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Heritage memory and identity in Vietnam with a focus on residents' topophilia for sustainable cultural tourism development

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Abstract

This paper explores the intersections of sustainable cultural tourism development in Vietnam, along with the impact of community engagement, cultural identity, topophilia, heritage memory, and the moderating effect of socioeconomic status. Using the data obtained from 183 valid respondents, community engagement, topophilia, heritage memory, and cultural identity were measured using various scales, with the alpha values ranging from 0.7602 to 0.8925. The factor analysis produced 61.88% of the total variance. As for the regression analyses, it was found that the four predictors influence the development of sustainable cultural tourism, with cultural identity showing the greatest impact (standardized coefficient 0.133). This was followed by heritage memory (0.118), topophilia (0.106), and community engagement (0.210), which had the largest impact. All the relationships were moderated by socioeconomic status, and it had its greatest effect on topophilia (0.323). Given these, the study signals that the development of sustainable cultural tourism in Vietnam is within the enhancement of the cultural essence, emotional ties to the place, and community engagement.

Keywords: Cultural identity, Sustainable cultural tourism, Topophilia, Community engagement, Heritage memory

1. Introduction

The recent growth of scholarly exploration in cultural tourism underscores the importance of the interrelationship of the constructs of heritage memory, cultural identity, emotional attachment to place, and the shaping of pathways for sustainable cultural tourism. Rapid urbanization, the commercialization of heritage spaces, and economic pressures in Vietnam - a country with a multilayered heritage system - highlight the need for an equitable development approach that addresses the cultural preservation and socioeconomic development dual paradox. In this light, the socio-cultural dimensions that drive residents to `engage in and support sustainable cultural tourism underscore the importance of residents as custodians of the heritage, carriers of cultural expression, and influencers of the visitor experience. Heritage memory is a principal pathway of connecting people to the past and sustaining cultural continuity [1]. It includes an emotional connection and familiarity of the residents to the concrete and abstract heritage (i.e., buildings, rituals, and other portions of collective memory) of the community. Enhanced heritage memory elevates cultural stewardship and increases

commitment to tourism initiatives of a heritage nature. Additionally, Lei et al. note that cultural memory positively affects cultural identity by narrowing the value gaps and strengthening the social cohesion [2].

Cultural identity allows social bonds and local pride to flourish [3]. Knowledge and awareness of traditions and cultural expressions inspire people to engage in the protection of their cultural heritage. Duran explains that cultural identity promotes the sense of responsibility for the cultural heritage of the community and the 'good' attitudes towards cultural tourism [4]. Li and Hunter point out that identity is strengthened when community members are involved in the management of heritage and the co-creation of tourism and suggest that this is a dual outcome of heritage awareness and a strong contributor to the support of sustainable tourism [5].

The emotional attachment to a place, as expressed through Yi-Fu Tuan's topophilia, enhances the impact of cultural identity and heritage memory. Affectionate attachment and the emotional symbolic meaning of the familiar environment are what define topophilia [6], [7]. Recent research indicates its impact on the support of sustainable cultural tourism and preservation. Lei et al. indicate that topophilia is associated with increased heritage pride and involvement in tourism development of a cultural nature [2]. Chhabra and Kim [8] show that place-based emotional attachment and topophilia are associated with an increase in motivation to promote the cultural heritage of the community, and [9] demonstrate their impact on social sustainability in landscapes of rich symbolism.

The success of any sustainable cultural tourism model lies in community engagement as a factor of sustained community participation. It allows a more balanced achievement of the economic and cultural goals [10]. Community engagement in tourism site management, cultural activities, and planning is central to the achievement of the sustainable cultural tourism goal. Studies from Kenya, Montenegro, Thailand, and Nigeria, among other countries, demonstrate that fully empowered communities also tend to advocate and govern positively, for sustainability and heritage [11], [12], [13], [14]. Dadizadeh and Doğan [15] show that community engagement in tourism, in most cases, is a function of heritage, cultural pride, and sense of place. The importance of socio-economic status (SES) as a moderating influence on the attitude of residents towards the conservation of the area and tourism development is also significant. Previous studies point out that an individual’s income, level of education, and job position determine their level of access to information regarding heritage and their participation in community activities [16]. Abdullah et al. [17] assert that the socio-economic status of individuals significantly determines their adoption of a sustainable model of tourism, while Luekveerawattana et al. confirm that economic, cultural, and environmental factors combined influence the outcomes of sustainable tourism [18].

While reputable sources in the field of literature have established a basis for theory, there still exists a disproportionate empirical literature in the case of Vietnam. With its ancient towns and temples, and its rich mosaic of festivals and performing arts, Vietnam possesses a unique set of conditions to study the intersections of the heritage of memory, the cultures of identity, and the perceptions of the potential for sustainable development. The topophilia, or affective bond to the place, of Vietnam is most strongly linked to the site of the ancestors, the ancestral villages, local customs and traditions, and the relics of the place. This cultural and psychological emplacement provides the most fertile ground for the sustainable development of tourism and the multiplicity of the attributes Revell and United [19], [20].

The latest research has shown that the emergence of sustainable cultural tourism has both positive and negative impacts. To cite a few, Ye et al. examined the impact of cultural heritage tourism on local economies and cultural resilience [21]. On the other hand, [22] and [23] have stated that intercommunity and inter-institutional collaboration is of paramount importance and that cultural identity is a direct determinant of the consumption of heritage.

Combining these perspectives suggests an emerging line of inquiry with the potential to anchor topophilia, cultural identity, memory, and cultural tourism in the sustained dynamics of possible tourism. This study seeks to assess the impact of cultural identity and memory of the Vietnamese heritage on the development of

sustainable cultural tourism in Vietnam while considering topophilia as an intermediary and the socioeconomic status as a possible moderator. This framework enhances the understanding of the nexus of emotional–cultural factors that spur action on the preservation of Vietnam's cultural heritage and tourism, and provides evidence for the management of cultural heritage and tourism. In line with these objectives, the attempts to explore the relationships between cultural heritage memory, cultural identity, topophilia, and sustainable cultural tourism development from the perspective of community heritage management.

2. Theoretical framework and research methodology

2.1. Theoretical framework

The study's theoretical framework revolves around the most recent sustainable cultural tourism strategies. Specifically, the study emphasizes the significance of the interconnections of heritage memory, cultural identity, topophilia, community, and socioeconomic factors in influencing residents' attitudes and behaviors toward sustainable tourism development. Heritage memory serves as the cornerstone of sustaining cultural continuity and promoting the conservation of community resources. Kashchenko and Polozhentseva [1] characterize the community memory as the collective memory of a community formed through a constellation of stories, symbols, and lived experiences, preserved by the community's memory through its monuments, rituals, and other cultural practices. Such memories and stories affect the residents' views and responses towards preservation initiatives. Battilani et al. [24] further show that even "dissonant" or contested heritage narratives influence the residents' acceptance of tourism development strategies. Recently, [2] reviewed the literature and established that when residents have strong emotional ties to a place, positive memories of that place significantly influence their support toward cultural heritage tourism.

Cultural identity operates as a socio-symbolic mechanism for how people place themselves among particular local cultural systems. Duran [4] defends cultural identity as a way of fostering social ties and defending the locality from outside intrusion. Researcher [3] demonstrates the role of cultural identity in shaping the attitude and behavior of local people towards cultural tourism development. Kanoksilapatham et al. [13] indicate that high cultural identity fosters inclusive tourism and thereby sustains it. In the same manner, [23] demonstrates that cultural identity is associated with higher levels of cultural consumption and the residents' willingness to defend and protect the heritage. Topophilia, a term from Tuan's humanistic geography and extended by [6], refers to the emotional bond of residents to a place. This feeling is the result of personal experience, memory, and associated symbolism. Phillips et al. [7] define topophilia as the intersection of feeling, emotion, perception, and memory, creating a bond to a place. In tourism, topophilia is a motivator for pro-social behavior. Chhabra and Kim [8] find that place attachment leads to stronger heritage protective attitudes and more favorable attitudes towards tourism development.

According to more recent studies, such as [9], topophilia, especially in culturally significant places, increases social sustainability. Lei et al. [2] show that topophilia, in and of itself, is a key intermediary of the influence of heritage memory, cultural identity, and supportive disposition of the sustainable cultural tourism continuum. Community engagement is acknowledged to be a key factor in the sustainable tourism development framework. Li and Hunter [5] argue that community engagement in tourism planning, as well as in managerial and heritage governance activities, increases the sustainability of the tourism system. Fong and Lo [10] stress community engagement as an anti-over-commercialization measure and for balanced cultural and economic development. Recent studies [12], [15], [25] empirically prove that community participation positively impacts cultural tourism development. Tabatabaei et al. [26] identify community engagement as one of the more significant predictors of sustainable tourism in heritage destinations.

Socioeconomic status acts as a moderating variable that stratifies residents' ability to comprehend, interact with, and gain from cultural tourism. Research [17] suggests that residents' income, education, and job-related consignment directly determine their engagement in heritage-related activities. Socioeconomic status also explains, to an extent, community level of cohesion and advocacy for the preservation of heritage, as noted by

Ramoroka and Mnisi [16]. Mnisi et al. [11] indicate that socioeconomic status explains the lack of a positive attitude toward tourism development and the feeling of absence of cultural tourism benefits. Luekveerawattana et al. [18] illustrate the prevalence of moderating effects of socioeconomic status on the cultural perception and sustainable tourism behavior of residents in the Asian region.

Moreover, for sustainable cultural tourism to be realized, the cultural, economic, and social parameters must be interwoven. According to [22], it is the collective role of the community, the private sector, and the state to strike the aforementioned balance. When cultural tourism is based on cultural preservation, it yields positive economic outcomes, as shown by Ye, Qin, and Wu [21]. As to Sihombing, Suastini, and Puja [27], mobilization of the cultural, emotional, and social components in heritage management is what determines the sustenance of cultural tourism. Synthesizing these perspectives, the theoretical framework of the present study explains how heritage memory, cultural identity, topophilia, and community engagement jointly shape sustainable cultural tourism development, and how socioeconomic status moderates these relationships in the Vietnamese context.

2.2. Research methodology

This study incorporates a blended research approach with two phases: a qualitative approach for scale refinement and a quantitative approach for empirical testing. In the first phase, qualitative interviews were conducted with a cross-section of the residents, cultural experts, and practitioners of tourism, which focused on gauging the initial measurement items' clarity and contextual credibility. Adjustments were made such that analyses of consensus of the expressions and cultural sensitivity guided the analyses of the themes.

In the second phase, a survey comprising closed-ended questions was administered to a purposive sample of residents within the vicinity of cultural heritage sites. This study was able to garner a total of 183 completed questionnaires. Heritage memory, cultural identity, topophilia, community engagement, socioeconomic status, and sustainable cultural tourism development were among the constructs for which the authors of this study developed questionnaires. The study adapted previously established scales to measure the items, which were measured on a 5-point Likert scale.

This study focuses on estimating the relationships among the constructs. Using a set of statistical software, the authors of this study conducted reliability analyses, factor analyses, correlation analyses, and regression analyses. Inequality in socioeconomic status was tested as a moderating variable by creating interaction terms. The methodological approach taken here is focused on empirical rigor and conceptual clarity.

2.3. Proposed research model

The suggested research model is based on the latest theoretical considerations, including those in the realms of cultural tourism, the memory of heritage, cultural identity, and place attachment. Previous research demonstrates that the cultural and emotional attachment of residents to heritage sites is very important and positively influences the adoption of sustainable tourism. The memory of heritage is recognized as one of the most important reasons that create an attachment to a place, as it links people to a collective history and cultural continuity [1], [24]. For this reason, the model assumes that stronger memory of heritage increases the level of support of residents for the sustainable development of cultural tourism, which is the basis for the formation of Hypothesis 1 (H1). Cultural identity has been acknowledged and accepted as a factor that influences the attitudes of residents toward the protection of heritage and the involvement in tourism [3], [4]. A stronger cultural identity means a higher likelihood of residents supporting preservation of and promotion of the local cultural values [13], [23]. This relationship drives Hypothesis 2 (H2). Topophilia is a term derived from Tuan’s conceptualization of place attachment, which is very widely used in contemporary tourism [6], [7] and refers to the emotional attachment of people to a particular place. The emotional connection to a place is seen as a major factor in the development of positive and sustainable attitudes towards cultural tourism [2], [8], [9], and this supports Hypothesis 3 (H3).

Community engagement is an important indicator of local participation in decision making, as well as local heritage activities, has been associated with positive tourism outcomes for a long time [5], [10]. As such, communities that are active participants in tourism seem to be more successful in achieving the sustainable development goals [12], [15], [26]. Drawing from such literature, we present Hypothesis 4 (H4), which states that there is a positive relationship between levels of community engagement and development of sustainable cultural tourism.

Moreover, the model includes the community's socioeconomic status as a moderating variable, which is based on the literature that suggests residents' economic status, education, and job security affect their level of participation and attitude towards tourism development [11], [16], [17], [18]. It can be assumed that residents with higher socioeconomic status see more value in tourism development or possess more means to participate in activities aimed at the preservation of heritage, which enhances the effect of sustainable tourism supports to heritage memory, cultural identity, topophilia, and community engagement. This proposed model captures the cultural, emotional, social, and economic dimensions identified in the literature [21], [22], [27]. These dimensions further substantiate the four hypotheses and outline the relationships to be empirically tested in relation to the development of sustainable cultural tourism.

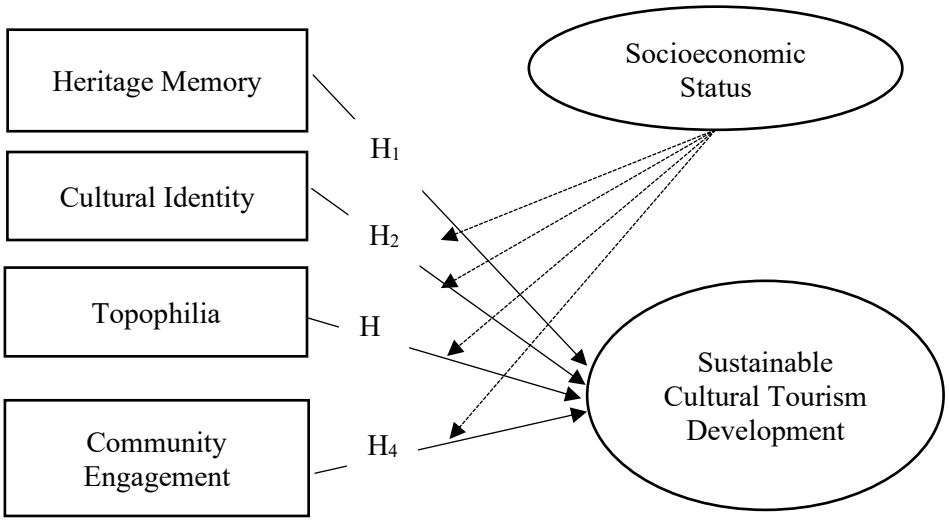

Figure 1. Proposed research model

3. Results and discussion

3.1. Descriptive statistics

3.1.1. Scale characteristics

In this study, the measured variables were evaluated on a 5-point Likert scale, where 1 is the lowest and 5 is the highest. The data collected were 183 valid responses. Below the tables, we present the detailed descriptive statistics for each variable group.

Table 1. Descriptive statistics of variable groups

Variable	N	Mean	Std. Dev.	Min	Max
Heritage Memory (HM)					
HM1	183	4.115	0.682	2	5
HM2	183	4.000	0.791	2	5
HM3	183	4.022	0.726	2	5
HM4	183	4.093	0.739	2	5
HM5	183	3.896	0.738	2	5

Variable	N	Mean	Std. Dev.	Min	Max
Cultural Identity (CI)					
CI1	183	2.634	0.82	1	5
CI2	183	2.617	0.803	1	4
CI3	183	2.579	0.814	1	5
CI4	183	2.639	0.806	1	5
CI5	183	2.617	0.816	1	5
Topophilia (TP)					
TP1	183	3.142	0.72	1	5
TP2	183	3.202	0.754	1	5
TP3	183	3.235	0.73	1	5
TP4	183	3.224	0.748	2	5
TP5	183	3.180	0.752	1	5
Community Engagement (CE)					
CE1	183	3.989	0.703	2	5
CE2	183	3.907	0.716	2	5
CE3	183	3.896	0.767	2	5
CE4	183	4.011	0.756	2	5
CE5	183	4.033	0.710	2	5
Socioeconomic Status (SES)					
SES1	183	4.005	0.722	2	5
SES2	183	3.978	0.741	2	5
SES3	183	3.929	0.771	2	5
SES4	183	4.011	0.784	1	5
SES5	183	4.027	0.801	2	5
Sustainable Cultural Tourism Development (SCTD)					
SCTD1	183	3.284	0.823	1	5
SCTD2	183	3.475	0.797	2	5
SCTD3	183	3.361	0.806	2	5
SCTD4	183	3.333	0.834	1	5
SCTD5	183	3.333	0.801	2	5

Respondents exhibited a high level of agreement concerning statements related to heritage memory, as evidenced by mean values for the heritage memory scale, wherein values range from 3.896 to 4.115. With a mean of 4.115, HM1 (understanding of local historical heritage) scored the highest, while HM5 (emotional connection to heritage across generations) scored the lowest at 3.896. The range of standard deviations from 0.682 to 0.791 shows a moderate level of response dispersion. The mean values for the cultural identity scale reflect the lowest levels of this study, ranging from 2.579 to 2.639, which show only moderate agreement towards statements about cultural identity. CI3 (sense of belonging to local cultural identity) scored the lowest mean of 2.579. The range of standard deviations shows a moderate level of consistency, at 0.803 to 0.820. For the topophilia scale, mean values range from 3.142 to 3.235, which denotes a high level of emotional attachment to place. The highest score at 3.235 was from TP3 (enjoy spending time at heritage sites), while TP1 (feeling deeply attached to one's living place) scored the lowest at 3.142. The range of standard deviations shows a moderate level of response dispersion across the items.

The average mark for the community engagement variables is quite high, with scores ranging from 3.896 to 4.033. CE5 (feeling responsible for contributing to the preservation of culture) scores the highest, indicating the community members are most strongly aware of the culture they need to preserve. Within the group, CE3 (willingness to work with others to protect heritage sites) scores the lowest, coming in at 3.896, yet this is still relatively high. There is also a positive correlation with the moderating variable Socioeconomic Status; mean scores range between 3.929 and 4.027. SES5 (having a stable job with the community) scores the highest, while SES3 (having the financial means to take part in cultural activities) scores the lowest at 3.929. The standard deviation ranges between 0.722 and 0.801. The mean scores for the dependent variable, sustainable cultural

tourism development, range from 3.284 to 3.475. SCTD2 (economic contribution of tourism to the community) scores the highest, reflecting the respondents' awareness of the positive contribution of tourism to the economy. SCTD1 (cultural tourism aids in the preservation of heritage) scores the lowest at 3.284. The relatively high standard deviation (0.797 to 0.834) shows a high disparity in the answers from the respondents regarding the local sustainable cultural tourism.

3.1.2. Demographic characteristics

The research sample consists of 183 survey participants. Frequency analysis results for demographic variables are summarized in the following tables.

Table 2. Demographic characteristics

Category	Frequency	Percentage (%)
Gender		
Male	97	53.01
Female	83	45.36
Other	3	1.64
Age		
Under 18	7	3.83
18–25	39	21.31
26–35	62	33.88
36–45	37	20.22
46–55	19	10.38
Above 55	19	10.38
Educational Level		
Primary school	11	6.01
Lower secondary	15	8.2
Upper secondary	48	26.23
Vocational/College	31	16.94
Bachelor's degree	64	34.97
Postgraduate	14	7.65
Occupation		
Student	25	13.66
Unskilled labor	26	14.21
Office worker	40	21.86
Household business	24	13.11
Government employee	34	18.58
Retired	20	10.93
Other	14	7.65
Monthly Income		
Under 3 million VND	22	12.02
3–5 million VND	36	19.67
5–10 million VND	72	39.34
10–20 million VND	40	21.86
Above 20 million VND	13	7.1
Marital Status		
Single	92	50.27
Married	67	36.61
Divorced	13	7.1

Category	Frequency	Percentage (%)
Other	11	6.01
Length of Residence		
Under 1 year	21	11.48
1–5 years	49	26.78
Over 5 years	75	40.98
Born and raised here	38	20.77
Participation Frequency		
Rarely	21	11.48
Occasionally	46	25.14
Monthly	55	30.05
Weekly	41	22.4
Very frequently	20	10.93
Distance to Heritage/Tourism Site		
Under 1 km	45	24.59
1–3 km	60	32.79
3–5 km	43	23.5
Over 5 km	35	19.13

Among the total 183 participants, males account for a higher proportion with 97 individuals (53.01%), followed by 83 females (45.36%), while 3 respondents (1.64%) identify as another gender. The difference between male and female respondents is not substantial, ensuring representativeness of both genders in the sample.

Focusing on age distribution, the largest segment is the 26-35 age category, consisting of 62 individuals, which is 33.88% of the total. This is followed by the 18-25 age group, which consists of 39 people, accounting for 21.31% of the total. Additionally, the 36-45 age group is the same as the 18-25 age group, consisting of 37 individuals, which is 20.22%, thus making the 36-45 age group an equally balanced age group as the 18-25 category. The least represented segment is the under 18 category, which is 3.83% of the total sample, meaning only 7 individuals belong to this category. The age groups of 46-55 and above 55 are both equally represented at 19 individuals, which is also 10.38% each. This data indicates that most of the respondents of this sample are of working age, being between 18 and 45.

The sample also represents a good variation of educational attainment. The largest group comprises respondents who hold a bachelor's degree, totaling 64 individuals, which is 34.97% of the total sample. This is followed by 48 respondents who hold an upper secondary education, making up 26.23% of the sample. Holding vocational and college education is 31 individuals, totaling to 16.94%, and 15 individuals comprise the lower secondary education level, which is 8.2% of the total. There are also 14 individuals who are postgraduates, making 7.65% of the sample, and the primary education level is represented by 11 individuals, which is also 6.01% of the total. This result reflects a good level of education distribution in this sample, as more than 59% of the respondents hold educational qualifications above the vocational level.

The breakdown of occupations shows a fairly even distribution across all categories. The most significant sector is office workers (40 individuals, 21.86%), followed by civil servants (34 individuals, 18.58%) and unskilled workers (26 individuals, 14.21%). The remaining sectors include students (25 individuals, 13.66%), owners of household businesses (24 individuals, 13.11%), senior citizens (20 individuals, 10.93%), and other occupations (14 individuals, 7.65%). Regarding earnings, the largest proportion is found within the 5–10 million VND category, with 72 respondents (39.34%). Following this, the 10–20 million VND category has 40 respondents (21.86%), then 3–5 million VND with 36 respondents (19.67%), under 3 million VND with 22 respondents (12.02%), and lastly over 20 million VND with 13 respondents (7.10%). The majority of respondents claim to earn a stable income, since over 68% of the respondents claim to earn 5 million VND monthly and above.

In terms of marital status, the largest number of respondents is single, with a total of 92 respondents, which constitutes 50.27%. This is followed by married people with 67 respondents (36.61%). There are 13 (7.10%) respondents who are divorced, and 11 (6.01%) respondents who are in the “other” category. The high number of single respondents is reasonable given the fact that more than half of the total number of participants is between 18 and 35 years, which is the predominant age group of the sample. When participants were asked how long they had resided in the area, the largest group of respondents was those who had resided in the area for more than 5 years, with 75 (40.98%) respondents. The 1-5 years group is 49 (26.78%) respondents, 38 (20.77%) respondents are lifelong residents of the area, and the smallest group of 21 (11.48%) respondents have resided in the area for less than 1 year. Overall, more than 62% of respondents have lived in the area for 5 years or more, or since birth, demonstrating that they have some level of attachment to the area.

Individuals' involvement with local cultural and tourism activities shows similar figures of participation frequency. Amongst all the participation types, monthly participation has the most responses with a total of 55 individuals (30.05%). This is closely followed by occasional participation, which has 46 individuals (25.14%). Participation on a weekly basis is confirmed by 41 people (22.40%). Those from the groups who participate seldom (11.48%) and those who do so very frequently (10.93%) have close shares. This indicates that a majority of the respondents take part in cultural and tourism activities frequently, at a minimum, or on a regular basis.

Analyzing the distance from the participants' homes to the closest heritage or tourism attraction, the largest proportion is represented by the 1–3 km distance category with 60 persons (32.79%). This is followed by the less than 1 km category, where 45 individuals (24.59%) are assigned. 43 people (23.50%) reside in the 3–5 km distance category, while 35 individuals (19.13%) live beyond 5 kilometers. Hence, it indicates that with more than 80% of the total respondents, they live less than 5 km from a heritage or tourism attraction, which encourages participation in cultural or tourism activities within the local area. The sample provided varied and differing demographic attributes. This shows that the participants belong to differing segments of society and enhances the value of the analysis by ensuring that it is objective and comprehensive.

3.2. Scale evaluation

3.2.1. Cronbach’s alpha reliability test

Table 3. Cronbach’s alpha reliability test results

Scale	Item	Item–Total Correlation	Cronbach’s Alpha if Item Deleted	Cronbach’s Alpha (Overall)
Heritage Memory (HM)	HM1	0.5826	0.7910	0.8185
	HM2	0.6500	0.7707	
	HM3	0.6271	0.7779	
	HM4	0.5855	0.790	
	HM5	0.6056	0.7841	
Cultural Identity (CI)	CI1	0.4713	0.7372	0.7602
	CI2	0.5904	0.6949	
	CI3	0.4640	0.7395	
	CI4	0.5425	0.7120	
	CI5	0.5748	0.7001	
Topophilia (TP)	TP1	0.6756	0.8824	0.8925
	TP2	0.7591	0.8640	
	TP3	0.7776	0.8600	
	TP4	0.7532	0.8654	
	TP5	0.7193	0.8731	

Scale	Item	Item–Total Correlation	Cronbach's Alpha if Item Deleted	Cronbach's Alpha (Overall)
Community Engagement (CE)	CE1	0.6211	0.7526	0.8015
	CE2	0.6359	0.7476	
	CE3	0.5833	0.7642	
	CE4	0.5575	0.7723	
	CE5	0.5286	0.7803	
Socioeconomic Status (SES)	SES1	0.6897	0.8649	0.8832
	SES2	0.6835	0.8662	
	SES3	0.7345	0.8545	
	SES4	0.7357	0.8542	
	SES5	0.7528	0.8501	
Sustainable Cultural Tourism Development (SCTD)	SCTD1	0.7647	0.8234	0.8692
	SCTD2	0.6675	0.8478	
	SCTD3	0.6668	0.848	
	SCTD4	0.6564	0.8509	
	SCTD5	0.7123	0.8370	

The heritage memory scale has a Cronbach's alpha coefficient of 0.8185, which is above the 0.7 threshold. This shows good reliability. All observed variables have item-total correlations greater than 0.3, with values ranging from 0.5826 to 0.6500. If any variable is removed, the overall alpha decreases, so all five items are kept. The cultural identity scale has a Cronbach's alpha of 0.7602, which meets reliability standards. The item-total correlations range from 0.4640 to 0.5904, all above the minimum requirement. Even though CI1 and CI3 have lower correlations than the other items, they still meet the criteria. Removing these items slightly increases the alpha, but the difference is negligible; therefore, they remain in the scale.

The topophilia scale demonstrates very high reliability, with a Cronbach's alpha of 0.8925. Item–total correlations are strong, ranging from 0.6756 to 0.7776. This is the most reliable scale in the study, and all five items are retained. The community engagement scale has a Cronbach's alpha of 0.8015, indicating good reliability. Item–total correlations range from 0.5286 to 0.6359. Removing CE5 slightly reduces the alpha (0.7803), thus all items are kept. The socioeconomic status scale shows high reliability with a Cronbach's alpha of 0.8832. All items have strong item–total correlations (0.6835 to 0.7528). Removing any item does not improve the overall alpha, so all variables are retained.

The dependent variable, sustainable cultural tourism development, has a Cronbach's alpha of 0.8692, indicating strong reliability. Item–total correlations range from 0.6564 to 0.7647. The highest correlation is found for SCTD1 (0.7647), suggesting that this item strongly represents the underlying construct.

Results indicate that all six scales achieve acceptable to high reliability. The topophilia scale has the highest reliability coefficient (0.8925), followed by SES (0.8832) and SCTD (0.8692). The cultural identity scale has the lowest reliability (0.7602), but still falls within acceptable limits. All 30 observed variables meet the criteria and are eligible for exploratory factor analysis.

3.2.2. Exploratory factor analysis (EFA)

We conducted an EFA to assess the convergent validity and discriminant validity of the measurement scales. The study used the principal component factor (PCF) extraction method along with Varimax rotation. The evaluation criteria are: KMO coefficient ≥ 0.5, Bartlett's test significance < 0.05, factor loadings ≥ 0.5, and total variance explained ≥ 50%.

a) EFA for independent variables and moderating variables

Factor analysis included 25 observed variables from five scales: heritage memory (HM), cultural identity (CI), topophilia (TP), community engagement (CE), and socioeconomic status (SES).

Table 4. KMO and Bartlett's test for independent variables; Source: Author compiled from Stata 17.0 results

Index	Value
KMO	0.8463
Bartlett's Test (Chi-square)	2035.38
Degrees of freedom (df)	300
Significance (Sig.)	0.0000

A KMO value of 0.8463 (> 0.5) indicates that the data are suitable for factor analysis. Bartlett's test returns a Chi-square value of 2035.38 with Sig. = 0.0000 (< 0.05), rejecting the null hypothesis of no correlation among observed variables. Therefore, factor analysis is appropriate.

Table 5. Factor extraction results for independent variables; Source: Author compiled from Stata 17.0 results

Factor	Eigenvalue	Variance (%)	Cumulative Variance (%)
Factor 1	6.652	26.61	26.61
Factor 2	2.728	10.91	37.52
Factor 3	2.556	10.23	47.75
Factor 4	2.027	8.11	55.85
Factor 5	1.507	6.03	61.88

Results indicate that five factors were extracted with eigenvalues greater than 1. The total variance explained reaches 61.88%, exceeding the minimum requirement of 50%. This shows that the five factors account for 61.88% of the variability in the dataset.

Table 6. Rotated factor matrix for independent variables (Varimax); Source: Author compiled from Stata 17.0 results

Variable	**Factor 1 (TP)**	**Factor 2 (HM)**	**Factor 3 (CI)**	**Factor 4 (CE)**	**Factor 5 (SES)**
TP1	0.7477				
TP2	0.8123				
TP3	0.8104				
TP4	0.8191				
TP5	0.8036				
HM1		0.6972			
HM2		0.7617			
HM3		0.7397			
HM4		0.7348			
HM5		0.7197			
CI1			0.6489		
CI2			0.6820		
CI3			0.6447		
CI4			0.7262		
CI5			0.7275		
CE1				0.7307	
CE2				0.7581	
CE3				0.7031	

Variable	Factor 1 (TP)	Factor 2 (HM)	Factor 3 (CI)	Factor 4 (CE)	Factor 5 (SES)
CE4				0.6821	
CE5				0.7098	
SES1					0.7883
SES2					0.7713
SES3					0.7961
SES4					0.8168
SES5					0.8059

(Only factor loadings ≥ 0.5 are displayed)

The rotated matrix shows that all 25 observed variables load onto 5 factors exactly as expected. All loadings exceed 0.5, ranging from 0.6447 (CI3) to 0.8191 (TP4). No variable loads on multiple factors, confirming strong discriminant validity. Factor 1 includes TP1–TP5 (loadings 0.7477–0.8191), representing topophilia. Factor 2 includes HM1–HM5 (loadings 0.6972–0.7617), measuring heritage memory. Factor 3 includes CI1–CI5 (loadings 0.6447–0.7275), measuring cultural identity. Factor 4 includes CE1–CE5 (loadings 0.6821–0.7581), representing community engagement. Factor 5 includes SES1–SES5 (loadings 0.7713–0.8168), representing socioeconomic status.

Table 7. KMO Coefficients for Each Observed Variable; Source: Author compiled from Stata 17.0 results

Variable	KMO	Variable	KMO	Variable	KMO
HM1	0.8110	CI5	0.7902	CE4	0.8537
HM2	0.8499	TP1	0.8528	CE5	0.8206
HM3	0.7998	TP2	0.8883	SES1	0.8740
HM4	0.7265	TP3	0.8676	SES2	0.8844
HM5	0.8516	TP4	0.8882	SES3	0.8718
CI1	0.8487	TP5	0.8490	SES4	0.8434
CI2	0.8262	CE1	0.7897	SES5	0.8936
CI3	0.8123	CE2	0.8448		
CI4	0.8216	CE3	0.8637		

The KMO values for individual observed variables range from 0.7265 (HM4) to 0.8936 (SES5), all above 0.5, confirming that each variable contributes adequately to its respective factor.

b) EFA for the dependent variable

Factor analysis was also performed separately for the five observed variables of the sustainable cultural tourism development (SCTD) scale.

Table 8. KMO and Bartlett's test for the dependent variable; Source: Author compiled from Stata 17.0 results

Index	Value
KMO	0.8621
Bartlett's Test (Chi-square)	413.51
Degrees of freedom	10
Sig.	0.0000

Both KMO and Bartlett's test indicate suitability for factor analysis.

Table 9. Factor extraction for SCTD; Source: Author compiled from Stata 17.0 results

Variable	Factor Loading	Uniqueness
SCTD1	0.8622	0.2566
SCTD2	0.7911	0.3742

Variable	Factor Loading	Uniqueness
SCTD3	0.7903	0.3755
SCTD4	0.7821	0.3883
SCTD5	0.8255	0.3186
Eigenvalue	3.287	
Variance Explained (%)	65.74	

All variables load onto a single factor with loadings between 0.7821 and 0.8622. The extracted variance is 65.74%, above the required 50% threshold. SCTD1 exhibits the highest factor loading (0.8622), indicating it best measures the sustainable cultural tourism development construct.

Table 10. KMO Values for SCTD Variables; Source: Author compiled from Stata 17.0 results

Variable	KMO
SCTD1	0.8299
SCTD2	0.8727
SCTD3	0.8817
SCTD4	0.8762
SCTD5	0.8606

All KMO values fall within 0.8299–0.8817, showing strong suitability for factor analysis.

Table 11. Summary of EFA results; Source: Author compiled from Stata 17.0 results

Content	Independent Variables	Dependent Variable
Number of observed variables	25	5
KMO	0.8463	0.8621
Bartlett Sig.	0.0000	0.0000
Number of extracted factors	5	1
Cumulative Variance	61.88%	65.74%
Minimum Factor Loading	0.6447	0.7821

The results of the exploratory factor analysis show that all scales in the study meet both convergent and discriminant validity. The observed variables load correctly onto their assigned factors as planned. A total of 30 observed variables are kept for further analysis, including correlation and regression analysis.

3.3. Correlation and regression analysis

3.3.1. Pearson correlation analysis

Before performing the regression analysis, the study conducts a Pearson correlation analysis to look at the relationships among the variables in the model. The correlation matrix offers an initial view of the strength and direction of the relationships between the independent variables and the dependent variable. It also helps identify the potential risk of multicollinearity.

Table 12. Pearson correlation matrix

Variable	SCTD	HM	CI	TP	CE	SES
SCTD	1.000					
HM	0.173	1.000				
CI	0.215	0.317	1.000			
TP	0.406	0.200	0.300	1.000		
CE	0.378	0.241	0.207	0.408	1.000	
SES	0.256	0.341	0.173	0.401	0.224	1.000

Note: N = 183; all correlation coefficients are statistically significant at $p < 0.05$

The analysis shows that the dependent variable, SCTD, is positively correlated with all independent variables and the moderating variable. Among them, topophilia (TP) shows the strongest correlation with SCTD (r = 0.406), followed by community engagement (CE) (r = 0.378). Socioeconomic status (SES) has a correlation of 0.256, cultural identity (CI) 0.215, and heritage memory (HM), the lowest at 0.173. Correlations among independent variables range from 0.173 to 0.408. The highest correlation occurs between TP and CE (r = 0.408), followed by SES and TP (r = 0.401), and HM and SES (r = 0.341). All correlations are below 0.8, indicating no severe multicollinearity.

3.3.2. Multiple regression analysis

The regression model is constructed to evaluate the effects of the independent variables and the moderating effect of SES on the dependent variable SCTD.

The regression equation is:

$$SCTD = \beta_0 + \beta_1 HM + \beta_2 CI + \beta_3 TP + \beta_4 CE + \beta_5 SES + \beta_6 MOD\_HM + \beta_7 MOD\_CI + \beta_8 MOD\_TP + \beta_9 MOD\_CE + \varepsilon$$

where the interaction terms (MOD_HM, MOD_CI, MOD_TP, MOD_CE) are created by multiplying SES with each independent variable to test moderation effects.

Table 13. Summary of regression model fit

Index	Value
R^2	0.7704
Adjusted R^2	0.7584
Standard error	0.32345
F	64.50
Sig. (F)	0.0000
Number of observations	183

The regression model has an R^2 of 0.7704, meaning that the independent variables and interaction terms explain 77.04% of the variation in SCTD. The adjusted R^2 of 0.7584 indicates strong explanatory power even after adjusting for the number of predictors. The F-test (F = 64.50, p = 0.0000) confirms that the model is statistically significant.

Table 14. Regression results with robust standard errors

Variable	B Coefficient	Std. Error	t	Sig.	Beta
Constant	0.217	0.372	0.58	0.560	
HM	0.138	0.061	2.26	0.025	0.118
CI	0.151	0.05	3.00	0.003	0.133
TP	0.113	0.044	2.55	0.012	0.106
CE	0.254	0.047	5.34	0.000	0.210
SES	0.164	0.054	3.03	0.003	0.157
MOD_HM	0.145	0.020	7.42	0.000	0.296
MOD_CI	0.135	0.034	3.91	0.000	0.221
MOD_TP	0.164	0.020	8.12	0.000	0.323
MOD_CE	0.145	0.029	5.08	0.000	0.241

Note: Robust standard errors are applied to address heteroskedasticity.

All independent variables and interaction terms significantly influence SCTD ($p < 0.05$). Community engagement (CE) has the strongest direct effect on SCTD (Beta = 0.210; B = 0.254). Socioeconomic status (SES) shows a significant positive effect (Beta = 0.157; B = 0.164). Cultural identity (CI) (Beta = 0.133),

heritage memory (HM) (Beta = 0.118), and topophilia (TP) (Beta = 0.106) all have positive direct effects. MOD_TP exhibits the strongest moderation effect (Beta = 0.323), indicating that SES significantly strengthens the effect of TP on SCTD.

Moderate effects are also observed for:

- MOD_HM (Beta = 0.296)
- MOD_CE (Beta = 0.241)
- MOD_CI (Beta = 0.221)

Table 15. Multicollinearity diagnostics

Variable	VIF	Tolerance (1/VIF)
MOD_TP	1.85	0.541
MOD_CE	1.85	0.541
TP	1.7	0.590
MOD_CI	1.55	0.646
HM	1.49	0.670
MOD_HM	1.42	0.705
SES	1.40	0.714
CE	1.35	0.743
CI	1.27	0.789
Mean VIF	1.54	

All VIF values are below 2 and far from the common threshold of 10 → no multicollinearity issues.

Table 16. Test for heteroskedasticity

Test	Chi^2	Sig.
Breusch-Pagan / Cook-Weisberg	15.48	0.0001

With Sig. = 0.0001 (< 0.05), heteroskedasticity is present. Therefore, robust estimators are applied in the regression to ensure reliable standard errors and t-statistics.

Table 17. Summary of hypothesis testing results

Hypothesis	Description	Beta	Sig.	Conclusion
H1	HM → SCTD	0.118	0.025	Accepted
H2	CI → SCTD	0.133	0.003	Accepted
H3	TP → SCTD	0.106	0.012	Accepted
H4	CE → SCTD	0.210	0.000	Accepted
H5a	SES moderates HM → SCTD	0.296	0.000	Accepted
H5b	SES moderates CI → SCTD	0.221	0.000	Accepted
H5c	SES moderates TP → SCTD	0.323	0.000	Accepted
H5d	SES moderates CE → SCTD	0.241	0.000	Accepted

All hypotheses are supported at the 5% significance level. The four independent variables – heritage memory, cultural identity, topophilia, and community engagement – exert positive effects on SCTD. Additionally, SES significantly moderates all examined relationships.

3.4. Mean difference testing

3.4.1. Analysis by gender

Table 18. ANOVA results by gender

Variable	Male (n = 97)	Female (n = 83)	Other (n = 3)	F	Sig.
HM	4.0	4.1	3.5	1.30	0.275
CI	2.6	2.7	3.0	1.60	0.205
TP	3.2	3.2	3.6	0.76	0.467
CE	4.0	4.0	3.8	0.28	0.76
SES	4.0	4.0	3.9	0.08	0.925
SCTD	3.3	3.4	3.5	0.56	0.573

The ANOVA results indicate that there are no statistically significant differences in the mean scores of all variables across gender groups (Sig. > 0.05). This implies that males, females, and other-gender respondents share similar evaluations of heritage memory, cultural identity, topophilia, community engagement, socioeconomic status, and sustainable cultural tourism development.

3.4.2. Analysis by age group

Table 19. ANOVA results by age group

Variable	Under 18	18–25	26–35	36–45	46–55	Over 55	F	Sig.
HM	4.0	4.1	4.0	4.0	4.1	4.0	0.33	0.897
CI	2.6	2.7	2.7	2.4	2.6	2.6	1.10	0.364
TP	3.3	3.3	3.2	3.2	3.1	3.1	0.6	0.703
CE	4.1	4.0	3.9	4.1	3.9	3.9	1.07	0.379
SES	4.0	4.0	4.0	4.1	4.0	3.7	1.19	0.317
SCTD	3.6	3.3	3.3	3.4	3.5	3.1	1.10	0.360

No significant differences were found in the mean scores across age groups (Sig. > 0.05). Although respondents over age 55 reported lower SES and SCTD scores compared with other groups, the differences were not statistically significant.

3.4.3. Analysis by educational level

Table 20. ANOVA results by educational level

Variable	Primary	Lower Secondary	Upper Secondary	Vocational/College	University	Postgraduate	F	Sig.
HM	4.2	3.9	4.0	3.8	4.1	3.9	1.83	0.11
CI	2.8	2.7	2.7	2.5	2.6	2.4	1.29	0.272
TP	3.2	3.1	3.3	3.1	3.2	3.2	0.21	0.958
CE	3.9	4.1	4.0	3.9	4.0	3.9	0.68	0.639
SES	4.1	4.0	4.0	3.8	4.0	4.0	0.50	0.773
SCTD	3.2	3.6	3.3	3.1	3.5	3.3	1.84	0.107

No statistically significant differences were detected across education levels for any of the variables (Sig. > 0.05). Although vocational/college respondents tended to report slightly lower scores in several variables, the differences were not statistically significant.

3.4.4. Analysis by occupation

Table 21. ANOVA results by occupation

Variable	Student	Unskilled Labor	Office Worker	Business Household	Public Employee	Retired	Other	F	Sig.
HM	3.7	4.1	4.2	4.0	3.9	4.1	4.1	1.96	0.074
CI	2.6	2.5	2.7	2.6	2.6	2.7	2.5	0.40	0.877
TP	3.2	3.1	3.3	3.2	3.2	3.2	3.1	0.47	0.832
CE	3.9	3.9	4.1	4.0	3.9	4.0	3.9	0.65	0.690
SES	4.0	4.0	4.0	3.9	4.0	4.1	4.0	0.15	0.990
SCTD	3.3	3.4	3.4	3.3	3.4	3.3	3.2	0.31	0.932

There are no statistically significant differences across occupation groups (Sig. > 0.05). However, the variable HM shows F = 1.96 with Sig. = 0.074, which is close to the 10% significance threshold. Students report the lowest HM score (3.7), while office workers report the highest (4.2).

3.4.5. Analysis by monthly income

Table 22. ANOVA results by monthly income; Source: Author compiled from SPSS 26.0 results

Variable	< 3M	3–5M	5–10M	10–20M	> 20M	F	Sig.
HM	4.0	4.1	4.0	4.1	4.1	0.34	0.854
CI	2.7	2.7	2.6	2.6	2.6	0.50	0.735
TP	3.1	3.3	3.2	3.2	2.8	1.51	0.201
CE	4.0	4.0	4.0	4.0	3.8	0.3	0.875
SES	3.8	4.0	4.1	4.0	3.7	1.29	0.274
SCTD	3.5	3.4	3.4	3.3	3.2	0.45	0.775

No significant differences were found across income groups (Sig. > 0.05). Notably, respondents earning above 20 million VND reported lower scores for several variables, especially TP (2.8) and SES (3.7), though the small sample size (n = 13) limits statistical significance.

3.4.6. Analysis by marital status

Table 23. ANOVA results by marital status

Variable	Single	Married	Divorced	Other	F	Sig.
HM	4.1	4.0	3.9	3.9	1.03	0.382
CI	2.7	2.5	2.5	2.5	1.76	0.156
TP	3.2	3.2	3.3	3.1	0.17	0.918
CE	4.0	4.0	3.9	3.9	0.18	0.913
SES	4.0	3.9	4.1	4.1	0.25	0.864
SCTD	3.4	3.4	3.3	3.4	0.10	0.960

No statistically significant differences across marital status groups were observed (Sig. > 0.05).

3.4.7. Analysis by length of residence

Table 24. ANOVA results by length of residence

Variable	< 1 year	1–5 years	> 5 years	Born here	F	Sig.
HM	4.1	3.9	4.0	4.1	1.24	0.299
CI	2.5	2.6	2.7	2.6	0.39	0.761
TP	3.3	3.2	3.2	3.1	0.39	0.759
CE	3.9	3.9	4.0	4.0	0.92	0.433
SES	3.9	4.0	4.0	4.1	1.02	0.387
SCTD	3.5	3.3	3.3	3.4	0.28	0.841

3.4.8. Analysis by frequency of participation in cultural–tourism activities

Table 25. ANOVA results by participation frequency

Variable	Rarely	Occasionally	Monthly	Weekly	Very Frequently	F	Sig.
HM	4.1	4.1	4.0	3.9	4.1	0.7	0.593
CI	3.0	2.6	2.6	2.5	2.6	2.33	0.058
TP	3.2	3.2	3.2	3.2	3.1	0.19	0.943
CE	3.7	4.1	4.0	3.9	4.1	1.90	0.113
SES	4.0	4.1	3.9	4.0	4.0	0.77	0.545
SCTD	3.2	3.5	3.4	3.3	3.4	0.55	0.70

The variable CI shows an F-value of 2.33 with Sig. = 0.058, approaching the significance threshold.

Bonferroni post-hoc test reveals:

- The "Rarely" group (mean = 3.0) reports significantly higher CI scores than the "Weekly" group (mean = 2.5), with p = 0.046.
- No other variables show significant group differences.

3.4.9. Analysis by distance to heritage site

Table 26. ANOVA results by distance to heritage site

Variable	< 1 km	1–3 km	3–5 km	> 5 km	F	Sig.
HM	4.0	4.0	4.1	4.1	0.28	0.837
CI	2.5	2.6	2.8	2.5	2.08	0.104
TP	3.0	3.3	3.1	3.4	3.71	0.013
CE	3.9	4.0	3.9	4.0	0.79	0.498
SES	3.9	4.0	3.9	4.1	0.55	0.647
SCTD	3.2	3.5	3.3	3.4	1.96	0.122

Topophilia (TP) varies significantly across distance groups (F = 3.71, Sig. = 0.013).

Table 27. Bonferroni Post-hoc results for TP

Comparison	Mean Difference	Sig.
<1 km – 1–3 km	–0.3	0.144
<1 km – 3–5 km	–0.1	1.000
<1 km – >5 km	–0.4	0.017
1–3 km – 3–5 km	0.2	0.978
1–3 km – >5 km	–0.1	1.000
3–5 km – >5 km	–0.3	0.155

Respondents living more than 5 km from the heritage site reported significantly higher TP scores (3.4) than those living within 1 km (3.0), with p = 0.017. This intriguing finding suggests that individuals living farther away may develop stronger emotional attachment due to less frequent but more valued visits.

3.4.10. Summary of ANOVA results

Table 28. Summary of ANOVA tests

Demographic Variable	**HM**	**CI**	**TP**	**CE**	**SES**	**SCTD**
Gender	No diff.	No diff.	No diff.	No diff.	No diff.	No diff.
Age	No diff.	No diff.	No diff.	No diff.	No diff.	No diff.
Education	No diff.	No diff.	No diff.	No diff.	No diff.	No diff.
Occupation	No diff.	No diff.	No diff.	No diff.	No diff.	No diff.
Income	No diff.	No diff.	No diff.	No diff.	No diff.	No diff.

Demographic Variable	HM	CI	TP	CE	SES	SCTD
Marital status	No diff.	No diff.	No diff.	No diff.	No diff.	No diff.
Length of residence	No diff.	No diff.	No diff.	No diff.	No diff.	No diff.
Participation frequency	No diff.	Near diff.*	No diff.	No diff.	No diff.	No diff.
Distance to heritage	No diff.	No diff.	Diff.	No diff.	No diff.	No diff.

Notes:
No diff. = No statistically significant difference
Diff. = Significant difference ($p < 0.05$)
Near diff. = Marginal significance ($p < 0.10$)

The ANOVA findings indicate that most demographic variables do not significantly influence the mean scores of the study constructs. Only two notable exceptions were observed:

- Distance to heritage site significantly affects topophilia (TP).
- Participation frequency shows a marginal effect on cultural identity (CI).

These results suggest that demographic characteristics such as gender, age, education, occupation, income, and length of residence do not substantially shape residents' perceptions of the constructs examined in this study.

3.5. Discussion

Heritage memory, cultural identity, topophilia, and community engagement were all found to positively affect sustainable cultural tourism development, and all relationships are moderated to a significant degree by socioeconomic status. While these findings corroborate much international research, they also provide new evidence in a Vietnam context. First, the positive impact heritage memory has on sustainable cultural tourism development ($\beta = 0.118$) demonstrates that collective memory and historical consciousness are instrumental to cultural continuity and the development of pro-preservation attitudes. Prior studies note that positive Heritage Memory contributes to cultural awareness and community support (increased advocacy) for heritage tourism [1], [24]. This study positively contributes to the body of evidence that speaks to the impact emotional memory, cross-generational memory, and familiarity with heritage narratives have on residents' perceptions of sustainable tourism development. The impact of SES on this relationship ($\beta = 0.296$) demonstrates that those with greater economic and educational attainment are better able to convert heritage memory into positive, supportive action. This finding supports the arguments made by [16], [17], who argue that socioeconomic resources are a determining factor in sustainable tourism engagement.

Second, the effect of cultural identity on the sustainable development of cultural tourism is also noteworthy ($\beta = 0.133$). This is consistent with the findings of [3], [4], [5], which show that cultural identity boosts local pride, brings people together, and increases the active participation of community members in the protection of their culture. The moderating effect of SES ($\beta = 0.221$) confirms that the impact of cultural identity is more pronounced among people of more affluent socioeconomic status, which is in line with Luekveerawattana et al. [18], where cultural participation is a function of the means and willingness of people.

Third, Topophilia, understood as the emotional and symbolic attachment to a place, illustrates a measurable direct effect on sustainable tourism, though this is limited from a practical standpoint ($\beta = 0.106$). The relative direct impact may be small, but it is consistent with the theoretical underpinnings of Yi-Fu Tuan [6], [7] and the related empirical work of [2], regarding the importance of place-based emotions as motivators of cultural preservation. The most significant finding of this study is the outstanding moderating impact of SES on the topophilia → SCTD relationship ($\beta = 0.323$), the largest of all the interaction terms. It suggests that emotional attachment on its own is inadequate; what is needed is the emotional attachment coupled with adequate socio-economic means to convert topophilic sentiments into sustainable behaviors. This is in line with Nagim and Raouf [9], that place attachment effects are most pronounced when there are tangible supportive access and social resources.

Fourth, community engagement demonstrates the strongest direct impact on sustainable cultural tourism development (β = 0.210). This finding is consistent with abundant scholarship emphasizing the pivotal role of resident participation in sustainable tourism outcomes [10], [11], [12], [15]. Residents in this study exhibit relatively high levels of engagement (mean values above 3.9), suggesting a strong sense of responsibility toward cultural stewardship. SES strengthens the effect of participation (β = 0.241), supporting [26], who argue that successful community-based tourism requires both willingness and socio-economic capability.

In addition, the ANOVA analysis shows that most of the demographic factors tested do not lead to differences in the main variables of the study. It is noticed that the only statistically significant difference is in the factor of Topophilia, across the distance-to-heritage subgroups, where respondents further away report higher levels of attachment. This may be perceived as appreciation or symbolic attachment, which is consistent with Chhabra and Kim's [8] findings regarding the emotional attachment to cultural environments. The culturally indicative and close to significant variation in Cultural Identity based on the frequency of participation is consistent with the cultural exposure and identity argument put forth by [13].

The strong explanatory power of the regression analysis (R^2 = 0.7704) suggests that cultural–emotional variables, in addition to community and socioeconomic variables, construct the most viable understanding of predictors for culturally sustainable tourism development. This is consistent with contemporary literature that advocates the need for a blend of social system, cultural, emotional, and value geographies for effective sustainable tourism governance [21], [22], [23].

4. Conclusion and recommendations

4.1. Conclusion

The results obtained demonstrate the importance of community engagement, cultural values, and emotional attachment to place in the sustainable development of cultural tourism. It is evident that the sustainable development of tourism in heritage areas needs a culturally and socially sensitive, inclusive, and community-centered approach. The unique interplay of cultural identity, collective memory, and community engagement provides a pathway for tourism that protects and promotes the community, improving their quality of life and sustaining the community. The results provide a strong starting point for striking a balance between the preservation of culture and the needs of present-day development for policymakers and practitioners.

4.2. Recommendations

The findings highlight the need for context-specific policies that align heritage conservation with socio-economic development in Vietnam. Local governments, particularly provincial and commune-level authorities, should play a central role in integrating cultural heritage management into local development strategies. By supporting vocational training, heritage-based livelihoods, and community tourism initiatives, local authorities can improve residents' socio-economic conditions while strengthening their commitment to heritage preservation.

In heritage villages, historic quarters, and traditional cultural spaces, participatory governance models such as community tourism boards or heritage management groups should be promoted to ensure that residents are actively involved in tourism planning and decision-making. Additionally, strengthening heritage education through schools, community institutions, and intergenerational knowledge transmission can foster cultural identity, stewardship, and long-term support for sustainable cultural tourism.

These measures can help ensure that cultural tourism development in Vietnam remains community-centered, culturally sensitive, and socially sustainable.

Declaration of competing interest

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Author contributions

Nguyen Tri Phuong: Conceptualization, Methodology, Formal analysis, Writing - original draft, Supervision, Data curation, Investigation, Writing - review & editing. Vu Van Tuyen: Methodology, Software, Validation, Writing - review & editing, Resources, Visualization.

Informed consent

Informed consent was obtained from all individual participants involved in the study prior to data collection.

Declaration of use of AI in the writing process

The author(s) used EndNote Reference Manager (version 21) during the preparation of this work to reference. The author(s) reviewed and edited the work as necessary and take(s) full responsibility for the final version.

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