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LOCAL PERCEPTIONS TOWARDS THE ENVIRONMENTAL IMPACT OF TOURISM ON THE CHÀM ISLANDS, VIETNAM

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Abstract

Local perceptions have the most significant impact on the sustainable tourism practices in a region. This study used the Social Exchange Theory (SET) to examine how local perceptions towards the environmental costs and benefits affect their support for tourism development. The study involved 300 residents of the Chàm Islands. Two factors that affect local perceptions towards the environmental costs and benefits; namely, community concern and eco-centric attitudes; were assessed. Two factors were found to have a positive effect on the perceived environmental costs while community concern had influence on perceived environmental benefits. Local perceptions towards the environmental costs and benefits also had a positive and significant correlation with their support for tourism development. Therefore, the locals still support tourism development even though they believe the environmental costs outweigh its benefits. The government and tourism planners may use the findings to guide local perceptions towards the environmental impacts to develop sustainable practices.

Keywords: Locals perceptions, environmental benefits, environmental costs, support for tourism

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INTRODUCTION

Tourism is often thought to have a positive effect on the economic and sociocultural aspects of the local community (Ouyang, Gursoy, & Chen, 2019; Latip, Jaafar, Marzuki, Roufechaei, & Umar, 2020; Latip, Jaafar, Marzuki, Roufechaei, & Umar *et al.*, 2020). However, the environmental sustainability of tourism development is often called into question (Latip, Rasoolimanesh, Jaafar, Marzuki, & Umar, 2018; Riengchantr, 2018; Bhat, Majumdar, & Mishra, 2020) as it often interferes with the preservation of pristine environments, particularly in highly vulnerable areas such as small islands (Burgin & Hardiman, 2015; McLeod, Dodds, & Butler, 2021).

Island tourism is a significant industry in Vietnam (Luan, 2015). As such, the Chàm Islands are one of the islands facing serious environmental issues due to an influx of tourists (Bourne, 2019; Vu, 2019). At the time of writing, at least 33 hectares of seaweed has been destroyed due to over-fishing and mass tourism (Thanh, 2019), marine species and fish shelters have been damaged by increased speed boat traffic and mass tourism (Vietnam News, 2018), the number of hard corals in tourism zones has decreased due to an increase in tourists (Quach, 2018), 102 hectares of forest have been cleared to construct roads and buildings for tourism and to collect plants as food for tourist (Thanh, 2019).

The primary purpose of the Cu Lao Chàm marine protected area (Chàm MPA) is to preserve habitats and species and improve local lives. The environmental protection initiatives of the Chàm MPA as well as its operations are funded by tourism revenue. Although the locals believe that tourism harms the environment as it causes marine damage and forest clearance, they do acknowledge the economic benefits and poverty reduction that tourism brings (Hoang, 2019; Thanh, 2019; Alisa, 2020; Tin *et al.*, 2020).

The cost-benefit approach is too simple and has limited predictive capabilities as it does not specify the impact of perceived aspects; such as economic, sociocultural, and environmental (Nunkoo & Ramkissoon, 2012; Styliadis & Terzidou, 2014). Furthermore, the number and scope of studies on the effect of local perceptions towards the environmental costs and benefits of tourism on local support of tourism is limited (Gursoy, Chi, & Dyer, 2010; Adongo, Choe, & Han, 2017). Most studies have examined the effect of local perception of the economic and socio-cultural costs and benefits of tourism (Kuvan & Akan, 2005; Boley, Strzelecka, & Woosnam, 2018). Furthermore, only a handful of studies have examined local perceptions towards the environmental costs and benefits of island tourism (Miyakuni, 2012; Martín, de los Salmenes Sanchez, & Herrero, 2018). Therefore, there is a need to examine the effect of local perceptions towards the environmental costs and benefits of tourism on local support of tourism development.

Although the locals of the Chàm Islands contend with tourism-related environmental deterioration (Alisa, 2020), little has been done to determine local

perceptions towards the environmental costs and benefits of tourism (Truong & Le, 2018). Therefore, this present study adopted the domain related costs-benefits approach of Stylidis, Biran, Sit, and Szivas (2014); which was derived from the social exchange theory (SET); to determine the extent to which the locals would support tourism development based on their perceptions of the environmental costs and benefits of tourism. The factors affecting these perceived environmental costs and benefits were also assessed.

LOCAL PERCEPTIONS TOWARDS THE ENVIRONMENTAL COSTS AND BENEFITS

Perception is a part of the human cognitive process (Bonnes, Lee, & Bonaiuto, 2004) that is affected by experiences (Ismail, 2009). It can be defined as the understanding, awareness, and knowledge of individuals (Doxey, 1975). In the context of tourism, local perceptions of the impacts of tourism are crucial as they influence how the locals behave with tourists as well as their support of tourism development (Almeida-García, Peláez-Fernández, Balbuena-Vázquez, & Cortés-Macias, 2016). The perceived environmental costs and benefits is the manner in which the locals recognise positive or negative changes in the environment and its surroundings (Pham, 2011).

FACTORS AFFECTING THE PERCEIVED ENVIRONMENTAL COSTS AND BENEFITS

i) Community concern

Concerns are a state of fear of a certain problem. Community concern refers to concerns about local issues; such as the environment, schools, crime, and recreation; in the community (Gursoy, Jurowski, & Uysal, 2002; Gursoy *et al.*, 2010). The level of concern that locals have for each dimension of a community may affect their perception of the impacts of tourism (Gursoy *et al.*, 2002). In this present study, local concerns refer to the condition and quality of the environment, particular marine life, and forest biodiversity.

ii) Eco-centric attitudes

Eco-centric attitudes are environmental attitudes that refer to “an individual’s values and norms about the correlation between human behaviours and the natural environment” (Gursoy, Ouyang, Nunkoo, & Wei, 2019, p. 315). It is also defined as “the strong belief in the preservation and protection of the environment” (Jurowski, Uysal, & Williams, 1997, p. 4). Locals who have eco-centric values are conservation-oriented and allocate resources to protect the environment (Gursoy *et al.*, 2019).

iii) Social Exchange Theory (SET)

The SET is the most frequently used theoretical framework in studies on the impacts of tourism (Amuquandoh, 2010; Lee, 2013; Rasoolimanesh, Jaafar, Kock, & Ramayah, 2015; Gursoy *et al.*, 2019). It is a “general sociological theory for understanding the exchange of resources between individuals and groups in an interactive situation” (Ap, 1992, p. 66). The SET suggests that locals are more likely to enter into an exchange if the benefits of tourism for their community are valued. They are also more likely to support the tourism industry when the benefits of tourism exceed its costs (Gursoy *et al.*, 2010; Saad, Abdullah, & Rosman, 2020; Gannon, Rasoolimanesh, & Taheri, 2021). Local support plays a pivotal role in determining the sustainability and success of tourism development and can be determined by evaluating their perceptions of the environmental impacts (Amuquandoh, 2010; Lee, 2013).

THE THEORETICAL FRAMEWORK

The theoretical framework of this present study was adapted from the studies of Jurowski *et al.* (1997), Gursoy *et al.* (2002), and Amuquandoh (2010) and applied with the SET. According to Jurowski *et al.* (1997), the perceived economic, social, and environmental impacts affect local support of tourism. However, the study did not consider the costs and benefits of each dimension. Meanwhile, the model that Gursoy *et al.* (2002) proposed suggests that the correlation between the perceived costs and benefits affects local support of tourism. However, both studies did not allow locals to express their own perceptions of the costs and benefits of specific aspects; such as economy, socio-culture, or environment. Therefore, this present study examined if the perceived environmental costs and benefits affect the level of local support of tourism development.

According to Gursoy *et al.* (2002) and Amuquandoh (2010), factors; such as community attachment, the state of the local economy, community concern, eco-centric attitudes, and the use of local resources; affect local perceptions. However, community attachment, the state of the local economy, and the use of local resources were not included in the framework of this present study. This present study also investigated how the correlation between the perceived environmental costs and benefits affects local support of tourism development. Figure 1 depicts the theoretical framework that was developed.

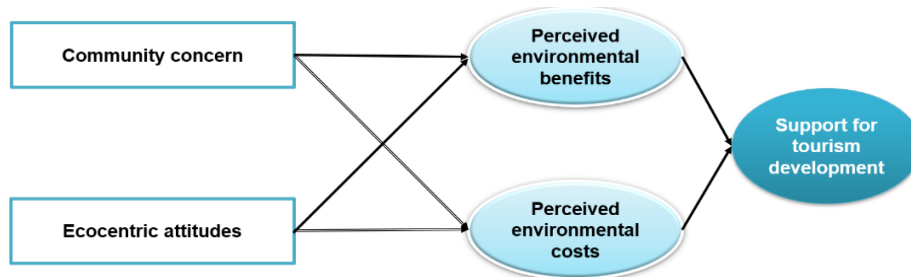


Figure 1: The theoretical framework

RESEARCH METHODOLOGY

A survey questionnaire was used to quantitatively determine local perceptions of the environmental impacts of tourism. Considering the Covid-19 pandemic and the subsequent movement control orders, convenience sampling; which is a type of nonprobability sampling; was used to collect the data. All the respondents were selected depending on their ease of access and willingness to participate in the study. The data was collected in May 2021 and included 300 valid respondents who received the survey questionnaires via Facebook and Google Forms. A team of local enumerators were also on-site to collect paper-based responses.

The Chàm Islands are in the Central Vietnamese province of Quang Nam and consist of eight islands, of which Hon Lao is the largest island and home to four villages. This present study was only conducted in two of these villages; namely, Bai Lang and Bai Huong; as most of the residents of these two villages either worked in the tourism industry or its related amenities (Hoang, 2019; Alisa, 2020). Figure 2 shows the location of the Chàm Islands and the two villages.

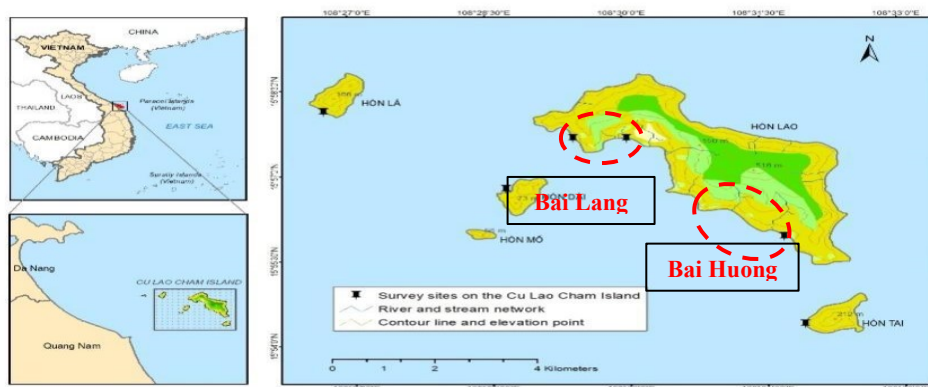


Figure 2: Location of the Chàm Islands.

The rich biodiversity of the islands includes both terrestrial and aquatic marine ecosystems; such as forests, mountains, coral reefs, seagrass beds, and fishing to name a few. At present, 1500 hectares of the islands is tropical forest with 6,700 hectares of sea that features a variety of flora and fauna. A total of 5175 hectares; which includes 165 hectares of coral reefs and 500 hectares of seagrass beds; falls under the purview of the MPA. The Chàm MPA is divided into five delineated zones and includes a tourism development zone (Trinh, 2014; Nguyen, Huynh, & Zhang, 2015; Quach, 2018; Bourne, 2019). Upon being recognised as a UNESCO site in 2009, tourism boomed on the Chàm Islands between 2012 to 2019 (Nam, 2020).

RESULTS

Demography

As seen in Table 1, the 300 respondents consisted of 154 males (51.3%) and 146 females (48.7%) that were aged between 18-60 years old. Approximately 34% of the respondents were 26-35 years old while 25.3% were aged 36-45 and 17.3% were 18-28. Most of the respondents had completed high school (36.7%) while 24% had a bachelor's degree and 22.7% had graduated secondary school. In terms of length of residency, 25% had lived on the Chàm Islands for 21-30 years, 26.3% had lived there for 31-40 years while 19% and 14% had lived there for 41-50 years or more than 51 years, respectively. According to the collected data, the minimum length of residency of all the respondents was one year or more, indicating that they had sufficient exposure to the negative effects of tourism on the environment.

Table 1: Demographic profiles of the respondents.

Demographic variable	Value	Percentage (%)
Gender	Male	51.3
	Female	48.7
Age	18-25 years old	17.3
	26-35 years old	34.0
	36-45 years old	25.3
	46-55 years old	16.7
	56 years old and older	6.7
Education	No formal education	1.3
	Primary school	9.7
	Secondary school	22.7
	High school	36.7
	Diploma/Certificate	4.7
	Bachelor's degree	24.0
	Master's degree	1.0

	PhD	0
Length of residency	1-10 years	3.0
	11-20 years	10.7
	21-30 years	27.0
	31-40 years	26.3
	41-50 years	19.0
	51 years and above	14.0

Perceived environmental benefits

As seen in Table 2, most of the respondents agreed that tourism environmentally benefited the Chàm Islands. Most of the respondents stated that, to avoid using plastic and to protect the environment, many local businesses use bamboo straws and handmade paper packaging for tourists (M = 4.05). They also acknowledged that the entrance fees that organisations collect from tourists are then used to conserve natural resources (M=3.80). The respondents also reported being motivated to collect garbage and maintain a clean environment to attract more tourists to the islands (M = 3.87). However, few respondents stated that the locals participate in community-based teams to preventing illegal activities (M = 3.68).

Table 2: Descriptive analysis of the perceived environmental benefits.

No	Statements	M	SD
a	Organisations; such as Cu Lao Chàm MPA; charge tourists entrance fees then use the funds to conserve natural resources.	3.80	0.805
b	Local businesses use bamboo straws and handmade paper packaging for tourists instead of plastic to reduce environmental damage.	4.05	0.973
c	Some locals join community-based teams to prevent illegal activities and to preserve marine animals for tourism activities; such as diving and fishing.	3.68	0.920
d	Residents are motivated to collect garbage along the seashore to preserve a clean environment that would attract more tourists.	3.87	0.897

Perceived environmental costs

As seen in Table 3, most of the respondents perceived the environmental costs of tourism on the Chàm Islands at a mean value of 3.66-3.90. The respondents agreed that the influx of tourists increased demand for seafood (M = 3.90). This was followed by an increase in the amount of waste produced as well as air, water, and soil pollution (M = 3.88), a reduction in the number of plant species (M = 3.82), and the overcrowding of public and leisure spaces (M = 3.67). Only the statement that tourism activities have damaged and decreased coral reef, seagrass, and seaweed had a moderate mean value (M = 3.66).

Table 3: Descriptive analysis of the perceived environmental costs.

No	Statements	M	SD
a	Tourism activities; such as anchoring boats, diving, and sea walking; have damaged and decreased the number of coral reefs, seagrass, and seaweed.	3.66	0.852
b	The influx of tourists has increased the demand for seafood; such as fish, shell, and shrimp; resulting in over-fishing.	3.90	0.846
c	The number of plant species are reducing as plants; such as vegetables and leaves; are harvested from the forest to cater to tourist demands.	3.82	0.759
d	The influx of tourists has increased the amount of waste produced as well as air, water, and soil pollution.	3.88	0.845
e	The influx of tourists has caused overcrowding in public and leisure spaces.	3.67	0.827
f	Forests have been cleared to build tourism infrastructure; such as roads, hotels, and resorts.	3.85	0.886

In summary, the respondents were very aware of both the environmental costs and benefits of tourism development. This implies that the respondents still acknowledge the environmental attributes of tourism.

Factors Affecting Local Perceptions of Environmental Costs and Benefits *Exploratory Factor Analysis (EFA)*

Items pertaining to community concern and eco-centric attitudes were analysed. The Cronbach's alpha (α) of all the items exceeded 0.7. An exploratory factor analysis (EFA) was then conducted using the varimax rotation method to reduce the items and identify the underlying dimensionality of the constructs. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.74, which was deemed acceptable as it exceeded the 0.6 minimum acceptable level while the results of the Bartlett's test of sphericity was significant ($p=0.000$). Therefore, the results of both measures indicated that the data was appropriate for factor analysis.

The eigenvalues illustrated that the factors affecting the environmental costs and benefits involved two components. As the factor loading values of all the items exceeded 0.6, they were practical and none of the items were removed. The rotated solution revealed there no new factors were generated. The available factors accounted for 69% of the total variance, with Component 1 accounting for 40.6% and Component 2 for the remaining 28.3%. The findings of this present study were corroborated by that of multiple extant studies on the factors affecting local perceptions (Gursoy *et al.*, 2002; Amuquandoh, 2010; Miyakuni, 2012; Gursoy *et al.*, 2019; Sánchez-Fernández, Alvarez-Bassi, & Ramon-Cardona, 2019).

Table 4: Results of the exploratory factor analysis (EFA).

Independent variables	Factors loading	Eigenvalue	% of variance	Cronbach's alpha (α)
Factor 1: Community concern				
How concerned are you by the loss of marine resources; such as seafood, coral reefs, and sea grass; that tourism has caused?	0.768			
How concerned are you by the deforestation that has occurred to construct infrastructure/facilities and to satisfy the increased demand for food that tourism has caused?	0.726	2.847	40.6%	0.816
How concerned are you by the litter and waste generated by the tourists?	0.702			
Factor 2: Eco-centric attitudes				
The natural resources of the Chàm Islands are limited and can disappear if they are caught and collected frequently.	0.643	1.986		
Plants and animals warrant as much preservation and protection as human life.	0.727		28.3%	0.822
The activities of the tourists and islanders affect nature.	0.611			
If marine resources and forests continue to be exploited for tourism activities, we will soon experience environmental problems.	0.656			

Multiple regression analysis

Multiple regression was performed to assess and explain the strength of the correlations between several independent variables and one dependent variable. As seen in Table 5, the coefficient of determination (R^2) was 0.057. This indicates that the two independent variables; community concern and eco-centric attitude; explained 5.7% of the variance of the dependent variable; perceived environmental benefits. Community concern and eco-centric attitudes were able to significantly predict the perceived environmental benefits ($p=0.000$). A positive and significant correlation was also observed between community concern and the perceived environmental benefits ($\beta=0.202$, $p=0.000$, <0.05). This suggests that higher levels of community concern led to increased perception

of environmental benefits among the locals. However, the correlation between eco-centric attitudes and the perceived environmental benefits was insignificant ($p=0.098$, >0.05). Therefore, locals who have strong eco-centric attitudes and a sense of preservation will not perceive any environmental benefits from tourism.

Table 5: Multiple regression analysis results of the perceived environmental benefits of tourism.

Variables	Unstandardised Beta (B)	Std. Error	Standardised Coefficients Beta (β)	t	p
Environmental benefits					
Constant	2.919	0.263		11.568	0.000
Community concern	0.163	0.046	0.202	3.539	0.000
Eco-centric attitudes	0.093	0.054	0.098	1.716	0.087
Model summary: $R^2 = 0.057$, F-value = 8.935, $p = 0.000$					

Based on Table 6, the two independent variables; community concern and eco-centric attitudes, explained 11% of the variance of the dependent variable; perceived environmental costs. All the factors had a significant correlation with the perceived environmental costs. The correlation between community concern and the perceived environmental costs of tourism was positive and significant ($\beta=0.266$, $p=0.000$, <0.05). Therefore, when community concern increases, the locals will perceive that tourism harms the environment of the Chàm Islands. A significant correlation was observed between eco-centric attitudes and the perceived environmental costs ($\beta=0.160$, $p=0.004$, <0.05). Therefore, the more eco-centric the attitudes of the locals, the more likely they are to perceive the environmental problems of tourism and changes in the environment of the Chàm Islands.

Table 6: Multiple regression analysis results of the perceived environmental costs of tourism.

Variables	Unstandardized Beta (B)	Std. Error	Standardized Coefficients Beta (β)	t	p
Environmental costs					
Constant	2,499	0.235		10.619	.000
Community concern	0.199	0.041	0.266	4.805	.000
Eco-centric attitudes	0.140	0.049	0.160	2.885	.004
Model summary: $r^2 = 0.11$, F-value = 18.393, $p = 0.000$					

Local support of tourism development

The results were interpreted based on the mean score of local support of tourism. As seen in Table 7, the mean value of each statement ranged between 3.99-4.29, which indicates that most of the respondents strongly support the development of tourism in the Chàm Islands.

Table 7: Descriptive analysis of local support of tourism development.

No	Statements	M	SD
a	I would like more tourists to visit the Chàm Islands	4.01	0.860
b	I support tourism having a major economic role in the community	4.16	0.840
c	I support conservation of nature and environmental education for future tourism development	4.29	0.750
d	The government should put more effort into minimising the negative environmental impacts of tourism to support tourism development	4.27	0.749
e	I am willing to participate in the tourism planning and management of the Chàm Islands to support tourism development.	3.99	0.886

Multiple regression was conducted to identify the influence of the perceived environmental costs and benefits of tourism on local support for tourism development. As seen in Table 8, the perceived environmental costs and benefits explained 31.6% of the variance in the local support of tourism ($F=70.070$, $p<0.001$). Furthermore, a positive and significant correlation was observed between the perceived environmental benefits and local support of tourism development ($b = 0.218$, $p<0.001$). The correlation between the perceived environmental costs and local support for tourism development was also positive and significant ($b=0.453$, $p< 0.001$). In summary, the perceived environmental costs of tourism were more important in explaining local support of tourism development.

Table 8: Multiple regression analysis results of local support of tourism development.

Variables	B	Std. Error	Std. Beta	t-ratio	p
Support of tourism development					
Constant	1.541	0.223		6.924	0.000
Environmental benefits	0.190	0.044	0.218	4.266	0.000
Environmental costs	0.494	0.056	0.453	8.879	0.000
Model summary: $r^2 = 0.316$, $F\text{-value} = 70.070$, $p = 0.000$					

The results of this present study indicate that local perceptions of both the environmental costs and benefits had a positive and significant effect on their support of tourism development. It also showed that, even though they believe that the environmental costs outweigh the environmental benefits, they will continue to strongly support tourism development in the Chàm Islands. This was consistent with the findings of Schofield (2011), who concluded that the level of local support for tourism development remained high despite the perceived environmental costs. However, the findings of this present study as well as Schofield (2011) contradicted that of the SET, which showed that the level of support for tourism development only increased when the perceived benefits exceed the perceived costs (Gursoy *et al.*, 2002; Amuquandoh, 2010; Rasoolimanesh *et al.*, 2015). This may be due to differences in the context of tourism, stages of tourism development, and economic benefits that these all these studies examined (Pham & Kayat, 2011; Schofield, 2011). For instance, Pham and Kayat (2011) report that locals believe positive environmental impacts are more important than economic impacts. The low environmental knowledge of the locals may also be to blame (Nyaupane & Thapa, 2006).

CONCLUSION AND RECOMMENDATIONS

Based on the findings of this present study, community concern and eco-centric attitudes were found to have a positive influence on the perceived environmental costs while community concern influenced the perceived environmental benefits. Furthermore, local perceptions towards environmental costs and benefits were found to have a positive and significant relationship with local support of tourism development.

This present study contributes to the existing body of literature on local perceptions of environmental costs and benefits as it confirms that factors; such as community concern and eco-centric attitudes; affect local support of tourism development. Multiple extant studies supported the SET and suggested that locals support and participate in tourism development only if the environmental benefits outweigh the environmental costs (Jurowski *et al.*, 1997; Gursoy *et al.*, 2002; Amuquandoh, 2010; Stylidis *et al.*, 2014). However, the findings of this present study contradict that of the SET from a theoretical perspective as it found that locals continue to strongly support tourism development even if they perceive that the environmental costs outweigh the environmental benefits. The results of this present study may vary from that of the SET and other extant studies due to the context of tourism on the Chàm Islands, the economic benefits, the promotion of tourism as an alternative source of livelihood, and a lack of environmental knowledge among the locals to perceive the long-term negative impacts of tourism.

The findings of this study also indicate that the government as well as tourism planners and policymakers should conduct meetings and campaigns that

guide local environmental perceptions to develop sustainable tourism practices. Tourism planners and policymakers should formulate plans and policies to mitigate the environmental costs. The local authorities should also limit the number of visitors to the Chàm Islands during peak tourism seasons.

A limitation of this present study was that it did not examine the effect of the perceived economic costs and benefits on local support of tourism development. Therefore, future studies should examine the impact of economy-related variables on local support of tourism according to the SET. Future studies could also use the SET, or combine it with other theories, to better understand local perceptions. This present study also did not examine the perception of environmental costs of other stakeholders; such as the local authorities, tourism managers, tourism agencies, and tourists. Therefore, future studies should investigate how their perceptions towards environmental changes affect their support of tourism development.

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