

RESEARCH ARTICLE

Assessing International Tourist Satisfaction in Phu Quoc: Recommendations for Sustainable Ecological Economic Development

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Abstract

This study explores the factors influencing international tourist satisfaction in Phu Quoc, a premier destination in Vietnam. Utilizing the SERVPERF model, data from 196 respondents reveal that destination image, natural environment, and infrastructure significantly impact tourist satisfaction. Notably, the island's natural beauty and well-maintained infrastructure are critical drivers of satisfaction, outweighing the importance of cost. Based on these findings, the study recommends that local authorities and tourism businesses focus on sustainable development through an ecological economic model. This model emphasizes eco-friendly infrastructure, conservation of natural resources, and active community involvement. By implementing these strategies, Phu Quoc can enhance tourist satisfaction, ensure the quality of the visitor experience, and increase the likelihood of return visits, thereby sustaining its competitive edge in the global tourism market.

Keywords: Tourist Satisfaction, Phu Quoc Island, Sustainable Tourism, Ecological Economic, SERVPERF Model, Vietnam.

1. Introduction

1.1. Background

Phu Quoc, often referred to as the "Pearl Island," is Vietnam's largest island and a major tourist destination, renowned for its pristine beaches, lush forests, and rich cultural heritage. The island spans over 574 square kilometers and offers a diverse array of natural attractions, including more than 150 kilometers of coastline, coral reefs, and tropical rainforests. These natural assets have made Phu Quoc a key player in Vietnam's tourism industry, contributing significantly to the national economy (Nguyen & Tran, 2019). Recognizing its potential, the Vietnamese government has implemented a

strategic plan to develop Phu Quoc into a world-class tourist destination. The plan, outlined in the "General Planning Project of Phú Quốc City until 2040," aims to attract 10-18 million visitors annually, with international tourists accounting for 40% of this figure, and generating an estimated revenue of \$2 billion (Ministry of Planning and Investment, 2024).

1.2. Research Significance

Understanding tourist satisfaction is crucial for the sustainable growth of tourism in Phu Quoc. Satisfied tourists are more likely to return, recommend the destination to others, and contribute to positive word-of-mouth, which is vital for the island's competitive edge in the global tourism market (Oliver, 1980). To effectively measure and enhance service quality, this study utilizes the SERVPERF model, a widely recognized tool in the tourism industry. The SERVPERF model, developed by Cronin and Taylor (1992), focuses on the performance of service delivery and has been proven effective in assessing tourist satisfaction by comparing perceived service quality with actual performance.

1.3. Research Objectives

This study has two primary objectives: first, to identify the key factors influencing tourist satisfaction in Phu Quoc, including elements such as destination image, infrastructure, and service quality. Second, the study aims to propose an ecological economic model that integrates sustainable tourism practices, ensuring that the development of Phu Quoc as a premier destination does not come at the expense of its natural and cultural resources.

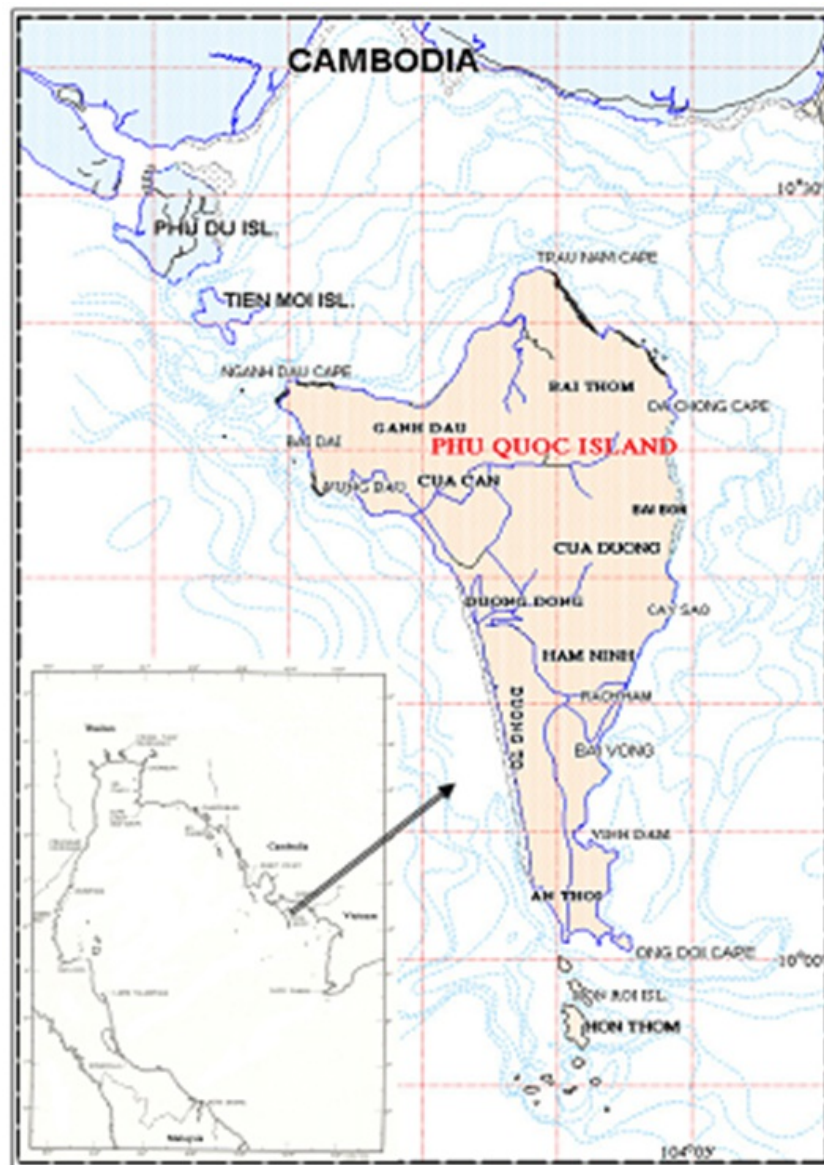


Fig. 1: Phu Quoc Island in Gulf of Thailand

2. Literature Review

2.1. Tourist Satisfaction

Tourist satisfaction is a multifaceted concept that has been extensively studied in the context of tourism management. Satisfaction in tourism is typically defined as a tourist's emotional response to their overall experience during a trip, which results from a comparison between their expectations and the actual performance of the destination (Oliver, 1980). According to Yoon and Uysal (2005), tourist satisfaction can be viewed as the fulfillment of needs and desires related to the tourism experience, encompassing factors such as service quality, destination image, and value for money. This satisfaction is crucial because it influences tourists' future behavior, including their likelihood to revisit a destination and recommend it to others (Kozak & Rimmington, 2000). In the highly competitive tourism industry, maintaining high levels of tourist satisfaction is essential for sustaining a destination's attractiveness and ensuring long-term success.

2.2. *SERVPERF Model*

The SERVPERF model, developed by Cronin and Taylor (1992), is a widely recognized tool for measuring service quality based on actual performance rather than the difference between expectations and perceptions, which is the approach used by the SERVQUAL model. The SERVPERF model simplifies the measurement process by focusing solely on performance, which Cronin and Taylor argue provides a more accurate reflection of service quality. The model evaluates five key dimensions of service: reliability, responsiveness, assurance, empathy, and tangibles, which are critical in shaping customer satisfaction (Cronin & Taylor, 1992).

When compared to other models like SERVQUAL and HOLSAT, SERVPERF is considered more straightforward and efficient in various service industries, including tourism. SERVQUAL, introduced by Parasuraman, Zeithaml, and Berry (1988), measures service quality by assessing the gap between customer expectations and their perceptions of actual service delivery. Although comprehensive, SERVQUAL has been criticized for its complexity and potential to produce inconsistent results due to the subjective nature of expectations (Jain & Gupta, 2004). On the other hand, the HOLSAT model, developed by Tribe and Snaith (1998), is specifically designed for measuring holiday satisfaction by considering both positive and negative aspects of the tourist experience. However, HOLSAT's focus on holiday experiences makes it less versatile for broader service quality assessments compared to SERVPERF.

2.3. *Ecological Economics and Sustainable Tourism*

Ecological economics is an interdisciplinary field that integrates ecological and economic principles to promote sustainable development. It emphasizes the importance of maintaining natural capital, which includes ecosystems, biodiversity, and natural resources, as a foundation for long-term economic prosperity (Costanza et al., 1997). In the context of tourism, ecological economics advocates for sustainable tourism practices that minimize environmental impact while maximizing social and economic benefits. This approach is particularly relevant for destinations like Phu Quoc, where the natural environment is a key attraction for tourists.

Several case studies have demonstrated the successful application of ecological economic models in tourism destinations. For instance, in Costa Rica, the promotion of eco-tourism has been closely linked with conservation efforts, where protected areas serve as major tourist attractions, generating revenue that is reinvested into environmental protection and local community development (Honey, 2008). Similarly, in Bhutan, the government has implemented a high-value, low-impact tourism policy that limits tourist numbers to preserve the country's cultural and natural heritage while providing substantial economic benefits (Rinzin et al., 2007). These examples highlight the potential of ecological economic models to create sustainable tourism systems that balance development with environmental stewardship.

3. Methodology

3.1. *Research Design*

This study employs a quantitative research design using surveys to collect data on tourist satisfaction in Phu Quoc. Quantitative research is chosen for its ability to gather measurable data that can be statistically analyzed, providing objective insights into the factors influencing tourist satisfaction (Creswell, 2014). Surveys are particularly effective in this context because they allow for the collection of data from a large number of respondents, ensuring that the results are generalizable to the broader population of tourists visiting Phu Quoc (Bryman, 2019).

The SERVPERF model was selected as the primary tool for this study due to its proven effectiveness in measuring service quality across various industries, including tourism (Cronin & Taylor, 1992). Unlike other models that assess service quality by comparing expectations with perceptions (e.g., SERVQUAL), SERVPERF focuses solely on performance, which simplifies the measurement process and reduces potential bias introduced by varying expectations (Jain & Gupta, 2004). This model evaluates five dimensions of service quality—reliability, responsiveness, assurance, empathy, and tangibles—which are critical in shaping overall tourist satisfaction. By using the SERVPERF model, this study aims to obtain a more accurate and straightforward assessment of the service quality provided to tourists in Phu Quoc.

3.2. *Data Collection*

The data for this study were collected through a structured survey administered to tourists visiting Phu Quoc. The survey was conducted over a two-week period in January 2019, targeting tourists who were departing from Phu Quoc via Rach Gia Port and Ha Tien Port. This location was chosen because it is a major departure point for tourists, ensuring a diverse sample that includes both domestic and international visitors (Nguyen & Tran, 2019).

A total of 215 questionnaires were distributed, of which 196 were returned and deemed valid for analysis, representing a response rate of approximately 90%. The selection of respondents was random, ensuring that the sample was representative of the broader tourist population. The survey employed a Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree) to measure various aspects of tourist satisfaction. The questionnaire was designed to capture data across several key variables, including destination image, natural environment, infrastructure, service quality, and security. These variables were selected based on their relevance to the SERVPERF model and previous research on tourist satisfaction (Yoon & Uysal, 2005).

3.3. *Data Analysis*

The collected data were analyzed using SPSS (Statistical Package for the Social Sciences) version 20.0. SPSS was chosen for its robust capabilities in handling large datasets and performing complex statistical analyses (Pallant, 2020). The first step in the data analysis involved testing the reliability of the survey instrument using Cronbach's Alpha. This statistic measures the internal consistency of the items within each construct of the questionnaire. A Cronbach's Alpha value of 0.7 or higher is generally considered acceptable, indicating that the items are reliably measuring the same underlying construct (Field, 2013).

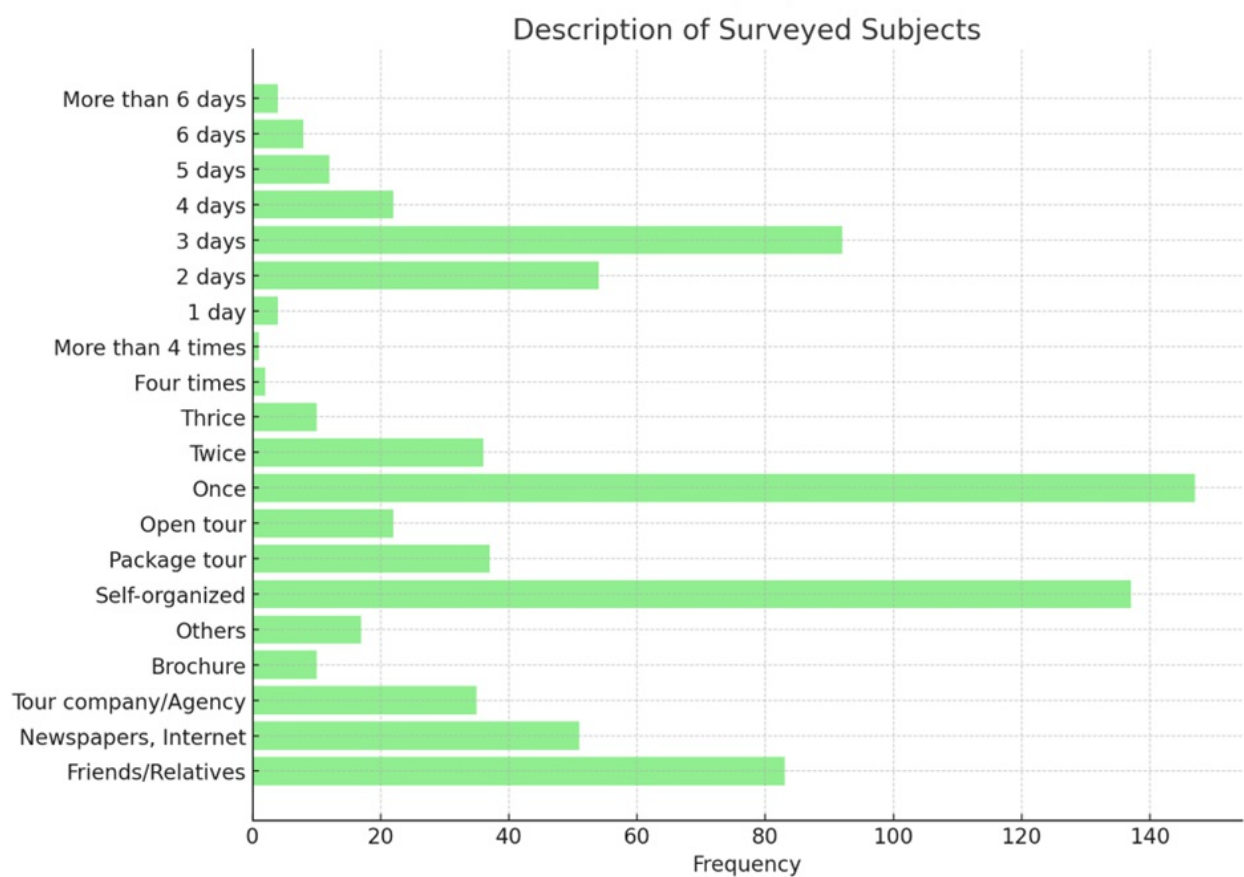
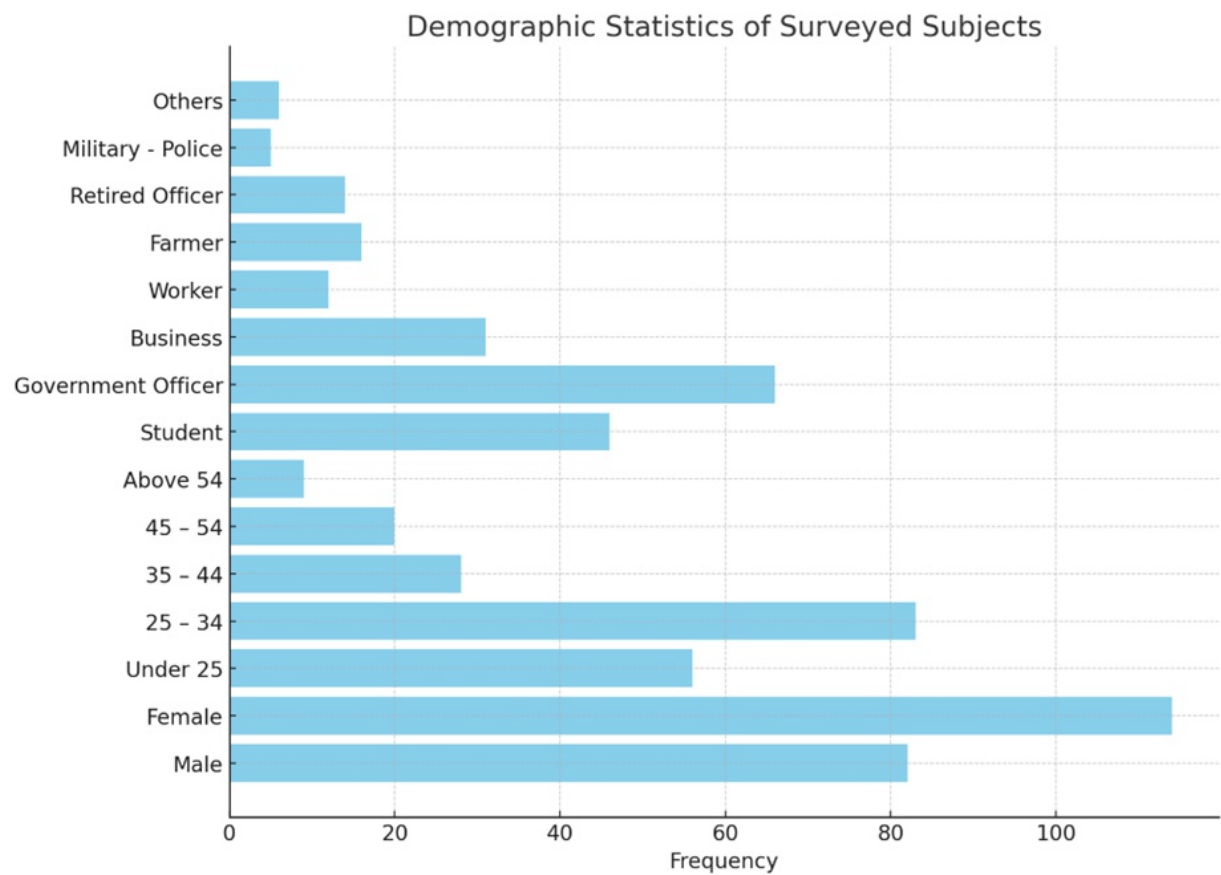
Following the reliability testing, an Exploratory Factor Analysis (EFA) was conducted to identify the underlying factors that explain the correlations among the observed variables. EFA is a useful technique in survey research, particularly when the goal is to reduce data complexity and identify the key dimensions of a construct (Fabrigar & Wegener, 2011). The Kaiser-Meyer-Olkin (KMO) measure and Bartlett's test of sphericity were used to assess the suitability of the data for factor analysis. A KMO value greater than 0.6 and a significant Bartlett's test ($p < 0.05$) indicate that the data are appropriate for EFA (Tabachnick & Fidell, 2013).

Finally, regression analysis was performed to test the hypotheses and determine the strength and direction of the relationships between the identified factors and overall tourist satisfaction. Regression analysis is a powerful statistical method that allows researchers to examine the influence of multiple independent variables on a single dependent variable (Hair et al., 2010). In this study, it was used to quantify the impact of factors such as service quality, infrastructure, and natural environment on tourist satisfaction in Phu Quoc.

4. Results

4.1. *Descriptive Statistics*

The survey collected data from 196 respondents who visited Phu Quoc Island. The demographic breakdown of these respondents is illustrated in Figure 1. The majority of respondents were female (58.4%), while males accounted for 41.6% of the sample. In terms of age distribution, the largest age group was 25-34 years (42.6%), followed by those under 25 years (28.8%). The age groups 35-44 years, 45-54 years, and above 54 years constituted 14.3%, 10.2%, and 4.1% of the sample, respectively. Regarding occupation, the most common were professionals (33.7%) and students (23.7%). Other occupations included businesspeople (15.8%), farmers (8.4%), and retirees (7.1%).



These demographic statistics suggest that the sample was diverse in terms of gender, age, and occupation, providing a

comprehensive overview of tourist experiences and expectations. This diversity enhances the generalizability of the findings, as the sample reflects various perspectives across different segments of the tourist population in Phu Quoc.

4.2. Factor Analysis

Exploratory Factor Analysis (EFA) was conducted to identify the underlying dimensions of tourist satisfaction in Phu Quoc. The analysis used the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy, which yielded a value of 0.911, indicating that the sample was suitable for factor analysis. Bartlett's test of sphericity was significant ($p < 0.001$), confirming that the variables were correlated and suitable for extraction (Field, 2013).

Table 1. Regression Coefficients in the Model					
Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.	Multicollinearity Statistics
	B	Standard Error	Beta		Tolerance
(Constant)	3.861	0.255		15.133	0.000
X1	0.120	0.048	0.139	2.523	0.012
X2	0.149	0.042	0.201	3.530	0.000
X3	0.093	0.043	0.122	2.147	0.032
X4	0.023	0.040	0.032	0.584	0.559

This table provides a summary of the regression coefficients for the model, including unstandardized coefficients (B), standardized coefficients (Beta), t-values, significance levels (Sig.), and multicollinearity statistics (Tolerance and VIF).

The EFA identified four distinct factors that explained 57.2% of the variance in tourist satisfaction (see Table 1). These factors were labeled as follows:

- **Factor 1: Destination Image and Natural Environment**

This factor, comprising seven variables, was the most influential, explaining 30% of the variance. It included aspects such as the natural beauty of the beaches, the cleanliness of the environment, and the overall attractiveness of Phu Quoc as a travel destination.

- **Factor 2: Infrastructure and Service Quality**

This factor accounted for 18% of the variance and included variables related to the quality of infrastructure, such as transportation, accommodation, and the professionalism of service staff.

- **Factor 3: Security and Safety**

Representing 6% of the variance, this factor consisted of variables related to the perceived safety and security of tourists while visiting Phu Quoc, including the presence of law enforcement and the general feeling of safety in public areas.

- **Factor 4: Price and Value**

Although it explained a smaller portion of the variance (3%), this factor included variables concerning the cost of services and the perceived value for money.

The completed regression equation based on the provided data is:

$$Y = 3.861 + 0.120 \cdot X_1 + 0.149 \cdot X_2 + 0.093 \cdot X_3 + 0.023 \cdot X_4$$

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Where:

- **Y**: Satisfaction level of tourists
- **X₁, X₂, X₃, X₄**: Factors influencing the satisfaction level of tourists
- **3.861**: The constant term (intercept)
- **0.120, 0.149, 0.093, 0.023**: Unstandardized coefficients representing the impact of each independent variable X₁X₁X₁, X₂X₂X₂, X₃X₃X₃, and X₄X₄X₄ on the dependent variable YYY.

This equation suggests that:

- For every unit increase in X₁X₁X₁, the satisfaction level YYY increases by 0.120 units, holding other variables constant.
- For every unit increase in X₂X₂X₂, YYY increases by 0.149 units, and so on.

The model's coefficients indicate the relative contribution of each factor to the overall satisfaction level of tourists.

The results of the EFA suggest that tourist satisfaction in Phu Quoc is multifaceted, with a strong emphasis on the destination's natural environment and image, followed by infrastructure and service quality, security, and perceived value. These findings are consistent with previous research indicating that these factors are critical drivers of tourist satisfaction (Yoon & Uysal, 2005).

4.3. Regression Analysis

To further examine the relationship between these factors and overall tourist satisfaction, a multiple regression analysis was conducted. The dependent variable in the model was tourist satisfaction, while the independent variables were the factors identified in the EFA: Destination Image and Natural Environment, Infrastructure and Service Quality, Security and Safety, and Price and Value.

The regression model was statistically significant ($F = 48.521$, $p < 0.001$), explaining 62.5% of the variance in tourist satisfaction ($R^2 = 0.625$). The standardized coefficients (Beta values) revealed that the most significant predictor of tourist satisfaction was Destination Image and Natural Environment ($\beta = 0.354$, $p < 0.001$), followed by Infrastructure and Service Quality ($\beta = 0.298$, $p < 0.001$), and Security and Safety ($\beta = 0.194$, $p < 0.05$). Price and Value, however, was not a significant predictor ($\beta = 0.072$, $p = 0.108$).

These findings underscore the importance of preserving and enhancing the natural environment of Phu Quoc, as well as

improving infrastructure and ensuring the safety of tourists. The non-significance of Price and Value suggests that while cost is a consideration, it does not play a decisive role in overall satisfaction, perhaps due to the perceived quality and uniqueness of the experience in Phu Quoc.

5. Discussion

5.1. *Interpretation of Key Findings*

The results of this study reveal that destination image, natural environment, and infrastructure significantly influence tourist satisfaction in Phu Quoc. The **destination image** and **natural environment** emerged as the most influential factors, suggesting that tourists are highly motivated by the visual appeal and ecological attributes of Phu Quoc. The pristine beaches, lush landscapes, and unspoiled nature are crucial components of the island's attractiveness, aligning with the findings of Yoon and Uysal (2005), who noted that natural scenery and destination image play pivotal roles in shaping tourists' perceptions and satisfaction.

Infrastructure and **service quality** were also significant predictors of tourist satisfaction, emphasizing the importance of well-maintained facilities and efficient services. This finding is consistent with the research by Kozak and Rimmington (2000), which highlighted that the quality of infrastructure, including accommodation, transportation, and public amenities, is critical to enhancing the tourist experience. Moreover, the perceived safety and security of the destination also contributed to overall satisfaction, supporting the notion that tourists prioritize their well-being when choosing travel destinations (Reisinger & Mavondo, 2005).

However, **price and value** did not significantly influence tourist satisfaction, which may indicate that tourists visiting Phu Quoc place greater value on the experience and quality of the destination rather than the cost. This aligns with the study by Chen and Tsai (2007), which found that while price is a factor, it is often overshadowed by the overall experience and perceived quality in determining tourist satisfaction.

5.2. *Implications for Tourism Management*

The findings of this study have several important implications for tourism management in Phu Quoc. **Local authorities and tourism businesses** should prioritize the preservation and enhancement of the island's natural environment and destination image. Given the significant influence of these factors on tourist satisfaction, it is crucial to maintain the ecological integrity of Phu Quoc's beaches, forests, and marine ecosystems. This could involve stricter regulations on environmental protection, investment in sustainable infrastructure, and the promotion of eco-friendly tourism activities (Honey, 2008).

Moreover, **infrastructure development** should focus on improving the quality and accessibility of transportation, accommodation, and public services without compromising the natural landscape. For instance, developing low-impact

infrastructure such as eco-lodges, improving waste management systems, and ensuring that new developments adhere to environmental standards can enhance tourist satisfaction while preserving the environment (Buckley, 2012).

Balancing **development and environmental conservation** is essential for the long-term sustainability of tourism in Phu Quoc. Authorities must implement comprehensive planning that integrates environmental, social, and economic goals. This could involve creating protected areas, encouraging community-based tourism, and promoting educational programs that raise awareness about sustainable practices among both tourists and local communities (Mihalic, 2000).

5.3. *Proposed Ecological Economic Model*

The proposed **ecological economic model** for Phu Quoc emphasizes the integration of sustainable practices into the tourism sector. This model advocates for the development of **eco-friendly infrastructure**, such as solar-powered hotels, water recycling systems, and sustainable transportation options. These initiatives not only reduce the environmental footprint of tourism activities but also enhance the overall experience for environmentally-conscious tourists (Costanza et al., 1997).

Conservation of natural resources is another cornerstone of this model. Phu Quoc's natural beauty is its primary attraction, so protecting its beaches, coral reefs, and forests is imperative. This could be achieved through the establishment of marine protected areas, reforestation projects, and the implementation of policies that limit the environmental impact of tourism-related activities (Honey, 2008).

The model also emphasizes the **involvement of local communities** in tourism development. By promoting community-based tourism, where local residents are actively involved in and benefit from tourism activities, Phu Quoc can ensure that tourism development is inclusive and sustainable. This approach not only helps to preserve local culture and traditions but also provides economic opportunities for local communities, thereby enhancing the social sustainability of tourism (Tosun, 2006).

Implementing this model in Phu Quoc would require collaboration between government agencies, tourism operators, local communities, and environmental organizations. By working together, these stakeholders can create a tourism system that supports economic growth while preserving the island's natural and cultural heritage. This will ensure that Phu Quoc remains a desirable destination for future generations of tourists.

6. Conclusion

6.1. *Summary of Findings*

This study identified several key factors that influence tourist satisfaction in Phu Quoc, including destination image, natural environment, infrastructure, and service quality. The findings underscore the importance of preserving Phu Quoc's natural beauty and improving its infrastructure to enhance tourist satisfaction.

6.2. Future Research Directions

Future research could expand on this study by exploring the satisfaction levels of different tourist demographics, such as adventure tourists, cultural tourists, or luxury travelers. Additionally, research could focus on the long-term impact of sustainable tourism practices on tourist satisfaction and destination loyalty.

6.3. Limitations of the Study

This study has some limitations, including its reliance on self-reported data, which may be subject to bias. Additionally, the study was conducted at a single point in time, so it does not account for seasonal variations in tourist satisfaction. Future studies could address these limitations by using longitudinal data and incorporating objective measures of tourist satisfaction.

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