# The Effects of Residents' Participation on Their Perception of and Support for Community-based Ecotourism in Cambodia: A Structural Equation Modelling Approach

## Introduction

Residents' attitudes towards and participation in tourism development have long been acknowledged by scholars and practitioners as two key factors that significantly influence its success and sustainability. In Cambodia, community-based ecotourism (CBET) has been initiated and implemented since the early 1990s in the form of integrated conservation and development projects to conserve natural resources and to generate additional income for local people. However, while many CBET projects are sustainable and successful, numerous others failed to survive. One of the determinants of this failure may be residents' low or non-participation and negative attitudes. Carter et al. (2015) found that 23 percent of the literature on sustainable tourism in Cambodia focused on ecotourism. However, residents' attitudes towards CBET and the relationship between residents' participation and their attitudes have been little studied in Cambodia. Therefore, to better understand the role of residents' participation in improving their attitudes towards CBET, this study attempts to determine the effects of residents' participation on their perceptions of and support for CBET.

### *Conceptual framework*

Structural equation modelling was used to examine the relationships between the factors of interest depicted in Figure A1 in the appendix. At the outset, a set of hypotheses was developed based on the literature or any substantial theory.

### *Remunerative participation*

Remunerative participation (RPART) is usually used as an incentive to encourage residents to get involved in CBET, to take part in natural resource conservation, and to support the CBET project. RPART is similar to residents' economic dependence on tourism, an aspect that has been investigated by many studies. This is because the level of RPART may be equivalent to the degree of dependence on tourism. It is apparent that residents who are economically dependent on tourism may have a positive attitude towards tourism development. Studies by Pizam (1978) and Vesey and Dimanche (2000) support this premise. Based on those studies, four hypotheses are postulated:

H1. RPART directly and positively influences non-remunerative participation (NRPART).
H2. RPART directly and positively influences perceived impacts of ecotourism on livelihood assets (PILA).
H3. RPART directly and positively influences perceived impacts of ecotourism on livelihood outcome (PILO).
H4. RPART directly and positively influences support for ecotourism (SUPPORT).

### *Non-remunerative participation*

Numerous studies discovered that community participation in tourism development, management or decision making positively affects residents' perceptions of the impacts of tourism. Lankford (1994) proposed that if their opinions and participation are taken into account, residents are likely to support tourism development. This

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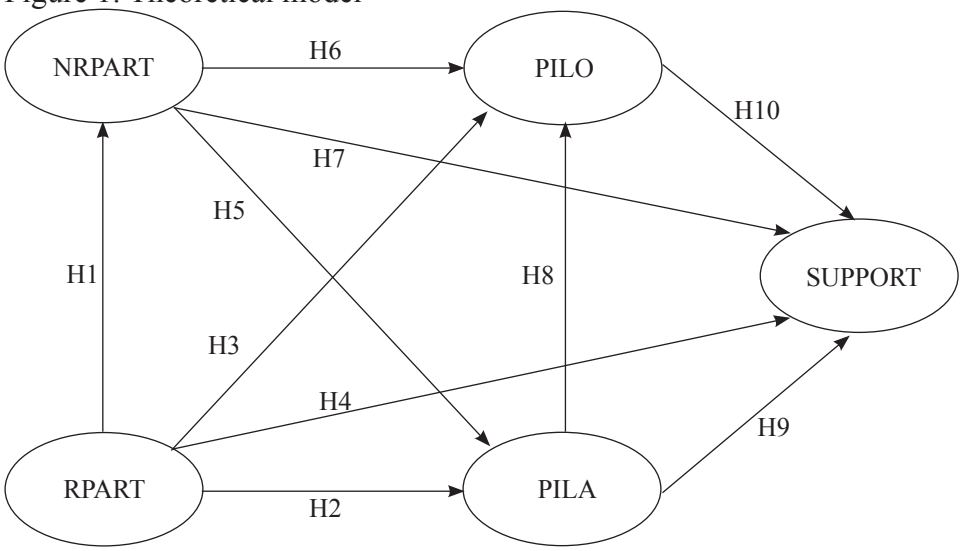
Figure 1: Theoretical model




Source: Authors' literature review
Note: H means hypothesis.

was supported by Lee (2013), who revealed that community involvement was positively associated with support for tourism development. Based on this literature, the following hypotheses are posited:

H5. NRPART directly and positively influences PILA.
H6. NRPART directly and positively influences PILO.
H7. NRPART directly and positively influences SUPPORT.

***Perceived impacts***

Most past studies evaluated the perceived impacts of tourism in terms of its economic, social and environmental aspects. These indicators are suitable for mass tourism destinations. But the focus of this study is CBET, which is managed by local people often with support from a nongovernmental organisation. The goal of CBET is to improve local people's livelihoods and to conserve local natural resources. For this reason, this study used the perceived impacts of CBET on livelihood assets (PILA) and livelihood outcomes (PILO). Livelihood assets consist of five core asset categories 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 the natural resource base (DFID 1999). As livelihood assets are the foundation for achieving livelihood outcomes, PILA is likely to directly and positively influence PILO.

Social exchange theory (SET) has been widely used to study residents' attitudes towards tourism development. SET asserts that if residents perceive that tourism has positive impacts rather than unacceptable adverse impacts, they are likely to support it. Based on this assertion, many scholars found that perceived impacts are the antecedents of support for tourism development. The following hypotheses are therefore proposed:

H8. PILA directly and positively influences PILO.
H9. PILA directly and positively influences SUPPORT.
H10. PILO directly and positively influences SUPPORT.

Hypotheses H1 and H7 state that RPART directly and positively influences NRPART, which, in turn directly and positively influences SUPPORT. Thus, RPART is likely to indirectly and positively influence SUPPORT with NRPART as a mediator (H11).[1] Similarly, according to other hypotheses, it is also likely that RPART and NRPART indirectly and positively influence SUPPORT with PILA or PILO as mediators (H12 and H13).

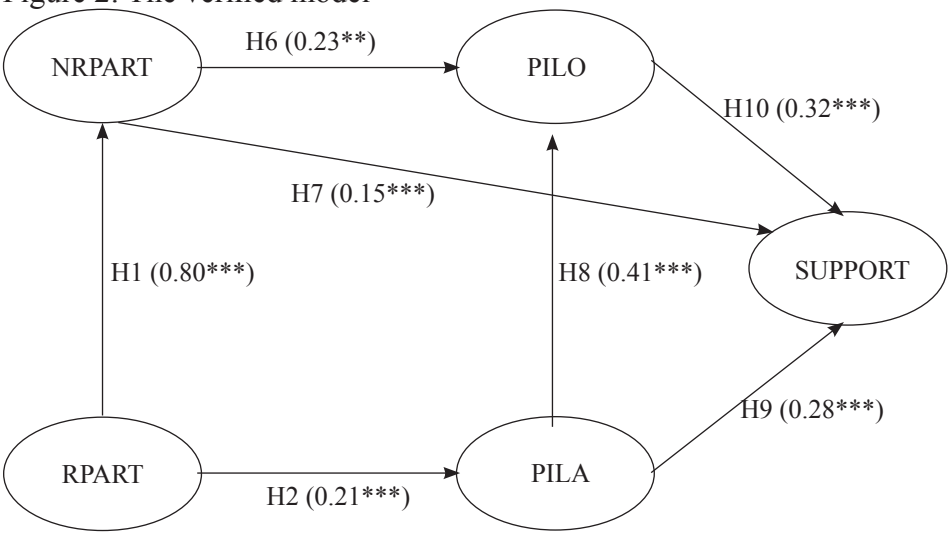
**Study method**

***Study area***

Chi Phat commune, where this study was conducted, is located in the Southern Cardamom Protected Forest, Koh Kong province. According to the commune database, there were about 549 households in this commune in 2010. Rice farming was the primary occupation of 69 percent of all households, cultivating crops and vegetables, fishing and raising livestock were the main occupations of 13 percent, and 4.1 percent of households collected non-timber

1 The indirect effects (H11, H12, H13) cannot be illustrated in Figure 1 because their paths are hidden in those of the direct effects.

Figure 2: The verified model




Source: Result of authors' analysis, 2014.
Note: ( ) denotes standardised coefficients; significant at p-value < 0.01*** and <0.05 **.

forest products. Chi Phat CBET was established in 2007 and has been supported by Wildlife Alliance to protect local natural resources and improve local livelihoods. It had an elected management committee and 167 households as members who took it in turns to provide services to tourists such as homestay, guesthouse, guide, transport, meals, and so on.

***Data collection***

The sample data was collected from 200 residents of four villages in Chi Phat commune, including both members and non-members of Chi Phat CBET. The survey was carried out in May 2014 using a structured interview questionnaire. Proportionate sampling was used to obtain a diverse sample of respondents across the four villages.

***Data analysis***

Two-step structural equation modelling (SEM) was carried out to test the theoretical model depicted in Figure A1 in the appendix. The first step was the measurement model, which aims to verify whether the observed variables are proper measures for their latent variables. Confirmatory factor analysis (CFA) was implemented to test the fitness of the measurement model in which all five latent variables (i.e., RPART, NRPART, PILA, PILO and SUPPORT) were specified to have correlations with each other. The reliability and validity of the latent variables were also verified. The second step in SEM was to test the hypothesised structural relationships between the five latent variables. The structural model is equivalent to ordinary least squares regression. Non-significant relationships were deleted from the model, and the corresponding hypotheses rejected. The maximum likelihood with robust standard error (MLR) estimator of Mplus version 6.12 statistical software was used in both steps. MLR is robust to non-normality of the data and is also recommended for a small sample size.

**Results and discussion**

***Effects of remunerative participation***

The result of analysis shows that remunerative participation had a strong positive effect on non-remunerative participation as hypothesised. Obviously, the residents involved in remunerative participation were usually required to join in non-remunerative participation such as meetings, training and conservation activities. Hence, remunerative participation plays a significant role in motivating residents to take part in CBET development. As discussed earlier, remunerative participation is commonly used as an incentive for residents to support CBET projects.

Unfortunately, the result emphasises that remunerative participation made an insignificant contribution to enhancing residents' perceptions of positive impacts from and support for CBET. It suggests that all residents regardless of the level of remunerative participation tended to have similar levels of perceived impacts and support. This may imply that residents' perceived impacts and support for CBET are more likely to be influenced by other factors such as their desire for additional economic development (Campbell 1999; Lepp 2007). Another possible justification for residents who exhibit low remunerative participation to have a positive attitude and strong support for tourism development is that they may believe in

the so-called trickle-down effects of CBET. In other words, they may perceive that CBET directly improves the livelihoods of a group of residents. Eventually, one way or another, it will indirectly improve others' livelihoods as well.

***Effects of non-remunerative participation***

Similarly to the result for remunerative participation, non-remunerative participation did not have a significant role in stimulating positive perceptions of tourism development. This result is similar to that of Nicholas, Thapa and Ko (2009) which reported that community participation did not have a significant relationship with perceptions about sustainable tourism. Non-remunerative participation, however, had a direct positive relationship with support. Although this relationship was weak, it may support Lankford's (1994) assertion that if residents realise that their opinions or interests are taken into account, they are more likely to support tourism development. It is also consistent with the finding of Lee (2013). Based on the results, it can be inferred that residents who participate in CBET training programs or express ideas at CBET meetings are somewhat more supportive of CBET than those without non-remunerative participation. That may be because, through non-remunerative participation, residents may be well informed and become aware of the goodwill, real conditions and contributions of CBET ventures, which in turn can make them more tolerant and amenable to the CBET and its impacts.

The results also imply that residents who participate in both remunerative participation and non-remunerative participation are more likely to have slightly higher positive perceived impacts and stronger support for CBET than those who only participate in remunerative participation. It can therefore be concluded that remunerative participation in consort with non-remunerative participation is an effective approach to gain residents' support for CBET.

Finally, the results confirm the premise of social exchange theory and the findings of most previous studies. In other words, residents who believe that CBET contributes to improving livelihood assets and livelihood outcomes tend to support it.

## Conclusion

The findings indicate that remunerative participation has a substantial role in encouraging residents to join non-remunerative CBET activities. However, remunerative participation fails to play a vital role in improving residents' perception of impacts from and support for CBET. Likewise, non-remunerative participation in CBET does not have a substantial influence on perceived impacts. Fortunately, non-remunerative participation has a positive effect on residents' support for CBET. Additionally, remunerative participation has an indirect positive effect on support for CBET via non-remunerative participation. This suggests that remunerative participation, accompanied by non-remunerative participation, is an effective approach to gain residents' support for CBET. As hypothesised, residents' perceptions of the impacts of CBET are precedents of support.

## References

Campbell, Lisa M. 1999. "Ecotourism in Rural Developing Communities." *Annals of Tourism Research* 26 (3): 534–553.

Carter, R. W. (Bill), Thok Sokhom, Vicky O'Rourke and Tristan Pearce. 2015. "Sustainable Tourism and its Use as a Development Strategy in Cambodia: A Systematic Literature Review." *Journal of Sustainable Tourism* 23 (5): 797–818.

DFID (Department for International Development). 1999. "Sustainable Livelihoods Guidance Sheets." http://www.eldis.org/vfile/upload/1/document/0901/section2.pdf.

Lankford, Samuel V. 1994. "Attitudes and Perceptions Toward Tourism and Rural Regional Development." *Journal of Travel Research* 32 (3): 35–43.

Lee, T. H. 2013. "Influence Analysis of Community Resident Support for Sustainable Tourism Development." *Tourism Management* 34: 37–46.

Lepp, Andrew. 2007. "Residents' Attitudes Towards Tourism in Bigodi Village, Uganda." *Tourism Management* 28 (3): 876–885.

Nicholas, Lorraine N., Brijesh Thapa and Yong Jae Ko. 2009. "Residents' Perspectives of a World Heritage Site: The Pitons Management Area, St. Lucia." *Annals of Tourism Research* 36 (3): 390–412.

Pizam, Abraham. 1978. Tourism's Impacts: The Social Costs of the Destination Community as Perceived by Its Residents. *Journal of Travel Research* 16, 4: 8–12.

Ven Seyhah. 2017. "Residents' Attitude toward Community-Based Ecotourism in Cambodia: Based on Two Cases of Yeak Laom and Chi Phat Communes." PhD Dissertation, Nagoya, Japan: Graduate School of International Development, Nagoya University. http://ir.nul.nagoya-u.ac.jp/jspui/bitstream/2237/26326/5/%E7%94%B211822%E4%B8%BB%E8%AB%96%E6%96%87.pdf.

Vesey, Catherine M., and Frederic Dimanche. 2000. "Urban Residents' Perceptions of Tourism and Its Impacts." Unpublished manuscript, University of New Orleans, LA.

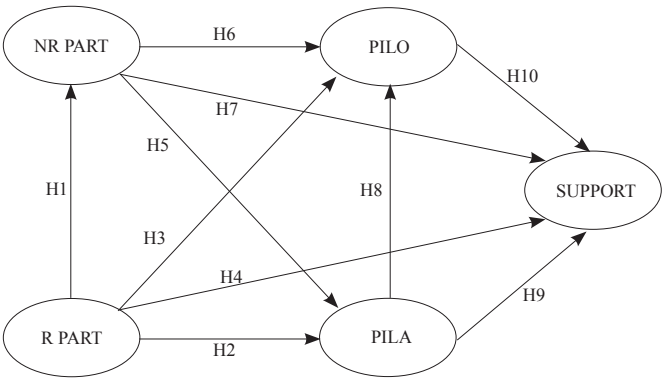
Woosnam, Kyle M. 2012. "Using Emotional Solidarity to Explain Residents' Attitudes about Tourism and Tourism Development." *Journal of Travel Research* 51 (3): 315–327.

## Appendix: Structural Equation Modelling

### *Model specification*

Structural equation modelling (SEM) was used to explain the structural relationships between the factors of interest. Figure A1 illustrates the structural paths based on the hypotheses posited in the section on structural framework.

Figure A1: Theoretical model




RPART, NRPART, PILA, PILO and SUPPORT are latent variables, which were measured with respective sets of observed variables. RPART and NRPART are the self-reported frequencies of residents' remunerative and non-remunerative participation in CBET. The observed variables of PILA and PILO were created based on the Sustainable Livelihoods Guidance Sheet of the UK's Department for International Development (DFID 1999). Support for CBET was adopted from Woosnam's (2012) modified Tourism Impact Attitude Scale. The questions were rated on the seven-point Likert scale, where one designates never (for RPART and NRPART), extremely negative (for PILA and PILO) and strongly disagree (for SUPPORT), while seven represents extremely often (for RPART and NRPART), or extremely positive (for PILA and PILO) and strongly agree (for SUPPORT).

### *Model selection*

Table A1 presents the model fit statistics for the measurement model, theoretical structural model and verified structural model.

### *Measurement model*

Table A1 shows that the measurement model has a significant chi square ($\chi 2$ = 202, df = 122, p-value < 0.001), suggesting that it was a poor fit for the data. However, chi square is likely to be significant when the sample is large, so it is recommended that researchers use alternative fit indices in addition to chi square. One of them is the ratio of $\chi 2$/df, for which the cut-off value for a good fit model is < 3. The measurement model had a $\chi 2$/df ratio of 1.65, indicating that the measurement model indeed had a good fit.

The comparative fit index (CFI) and Tucker-Lewis Index (TLI) were also used to examine the model fit. A model with CFI and TLI > 0.95

Table A1: Model fit statistics

| Model Fit Index | Measurement Model | Structural Model | |
|---|---|---|---|
| | | Theoretical | Verified |
| **Absolute fit indices** | | | |
| Chi square | 201.64 | 201.64 | 204.42 |
| df | 122.00 | 122.00 | 125.00 |
| P-Value | 0.00 | 0.00 | 0.00 |
| $\chi^2$/df | 1.65 | 1.65 | 1.64 |
| CFA | 0.95 | 0.95 | 0.95 |
| TLI | 0.94 | 0.94 | 0.94 |
| SRMR | 0.05 | 0.05 | 0.05 |
| RMSEA | 0.06 | 0.06 | 0.06 |
| **Relative fit indices** | | | |
| **Satarro-Bentler chi square difference test** | | | |
| chi square difference (df=3) | | | 1.229 |
| p-value | | | 0.746 |

Source: Result of the authors' analysis, 2014

has a good fit. The measurement model had an acceptable fit because its CFI was 0.95 and TLI was 0.94. Moreover, standardised root mean square residual (SRMR) and root mean square error of approximation (RMSEA) were used to measure the misfit of the target model. The recommended cut-off values of SRMR and RMSEA are <0.05. The measurement model also had a good fit according to the misfit indices, with SRMR of 0.05 and RMSEA of 0.06. RMSEA was slightly higher than the cut-off value. Nonetheless, RMSEA < 0.08 is considered an acceptable fit.

The full CFA and measurement model results[2] cannot be shown here because of limited space. Based on the CFA results, all the latent variables had a high level of internal consistency because their composite reliability (CR) was greater than 0.70. They also had convergent validity because the standardised factor loadings of all the observed variables were statistically significant at the 1 percent level. Also, most standardised factor loadings were higher than 0.70, which is considered ideal. Only one standardised loading was less than 0.70 but higher than 0.50, and three of them were less than 0.50, but these observed variables were kept to retain the content validity of their latent variables.

### *Theoretical structural model*

The theoretical structural model had the following fit indices: $\chi^2$/df = 1.65, CFI = 0.95, TLI = 0.94, SRMR = 0.05, RMSEA = 0.06. Hence, it had an acceptable fit, but several path coefficients were not statistically significant. The non-significant path coefficients were deleted to seek a simple model that fits the data well.

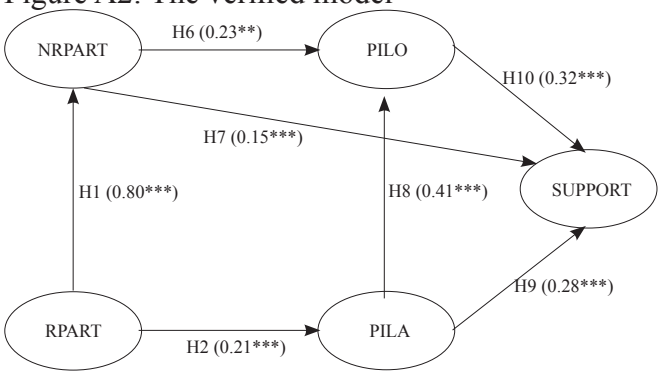
### *Verified structural model*

The verified model also had a good fit ($\chi^2$/df = 1.64, CFI = 0.95, TLI = 0.94, SRMR = 0.05, RMSEA = 0.06). The Satorra-Bentler scaled chi square difference test was implemented to compare the theoretical model with the verified model. As presented in Table A1, Satarro-Bentler chi square difference was not significant, indicating that the verified model fits the sample data better than the theoretical model does. The verified model was selected as the final model.

### The results of analysis

Figure A2 illustrates the structural paths of the verified model. The numbers in the parentheses are the statistically significant standardised coefficients of the direct effects. The statistically significant standardised coefficients of the indirect effects are shown in Table A2.

Figure A2: The verified model




Source: Result of the authors' analysis, 2014
Note: ( ) denotes standardised coefficients; significant at p-value <0.01*** and <0.05**.

2 The full CFA and measurement model results can be found in Ven (2017).

Table A2: Significant indirect effects

| H | Path | | | sc |
|---|---|---|---|---|
| | From | Via | To | |
| H11a | RPART | NRPART | PILO | 0.18** |
| H11b | RPART | NRPART | SUPPORT | 0.12** |
| H11c | RPART | NRPART PILO | SUPPORT | 0.06** |
| H13a | NRPART | PILO | SUPPORT | 0.07** |
| H13b | PILA | PILO | SUPPORT | 0.13** |

Source: Result of authors' analysis, 2014
Note: ** significant at p-value < 0.05.