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## Research on factors affecting the development of sustainable community tourism in Thai Nguyen province, Vietnam – An approach from the perspective of the local community

 Nam Danh Nguyen<sup>1\*</sup>,  Lan Ngoc Thi Uong<sup>1</sup>

<sup>1</sup>Thanh Dong University, Hai Duong province, Vietnam.

Corresponding author: Nam Danh Nguyen (Email: [namnd@thanhdong.edu.vn](mailto:namnd@thanhdong.edu.vn))

### Abstract

The study aims to explore the factors affecting sustainable community tourism development in Thai Nguyen province in Vietnam from the perspective of the local community. Utilizing the Delphi method and PLS-SEM quantitative analysis, results from 204 survey samples reveal that sustainable community tourism development in Thai Nguyen province is influenced by economic, socio-cultural, environmental, local community involvement, human resources, policy, attractiveness, and tourism carrying capacity. Economic, environmental, and socio-cultural factors play particularly crucial roles. This research contributes to the literature on sustainable community tourism development and offers valuable practical implications for local authorities and tourism enterprises in creating effective development policies.

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### 1. Introduction

In recent decades, “sustainable tourism” has emerged as a significant concept, encompassing both academic discourse and practical tourism development across countries and localities [1]. Sustainable tourism plays an essential role in alleviating poverty in vulnerable communities [2]. The involvement of local communities in planning and implementing tourism development strategies is key to achieving sustainability in tourism [3].

Community tourism, a pivotal aspect of sustainable tourism, serves as an alternative approach to sustaining tourism development in developing countries [4]. This development model centers on empowering local communities to manage and participate in tourism activities [5]. By doing so, it creates job opportunities, increases income, and fosters greater awareness of preserving and enriching local tourism resources [6].

Thai Nguyen, a northern province in Vietnam's mountainous midlands, boasts a rich history and unique cultural heritage. Known for its revolutionary traditions and diverse ethnic minorities, Thai Nguyen possesses significant potential for developing community tourism. However, inadequate infrastructure and spontaneous tourism approaches have hindered its growth, leaving much of the area's potential untapped [7].

Many previous studies have attempted to study the factors affecting the development of community tourism with an approach from the participation of local communities [6, 8, 9] by many methods, such as qualitative research methods through in-depth interviews to explore, or surveys using questionnaires of local people with quantitative research. However, most of the previous research conducted in community tourism destinations has been exploited and well-developed. This study distinguishes itself by examining the context of Thai Nguyen, where tourism remains nascent, and resource values are underutilized for community tourism development [10]. More importantly, to the best of our knowledge, studies approaching the perspective of local community participation in this context are still relatively few, even though local people are the subject of community tourism development plans. The involvement of local communities is fundamental to the success and sustainability of any tourism type [11]. Therefore, the study aims to explore the factors affecting sustainable community tourism development from the perspective of local communities in Thai Nguyen province. Thus, we proposed the following research questions:

- What factors influence sustainable community tourism development in Thai Nguyen province?
- How can this research support the government, enterprises, and communities in promoting sustainable development in Thai Nguyen?

This study emphasizes the necessity of a comprehensive strategy that safeguards the environment, preserves cultural values, and improves local living standards.

## **2. Literature Review and Research Model**

### *2.1. Community Tourism*

With characteristics associated with each separate residential community and depending on geographical location, the perspective of community tourism approaches from different angles. Studies on community tourism mainly focus on small-scale tourism activities stemming from the association of households living in a specific tourist destination to take advantage of natural tourism resources, humanistic values, indigenous cultural customs and practices to attract tourists to create a source of tourism income and promotion of local livelihoods Rozemeijer et al. [12] and Ashley and Haysom [13]. Hausle and Strasdas [14] have affirmed the crucial role of local communities in tourist destinations in the management process, implementing and developing community tourism. In addition, local people have also received economic benefits from community tourism activities.

Community tourism is developed based on the community's cultural values, owned, managed, coordinated, and operated by the community to preserve traditional cultural values and natural and artificial cultural heritage resources. At the same time, it creates sustainable economic value and prosperity for the local community in the tourist destination [15]. Moreover, community tourism creates jobs and raises incomes. It reduces poverty and boosts development at tourist spots [16].

In this study, community tourism is defined as a model where local communities actively participate in providing products and services to tourists, directly benefiting from economic gains. It is vital to affirm local communities' roles in preserving and promoting traditional culture and nature at tourist destinations.

### *2.2. Sustainable Community Tourism Development*

Previous sustainable tourism research has called for the promotion of community tourism as a means of achieving sustainable development goals. Because of its potential to benefit local people while minimizing the negative consequences of tourism [17]. Therefore, sustainable community tourism development is a part of sustainable tourism development. It is a form that aims to meet current needs without affecting or creating potential risks affecting the needs of future generations. The sustainable tourism development model refers to the responsible use of natural and humanistic tourism resources and aims to preserve intact current values [18]. Sustainable tourism development is considered a multi-sectoral model, and various issues about politics, economic development, environmental issues, social factors, the structure of the international tourism system and so on [19]. Approaching from the perspective of development goals, Camilleri [20] believes that sustainability community tourism focuses on maximizing economic benefits, stabilizing the lives of local communities, protecting the tangible and intangible resources of the community and providing high-quality educational experiences for tourists.

Sustainable tourism incorporates economic, social, and environmental dimensions [21]. The economic dimension includes the flow of money into the local community and the profits of local businesses derived from tourism. The social aspect includes internal actions and interactions between tourists and the local community at the destination. The environmental refers to activities to preserve the natural environment in the community. The last state is the intersection of the economy - society - and environment, which is achieving core sustainability for tourism development in general and community tourism development in particular [22].

Recent studies highlight the importance of integrating political, economic, social, technological, environmental, and legal factors into sustainable tourism strategies [23]. Although the context differs, these findings offer valuable insights for Thai Nguyen destination.

### *2.3. Research Models and Hypotheses*

The basic theories used to build the research model are the sustainable development theory, community tourism theory, social exchange theory (SET), and stakeholder theory.

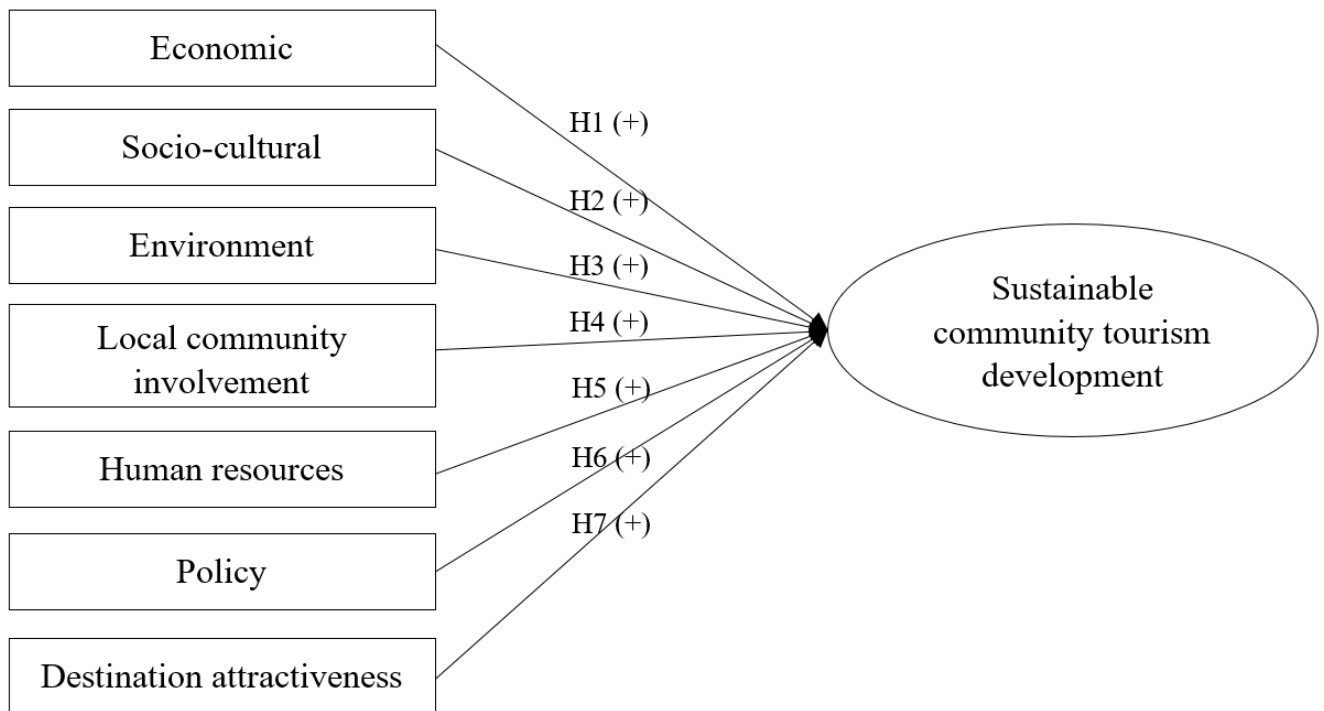
Sustainable development theory relates to the principle of meeting human development goals while at the same time sustaining the ability of natural systems to provide the natural resources and ecosystem services upon which the economy and society depend [24]. This theory emphasizes a positive transformation trajectory anchored on social, economic, and environmental factors [25].

Local community involvement is crucial for the community tourism model [26]. Community tourism theory indicates that community participation ensures democracy because local people are most affected by accessibility and use local values for sustainable tourism development [27].

Complementing the sustainable development and community tourism theories in this study is the social exchange theory (SET). SET refers to a mutually beneficial voluntary exchange between two parties [28]. Based on the SET's explanation, the local community will actively participate if they see benefits from community tourism.

Stakeholder theory is applied in sustainable tourism development through stakeholders' identification and their roles in tourism development. According to Byrd [29], stakeholders include local communities, governments, tourists, and enterprises. Stakeholder participation is a requirement, and strong political leadership and development policies ensure broad participation to build consensus among the parties.

The concept of sustainable tourism development originates from the general concept of sustainable development and forms based on three key factors: economic, environmental, and socio-cultural aspects [30-33]. Based on the underlying theories and referring to studies on sustainable tourism development combined with community tourism perspectives and the Global Sustainable Tourism Council (GSTC) set of criteria for sustainable tourism development, the Barometer of Sustainability was proposed by Prescott-Allen [34]. In addition, the study also conducted a group discussion and interviewed several experts in the field of tourism using the Delphi method to select factors affecting sustainable community tourism development in Thai Nguyen province. The results selected factors including economic, socio-cultural, environmental, community participation, tourism human resources, policy and attractiveness. As a result, the proposed research model is shown in Figure 1 as follows:



**Figure 1.**  
Research model.

Economic related to community tourism development promotes continuous economic growth and maintains a level of stability over a long period, helping to create jobs for local communities in tourist destinations, improve lives, increase incomes, and reduce unemployment from economic benefits based on available tourism resources, which a view to protecting these resources Nguyen and Nguyen [33]. Biddulph and Scheyvens [35] highlighted that the equitable distribution of economic benefits among community groups has a crucial positive impact on sustainable tourism in Southeast Asian countries. Moreover, Gohori and Van Der Merwe [36] analyzed community tourism models in Africa, showing that the economic benefits of tourism create incentives for the preservation of culture and natural resources. Based on the above discussion, the following hypothesis could be started:

*Hypothesis 1 (H1): Economic factors will be positively associated with sustainable community tourism development.*

Socio-cultural refers to the development of community tourism to create conditions for the community to voluntarily preserve and protect the traditional values, customs, and practices passed down from generation to generation in that destination, Truong [32]. Gohori and Van Der Merwe [36] show that the exploitation of local cultural values contributes to raising the awareness of tourists and the community about the importance of heritage conservation while creating a stable

source of income. Nguyen et al. [37] research in mountainous community tourism villages in Northern Vietnam indicates that the preservation and promotion of local cultural values play an important role in attracting tourists and promoting sustainable tourism development. Based on the above discussion, the following hypothesis could be started:

*Hypothesis 2 (H2): Socio-cultural will be positively associated with sustainable community tourism development.*

The environment refers to the conservation and preservation of tourism resources, aiming to minimize the impact on the flora and fauna ecosystems at the destination [32]. Studies by Weaver et al. [38] and Vu and Dang [39] emphasize that protecting natural ecosystems helps sustain resources in community tourism destinations while enhancing the quality of tourists' experiences. In studying homestay tourism models in the Central Highlands, Dang [40] found that environmental initiatives, such as reducing plastic waste and recycling domestic wastewater, positively impact tourism quality and increase income for the community. Based on the above discussion, the following hypothesis could be started:

*Hypothesis 3 (H3): Environment will be positively associated with sustainable community tourism development.*

Local community involvement has been widely recognized as an effective mechanism for promoting sustainable tourism development at destinations [41, 42]. The participation of local communities in tourism development is a dynamic process, beginning with their awareness of the roles and benefits of tourism for themselves and their locality and extending to their engagement in various tourism activities across different forms, levels, and durations [8]. Since tourism activities occur within the community and have positive and negative impacts on its members, the local community is considered a fundamental component for ensuring sustainable tourism development [19]. The studies of Khalid et al. [22] and Tran and Hoang [43] have found a positive correlation between community participation and sustainable tourism development. Moreover, the direct involvement of communities in decision-making processes has been shown to contribute to increased income generation, cultural preservation, and the maintenance of social harmony [38]. Based on the above discussion, the following hypothesis could be started:

*Hypothesis 4 (H4): Local community involvement will be positively associated with sustainable community tourism development.*

Community tourism is a type of development and ownership by people/residential communities, serving tourists from eating and resting to tourism activities and products. Therefore, human resources in this type of tourism are mainly human resources of the community and residents; the State and enterprises can only orient and train these human resources without directly managing and arranging them, and so on, Pham [44]. Dang [40] has determined that local human resources with skills related to homestay organization, local cultural experience, and good service attitude can attract tourists, especially international tourists, thereby maintaining a balance between economic development and preserving cultural values in the Central Highlands. Ullah et al. [45] point out that local human resources willing to participate in tourism activities tend to have more effective conservation strategies and are more conscious of sustainable development. Based on the above discussion, the following hypothesis could be started:

*Hypothesis 5 (H5): Human resources will be positively associated with sustainable community tourism development.*

Local government policies play a crucial role in sustainable tourism development, linking tourism development activities with social goals and maximizing benefits for the community [19]. Policies are legal documents and action programs from the central to local levels related to the development of community tourism in a manner suitable to the characteristics of each locality to ensure sustainable and stable social development [46]. According to Biddulph and Scheyvens [35], policies that empower local communities have contributed to improving management capacity, strengthening community cohesion and responsibility, and determining the success of sustainable community tourism development [47]. In addition, community tourism planning policies have helped orient sustainable development while minimizing conflicts of interest between stakeholders [32]. Based on the above discussion, the following hypothesis could be started:

*Hypothesis 6 (H6): Policy will be positively associated with sustainable community tourism development.*

Destination attractiveness is associated with core attributes, typically natural resources and humanistic values [48], and additional attributes of goods and services for the trip [49]. Attractiveness is a crucial factor, directly affecting tourists' decisions to choose a destination, thereby creating economic benefits for the local community Vo [50]. Weaver et al. [38] point out that destinations will attract strong tourists and promote economic development if they have rich cultural heritage (traditional festivals, indigenous arts, and unique lifestyles). In addition, Nguyen et al. [51] also commented that destinations with unique ethnic minority cultures have contributed to sustainable community tourism model development. Based on the above discussion, the following hypothesis could be started:

*Hypothesis 7 (H7): Destination attractiveness will be positively associated with sustainable community tourism development.*

### **3. Research Methods**

#### **3.1. Qualitative Research Methods**

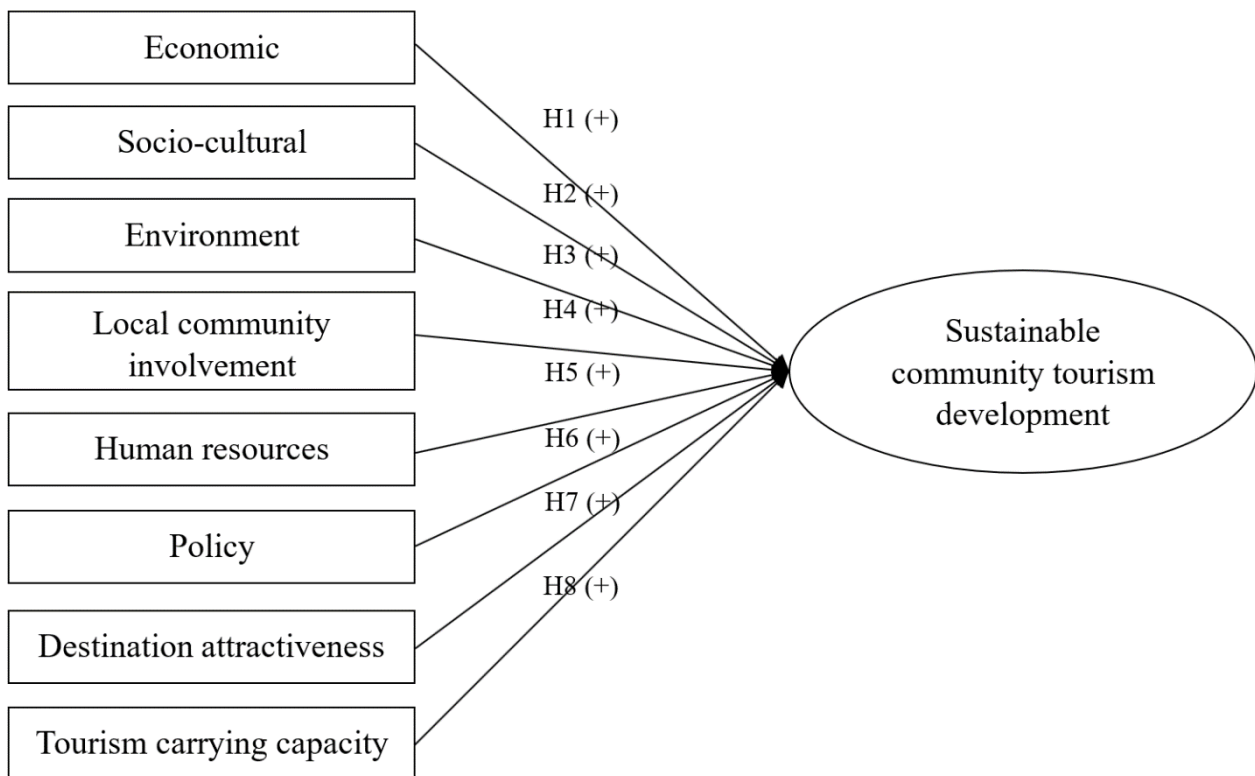
The preliminary scale is formed based on domestic and foreign studies. In addition, to complete the trial scale to meet the requirements and context of the study, the authors conducted discussions with tourism managers at tourist destinations, tourism business owners, tourists, and local communities living and directly participating in tourism activities at the destination to receive ideas contributing to the content, correcting the observation variables and attributes of each inheritance scale in the proposed research model. Next, we consulted with five experts in the field of tourism to carefully consider the relationship between the factors in the proposed research model, compare reality with theoretical concepts, and solve problems that arise during the group discussion.

At the end of the discussion, the authors analyzed the recording and selected the opinions that received the most agreement from the participants. The results showed that the experts agreed with the factors in the proposed research model.

At the same time, they suggested that the preliminary scale should be revised and add several observation variables and adjust the wording to be more suitable to the level of the surveyed subjects and associated with the actual research. More importantly, the participants agreed to add a “tourism carrying capacity” factor to the model. Managing it is vital for sustainable tourism development [52]. Tourism carrying capacity is the level of reception and ability to serve a certain number of tourists of a tourist destination or locality without causing terrible and adverse effects such as environmental pollution, noise, disorder, security and safety, wear and tear of tourism resources, degrading facilities, imbalance in people’s quality of life and bringing negative tourism experiences [53]. Research by Sinlapasate et al. [54] has shown that tourism carrying capacity regarding the exploitation of resources (physical, environmental, social, and economic exploitation) has a crucial and positive impact towards sustainable tourism development in world-class tourist destinations such as Phuket, Thailand. Using the qualitative library/desk study method, Haribudiman et al. [55] demonstrated the vital role of tourism destinations and capacity management policies for sustainable tourism development. Based on the above discussion, the following hypothesis could be started:

*Hypothesis 8 (H8): Tourism carrying capacity will be positively associated with sustainable community tourism development.*

Thus, the adjusted proposed research model is shown in Figure 2 as follows:



**Figure 2.**  
Adjusted research model.

**3.2. Quantitative Research Methods**

This study uses SPSS 26 software to analyze the exploratory factors (EFA). Additionally, smartPLS software 4.0 was applied to evaluate the research model via partial least squares structural equation modeling (PLS-SEM). PLS-SEM analysis works well for studies with small sample sizes of 100 to 200 [56].

The questionnaire items were evaluated on a five-point Likert scale (1 = strongly disagree, 3 = neither agree nor disagree, 5 = strongly agree). According to Hair et al. [57] the minimum sample size when performing the PLS-SEM analysis, and to ensure a high number of votes, the authors distributed 240 survey votes for six community tourism sites of Thai Nguyen province: the conservation area of Thai Hai ecological ethnic stilt village (Thinh Duc commune, Thai Nguyen City); the Tay ethnic cultural village (Quyen village, Diem Mac commune, Dinh Hoa district); Mo Ga hamlet (Phu Thuong commune, Vo Nhai district); Tan Cuong commune (Thai Nguyen city); Ghenh Che lake (Song Cong City); Tan Son village (La Bang commune, Dai Tu district) because they are the most attractive community tourism destinations of Thai Nguyen province out of a total of ten current community tourism destinations of the province [19]. We focused on five survey subjects: tourism managers at the destination, tourism business owners, tourists, and local communities living and directly participating in community tourism activities.

The study uses a convenient non-probability sample selection method to get the most samples possible. The authors designed the survey using Google Forms. We sent it to 70 per cent of respondents through chat apps and delivered 30 per cent directly to five respondents between January and May 2024. After eliminating invalid questionnaires, 204 valid questionnaires had a response rate of 86.8 per cent. The profile of the respondents is reported in Table 1.

**Table 1.**  
Profile of the respondents

Characteristics			Frequency
Gender	Male	129	63.2
	Female	75	36.8
Age	[23-35]	74	36.3
	[36-50]	95	46.6
	> 50	35	17.1
Highest educational attainment	Graduate	89	43.6
	Undergraduate	102	50.0
	Postgraduate	13	6.4
Living time in a destination	> 5	0	0
	[5-10]	6	2.9
	[11-15]	19	9.3
	[16-20]	23	11.3
	> 20	156	76.5
Monthly income	> 5 million VND	150	73.5
	5-10 million VND	41	20.1
	11-20 million VND	13	6.4
	> 20 million VND	0	0
The rate of additional income from community tourism (%)	0	0	0
	> 10	5	2.5
	11-50	112	54.9
	> 50	87	42.6

## 4. Findings

### 4.1. Reliability analysis

Table 2 shows that the scale's Cronbach's Alpha is over 0.7. The Cronbach's Alpha is also higher if we delete any item. The observed variables' corrected item-total correlation coefficients are all above 0.4. They show that the observed variables are unchanged. They meet the reliability needed for exploratory factor analysis [58]. Table 2 also presents the formal scale.

**Table 2.**  
Construct reliability.

Code	Items	Cronbach's Alpha	Corrected Item-Total Correlation	Factor loading	Source
Economic (Eco)					
Eco1	Community tourism activities contribute to promoting local economy	0.819	0.445	0.741	Truong [32]
Eco2	Community tourism activities contribute to increasing local people's income		0.601	0.763	
Eco3	Community tourism activities create jobs for local people		0.523	0.810	
Eco4	Community tourism activities contribute to local poverty reduction		0.468	0.815	
Eco5	Community tourism activities contribute to improving the quality of life		0.584	0.801	
Eco6	Community tourism activities contribute to increasing local land value		0.502	0.798	
Socio-cultural (SC)					
SC1	Community tourism activities contribute to preserving and promoting local cultural values	0.802	0.578	0,809	Goodwin and Harris [59]
SC2	Community tourism activities contribute to the exchange and development of local cultural values		0.434	0.779	
SC3	Community tourism activities contribute to ensuring security and social order in the locality		0.489	0.762	
SC4	Community tourism activities contribute to the development of local infrastructure		0.643	0.791	
SC5	Community tourism activities contribute to raising local people's awareness of culture and society		0.566	0.821	
SC6	Community tourism activities contribute to connecting social relationships among local people		0.629	0.811	
Environment (Env)					
Env1	Waste classification and treatment associated with tourism activities	0.811	0.557	0.730	Truong [32]
Env2	Protecting and preserving the environment and natural landscape will help local tourism develop		0.469	0.748	
Env3	Using renewable energy sources helps save costs and minimize environmental impact		0.548	0.736	
Env4	Waste treatment system to limit discharge into the environment		0.617	0.812	
Env5	Strengthen propaganda and remind tourists about proper waste disposal		0.640	0.799	
Env6	Exploiting natural tourism resources needs to be associated with pollution control, ecosystem protection and biodiversity		0.506	0.768	
Local community involvement (LCI)					
LCI1	People actively participate in local tourism development planning	0.792	0.519	0.824	Tran and Hoang [43]
LCI2	People often discuss with local authorities to develop tourism		0.602	0.712	
LCI3	Local communities benefit from participating in tourism development		0.539	0.804	
LCI4	Local communities proactively promote local tourism images		0.494	0.721	

Code	Items	Cronbach's Alpha	Corrected Item-Total Correlation	Factor loading	Source
LC15	Local communities are oriented by authorities in tourism development		0.477	0.818	
LC16	Local communities are involved in all steps of tourism development		0.621	0.789	
Human resources (HR)					
HR1	People are friendly, sociable and cheerful with tourists	0.781	0.449	0.822	Pham [44]
HR2	People are skilled, professional and enthusiastic in serving tourists		0.482	0.773	
HR3	People are able to communicate with tourists		0.518	0.769	
HR4	The number of people willing to take part in tourism activities is quite large		0.535	0.803	
Policy (Pol)					
Pol1	Local authorities encourage and create conditions for people to develop tourism	0.785	0.623	0.780	Tolkach and King [47]
Pol2	Local authorities prioritize tourism development		0.571	0.793	
Pol3	Local authorities create mechanisms and policies to attract investment in tourism development		0.633	0.808	
Pol4	Local authorities are committed to ensuring security and safety for tourists		0.443	0.829	
Pol5	Local authorities develop a code of conduct for tourists and providers		0.569	0.767	
Pol6	Local authorities proactively participate in linking tourism development		0.499	0.796	
Destination attractiveness (Att)					
Att1	Unique historical and cultural relics and famous scenic spots	0.774	0.547	0.836	Recommendations from experts and authors
Att2	Diverse and attractive cuisine		0.534	0.827	
Att3	Accommodation and restaurant facilities are adequate		0.607	0.727	
Att4	Convenient transportation system and diverse means of transportation		0.616	0.750	
Att5	Unique customs, crafts and lifestyles of the people		0.492	0.817	
Att6	Service prices are reasonable		0.484	0.789	
Tourism carrying capacity (TCC)					
TCC1	Too many tourists affect natural resources	0.788	0.509	0.814	Recommendations from experts and authors
TCC2	Too many tourists affect the infrastructure		0.473	0.757	
TCC3	Too many tourists cause disorder, security, safety and degradation of traditional cultural values		0.523	0.746	
TCC4	Too many tourists affect the tourist experience		0.478	0.800	
TCC5	Too many tourists affect the price of goods		0.515	0.783	
Sustainable community tourism development (SCTD)					
SCTD	Developing sustainable community tourism is the current trend	0.817	0.434	0.841	Recommendations from experts and authors



Table 3 shows the results of the exploratory factor analysis. The KMO coefficients are higher than 0.8, the Sig. of Bartlett’s test reaches 0.000, and the Eigenvalue coefficients are over the threshold of 2. Also, the scale’s factor loading is above 0.7. No one eliminates observed variables. The data extracted the independent variables into eight factors as we had predicted. Their total extracted variance is 75.914 per cent. They explain 75.914 per cent of the variability of the data [58]. Also, the dependent variable has only one observed variable. They extract it into a single factor with a total variance of 89.725 per cent. As a result, the official scale has eight independent factors and one dependent one. They correspond to 46 observed variables. The formal scale meets the requirements of Hair et al. [58].

**Table 3.**  
Exploratory factor analysis.

<b>Independent factors (KMO = 0.828)</b>		
Bartlett’s Test of Sphericity	Approx. Chi-Squared	8421.517
	df	483
	Sig.	0.000
Total Variance (percent)		75.914 percent
<b>Dependent factor (KMO = 0.861)</b>		
Bartlett’s Test of Sphericity	Approx. Chi-Squared	377.264
	df	1
	Sig.	0.000
Total Variance (percent)		89.725 percent

4.2. PLS-SEM Analysis

4.2.1. Measurement Model

The results in Table 4 show that Cronbach’s Alpha and CR coefficients are all in the range of 0.7 to 0.9, which ensures that the scale achieves internal consistency reliability. At the same time, the AVE coefficient is also in the range of 0.5 to 0.7, which affirms the convergent validity scale with a statistical significance of 0.05 and complies with the standards set by Fornell and Larcker [60] and Hair et al. [61]. In addition, the outer loading coefficient over threshold 0.7 ensured the quality of the observed variables according to recommendations by Hair et al. [61].

**Table 4.**  
Convergent validity and reliability.

Construct	Reliability			Convergent validity	Smallest outer loading
	Cronbach’s Alpha	CR (rho-a)	CR (rho_c)	AVE	
Economic	0.819	0.846	0.886	0.682	0.802
Socio-cultural	0.802	0.837	0.862	0.598	0.811
Environment	0.811	0.841	0.874	0.646	0.809
Local community involvement	0.792	0.835	0.858	0.588	0.817
Human resources	0.781	0.818	0.844	0.622	0.773
Policy	0.785	0.826	0.850	0.581	0.787
Attractiveness	0.774	0.809	0.839	0.608	0.768
Tourism carrying capacity	0.788	0.822	0.853	0.619	0.782
Sustainable community tourism development	-	-	-	-	1.000

The results in Table 5 show that the quadratic root diagonal coefficients of AVE ranged from 0.767 to 1.00, which was greater than the correlation coefficients between the factors in the study model and less than the composite reliability. At the same time, the correlation coefficient between factors is less than 0.85 when analyzing HTMT. Therefore, the discriminant validities between the factors are guaranteed based on the recommendations of Fornell and Larcker [60] and Henseler et al. [62].

**Table 5.**  
Results of differential value analysis.

	Eco	SC	Env	LCI	HR	Pol	Att	TCC	SCTD
Eco	0.826								
SC	0.568 0.715	0.773							
Env	0.600 0.832	0.332 0.571	0.804						
LCI	0.348 0.690	0.635 0.707	0.712 0.665	0.767					
HR	0.297 0.401	0.684 0.784	0.557 0.776	0.369 0.766	0.789				
Pol	0.512 0.678	0.394 0.517	0.623 0.825	0.263 0.559	0.669 0.448	0.762			
Att	0.473 0.504	0.377 0.438	0.701 0.513	0.490 0.838	0.257 0.830	0.224 0.675	0.780		
TCC	0.503 0.770	0.480 0.824	0.661 0.685	0.272 0.339	0.242 0.756	0.458 0.396	0.511 0.606	0.787	
SCTD	0.672 0.842	0.703 0.795	0.419 0.751	0.368 0.295	0.724 0.418	0.467 0.790	0.302 0.717	0.527 0.729	1.000

4.2.2. Structural model analysis

Next, we will analyze a structural model. It will estimate the relationships between the factors in the research model. The structural model analysis used a bootstrapping technique. It was re-sampled 5,000 times to calculate the path coefficients [63].

**Table 6.**  
Saturated model results

Hypotheses	VIF	Status	f <sup>2</sup>
H1	1.987	Satisfactory	0.578
H2	1.785	Satisfactory	0.452
H3	1.843	Satisfactory	0.519
H4	2.154	Satisfactory	0.398
H5	2.780	Satisfactory	0.473
H6	2.306	Satisfactory	0.414
H7	1.817	Satisfactory	0.444
H8	1.889	Satisfactory	0.501

R<sup>2</sup> adjusted = 0.797, Q<sup>2</sup> = 0.573, SRMR = 0.067 (SCTD)

Table 6 showed no multicollinearity in the study model since VIF was less than 3 [61]. Also, an effect size (f<sup>2</sup>) > 0.35 indicates a strong link. It shows independent factors significantly affecting a dependent factor [61]. The R<sup>2</sup> adjusted coefficient of the dependent factor is over the threshold of 0.7. Thus, the independent factors explained 79.7% of the dependent factor’s variability. The remaining 20.3% is due to system errors or other unexplored factors. A Q<sup>2</sup> coefficient greater than 0.5 for every tested structure shows a good prediction for the structural model [61]. An SMRM coefficient below 0.06 means the model fits the data from 6 community tourism sites in Thai Nguyen province [62].

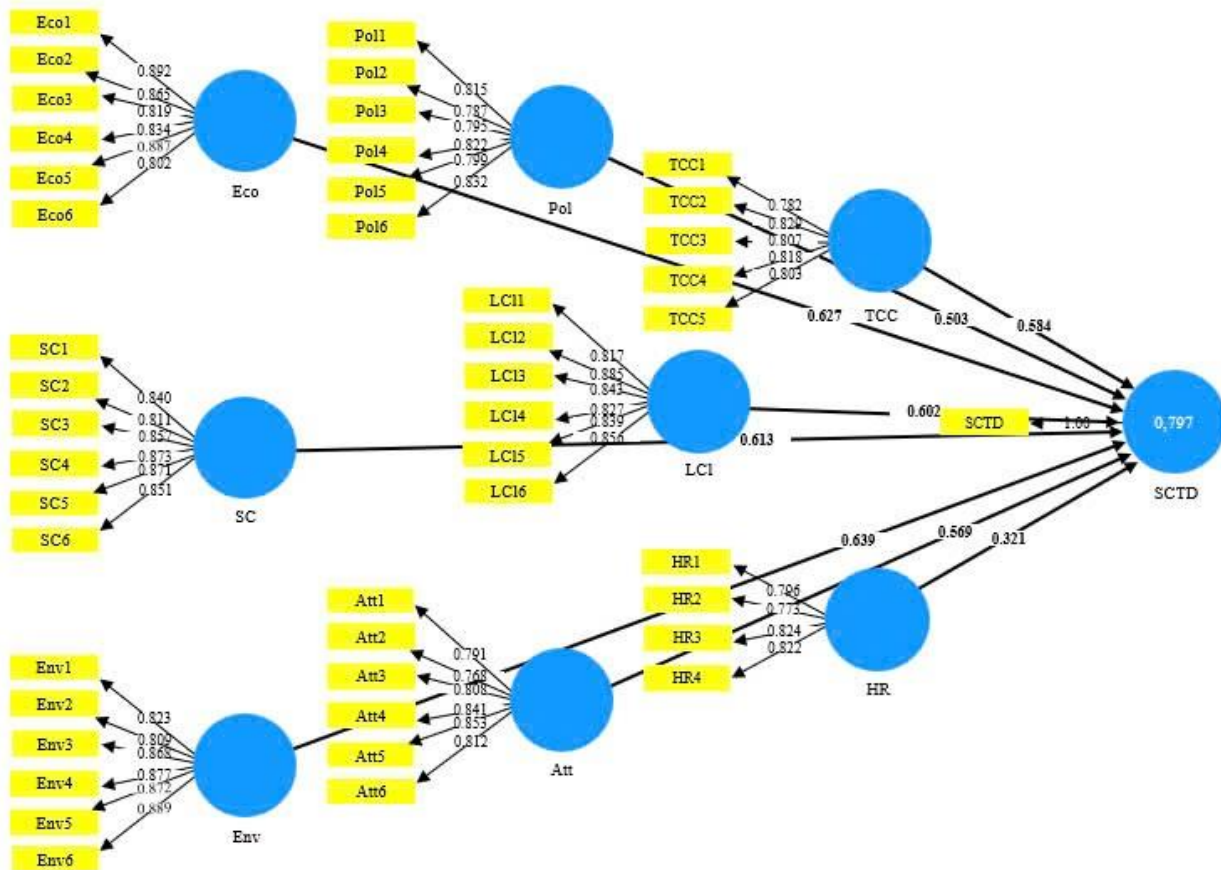
**Table 7.**  
Hypothesis testing

Hypothesis	Path coefficient	S.D	t-value	Decision
H1	0.627	0.086	3.439***	Supported
H2	0.613	0.080	4.163***	Supported
H3	0.639	0.089	3.992***	Supported
H4	0.602	0.083	2.834*	Supported
H5	0.321	0.091	5.523*	Supported
H6	0.503	0.085	4.661*	Supported
H7	0.569	0.090	3.105**	Supported
H8	0.584	0.095	3.561**	Supported

Note: \* significant at p < 0.05; \*\* significant at p < 0.01; \*\*\* significant at p < 0.001.

Table 7 shows that the hypothesis’s impact coefficient is positive. The results show statistical significance at a confidence level of 95 percent. The proposed hypotheses are accepted [61]. The model’s independent factors boost the dependency factor: sustainable community tourism development. The economy, society, and culture are crucial to sustainable

development. They most impact on sustainable community tourism. Next are the factors: local participation, tourism capacity, attractions, policies, and human resources.



**Figure 3.**  
PLS results of the structure model

## 5. Discussion and Implications

### 5.1. Discussion

The economy helps develop sustainable community tourism in Thai Nguyen province. Similar results also appear in the research of Biddulph and Scheyvens [35] when affirming that the economy positively affects the community tourism model. In addition, this finding is also supported by Truong [32], who highlights its significance in the context of the sustainable development of tourist destinations. Promoting the economy at the destination is a prerequisite for sustainable community tourism development. The community tourism model has boosted local incomes and improved lives. In this study, when other conditions are constant, the economy will increase to 1 unit, and sustainable community tourism development will rise to 0.627 units.

Hypothesis 2: Socio-cultural factors help develop sustainable community tourism in Thai Nguyen province. The study of Dang [40] gives similar results. They show that socio-cultural factors highly affect sustainable tourism development. Promote and preserve socio-cultural values, contributing to achieving sustainable tourism growth. In this study, with all else constant, the socio-cultural increases by 1 unit, and sustainable community tourism development rises by 0.613 units.

Hypothesis 3: The environment helps develop sustainable community tourism in Thai Nguyen province. Similar to the research of Vu and Dang [39] and Truong [32], the environment significantly impacts sustainable community tourism development. The environment is the place where tourism activities take place at the destination. So, if we protect the environment, community tourism can grow. In this study, when other conditions remain unchanged, the environment increases to 1 unit, and sustainable community tourism development increases to 0.639 units.

Hypothesis 4: Local community involvement boosts sustainable community tourism development in Thai Nguyen province. Similar to the research of Tran and Hoang [43], the level of local community involvement is a decisive factor for sustainable community tourism development. The higher the positive attitude of local people to participate, the more sustainable community tourism development. Meanwhile, Vu and Dang [39] proved that local communities have no impact on community tourism. In this study, when other conditions remained unchanged, the participation of local communities increased to 1 unit, and sustainable community tourism development increased to 0.602 units.

Hypothesis 5: HR boosts sustainable community tourism development in Thai Nguyen. Similar results also appear in the study of Dang [40]. Better communication and expertise of the service staff will promote sustainable tourism. Meanwhile, Vu and Dang [39] indicated that community tourism enterprises have no impact on sustainable community tourism

development. In this study, when other conditions remain unchanged, tourism human resources increase to 1 unit, and sustainable community tourism development increases to 0.321 units. Human resources have the lowest impact on sustainable community tourism development in Thai Nguyen because they mainly serve the local community/population and lack adequate training in the knowledge and skills required for organizing community tourism. As a result, they limit their ability to provide a high-quality experience to tourists. More importantly, for tourists in general, especially international tourists in particular, communication is a crucial factor. However, foreign language proficiency is limited in remote communities such as Thai Nguyen province. So, there are difficulties in serving tourism, leading to economic benefits from community tourism activities growing slowly.

Hypothesis 6: Policy boosts sustainable community tourism in Thai Nguyen province. Similar to the study by Biddulph and Scheyvens [35], policy plays a crucial role in the development of sustainable community tourism, helping to enhance the responsibility of stakeholders in exploiting cultural values and protecting the environment. In this study, when other conditions remain unchanged, the policy mechanism increases to 1 unit, and sustainable community tourism development increases to 0.503 units.

Hypothesis 7: Destination attractiveness boosts sustainable community tourism development. Similar to the research of Nguyen et al. [37], it promotes the cultural preservation process, environmental protection, and awareness-raising. This appeal can help community tourism grow and benefit both tourists and residents. In this study, with all else constant, attractiveness increases by 1 unit, and sustainable community tourism development increases by 0.569 units.

Hypothesis 8: Tourism carrying capacity boosts sustainable community tourism. Similar to the research of Sinlapasate et al. [54]. By limiting the number of tourists and controlling tourism activities, it is possible to avoid environmental overload, minimize negative impacts such as pollution and degradation of natural landscapes, and preserve and develop cultural values and traditions without being distorted by the intrusion of mass tourism. In this study, when other conditions remain unchanged, the tourism carrying capacity increases to 1 unit, and sustainable community tourism development increases to 0.584 units.

## 5.2. Implications

Theoretically, this study's findings are consistent with the sustainable development theory, community tourism theory, social exchange theory (SET), and stakeholder theory in explaining the factors affecting the sustainable development of community tourism in Thai Nguyen province. The Partial Least Squares Structural Equation Model (PLS-SEM) has also accepted elements in the proposed research model. Our findings have provided empirical evidence that the following factors: economic, socio-cultural, environmental, local community involvement, human resources, policy, destination attractiveness, and tourism carrying capacity have a positive relationship with the development of sustainable community tourism in Thai Nguyen province – an emerging tourism market in the North, Vietnam.

Practically, the research results are a crucial signal for local authorities and tourism enterprises to pay special attention to economic, socio-cultural, environmental, and local community involvement, human resources, policy, destination attractiveness, and tourism carrying capacity to build a comprehensive strategy towards sustainable community tourism development.

The study results indicated that the economic, environment and socio-cultural have the highest impact on sustainable community tourism development in Thai Nguyen province. Based on the research results, the proposed policy implications to promote sustainable community tourism development in Thai Nguyen are as follows:

First, to promote the economic at the destination, Thai Nguyen province must develop sustainable community tourism. It should be a value chain that boosts the community's economic benefits. Develop a community tourism value chain in a closed direction, from local agricultural products and food processing to tourism services provision. This model provides opportunities for the local community to participate in community tourism activities, from homestay services to local cuisine and tour guides. From there, the economic benefits will be divided equally among local people participating in this model.

Next is enhancing environmental sustainability through specific plans to meet the uniqueness and vulnerability of the environment at the destination. At community tourist attractions, it is necessary to supplement signs and banners to propagate people's and tourists' awareness about environmental protection. Also, we need garbage cans in the tourist area. We should penalize anyone who dumps trash there. Finally, we must arrange for garbage collection at community tourist sites.

Finally, socio-cultural aspects must focus on preserving local identity. It should allow the community to participate in and enjoy tourism activities. Therefore, local authorities need to have policies to encourage the preservation of traditional craft villages, costumes, festivals, and customs of ethnic groups in Thai Nguyen. Develop tourism programs associated with local cultural experiences. At the same time, creating cooperatives and community groups to manage tourism should ensure fair, shared benefits for the people.

## 6. Conclusion and Limitations

The study affirms the positive influence of economic, socio-cultural, and environmental factors, local community participation, tourism human resources, policy mechanisms, tourism attractions, and tourism load capacity on sustainable community tourism development in Thai Nguyen province. The correlations help local authorities and tourism businesses in Thai Nguyen identify essential factors for the sustainable implementation of the community tourism model. However, this study also has limitations as it is only carried out in Thai Nguyen province. Therefore, the results may not be completely accurate or representative of the study subjects. Moreover, other factors may affect community tourism's sustainable development, such as business strategy and social responsibility, and so on.

Future studies should expand their scope to improve accuracy. They should include other provinces in Vietnam beyond Thái Nguyên. Additionally, they should explore new factors for more comprehensive results.

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