter estimates.

Table 8. Path coefficients table.

Path	S.E.	C.R.	<i>p</i> value	Standardized Coefficients
Satisfaction ← Consumer Experience	0.284	4.329	0.001	0.793
Satisfaction ← Infrastructure	0.361	6.286	0.000	0.607
Satisfaction ← Cultural-Tourism Value	0.107	3.076	0.000	0.626
Consumption Intention ← Consumer Experience	0.531	4.682	0.000	0.742
Consumption Intention ← Infrastructure	0.449	3.978	0.000	0.572
Consumption Intention ← Cultural-Tourism Value	0.384	3.439	0.000	0.648
Consumption Intention ← Satisfaction	0.473	5.278	0.000	0.778

Consumer experience exerts a direct positive effect on satisfaction ($\beta = 0.793$) and consumption intention ($\beta = 0.742$). Enhanced consumer experiences with Poetry Road cultural tourism elevate visitor satisfaction while fostering emotional and economic value recognition. This facilitates sustained consumption behavior and stickiness, where short-term experiences transform into long-term consumption intentions mediated through satisfaction.

2) Infrastructure Development Enhances Satisfaction and Consumption Intention

Infrastructure demonstrates direct positive effects on satisfaction ($\beta = 0.607$) and consumption intention ($\beta = 0.572$). Optimized infrastructure improves tourism accessibility, allowing visitors to focus on experiential engagement. Digital interpretation systems and interactive installations create immersive experiences that elevate satisfaction and stimulate consumption willingness through enhanced experiential value.

3) Cultural-Tourism Value Drives Satisfaction and Consumption Intention

Cultural-tourism value directly increases satisfaction ($\beta = 0.626$) and consumption intention ($\beta = 0.648$). Through historical scene revitalization and poetic imagery embodiment, Poetry Road tourism fosters cultural resonance and value appreciation. Immersive performances and contextualized interactions transform passive observation into multi-sensory emotional memory experiences, heightening cultural interest and expenditure willingness.

4) Satisfaction Significantly Predicts Consumption Intention

Satisfaction has a strong influence on consumption intention ($\beta = 0.778$). Higher satisfaction indicates superior experiential quality, increasing revisit probability while reducing price sensitivity. Satisfied visitors demonstrate greater willingness to pay for Poetry Road experiences, establishing a self-reinforcing cycle of engagement.

5. Discussion and Implications

5.1. Discussion

Existing research on tourism consumption intentions based on Structural Equation Modeling (SEM) primarily focuses on general tourism, rural tourism, heritage tourism, and red tourism. This study takes Poetry-themed Cultural Tourism as its subject, investigating the influence mechanisms on consumption intentions among both residents and tourists. It aims to provide empirical evidence for the psychological mechanisms underlying consumption in specific cultural-theme tourism contexts.

This research demonstrates that mainstream tourism consumption behavior theories remain valid even within the niche domain of “Poetry-themed Cultural Tourism,” which possesses unique cultural connotations. This enhances the theoretical framework’s applicability across diverse contexts. Specifically, within the distinctive setting of Poetry-themed Cultural Tourism—which emphasizes cultural ambiance and immersive experiences—the study finds that: Consumption

experience positively impacts both satisfaction and consumption intention, confirming its role as a core driver. Infrastructure positively influences satisfaction and consumption intention, underscoring that hardware facilities remain a cornerstone for ensuring seamless experiences and enhancing satisfaction, even in culture-centric tourism like Poetry-themed Cultural Tourism. The strong driving effect of cultural-tourism value perception on consumption intention ($\beta = 0.648$) validates the central proposition of perceived value theory (*perceived value theory*; Zeithaml, 1988)—that consumers form behavioral intentions based on perceived value.

The significant impact of satisfaction on consumption intention ($\beta = 0.778$) supports the classic expectancy-confirmation theory (*expectancy-confirmation theory*; Oliver, 1980), confirming the “experience \rightarrow satisfaction \rightarrow behavior” transmission mechanism within the Poetry-themed Cultural Tourism context.

5.2. Implications

Path Analysis-Based “Three-Stage Conversion Strategy” for Enhancing Consumption Willingness: Systematically Transforming Tourist Satisfaction into Sustained Consumption Momentum

Stage 1: Product Optimization

Focus on elevating consumption experiences and infrastructure quality to establish a solid foundation for satisfaction. Premium facilities and service environments ensure visitor comfort, fostering initial recognition of Poetry Road cultural tourism offerings.

Stage 2: Emotional Connection

Strengthen cultural value resonance to deepen satisfaction. Revitalized historical settings and tangible poetic imagery immerse visitors in cultural narratives, while immersive performances and contextual interactions transform passive observation into multi-sensory emotional memories.

Stage 3: Consumption Activation

Convert satisfaction into tangible consumption through diversified offerings and intelligent marketing. Satisfaction directly drives consumption intent, demonstrating its decisive impact on subsequent behavior. High satisfaction not only increases revisit likelihood but also reduces price sensitivity, fostering stable, long-term patronage. To achieve sustainable development, Poetry Road tourism should diversify products and personalize marketing strategies to transform satisfaction into enduring consumption behavior.

Conflicts of Interest

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

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Appendix. Poetry Road Cultural-Tourism Consumption Intention Survey

variable	Observed Variable	ID	Item Statement	Scale (1 - 5)
Consumer Experience (TY)	Specialty Shopping Service	TY1	Poetry Road cultural-tourism products feature distinctive cultural characteristics	
	Price-Quality Ratio	TY2	Pricing reasonably reflects the actual quality of Poetry Road products	
	Staff Professionalism	TY3	Attraction staff demonstrate positive service attitudes and professional competence	
	Dining & Accommodation	TY4	Catering services maintain hygiene standards with well-equipped lodging facilities	
Infrastructure (JC)	Transportation Access	JC1	Convenient transportation access to Poetry Road attractions	
	Information Accessibility	JC2	Comprehensive and easily accessible attraction information	
	Signage Clarity	JC3	Clear directional, facility, and emergency signage throughout attractions	
	Itinerary Rationality	JC4	Well-structured visiting schedules with demand-aligned content	
Cultural Value (WL)	Poetic Feature Integration	WL1	Strong poetic ambiance with seamless integration of classical poetry culture	1 = SA-5 = SD
	Smart Technology Adoption	WL2	Effective utilization of smart technologies for cultural presentation	
	Interactive Experiences	WL3	Engaging cultural interaction experiences at attractions	
Satisfaction (MY)	Overall Satisfaction	MY1	General satisfaction with Poetry Road cultural-tourism experiences	
	Expectation Congruence	MY2	Experiences align with pre-visitation expectations	
	Recommendation Willingness	MY3	Willingness to recommend attractions to others	
	Revisit Intention	MY4	Willingness to revisit Poetry Road attractions	
Consumption Intention (XF)	Future Purchase Likelihood	XF1	Future willingness to purchase Poetry Road products	
	Priority Selection	XF2	Preference for selecting Poetry Road attractions during trip planning	
	Price Premium Acceptance	XF3	Willingness to pay premium prices for Poetry Road experiences	