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Original Paper

The Impact Mechanism of Pro-Environmental Behaviours

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Abstract

Based on the theory of relationship quality, the research constructed the impact mechanism model of pro-environmental behaviours by applying tourist's perceived value as the antecedent variable, while relationship quality (satisfaction and loyalty) was treated as the mediators, and place attachment as a moderator. Surveys were conducted at the Daweishan National Forest Park in Hunan Province, China, with 674 valid questionnaires collected. The empirical results provided evidence that the direct effect of perceived value of tourists on tourists' pro-environmental behaviours is significantly positive, and the indirect effect of relationship quality (satisfaction and loyalty) between perceived value of tourists. Recommendations and strategies for further research and implementing tourist stratification management are suggested.

Keywords

affective loyalty, perceived value, pro-environmental behaviour, satisfaction

1. Introduction

National parks are becoming increasingly important with the rapid development of ecotourism. Parks not only meet the desires of visitors for leisure and recreation, but also undertake the functions of conservation, biodiversity, and education (Bjork, 2000; Sirakaya, Sasidharan, & Sonmez, 1999). Pro-environmental behaviour, also known as environmentally responsible behaviour, ecological

behaviour or environmentally friendly behaviour, refers to the behaviour of tourists who spontaneously reduce the damage to the natural resources and ecological environment, or take actions to promote the sustainable use of the environment in tourism destinations (Ballantyne & Packer, 2011; Nepal, al Irsyad & Nepal, 2019; Ramkissoon & Mavondo, 2015).

Scholars have started the analysis of pro-environmental behaviours' formation mechanism from place attachment (Anton, & Lawrence, 2016; Buonincontri, Marasco, & Ramkissoon, 2017; Cheng et al., 2014; Eusébio et al., 2018; Halpenny, 2010; Song, Kim, & Yim, 2017). Halpenny (2010) confirmed that place dependence indirectly affects pro-environmental behaviours through place identity, from a study at Point Pelee National Park in Canada. Based on the survey of 372 tourists in Ningaloo Marine Park in Australia. There is some literature documenting that perceived value, satisfaction, affective loyalty and place attachment are associated with pro-environmental behaviour, but little is known about the mediating and moderating mechanisms underlying this association (Chiu, Lee, & Chen, 2014; Chung, Petrick, & Absher, 2011).

The study takes the satisfaction and Affective loyalty of tourists as the mediators to explore the impact Mechanism of tourists' pro-environmental behaviour. The study establishes a new theoretical framework for the formation mechanism of tourists' pro-environmental behaviour, and provides a new perspective for the sustainable development of tourist destinations.

2. Theoretical Foundation and Hypotheses

2.1 Perceived Value

Perceived value is characterized as a core element in relationship marketing and for predicting consumer behaviour (Bolton & Drew, 1991). Value is the income from exchange from the perspective of supply side, and the benefit of products and services purchased from the perspective of demand side (Sheth, Newman, & Gross, 1991). Perceived value is the value perception of products or services that consumers have paid for and are based on the rational evaluation of perceived gains and losses. Perceived value is generally regarded as a key element to the success of enterprises. Identifying and creating customer perceived value is a prerequisite for the long-term survival and progress of an enterprise (Kotler & Keller, 2006). From the perspective of tourist experience, scholars further suggested that customer perceived value itself is part of the entire tourist experience (Chen & Tasi, 2007; Fernando et al., 2018; Lee, Yoon, & Lee, 2007). The value in this study is based on the perspective of consumers and refers to the benefits obtained in products or services.

2.2 The Indirect Effect of Satisfaction

Oliver (1997) viewed satisfaction as consumers' judgements about service or products fulfilment. Visitor satisfaction is widely viewed as the overall evaluation of visitors' experiences of the destination after meeting their expectations and desires (Kozak & Rimmington, 2000; Okello & Yerian, 2009). Perceived value is viewed as a key antecedent to visitors' satisfaction (Lee, Yoon, & Lee, 2007; Orams, 1995). Tourism literature suggested that providing a satisfying ecotourism experience can enhance the

pro-environmental behaviour of tourists (Davis, Le, & Coy, 2011; Higham & Carr, 2002; Lee & Moscarbo, 2005). Chiu, Lee, and Chen (2014) concluded that satisfaction not only directly affected pro-environmental behaviours, but also played a moderating effect between perceived value and pro-environmental behaviour.

2.3 The Indirect Effect of Affective Loyalty

Loyalty refers to the commitment to repurchase a service or a product in the future (Moore & Graefe, 1994; Oliver, 1999; Shoemaker & Lewis, 1999). The concept of tourist loyalty originated from customer loyalty in marketing. Loyalty is measured as a multi-dimensional construct, consisting of cognitive loyalty, affective loyalty, and conative loyalty (Oliver, 1999; Yuksel, 2010), or attitudinal loyalty and behavioural loyalty (Lee & Shen, 2013). Affective loyalty refers to the loyalty to an individual's own preference. The consumer may be satisfied with the product and hence, they may be more likely to become affectively loyal in the same category (Yuksel et al., 2010). Kwenye and Phiri (2016) took the world heritage site of Victoria Falls, Zambia, as the research base and confirmed that loyalty positively influenced pro-environmental intentions.

Based upon the literature, the paper proposes its hypothesis.

H1: Perceived value directly affect the satisfaction.

H2: satisfaction directly affect the pro-environment behavior of tourists.

H3: Perceived value directly affect theAffective loyalty.

H4: Affective loyalty directly affect the pro-environment behavior of tourists.

H5: Perceived Value (PV) directly affect the pro-environment behavior of tourists (PB).

H6: The indirect effect of satisfaction between perceived value and pro-environmental behaviour is significant.

H7: The indirect effect of affective loyalty between perceived value and pro-environmental behaviour is significant.

3. Research Methods and Data Collection

3.1 Research Area

This study was based at Daweishan National Forest Park (referred to DNFP in this paper), which is located at Daweishan Town, Liuyang City, Hunan Province, southern China. It has become a famous green summer resort due to its rich negative oxygen ions and convenient location, attracting visitors for short weekend escapes and long holidays from not only Hunan Province but also from Guangdong, Zhejiang, and other parts of China. It was rated as national 4A scenic spot in 2007, a national forest park in 2012, and the national eco-tourism demonstration area in 2014. DNFP charges a user fee (boom season: 100RMB/person-time; off season: 70RMB/person-time) and collects tickets at entry points, resulting in relatively reliable access to visitors.

3.2 Design of Scales and Questionnaire

The design of the scale was adapted from previous measurements in the literature, in combination with the context of DNFP. Six constructs were examined in this research with a multi-item, five-point Likert-type scale, from "- strongly disagree" to "5-strongly agree". Perceived value was measured by adapting five items proposed by Sweeney and Soutar (2001), Chen and Tsai (2007), and Lee et al. (2007). Five items that measure satisfaction were adapted from Okello and Yerian (2009). Affective loyalty was measured by three items drawn from Yuksel et al. (2010) and one item from Lee et al. (2013). Based on work by Williams and Roggenbuck (1989), the research categorised place attachment as place dependence or place identity, reflected by nine items in total. Pro-environmental attitude was measured by five items proposed by Smith-Sebasto et al. (1995).

In order to minimise semantic differences on the quality of the questionnaire, the scale was translated from Chinese to English by the research team. Researchers adjusted some items that might have produced ambiguity, unclear meaning or confusion.

3.3 Sampling and Data Collection

A pilot survey was conducted in DNFP during 16-17 August 2019 to test the questionnaire design. The pilot survey secured 32 visitors and provided valuable ideas about improving the sentences and structure of some questions in the questionnaire. The formal survey was performed from August to November 2019. Altogether, 750 questionnaires were distributed and 712 were returned. After eliminating invalid questionnaires with missing sample options or identical scores for consecutive items, 674 valid questionnaires were collected. The valid return rate was 89.86%.

3.4 Data Analysis

SPSS 24.0 was used to test reliability of scales and carry out descriptive statistics. AMOS 22.0 was used to test the validity of scales, and PROCESS3.0 plug-in SPSS 24.0 was selected for the moderated model analysis.

4. Results and Analysis

4.1 Demographic Features of the Respondents

There were slightly more female than male respondents (53.7% females). The majority of the respondents were young, with 36.4% aged between 21~35 years old, and 30.7% between 36~50 years old. Education level was relatively high, with 56.2% of the respondents having a diploma or a bachelor's degree. About 41.4% of respondents earned a monthly income over 5000 RMB. In general, ecotourists tend to be better educated and have higher incomes than other types of tourists (Wen & Tisdell, 2001). Repeat visitation was high, with 40.7% of the respondents visiting DNFD three times or more. The majority came from nearby areas, and 60.8% of the respondents came from Hunan Province. This probably reflects the cost of travel. The demand for visiting national parks rises (other things being held constant) with a reduction in the cost of travel to these sites. Studies using the travel cost method support this hypothesis. It is also likely that a majority of repeat visitors are from Hunan. The

relative frequency of repeat visits is liable to taper off the further away the visitor's residence is from the national park (Wen & Sinha, 2009).

4.2 Reliability and Validity Test

For examining the measurement scales, this research assessed the reliability, confirmation factor analysis, convergent and discriminant validity of the constructs. The Cronbach's α of six constructs varied from 0.918 to 0.957, and the overall Cronbach's α of the scale is 0.980. The figures were higher than 0.70 criterion, as proposed by Nunnally and Bernstein (1994), revealing satisfactory internal consistency of the measurement scale (see Table 1).

The x^2/df was less than 3 at 2.513, the value of RMR was less than 0.05 at 0.031 and RMSEA was less than 0.08 at 0.069. The values of GFI, AGFI, NFI, TLI, and CFI all exceeded the 0.90 criterion set by Hu et al. (1999), which was an acceptable fit.

In current study, the AVE for the six constructs exceeded the squared inter-construct correlations, as proposed by Formal and Larcker (1981), and discriminant validity was satisfactory.

4.3 Model Analysis

According to Jose (2013), a bootstrap method was adapted to examine the significance of the direct and indirect effect of the research model. The specific process of calculation was conducted through PROCESS 3.0 in SPSS 24.0. The bootstrap samples in this study were set at 5000.

Perceived Vvalue (PV)directly affect the satisfaction (SA). The direct effect is 0.730(P<0.001). Satisfaction (SA) directly affects the pro-environment behaviour of tourists(PB). The direct effect is 0.289 (P< 0.001). Perceived Value (PV) directly affect the Affective loyalty (SL). The direct effect is 0.708(P<0.001). Affective loyalty (SL) directly affect the pro-environment behaviour of tourists (PB). The direct effect is 0.211 (P< 0.001). Perceived Value (PV) directly affect the pro-environment behaviour of tourists (PB). The direct effect is 0.164 (P< 0.001). Therefore, H1, H2, H3, H4, H5 are valid (see Figure 1).

Satisfaction (SA) plays a significantly positive indirect effect between perceived value (PV) and pro-environmental behaviour (PB). The indirect effect is 0.211 (P< 0.001). Affective loyalty (LO) plays a significantly positive indirect effect between perceived value and pro-environmental behaviour. The indirect effect is 0.150 (P< 0.001). Therefore, H6 and H7 are valid (see Figure 1).

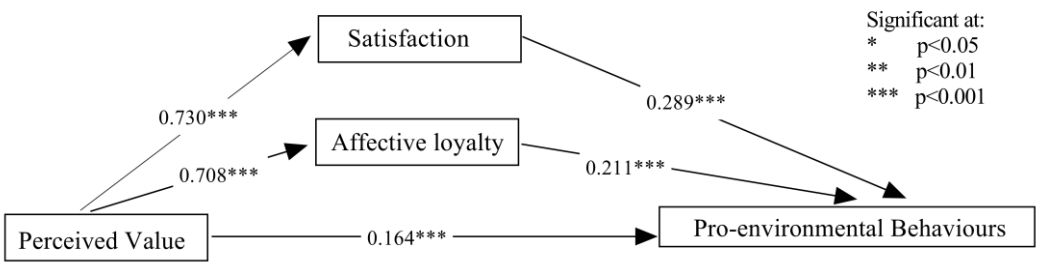

Figure 1. Structural Model Results

Table 1. Hypotheses and the Indirect Effects of the Structural Model

Path	Indirect effects	Direct effects	Total effects	Result
H6:PV→SA→PB	0.211***	0.164***	0.375***	supported
H7:PV→LO→PB	0.150***	0.164***	0.314***	supported

5. Discussion

The current article presents a conditional mediation model derived from cognitive psychology theory to clarify the formation of pro-environmental behaviour via visitors' perceived value, satisfaction, affective loyalty, and place attachment, with reference to the eco-travel experience from DNFP.

This study finds that perceived value is the key precedent of satisfaction, affective loyalty, and pro-environmental behaviour. Extending on the previous researches indicating that perceived value can directly and positively affect pro-environmental behaviours (Chiu, Lee, & Chen, 2014; Davis, Le, & Coy, 2011). The empirical results are evident that satisfaction and affective loyalty significantly positively affect pro-environmental behaviour. This accords with findings in the literature (Davis, Le, & Coy, 2011; Kweny & Phiri, 2016). Higher satisfaction and affective loyalty of the eco-travel experience enhance tourists' pro-environment behaviour. This finding proposes that visitors with higher satisfaction and affective loyalty to the national forest park are more willing to maintain long-term relationships with the destination and subsequently are more willing to display pro-environmental behaviour.

6. Conclusion

This study constructed a model on pro-environmental behaviour and the underlying mechanisms. The research is valuable in its contribution in the following findings: (1) Perceived value both directly or indirectly via satisfaction and affective loyalty indicated is strongly associated with pro-environmental behaviour. (2) Satisfaction and affective loyalty have a significantly positive indirect effect between perceived value and pro-environmental behaviour. The indirect effect of satisfaction and affective loyalty is conditional and moderated by place attachment. This is a pioneering research for assessing mediator (satisfaction and affective loyalty) and pro-environmental behaviour. However, this research has some limitations. It is proposed to test the two-way moderating effect in the next study. Taking into consideration that visitors from different countries and cultures may present diverse traits, further verification is needed in the future about other nationalities.

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References

AI-Sabbahy, H. Z., Ekinci, Y., & Riley, M. (2004). An investigation of perceived value dimensions: Implications for hospitality research. *Journal of Travel Research*, *42*(3), 226-234. https://doi.org/10.1177/0047287503258841

Ajzen, I. (1985). From intentions to actions: a theory of planned behaviour. In J. Kuhl, & J. Beckmann (Eds.), *Action-control: From cognition to behaviour* (pp. 11-39). Heidelberg: Springer. https://doi.org/10.1007/978-3-642-69746-3_2

Alexandris. K., Kouthouris, C., & Meligdis, A. (2006). Increasing customer's loyalty in a skiing resort: The contribution of place attachment and service quality. *International Journal of Contemporary Hospitality Management*, *18*, 414-425. https://doi.org/10.1108/09596110610673547

Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modelling in practice: A review and recommend two-step approach. *Psychological Bulletin*, *103*(3), 411-423. https://doi.org/10.1037/0033-2909.103.3.411

Ballantyne, R., & Packer, J. (2011). Using tourism free-choice learning experiences to promote environmentally sustainable behaviour: The role of post-visit "action resources". *Environmental Education Research*, *17*(2), 201-215. https://doi.org/10.1080/13504622.2010.530645

Bolton, R. N., & Drew, J. H. (1991). A multistage model of customers' assessment of service quality and value. *Journal of Consumer Research*, *17*(4), 375-384. https://doi.org/10.1086/208564

Chen, C. F., & Chen, F. S. (2010). Experience quality, perceived value, satisfaction and behavioural intentions for heritage tourists. *Tourism Management*, (31), 29-35. https://doi.org/10.1016/j.tourman.2009.02.008

Chi, C.G. Q., & Qu, H. (2008). Examining the structural relationships of destination image, tourist satisfaction and destination loyalty: An integrated approach. *Tourism Management*, *29*, 624-636. https://doi.org/10.1016/j.tourman.2007.06.007

Cronin, J. J., Brady, M. K., & Hult, G. T. M. (2000). Assessing the effects of quality, value and customer satisfaction on consumer behavioural intentions in service environments. *Journal of Retailing*, *76*(2), 193-218. https://doi.org/10.1016/S0022-4359(00)00028-2

de Oliveira Santini, F., Ladeira, W. J., & Sampaio, C. H. (2018). Tourists' perceived value and destination revisit intentions: The moderating effect of domain-specific innovativeness. International *Journal of Tourism Research*, *20*(3), 277-285. https://doi.org/10.1016/S0022-4359(00)00028-2

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with un-observable variables and measurement error. *Journal of Marketing Research*, *18*(1), 39-50. https://doi.org/10.1177/002224378101800104

Halpenny, E. (2010). Pro-environmental behaviours and park visitors: The effect of place attachment. *Journal of Environmental Psychology*, *30*(4), 409-421. https://doi.org/10.1016/j.jenvp.2010.04.006

Han, H., & Hwang, J. (2015). Norm- based loyalty model (NLM): Investigating delegates' loyalty formation for environmentally responsible conventions. *International Journal of Hospitality Management*, *46*, 1-14. https://doi.org/10.1016/j.ijhm.2015.01.002

Hatcher, L. (1994). *A step-by-step approach to using the SAS(R) system for factor analysis and structural equation modelling*. Cary, NC: SAS Institute.

Hwang, S. N., Lee, C., & Chen, H. J. (2005). The relationship among tourists' involvement, place attachment and interpretation satisfaction in Taiwan's national parks. *Tourism Management*, *26*(2), 143-156. https://doi.org/10.1016/j.tourman.2003.11.006

Isa, S. M., Ariyanto, H. H., & Kiumarsi, S. (2020). *The effect of place attachment on visitors' revisit intentions: Evidence from Batam, Tourism Geographies*, *22*(1), 51-82. https://doi.org/10.1080/14616688.2019.1618902

Jose, P. E. (2013). *Doing statistical mediation and moderation*. New York: Guilford Press.

Kerstetter, D. L., Hou, J. S., & Lin, C. H. (2004). Profiling Taiwanese ecotourists using a behavioural approach. *Tourism Management*, *25*(4), 491-498. https://doi.org/10.1016/S0261-5177(03)00119-5

Kim, S., Park, J. H., Lee, D. K., Son, Y. H., Yoon, H., Kim, S., & Yun, H. J. (2017). The impacts of weather on tourist satisfaction and revisit intention: A study of South Korean domestic tourism. *Asia Pacific Journal of Tourism Research*, *22*(9), 895-908. https://doi.org/10.1080/10941665.2017.1357640

Kotler, P., & Keller, K. L. (2006). *Marketing management* (12th ed.). NJ: Prentice Hall.

Kozak, M., & Rimmington, M. (2000). Tourist satisfaction with Mallorca, Spain, as an off-season holiday destination. *Journal of Travel Research*, *38*, 260-269. https://doi.org/10.1177/004728750003800308

Lee J. (2001). *Constructs of tourists' destination loyalty and market segmentation* (Unpublished PhD dissertation). Purdue University.

Lee, C. K., Yoon, Y. S., & Lee, S. K. (2007). Investigating the relationships among perceived value, satisfaction, and recommendations. *Tourism Management*, *28*, 204-214. https://doi.org/10.1016/j.tourman.2005.12.017

Lopez-Mosquera, N., & Sanchez, M. (2011). Emotional and satisfaction benefits to visitors as explanatory factors in the monetary evaluation of environmental goods. An application to periurban green spaces. *Land Use Policy*, *28*(1), 151-166. https://doi.org/10.1016/j.landusepol.2010.05.008

Nepal, R., al Irsyad, M. I., & Nepal, S. K. (2019). Tourist arrivals, energy consumption and pollutant emissions in a developing economy–implications for sustainable tourism. *Tourism Management*, *72*, 145-154. https://doi.org/10.1016/j.tourman.2018.08.025

Okello, M. M., & Yerian, S. (2009). Tourist satisfaction in relation to attractions and implication for conservation in the protected areas of the Northern Circuit, Tanzania. *Journal of Sustainable Tourism*, *17*(5), 605-625. https://doi.org/10.1080/09669580902928450

Oliver, R. L. (1997). *Satisfaction: A behavioural perspective on the consumer*. New York: Irwin/McGraw-Hill.

Oliver, R. L. (1999). Whence consumer loyalty? *Journal of Marketing*, *63*, 33-44. https://doi.org/10.2307/1252099

Prayag, G., & Ryan, C. (2012). Antecedents of tourists' loyalty to Mauritius: the role and influence of destination image, place attachment, personal involvement and satisfaction. *Journal of Travel Research*, *51*(3), 342-356. https://doi.org/10.1177/0047287511410321

Ramkissoon, H., Smith, L., & Weiler, B. (2013). Relationships between place attachment, place satisfaction and pro-environmental behaviour in an Australian national park. *Journal of Sustainable Tourism*, *21*(3), 434-457. https://doi.org/10.1080/09669582.2012.708042

Ramseook, M. P., Seebaluck, V. N., & Naidoo, P. (2015). Examining the structural relationships of destination image, perceived value, tourist satisfaction and loyalty: Case of Mauritius. *Procedia Social and Behavioural Sciences*, *175*, 252-259. https://doi.org/10.1016/j.sbspro.2015.01.1198

Ramukumba, T. (2018). Tourists revisit intentions based on purpose of visit and preference of the destination. A case study of Tsitsikamma National Park. *African Journal of Hospitality, Tourism and Leisure*, *7*(1), 1-10.

Shoemaker, S., & Lewis, R. C. (1999). Customer loyalty: The future of hospitality marketing. *International Journal of Hospitality Management*, *18*, 345-370. https://doi.org/10.1016/S0278-4319(99)00042-0

Steg, L., & Vlek, C. (2009). Encouraging pro-environmental behaviour: An integrative review and research agenda. *Journal of Environmental Psychology*, *29*, 309-317. https://doi.org/10.1016/j.jenvp.2008.10.004

Stern, P. C. (2000). Toward a coherent theory of environmentally significant behaviour. *Journal of Social Issues*, *56*(3), 407-424. https://doi.org/10.1111/0022-4537.00175

Sweeney, J. C., & Soutar, G. N. (2001). Consumer perceived value: the development of a multiple item scale. *Journal of Retailing*, *77*(2), 203-220. https://doi.org/10.1016/S0022-4359(01)00041-0

Trangeland, T. (2011). Why do people purchase nature-based tourism activity products? A Norwegian case study of outdoor recreation. *Scandinavian Journal of Hospitality and Tourism*, *11*(4), 435-456. https://doi.org/10.1080/15022250.2011.619843

Wen, J., & Sinha, C. C. (2009). The spatial distribution of tourism in China: Trends and impacts. *Asia Pacific Journal of Tourism Research*, *14*(1), 93-104. https://doi.org/10.1080/10941660902756776

Wen, J., & Tisdell, C (2001). *Tourism & China's development: Policies, regional economic growth, and ecotourism*. World Scientific, Singapore. https://doi.org/10.1142/4533

Williams, D. R., Patterson, M. E., Roggenbuck, J. H., & Watson, A. E. (1992). Beyond the commodity metaphor: examining emotional and symbolic attachment to place. *Leisure Sciences*, *14*(1), 29-46. https://doi.org/10.1080/01490409209513155

Yoon, Y., & Uysal, M. (2005). An examination of the effects of motivation and satisfaction on

destination loyalty: A structural model. *Tourism Management, 26,* 45-56. https://doi.org/10.1016/j.tourman.2003.08.016

Yuksel, A., Yuksel, F., & Bilim, Y. (2010). Destination attachment: Effects on customer satisfaction and cognitive, affective and conative loyalty. *Tourism Management, 31,* 274-284. https://doi.org/10.1016/j.tourman.2009.03.007