IMPACTS OF LOCAL MARKETING ON TOURIST SATISFACTION IN TAN CUONG TRADITIONAL TEA VILLAGE: APPLYING A STRUCTURAL EQUATION MODEL

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Abstract: ***This study examines the factors influencing tourist satisfaction at Tan Cuong tea village, Thai Nguyen province. Data were collected from 230 tourists and analyzed using structural equation modeling (SEM). The results show that the measurement model achieved reliability and validity (Cronbach's alpha = 0.834–0.963; CR = 0.835–0.964; AVE = 0.560–0.899; maximum HTMT = 0.590), and the CFA/SEM model showed very good fit. The five factors, destination promotion (DP), visitor facilities (VF), cultural experience (CE), environmental quality (EQ), and destination management (DM), all have a positive and significant impact on satisfaction (VS), with EQ having the strongest influence (β = 0.284), followed by VF (β = 0.264), CE (β = 0.258), DP (β = 0.252), and DM (β = 0.157). The model explains 62.8% of the variance of VS, suggesting that policy priorities should focus on the environment, amenities, and enhancing the cultural tea experience.***

• Keywords: *tea craft village tourism, visitor satisfaction, structural equation modeling (SEM), destination management, Thai Nguyen province.*

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1. Introduction

Traditional craft village tourism is emerging as a development direction aligned with the trend of experiential tourism, emphasizing identity and sustainability. In this context, Tan Cuong tea village (Thai Nguyen province) possesses distinct advantages in terms of product branding, tea-growing landscape, and the ability to organize experiences related to tea culture. However, in practice, the number of visitors to the village is not commensurate with its strengths, experiential activities lack coordination, and tourism potential has not been adequately translated into high and consistent levels of visitor satisfaction.

From an academic perspective, recent studies emphasize that satisfaction is a key link connecting destination evaluations with positive behavioral responses from tourists, and is influenced by destination quality, image, experiences, and communication (Lee & Xue, 2020). In the digital media environment, tourist-generated social media can strengthen destination brand awareness and value, thereby increasing satisfaction and behavioral outcomes (Abbasi et al., 2024). Specifically for tea tourism, empirical evidence shows that the experiential environment and cultural identity play a significant role in shaping tourist evaluations, emotions, and behavioral intentions (Fu et al., 2023; Jiang & Garrod, 2025).

From a destination management perspective, tourist satisfaction at tea villages is often the combined result of many components of "experiential delivery capabilities." Based on the research questionnaire, the independent factor groups can be broadly categorized as: (i) destination promotion (DP), (ii) tourist facilities (VF), (iii) cultural experience (CE), (iv) environmental quality (EQ), and (v) destination management (DM). These factors are expected to influence tourist satisfaction (VS) in Tan Cuong. However, research applying SEM to the context of tourism in Tan Cuong's tea-making villages is limited, especially studies that simultaneously validate both measurement and structural models to quantify the relative impact of each factor. Stemming from this practical need and gap, this paper aims to validate an SEM model to assess the impact of DP, VF, CE, EQ, and DM on VS, thereby providing a scientific basis for management implications for the effective and sustainable development of tourism in Tan Cuong's tea-making villages.

2. Theoretical basis, research overview, and hypothesis development

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2.1. Destination Promotion (DP)

Destination promotion helps shape awareness, reinforce the image and perceived value of tourists, thereby increasing satisfaction levels. Particularly in the digital environment, communication generated by destination management organizations and by tourists can impact destination brand value and satisfaction through relationship chains that can be tested using SEM (Abbasi et al., 2024).

2.2. Visitor Facilities (VF)

Facilities and amenities at a destination (such as sanitation, parking, rest areas, and facility layout) are fundamental conditions that help reduce inconvenience, increase perceived convenience, and support the experience. SEM research on satisfaction at attractions and entertainment spaces shows that destination attributes and experiential activities (related to service conditions) are significantly associated with overall satisfaction levels (Halkos et al., 2021).

2.3. Culture Experience (CE)

For craft village tourism, cultural experiences are the "core value" that determines the memorability, emotions, and overall evaluation of tourists. In the context of tea tourism, experiential environmental factors and cultural identity have been shown to play a crucial role in shaping emotional values and tourist responses implying an impact on satisfaction/ behavioral intention (Fu et al., 2023).

2.4. Environmental Quality (EQ)

Environmental quality (cleanliness, maintenance, landscaping, eco-friendliness) is often a "fundamental" factor: poor quality leads to strong dissatisfaction, while good quality contributes to an improved overall rating. Research based on guest rating data shows that environmental aspects within service spaces, particularly related to "cleanliness/maintenance", are significantly correlated with guest satisfaction (Zhang et al., 2025)..

2.5. Destination Management (DM)

Destination management is demonstrated through coordinating visitor flow, communicating regulations, providing on-site support, and handling feedback. When management is weak, destinations are prone to overcrowding, causing inconvenience and degrading the experience. A meta-analysis shows that perceived crowding generally negatively impacts satisfaction and many other experience indicators, thus highlighting the role of destination management/coordination (Luo et al., 2025).

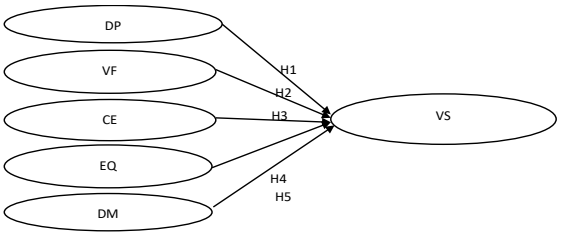
2.6. Visitor Satisfaction (VS)

Satisfaction reflects the degree to which expectations are met and the overall quality of the experience; it also forms the basis for positive behavioral responses (loyalty/referral). The sustainable image-integrated destination loyalty model highlights the central role of satisfaction in the chain of impacts from destination evaluation to tourist behavior (Lee & Xue, 2020).

2.7. Hypothesis development

Based on the above arguments, the study proposes a structural model with VS as the dependent variable and the independent variables including DP, VF, CE, EQ, and DM. Recent SEM studies have also shown that experience/destination condition components can enhance satisfaction and thus promote behavioral outcomes (Torabi et al., 2022). On that basis, the study proposes: H1–H5: DP, VF, CE, EQ, and DM have a positive impact on VS.

Figure 1: Research model



3. Research Methods

3.1. Research Design

The study uses a quantitative design focused on hypothesis testing, with data collected using structured questionnaires and a 5-point Likert scale. The research model includes latent variables (DP, VF, CE, EQ, DM, VS) and is tested using SEM, allowing simultaneous estimation of both the measurement model and the structural model (Rosseel, 2012). The analysis process adheres to recommendations for model fit assessment with indicators such as CFI/TLI, RMSEA, and SRMR (Hu & Bentler, 1999). Results are reported according to SEM research standards, prioritizing standardized coefficients to compare the relative impact between factors.

3.2. Survey Subjects, Sampling, and Data Collection

The survey subjects were tourists who had experienced tourism in Tan Cuong tea village, Thai Nguyen province, including visitors and those who had activities related to tea products. The sample was selected using a controlled convenience sampling method, ensuring that respondents met the condition of "having experienced" the destination before completing the questionnaire. Data was collected directly at the destination (and/or online channels with confirmed experiences), ensuring the principles of voluntariness,

anonymity, and for research purposes only. The sample size was considered according to the requirements of CFA/SEM, ensuring sufficient reliability for parameter estimation and model testing (Rosseel, 2012)

3.3. Scales and Research Variables

Table 1: Structures, number of observed variables and scale sources

Factors	No of observations	Description	Sources
DP	4	Destination promotion/communication (clear, accessible, attractive, consistent)	Abbasi et al., 2024
VF	4	Amenities for visitors (cleanliness, parking, rest areas, facility layout)	Halkos et al. (2021)
CE	4	Tea culture experience (unique, easy to participate in, culturally informative, memorable)	Fu et al., 2023
EQ	4	Environmental quality (cleanliness, maintenance, landscape protection, eco-friendly)	Lee & Xue, 2020
DM	4	Destination management (coordination, regulations/ guidelines, support/feedback)	Laesser et al. (2025)
VS	3	Visitor satisfaction (overall satisfaction, meeting expectations, willingness to recommend)	Zeng & Li (2021)

3.4. Data Analysis Process

The data was processed in four steps:

Step 1: Descriptive statistics (Mean, SD) and correlations between variables, as a basis for identifying general trends.

Step 2: Evaluation of the measurement model using CFA, considering standardized load, reliability, and convergent validity (CR/AVE) according to classical logic in marketing-behavioral research (Fornell & Larcker, 1981).

Step 3: Testing discriminant validity using HTMT, aiming to increase sensitivity compared to traditional criteria (Henseler et al., 2015).

Step 4: Estimation of the structural model SEM, reporting model fit and path coefficients (β, SE, p), and interpreting the R^2 of the dependent variable according to recommendations on the fit index (Hu & Bentler, 1999).

4. Research Results

4.1. Descriptive Statistics of Respondents

Table 2. Demographics of Respondents (n = 230)

Factors	Frequency	(%)
Gender		
Male	142	61.74
Female	88	38.26
Marital status		
Single	117	50.87
Married	113	49.13
Age		
Under 30	126	54.78
From 30 to 45	63	27.39
More than 45	41	17.83
Residence		
From Thai Nguyen province	137	59.57
Surrounding areas	93	40.43
Occupation		
Student	84	36.52
Employee	79	34.35
Freelancer and other	67	29.13

Source: Compiled by the authors

Table 2 describes the characteristics of the survey sample (n = 230) according to basic demographic variables. The gender structure shows that males accounted for 61.74% (142 people), while females accounted for 38.26% (88 people). Marital status was relatively balanced between the single group (50.87%, 117 people) and the married group (49.13%, 113 people), thus limiting sample bias based on family characteristics. Regarding age, the group under 30 years old accounted for the highest proportion (54.78%, 126 people), followed by the 30–45 age group (27.39%, 63 people) and the over 45 age group (17.83%, 41 people), implying that younger customers were the dominant group in the study sample. Regarding place of residence, 59.57% (137 people) of respondents were from Thai Nguyen province, and 40.43% (93 people) were from neighboring areas, reflecting that the current customer market is mainly concentrated in nearby regions. In terms of occupation, the sample distribution was relatively diverse, including students (36.52%), workers/civil servants (34.35%), and self-employed/ others (29.13%), facilitating a multi-faceted reflection of tourists' perceptions.

4.2. Descriptive statistical analysis of factors

Table 3. Descriptive Statistics and Correlation Matrix (N = 230)

Construct	Mean	SD	DP	VF	CE	EQ	DM	VS
DP	3.524	0.692	1.000	0.233**	0.128	0.125	0.022	0.360**
VF	3.541	0.803	0.233**	1.000	0.465**	0.268**	0.144*	0.537**
CE	3.376	0.774	0.128	0.465**	1.000	0.348**	0.168*	0.544**
EQ	3.504	0.715	0.125	0.268**	0.348**	1.000	0.342**	0.522**
DM	3.396	0.770	0.022	0.144*	0.168*	0.342**	1.000	0.341**
VS	3.539	0.595	0.360**	0.537**	0.544**	0.522**	0.341**	1.000

** $p < 0.05$; ** $p < 0.01$*

Source: Compiled by the authors

Table 3 shows that the scales have mean values ranging from 3.376 (CE) to 3.541 (VF), reflecting a generally fairly positive rating from tourists. The Pearson correlation matrix shows that the independent variables are generally positively correlated and statistically significant, with VF–CE having the strongest correlation ($r = 0.465$; $p < 0.01$), followed by CE–EQ ($r = 0.348$; $p < 0.01$) and EQ–DM ($r = 0.342$; $p < 0.01$). For the dependent variable VS, the correlations were all positive, notably CE–VS ($r = 0.544$; $p < 0.01$), VF–VS ($r = 0.537$; $p < 0.01$), and EQ–VS ($r = 0.522$; $p < 0.01$), suggesting the important role of cultural experience, amenities, and environmental quality. DP–DM showed no significant correlation ($r = 0.022$), indicating that destination promotion may be relatively independent of perceived destination management in the survey sample.

4.3. The goodness-of-fit index of the confirmatory factor analysis (CFA)

Table 4. CFA Model Fit Indices

Fit Index	Value	Threshold	Assessment
χ^2(df)	222.695 (215)	–	
p-value	0.362	> 0.05	Good
CFI	0.998	≥ 0.90	Excellent
TLI	0.998	≥ 0.90	Excellent
RMSEA	0.012	≤ 0.08	Excellent
SRMR	0.035	≤ 0.08	Excellent

Source: Compiled by the authors

The CFA results in Table 4 show that the measurement model has a very good fit with the data: $\chi^2(215)=222.695$ and p-value=0.362 (>0.05) implying that the model is not significantly different from the observed data. The incremental indices are excellent with CFI=0.998 and TLI=0.998 (both exceeding the recommended threshold). At the same time, the low error indices (RMSEA=0.012; SRMR=0.035) confirm that the measurement model has an excellent fit, making it eligible for conversion to SEM.

4.4. Reliability and convergent validity of structures

Table 5. Reliability and Convergent Validity

Construct	N Items	Cronbach's α	CR	AVE
DP	4	0.834	0.835	0.560
VF	4	0.863	0.864	0.615
CE	4	0.881	0.882	0.652
EQ	4	0.850	0.850	0.587
DM	4	0.871	0.871	0.630
VS	3	0.963	0.964	0.899

Source: Compiled by the authors

Table 5 shows that the scales achieve very good reliability, with Cronbach's alpha ranging from 0.834 to 0.963, all exceeding the acceptable threshold (≥0.70). The composite reliability CR is in the range of 0.835–0.964, confirming the intrinsic stability of the underlying structures. Regarding convergence validity, the AVE indices are all greater than 0.50 (0.560–0.899), indicating that each structure explains a significant proportion of the variance of the observed variables. Notably, the VS structure has very high alpha (0.963), CR (0.964), and AVE (0.899), reflecting strong consistency in the satisfaction scale. Overall, these results confirm that the measurement model simultaneously meets the requirements of reliability and convergence validity, qualifying it for structural model testing.

4.5. Discriminant Value (HTMT)

Table 6. Discriminant Validity (HTMT)

	DP	VF	CE	EQ	DM	VS
DP	1.000	0.276	0.149	0.149	0.074	0.401
VF	0.276	1.000	0.536	0.312	0.174	0.589
CE	0.149	0.536	1.000	0.403	0.196	0.590
EQ	0.149	0.312	0.403	1.000	0.397	0.577
DM	0.074	0.174	0.196	0.397	1.000	0.373
VS	0.401	0.589	0.590	0.577	0.373	1.000

Source: Compiled by the authors

Table 6 presents the HTMT index for the structural pairs, with values ranging from 0.074 to 0.590. The highest HTMT value is 0.590 (CE–VS), still lower than the recommended threshold of 0.85, indicating that the structures are conceptually well-discriminant. The remaining pairs are at low-to-medium levels (e.g., VF–VS = 0.589; EQ–VS = 0.577), implying negligible overlap between the scales. Thus, the measurement model achieves discriminant validity, qualifying it for SEM structural model testing.

4.6. Structural model fit indices (SEM)

Table 7. SEM Model Fit Indices

Fit Index	Value	Threshold	Assessment
χ^2(df)	222.695 (215)	–	
p-value	0.319	> 0.05	Good
CFI	0.997	≥ 0.90	Excellent
TLI	0.997	≥ 0.90	Excellent
RMSEA	0.014	≤ 0.08	Excellent
SRMR	0.037	≤ 0.08	Excellent

Source: Compiled by the authors

Table 7 shows that the SEM structural model has a very good fit with the data: $\chi^2(215)=222.695$ and p-value=0.319 (>0.05) implying that the model fits the observed data. The incremental indices are excellent with CFI=0.997 and TLI=0.997, exceeding the recommended threshold. At the same time, the low error indices (RMSEA=0.014; SRMR=0.037) confirm that the SEM model has an excellent fit. Therefore, the model can be used to interpret the path coefficients and test the research hypotheses.

4.7. Structural modeling and hypothesis testing

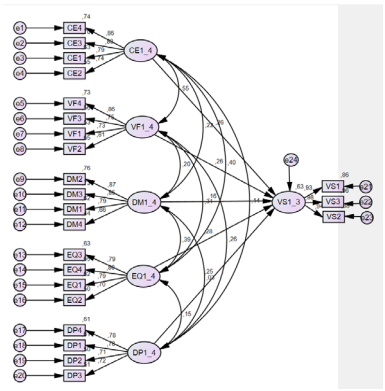
Table 8. Structural Model Results

Hypothesis	Path	β	S.E.	p-value	Supported
H1	DP → VS	0.252	0.052	<0.001	Yes
H2	VF → VS	0.264	0.044	<0.001	Yes
H3	CE → VS	0.258	0.042	<0.001	Yes
H4	EQ → VS	0.284	0.050	<0.001	Yes
H5	DM → VS	0.157	0.044	0.004	Yes
R^2(VS) = 0.628.					

Source: Compiled by the authors

Table 8 shows that all hypotheses H1–H5 are supported, with positive and statistically significant effects on visitor satisfaction (VS). Among the factors, EQ has the strongest effect ($\beta = 0.284$; $p < 0.001$), followed by VF ($\beta = 0.264$; $p < 0.001$), CE ($\beta = 0.258$; $p < 0.001$), and DP ($\beta = 0.252$; $p < 0.001$). The DM factor also has a significant but lower impact ($\beta = 0.157$; $p = 0.004$), implying that destination management remains important but is not the driving factor in the model. The R^2(VS) value of 0.628 indicates that the model explains approximately 62.8% of the variance in satisfaction, demonstrating strong explanatory power. Overall, the results highlight the priority of improving environmental quality, service amenities, and cultural experiences to enhance visitor satisfaction at Tan Cuong tea village.

Figure 2: Structural Equation Modeling (SEM) with standardized Path Coefficients



Note: The structural model was estimated using SEM in R (lavaan and lavaan. survey packages), and the diagram was visualized using IBM SPSS AMOS for clarity in presentation.

5. Conclusion and Implications

This study tested the SEM model of factors influencing tourist satisfaction (VS) at Tan Cuong tea village, Thai Nguyen province, on a sample of 230 observations. The results showed that the measurement model achieved reliability and validity (Cronbach's alpha, CR, and AVE all exceeded the threshold; HTMT < 0.85), and the structural model had a very good fit. The five factors - destination promotion (DP), tourist facilities (VF), cultural experience (CE), environmental quality (EQ), and destination management (DM) - all had a positive and significant impact on VS; the model explained 62.8% of the variation in satisfaction. In this study, the influence decreases in the following order: EQ (strongest), followed by VF, CE, DP, and DM (lower but still significant), implying that satisfaction in Tan Cuong is primarily determined by the quality of the space-environment and the experiential conditions at the destination.

Regarding policy implications, interventions should be prioritized in the order of impact. First, the locality should consider improving the quality of the environment and landscape as a central task: strengthening sanitation, waste collection and sorting, maintaining pathways, controlling discharge points, and standardizing criteria for a "clean destination" linked to the specific characteristics of the tea-growing region. This group of solutions can create rapid and noticeable improvements in tourists' perceptions, thereby increasing satisfaction.

Secondly, there is a need for targeted investment in infrastructure and amenities serving tourists (standard restrooms, reasonable parking, rest areas/seating spots, signage), while encouraging social participation through co-financing mechanisms and clearly assigning operational and maintenance responsibilities between the government, cooperatives, and service businesses. Simultaneously, minimum standards for amenities should be established to ensure consistency among the various experience points within the craft village.

Thirdly, develop tea culture experiences with a "scripted" approach and standardized services: standardize the experiential tour (tea picking – tea processing – tea tasting), train community tour guides, design spaces for storytelling about tea culture, and increase interactive activities (workshops, check-ins, performances). This set of solutions helps increase the uniqueness and memorability of the destination, thereby reinforcing satisfaction and promoting its widespread appeal.

Fourth, regarding destination promotion, it is necessary to shift from fragmented communication to campaign-based communication, consistently conveying the message "Tan Cuong – Tea Culture," optimizing digital content (short videos, experience maps, event calendars), and linking with the province's and region's tourism ecosystem to expand the market beyond Thai Nguyen. Finally, although the impact is lower, destination management is still significant; therefore, it is necessary to improve the mechanism for coordinating tourist flows during peak season, publish clear visiting regulations, establish support/ feedback reception points, and implement a "one-stop" complaint handling process to reduce experiential risks and improve overall service quality.

In summary, the above implications will help Tan Cuong improve the quality of the experience, increase tourist satisfaction, and create a foundation for sustainable tourism attraction, contributing to the effective development of the tea village tourism potential of Thai Nguyen province.

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