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The impact of corporate social responsibility on sustainable tourism development at tourist destinations in the Mekong Delta

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Abstract

This study examines the influence of corporate social responsibility (CSR) dimensions on sustainable tourism development at tourist destinations in the Mekong Delta. The research employs the Partial Least Squares (PLS) method using a two-stage approach to analyze data collected from a sample of 320 tourists who had previously visited destinations across six provinces in the Mekong Delta: Tien Giang, Ben Tre, Dong Thap, Can Tho, Kien Giang, and An Giang. The data analysis results indicate that all proposed hypotheses are supported, except for the impact of legal responsibility on sustainable tourism development in the region. Moreover, the findings reveal that tourist satisfaction plays a mediating role in the relationship between ethical responsibility, economic responsibility, and philanthropic responsibility with sustainable tourism development in the Mekong Delta. In contrast, the mediating role of tourist satisfaction in the relationship between legal responsibility and sustainable tourism development is not supported. These findings provide useful insights for tourism managers, travel companies, and local authorities to reassess their strategic framework, identify key drivers, and determine effective approaches to enhance the tourism sector's performance in the Mekong Delta. Consequently, the study suggests appropriate and practical policies and strategies to promote the sustainable development of tourism in the region.

Keywords CSR, Mekong Delta, Sustainability, Sustainable tourism development

1 Introduction

Tourism is a vital industry due to its significant contribution to the overall development of the national economy. Against the backdrop of climate change—an increasingly urgent global challenge and a key concern for environmentally aware communities—sustainable tourism has emerged as a focal point of interest. Sustainable tourism is recognized as a form of travel that meets the increasing demands of high-income and key tourism markets while contributing positively to the preservation of natural and cultural diversity [31]. In other words, it seeks to strike a balance between economic benefits and environmental conservation.

Vietnam possesses several advantages for sustainable tourism development, including its humid tropical monsoon climate and its status as one of the world's most biologically diverse regions, with a wide range of unique ecological features—particularly within Southeast Asia [22]. Notably, the Mekong Delta is endowed with abundant tourism resources encompassing nature, culture, and cuisine. It offers strong potential for developing major global tourism trends such as nature exploration, cultural and ecological diversity, wellness tourism, and agricultural tourism experiences [10, 18]. Recent studies on sustainable tourism (SUS) in the Mekong Delta, particularly in the context of the circular economy, have shown that this region holds significant potential for tourism-based economic development, especially when linked with corporate social responsibility (CSR) initiatives [13]. The Mekong Delta is characterized by stunning landscapes and a vast network of rivers and canals, making it a preferred destination for both domestic and international tourists. Its ecological richness, including wetlands and mangrove forests, makes it an ideal area for ecotourism development [13, 18]. Moreover, the region can provide visitors with high-quality and unique tourism products that showcase the natural beauty of Vietnam [8]. The Mekong Delta spans approximately 40,000 square kilometers, includes 2700 km of coastline, and is home to about 18 million people [20]. The area currently hosts 3 biosphere reserves, 5 national parks, 3 nature reserves, 3 species conservation areas, 7 habitat protection zones, and one scientific experimental forest. In addition to being a major production zone for rice, fruit, aquaculture, and fisheries, the Mekong Delta is also one of Vietnam's seven key tourism regions, with significant strengths and potential. However, current investment and development efforts lack a regional strategic perspective and remain disconnected from market-oriented strategies aimed at attracting high-spending, long-stay tourists. The region's tourism growth rate remains modest compared to other major tourism destinations in the country. Despite favorable conditions and abundant development opportunities, research on how to effectively promote sustainable tourism in the Mekong Delta remains limited.

The past few years have witnessed rising scholarly attention to sustainable tourism at both national and international levels. On a broader scale, in the global context, the number of academic publications focusing on these topics has risen annually, and the terms "sustainable development" and "corporate social responsibility" (CSR) have become widely used. The author has identified a substantial body of literature; however, the research findings remain inconsistent and differ markedly depending on regional contexts and case analyses. This variation has motivated scholars to seek more comprehensive and generalizable discussions on the characteristics of tourism regions, making this a topic of growing relevance and interest. Furthermore, previous studies have predominantly focused on examining the direct impact of CSR on SUS through various components of the CSR framework. Therefore, exploring the relationship between CSR and SUS through mediating variables deserves greater attention to fill existing gaps in the conceptual model connecting these constructs. Given this gap, it is essential to provide a deeper understanding of how CSR contributes to SUS through mediators, as well as how to improve tourism performance in achieving sustainability. To address this issue, the present study seeks to bridge these theoretical gaps by answering the following research questions:

RQ1. Which dimensions of Corporate Social Responsibility influence Sustainable Tourism Development in the Mekong Delta?

RQ2. Does tourist satisfaction truly serve as a mediating variable in the relationship between CSR and SUS?

RQ3. To what extent do CSR factors influence tourist satisfaction in the Mekong Delta?

RQ4. To what extent does tourist satisfaction affect sustainable tourism development in the Mekong Delta?

RQ5. What policy implications can be drawn to support sustainable tourism development in the Mekong Delta?.

Drawing on the rationale outlined above, this study makes several notable contributions to the sustainable tourism literature. First, it enriches existing research by presenting a more holistic conceptual framework for understanding SUS and by incorporating tourism sustainability performance into the analytical model. Second, it offers important implications for advancing SUS in developing countries, providing practical insights for policymakers and practitioners. Finally, the study enhances understanding of how to strengthen the long-term resilience and effectiveness of the tourism sector, not only in Vietnam but also in other regions with comparable socio-economic and environmental conditions. The research findings offer meaningful implications for various stakeholders, including scholars, practitioners, and policymakers in the tourism industry. Accordingly, this study also proposes directions for future research to further enrich the academic discourse on tourism sustainability.

2 Literature review

2.1 Sustainable tourism development

SUS can be understood as an approach that satisfies the demands of current travelers and local residents, while simultaneously safeguarding and improving the possibilities available to future generations. At its core, sustainable tourism involves balancing three key pillars: economic, social, and environmental sustainability [26]. Achieving this balance requires the active participation of multiple stakeholders, such as government bodies, enterprises, community members, and visitors. In Vietnam, although the concept of sustainable tourism has increasingly been emphasized in national policies and development strategies, its practical implementation remains limited. This is particularly true in high-potential regions such as the Mekong Delta, which, despite its rich ecosystem, faces a number of challenges including environmental pollution, overexploitation of natural resources, and the impacts of climate change [13, 18]. To further expand the literature review on the topic, the author presents a summary comparison of previous studies on the relationship between CSR → SAT → SUS across various regions, as shown in Table 1 below:

2.2 Corporate social responsibility (CSR)

Corporate social responsibility (CSR) reflects a company's commitment to ethical, legal, environmental, and community development values. According to Carroll [5], CSR is structured around four dimensions of responsibility, namely economic, legal, ethical, and philanthropic. In the tourism sector, CSR is demonstrated through actions such as protecting destination environments, supporting local community development, preserving cultural identity, and improving working conditions for industry employees. Font & Lynes [9] argue that strategically implementing CSR not only enhances brand

Table 1 Summary of previous studies.
Source: Synthesis by the author

Author(s) and year	Study context	CSR → tourist satisfaction relationship	Role of tourist satisfaction	Key findings
Lee and Park [19]	South Korea	CSR positively influences tourist satisfaction	Partial mediator	Environmental and social equity CSR were most influential
Adrián-Martínez et al. [2]	Spain	CSR increases trust and satisfaction with hotel brands	Full mediator	Model applied to luxury hotel industry
Kim and Stepchenkova [17]	Florida, USA	CSR improves brand attitude, indirectly enhances satisfaction	Partial mediator	Satisfaction leads to revisit and recommendation intentions
Zhang et al. [32]	China (Cultural Heritage Sites)	CSR enhances destination image and perceived value	Clear mediator	CSR has stronger impact on tourists with high social awareness
Dang and Ali [8]	Mekong Delta, Vietnam	CSR enhances satisfaction via service quality and experience	Supportive role (moderator)	Model did not confirm mediation role but emphasized satisfaction's importance
Alam and Rashid [3]	Bangladesh	CSR (especially philanthropic and ethical) positively affects satisfaction	Full mediator	Proposed pathway: CSR → Trust → Satisfaction → Sustainable tourism intention

value but also creates a competitive advantage for businesses in a global tourism environment that increasingly prioritizes sustainability. Therefore, the various dimensions of CSR can be considered as strategic actions that contribute to strengthening brand image and can be directed toward both customers and stakeholders.

The choice to adopt Carroll's [5] four-dimensional CSR model as the theoretical foundation of this study is based on its clarity, generalizability, and robust conceptual structure [5, 6]. Environmental and cultural responsibilities are not treated as separate constructs because they are already implicitly embedded in the ethical and philanthropic dimensions of the original model. As argued by Visser [29], the ethical layer often encompasses concerns for environmental and cultural integrity, particularly in developing contexts. Thus, actions such as environmental protection or cultural preservation can be understood as expressions of ethical or philanthropic responsibility. Using the original framework also ensures consistency with prior CSR literature and avoids conceptual overlap, especially when sustainability outcomes already integrate environmental and cultural indicators [2, 21].

2.3 The relationship between corporate social responsibility and tourist satisfaction (SAT)

Numerous studies have demonstrated a positive relationship between corporate social Responsibility and tourist satisfaction. CSR contributes to building trust with local communities, enhancing tourist satisfaction and loyalty, and mitigating environmental and social risks [2, 19]. In particular, in sensitive destinations such as the Mekong Delta—where the impacts of climate change are severe—CSR plays a crucial role in protecting ecosystems, ensuring livelihoods, and preserving local cultural heritage. CSR components such as ethical, economic, environmental, and social responsibility each have the potential to influence different dimensions of sustainability in tourism. However, the extent of their impact may vary depending on local context, level of economic development, and community awareness [8].

Although the number of studies exploring the connection between corporate social responsibility and tourist satisfaction is increasing, specific empirical evidence from Vietnam—particularly in the Mekong Delta region—remains limited. Most previous studies have focused on analyzing individual factors influencing sustainable tourism without delving into the detailed roles of CSR dimensions. Thus, CSR is increasingly regarded as a critical element in sustainable development strategies, especially in the tourism sector and at tourist destinations, where business activities are closely tied to local communities, cultures, and natural environments. CSR is expected not only to enhance corporate image but also to help foster a sustainable tourism environment by steering corporate behavior toward community and ecological benefits [9, 19].

Building on Carroll's [5] theoretical model, corporate social responsibility consists of four core components: economic, legal, ethical, and philanthropic responsibilities. However, in the context of tourism destination practices, these components can be expanded to more precisely measure aspects such as environmental responsibility, social responsibility, and corporate awareness of CSR. Accordingly, this study proposes a theoretical model in which five CSR components influence tourist satisfaction. The rationale for this proposition is presented as follows:

CSR activities related to legal responsibility (LEG) typically involve tourism businesses' compliance with regulations issued by governmental and state authorities. This includes adherence to environmental laws, labor laws, and financial transparency, as well as protecting the rights and interests of investors and fulfilling financial obligations to regulatory agencies. These actions help establish a symbiotic relationship between businesses and local communities, contributing to tourists' satisfaction with the credibility and reliability of businesses operating at tourism destinations. However, some studies suggest that the strength of this influence may vary depending on the level of interaction and trust between businesses and the local community [18]. Therefore, the following hypothesis is proposed:

H1: Legal responsibility has a positive impact on tourist satisfaction in the Mekong Delta.

Ethical responsibility (ETH) refers to business practices that align with social ethical standards, such as honesty, transparency, respect for cultural identity, and the protection of the rights of employees and tourists. Businesses that demonstrate high ethical conduct are often perceived more positively by local communities and tourists, thereby enhancing tourist satisfaction with the destination [2]. Therefore, the following hypothesis is proposed:

H2: Ethical responsibility has a positive impact on tourist satisfaction in the Mekong Delta.

Economic responsibility (ECO) is regarded as the obligation to generate profit in a transparent, stable, and sustainable manner, and it serves as the foundational and most essential component in Carroll's [5] CSR model. Additionally, argue that economic responsibility involves harmonizing business profitability with long-term sustainability. In the tourism sector, ensuring business efficiency is not only a corporate goal but also a prerequisite for reinvesting in local communities and tourism infrastructure. Such

reinvestment contributes to improving service quality, tourist experiences, and overall satisfaction [25]. Therefore, the following hypothesis is proposed:

H3: Economic responsibility has a positive impact on tourist satisfaction in the Mekong Delta.

Tourism is an industry that has significant impacts on the natural environment. Philanthropic responsibility (PHI), as outlined by Carroll [5], refers to the voluntary efforts of businesses to support and contribute to community development through programs and actions aimed at mitigating and restoring the environmental, social, and communal effects of their operations. Moreover, corporate contributions to initiatives in education, healthcare, and ecosystem protection help maintain the long-term appeal of tourist destinations and enhance their reputation in the eyes of tourists. These actions not only meet the expectations of visitors but also align with local strategies for environmental conservation [1, 28]. Furthermore, when local communities receive better support and attention, it fosters stronger community engagement and contributes to greater tourist satisfaction—often leaving a lasting impression on travelers. Therefore, the following hypothesis is proposed:

H4: Philanthropic responsibility has a positive impact on tourist satisfaction in the Mekong Delta.

2.4 The relationship between tourist satisfaction and sustainable tourism development

The direct or indirect impact of tourist satisfaction on sustainable tourism development remains a subject of considerable debate. Studies supporting the direct influence of satisfaction argue that tourists' positive experiences have a strong and immediate effect on the outcomes of tourism growth strategies [18]. However, according to the Stimulus-Organism-Response (S-O-R) theory by Mehrabian and Russell [23], tourist satisfaction—whether resulting from positive or negative experiences at destinations—acts as a stimulus that affects individual consumers. These stimuli influence internal cognitive states, which in turn shape consumers' attitudinal and behavioral responses [24]. Moreover, tourist satisfaction when visiting destinations often reflects their perception of a business's awareness and commitment to CSR. When tourism managers and employees clearly understand the long-term benefits of CSR, they are more likely to integrate CSR into operational strategies and contribute effectively to the formulation of sustainable development policies [4]. This study posits that tourist satisfaction serves as a mediating mechanism through which CSR dimensions influence sustainable tourism development in destinations across the Mekong Delta. Therefore, the following hypothesis is proposed:

H5: Tourist satisfaction has a positive impact on sustainable tourism development in the Mekong Delta.

Based on the aforementioned arguments, the research model examining the impact of corporate social responsibility (CSR) on Sustainable Tourism Development (SUS) at tourist destinations in the Mekong Delta is proposed and further developed by the author as follows (Fig. 1):

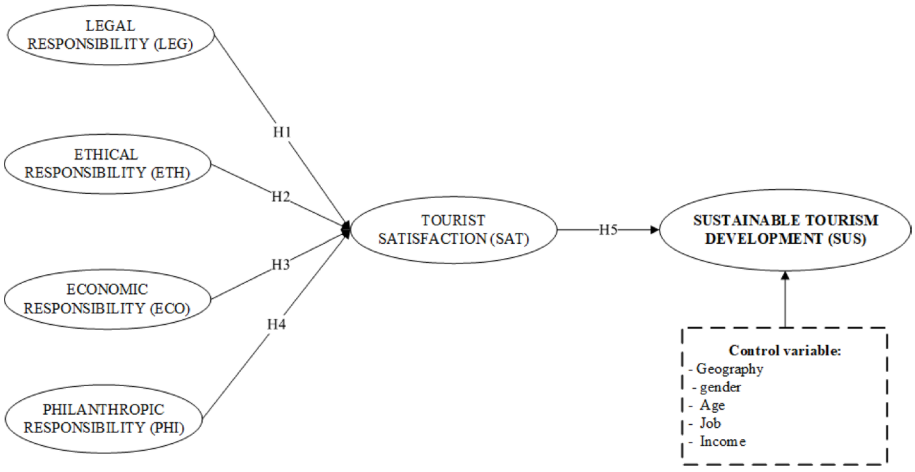

Fig. 1 Proposed research model.
Source: Author's Proposal

3 Research methodology

3.1 Measurement scale

The constructs in the proposed model were measured using scales adapted from prior research and refined to align with the context of tourist destinations in the Mekong Delta provinces (Tien Giang, Ben Tre, Dong Thap, Can Tho, Kien Giang, and An Giang). A five-point Likert scale, ranging from 1 = Strongly Disagree to 5 = Strongly Agree, with 3 representing Neutral, was applied to evaluate both independent and dependent variables.

The proposed research model includes six constructs and five hypotheses, which are inherited and developed from prior studies to establish appropriate measurement scales for each conceptual structure. Specifically, the legal responsibility construct is measured using five items; the philanthropic responsibility construct includes three items adopted from Dreiseitl & Machado [9]; ethical responsibility is measured by five items, economic responsibility by four items, and sustainable tourism development by three items based on the scale. Tourist satisfaction is measured using three items adapted from the scale. However, since service-related concepts may vary across national markets and contextual environments, and since previous researchers have used different hypotheses and research objectives, these scales may require contextual adaptation. Therefore, the author revised and refined the wording and phrasing of the items through interviews with five experts, in order to ensure conceptual clarity and contextual relevance for the tourism setting in the Mekong Delta.

3.2 Data collection

The target respondents for data collection were tourists who had previously visited destinations in the following Mekong Delta provinces: Tien Giang, Ben Tre, Dong Thap, Can Tho, Kien Giang, and An Giang. Data were obtained through convenience sampling, with questionnaires distributed both in person and via online platforms. A total of 340 questionnaires were distributed and returned. After removing invalid responses, 320 valid questionnaires remained and were used for quantitative data analysis, yielding a valid response rate of 94.12%.

3.3 Data analysis method

The research applied a mixed-method design that integrated qualitative and quantitative techniques. The qualitative phase was conducted through desk research and in-depth interviews with five experts who have extensive experience in teaching and managing within the tourism sector. This phase contributed to the development of the research model, hypotheses, and the design of the survey questionnaire. The quantitative phase was carried out to test, measure, and validate the proposed hypotheses using statistical tools and estimation techniques. The study utilized SmartPLS 3.0 software and applied the Partial Least Squares (PLS) technique—an advanced method for path coefficient analysis in structural equation modeling (SEM). This approach is particularly suitable for confirming relationships between latent constructs. PLS-SEM served as the main statistical tool to assess the reliability of measurement scales, validate construct validity, and evaluate the goodness of fit of the proposed model, including the significance levels of the path coefficients within the structural model.

4 Research results and discussion

4.1 Research results

4.1.1 Reliability testing of the measurement scale

Cronbach's Alpha (CA) Reliability Test: The analysis results presented in Table 2 indicate that all constructs meet the reliability threshold, with CA coefficients exceeding 0.7, ranging specifically from 0.883 to 0.906. Furthermore, the majority of loadings associated with individual items are greater than 0.5 (Table 3). Therefore, the internal consistency reliability of the items (as indicated by CA) is confirmed, and the reliability of the measurement scales for all variables is deemed acceptable. In addition, the results for Composite Reliability (CR) show that the CR values are as follows: LEG = 0.920, ETH = 0.928, ECO = 0.921, PHI = 0.936, SAT = 0.935, and SUS = 0.928. Overall, all constructs demonstrate CR values above the 0.8 threshold, confirming that the measurement scales used in this study exhibit strong internal consistency reliability.

4.1.2 Assessment of convergent validity of the measurement scale

The results presented in Table 1 show that the Average Variance Extracted (AVE) values for all constructs exceed 0.5, ranging from 0.698 to 0.831, thereby satisfying the convergent validity criterion. According to Hair et al. [11], for a measurement scale to demonstrate convergent validity, its AVE must be greater than 0.5, indicating that the construct explains at least 50% of the variance of its indicators. An AVE below 0.5 suggests that

Table 2 Construct reliability and validity.
Source: The author's research results

	Cronbach's Alpha	rho_A	Composite reliability	Average variance extracted (AVE)
Economic responsibility	0.886	0.889	0.921	0.746
Ethical responsibility	0.902	0.906	0.928	0.721
Legal responsibility	0.891	0.893	0.920	0.698
Philanthropic responsibility	0.898	0.898	0.936	0.831
Sustainable tourism development	0.883	0.887	0.928	0.810
Tourist satisfaction	0.906	0.908	0.935	0.781

Table 3 Outer loadings and collinearity statistics (VIF).
Source: The author's research results

	Economic responsibility	Ethical responsibility	Legal responsibility	Philanthropic responsibility	Sustainable tourism development	Tourist satisfaction	VIF
ECO1	0.850						2.545
ECO2	0.883						2.900
ECO3	0.844						2.121
ECO4	0.876						2.462
ETH1		0.759					1.718
ETH2		0.859					2.828
ETH3		0.890					3.443
ETH4		0.895					3.785
ETH5		0.835					2.793
LEG1			0.871				3.200
LEG2			0.812				2.681
LEG3			0.806				2.262
LEG4			0.861				2.543
LEG5			0.825				2.010
PHI1				0.907			2.631
PHI2				0.915			2.831
PHI3				0.912			2.836
SAT1						0.894	3.421
SAT2						0.899	3.490
SAT3						0.904	3.059
SAT4						0.837	2.226
SUS1					0.891		2.197
SUS2					0.897		2.657
SUS3					0.913		2.820

error variance exceeds the variance explained. Therefore, the estimation results confirm that each construct in the model exhibits good convergent validity.

4.1.3 Assessment of discriminant validity of the measurement scale

To establish discriminant validity, the square root of the AVE of each latent construct should exceed its correlation with other latent constructs. In SmartPLS, this is assessed using the Fornell–Larcker criterion, where the square root of the AVE appears on the diagonal of the correlation matrix, and the inter-construct correlations appear below it. As shown in Table 4, results indicate that the square root of each AVE (shown on the diagonal) is greater than the correlations presented off the diagonal, confirming that discriminant validity has been established for all constructs. Additionally, the study employed the Heterotrait–Monotrait (HTMT) ratio to further assess discriminant validity. The results indicate that all HTMT values for the first-order construct pairs are below 0.9, which satisfies the standard threshold, as presented in Table 5. Based on the analysis results, the research team can conclude that the measurement scales used in the study model have achieved reliability and validity.

4.1.4 Structural model testing: multicollinearity and model fit

According to Hair et al. [11], multicollinearity may arise when the tolerance value falls below 0.2 or when the Variance Inflation Factor (VIF) exceeds 5. Since VIF is simply the reciprocal of tolerance, both indicators convey the same information. Tolerance is

Table 4 Fornell-Larcker criterion.
Source: The author's research results

	Economic responsibility	Ethical responsibility	Legal responsibility	Philanthropic responsibility	Sustainable tourism development	Tourist satisfaction
Economic responsibility	**0.864**					
Ethical responsibility	0.650	**0.849**				
Legal responsibility	0.653	0.794	**0.835**			
Philanthropic responsibility	0.711	0.571	0.571	**0.911**		
Sustainable tourism development	0.639	0.594	0.576	0.610	**0.900**	
Tourist satisfaction	0.707	0.650	0.618	0.726	0.667	0.884

Table 5 Heterotrait—Monotrait Ratio (HTMT).
Source: The author's research results

	Economic responsibility	Ethical responsibility	Legal responsibility	Philanthropic responsibility	Sustainable tourism development	Tourist satisfaction
Economic responsibility						
Ethical responsibility	0.730					
Legal responsibility	0.733	0.888				
Philanthropic responsibility	0.793	0.635	0.635			
Sustainable tourism development	0.721	0.667	0.643	0.680		
Tourist satisfaction	0.787	0.719	0.686	0.804	0.742	

calculated as $1—R^2$ of the variable; therefore, if R^2 is less than 0.8, the condition of tolerance > 0.2 or VIF < 5 is satisfied, indicating that multicollinearity is not a concern. The analysis results in Table 3 show that all VIF values are below the threshold of 5, with the maximum VIF being 3.490 and the minimum 1.718, indicating that potential variables do not exhibit multicollinearity.

The fit of the model was assessed using the R-squared (R^2) value. The analysis results show that the adjusted R^2 values for the tourist satisfaction (SAT) model and the

Table 6 Testing with R and R^2.
Source: The author's research results

	R square	R square adjusted
Sustainable tourism development (SUS)	0.457	0.440
Tourist satisfaction (SAT)	0.638	0.631

Table 7 Q^2 Coefficient analysis results.
Source: The author's research results

	SSO	SSE	Q^2 (= 1–SSE/SSO)
Economic responsibility	824.000	824.000	
Ethical responsibility	1030.000	1030.000	
Legal responsibility	1030.000	1030.000	
Philanthropic responsibility	618.000	618.000	
Sustainable tourism development	618.000	399.153	0.354
Tourist satisfaction	824.000	427.018	0.482

Table 8 Model_fit.
Source: The author's research results

	Saturated model	Estimated model
SRMR	0.052	0.067
d_ULS	1.184	1.938
d_G	0.890	0.935
Chi-Square	1015.671	1057.782
NFI	0.784	0.775

sustainable tourism development (SUS) model in the Mekong Delta are 0.631 and 0.440, respectively. These indicators comply with the standards for assessing model adequacy, and the adjusted R^2 coefficients indicate a moderate to strong level of explanation (Hock & Ringle [15]; [14]), as presented in Table 6.

Additionally, In evaluating the structural model, the authors relied on the Communality index, which, as noted by Tenenhaus et al. [27] and Wetzels et al. [30], corresponds to the AVE in PLS analysis. For the model to be acceptable, this value should be above 0.5, and the results in Table 1 confirm that all constructs met this threshold (Table 7). Furthermore, Cohen's [7] f^2 statistic was applied to assess effect sizes, where values greater than 0.40 indicate a strong effect, those between 0.25 and 0.40 suggest a moderate effect, and values below 0.10 represent a weak effect (see Table 9). The overall adequacy of the model was further validated through the Goodness of Fit (GoF) index. GoF = $\sqrt[2]{Average\ R^2 * Average\ communality}$ = 0.653 indicated that the impact model's fit is at a large level. Index $Q_{SAT}{}^2$ = 0.482 and $Q_{SUS}{}^2$ = 0.354, all are greater than 0, indicates that the predictive capability of the model is at a moderate level [12]. Additionally, the SRMR coefficient of the model (Table 8) = 0.067 < 0.08, indicating that the overall fit of the model is considered good and suitable with the empirical data [16]. Taken together, the findings confirm that the PLS-SEM model provides an excellent fit to the observed data.

4.1.5 Testing the research model and hypothesis

Using the bootstrapping function [12], as indicated in Table 9, the regression coefficient analysis confirms that every relationship within the model is significant at the statistical level. When comparing the impact levels of independent variables on tourist satisfaction

Table 9 Hypothesis testing results.
Source: The author's research results

Hypothesis	Impact relationship	Path coefficients (β)	f^2	*p* values	Results
Results of direct relationship testing					
H1	Legal responsibility → Tourist satisfaction	0.060	0.003	0.542	Rejected
H2	Ethical responsibility → Tourist satisfaction	0.218	0.044	0.009	Accepted
H3	Economic responsibility → Tourist satisfaction	0.248	0.066	0.000	Accepted
H4	Philanthropic responsibility → Tourist satisfaction	0.391	0.198	0.000	Accepted
H5	Tourist satisfaction → Sustainable tourism development	0.681	0.835	0.000	Accepted
Results of control variable relationship testing					
Age → Sustainable tourism development				0.408	Rejected
Gender → Sustainable tourism development				0.198	Rejected
Geography → Sustainable tourism development				0.225	Rejected
Income → Sustainable tourism development				0.349	Rejected
Job → Sustainable tourism development				0.858	Rejected

Table 10 Results of indirect relationship testing.
Source: The author's research results

Hypothesis	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	*p* values	Results
Legal responsibility—>Tourist satisfaction—> Sustainable tourism development	0.041	0.050	0.068	0.600	0.548	Rejected
Ethical responsibility—>Tourist satisfaction—> Sustainable tourism development	0.149	0.150	0.057	2.625	0.009	Accepted
Economic responsibility—>Tourist satisfaction—> Sustainable tourism development	0.169	0.167	0.048	3.512	0.000	Accepted
Philanthropic responsibility—>Tourist satisfaction—> Sustainable tourism development	0.266	0.258	0.063	4.225	0.000	Accepted

(SAT) in descending order, the results are as follows: philanthropic responsibility (PHI), economic responsibility (ECO), ethical responsibility (ETH), while legal responsibility (LEG) was found to have no significant effect on tourist satisfaction. The findings also highlight that visitor satisfaction exerts a significant and positive impact on the advancement of sustainable tourism (SUS) in the Mekong Delta. These findings indicate that the proposed hypotheses H2, H3, H4, and H5 are supported at a 97.5% confidence level, whereas hypothesis H1 is rejected. In addition, the mediating effect of tourist satisfaction in the relationship between legal responsibility and SUS is not supported. However, the mediating effects of tourist satisfaction in the relationships between ethical, economic, and philanthropic responsibilities and SUS are supported (Table 10). In other words, ethical responsibility, economic responsibility, and philanthropic responsibility positively influence tourist satisfaction, which in turn contributes to sustainable tourism development at destinations in the Mekong Delta. Moreover, the results show no

significant differences across demographic groups such as age, gender, income, and occupation in relation to SUS. Similarly, no geographic differences were observed with respect to SUS in this context (Fig. 2).

4.2 Discussion

The results show that philanthropic responsibility (PHI) has the strongest impact on tourist satisfaction ($\beta = 0.391$; $p < 0.001$). This finding is consistent with the study by Porter and Kramer [25], which argues that when businesses at tourism destinations create value by contributing to the community and actively engaging in local social initiatives, they lay a crucial foundation for enhancing tourist satisfaction. This result also helps to reinforce and validate Carroll's [5] CSR model, in which philanthropic responsibility represents the highest level in the corporate social responsibility hierarchy. It reflects the reality in the Mekong Delta, where local residents are friendly, cooperative, and actively involved in volunteer and community-oriented activities (Figs. 3 and 4).

Economic responsibility (ECO) ranks as the second most influential factor on tourist satisfaction ($\beta = 0.248$; $p < 0.001$). This result aligns with the findings of Le [18], who identified economic factors as a primary driver for maintaining tourist satisfaction. This reflects the reality in the Mekong Delta, an economy that remains heavily dependent on agriculture and tourism revenues. In such a context, tourism businesses must ensure financial efficiency in order to survive and subsequently reinvest in the local community and environment.

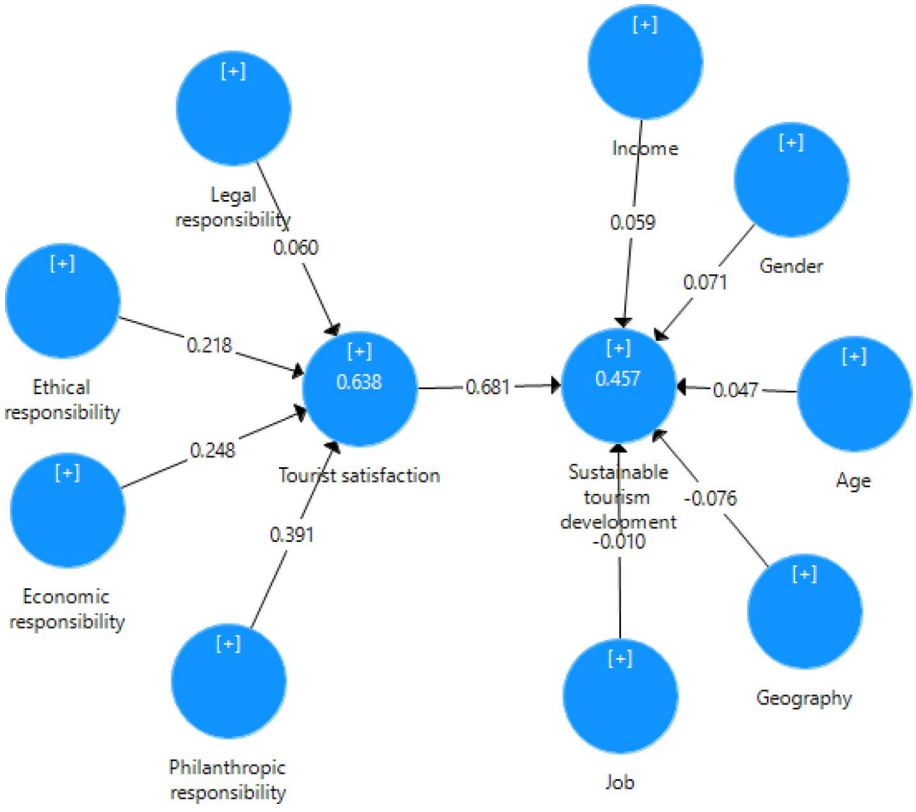

Fig. 2 PLS-SEM model estimation results.
Source: The author's research results

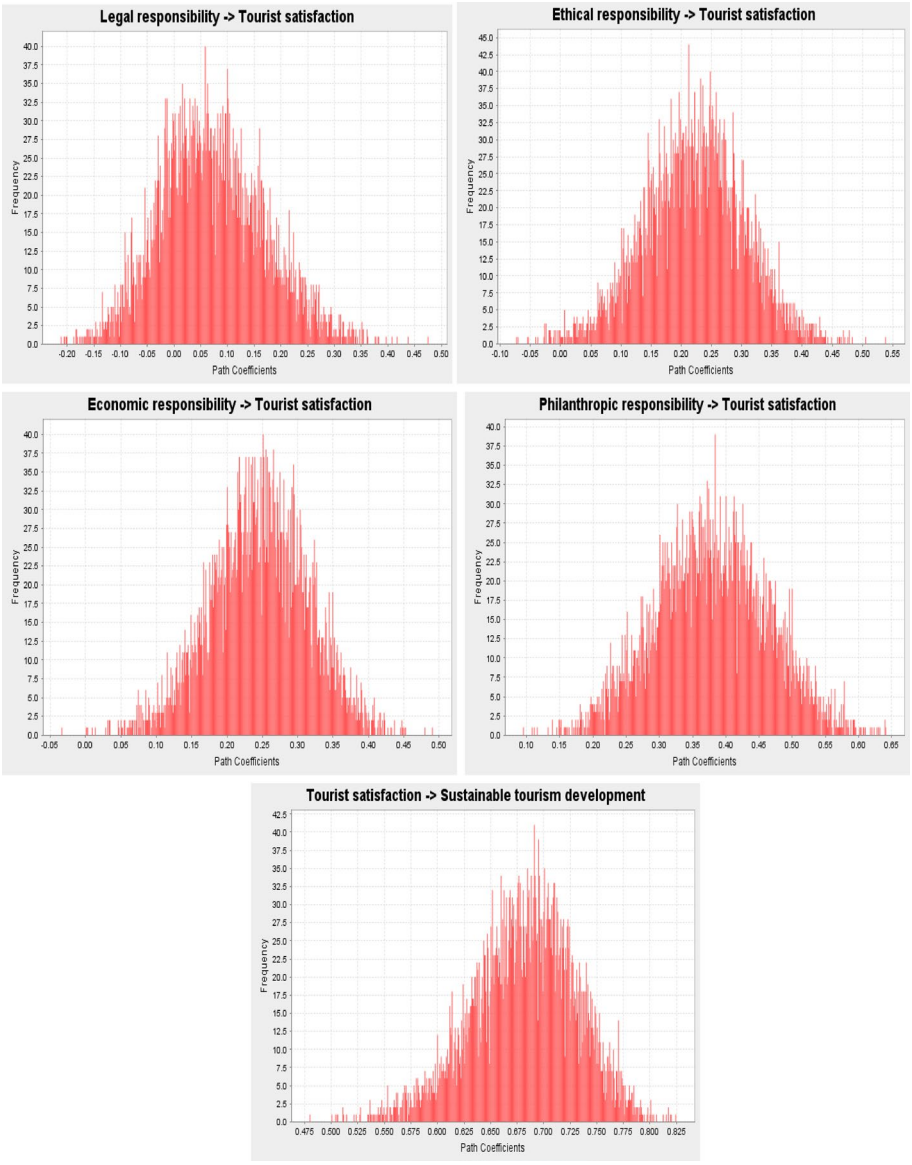

Fig. 3 Chart of direct path coefficients.
Source: The author's research results

Ethical responsibility (ETH) (β = 0.218; $p = 0.009$) is shown to have a positive effect on tourist satisfaction, although to a lesser extent. This finding is consistent with the conclusions of Martínez et al. [2] and UNWTO [28], which suggest that ethical behaviors—such as business transparency, respect for local culture, and adherence to environmental standards—are key to maintaining trust and support from the community. Le [18] also identified ethical responsibility as a critical factor, though with a stronger influence. This discrepancy may be attributed to the scope of previous studies, which often focused on a single locality or specific ecotourism contexts, whereas the present research covers the entire Mekong Delta region, where environmental awareness may vary across provinces.

Contrary to expectations, the legal responsibility factor (LEG) does not have a significant impact on tourist satisfaction (β = 0.060; $p = 0.542 > 0.05$). This finding contradicts some previous studies such as the research by Dang & Ali [8], where businesses that

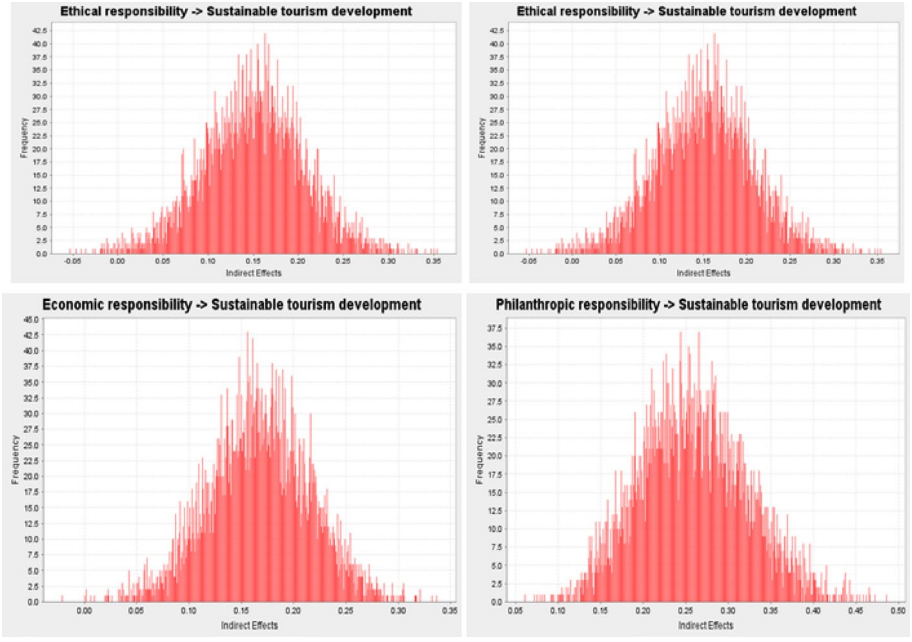

Fig. 4 Chart of indirect path coefficients.
Source: The author's research results

comply with legal regulations in their operations consistently receive strong support, thereby enhancing tourists' satisfaction with the destinations. This difference can be explained by the fact that businesses here have not yet genuinely and voluntarily complied with the legal regulations during their business operations. Although legal responsibility is a key pillar of CSR, the study found that it has no significant impact on tourist satisfaction in the Mekong Delta. This may be attributed to the fact that many businesses in the region do not proactively or voluntarily comply with legal regulations, but rather do so reactively or superficially. Moreover, legal compliance is often not directly visible in tourists' experiences, making it difficult for them to recognize or evaluate. In addition, a lack of transparency and consistency in law enforcement at the local level may further diminish tourists' perception of its value. Therefore, to enhance the role of legal responsibility in sustainable tourism, it is essential to foster a culture of voluntary compliance and improve transparency in destination governance.

At the same time, this finding suggests a noteworthy perception gap: although businesses may indeed be complying with legal regulations, such compliance is not necessarily recognized, perceived, or valued by tourists as a meaningful part of their travel experience. This gap indicates that legal compliance—if lacking transparency or effective communication—may fail to translate into positive customer perception. Moreover, it may also reflect a lack of transparency in the implementation of legal aspects of CSR. When companies do not publicly disclose or demonstrate how they comply with regulations (e.g., environmental standards, safety measures, labor policies), tourists have no basis to evaluate such efforts, rendering legal responsibility virtually "invisible" in their perception. This is particularly relevant in the tourism industry, where emotional experiences, tangible services, and ethical behaviors are more readily recognized than abstract legal commitments. Therefore, it can be concluded that a genuine gap exists between corporate legal compliance and tourist satisfaction, and that a key cause may lie in the

lack of transparency and communication surrounding legal CSR practices in tourism enterprises.

5 Policy implications

Drawing from the findings, the study suggests several policy recommendations to provide tourism management authorities in the Mekong Delta with regional policy directions and strategies as follows:

First, ethical responsibility in CSR, demonstrated through transparency, honesty in business, respect for indigenous culture, and fair treatment of employees and the community, has been shown to positively influence sustainable tourism development in the Mekong Delta. This result suggests that ethical behavior not only builds a trustworthy corporate image but also helps strengthen social trust and improve the quality of tourist destinations. Therefore, local authorities need to encourage tourism businesses to comply with ethical standards by issuing a code of ethics for the tourism industry that aligns with the cultural and ecological characteristics of the Mekong Delta region; at the same time, organizing professional ethics training courses for the workforce in the sector. Additionally, support and incentive policies should incorporate ethical criteria as a mandatory condition to promote a culture of responsible business, thereby contributing to shaping a fair, civilized, and sustainable tourism environment.

Second, public policy should focus on promoting business models that create shared value, where enterprises ensure both financial efficiency and contributions to improving the quality of life for local communities. This requires regional authorities to prioritize support for tourism businesses that have strategies to reinvest in infrastructure, create stable employment, and link with local value chains (agriculture, handicrafts, services). At the same time, economic responsibility criteria such as financial transparency, use of local labor, and fair benefit distribution need to be integrated into the evaluation, licensing, and rating systems for tourism enterprises. Such an approach contributes to improving the sector's competitiveness but also ensures the sustainable and inclusive spread of economic value at destinations within the region.

Third, although philanthropic responsibility is not legally mandatory, it clearly reflects a company's social and ethical commitment to the local community. In the context of sustainable tourism development in the Mekong Delta, philanthropic activities such as sponsoring education, supporting livelihoods, preserving intangible cultural heritage, or assisting vulnerable groups can help spread humanitarian values, enhance social consensus, and strengthen the image of sustainable businesses. Therefore, local authorities should encourage tourism enterprises to implement philanthropic programs linked to the cultural and ecological characteristics of each locality, while integrating this content into recognition criteria, rankings, or regional brand communications. Additionally, establishing transparent mechanisms for reporting philanthropic activities will help build community trust and motivate social initiatives to develop systematically, thereby making a practical contribution to more inclusive and sustainable tourism development.

Fourth, sustainable tourism development in the Mekong Delta shows that positive tourist perceptions are a crucial bridge for transforming corporate responsibility behaviors into sustainable outcomes for destinations. Therefore, public policy needs to emphasize the role of tourist experience in evaluating the effectiveness of CSR implementation. Specifically, businesses should be encouraged to design tourism products

and services not only based on material benefits but also with attention to the ethical, cultural, and community values that tourists expect. In addition, feedback mechanisms and satisfaction measurement should be integrated into destination management tools, enabling authorities to monitor policy effectiveness and timely adjust tourism development activities towards a more friendly, fair, and sustainable direction.

In summary, growth is a key factor in creating both industrial and social value. These findings help tourism managers, tourism companies, and local authorities reconsider the overall framework to understand what and how to improve the operational efficiency of the tourism sector towards sustainable development in the Mekong Delta. From there, appropriate and practical policies and strategies can be developed for the common sustainable development of the tourism industry in the Mekong Delta. However, the study also acknowledges certain limitations, such as not expanding the research model towards a multidimensional and multilevel approach, and not testing the model in other regions to enhance generalizability and make a stronger academic contribution. The limitations of this study may stem from the use of a convenience sampling approach, which restricts the generalizability of the findings. Additionally, the study is context-specific to a particular region, and the results may not be transferable to other tourism settings. Therefore, future research should consider longitudinal data designs or qualitative methods (e.g., interviews with tourists or tourism managers) to triangulate the findings. The research model could also be extended to include variables such as destination image, trust, or perceived value for broader applicability in future studies.

Author contributions
Minh Tri Nguyen conceptualized the study and designed the methodology. Minh Tri Nguyen performed the numerical simulations and analyzed the results. Minh Tri Nguyen, Thanh Vu Dang, Van Nguyen Thi Cam and Duc Giap Pham contributed to the theoretical framework and provided key insights for the discussion. Minh Tri Nguyen wrote the initial manuscript, and all authors reviewed, revised, and approved the final manuscript.

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Data availability
The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate
The study was approved by the Research Ethical Committee of Van Hien University, and all procedures were carried out in accordance with relevant guidelines and regulations. A formal ethics approval document has been issued by the Research Ethical Committee of Van Hien University and can be provided upon request. The study involved survey participants who were tourists visiting destinations in the Mekong Delta. Their participation was entirely voluntary, and respondents were informed of the research purpose before data collection. No sensitive or personally identifiable information was requested. Informed consent was obtained from all participants prior to the survey, and respondents were assured of confidentiality and anonymity throughout the study.

Consent to publication
The authors affirm that the participants provided consent for their anonymized responses to be used for research and publication purposes. All findings are reported in aggregate form, ensuring that no individual respondent can be identified.

Competing interests
The authors declare no competing interests.

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