

Sustainable Ecotourism Development in the Context of ASEAN Economic Community Integration: The Study of Phu Yen Province, Vietnam

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Abstract. The aim of this study is to explore the factors affecting sustainable ecotourism development in Phu Yen province within the context of the ASEAN Economic Community (AEC) integration. Using a combination of qualitative and quantitative methods, the authors conducted a field survey of 500 tourists and experts/managers in the field of tourism to identify six factors impacting sustainable ecotourism development: Destination image, Community participation, Visitor satisfaction, Natural environment, Culture-society, and Tourism policy. Through data processing using reliability analysis (Cronbach's alpha), Exploratory Factor Analysis (EFA), and Structural Equation Modeling (SEM), the authors found that tourism infrastructure and utilities impact sustainable ecotourism development through the intermediate factors of Destination image and Visitor satisfaction. Notably, this study adds a new factor, "Socio-Culture," which has a significant impact on sustainable ecotourism development. The findings of this study provide scientific and practical guidance to authorities, managers, and tourism enterprises in Phu Yen province for developing sustainable ecotourism policies within the context of AEC integration. The study's results differ from other studies and challenge the assertion of the Vietnam National Administration of Tourism (2020). Overall, the study provides valuable insights into sustainable ecotourism development in Phu Yen province and contributes to the literature on ecotourism and sustainable development.

Keywords: Sustainable ecotourism, ecotourism, sustainable tourism, Phu Yen tourism, Vietnam tourism

1. Introduction

Tourism has gradually become a significant economic sector in recent years in many countries, including Vietnam. The number of international tourists in 2019 reached nearly 1,5 billion, up 3,8% compared to 2018, higher than the global economic growth of 3% (UNWTO, 2021). According to the Vietnam Tourism Annual Report 2019, Vietnam's tourism welcomed over 18 million international visitors, up 16,2%; served 85 million domestic visitors, up 6%; total tourism revenue reached 755 trillion VND, up 18,5% compared to 2018 (Vietnam National Administration of Tourism, 2020).

Establishing the ASEAN Economic Community (AEC) in 2015 creates opportunities for Vietnam and ASEAN countries to increase revenue and motivate local economic growth. However, the requirements for the quality of tourism services are growing, requiring tourism businesses to enhance visitor satisfaction, and develop tourism in a sustainable way, especially for ecotourism.

Sustainable ecotourism development is recently also an area of research interest, both domestically and internationally, but there are many limitations that the author can exploit in this study.

Firstly, some studies go into forecasting the development trend of the ecotourism industry as the report of the World Tourism Organization shows that ecotourism is the fastest growing sub-sector in tourism activities (UNWTO, 2021). On the other hand, some others go into clarifying the concept and nature of ecotourism and apply how to develop sustainable ecotourism; however, there are still many disagreements, most of which are qualitative studies offering solutions to develop ecotourism in some localities, such as Ba Vi (Nguyet, 2012), North Central region (Hanh, 2011). This is a limitation of most of the studies on sustainable ecotourism that the author thinks can be exploited, so the author will develop a quantitative research model to measure specific factors and concretize solutions compared to qualitative studies.

Secondly, there are also a number of quantitative studies; however, these studies only indicate factors affecting tourism or ecotourism development without paying attention to sustainable development and also the issue of AEC integration (Nhan, 2015; Nhan and Khoi, 2016). Up to the present time, there have been very few research topics on tourism development in the context of AEC integration. There are only studies on tourism development in the context of general world integration (Luong, 2015; Tu, 2006). Moreover, there is also a research topic on sustainable tourism development in Vietnam in competition with ASEAN countries but also only qualitative research (Cuong, 2015). This is a major research gap that the author aims to exploit to the fullest potential of tourism and contribute quantitative solutions to sustainable ecotourism in Vietnam in the context of AEC integration.

Thirdly, Phu Yen is a prominent province in Vietnam that has a lot of potential for ecotourism development, but still reveals many limitations in the process of AEC integration. The research and development of sustainable ecotourism in Phu Yen is reasonable and urgent.

According to the Department of Culture, Sports and Tourism of Phu Yen province (2020), it is expected that in 2022, Phu Yen will welcome 2,2 million visitors, 5,9 times higher than in 2021. However, transport infrastructure, conservation and promotion of the value of monuments and landscapes, services at destinations, and state management of investment have not met the needs of tourists well, including tourists from ASEAN countries (Department of Culture, Sports and Tourism of Phu Yen province, 2020). In the context countries in the ASEAN region such as Thailand, Indonesia, Malaysia, etc have done very well in developing ecotourism, creating more competitive pressure for Vietnam in general and Phu Yen in particular when integrating with the AEC.

From the above analysis, it can be seen that there are still many factors that need to be quantified and individualized solutions for sustainable ecotourism development, especially in the context of AEC integration in Vietnam. Therefore, the authors decided to conduct research to address the following questions: (1) What factors affect the destination image and visitor satisfaction? (2) What is the level of impact of those factors? (3) Determine the relationship between destination image, satisfaction, and sustainable ecotourism development in the context of AEC integration. (4) What are the proposals to

promote sustainable ecotourism development?

2. Literature Review, Hypothesis Development, and Research Model

2.1 Literature review

2.1.1. Ecotourism

There are many different concepts of ecotourism. Ceballos- Lascurain (1988) argues that ecotourism is about visiting relatively wild or intact natural areas with the specific purpose of studying and contemplating the landscapes and wildlife that live there, as well as all the cultural activities (past and present) that can be observed in this area. Meanwhile, Ziffer (1989) states that ecotourism is a form of tourism inspired by the natural history of a region, especially the indigenous culture there. This concept pays attention to all three subjects not only tourists but also related to the local community and managers.

The International Ecotourism Society (TIES, 2015) defines ecotourism as “Responsible travel to natural areas that conserve the environment, maintain the well-being of people, including interpretation and education”.

In Vietnam, the National Administration of Tourism (2011) has given the definition of ecotourism: “Ecotourism is a type of tourism based on nature and indigenous culture, associated with environmental education, contributing to conservation efforts and sustainable development, with the active participation of local communities”.

The authors stands on the view of ecotourism as a type of tourism and a type of business to have a more comprehensive view. From that point of view, the author said: "Ecotourism is both a type of tourism and a developed business type based on the attractive values of nature and indigenous culture; meet the satisfaction of tourists while protecting the environment, contributing to the conservation and improvement of life for local people".

2.1.2 Sustainable tourism

The concept of sustainable tourism has emerged with the goal of reducing the negative impacts of tourism activities, which has been widely accepted as an appropriate approach for tourism development (Sharpley, R., 2003).

According to the World Tourism Organization (UNWTO, 2005): “Sustainable tourism is a type of tourism that meets the current needs of tourists and destinations while ensuring and improving resources for the future. Sustainable tourism leads to a way of managing all resources to meet economic, social and aesthetic needs and to preserve the integrity of culture and living environment”. The purpose of sustainable tourism is to strike a balance between protecting the environment, maintaining cultural integrity, promoting economic benefits, meeting people's needs for improved living standards both in the short and long term (Liu et al., 2013).

From the above concepts, in this study, the author considers sustainable tourism to be a type of tourism that not only tourists but also the community at the destination must be responsible for ensuring long-term economic, cultural - social and environmental benefits for the local community at the destination and satisfaction for tourists.

2.1.3 Sustainable ecotourism development

Sustainable ecotourism is one of the most developed types of tourism nowadays. However, there are still many different notions about the concept.

According to Stone (2002), sustainable ecotourism is defined as tourism that requires a high level of human responsibility in relation to “positive contributions to the conservation and/or improvement of host community welfare”. Some other points of view are that sustainable ecotourism is a type of tourism that is consistent with the social-environmental goals and enhances the biomass of the locality (Gibson et al., 2005; Garraway, 2005). Bhuiyan et al. (2012) showed that sustainable development can

occur simultaneously between ecotourism and regional development in an area. The scale of ecotourism development refers to the balancing of environmental, economic and social aspects of tourism development in order to maintain its long-term sustainability along with regional development.

From the above perspectives, the authors consider that sustainable ecotourism development is sustainable development activities based on ecotourism and balance environmental, economic and social aspects of tourism development to maintain its long-term sustainability.

2.1.4 Sustainable ecotourism development in the context of integration into the ASEAN Economic Community (AEC)

The ASEAN Economic Community (AEC) was officially established on December 31, 2015 in order to promote equitable economic development and establish a highly competitive economic region that with this competitiveness, ASEAN can fully integrate into the global economy (Vietnam Chamber of Commerce and Industry - VCCI, 2016).

Participation in the AEC has many advantages and challenges for Vietnam's tourism industry:

Firstly, ASEAN is a major tourism market with more than 600 million people, 11 natural heritages and 17 world cultural heritages have been recognized by UNESCO. In 2017, the growth rate of international tourists to ASEAN increased by 8% compared to 2016; among ASEAN countries, Vietnam is the country with the highest growth rate (more than 28%) (UNWTO, 2018), showing that taking advantage of the large number of tourists in the bloc will bring high economic efficiency.

Secondly, adverse factors still exist in parallel, including external factors (risk of economic crisis; political security situation; uneven level of economic development among countries in the region...); stronger competition from the integration process; challenges in managing and responding to crises related to foreign factors; the most sustainable risk of tourism development is ecological tourism, etc.

Therefore, this is an excellent and macro study aspect that the authors aim at, contributing to raising the local economy from sustainable tourism development.

2.2 Proposed model

Drammeh (2014) in the study of the perception of managers of small and medium enterprises on sustainable tourism development in less developed countries, pointed out 3 impacts on sustainable tourism development including tourism capital (environment, nature, culture - society, human resources), the needs and interests of local communities and groups of products, facilities and services. Research by Rodríguez Díaz and Espino Rodríguez (2016) identified the key factors for achieving the sustainability of a tourism destination, highlighted the impact of variables on environmental resources, tourism supply chains, governance of the destination, as well as security aspects.

A study by Tseng et al. (2019) indicated that community participation is a causal attribute affecting the potential for ecotourism. Management factors, ecosystem activities based on the natural resources of the regions and the cooperation between stakeholders, governments and local communities to develop ecotourism also proved to be crucial. Wondirad et al. (2020) suggested that poor interaction and cooperation between ecotourism stakeholders will impair ecotourism and jeopardize the long-term survival of the ecosystem itself and the community.

Biswas et al. (2020) consider the relationship between destination attributes and tourist satisfaction. As a result, the attributes of the destination (accommodation, attractions, refreshments, and transportation) except for safety significantly affect the satisfaction of tourists.

Many domestic studies also point out factors related to sustainable ecotourism development. The study of Anh and Hieu (2020) showed that social participation has the strongest impact on sustainable tourism development, followed by state management capacity, quality of tourism services, quality of tourism human resources, development of infrastructure, tourism facilities and tourism resources. De et al. (2020) identified institutional, tourism development policies, infrastructure, tourism resources, and local communities that strongly impact the region's sustainable tourism development in Central of

Vietnam. Huyen and Binh (2020) conducted an assessment of the impact of destination image, satisfaction and loyalty of tourists in mountainous tourist destinations in Thanh Hoa province, Vietnam and identified natural features, human factors and infrastructure are key factors. On the other hand, the results of the study also prove that satisfaction has a significant impact on the loyalty of tourists.

From the case studies that the authors have synthesized, it can be seen that sustainable ecotourism development is affected by different factors. Based on the analysis of actual tourism conditions in Phu Yen as well as interviews with industry experts, the authors have drawn the most appropriate factors to include in the research model. Details are as follows:

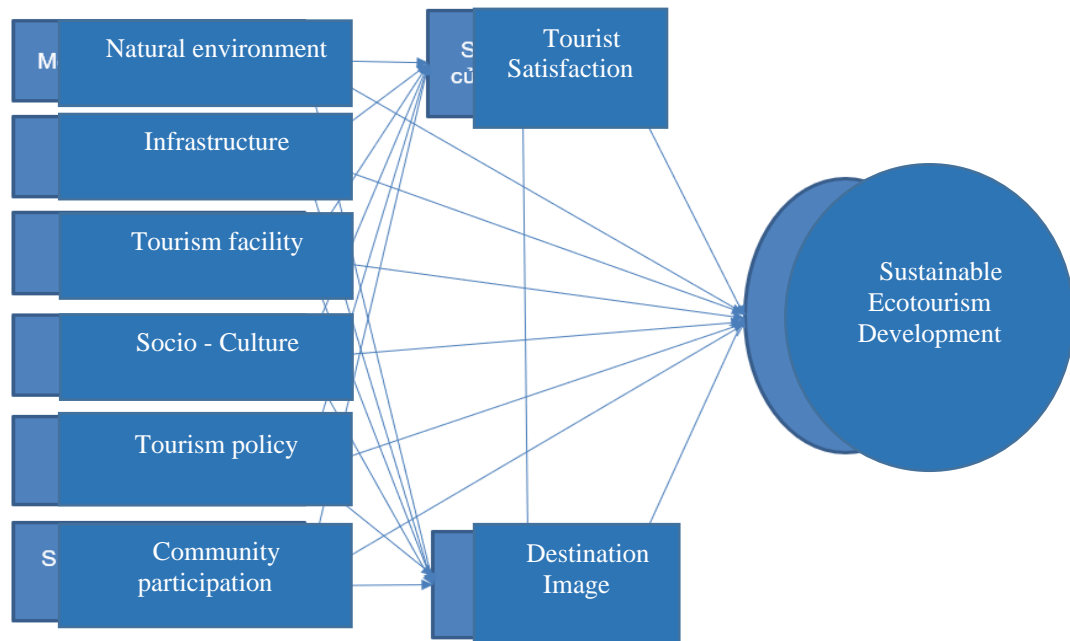


Fig. 1: Proposed research model

2.2.1 Tourist Satisfaction

Previous studies show that satisfaction refers to perceived differences between predictions and perceptions of post-consumption performance (Martín et al., 2018; Woyo & Slabbert, 2020). Satisfaction as an overall evaluation or positive attitude toward the image that the experiencer has about the whole activity (Sang-Won & Lee-Sang, 2021). Seung-Wan (2022) defines satisfaction means the state that customers feel satisfied or enough without shortage or the degree of decision maker's own favorable when judging something.

In the context of travel, satisfaction is largely based on the difference between pre-travel expectations and a traveler's post-travel experience. It evaluates the quality of the entertainment experience (Jiang et al., 2017). Tourists are satisfied when experiences against their expectations lead to feelings of enjoyment and vice versa when they lead to feelings of dissatisfaction (Chen & Chen, 2010; Yvette & Turner, 2003). Tourist satisfaction leads to an increase in the number of satisfied tourists returning and introducing others to the destination, thus promoting sustainable tourism development (Lee, 2009). Examining the relationship between tourist satisfaction and loyalty is key to proper promotion and sustainable tourism development (Valle et al., 2006), which is considered an important pillar of successful tourism business (Bernini et al., 2015). Therefore, the author hypothesizes this problem as follows:

H1: Tourist satisfaction impacts on sustainable ecotourism development in the same direction.

2.2.2 Destination Image

Ibrahim & Gill (2005) point out if a tourist destination image can prove its appeal and meet the expectations of tourists, they will likely achieve further satisfaction. An attractive destination image promotes the tourist experience and creates a satisfaction that encourages tourists to return (Sun et al., 2013; Lee, 2009; Lee & Syah, 2018). Sustainable tourism requires adequate use and management of resources to achieve economic, social and cultural needs while maintaining social, cultural integrity, ecological processes as well as biodiversity for the present as well as for future generations. Therefore, the author hypothesizes this problem as follows:

H2a: Attractive destination images impacts on tourist satisfaction in the same direction.

H2b: Attractive destination images impact on sustainable ecotourism development in the same direction.

2.2.3 Natural environment

Lin et al. (2007) have shown that natural features include aspects of the natural landscape, environment, atmosphere and weather at tourist destinations. For tourism in general or ecotourism in particular to develop, it is necessary to pay attention and control with a green and clean environment to ensure the long-term (Nishiyama & Terasawa, 2013; Trochidis & Bigand, 2015; Shrode, 2012). UNWTO (2005) also considers that the optimal use of natural resources is a key factor in tourism development and the maintenance of essential ecological processes and helps to preserve natural heritage and biodiversity are the core foundational concepts for sustainable development. From there, the author proposes the hypotheses as follows:

H3a: Natural environment impacts on destination image in the same direction.

H3b: Natural environment impacts on tourist satisfaction in the same direction.

H3c: Natural environment impacts on sustainable ecotourism development in the same direction.

2.2.4 Infrastructure

The basic physical systems of a business or country are called infrastructure. It includes administrations, telecommunications, transportation, utilities, and waste disposal facilities, which are crucial to a country's economic development and prosperity. The highly fragmented and complex structure of the tourism sector remains a key challenge in achieving consensus and developing consistent sustainable tourism strategies (Papatheodorou, 2004). The main objective of the tourism association should be to develop a continuous route for sustainable tourism mobility, in order to ameliorate the ability to travel smoothly, without problems and be environmentally friendly (Verbeek, Bargeman & Mommaas, 2011). The research hypotheses are as follows:

H4a: Infrastructure impacts on destination image in the same direction.

H4b: Infrastructure impacts on tourist satisfaction in the same direction.

H4c: Infrastructure impacts on sustainable ecotourism development in the same direction.

2.2.5 Tourism Policy

Tourism policy is unlikely to be conducted individually and as part of a wider planning process, including material and economic plans, alongside social and cultural programmes (Kong & Yeoh, 2003). Where policies are effective, destinations are more likely to succeed in sustainable ecotourism development (Bramwell, 2011). Effective government policies will also benefit the industry in terms of attracting international investment and facilitating the movement of tourists at home and abroad (Crouch & Ritchie, 1999). The research hypotheses are as follows:

H5a: Tourism policy impacts on destination image in the same direction

H5b: Tourism policy impacts on tourist satisfaction in the same direction.

H5c: Tourism policy impacts on sustainable ecotourism development in the same direction.

2.2.6 Socio - Culture

Yaprak (2008) defines culture as “the values, beliefs, norms, and behavioral patterns of a group of countries”. The individual attitudes - often influenced by culture - play an important role in understanding the perspectives of people and other stakeholders on sustainable tourism (Chen & Jim, 2010; Liu, Ouyang & Miao, 2010). Furthermore, cultural and heritage priorities are reflected in sustainable development approaches (Zhao et al., 2011). Many studies emphasize that socio-culture including cuisine, handicrafts, languages, customs, belief systems, etc. have an effect on destination attractiveness and satisfaction (Crouch & Ritchie, 1999). The research hypotheses are as follows:

H6a: Socio - Culture impacts on destination image in the same direction.

H6b: Socio - Culture impacts on tourist satisfaction in the same direction.

H6c: Socio - Culture impacts on sustainable ecotourism development in the same direction.

2.2.7 Tourism facility

Tourism facilities include features such as accommodation establishments, catering services, transportation, themed attractions, fast food outlets, pubs/bars and tour wholesalers, tour operators, travel agents, vehicle rental businesses, conference offices (Kaul & Gupta, 2009). Dwyer and Kim (2003), Crouch and Ritchie (1999) argue that destination utility is the most important factor in an international traveler's experience of a destination. Therefore, the following hypotheses are proposed:

H7a: Tourism facility impacts on tourist satisfaction in the same direction.

H7b: Tourism facility impacts on destination image in the same direction.

H7c: Tourism facility impacts on sustainable ecotourism development in the same direction.

2.2.8 Community participation

According to Lee (2013), community attachment and participation are important factors affecting the level of support for sustainable tourism development. In addition, Tseng et al. (2019) also suggested that community participation is a causal attribute affecting the potential for ecotourism and the support of local communities for conservation activities. Therefore, the following hypotheses are proposed:

H8a: Community participation impacts on visitor satisfaction in the same direction.

H8b: Community participation impacts on destination image in the same direction.

H8c: Community participation impacts on sustainable ecotourism development in the same direction.

3. Research Method

This study was conducted in three phases by qualitative and quantitative methods.

Phase 1: We used a qualitative study method and interviewed 10 tourism industry experts and also held group discussions to build a scale of factors from which to design a survey question for the preliminary inspection survey.

Phase 2: Preliminary research (qualitative and quantitative methods).

Quantitative preliminary research was conducted through face-to-face interviews with 100 tourists traveling to Phu Yen by questionnaires and selected by a convenient sampling method. These scales were adjusted through the main technique:

(1) Analysis of reliability coefficients was undertaken by the use of Cronbach's alpha which verifies the reliability of the scale, allowing the elimination of inconsistent variables in the research model. A scale has good reliability when it varies in the range of 0,7–0,8; if Cronbach's alpha coefficient is $\geq 0,6$, then the scale is acceptable; if a correlation coefficient $\geq 0,3$, then this variable is accepted (Nunnally & Bernstein, 1994).

(2) Analysis of discovery factors EFA determines observed variables and must have a factor loading

coefficient (factor loading) $\geq 0,5$, the total variance explained must reach a value of 50% or more and the eigenvalue must be (representing the variation explained by each factor) > 1 ; then the extracted factor has the best summary of information (Nunnally & Bernstein, 1994). Appropriate variables were included in the questionnaire for the official quantitative research.

Phase 3: Formal research (quantitative method).

The official study was conducted using a quantitative method through direct interviews with visitors using a formal questionnaire with $n = 500$; the study sample was valid according to the theory of Hair et al. (1998). This study used confirmatory factor analysis (CFA) to further confirm unidirectionality, scale reliability, convergence value and special value and to experiment with the structural equation model (SEM). If a model receives values GFI, TLI, CFI $\geq 0,9$, CMIN / $df \leq 2$ (in some cases, CMIN / $df \leq 3$) and RMSEA $\leq 0,08$ (RMSEA ≤ 0.05 is considered very good, then the model is considered to be suitable with market data or compatible with market data (Hair et al., 1998). Data were processed using SPSS and AMOS data analysis software.

4. Empirical Results

4.1 Descriptive statistics

Demographic survey results show that survey participants aged 26-35 account for the highest proportion of 41,4%. Meanwhile, the proportion of survey participants with male and female sexes was similar (57% of men, 43% of women). In terms of income, most people have an income of 11-20 million VND/month (36,2%). Of the 500 tourists interviewed, 37 were foreigners (including 14 from ASEAN countries). With survey sample data showing consistent with the overall reality and so survey results can be valuable.

Table 1: Sample statistics by demographic characteristics

Demography	Element	Quantity (people)	Percentage (%)
Age	18 – 25	44	8,8
	26 – 35	207	41,4
	36 – 45	109	21,8
	46 – 55	125	25,0
	> 55	15	3,0
Gender	Male	285	57,0
	Female	215	43,0
Occupation	Employee	196	39,2
	Student	31	6,2
	Manager	139	27,8
	Entrepreneur	51	10,2
	Others	83	16,6
Nationality	Vietnam	463	92,6
	Foreigner	37	7,4
	Foreigners from ASEAN countries	14	2,8
Income	<10 million	63	12,6
	11-20 million	181	36,2
	21-30 million	130	26,0
	> 30 million	126	25,2
Total		500	100,0

Source: Author's data processing

4.2 Reliability of measurement scale

The test results of the scales show that the Cronbach's Alpha coefficient of all scales is > 0,6 and the total variable correlation coefficient of the observed variables is > 0,3. Therefore, the variables all achieved reliability and were included in the subsequent analysis (Table 2).

4.3 Exploratory factor analysis (EFA)

Table 2: Results of EFA exploratory factor analysis

Code	Factors									α	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted	
	1	2	3	4	5	6	7	8	9				
CSDL2	0,899											0,840	0,927
CSDL3	0,898											0,861	0,922
CSDL1	0,875										0,940	0,864	0,922
CSDL4	0,867											0,835	0,927
CSDL5	0,824											0,798	0,934
CSHT2		0,873										0,808	0,908
CSHT1		0,849										0,819	0,906
CSHT5		0,839									0,925	0,815	0,906
CSHT3		0,836										0,789	0,912
CSHT4		0,807										0,794	0,911
BV5			0,882									0,794	0,888
BV4			0,820									0,770	0,892
BV1			0,814								0,911	0,761	0,894
BV3			0,777									0,774	0,891
BV2			0,748									0,778	0,891
SHL2				0,961								0,820	0,947
SHL3				0,928								0,909	0,919
SHL4				0,882							0,947	0,892	0,925
SHL1				0,829								0,871	0,931
MTTN5					0,816							0,688	0,864
MTTN4					0,781							0,722	0,857
MTTN2					0,777						0,882	0,703	0,861
MTTN3					0,764							0,732	0,854
MTTN1					0,742							0,747	0,850
VHXH2						0,926						0,828	0,909
VHXH1						0,878						0,875	0,894
VHXH4						0,868					0,929	0,798	0,919
VHXH3						0,831						0,835	0,907
TIDL1							0,830					0,776	0,844
TIDL3							0,813					0,745	0,855
TIDL4							0,806					0,751	0,852
TIDL2							0,775					0,730	0,860
CDDP4								0,848				0,752	0,862
CDDP2								0,818				0,758	0,860
CDDP1								0,805			0,891	0,750	0,863
CDDP3								0,798				0,776	0,853
HADD1									0,877			0,817	0,863
HADD4									0,849		0,902	0,792	0,869

Code	Factors									α	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
	1	2	3	4	5	6	7	8	9			
HADD2										0,806	0,752	0,884
HADD3										0,766	0,770	0,878
Total Variance											71,164	
KMO.											0,918	
Sig.											.000	

Source: Author's data processing

The results of the thematic discovery factor analysis show that the KMO coefficient = 0,918, the total variance coefficient extracted = 71,164 > 50%, the Bartlett test is statistically significant (Sig < 0,05) and any load factors are > 0,3. This shows that the results of factor rotation of independent and intermediate variables of the thematic value.

4.4 Confirmatory factor analysis (CFA)

Figure 2 shows that the results of CFA confirmation factor analysis are: Chi square / df = 1,144 < 2; TLI = 0,992; CFI = 0,993 (both > 0, 9); GFI = 0,927 (>0,8 is acceptable); RMSEA = 0,017 (<0,08). This demonstrates that the scale model of the factors is consistent with market data and that the scales achieve unidirectionality. Scale reliability is assessed by the coefficients: composite reliability (ρ_c), variance extracted (ρ_{vc}) and confidence number (α) - Cronbach's alpha.

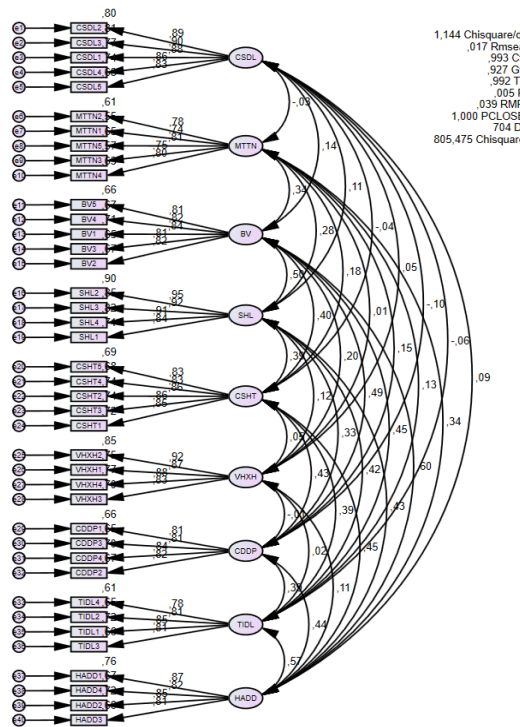


Fig. 2: CFA results critical measurement model (standardized)

Source: Author's data processing

The results of the reliability test by CFA (Table 3) show that the factors all have Cronbach's Alpha coefficient and the composite confidence coefficient are both > 0,6; the variance coefficient is > 0,5. This proves the scale to be highly reliable. For discriminant validity, if the correlation coefficients and the standard deviation between the components of a concept are all different from 1 and P < 0.05, then the scales have obtained discriminatory validity (Tho, 2014).

Table 3: Scale reliability test results by CFA

Measurement Scale	Number of observed variables	Cronbach's Alpha > 0,6	Reliability coefficient > 0,6	Variance Extracted > 0,5
Natural environment	5	0,882	0,883	0,602
Infrastructure	5	0,925	0,926	0,713
Tourism facility	4	0,885	0,886	0,660
Tourism policy	5	0,940	0,941	0,761
Socio - Culture	4	0,929	0,930	0,768
Community participation	4	0,891	0,891	0,671
Tourist Satisfaction	4	0,947	0,948	0,820
Destination Image	4	0,902	0,904	0,702
Sustainable Ecotourism Development	5	0,911	0,912	0,674

Source: Author's data processing

4.5 Structural equation modelling (SEM).

4.5.1 Tests for model fitness and hypotheses (SEM)

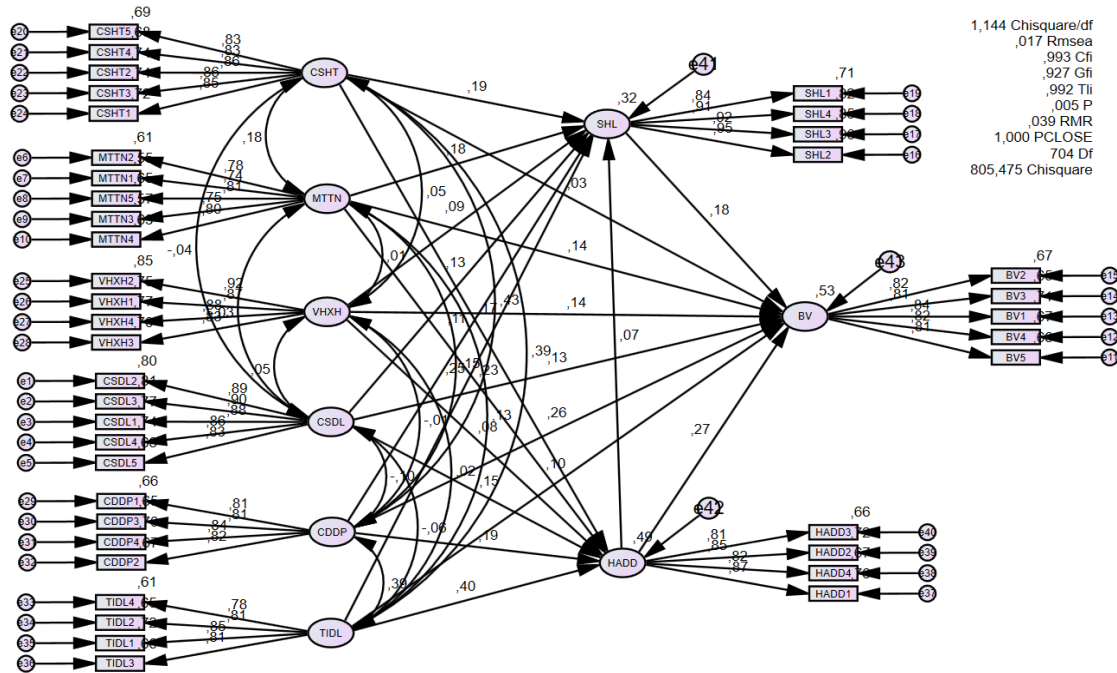


Fig. 3: Results of linear structure model (SEM) testing

Source: Author's data processing

The results of SEM analysis show that the model has a Chi-square statistical value of 805,475 with 704 degrees of freedom ($P = 0,000$); Chi-squared relative in degrees of freedom $1 < Cmin/df = 1,144 < 5$. Other measures of suitability meet $TLI = 0,992 (> 0,9)$; $CFI = 0,993 (> 0,9)$; $GFI = 0,927 (> 0,9)$; $RMSEA = 0,017 (< 0,08)$. The weights are satisfactory and conform to the standards proposed by Hu and Bentler (1999). From there, research is suitable for the market data set.

4.5.2 Hypothesis Test

Table 4: Regression Weights

Hypothesis	Relationship			Estimate	Standard Error (S.E)	Critical Ratio (C.R.)	Probability (P)	Conclusion
H4a	HADD	<---	CSHT	0,151	0,040	3,810	***	Accept
H3a	HADD	<---	MTTN	0,268	0,046	5,796	***	Accept
H6a	HADD	<---	VHXH	0,079	0,035	2,228	0,026	Accept
H5a	HADD	<---	CSDL	0,129	0,033	3,898	***	Accept
H8b	HADD	<---	CDDP	0,182	0,043	4,245	***	Accept
H7b	HADD	<---	TIDL	0,406	0,048	8,515	***	Accept
H2a	SHL	<---	HADD	0,075	0,062	1,201	0,230	Disapproved
H4b	SHL	<---	CSHT	0,168	0,044	3,812	***	Accept
H3b	SHL	<---	MTTN	0,205	0,053	3,868	***	Accept
H6b	SHL	<---	VHXH	0,087	0,039	2,236	0,025	Accept
H5b	SHL	<---	CSDL	0,121	0,037	3,253	0,001	Accept
H8a	SHL	<---	CDDP	0,105	0,048	2,185	0,029	Accept
H7a	SHL	<---	TIDL	0,260	0,057	4,567	***	Accept
H1	BV	<---	SHL	0,185	0,045	4,092	***	Accept
H2b	BV	<---	HADD	0,281	0,058	4,831	***	Accept
H4c	BV	<---	CSHT	0,026	0,041	0,647	0,518	Disapproved
H3c	BV	<---	MTTN	0,172	0,050	3,452	***	Accept
H6c	BV	<---	VHXH	0,139	0,036	3,846	***	Accept
H5c	BV	<---	CSDL	0,116	0,035	3,335	***	Accept
H8c	BV	<---	CDDP	0,254	0,045	5,582	***	Accept
H7c	BV	<---	TIDL	0,102	0,053	1,915	,056	Disapproved

***: $p < 0,001$

Source: Author's data processing

From the results of the inspection, the author removes the impact direction of the Destination Image variable on Tourist Satisfaction and the Tourism Facility variable, the Infrastructure variable with the Sustainable Ecotourism Development variable because the P value $> 0,05$ is not significant.

5. Conclusion and Managerial implications

5.1 Conclusion

From the analysis result, the authors draw some important conclusions:

Firstly, all 6 proposed factors are Tourism Facility, Infrastructure, Natural Environment, Tourism Policy, Community Participation and Socio - Culture all have the same dimensional impact on Tourist Satisfaction and Destination Image. This is fully appropriate when compared with previous studies that have involved Bernini et al. (2015), Crouch and Ritchie (1999), Lee (2015), Dwyer and Kim (2003); Crouch et al. (1999); Huyen & Binh (2020) etc... However, this research has also indicated a difference compared to the assertion of the Vietnam National Administration of Tourism (2020) and the study by Huyen & Binh (2020), which is the strong influence of factors such as Tourism facility, Infrastructure,

and Natural environment instead of Tourism policy as the main factor.

Secondly, the study asserts the important role of the Destination Image and Tourist Satisfaction in Sustainable Ecotourism Development, as well as demonstrates the positive impact of 4 proposed factors on sustainable ecotourism development, including Community Participation, Natural Environment, Socio - Culture and Tourism Policy. Simultaneously, the results also confirm the appropriate succession of factors in this study in Phu Yen compared to some previous studies such as Biswas et al. (2020), Vu et al., (2020), Drammeh (2014), Tseng et al. (2019). However, compared to some other studies such as Nguyet (2012), Vu et al. (2020), Vietnam National Administration of Tourism (2020), etc., this study has added a factor of "Socio - Culture", particularly the value of indigenous cultural community surrounding the ecotourism resource points in Phu Yen. The research results have shown that this factor has a strong impact on the sustainable development of tourism in Phu Yen. This can be considered a new point of this study.

Thirdly, Tourism Infrastructure and Facility, although not directly affecting sustainable ecotourism development, is one of the factors with the strongest impact on Satisfaction and Destination Image. This is a remarkable point for tourism businesses and Phu Yen provincial authorities in promoting sustainable tourism development through indirect factors.

The model explains about 71,2% of its meaning, the remaining 28,8% belongs to many other factors that the author has not discovered yet. This represents that for there are still many factors to learn in the next studies on sustainable ecotourism. The authors could only concentrate on studying a few notable ecotourism sites in Phu Yen in the actual context because of the relatively small research force, which led to a small number of survey samples, and has not included many guests. This also has the effect of making it difficult and insufficient to screen many visitors from the ASEAN region. This is a limitation of the study that needs to be improved in future studies.

5.2 Managerial implications

Based on the result of research, the author proposes the implications of sustainable ecotourism development for Phu Yen province in the context of AEC integration, applicable to state management agencies, localities as well as tourism enterprises wishing to invest in Phu Yen.

First, improving the value of the destination image for visitors

The average value of the Destination Image element is 3,4960, which is the highest of the nine elements but still just above average.

Phu Yen needs to implement the planning of tourist sites in a closed direction in accordance with the natural advantages and historical and cultural relics of tourist sites and the demands of many domestic and foreign tourists. The master plan highlighted of tourist areas should be associated with adjacent aquaculture areas, forming a unique feature in Phu Yen tourism, ensuring sustainable marine economic development.

Moreover, the authors propose that Phu Yen province should soon deploy to attract investment in a number of diverse ecotourism products with characteristics of Phu Yen such as typical landscapes, cuisine of Phu Yen; invest in restaurants serving foreign dishes, including dishes of ASEAN countries; well organize the annual Culture and Tourism Week, diversify activities, contribute to introduce and promote potential, stimulate demand, attract investment and create motivation for tourism development.

In addition, the province needs to focus on developing smart tourism products because the development of technology and self-sufficient tourism tends to increase. Deploying and applying a number of online tools (website, social network) to support visitors as well as applications in promoting, introducing destinations, answering questions and problems of tourists...

Second, promoting the active participation of the community in the development of ecotourism:

Community participation is the second highest level of influence on sustainable ecotourism development in Phu Yen province (beta-standardized = 0,259). However, the observation variable

People are interested in ecological environmental protection has an average value of 3,27, the lowest of the observed variables. Therefore, the province needs to:

Organize monthly cultural activities in the locality. In the program, content related to the benefits of participating in local tourism development must be integrated in the program. Proposing emulation movements for tourism development associated with commensurate rewards to motivate people to participate more enthusiastically.

Focus on developing models of community-based, agricultural and rural tourism in combination with natural environment protection in all 09 districts, towns and cities in the province; in which concentrated in Song Cau, Tuy An, Son Hoa. This type of tourism helps local people reduce poverty, enrich themselves in their homeland, towards sustainable tourism development.

Strengthening legal support, raising awareness, equipping tourism business skills and knowledge for organizations and people to invest in tourism development in the locality.

Third, protecting and promoting the natural environment, raising public awareness of environmental protection and tourism resources:

The average value of the natural environment factor is 3,4220, which is above average. Therefore, Phu Yen needs to focus on developing the following factors:

The government has clear and strict sanctions for the destruction of primary forests and wild animal fishing, ensuring the integrity and ecological diversity of Phu Yen.

Organize in-depth research groups applying scientific and technical advances to investigate, evaluate, classify and manage natural resources for tourism development in the province. At the same time, the province builds wastewater treatment stations, wastewater collection systems from tourist spots and neighboring households to ensure the local environment.

When approving investment projects and tourism development projects related to natural factors, it is necessary to give reasonable consideration, especially to assess the immediate as well as long-term environmental impacts in accordance with the law.

Fourth, strengthening the promotion of unique features, and characteristics of Phu Yen culture and people to attract tourists:

Socio-Cultural factors have a high degree of influence on sustainable ecotourism development in Phu Yen province (beta-standardized = 0,141). Compared to many studies in Vietnam, this factor has been added to the study in connection with community culture. It can be considered a new discovery in this study.

Therefore, Phu Yen should focus on promoting typical cultural tourism products such as relics, festivals, local lifestyles, traditional occupations, culinary culture; improve the quality of cultural presentations in tourism through social networks, local newspapers.

Organize weekly/monthly/quarterly folk art performances typical of Phu Yen at some eco-tourism sites in the province.

The province annually reviews and plans funding for the restoration, embellishment, restoration, recognition and protection of historical relics, scenic spots, religious and belief establishments, etc.

Fifth, improving tourism management policies and promoting regional linkages in the context of AEC integration:

The Tourism policy group is one of the factors with the lowest survey average score, only reaching 3,2420. The above results show that tourists do not appreciate tourism policies in Phu Yen province.

Branches and localities need to advise on signing and promoting cooperation in state management; developing a plan to link and cooperate in tourism development with the provinces and cities in the country that have signed or with localities that have the ability to open tourism routes to Phu Yen, connecting passenger organizations to Phu Yen, especially in ASEAN countries.

Supplementing and strengthening destinations with propaganda signs on sustainable ecotourism development and environmental protection. Regularly inspecting, checking and strictly handling violations of non-listing/listing unclear prices and quality of goods at tourist destinations.

Sixth, investing, upgrading and completing infrastructure, technical facilities and tourism facilities to serve the development of ecotourism:

Phu Yen needs to prioritize the budget for investment in infrastructure development in tourist areas and national tourist attractions, especially at Da Dia Reef, Xuan Dai Bay, Hon Yen; infrastructure investment projects must be identified in accordance with tourism development orientation, avoiding spreading investment.

Upgrading the airport; opening new routes from Phu Yen to some major provinces and cities in the country and towards some ASEAN countries; renovating and upgrading railways and promoting the construction of highways from Phu Yen to the Central Highlands; investing in rest stops on road tourism routes.

Focusing on investing in infrastructure, equipment and human resources to serve the digital transformation of the tourism industry; building a digital database system of the tourism industry and connecting data with other industries.

Seventh, training and developing human resources for tourism:

According to the results of data processing, the observed variables related to human resources only average from 3,49 -3,52, which is above average. Therefore, Phu Yen province needs to focus on the following directions:

In 2023, the province will conduct an overall survey and assessment of the province's tourism human resources in order to develop a plan for training, retraining and supplementing human resources in line with the tourism development requirements of the province. province in the period of 2024-2030.

Create favorable conditions for universities and colleges in the province to organize training courses, fostering professional skills and skills in tourism for management staff and tourism workforce. in the province in terms of communication skills, foreign language proficiency and expertise to serve tourists more professionally.

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