Factors Influencing Tourist Satisfaction with the Tourism Destination of Bac Giang Agriculture and Forestry University, Viet Nam

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Abstract: The sudy used the survey data of 214 tourists and exploratory factor analysis (EFA), multivariate regression to analyze the influence of factors on tourist satisfaction with the tourist destination of Bac Giang Agriculture and Forestry University showed that the results identified 5 factors, of which 3 factors were statistically significant and positively influenced customer satisfaction. These factors are:" (Responsibility and nfrastructure, Empathy towards tourists, Tourist landscapes and amusement parks).

Keywords: Tourist satisfaction, tourism destination.
JEL Classification: J01, J21, O14.

1. INTRODUCTION

Tourist satisfaction is defined as the emotions felt by tourists after experiencing a certain destination (Huynh Quoc Tuan, 2023). Evaluating the factors influencing tourist satisfaction is crucial in enhancing the quality of tourism activities at various tourist destinations. Therefore, this study focuses on the tourist destination of Nong-Lam Bac Giang University, which is a developing agricultural and ecotourism destination, to analyze the factors influencing tourist satisfaction. The aim is to determine the level of impact these factors have and help the University make informed decisions to develop this tourism destination further

2. LITERATURE REVIEW

2.1. Tourist Satisfaction

Huynh Quoc Tuan (2023) defines tourist satisfaction as the emotions experienced by tourists after their perception of their travel experiences. A tourist destination is a geographical area where tourists stay for at least one night, encompassing tourism products, provided services, tourist-attracting resources, administrative boundaries for management, and image recognition for competitiveness in the market (UNWTO, 2005).

2.2. Factors Affecting Tourist Satisfaction at Tourist Destinations

There are various factors influencing tourist satisfaction, but this study focuses on five key factors:

- Tourist landscapes and recreational areas: The value of landscapes plays a transformative role between geographical factors and socio-cultural perceptions of each region. The balanced interests of stakeholders and the evaluation of landscape value serve as the foundation for proposing, constructing, and adjusting development policies, territorial planning, and natural resource management (Pham Anh Tuan & et al, 2021). According to Nguyen Thi Phuong Loan (2011), recreational activities play a crucial role in everyone's life, especially during travel. As society develops, the variety of recreational activities increases, serving social, educational, economic, and ecological purposes.

- Infrastructure: Infrastructure and technical facilities cater to social needs (infrastructure and technical facilities type 1) such as road systems, electricity, communication, and water supply leading to tourist resources. Specific infrastructure and technical facilities serve primarily the tourism industry (infrastructure and technical facilities type 2) like road systems, electricity, communication within tourist resources, parking lots, and public restrooms for operational purposes (Le Thi Ngan, 2021).

- Service costs: According to Thai Thi Nhung & et al (2020), service costs significantly impact the quality of tourism services.

- Quality of tourism area management: Stephen J. Page (2015) indicates that the management of tourist areas influences tourism activities. Effective tourism operations require well-organized and managed approaches.

- Responsibility of organizing units: Harold Goodwin (2018) emphasizes the crucial role of organizing units in promoting sustainable tourism development, minimizing environmental and community impacts

3. RESEARCH METHODOLOGY

Exploratory Factor Analysis (EFA) is used to condense data from a set of n observed variables into k observed variables

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(where k < n), called latent variables, to identify influential factors. The EFA technique involves two steps: Step 1: Constructing and validating the measurement scale's quality; Step 2: Exploratory factor analysis, which includes (1) Testing the suitability of the model using the KMO (Kaiser-Meyer-Olkin) coefficient, (2) Testing the correlations among the observed variables in the representative measurement scale, (3) Testing the level of explanation of the observed variables. EFA is performed using the statistical software SPSS 23.

The research utilizes a multivariate regression model in the analysis of influential factors:

$A = \beta0 + \beta1 * F1 + \beta2 * F2 + \beta3 * F3 + \beta4 * F4 + \beta5 * F5$

In this model: "A" represents the dependent variable;

F1, F2, F3, F4, and F5 represent the independent variables;

β0, β1, β2, β3, β4, and β5 are the regression coefficients that show the effect of each independent variable on the dependent variable. These coefficients will be estimated from the data and describe the linear relationship between the dependent variable and the independent variables.

4. Research Results and Discussion

4.1. Exploratory Factor Analysis

The measurement of observed variables was conducted using a 5-point Likert scale (Likert, 1932): strongly agree (5 points), agree (4 points), neutral (3 points), disagree (2 points), and strongly disagree (1 point). The results of performing the main steps in exploratory factor analysis to identify fairness determinants are as follows:

Testing the suitability of data for EFA application

The result of the Kaiser-Meyer-Olkin (KMO) test for data suitability and sample adequacy for EFA application, and the Bartlett test for correlation among the observed variables presented in Table 1.

The test results show that the KMO value, a measure of the proportion of variance of the measured variables that can be explained by latent factors, is 0.889, which is sufficiently large according to common testing rules (value 0 < KMO < 1). Therefore, the sample data is appropriate for factor analysis. The Bartlett test, with the hypothesis Ho: the correlation matrix among the measured variables is an identity matrix, or the variables are uncorrelated, rejects Ho and confirms that the measured variables in the model are correlated. This condition is suitable for factor analysis.

Table 1. KMO and Bartlett's Test.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		**0.889**
Bartlett's Test of Sphericity	Approx. Chi-Square	4369.918
	Df	300
	Sig.	0.000

(ii) Factor loading, factor rotation to cluster variables and determine latent factors

Table 2. Total Variance Explained.

Component	**Initial Eigenvalues**			**Extraction Sums of Squared Loadings**		
	Total	**% of Variance**	**Cumulative %**	**Total**	**% of Variance**	**Cumulative %**
1	11.664	46.657	46.657	11.664	46.657	46.657
2	2.272	9.086	55.744	2.272	9.086	55.744
3	1.777	7.107	62.851	1.777	7.107	62.851
4	1.302	5.207	68.058	1.302	5.207	68.058
5	1.111	4.442	72.500	1.111	4.442	72.500
6	.957	3.829	76.329			
7	.644	2.578	78.906			
8	.578	2.310	81.217			
9	.535	2.138	83.355			
10	.504	2.016	85.371			
11	.466	1.862	87.234			
12	.404	1.616	88.850			
13	.363	1.454	90.303			
14	.344	1.378	91.681			
15	.322	1.287	92.968			
16	.286	1.143	94.111			
17	.249	.995	95.106			
18	.240	.960	96.066			
19	.225	.900	96.967			
20	.194	.777	97.744			
21	.162	.650	98.393			
22	.145	.582	98.975			
23	.109	.435	99.409			
24	.091	.364	99.773			
25	.057	.227	100.000			

The method chosen for factor loading is Principal Component Analysis (PCA). The rules for selecting the number of factors are: eigen values (measuring the linear dependency level of the correlation matrix between observed variables) greater than 1, cumulative extracted variance greater than 50%, using the orthogonal rotation method (Varimax rotation), and retaining factors with minimum loading coefficients of variables greater than 0.5. The results of the factor loading matrix are presented in Table **3**.

Table 3. Rotated Component Matrixa for Independent Variables and Dependent Variable.

	Component				
	1	2	3	4	5
CLQLDL2	0.759				
CLQLDL3	0.752				
CLQLDL1	0.725				
TTNCDVTC5	0.670				
TTNCDVTC4	0.654				
CSHT4		0.783			
CSHT5		0.699			
CSHT3		0.685			
CSHT2		0.683			
CSHT6		0.681			
CSHT1		0.637			
GCDV3			0.712		
TTNCDVTC2			0.695		
TTNCDVTC1			0.692		
GCDV1			0.683		
TTNCDVTC3			0.590		
GCDV2			0.546		
SDCVDK3				0.838	
SDCVDK4				0.799	
SDCVDK2				0.700	
SDCVDK1				0.609	
CQDL3					0.840
CQDL4					0.830
CQDL1					0.776
CQDL2					0.706
DG1	0.856				
DG2	0.933				
DG3	0.914				

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.[a]

a. Rotation converged in 6 iterations.

iii) Testing the stability of the measured variables within the factors

The stability of the factors (groups of explanatory variables) is assessed using the Cronbach's Alpha test, and the results are presented in Table **4**.

Table 4. Cronbach's Alpha Test for Factor Groups

Factors	Measurements Variables	Cronbach's Alpha
1	CLQLDL2, CLQLDL3, CLQLDL1, TTNCDVTV5,TTNCDVTC4	0.897
2	CSHT4, CSHT5, CSHT3, CSHT2, CSHT6, CSHT1	0.875
3	TTNCDVTV2,TTNCDVTC1, GCDV1, TTNCDVTC3, GCDV2	0.892
4	SDCVDK3, SDCVDK4, SDCVDK2, SDCVDK1	0.915
5	CQDL3, CQDL4, CQDL1, CQDL2	0.849

The Cronbach's Alpha coefficients of variable groups belonging to the factors are greater than 0.7. This is a common threshold used to measure the internal consistency reliability among measurement variables within the same factor.

From the aforementioned analysis results, the constituent factors of tourism development are identified in Table **5**.

Table 5. Constituent factors of tourist satisfaction.

Factors	Symbol
Factor 1. Quality and responsibility of the organizing unit	
1. Good management of tourists to avoid disturbing the waterbird conservation area	CLQLDL2
2. Enhancing tourists' understanding of the value of eco-tourism, agrotourism	CLQLDL3
3. Good management of tourists to minimize negative impacts on the environment	CLQLDL1
4. Ensuring security for all tourists	TTNCDVTC5
5. Friendly and open-minded attitude of staff members	TTNCDVTC4
Factor 2. Responsibility and infrastructure	
1. Clear and visible signs, lights, and signs	CSHT4
2. Clean public sanitation	CSHT5
3. Strong Internet and wifi	CSHT3
4. Reliable electricity supply	CSHT2
5. Suitable services for lodging, parking, eateries, etc.	CSHT6
6. Convenient transportation, easy movement between areas, non-slip roads	CSHT1
Factor 3. Responsibility and pricing	
1. The organization provides fast services to tourists	TTNCDVTC2
2. The organization is always ready to assist tourists	TTNCDVTC1
3. Reasonable ticket prices for admission	GCDV1
4. The organization accurately informs about the service delivery time	TTNCDVTC3

5. Reasonable prices for services provided by the organization (entertainment, accommodation, tour guides).	GCDV2
Factor 4. Empathy towards tourists	
1. Organizational units understanding individual needs	SDCVDK3
2. Organizational units providing personalized services Convenient hours for tourists	SDCVDK4
3.Convenient hours for tourists	SDCVDK2
4. The organization cares about each tourist	SDCVDK1
Factor 5. Tourist landscapes and amusement parks	
1. Fresh air	CQDL3
2. Preserved natural scenery (with minimal artificial elements)	CQDL4
3. Clean tourist area	CQDL1
4. Beautiful, natural, and unique attractions (such as lakes, flower gardens, botanical gardens, …)	CQDL2

4.2. Multiple Regression Analysis

The analysis was carried out using the Enter technique, in which the variables were selected at the same time using the criteria for picking variables with a significance of less than 0.05. Table **6** shows the findings of the regression analysis. With positive beta coefficients, the standardized regression coefficients are all different from 0, and the Sig t-tests of the regression coefficients are all less than 0.05.

The developments of Ecotourism and agritourism is affected by all three independent variables, and two factors are removed from the model. The following is the regression result:

A = 0.154. F2 + 0.299. F4 + 0.384. F5

Table 6. Coefficientsa

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations
		B	Std. Error	Beta			Zero-order
1	(Constant)	0.493	0.260		1.894	0.060	
	F2	0.162	0.068	0.154	2.391	0.018	0.504
	F4	0.308	0.067	0.299	4.624	0.000	0.565
	F5	0.422	0.064	0.384	6.615	0.000	0.589

The beta coefficient of Responsibility and infrastructure (F2) is 0.154. So, when Responsibility and infrastructure increases (decreases) by 1 point, the level of customer satisfaction increases (decreases) by 0.154 points. The coefficient of Empathy towards tourists means (F4) is 0.299. When Empathy towards tourist increases (decreases) by 1 point, the level of customer satisfaction increases (decreases) by 0.299 points. The coefficient of Tourist landscapes and amusement parks (F5) is 0.384. This means when Tourist landscapes and amusement parks increases (decreases) by 1 point, the level of customer satisfaction increases (decreases) by 0.384 points.

Table 7. Model Summaryb

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	0.687[a]	0.473	0.465	0.43754	0.473	62.704	3	210	0.000	1.780

a. Predictors: (Constant), F5, F2, F4

b. Dependent Variable: A

The coefficient R = 0.687 in Table **7** indicates that the variables in the model are correlated with each other. The R2 (R Square) value of the regression model's findings is 0.465. This indicates that the independent variable accounts for 46.5% of the variation in the dependent variable. The research uses the F test to further assess the model's suitability (relevance of the overall linear regression model). This indicates if the dependent variable and the independent variable are linearly associated. If the value of Sig.0.05 is less than 0.05, the data set is appropriate for the multiple linear regression model. The value Sig. of the F test is 0.00 < 0.05, as shown in Table **8**. This indicates that the model's independent variables have a linear relationship with the dependent variable, that the linear regression model is appropriate for the data set, and that the variables match the acceptance requirements.

Table 8. ANOVAa.

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	36.013	3	12.004	62.704	0.000[b]
	Residual	40.203	210	.191		
	Total	76.217	213			

a. Dependent Variable: A

b. Predictors: (Constant), F5, F2, F4

5. CONCLUSION

The results of the EFA (Exploratory Factor Analysis) model indicate that there are 5 components of tourism satisfaction. After conducting a regression analysis, it is found that there are 3 factors influencing the satisfaction of tourists at the tourism site of Nong Lam University - Bac Giang (Responsibility and infrastructure, Empathy towards tourists, Tourist landscapes and amusement parks). Therefore, appropriate measures are needed to impact these factors in order to enhance tourist satisfaction.

CONFLICT OF INTEREST

The authors reported no potential conflict of interest.

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