

โมเดลความสัมพันธ์เชิงสาเหตุเจตคติการอนุรักษ์ธรรมชาติ
ที่มีต่ออุทยานแห่งชาติในประเทศไทย
**A CAUSAL RELATIONSHIP MODEL OF ATTITUDES TO NATURE
AFFECTING CONSERVATION TOWARD NATIONAL PARKS
IN THAILAND**

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บทคัดย่อ

การวิจัยครั้งนี้ค้นพบว่าโมเดลความสัมพันธ์เชิงสาเหตุเจตคติการอนุรักษ์ธรรมชาติที่มีต่ออุทยานแห่งชาติในประเทศไทย มีความสอดคล้องกับข้อมูลเชิงประจักษ์ ด้านการยึดมนุษย์เป็นศูนย์กลางมีอิทธิพลทางตรงเชิงลบต่อการอนุรักษ์ธรรมชาติ ในทางตรงกันข้าม ด้านการยึดธรรมชาติมีอิทธิพลทางตรงเชิงบวกต่อการอนุรักษ์ธรรมชาติ ด้านการท่องเที่ยวและธรรมชาติมีอิทธิพลทางตรงเชิงบวกต่อการอนุรักษ์ธรรมชาติ ด้านการยึดมนุษย์เป็นศูนย์กลางมีอิทธิพลทางอ้อมเชิงบวกต่อการอนุรักษ์ธรรมชาติโดยผ่านด้านการท่องเที่ยวและสิ่งแวดล้อม การค้นพบในครั้งนี้แสดงให้เห็นว่าด้านการท่องเที่ยวและสิ่งแวดล้อมสามารถเพิ่มผลกระทบเชิงบวกได้ทั้ง 2 ด้าน คือ ด้านการยึดมนุษย์เป็นศูนย์กลางและด้านการยึดธรรมชาติเป็นศูนย์กลางซึ่งทำให้เจตคติที่มีต่อการอนุรักษ์ธรรมชาติสูงขึ้น

คำสำคัญ: เจตคติ การยึดมนุษย์เป็นศูนย์กลาง การยึดธรรมชาติเป็นศูนย์กลาง อุทยานแห่งชาติ
โมเดลสมการโครงสร้าง

Abstract

The findings revealed that the casual relationship model of attitudes to nature affecting conservation toward national parks in Thailand with regard to the hypothesis was consistent to the empirical data. Anthropocentrism directly influences in a negative way toward nature conservation, whereas eco-centrism directly influences in a positive way toward nature conservation. Tourism and environment directly influences in positive ways toward nature conservation. Anthropocentrism indirectly influences in a positive way toward nature conservation through tourism and the environment. Eco-centrism indirectly influences in a positive way toward nature conservation through tourism and the environment. The finding showed that tourism and environment can increase the

positive effects both in the attitudes of anthropocentrism and eco-centrism which made the attitudes toward nature conservation higher.

Keywords: attitudes, anthropocentric, eco-centric, national park, structural equation model

Introduction

National parks are important places for natural and scenery experiences, such as, ecotourism and natural tourism (Fennel & Nowaczek, 2010). The purposes of visiting national parks were recreation, aesthetic, tourism, and conservation (Frost & Hall, 2009). However, the over-development of tourism in many national parks is causing serious concern about the natural environment. Because of natural parks are popular tourist attractions, many park managers in the world are under increasing pressure to provide more visitor facilities and accommodation, and to provide different types of activities to meet the growing demand of visitors. The sustainable development of tourism is now acknowledged globally (Connel et al., 2009) and has become a research focus over recent decades (Clarke, 1997; Swarbrooke, 1999; Robinson et al., 2000; Liu, 2003).

From above concepts and research results, the researchers are interested in studying about a causal relationship model of attitudes to nature affecting conservation toward national parks in Thailand. The researchers expect that this study will help the authorities of national parks in Thailand understand more about their visitor attitudes, and it will increase conservational behavior of tourists in national parks and reduce natural resources usage for sustainable tourism industry development in Thailand. The aims of this study were to develop a causal relationship model of attitudes to nature affecting conservation toward national parks in Thailand and to validate between the assumption model and an empirical data.

For literature reviews, attitude is what we feel about a particular principle which can be a brand, a person, a theory, and so on. It is what we think of and try to imprint our own feeling into that (East et al., 2013). Garner (1980) stated that attitude comprises the instinct and feeling of human, bias, fear, obstacle, and feeling of guilt toward a particular subject. Moreover, Garner (1985) also indicated that attitude is linked with the value and belief of a person who will be possible to support or oppose the choices of the scope of the whole activity. Kitpredaborisut (1992) stated that attitude consists of 3 components which are knowledge, feeling, and practice, meaning that the attitude is not only in the scope of inner feeling, but it also affects the behavior that tends to act out in a way according to the attitude of that person.

Attitude toward nature conservation is the manner of thought, feeling and tendency to show the behavior in maintaining the environment with a satisfying way or

agreement, or with a dissatisfying way or disagreement, or with a moderate way which is agreed with the principle of Light (2002) that the environment morality affects the attitude toward environment and person; and consequently, that person may be influenced in the aspect of applying the environment in the tourism industry, such as the conservative support of wild-life tourism and eco-centric (Fennel & Nowaczek, 2010). The attitude is determined by the structures of society and culture, and there are a relationship and several factors e.g. demography, society, religion, background of races and cultures, pressure from groups, law and order, and news report via media (Rokeach, 1973; Pearce & Turner, 1990; Cairncross, 1991; Gössling, 2002; Duerden & Witt, 2010) which is consistent to the principle of Dunlap et al., (2000) stating that a person's belief toward nature and roles of human is the basic components of the system of human beliefs and nature. Schultz et al., (2004) supported this idea that levels of involvement between person and nature are built for relationship according to types of the attitude of person that is developed.

A person who adheres to anthropocentrism will see the nature as the source that must be pioneered and used. They see that nature is a valuable tool to increase the qualities of life (Godfrey-Smith, 1979), and the economic growth is necessary for human development (Page & Dowling, 2002). Therefore, anthropocentrism is considered in the aspect of responsibility toward nature crisis that has occurred violently, such as global warming, drought, ozone or less pure air which affects the loss of biological variety. Deforestation causes the global warming and greenhouse effect (Gaston, 2005). Furthermore, it also causes the extinction of several species of animals which are the results from destroying animal habitats (Wilson, 2003). Xu & Fox (2014) found that the attitude toward anthropocentrism has a negative influence toward nature conservation. Leopold (1949) commented that the changes in morality of the interaction between human and nature are highly necessary.

From the latest research of Xu & Fox (2014), it was investigated the tourists' attitudes toward nature, tourism and sustainable development of national parks found that the attitudes of anthropocentrism of tourists who visited National Parks of China and England had negative influence toward tourism and environment. Similarly, Thomson & Barton (1994) found that an anthropocentric person could have a positive attitude toward environment. Also, Schultz & Zelezny (1999) stated that an anthropocentric person would support the natural tourism with regard to the consideration of the benefits that nature provides to human in the research of Milfont & Duckitt (2004).

Eco-centric tourism and eco-centrism realize the true values of nature (Page & Dowling, 2002). Nature has generated its values appropriately, meaning that humans

and nature can live together with equivalent values (MacKinnon, 2007; Wearing & Neil, 2009) and humans are part of nature. Schultz & Zelezny (1999) remarked that an eco-centric person would support the natural tourism with regard to the consideration of the benefits that nature provides to humans, whereas the eco-centric person may support the natural tourism like anthropocentric persons, but their inspiration is in eco-centrism (Hernandez et al., 2000)

Method

Conceptual Framework

The researcher considered the concept of a causal relationship model of attitudes to nature toward national parks in Thailand as it affected conservation (Xu & Fox, 2014) and related researches about anthropocentric, eco-centric, tourism and the environment, and conservation. The researcher synthesizes all of these concepts, theories, and related researches to create the conceptual framework for developing a causal relationship model of attitudes to nature affecting conservation toward national parks in Thailand as shown in Figure 1.

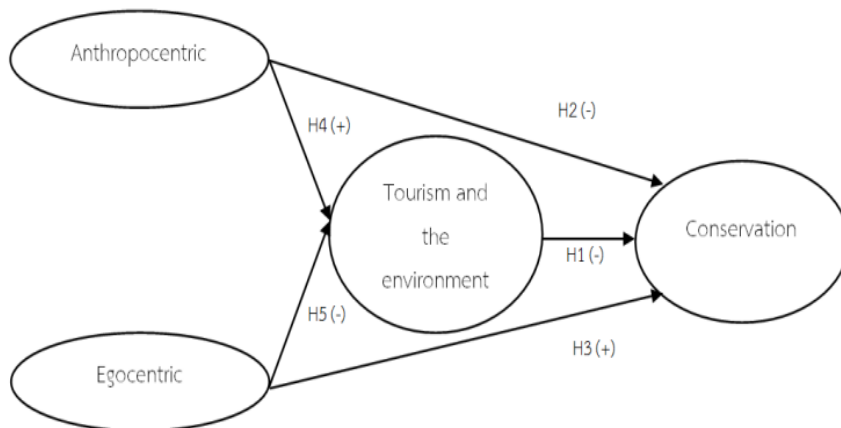


Figure 1 A causal relationship model of attitudes to nature toward national parks in Thailand as it affected conservation (Xu & Fox, 2014)

Sampling and Data Collection

Data were collected from the undergraduates during September 2014 in six universities in Bangkok, Samut Prakarn, Chiang Mai, Khon Kaen, Songkhla, and Chonburi, Thailand by multiple stage stratified random sampling. For the data collection procedure, students were invited to complete a survey by using screen questions regarding their national parks traveling experience in Thailand. A cover letter

explained the purpose of the study, confidentiality, and contact information of researchers. The sample size was 400 undergraduates. The 382 complete questionnaires were gathered (or 95.50 percent). For multivariable study, Hair et al. (2010) stated that the proportion between samples and observed variables should be at least 5: 1, more acceptable ratio is 10: 1, and 20: 1 being the best. There were 15 observed variables for this study, therefore, the sample size should be 300, but this study was considered for 400 samples for unusable questionnaires.

Research Instruments

The questionnaire was adapted from Xu & Fox (2014) Additionally, it is an adapted model designed to fit with its environmental context. Five-point Likert scales were used to measure the components of this adapted model, with 5 indicating a positive view. The questionnaire contained the four latent variables: anthropocentric, eco-centric, tourism and the environment, and conservation.

The questionnaire also involved questions soliciting demographic information, such as gender and education. For content validity, the researcher selected 3 experts to review the questionnaire and the value of the Index of items Objective Congruence (IOC) of all questions was more than 0.50 Therefore, every question was associated with the research objectives. To enhance internal validity, pre-testing was conducted to modify the questionnaire before using it formally. Thirty copies of the questionnaire were randomly distributed in this pre-test/pilot study. Moreover, the questionnaire was checked for internal consistency of reliability which had Cronbach's alpha coefficient for overall at 0.889 questionnaires were collected in the field. 382 national park visitors in Thailand completed and submitted valid questionnaires. Table 1 presents the profile of the respondents.

Table 1 The result of path analysis of the latent variables regarding the hypothesis

Dependent variables Independent variables	Tourism and the environment			Conservation		
	TE	DE	IE	TE	DE	IE
Anthropocentric	0.51** (0.10)	0.51** (0.10)	-	-0.08 (0.09)	-0.30 (0.12)	0.21* (0.09)
Eco-centric	0.35** (.09)	0.35** (0.09)	-	0.72** (0.09)	0.57** (0.09)	0.15** (0.05)
Tourism and the environment SEM Variable	-	-	-	0.42** (0.12)	0.42** (0.12)	-
R-square	Tourism and the environment 0.64	Conservation 0.50				

Remark * $p < 0.05$, ** $p < 0.01$ $\chi^2=72.30$, $df=57$, $p= 0.83$, $GFI=0.977$, $AGFI=0.945$, $NFI=0.989$, $NNFI=0.995$, $RMSEA=0.00$, $RMR=0.037$, $SRMR=0.015$

Data analysis

A confirmatory Factor Analysis (CFA) using LISREL program (version 9.1) was performed to empirically evaluate the construct validity of the developed components model. After CFA, a structure equation model (SEM) was validated between causal relationship models and an empirical data.

Results

A causal relationship model of attitudes to nature affecting conservation toward national parks in Thailand regarding the hypothesis is shown in Figure 2.

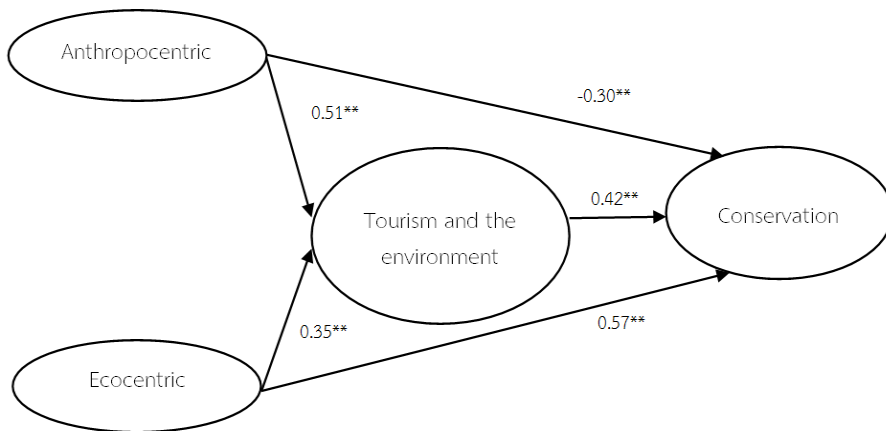


Figure 2 a causal relationship model of attitudes to nature toward national parks in Thailand as it affected conservation

The investigating result of assumed model goodness of fit as in Figure 2 and Table 1 found that hypothesis model fit the empirical data well, considered the statistic value and goodness of fit index that passed all values. For example, Chi-square (χ^2) has a statistically significant level at ($\chi^2 = 72.30$, $df = 57$, $p = 0.83$), with goodness of fit index (GFI) of 0.977, squared root mean residual (SRMR) of 0.02. The root mean square error of approximation (RMSEA) is equal to 0.64, and the regression coefficient of dependent variable is variable of conservation is equal to 0.64, showing that all the model variables can explain the variance of variable of conservation equal to 64 percent.

When considering the influence of latent variables in developed model found that latent variable that affected the nature conservation the most was eco-centric. Next come tourism and the environment. The variable that affected the variable of natural conservation the least was anthropocentric, with the path coefficient of 0.72,

0.42, and -0.08 respectively. With regard to the path analysis of the latent variable that affected conservation, considered with the research hypotheses as follows:

Anthropocentric affects the conservation of national parks in Thailand equal to -0.08, which was negative direct effect equal to -0.30 and indirect effect through tourism and the environment equal to 0.21, meaning that anthropocentric caused the decrease in the conservation of national parks in Thailand, and it was direct and indirect causes through tourism and the environment. It was found that the indirect cause had a statistically significant level at 0.05.

Eco-centric affected the conservation of national parks in Thailand equal to 0.72, which was positive direct effect equal to 0.57 and indirect effect through tourism and the environment equal to 0.15, meaning that eco-centric caused the increase in the conservation of national parks in Thailand, and it was direct and indirect causes through tourism and the environment, which had statistically significant level at 0.01.

Tourism and the environment affected the conservation of national parks in Thailand equal to 0.42, meaning that tourism and the environment caused the increase in the conservation of national parks in Thailand, which has statistically significant level at 0.01.

Eco-centric affected the conservation of national parks in Thailand equal to 0.57 and it was indirect effect through tourism and the environment equal to 0.15, meaning that eco-centric caused the increase in the conservation of national parks in Thailand, and it was direct and indirect causes through tourism and the environment, which had statistically significant level at 0.01.

Tourism and the environment received the positive direct effect from the conservation of national parks in Thailand equal to 0.42, meaning that tourism and the environment caused the direct effect of the increase in the conservation of national parks in Thailand, which had statistically significant level at 0.01.

Discussion

The research revealed that the attitudes of anthropocentric had the negative effect toward the attitudes of nature conservation, whereas the attitudes of eco-centric had the positive effect toward the attitudes of nature conservation. The two types of the tourists' attitudes as mentioned had different attitudes toward nature conservation, which was similar to the previous research results that the British tourists' attitudes of anthropocentric and eco-centric affect was the opposite towards nature conservation, which means the more the attitudes of anthropocentric tourists are, the less the attitudes of nature conservation are. In contrast, the higher the attitudes of eco-centric tourists are, the higher the attitudes of nature conservation are. (Thompson

& Barton, 1994; Schultz & Zelezny, 1999; Hernandez et al., 2000; Page & Dowling, 2002; Xu & Fox, 2014). Furthermore, it was also found that the anthropocentric gave more importance to the environment more than tourism, whereas humans who had the anthropocentric attitudes gave more importance to the use of natural resources more than the environment maintenance. (Stern & Dietz, 1994)

This research also found that the variable of tourism and the environment had the positive impact toward nature conservation, which was not consistent with previous research by stating that tourism and the environment had the negative effect toward nature conservation (Xu & Fox, 2014), but it was in the context of British tourists. For Thailand, the tourists were the anthropocentric that supported the natural tourism regarding the benefits that nature provides to humans (Schultz & Zelezny, 1999). Also, the eco-centric tourists in Thailand realized that tourism meant no harm to nature conservation. Therefore, the recommendation for the next research should be focused on the reasons of the attitudes of the tourist that views the natural tourism as non-destruction to natural conservation.

Conclusion

The casual relationship model of attitudes to nature affecting conservation toward national parks in Thailand with regard to the hypothesis was consistent to the empirical data. Anthropocentrism directly influences in a negative way toward nature conservation, whereas eco-centrism directly influences in a positive way toward nature conservation. Tourism and environment directly influence in positive ways toward nature conservation. Anthropocentrism indirectly influence in a positive way toward nature conservation through tourism and environment. Eco-centrism indirectly influences in a positive way toward nature conservation through tourism and environment. The analysis of total effect found that Eco-centric affected to conservation the most.

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References

- Cairncross, F. (1991). **Costing the Earth**. London; Business Books.
- Clarke, J. (1997). A framework of approaches to sustainable tourism. **Journal of Sustainable Tourism**, 5(3), 224-233.

- Connel, J., Page, S., & Bentley, T. (2009). Towards sustainable tourism planning in New Zealand: monitoring local government planning under the resource management act. **Tourism Management**, 30, 867-877.
- Duerden, M.D., & Witt, P.A. (2010). The impact of direct and indirect experiences on the development of environmental knowledge, attitudes, and behavior. **Journal of Environmental Psychology**, 30(4), 379-392.
- Dunlap, R.E., Van, L., K.D., Mertig, A.G., & Jones, R.E. (2000). Measuring endorsement of the new ecological paradigm: a revised NEP scale. **Journal of Social Issues**, 56(3), 425-442.
- East, R., Wright, M., & Vanhuele, M. (2013). **Consumer Behavior: Applications in Marketing**. 2nd ed. London: SAGE Publications.
- Fennel, D.A., & Nowaczek, P. (2010). Moral and empirical dimensions of human-animal interactions in ecotourism: deepening an otherwise shallow pool of debate. **Journal of Ecotourism**, 9(3), 239-255.
- Frost, W., & Hall, C.M. (2009). **American Invention to International Concept: the Spread and Evolution of National Parks**. In W. Frost, & C.M. Hall (Eds.), National parks and tourism: International perspectives on development, histories and change. London: Routledge.
- Gardner, R. (1980). On the validity of affective variables in second language acquisition: Conceptual and statistical considerations. **Language Learning**, 30(2), 255-270.
- Gardner, R. (1985). **Social Psychology and Second Language Learning: The Role of Attitudes and Motivation**. London: Edward Arnold.
- Gaston, K.J. (2005). Biodiversity and extinction: species and people. **Progress in Physical Geography**, 29(2), 239-247.
- Godfrey-Smith, W. (1979). The value of wildness. **Environmental Ethics**, 1(4), 309-319.
- Gössling, S. (2002). Human-environmental relations with tourism. **Annals of Tourism Research**, 29(2), 539-556.
- Hair, J.F., Black, W.C., Babin, B.J., & Anderson, R.E. (2010). **Multivariate Data Analysis: A Global Perspective**. New Jersey: Pearson.
- Hernandez, B., Suarez, E., Martinez-Torvisco, J., & Hess, S. (2000). The study of environmental beliefs by fact analysis: research in the Canary Islands, Spain. **Environment and Behavior**, 32, 612-636.
- Kitpredaborisut, B. (1992). **Teaching and Learning Measurement and Evaluation**. 2nd ed. Bangkok: B&B Publishing.
- Leopold, A. (1949). **A Sad Country Almanac**. New York: Oxford University Press.
- Light, A. (2002). Contemporary environmental ethics from met ethics to public philosophy. **Metaphilosophy**, 33(4), 426-449.
- Lui, Z. (2003). Sustainable tourism development: a critique. **Journal of Sustainable Tourism**, 11(6), 459-475.
- MacKinnon, B. (2007). **Ethics: Theory and Contemporary Issues**. 5th ed. Belmont, California: Thomson/Wadsworth.
- Milfont, T.L., & Duckitt, J. (2004). The structure of environmental attitudes: A first- and second-order confirmatory factor analysis. **Journal of Environmental Psychology**, 24, 289-303.
- Page, S., & Dowling, R.K. (2002). **Ecotourism**. Harlow: Prentice Hall.

- Pearce, D.W., & Turner, R.K. (1990). **Economics of Natural Resources and the Environment**. London: Harvester Wheatsheaf.
- Robinson, M., Swarbrooke, J., Evans, N., Long, P., & Sharpley, R. (2000). **Environmental Management and Pathways to Sustainable Tourism: Reflections on International Tourism**. Sunderland: Business Education Publishers Ltd.
- Rokeach, M. (1973). **The Nature of Human Value**. New York: Free Press.
- Schultz, P., & Zelezny, L. (1999). Values as predictors of environmental attitudes: evidences from consistency across 14 countries. **Journal of Environmental Psychology**, 19(3), 255-265.
- Schultz, P.W., Shriver, C., Tabanic, J.J., & Khazian, A.M. (2004). Implicit connections with nature. **Journal of Environmental Psychology**, 24, 31-42.
- Stern, P.C. & Dietz, T. (1994). The value basis of environmental concern. **Journal of Social Issues**, 50(3), 407-424.
- Swarbrooke, J. (1999). **Sustainable Tourism Management**. Wallingford: CABI Publishing.
- Thompson, S.C.G., & Barton, M.A. (1994). Ecocentric and anthropocentric attitudes toward the environment. **Journal of Environmental Psychology**, 14(1), 149-157.
- Wearing, S., & Neil, J. (2009). **Ecotourism: Impacts, Potentials and Possibilities**. 2nd ed. Oxford: Butterworth-Hememann.
- Wilson, E.O. (2003). **The Future of Life**. New York: Vintage.
- Xu, F., & Fox, D. (2014). Modelling attitudes to nature, tourism and sustainable development in national parks: A survey of visitors in China and the UK. **Journal of Tourism Management**, 45, 142-158.