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Host Residents' Attitude toward Community-based Ecotourism: Empirical Study in Southwestern Cambodia

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Abstract

The main objective of this paper is to find the determinants of perceived impacts of community-based ecotourism (CBET) onto livelihood assets and outcomes and the determinants of support for community-based ecotourism by using sample data collected from two successful CBETs in southwestern Cambodia, Chambok and Chi Phat CBET. The analysis method was Structural Equation Modeling (SEM). The present study concluded that in addition to the determinants of perceived impacts and support for tourism development found by previous studies such as community attachment, community concern, ecocentric attitude, emotional solidarity, tourism dependency, knowledge about the (tourism) industry; natural resource dependency and socio-economic status (as a construct) are also likely to influence residents' attitude toward CBET. Moreover, as an alternative to the earlier empirical studies that used the residents' perceived impacts in term of overall economic, socio-cultural, and environmental aspects as determinants of support for tourism development; this study suggests that residents' perceived impacts of tourism on livelihood assets and outcomes may also affect support for tourism development, especially community-based ecotourism.

Keywords: Residents' perceived impacts; residents' support; Community-based ecotourism; Cambodia; Livelihood approach; Structural equation modeling

Introduction

For many developing countries, the tourism is one of the important industries. Particularly in Cambodia, the tourism and travel industry accounted for 23.5% of gross domestic product (GDP) in 2013. It is estimated to rise by 9.7% in 2014 according to World Travel and Tourism Council (WTTC). Though the tourism industry has significantly contributed to Cambodia's economic growth, it has little linkages to the local economy and has quite huge economic leakages [1]. As an alternative to mass tourism, since the 1990s community-based ecotourism (CBET) projects have been initiated and supported by many non-governmental organizations and governmental agencies in Cambodia. The purpose is to conserve natural resources and to generate additional income for the local people. This approach is called integrated conservation and development projects (ICDPs). Denman defined "community-based ecotourism" as "a form of ecotourism where local community has substantial control over and involvement in, its development and management, and a major proportion of the benefits remain within the community" [2]. The definition implies that the developer and manager of CBET is a local community or committee body with a 'collective responsibility and approval. Therefore, CBET requires active involvement from host residents who would also have a high degree of interaction with CBET visitors. As a result, the livelihood of host residents can be significantly influenced by these CBET projects while their attitudes are vital to the success and sustainability of these projects. However, while many CBETs are successful, several others hardly sustain its operations in Cambodia. One of the causes might be negative residents' attitude. For example, Ven and Usami's study on sustainability of a CBET in Cambodia found that the host residents' attitude toward CBET was in the lowest edge of medium level. More importantly, they found that CBET members' low satisfaction, undesirable attitude, and resignations might impede the operation of CBET [3]. It was also observed that CBET in Cambodia might not benefits all the residents in the community. Even the beneficiaries receive inequitable economic benefits from CBET. As Men [4] and Lonn's master thesis found that income distribution from Chambok community-based ecotourism had a Gini Coefficient of 0.50 and 0.73 respectively, which indicated that the income distribution was unequal. These disparities may make the residents have negative perceptions about and low support for CBET. Therefore, for CBET destinations, it is necessary to study residents' attitude. Accordingly, the main objective of this study is to find the determinants of the host residents' attitude toward community-based ecotourism so that the solutions to improving residents' attitude toward CBET in Cambodia can be speculated. In order to achieve the main objective, two research questions were addressed:

(1) what are the direct and indirect determinants of perceived impacts of CBET on livelihood assets and outcomes? and

(2) what are the direct and indirect determinants of support for CBET?

Literature Review

Residents' attitude toward tourism development have gained much attention from tourism researchers since the late 1980s because one of factors for the success and sustainability of tourism development, which was identified by both scholars and practitioners, is the residents' attitudes [5-7]. The factors that commonly used to study residents' attitude toward tourism development were resident's perceived

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impacts of tourism and support for tourism development. In the West, the support for various types of tourism development has been studied well. However, in the East, the study of this subject is limited [7-13].

Measurement of the residents' attitude toward tourism development

Tourism Impact Attitude Scale (TIAS), which was originally developed by Lankford and Howard, is identified as "a standardized measurement of resident attitude towards tourism development" [14]. This scale, containing 27 items, consists of two factors that are named as "concern for local tourism development" and "personal and community benefits". Over the past twenty years, many studies in various tourism destinations [14-17] have tested its reliability and validity by using it. However, the feasibility of its usage in a small community where tourism is in the emerging stage has not been confirmed yet [18]. Wang and Pfister adopted 20 items from TIAS. They conducted factor analysis to assess the dimensionality of this modified scale and found that it had high reliability. This modified TIAS consists of two factors. Factor 1 consists of 12 items that address residents' support for tourism development while factor 2 contains eight items that address the contribution that tourism could make to their community. This modified TIAS was adopted and modified by Woosnam who verified that it had high reliability and validity [19].

Social Exchange Theory

Social Exchange Theory (SET) has been extensively utilized to study residents' attitude toward tourism development. Its basic concept is that if the residents perceive that tourism has more positive (benefits) impacts than negative (cost) impacts, they are inclined to support it [7,20-23]. Based on this theory, many empirical studies used the host residents' perception of impacts or benefits/costs of tourism development as explanatory factors of support for tourism development via structural equation modeling (SEM). Previous studies [14,24-28] used perceived impacts in term of economic, cultural, social, and environmental aspects as explaining factors of support for tourism development. Alternatively, Gursoy et al (2002, 2010) Lee et al., Gursoy and Rutherford, Jurowski and Gursoy, and Nunkoo and Ramkissoon [7,8,13,22,23,29,30] used perceived benefits and costs in the same aspects. These earlier studies found that perceived positive impacts or benefits had positive effects on support for tourism development. On the other hand, perceived negative impacts or costs had inverse effects on support for tourism development.

Determinants of perceived impacts

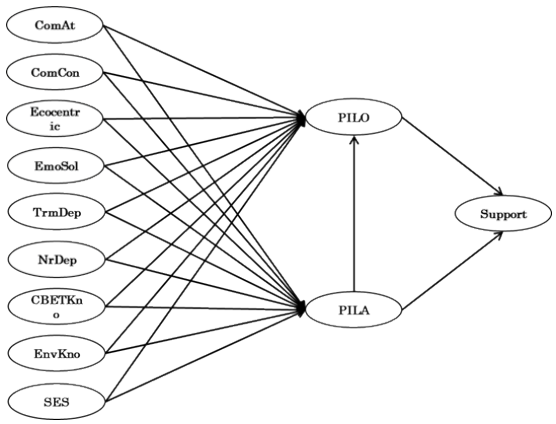
In addition, during the past 20 years many scholars studied the determinants of residents' perceived impacts. The factors that are likely to affect residents' perceived impacts or benefits and costs from tourism include residents' community attachment [7,8,10,13,23], community concern [7,8,23,29,], ecocentric attitude [7,8,22,23,29,32], emotional solidarity with tourists, tourism dependency [33-35], and knowledge about the industry (tourism) [36], and utilization of tourism resource base [7,8,23,29].

Community attachment: Community attachment is defined as the "extent and pattern of social participation and integration into community life, and sentiment or affection toward the community" [37]. The community attachment theory (CAT) asserts that tourism is likely to affect the community living standard unfavorably. Hence, the residents with high community attachment are likely to have unfavorable attitude toward tourism development [38]. However, the results of the earlier studies were mixed. Um and Crompton showed that the higher the community attachment a resident had, the more negative they were about tourism development [39]. Nevertheless, the study of Gursoy et al. (2002) and McCool and Martin did not find any association between community attachment and perceived impacts or benefits/costs and support [8,37]. On the contrary, Lee's and Gursoy and Rutherford found that community attachment had positive effects onto perceived economic and social benefits and support [13,23].

Community concern: Gursoy et al. (2002) posited that community concern about the environment, schools, crime, and so on were likely to influence perception about tourism impact and support for tourism development [8]. Unfortunately, they did not find any significant relationships between community concern and perceived impacts and support. Conversely, Gursoy and Rutherford found that community concern influenced the perception of socio-cultural impacts of tourism [23]. In addition, Gursoy et al. (2010) found that community concern positively affected perceived cultural benefits and social cost [7].

Ecocentric attitude: Researchers have categorized the environmental attitude according to two underlying motives, namely "ecocentrism—valuing nature for its own sake, and anthropocentrism—valuing nature because of material or physical benefits that it can provide for humans" [40]. Therefore, residents who have ecocentrism are inclined to support the protection and preservation of natural resources while those with anthropocentrism are likely to support the utilization of natural resources in order to fulfill human needs. Gursoy et al. (2002, 2010) Gursoy and Rutherford, and Jurowski et al. concluded that residents with high ecocentric values were likely to perceive impacts of tourism less favorably [7,8,23,32]. However, Gursoy et al. (2002) and Jurowski et al. also found that residents with a high ecocentric value were inclined to support tourism development [8,32].

Utilization of tourism resource base: Tourism resource base refers to local recreational facilities. The residents who used these recreational facilities might have either positive or negative perception about impacts of tourism on these facilities depending on the actual impacts of tourism on these facilities. gursoy et al. (2002, 2010) Gursoy and Rutherford, and Jurowski and Gursoy used utilization



Source: The author's idea based on literature review

Note ComAt: community attachment, ComCon: community concern, ecocentric: ecocentric attitude, EmolSol: emotional solidarity, TrmDep: tourism dependency, NrDep: natural resource dependency, CBETkno: knowledge about CBET, Envkno: environmental knowledge, SES: socio-economic status, PILA: perceived impacts on livelihood assets, PILO: perceived impacts on livelihood, Support: support for community-based ecotourism

Figure 1: Model specification

of tourism resource base to explain perceived benefits and cost of tourism development [7,8,23,29]. In accordance to Gursoy et al. (2002) Lankford, and O'Leary [8,41,42]; Gursoy et al. (2010) found that residents with high usage of the tourism resource base were likely to have unfavorable attitude toward tourism development because they might think that tourism made them share their resources with visitors [7].

Emotional solidarity: Emotional solidarity is defined as the feeling of identification with another person that one has. This feeling helps to brace connections between such individuals [43]. Such connections are characterized by emotional closeness and the extent of contact between each other [44]. Woosnam used the elements of this concept to predict residents' attitude toward tourism. He found that the three sub-factors of emotional solidarity had positive relationships with the modified Tourism Impact Attitude Scale [19].

Tourism dependency: It is apparent that residents who depend on tourism are likely to have a positive attitude toward tourism development. Earlier studies from Pizam to Vesey and Dimanche supported this premise [38]. However, Brunt and Courtney, Pizam, and Williams and Lawson concluded that residents who economically depended on tourism had both strong positive and negative attitudes toward tourism development [33-35]. They had a negative attitude because they had immediate involvement in the industry, so they could instantly recognize unfavorable impacts if there were any.

Research Methodology

Structural equation modeling (SEM) was used to build models of residents' attitude toward CBET. SEM is a statistical method that simultaneously tests the entire structural relations of both observed and latent variables. The two primary functions of SEM are confirmatory (i.e., model/hypothesis testing) and exploratory (i.e., model developing) approaches. This study adopted the latter approach in order to discover the determinants of residents' attitude toward CBET. This study took the following steps: model specification, latent variable measurement, data collection, and data analysis. In the subsequence sections, each step will be explained in details.

Model specification

The purpose of this section is to present the rationales for the inclusion of latent factors in the model, but does not try to make hypothesis per se since the approach of this study is not hypothesis testing but to identify the determinants in an exploratory approach. The proposed model (Figure 1) was specified according to the previous studies and some of the author's rationales for inclusion of three additional factors. According to the previous studies described above, the proposed model postulated that the explaining factors including community attachment (ComAt), community concern (ComCon), ecocentric attitude (ecocentric), emotional solidarity (EmolSol), tourism dependency (TrmDep), knowledge about CBET (CBETkno) influence residents' perceived impacts of CBET onto their livelihood assets (PILA) and perceived impacts of CBET onto livelihood outcomes (PILO). In addition, it was also posited that residents' natural resource dependency (NrDep), environmental knowledge (Envkno) and socio-economic status (SES) influence both impacts on livelihood assets and impacts on livelihood outcome. The reason for inclusion of natural resource dependency is that CBET is a form of tourism that bases on the natural resources upon which host residents rely. After the inception of CBET, residents' access to and extraction of natural resources may be reformed or restricted somehow. As a result, residents who highly depend on natural resources are likely to have unfavorable perceptions of CBET. This premise is similar to that of utilization of tourism resource base in the models of Gursoy et al. (2002,2010), Gursoy and Rutherford, and Jurowski and Gursoy [7,8,23,29]. The difference is that the resource base for the present study is natural resources while that of the above mentioned studies was general tourism facilities. Additionally, residents' usage of resources in this study sites was extraction of natural resource for livelihood while residents' usage of resources in other studies was recreational activities. The rationale for the inclusion of environmental knowledge is that it is observed that level of environmental knowledge is likely to influence the attitude toward CBET because they can probably acknowledge the impacts of CBET onto local natural resources more rapidly than other residents can if there is any. The direction of the causal relationship between environmental knowledge and residents' attitude may be either positive or negative. If CBET has positive impacts on natural resources, the direction is likely to be positive, and vice versa. Individual indicators of SES were found to affect perceived impacts, but they have not been used as a whole latent factor as an explanatory factor. This study used SES as an explanatory latent factor for perceived impacts on livelihood assets and perceived impacts on livelihood outcome. Besides, it is argued that residents who have positive perception about impacts of CBET onto livelihood assets are more likely to have positive perception about impacts of CBET onto livelihood outcome, so impacts on livelihood assets is specified to influence impacts on livelihood outcome. Finally, According to the social exchange theory, residents' perceived impacts onto livelihood assets (PILA) and outcomes (PILO) were specified to influence support for CBET.

Latent variable measurement/Data collection

Perceived impacts used by other studies were based on general impacts of tourism in economic, socio-cultural, and environmental aspects. These perceived impacts were suitable for mass tourism destinations, where private businesses provide tourism products and services. Their primary objective is economic development or profit maximization. In contrast, the present study sites were small-scale community-based ecotourism, which were operated by local people. Their primary objectives were to protect natural resources and to improve the livelihood of local people. Consequently, in this study, perceived impacts were measured in the livelihood analysis approach. The livelihood analysis approach is widely used by non-governmental organizations mainly in the appraisal of smaller scale, more rural and community-based tourism/ecotourism projects [45]. It is specifically suitable for rural settings where wage income is one component of livelihood security, and other activities and assets are critical significant. Livelihood analysis approach was also used in many studies such as Broham, Homewood and Brockington, Ashley, Scheyvens, Murphy and Halstead, Siegel and Alwang, Mycoo [46-51]. Therefore, this study utilized livelihood analysis approach to measure the perceived impacts on livelihood assets and outcomes. For the current study, residents' attitude toward CBET is defined as resident's subjective tendency

(1) to evaluate impacts of CBET onto livelihood assets and outcome positively or negatively and

(2) to personally support CBET in term of the extent of favor or disfavor. Livelihood assets are the five core asset categories (i.e., Human, Social, Natural, Physical, Financial capitals) upon which livelihoods are built. Livelihood outcomes are the achievements of livelihood activities. They are in the form of more income, increased well-being, reduced vulnerability, improved food security, and more sustainable use of natural resource base [52]. In this study, most of the indicators are reflective. Only a few of them are formative. All the

indicators of community attachment, community concern, ecocentric attitude, emotional solidarity, impact on livelihood assets, impact on livelihood outcome, and support for CBET are reflective indicators. Tourism dependency, natural dependency, CBET knowledge, and environmental knowledge have both types of indicators while SES consists of only formative indicators. Indicators for community attachment were adopted from Gursoy et al. (2002) and Gursoy and Rutherford [8,23]. Those of the ecocentric attitude were adopted and modified from Dunlap, Van Liere, Mertig, and Jones [53]. Those of emotional solidarity were adopted from Woosnam [19]. Those of Support for CBET were adopted from Wang and Pfister and Woosnam [18,19]. The indicators of community concern, tourism dependency, natural dependency, CBET knowledge, environmental knowledge, perceived impacts on livelihood assets, and perceived impacts on livelihood outcome were developed by the author. Perceived Impacts on livelihood assets and perceived impacts on livelihood outcome were created basing on the Department for International Development's (DFID) sustainable livelihoods guidance sheets [52]. The data collection method was residents' perception survey by the interview using structured questionnaire. All the reflective indicators were measured on the 7-point Likert scale. The respondents were asked to answer to each indicator statement using number 1 to 7, where 1 represents strongly disagree/extremely negative, 7 denotes strongly agree/extremely positive. Self-administered questionnaire was impossible because the respondents' education is quite low. The first round of data collection was conducted in Chambok CBET during November 2013; the second round was done in Chi Phat CBET during May 2014. The respondents were both CBET members and nonmember residents of the two study sites. Stratified sampling method was used in order to have representative samples in term of residence location (i.e., villages). That means that the proportions of sample respondents residing in each village should approximate the proportion of the total number of households in each corresponding village.

Data analysis

Robust method of EQS 6.1 statistical package software was used. This method works well when the data are not multivariate normally distributed [54]. The analysis was done in two stages. In stage 1 (measurement model), first, each factor was tested separately with confirmatory factor analysis (CFA) to verify their validity and reliability. Then, overall measurement models were also tested with CFA. Acceptable standardized factor loadings should be 0.5 or greater, and preferably 0.7 or greater [55]. So during both CFA tests, standardized factor loadings <0.5 were deleted. In order to attain convergent validity, standardized factor loadings with p value below 0.05 were also eliminated [56]. For reflective factors, composite reliability (CR) were calculated to verify construct reliability for each factor. The acceptable score of CR is over 0.60 [13]. For formative indicators, p value of the path coefficient was examined to verify the indicator validity, and multicollinearity was used to verify construct reliability [57]. Any factors that failed to meet the reliability and validity criteria were deleted. In stage 2 (structural model), the hypothesized model were separately tested and modified to get the acceptable fit models using the sample data collected from Chambok and Chi Phat CBET. Non-significant structural paths were deleted, while LaGrangian Multiplier (LM) tests were implemented to find additional statistically significant and substantial paths that improve the model fit. Any factors that did not have significant relationships with other factors were eliminated.

Research Sites

The sample data were collected from two successful CBETs, namely Chambok community-based ecotourism and Chi Phat community-based ecotourism, in southwestern Cambodia. Chambok CBET locates in Chambok commune, KompongSpeu province. This commune is adjacent to Kirirom National Park, one of the popular national parks in Cambodia. It comprises Krang Chek, Beng, Thmei, and Chambok villages. According to the Commune Database Online (CDB online), Chambok commune had 814 households. The primary occupation of 99% of all the households in this commune was rice farming. Only 0.61% had the primary occupation as service (trader and repairer), and 0.37% did not have any clear occupation. In the past, the residents' livelihoods depended on forest product extraction such as illegal logging, firewood collecting, charcoal producing, and wildlife poaching. Recently the population growth and better accessibility to markets has accelerated extensive deforestation, which in turn has depleted the natural resources for the local livelihood [58]. Through an assessment conducted by Mlup Baitong, a Cambodia environmental nongovernmental organization, ecotourism was identified as a promising tool for both protecting natural resources and providing the alternative income for the residents. Consequently, Chambok community-based ecotourism (CBET) was established in 2002 with the initiative and support from Mlup Baitong. A management committee consisting of elected residents was nominated in order to operate the CBET. Its objectives are to protect forests and natural resources, to provide an alternative income to poverty-stricken and forest product-dependent communities, and to educate the residents and visitors about environmental conservation. The primary tourist attractions of Chambok CBET were a 40-meter waterfall, a bat cave, protected forest, local livelihood and traditional culture. Around 500 households were members of CBET. They could earn income from entrance fee, vehicle-parking fee, selling souvenir and nursery plant, and services provided to tourists such as ox-cart driving, home stay, guide, cooking, bicycle rental, traditional dance, and tourist gazebos catering. Chi Phat CBET locates in Chi Phat commune, which is inside the southern Cardamom protected forest, Koh Kong province. Chi Phat commune consists of four villages namely Chi Phat, Tuek L'ak, Cheam Sla, and Sam Lort. It was home to 549 households in 2010 according to CDB online. 68.5% of all the households were primarily rice farmers. About 12.60% had primary occupations as cultivating long/short-term crops and vegetable, fishing, and raising livestock. Only 4.10% of all the households collected non-timber forest products (NTFP). The rest had the primary occupation as craftwork and service (trader, repairer, and transporter). Additionally many residents also work as government officials, private sector staffs, workers, and migrant laborers. Previously, Chi Phat commune was a renowned hub of wildlife smuggling and illegal logging before the arrival of Wildlife Alliance, an environmental nongovernmental organization based in the United Sates, working to protect wildlife. Tourism was discovered to have the best potential for conserving vulnerable natural resources and improving the livelihood of residents. Consequently, Chi Phat CBET was initiated in 2007 and has been supported so far by Wildlife Alliance. Chi Phat CBET has an elected management committee. Its objectives are to conserve natural resources, to preserve local culture, to improve local communities' livelihoods, to exchange tourists' and local cultures, and to empower local communities to manage CBET independently. It had 167 members who were residents of the four villages in Chi Phat commune. All the CBET members involved in CBET by providing services such as homestays, guesthouses, taxi motorbike services, restaurants, and

Chambok commune (n=204)			Chi Phat commune (n=200)		
Villages	Percentage of all households	Percentage of all respondents	Villages	Percentage of all households	Percentage of all respondents
Chambok	21	25	Chi Phat	35	35
Thmey	39	34	Chham Sla	21	24
Beng	21	20	Kamlout	31	31
Krangchek	20	20	Toeuk La ork	12	9

Source: The authors' survey, 2013, 2014

Table 1: Respondents' Residence Locations

Socio-demographic items	Chambok commune (n=204)		Chi Phat commune (n=200)	
CBET membership	n	%	n	%
Non-member	86	42	108	54
Member	118	58	92	46
Gender	n	%	n	%
Female	137	67	127	64
Male	67	33	73	37
Age (year)	Average: 37		Average: 39	
18-29	68	33	80	40
30-39	52	26	30	15
40-49	43	21	38	19
50-59	31	15	27	14
≥60	10	5	25	13
Education	Average: grade 4		Average: grade 4	
No education	60	29	57	29
Primary education(1-6)	111	54	78	39
Secondary education (7-12)	28	14	62	31
4-year undergraduate	5	3	3	2
Total income (US$/year)	Average: 511		Average: 679	
<500	153	75	128	64
501-2000	43	21	62	31
2000-3500	5	5	5	2.5
3500-5000	5	1.5	4	2
>5000	1	0.5	1	0.5
Percentage of total income derived from:	Average (%)		Average (%)	
Agriculture	30		39	
Tourism	21		23	
Natural Resource	16		15	
Other	33		23	

Source: The authors' survey, 2013, 2014

Table 2: Respondents' Characteristics

guides. The tourist attractions include wildlife, forest, bat caves, burial sites, waterfalls and local Cambodian livelihoods. The primary tourism services are trekking, mountain biking, boating and kayaking and so on.

Results and Discussions

Respondents' characteristics

The respondents comprised 204 residents in Chambok commune, 200 residents in Chi Phat commune. Table 1 shows that the proportions of sample respondents residing in each village approximate the proportion of the number of all households in each corresponding village. As shown in Table 2, 42% and 54% of the respondents in Chambok commune and Chi Phat commune respectively were nonmember, while the rest were CBET members. Woman respondents accounted for 67% and 64% in Chambok and Chi Phat communes respectively. There were more women respondents than men because, in rural Cambodia, usually woman does the housework while men work far away from home. Therefore, woman had more chance of being interviewed. The average age of respondents in Chambok and Chi Phat communes were 37 and 39 respectively. The average education levels in both communes were about 4th grade. The respondents in Chi Phat commune had the highest average annual income, which was US$ 679 while that of Chambok commune was US$ 511. The last row showed the percentages of different income sources comparing with the total income.

Validity and reliability

Table 3 shows the results of confirmatory factor analysis. In Chambok's model, the factors that did not have adequate reliability and

Factors and observed variables	Std. loadings and CR	
	Chambok	Chi Phat
Community attachment	**0.76***	**deleted**
I feel that I am a native of this community	0.62	deleted
I feel that this community is my hometown	0.99	deleted
Community concern	**0.76***	**0.66***
I concern about the violence in this community.	deleted	0.83
I concern about the natural resources in this community.	0.72	deleted
I concern about the natural disasters in this community.	0.87	deleted
I concern about the security in this community.	0.73	0.73
Ecocentric attitude	**0.55***	**deleted**
The usage of plastic bags should be banned	0.36	deleted
People who litter messily in the woods should be fined	0.51	deleted
Plants and animals have as much right as humans to exist	0.834	deleted
Emotional solidarity	**0.76***	**0.71***
I am proud to have tourists come to my community	0.87	deleted
I appreciate tourists for the contribution they make to the local economy	0.66	deleted
I have made friends with some tourists in this community	deleted	0.72
I identify with tourists in this community	deleted	0.84
I have a lot in common with tourists in this community	deleted	0.67
I feel affection towards tourists in this community	0.840	deleted
Perceived impacts on livelihood assets	**0.89***	**0.86***
Impacts on residents' livelihood skills (language skills, guide, cooking, …)	deleted	0.73
Impacts on residents' leadership potential	deleted	0.75
Impacts on networks and connectedness among the local residents	0.80	0.88
Impacts on trusts among the local residents	0.81	0.80
Impacts on the local residents' ability to work together	0.77	0.89
Impacts on the residents 'membership in formalized groups	0.77	deleted
Impacts on the local residents' adherence to mutually-agreed or commonly accepted rules, norms and sanctions	0.82	deleted
Impacts on the local residents' mutual reciprocity and exchanges among the residents in the community	0.87	deleted
Impacts on natural resources needed for livelihoods	0.66	deleted
Impacts on transportations in the community	deleted	0.70
Impacts on shelters for (some) residents in the community	0.59	deleted
Because of CBET, the local residents' income increases	0.66	deleted
CBET provide credit without interest to local residents	0.66	Not applicable
Perceived impacts on livelihood outcome	**0.80***	**0.78***
I feel proud to have this community to be a tourism destination	0.88	deleted
CBET contribute to improving the local residents' access to services such as health center, information, micro credit, and education…	0.65	deleted
CBET contributes to maintenance of local culture	0.68	deleted
CB ET contributes to more sustainable use of the natural resource base	0.71	deleted
CBET contributes to bringing sufficient quantities of appropriate, necessary types of food to this community	0.62	0.89
CBET contributes to (some) local residents' ability to obtain appropriate, necessary food for their family	0.63	0.90
Support for tourism development	**0.93***	**0.84***
I support tourism in this community.	deleted	0.74
I support new tourism facilities that will attract additional visitors to this community	0.81	0.83
I want to see tourism remain important to this community	0.95	0.78
I believe tourism should be actively encouraged in this community	0.96	0.75
This community should remain a tourist destination.	0.97	deleted
The tourism sector will continue to play a major role in this community.	0.96	deleted
In general, the positive benefits of tourism outweigh negative impacts.	0.810	deleted
Tourism dependency		
Perceived extent of dependency on tourism	0.28	0.39
Percentage of Income one earns from tourism and related sectors**	1.00	0.47
Natural resource dependency		
Percentage of income one earns from natural resources extraction**	0.80	0.72
Perceived extent of livelihood dependency on natural resources	1.00	1.00
Frequency of natural resources extraction**	deleted	deleted

Knowledge about CBET		
Number of time participated in training about CBET**	deleted	1.00
Test score of knowledge about CBET	deleted	0.30
Knowledge about environment		
Number of times participated in training about environment**	deleted	deleted
Number of times participated in environmental activities**	deleted	deleted
Test score of knowledge about environment	deleted	deleted
Socio-economic status		
Level of education**	deleted	0.77
Occupation Prestige**	deleted	0.37
Total Income**	deleted	0.15
Correlations among indicators of SES		
Job-Education		0.30
Income-Education		0.13
Income-Job		0.09

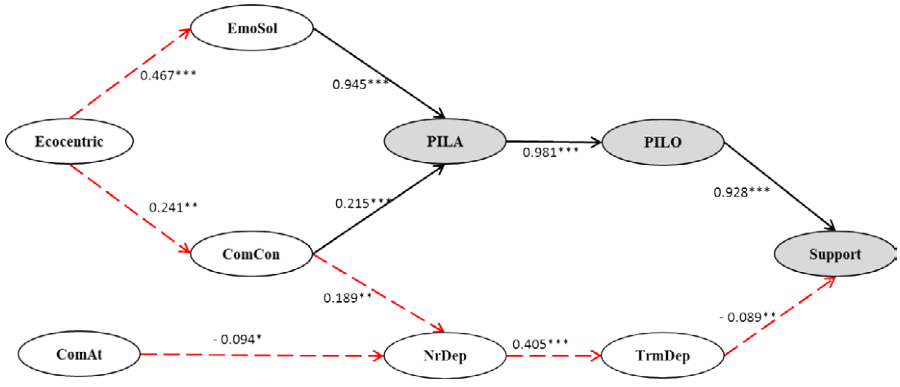
Table 3: Standardized factor loadings (Std.loading) and composite reliability (CR).

Source: The authors' survey, 2013, 2014
Note *Construct reliability (CR)
** formative indicators

Indirect determinants	Chambok			Chi Phat		
	PILA	PILO	Support	PILA	PILO	Support
PILA			0.910***			
PILO						
Community attachment						
Community concern		0.211***	0.189***		0.056**	0.082**
Ecocentric attitude	0.493**	0.484**	0.447**			
Emotional solidarity		0.927***	0.860***			
Tourism Dependency						
Natural resource dependency			-0.036**			-0.053*
CBET Knowledge						0.304***
Environmental knowledge						
Socio-economic status					0.564**	0.495**

Table 4: Indirect effects (standardized coefficients).

Source: The authors' survey, 2013, 2014
Note ***Significant at p value=0.01
**Significant t p value=0.05
*Significant at p value=0.1



Source: The authors' survey, 2013, 2014
Note ***Significant at p value=0.01
**Significant t p value=0.05
*Significant at p value=0.1
Original paths, additional paths:⟶ ⟶

Figure 2: Chambok's model

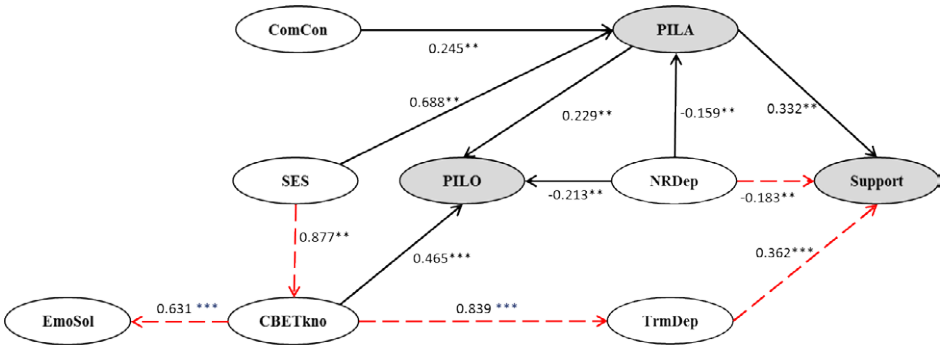


Figure 3: Chi Phat's model.

validity were environmental knowledge and socio-economic status. In Chi Phat's model community attachment, ecocentric attitude, and environmental knowledge did not have adequate reliability and validity. Therefore, they were deleted. Most of the remaining reflective indicators had standardized factor loading above 0.6 and statistically significant at p value ≤ 0.05. It was indicative of convergent validity. All the remaining factors had composite reliability (CR) values above 0.6, except ecocentric factor (in Chambok's model) that had a CR=0.553, but it could also be acceptable. All the path coefficients of all the formative indicators were statistically significant at p value ≤ 0.05. Table 3 shows that multicollinearity did not exist among the three formative indicators of social-economic status in Chi Phat's model because the correlations among them were small. Given adequate reliability and validity of each remaining factor, the specified model (Figure 1) was tested using the sample data from both CBET separately. The results of the first round of SEM analysis showed that the proposed models were ill fitted with both sample data. Therefore, the proposed model was modified in an exploratory approach in order to search for models with acceptable fit. After successive model modifications, two models (Figures 2 and 3) that had acceptable fit indices were obtained.

Model fit

Bentler-Bonett non-normed fit index (NNFI), Bollen (IFI) fit index, comparative fit index (CFI), and root-mean-square error of approximation (RMSEA) were used to evaluate the model fit. NNFI, IFI, and CFI are incremental fit indices whose values range from 0 to 1. Their value above 0.90 or 0.95 are indications of good fit [59,60]. However, CFI has been suggested as the index of choice [61]. RMSEA is the misfit measure whose value can range from 0 to 1, so the smaller the value, the better fit. However, the value<0.05 is considered good fit [61]. Chambok's model (Figure 2) had NNFI=0.963, CFI=0.965, IFI=0.972, and RMSEA=0.007, the confidence interval of RMSEA=(0.00, 0.02). Thus, Chambok's model was well fit. Chi Phat's model (Figure 3) had NNFI=0.880, CFI=0.900, IFI=0.904, and RMSEA=0.049 the confidence interval of RMSEA= (0.039, 0.050). Although NNFI was a bit lower than 0.90, this model can also be considered acceptable fit model.

Structural model

Figure 2 (Chmabok's model) and Figure 3 (Chi Phat's model) show structural paths as well as direct standardized path coefficients among explanatory factors and dependent factors. Table 4 shows indirect standardized path coefficients.

Community attachment: Chambok's model (Figure 2) shows that community attachment did not have significant relationships with perceived impacts and support. This result supports the findings of Gursoy et al. (2002) McCool and Martin and Jurowski [8,37,62]. The finding may imply that the residents with community attachment in Chambok commune may have neutral attitude toward CBET.

Community concern: Community concern had direct positive effects on perceived impacts on livelihood assets (in Chambok's model: standardized (std.) b=0.215***[1], Chi Phat's model: std. b=0.245**[2]); and indirect positive effects on perceived impacts on livelihood outcomes and support for CBET in both study sites. The findings suggested that in Chambok and Chi Phat communes, residents with high community concern might expect that CBET may remedy their concerns by improving their livelihood assets; therefore, they are more likely to support CBET. These findings are similar to that of Gursoy and Rutherford [23].

Ecocentric attitude: Ecocentric attitude did not have any direct association with perceived impacts in Chambok's model. It contradicts with the studies of Gursoy et al. (2002), Gursoy and Rutherford and Jurowski et al. [8,23,32] which found that residents with high ecocentric attitude are likely to view tourism less favorably. However, ecocentric attitude had indirect positive effects on PILA, PILO and Support (in Chambok's model).

Emotional solidarity: Emotional solidarity directly and positively affected PILA (std. b=0.945***) in Chambok's model (Figure 2). It might suggest that residents with high emotional solidarity are likely to perceive positive impacts of CBET on livelihood assets. This finding is similar with that of Woosnam [19]. In addition, Emotional solidarity had an indirect positive effect on PILO and Support in Chambok's model.

Tourism dependency: Tourism dependency had a direct positive influence on Support (std. b=0.362***) in Chi Phat's model (Figure 3) It could be interpreted that residents who highly depend on CBET perceive that the impacts of CBET more desirable. The finding is consistent with most of the earlier studies. In contrast, Chambok's

[1]***statistically significant at p value=0.01
[2]**statistically significant at p value=0.05

model (Figure 2) shows that tourism dependency did not have any relationship with perceived impacts. Somewhat astonishingly, it had a direct negative influence on Support to some extent (std. b=-0.089**). The finding might suggest that in Chambok commune, residents who were more reliant on CBET did not think that CBET could improve their livelihood assets or outcomes. Moreover, they had slightly lower support for CBET than those who were not reliant on CBET. This may be due to the disparity in sharing benefits of CBET as found by Men [4] and Lonn's master thesis. This finding supports the previous studies of Brunt and Courtney, Pizam, and Williams and Lawson [33-35] which concluded that residents who economically depended on tourism had both strong positive and negative attitudes toward tourism. They had negative attitudes because they had immediate involvement in the industry; and, therefore, could instantly recognize unfavorable impacts if there were any.

Natural resource dependency: Chi Phat's model (Figure 3) shows that natural resource dependency consistently had direct negative effects on PILA (std. b= -0.159**), PILO (std. b= -0.213**), and Support (std. b=-0.183**). It also had indirect negative effects on Support (in Chambok's and Chi Phat's models). It implies that residents who depend on natural resources might perceive that CBET fairly reduced their livelihood assets and outcomes; in turn, they had somewhat lower support for CBET especially in Chi Phat commune. The finding can be justified by the fact that Chi Phat commune used to be a renowned hub for illegal logging and wildlife poaching. With the arrival of Wildlife Alliance as well as the inception of CBET, illegal logging and wildlife poaching may have been controlled.

CBET knowledge: Only in Chi Phat's model (Figure 3), CBET knowledge had a direct positive influence on PILO (std. b=0.465***) and an indirect effect on Support for CBET. It can be asserted that residents with better CBET knowledge tended to have positive perceptions about CBET. The finding is similar to that of Davis et al. [36].

Socio-economic status: Chi Phat's model (Figure 3) illustrates that socio-economic status (SES) had direct positive effects on PILA (std. b=0.688**). It also had indirect positive effects on PILO and Support. Chi Phat's model might suggest that residents with high SES had a tendency to perceive impacts of CBET onto their livelihood assets more positively than those with lower SES did. More precisely, residents with high SES might conceive that they could personally benefit from CBET somehow because many private guesthouses, bungalows, and Eco-lodges belonged to those with high SES.

Perceived impacts on livelihood assets (PILA) and perceived impacts on livelihood outcomes (PILO): Both Chambok's and Chi Phat's models consistently present that PILA had a direct positive effect on PILO (std. b=0.981*** and 0.229** respectively). The result can be interpreted that residents who had positive perceived impacts on livelihood assets were inclined to have positive perceived impacts on livelihood outcomes. In addition, Chi Phat's model illustrated that PILA directly influenced Support positively (std. b=0.332**) while Chambok's model showed that PILO directly influenced Support positively (std. b=0.928***). It may indicate that the expectation that CBET could contribute to improving livelihood assets was the motive for support for CBET in Chambok commune. Similarly, in Chi Phat commune the motive for support for CBET was the expectation that CBET could improve livelihood outcome.

Conclusion and Implications

This study contributes to expanding the understanding of the host residents' attitude toward tourism development, especially CBET, by providing the following theoretical contributions. First, in addition to the determinants of residents' attitude to tourism found by previous studies such as community attachment, community concern, ecocentric attitude, emotional solidarity, tourism dependency, knowledge about the (tourism) industry; this study showed that natural resource dependency and socio-economic status (as a construct) also influence residents' attitude toward CBET. Theoretically, this study suggests that the residents who depend on natural resources are likely to hold negative attitude toward tourism development that rely on natural resource base, especially ecotourism. Second, as an alternative to the earlier empirical studies that found that residents' perceived impacts in term of overall economic, socio-cultural, and environmental aspects affected support for tourism development; this study suggests that residents' perceived impacts of CBET on livelihood assets and outcomes are also likely to affect support for CBET. However, the perceived impact factors that affect support for CBET may be different in different CBET areas. For example, while Chambok's model shows that perceived impacts on livelihood assets were likely to influence support, Chi Phat's model demonstrates that perceived impacts on livelihood outcome were. Nevertheless, it can be concluded that the findings of this study partially supports the social exchange theory. This study also contributes to improving CBET by providing the following suggestions. CBET managers, planners, and developers should take residents' attitude into consideration in order to manage and develop CBET successfully and sustainably. Chambok's model suggests that in order to improve positive perception about impacts of CBET, CBET should take the following actions.

(1) Maintaining or improving friendly interactions between the tourists and the host residents because emotional solidarity positively influenced PILA;

(2) Educating the residents with high community concern about CBET's contribution to improving their livelihood assets. As a result, PILO and Support will also improve because PILA influenced PILO, which in turn influenced Support; and

(3) Implementing fair and transparent benefit sharing mechanisms so that dissatisfaction of the residents who highly depended on CBET can be prevented.

The following suggestions can be made based Chi Phat's model.

(1) Taking the same action as the suggestion 2 of Chambok's model for the resident with high community concern because community concern positively influenced PILA, this in turn influenced PILO.

(2) Providing alternative benefits to those with lower SES. This can be done by providing employment opportunity which Chi Phat CBET is trying to implement right now, by buying goods/products from low SES residents, or by using development fund to directly help those in need, if possible.

(3) Providing training about CBET because knowledge about CBET possibly improves positive PILO. And

(4) Educating the residents who are highly reliant on natural resources about benefits that CBET can generate so that their negative attitude can be moderated.

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