

Does tourist engagement lead to responsible behavior? Evidence from Ha Long Bay, Vietnam

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INTRODUCTION.

Tourism plays a vital role in Vietnam's economic development, yet its rapid growth has intensified environmental pressures at natural heritage destinations such as Ha Long Bay (Do et al., 2020; United Nations Development Programme, 2021). These challenges highlight the importance of understanding tourists' environmentally responsible behavior (ERB). Prior research has extensively examined various antecedents of ERB, such as place attachment, environmental sensitivity, and environmental attitude (Cheng & Wu, 2015; Lee & Jan, 2015). However, tourist engagement (TE) has received relatively limited attention as a predictor of ERB. Drawing on Self-Determination Theory (Ryan & Deci, 2000), individuals are more likely to engage in positive behaviors when they experience intrinsic motivation and a sense of relatedness. In the tourism context, TE can enhance emotional connection to a destination, thereby encouraging ERB. Consistent with this view, recent studies suggest that when tourists actively engage with a destination through experiential activities, they are more likely to develop a sense of closeness and connection, which makes them less likely to harm the environment (Zhou et al., 2020). Nevertheless, whether such engagement consistently leads to ERB remains unclear, as engagement alone may be insufficient to motivate responsible actions without additional psychological conditions. To address this gap, environmental commitment (EC) is introduced as a relevant psychological factor. Defined as individuals' psychological attachment to and long-term orientation toward environmental protection (He et al., 2022), EC has been shown to strengthen the influence of attitudes and psychological involvement on actual behavior (Wang, Li, & Zhao, 2018). Building on this perspective, EC is proposed as a moderating variable in the relationship between TE and ERB. Specifically, EC is expected to strengthen the extent to which engagement translates into responsible behavior, thereby acting as a critical boundary condition in this relationship.

LITERATURE REVIEW

TE refers to tourists' cognitive, emotional, and behavioral involvement in their interactions with a destination (Manosuthi et al., 2021), whereas ERB refers to behaviors that help preserve the natural environment (Confente & Scarpi, 2021). Prior research indicates that higher levels of engagement are associated with more positive behaviors within a given context (Saleem et al., 2021). In particular, Zhou et al. (2020) argue that when tourists accumulate rich travel experiences, they develop a sense of closeness to the destination, perceiving it as a home-like environment and becoming less likely to harm it. This study suggests that engaged tourists tend to perceive the destination as personally meaningful, thereby increasing their willingness to minimize negative environmental impacts. Accordingly, this study proposes the following hypothesis:

H1. TE has a positive and significant effect on ERB.

EC refers to individuals' psychological attachment to and long-term orientation toward the environment (He et al., 2022). Individuals with strong EC are more likely to engage in protective behaviors (Davis et al., 2011). Previous studies in environmental management and organizational behavior suggest that EC can strengthen the effect of attitudes or psychological involvement on actual behavior (Wang, Li, & Zhao, 2018; Elzek et al., 2021). While engagement reflects a situational response, EC represents a more stable, value-based orientation that guides behavior. Therefore, the positive effect of TE on ERB may vary depending on individuals' level of EC. Specifically, tourists with higher EC are more likely to translate their engagement into responsible behavior.

H2. EC moderates the effect of TE on ERB.

Due to the abstract limit of no more than 3 pages, the research model is shown in Appendix A.

METHOD

The survey was conducted from January 10 to February 28, 2025, at Ha Long Bay, covering major tourist sites including Luon Cave, Surprise Cave, and Ti Top Island. Data were collected from domestic and international tourists using a structured questionnaire. A convenience sampling approach was employed, combining online distribution (Google Forms) and on-site hand distribution to organized tour groups through tour guides and directly to independent tourists at the study sites. A total of 500 questionnaires were distributed, of which 460 valid responses were retained. Measurement scales were adapted from prior studies: TE from Manosuthi et al. (2021), ERB from Confente and Scarpi (2021), and EC from He et al. (2022). All constructs were measured using 7-point Likert scales. Data were analyzed using structural equation modeling (SEM). To examine the moderating effect, respondents were classified into high and low EC groups using a median split approach. Measurement invariance was assessed before multigroup SEM by comparing unconstrained and constrained models. Statistical analyses were conducted using SPSS and AMOS.

FINDINGS

The measurement model demonstrates satisfactory reliability and validity. Composite reliability (CR) values range from 0.81 to 0.85, and average variance extracted (AVE) values range from 0.51 to 0.59. The goodness-of-fit indices ($\chi^2/df = 3.59$, GFI = 0.96, AGFI = 0.92, RMSEA = 0.07, CFI = 0.96, RMR = 0.05) revealed that the model is appropriate and acceptable. The square root of AVE for each construct exceeds the inter-construct correlations, confirming discriminant validity. The structural model results indicate that TE has a positive and significant effect on ERB ($\beta = 0.40$, $p < 0.01$), supporting H1. To examine the moderating effect, a multigroup SEM approach was employed by comparing an unconstrained model with a constrained model in which the structural path from TE to ERB was set to be equal across high and low EC groups. A significant difference was found between the two models ($\Delta\chi^2 = 7.18$, $\Delta df = 1$, $p < 0.05$), indicating that EC moderates the relationship between TE and ERB. Specifically, the effect of TE on ERB is stronger in the high EC group ($\beta = 0.50$, $p < 0.01$) than in the low EC group ($\beta = 0.15$, $p > 0.05$). Therefore, H2 is supported. All results are presented in Appendix B.

CONCLUSION AND IMPLICATIONS

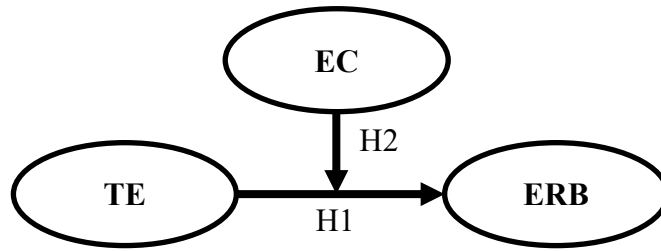
While prior studies often assume a direct link between engagement and behavior, the findings suggest that although TE can promote ERB, such effects are not uniform across individuals, but depend on tourists' EC. Specifically, the positive effect of TE on ERB is significantly stronger among tourists with higher EC and weaker among those with lower EC. These results help explain the previously identified engagement–behavior gap by showing that engagement does not uniformly translate into responsible action but instead depends on underlying psychological conditions. Theoretically, this study advances tourism sustainability research by framing TE as a mechanism and EC as a boundary condition, offering a clearer understanding of when engagement leads to ERB. Future research should further explore the psychological mechanisms that shape when engagement translates into responsible behavior. Practically, destination managers should not only enhance engagement through immersive experiences but also strengthen tourists' EC through education and interpretive programs to promote sustainable behavior..

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APPENDIX A Research Model



APPENDIX B Convergent Validity Results of the Models

Variables	Cronbach's Alpha	CR	AVE
TE	0.84	0.83	0.51
ERB	0.80	0.81	0.52
EC	0.85	0.85	0.59

Discriminant Validity Results

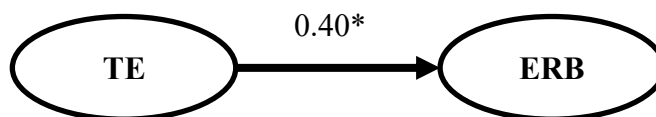
Constructs	TE	ERB	EC
TE	0.71		
ERB	0.38	0.72	
EC	0.24	0.34	0.77

Path coefficient value table

Path	Std. Estimate	t-value	R ²
TE -> ERB	0.40*	6.48*	0.16

* $p < 0.01$

Direct effect of TE on ERB





Results of the measurement invariance for two samples (TE - ERB)

	χ^2	df	Chi-square difference ($\Delta df = 1$)
Unconstrained model	341.55	68	7.18*
Constrained model	348.73	69	

Note: χ^2 = chi-square value; df = degree of freedom; * $p < 0.01$

TE the path coefficients for the high and low EC of this group model to ERB

Path	Low environmental commitment	High environmental commitment
	Estimate	Estimate
TE – ERB	0.15	0.50*

Note: * $p < 0.01$