

FROM EXPERIENCE TO RESPONSIBILITY: THE CONTRADICTION INFLUENCE OF TOURIST RECREATIONAL EXPERIENCE ON WETLAND CONSERVATION BEHAVIORS

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Abstract: Wetland ecosystem flourishes the biodiversity, local livelihood, and economy. However, the tourism activity in wetland can alter the ecosystem degradation. Thence, this study examines the psychological relationship of tourist recreational experience (TRE) on tourist satisfaction and environmentally responsible behavior (ERB). The tourist satisfaction (TS), meanwhile, was utilized as a mediator between TRE and ERB. The assessment was conducted through Stimulus-Organism-Response (SOR) theory lens in Pong wetland Himachal Pradesh, India. The quantitative method was administered by using partial least squares structural equation modelling (PLS-SEM) for data analysis. The questionnaires were employed collecting 219 valid data among domestic tourists at Pong wetland region. Whereas, the internal consistency of all constructs was assessed using Cronbach's alpha and McDonald's ω , with each construct scoring above 0.7. While, the overall Cronbach's alpha and McDonald's ω values were 0.967 and 0.969, respectively. The results indicated that recreational experiences significantly enhance satisfaction and positively predict environmentally responsible behavior. However, there was an unexpected negative direct effect of tourist recreational experience toward environmentally responsible behavior. This indicates that the hedonic recreational experiences may not straightaway translate into commitment to the environment without the mediating role of tourist satisfaction. The findings shed light on experience-satisfaction-behavior correlations in wetland tourism. Noting that, solely of the wetland recreational value has no psychologically impact on environmentally responsible behavior. Therefore, the destination management organization should project on nurturing the conservation activities that enhance visitor satisfaction. As such, the creation and design of nature-based recreation that satisfying, inspiring and mastering awareness on environmental conservation while establishing sustainable wetland governance. In addition to this, the local community participation in wetland management should be prioritized.

Keywords: environmentally responsible behavior, tourist recreational experience, wetland, attitude, satisfaction, SOR theory

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INTRODUCTION

Wetlands are environmentally sensitive ecosystems that support a diverse species and offer significant impact on socio-economic as well as (Yiamjanya et al., 2024) nature-based tourism. Though, wetland does exist only 6% of the whole world, but its natural settings provide crucial social well-being (Van & Doo-Chul, 2025), recreational and educational benefits to visitors, increasing their admiration for nature. Furthermore, wetland habitats are widely perceived for SDG achieving goals (Stojanovic et al., 2025). It was metaphor as the earth's kidney that is one of the three primary ecosystems service for mankind. It is noticeable in current day that wetlands have more degradation and loss biodiversity (Wang et al., 2025). As Chatterjee et al. (2025) cited the wetlands were damage consistently from 1970 to 2015 with higher decline rate per year than natural forest. At the same time, tourism activity is regarded as wetland resource usage because of its attractiveness (Stojanovic et al., 2025). Addedly in the postmodern society, people prompted re-evaluation of tourism practices to a more integrated approach prioritizing biodiversity conservation alongside tourism development. Destination managers can support the sustainable development of recreational surroundings and enhance the scientific supply of park services by evaluating urban parks' environmentally responsible behaviour practices (Zhao et al., 2018).

Such a shift has the aim of restoring degraded ecosystems and biodiversity and creating sustainable economic opportunities for local communities. It aligns with evolving tourist behaviours and expectations in the context of the "new normal" (Afifi, 2021). Tourists typically sought to visit attractions in small groups in open-air locations like mountains, isolated islands and deserts. Such an aim is echoed by Skryl & Gregoric (2022), who stressed that through ecotourism and rural tourism, travellers favour remote locations, green and natural settings, fresh and pure air, and activities such as cycling, hiking, and trekking. Yet, wetland has gained more popularity among visitors especially nature-based tourists.

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However, not every visitor has a positive in wetland spaces as Ausique et al (2025) stated the feeling of discomfort, rejection, and insecurity toward urban wetland because of socio-environmental factors and limitation in educational. Thence, the wetland conservation program initiative studies have recommended as in Vietnam found community involvement in managing wetland resources is vital (Van & Doo-Chul, 2025), the wetland scientific knowledge, infrastructure, and service quality are required in Kazakhstan (Dildabek et al., 2025), and activity-based instruction in school for natural sound mapping in Chile to stimulate students draw attention in the environment (Rabello-Mestre et al., 2026). At the same token, the tourism grows in these biodiversity locations, it is essential to comprehend the psychological and behavioral mechanisms that determine tourists' environmentally responsible behavior (ERB).

Though in India, the government has emphasized of its 93 Ramsar sites conservation tourism practices. The Pong Wetland in Himachal Pradesh is one of the projected sites. That exhibits biodiversity and historical sites such as Masroor Temple and Bathu Ki Ladi Temple, as well as the opportunities for bird watching and outdoor recreation. Despite a greater emphasis on wetland ecosystem preservation, the research on understanding the tourists' ERB is also crucial. Literally, this field of study still remains limited. Albeit, there were researches identified environmental attitudes, place attachment, and biospheric values as important predictors of ERB (Lee, 2011; Ramkissoon et al., 2013; Lin & Lee, 2019), whereas some studies pinpointed the recreational experience with nature can increase environmental awareness (Galley & Clifton, 2004; Ballantyne et al., 2011a). Nevertheless, the causal relationship between tourists' recreational experience and ERB in natural settings remains unclear (Lin & Lee, 2020). Secondly, the satisfaction has been hypothesized as a potential predictor of ERB (Lee & Jan, 2015a), but its mediated role in wetland tourism has yet to be empirically verified. Research on sustainability attitudes and biodiversity knowledge (Naparin & Karsudjono, 2025) underscores the necessity to investigate these internal factors. To address these gaps, this study adopts the Stimulus-Organism-Response (SOR) framework (Mehrabian & Russell, 1974), which holds that external stimuli generate internal evaluations that influence behavioral responses. Although it is widely employed in tourism and hospitality (Dogra et al., 2023), SOR is underexplored in wetland tourism specifically in India. This theoretical gap restricted our knowledge of how wetland-base experiences explain the conversation behavior.

Henceforth, we develop a structural model to investigate the relationships between recreational experience, satisfaction, and ERB among domestic visitors to the Pong Wetland, in India. This study also delves into satisfaction as a mediator of recreational experience and ERB. Ultimately, the theoretical expounding of ERB drivers by giving empirical information from a Ramsar-designated in an emerging economy, as well as informing managers who desire to establish recreational experiences that encourage sustainable preservation of wetlands will be addressed.

LITERATURE REVIEW

Stimulus-Organism-Response Theory

The Stimulus–Organism–Response (SOR) framework (Mehrabian & Russell, 1974) provides a foundational lens for understanding how external environmental cues shape individuals' internal states and subsequent behavioural responses. In tourism, SOR has been widely adopted to explain how attributes of the tourism environment function as stimuli that activate cognitive or affective evaluations, which then translate into outcomes such as satisfaction, behavioural intentions, and loyalty. This triplex structure has offered scholars a robust way to conceptualize the experiential pathways that connect destination attributes to visitor behaviour. Empirically, Cheng et al. (2016) illustrate that mediating variables generally represent the effects of visitor experiences to behavioral intentions. Zhou et al. (2022) discovered that experiencing inputs significantly influence tourists' internal appraisals, which then drive loyalty-related behaviors. Besides, the adoption of satisfaction as mediator is significantly between servicescape (S) and loyalty (R) in a healthcare setting (Suess & Mody, 2018), the memorable experiences (S) enhance destination attachment and overall satisfaction (O), resulting to the development of destination brand equity (R) base on customer (Guleria et al., 2024).

Collectively, these investigations demonstrate SOR's utility in recording multimodal experience processes and understanding how external factors influence behavioral responses. Although SOR has been widely utilized to explain behavioral intentions such as loyalty, revisit intention, and brand equity, its applicability to environmentally responsible behavior (ERB) is restricted, particularly in ecologically sensitive contexts alike wetland (Tang et al., 2025). Meanwhile, scholars studying ERB typically use alternative theoretical frameworks, such as the Theory of Reasoned Action and Theory of Planned Behavior (Lee et al., 2015; Lee & Jan, 2015b; Naparin & Karsudjono, 2025), the Value-Belief-Norm Theory (Lee & Jan, 2015a; Xu et al., 2018), Stakeholder Theory (Su et al., 2018), and the Theory of Goal-Directed Behavior (Han et al., 2018) rather than SOR. While these prior-mentioned theories provide useful insights into the attitudinal and normative drivers of ERB, they commonly ignore the senses and affective processes that arise from interaction with natural environments—mechanisms that are important to wetland tourism. Despite the strong conceptual alignment between SOR and the experiential aspect of wetland tourism, the theory has received little attention in this field.

In spite of that, no empirical study has used the SOR paradigm to explain ERB in wetland tourism contexts in India. This gap narrows our understanding of how recreational experiences behave as triggers, how satisfaction functions as an organismic state, and how these processes influence environmentally responsible behavior in fragile ecosystems.

Tourist Recreational Experience

Tourist recreational experience (TRE) is considered an integral driver of attitudes, satisfaction, and subsequent behavioral intentions in tourism research. It was defined as a multidimensional construct with emotional, cognitive, sensory, educational, entertaining, and hedonistic engagement (Pine & Gilmore, 1998; Schmitt, 1999; Kim, 2018; Câmara et al., 2023; Ge & Chen, 2024). The larger perspective views recreational experience as a holistic psychological

process impacted by interactions with place, nature, and interpretation, rather than just an activity-based encounter (Tang et al., 2024). In nature-based tourism, scholars (Xu et al., 2018) cited thoughts, emotions, and reflections that ecotourists develop when engaging in wetland-related activities. These experience components, particularly draw on the dynamic and multisensory qualities of wetland ecosystems, foster direct contacts with biodiversity, observation of ecological processes, and involvement with conservation narratives. In line with environmental psychology and ecotourism frameworks, such immersive nature-based interactions promote affective and cognitive restoration while strengthening environmentally responsible behavior through increased place connection and moral engagement (Ballantyne et al., 2011a; Ballantyne et al., 2011b). That is the emotional components such as admiration, empathy, and attachment to nature can foster deep psychological engagement and lead to behavioural motivation (Rasul et al., 2025). And the experiential quality constructs the foundation for environmental stewardship and influence visitors' willingness to act responsibly both during and after their visit. As evidence of a significant of emotion effect in tourism (Javed et al., 2020), community-based tourism verifies these dynamics: recreational experiences have been found to impact environmental attitudes, which in turn motivate environmentally responsible behavior (Lee & Jan, 2015b) activities experience exert satisfaction and behavioral intention (Ge & Chen, 2024). This can be inferred that the tourists' recreational experience and satisfaction could nurture behavior and attitudes toward endangered wetland habitats. Despite these findings, empirical understanding remains fractured. In particular, the structural links between recreational experience, ecologically oriented attitudes, satisfaction, and ERB have not been thoroughly investigated in wetland tourism. Given that wetlands offer unique dynamic and instructive environments, exploring these experiential pathways is critical for establishing effective nature-based tourism strategies that promote both visitor satisfaction and ecological responsibility. We anticipate that educational and emotional factors will influence ERB more significantly than hedonic factors, as the former promote conservation mindsets, whilst the latter may emphasize satisfying oneself. As well as, the multi-sensory immersion during visitation would generate holistic positive evaluations. Thence, our hypothesis is:

H1: TRE has a significant impact on Tourist satisfaction (TS)

H3: TRE has a significant impact on ERB

Tourist Satisfaction

Tourist satisfaction (TS) is regarded as an important indicator of destination loyalty and intent to return (Sahabuddin et al., 2021; Carvache-Franco et al., 2022). Satisfaction is typically portrayed in tourism literature as a mediating psychological mechanism that directs the influence of experiencing stimuli into behavioral results (Radovic et al., 2021; Carvache-Franco et al., 2022; Prayag, 2009). In tourism studies, satisfaction is defined as an emotional or cognitive appraisal (Liu et al., 2023) obtained by comparing actual experiences to pre-visit expectations, which is consistent with the foundations of expectancy-disconfirmation theory and norm theory (Javed et al., 2020; Beard & Ragheb, 1980; Yoon & Uysal, 2005). Where, the high-quality recreational experiences, particularly those that incorporate enjoyment, learning, and immersion, are consistently associated with higher levels of visitor satisfaction (Tribe & Snaith, 1998; Radovic et al., 2021; Haji et al., 2021). Visitors who are satisfied are more likely to recognize the importance of environmental conservation, especially in natural settings (Jiang et al., 2022). Similarly, in wetland tourism, satisfaction serves as a mediator between motivation, destination image, attitudes, and behavioral intentions (Lee, 2009). These findings suggest that satisfaction not only reflects the evaluative conclusion of recreational activities, but also acts as a crucial psychological state that converts experiencing encounters into future actions. Satisfaction levels impact visitors' decision-making to revisit and share positive things about the place (Lai et al., 2018).

Despite the importance of satisfaction in tourism behavioral models, its relevance in the nexus of recreational experience and environmentally responsible behavior (ERB) in wetland settings is understudied. Given that wetlands ecological sphere may induce psychological correlation between tourists' experiential attachment and their pro-environmental actions—however, scientific information on this approach is limited. We expect that satisfaction in a sensitive natural ecosystem creates a sense of reciprocal obligation. Therefore, our second hypothesis is:

H2: Tourists' satisfaction has a significant impact on environmentally responsible behaviour

H4: Satisfaction mediates the relationship between TRE and ERB

Environmentally Responsible Behaviour

Environmentally responsible behavior (ERB) refers to humans' intentional acts aimed at reducing environmental degradation and preserving ecological integrity (Zacher et al., 2023; Tan et al., 2023; Han et al., 2016; Lee, 2011; Confente & Scarpi, 2021) or interchangeably as pro-environmental behavior. It composes of four set of behavior including; environmental activism; nonactivist publicly but donation or complying to policy; private environmentalism as such green behavior; and other behavior like influencing (Zacher et al., 2023). Simultaneously, ERB in tourism is comprised of ecological knowledge, environmental attitude, place-based sensitivity, and recognized personal responsibility (Tang et al., 2025). These cognitive-affective components are expressed through behaviors such as following travel instructions, reducing waste, conserving resources, respecting wildlife, and supporting conservation projects (Chiu et al., 2014; Steg & Vlek, 2009; Zacher et al., 2023; Yu et al., 2024; Zhang et al., 2024).

ERB is thus regarded as a necessary foundation to preserving ecotourism growth and protecting endangered areas (Lee et al., 2013). A significant amount of research has identified different causes of ERB in multiple nature-based tourism environments. Place attachment and recreational involvement have been demonstrated highly predict ERB in wetland habitats (Lee, 2011; Xu et al., 2018) show that engagement and experience appreciation are antecedents of ERB in wetland parks. Although this research emphasizes the significance of experience-based and psychological drivers of

ERB, they only provide a partial comprehension of the complex mechanisms that link recreational activities with pro-environmental behavior. Notably, Figure 1 the structural associations between tourist recreational experience (TRE), tourist satisfaction (TS), and ERB in wetland based on SOR will be examined.

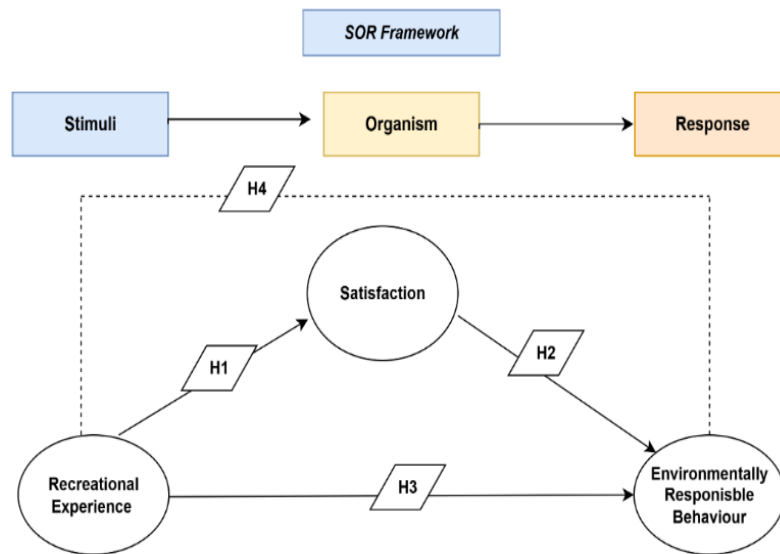


Figure 1. Conceptual Model (Source: Author's own creation)

METHODOLOGY

Research Design

The Quantitative research method and cross-sectional design have been employed to accomplish the research objectives, which are to examine the impact of TRE on ERB in wetland tourism destinations and the mediating roles of satisfaction. According to Apuke, (2017) quantitative research methods were selected for multiple reasons, including the potential of generalising the findings, addressing research questions through numerical data, and statistical analysis, etc. The study can be completed more quickly and cost-effectively, and a cross-sectional research design was used (Setia, 2016).

The questionnaires were constructed for data collection at Pong wetland site. Each measurement item used in the study was adapted and modified from the body of existing literature. The survey used a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree), as it is a common method for data collection that needs less time and effort than scales with more points (Likert, 1932). Tourist recreational experience is an exogenous variable, assessed using 12 indicators adapted from Ballantyne et al. (2011a); Lee & Jan (2015a); satisfaction is an intervening variable, assessed using 9 indicators adapted from (Lee, 2009); environmentally responsible behaviour is an endogenous variable, assessed using 5 indicators from (Xu et al., 2018). The questionnaire was examined by domain experts and pretested with a small group of visitors to verify linguistic clarity, cultural appropriateness, and contextual accuracy before the final survey.

Study Area

This study focuses on Pong Wetland, also known as Maharana Pratap Sagar in Figure 2, one of India's largest artificial wetlands and a designated Ramsar site with diverse and unique biodiversity, located in the Kangra district of Himachal Pradesh (Kohli, 2015). It was established in 1975 on the Beas River. Pong Wetland likely serves as the first significant resting place for migrating birds from the Trans-Himalayan region during winter. This Ramsar site has been established as a sustainable tourism destination under the Swadesh Darshan Scheme 2.0.

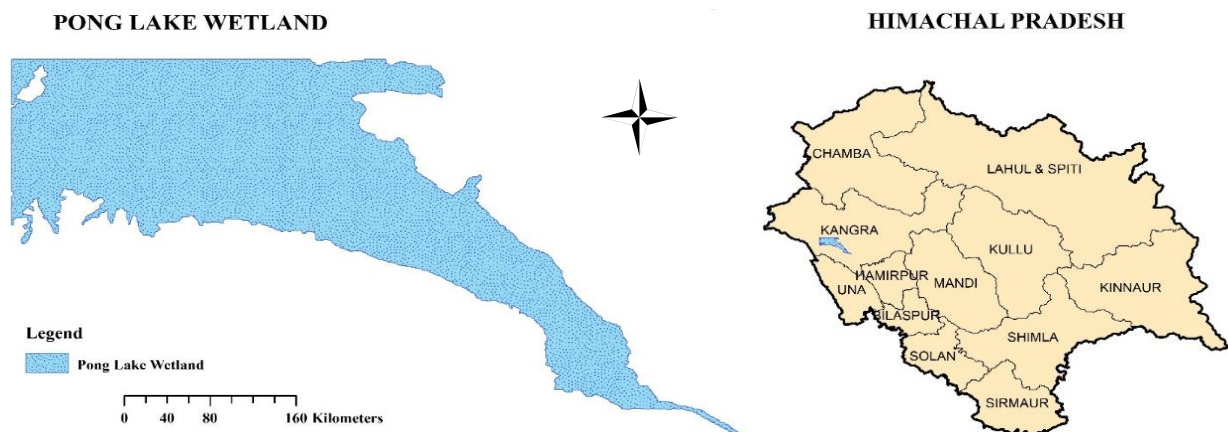


Figure 2. Pong Wetland (Source: Created by the authors using USGS Earth Explorer and ArcGIS10.5)

Sampling and Data Collection Procedure

The research methods were evaluated among visitors to the Pong Wetland (Ramsar site) in Himachal Pradesh, India. Before the final data collection, this study utilised an “a priori sample size calculator for structural equation models”. The total number of responses required for the model’s structure is sufficient for SEM, with 3 latent variables, 22 observed variables, an expected effect size of 0.30, a significance level of 0.05, and a statistical power of 0.80. The calculation shows that at least 119 responses are necessary to detect the effect (Westland, 2010). However, this study collected 219 valid responses, substantially exceeding this threshold and ensuring reliability, validity and adequate statistical power for hypothesis testing (Hair et al., 2014). The questionnaire was distributed offline at Pong Wetland. Data collection took place over three months, in October – December 2024, with respondents asked to complete the questionnaire. Before conducting the final survey, a pilot study was carried out with the first 30 respondents to verify clarity and reliability. The internal consistency of all constructs was assessed using Cronbach’s alpha and McDonald’s ω , with each construct scoring above 0.7. The overall Cronbach’s alpha and McDonald’s ω values were 0.967 and 0.969, respectively. Thus, the reliability of the questionnaire was established (Hair et al., 2019). The data was gathered among 230 domestic tourists using a convenience sampling technique, in which the respondents were chosen for their willingness and availability to participate while they were there. After initial screening, 11 unsatisfactory responses were eliminated, leaving a final sample size of 219 responses to be analysed with a response rate of 95.21%.

Data Analysis

Partial least squares structural equation modelling through SMART PLS 4.0 was applied to test both the measurement model (reliability and validity) and the structural model (path analysis) and the same was utilised to pilot-test as well as analyse the demographic profile of the respondents using Jamovi (version 2.3). For social sciences, conceptual model analysis, particularly in hospitality and tourism studies, partial least square path modelling is a reliable technique (Ali et al., 2018). Moreover, PLS-SEM is a useful tool for examining datasets with restricted observations (Hair et al., 2019). The research utilised the bootstrapping technique to estimate the statistical significance of both direct and indirect effects (Hayes, 2018). The methodology was conceptualized as shown in Figure 3.

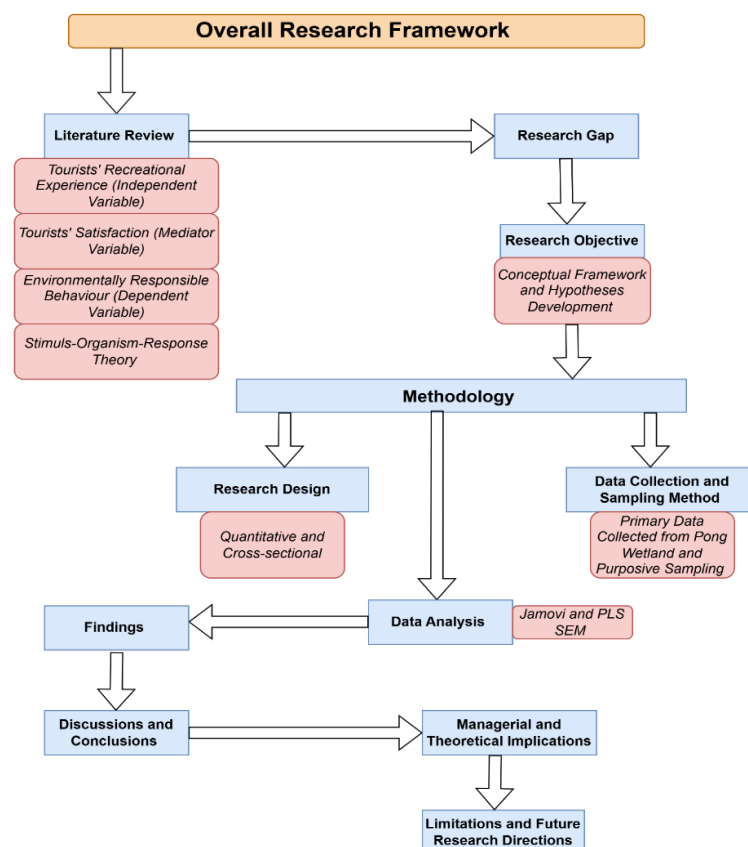


Figure 3. Research Framework

RESULTS

Descriptive statistics

Figure 4 shows the total of 219 responses data, it reveals that 63.0% of the tourists were male, while 37.0% were female. The largest group of tourists is aged 21-30 (68.5%), followed by those aged 31-40 (16.9%). Most are single (71.7%), with 27.4% married. In terms of educational background, 53.0% are postgraduates, 26.9% are graduates, and the majority are first-time visitors (48.9%). Additionally, 65.3% were accompanied by friends on this trip.

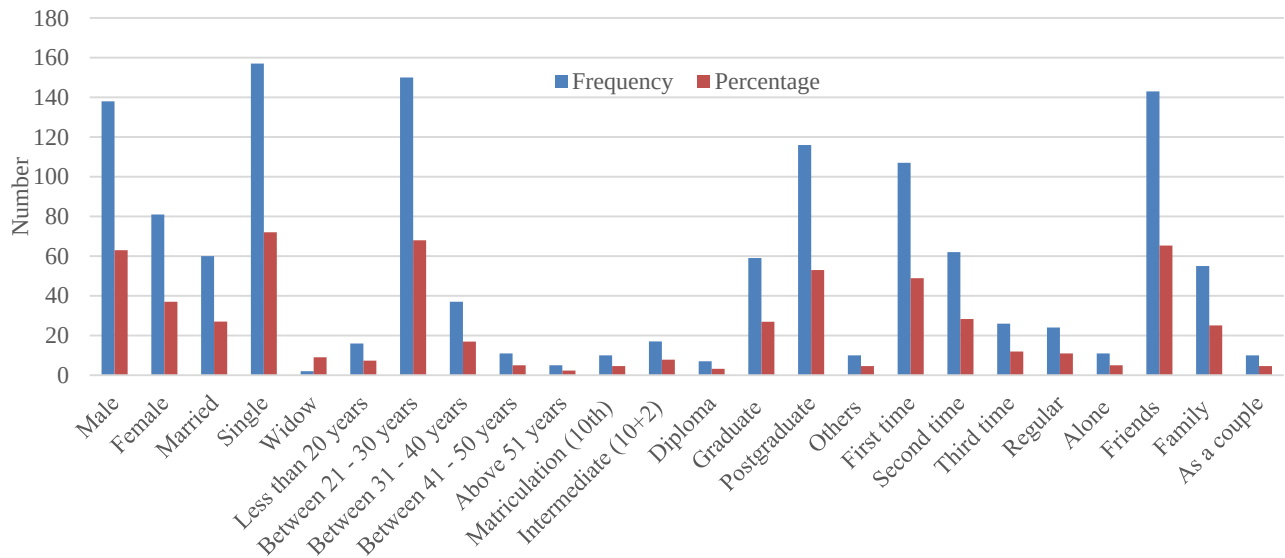


Figure 4. Respondents' Profile (Source: Author's own creation)

Assessment of the measurement model

To check the common method bias, Harman's Single Factor test was applied. The finding was that the first factor accounted for just 28.36% of the total variance, which is below the criterion of 50%. The implication is that there was no issue of common method bias (Fuller et al., 2016). The measurement model evaluation involves verifying construct reliability through measures such as Cronbach's alpha and composite reliability, along with assessing convergent validity (average variance extracted) and discriminant validity. The outer loadings of the 22 indicators ranged from 0.686 to 0.880, all exceeding 0.6. As shown in Table 1, Cronbach's alpha values were above 0.7, confirming that all constructs are reliable (Hair et al., 2014). The collinearity test results for the outer model revealed that all variance inflation factor values were under five, confirming the absence of multicollinearity and bias in the regression analysis.

Table 1. Construct reliability and validity (Source: Author's own creation)

Items		Factor loadings	VIF	Cronbach alpha	rho_c	rho_a	AVE
Tourists Recreational Experience				0.879	0.903	0.890	0.539
TRE1	"A fascinating and new experience"	0.728	1.591				
TRE4	"An amazing experience with water-based activities (Boating, Kayaking, Canoeing, etc.)"	0.710	1.705				
TRE5	"An emotional connection with the nature (flora-fauna)"	0.686	1.651				
TRE6	"A sheer pleasure as I got to see a wide variety of migratory birds"	0.748	1.708				
TRE8	"A refreshing experience as the air in the wetland was fresh and calming"	0.758	2.236				
TRE9	"Highly enjoyable as far as land-based recreational experiences were concerned (cycling tour, nature walk, etc.)"	0.734	2.102				
TRE10	"A very calming experience, as I felt a deep sense of peace within myself during the tour"	0.793	2.327				
TRE11	"A unique experience, where I witnessed a perfect balance between environmental preservation and recreational promotion"	0.714	1.892				
Tourists Satisfaction				0.908	0.925	0.914	0.580
TS1	"The recreational experiences offered at Pong Wetland (boating, bird watching, nature walks, etc.)"	0.749	2.069				
TS2	"The tourist attractions (natural, cultural and religious), available at the Pong Wetland"	0.793	2.388				
TS3	"A thoughtful and worthwhile decision"	0.763	2.003				
TS4	"Time and money I have spent"	0.813	2.569				
TS5	"The environment of the destination"	0.806	2.489				
TS6	"The natural landscape at the Pong Wetland"	0.708	1.702				
TS7	"The Pong Wetland biodiversity"	0.622	1.687				
TS8	"The tourist facilities offered at the Pong Wetland (Information Centre, drinking water, washrooms etc.)"	0.792	2.428				
TS9	"Overall service distribution at the Pong Wetland"	0.789	2.310				
Environmentally Responsible Behaviour				0.890	0.919	0.904	0.695
ERB1	"I would talk to friends or relatives about environmental issues"	0.880	3.006				
ERB2	"I would try to persuade others to adopt environmentally responsible behaviour"	0.827	2.479				
ERB3	"I would report it to the wetland managers if I spotted improper behaviours"	0.864	2.657				
ERB4	"I would pick up the garbage that I see during my trip to Pong Wetland"	0.829	2.371				
ERB5	"I joined in community clean-up efforts"	0.763	1.806				

Additionally, the composite reliability (ρ_c and ρ_a) of all constructs was above 0.7 (Bagozzi & Yi, 1988; Dijkstra & Henseler, 2015), and the average variance extracted (AVE) was above 0.5, indicating that each construct explains at least 50% of the variance in its indicators (Hair et al., 2019). The AVE increased from 0.539 to 0.695. The AVE values of each construct are “Recreational Experience” 0.539, “Satisfaction” 0.580, and “Environmentally Responsible Behaviour” 0.695. Thus, the convergent validity was valid. To assess discriminant validity, using the Heterotrait-Monotrait ratio and Fornell-Larcker criterion in *italic numbers with $\sqrt{AVE}$ in **italic bold***, Table 2. All HTMT values below the threshold of 0.9 or 1 (Henseler et al., 2015; Voorhees et al., 2016). Therefore, discriminant validity is valid.

Table 2. Heterotrait-Monotrait Ration (HTMT) and *Fornell-Larcker Criterion $\sqrt{AVE}$* (*Italic numbers are Fornell-Larcker Criterion)

Constructs	TRE	TS	ERB
TRE	0.734	0.551	0.001
TS	0.590	0.761	0.336
ERB	0.132	0.367	0.834

Table 3. Explanatory Power (Source: Author's own creation)

Constructs	R-square	R-square adjusted	Q ² predict
ERB	0.162	0.154	-0.011
TS	0.304	0.300	0.292

Table 3 presents the explanatory power of the models, highlighting the impact of predictor variables on each construct. The recreational experience accounts for 16.2% of the variance in tourists' satisfaction. Moreover, satisfaction explains 30.4% of the variance in environmentally responsible behaviour. The predictive validity of the structural model was confirmed through R-squared values for the endogenous latent variables of appreciation and actual visits, both of which exceeded the acceptable value of 0.10 (Chin et al., 2020). The Q² prediction results show that the model has good predictive relevance for tourist satisfaction, indicated by the positive value (0.292). Conversely, the negative value for environmentally responsible behaviour (-0.011) suggests that the model has limited or no predictive power for ERB. This indicates that while the model predicts TS effectively, additional constructs are necessary to improve ERB prediction.

Structural Model

The structural model was evaluated using Model Fit (SRMR), f^2 , and path coefficients, as well as t-statistics and p-values, in SmartPLS 4.0. The model fit was excellent, with an SRMR (Standardized Root Mean Square Residual) value of 0.075. Effect size analysis showed that $ERB \rightarrow TRE$ ($f^2 = 0.058$) has a small effect, so ERB modestly explains the variability in the tourist recreational experience. Conversely, the effect size of $ERB \rightarrow TS$ is medium ($f^2 = 0.193$), indicating that environmentally responsible behaviour moderately contributes to tourist satisfaction. $TRE \rightarrow TS$ has a large effect size of $f^2 = 0.436$, suggesting that the recreational experience of tourists is a very strong predictor of tourist satisfaction.

Table 4. Hypothesis Testing Results (direct relationship) (Source: Author's own creation)
(Note: TRE: Tourist Recreational Experience; TS: Tourist Satisfaction; ERB: Environmentally Responsible Behaviour)

Construct (path)	β (path coefficients)	Std	T- statistics	p values	95% Confidence Interval (LICI-UICI)		Support
TRE $\rightarrow$ ERB	-0.265	0.091	2.906	0.004	-0.445	-0.089	H1 $\rightarrow$ No (different sign)
TRE $\rightarrow$ TS	0.551	0.061	9.098	0.000	0.432	0.670	H2 $\rightarrow$ Yes
TS $\rightarrow$ ERB	0.482	0.066	7.323	0.000	0.367	0.624	H3 $\rightarrow$ Yes

A bias-corrected and accelerated (Bca) bootstrap method with 5000 subsamples was employed to examine the relationship between tourists' recreational experience, satisfaction, and environmentally responsible behaviour in the Pong Wetland. The tourist recreational experience has a negative and significant effect on environmentally responsible behaviour ($\beta_{TRE \rightarrow ERB} = -0.265$, $t = 2.906$, $p = 0.004$; Table 4). This suggests that increased recreational engagement might decrease environmentally responsible behaviour. Therefore, H1 is not supported because of the different sign. This negative correlation raises the possibility that tourists may unawares experience psychological stress as a result of increased exposure to environmental responsibility. Conversely, it has a positive and significant influence on tourist satisfaction ($\beta_{TRE \rightarrow TS} = 0.551$, $t = 9.098$, $p = 0.000$; Table 5), supporting H2. The result emphasizes the necessity of creating environmental programs that lessen the immediate reliance on behavior and satisfying visitors. Additionally, satisfaction has a positive and significant impact on environmentally responsible behaviour ($\beta_{TS \rightarrow ERB} = 0.482$, $t = 7.323$, $p = 0.000$), confirming H3.

Mediation Analysis

A mediator, according to Baron & Kenny (1986), is a variable that influences how the independent and dependent variables relate to one another. The results indicate that tourist satisfaction serves as a positive and significant mediator between the recreational experience and environmentally responsible behaviour of tourists ($\beta_{TRE \rightarrow TS \rightarrow ERB} = 0.266$, $t = 5.924$, $p = 0.000$; Table 5). Notably, while the direct impact of TRE on ERB is negative, the indirect impact through satisfaction is positive, suggesting a competitive (inconsistent) mediation (Zhao et al., 2010). Therefore, H4 is confirmed. Consequently, three hypotheses are supported.

Table 5. Mediation Analysis (indirect effect) (Source: Author's own creation)

Construct	β (path coefficients)	Std	t- statistics	p values	95% Confidence Interval (LICI-UICI)		Result
TRE→TS→ERB	0.266	0.045	5.924	0.000	0.196	0.371	H4→ Yes

In Figure 5 depicts the structural equation model's hypothesized correlations between Tourist Recreational Experience (TRE), Tourist Satisfaction (TS), and Environmentally Responsible Behavior (ERB). The path coefficients and p-values reflect the strength and importance of these associations.

Figure 6 demonstrates that the importance-performance map analysis (IPMA) reveals clear differences among the constructs. Tourist satisfaction scores highly on both importance and performance, signifying it is a key factor influencing the target outcome and performs well. In contrast, tourists' recreational experience exhibits high performance but low importance, implying it has a smaller direct influence on the desired behavior outcome.

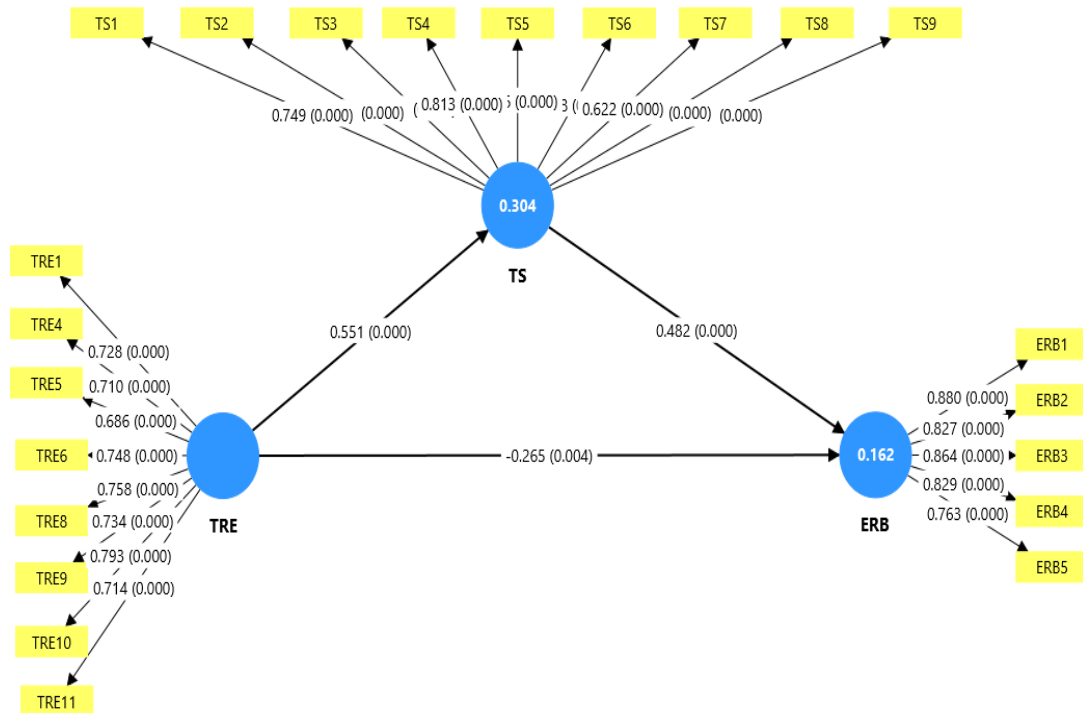


Figure 5. Path model results

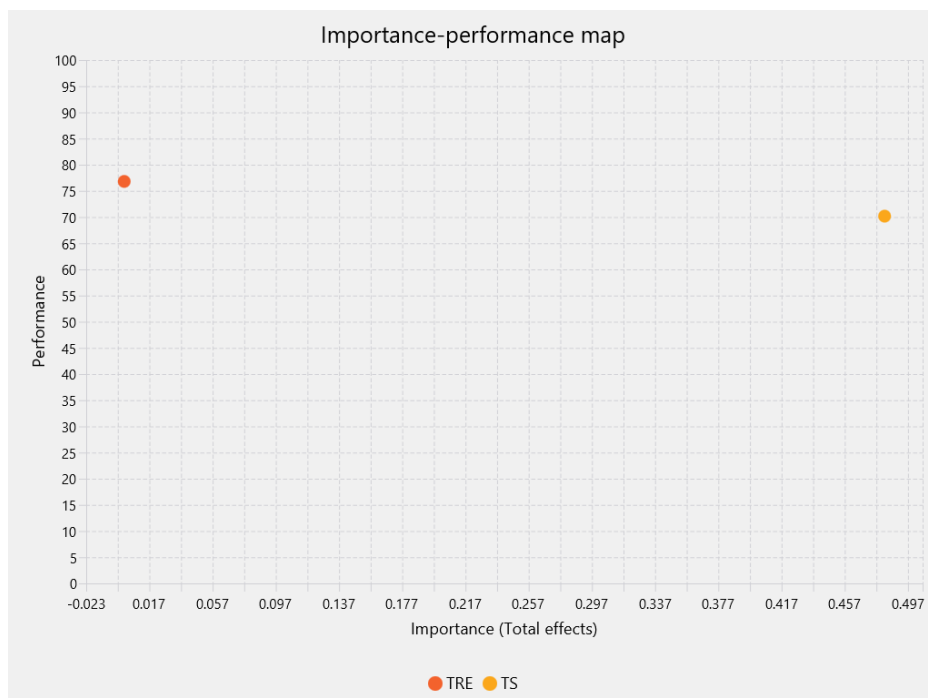


Figure 6. Importance-performance map analysis (IPMA)

DISCUSSION AND CONCLUSIONS

The findings confirm that tourist recreational experience (TRE) significantly contributes to tourist satisfaction (TS), which is consistent with previous research concluding that emotional, cognitive, and sensory experiences shape positive visitor evaluations in nature-based settings (Pine & Gilmore, 1998; Schmitt, 1999; Kim, 2018; Tang et al., 2025).

This finding is consistent with previous research demonstrating that meaningful nature experiences enhance tourists' attitudes and well-being (Ballantyne et al., 2011b; Xu et al., 2018). TS emerges as a major predictor of environmentally responsible behavior (ERB), reinforcing previous research showing satisfied visitors are more likely to appreciate, protect, and behave responsibly in natural settings (Chi & Qu, 2008; Jiang et al., 2022). This supports prior investigations suggesting that satisfaction influences behavioral intentions such as revisits, recommendations, and pro-environmental behaviors (Hultman et al., 2015; Hung et al., 2021).

Another significant theoretical variation is the negative direct effect of TRE on ERB, which puts into doubt the notion that pleasant experiences always encourage stewardship (Lee & Jan, 2015a; Ramkissoon et al., 2013). This indicates that higher involvement in recreational activities could reduce environmentally responsible behavior. This implies that recreational enjoyment alone does not convert into responsible behavior unless mediated by satisfaction or equivalent evaluative systems. This complexity contrasts with research that place experience as a direct antecedent of ERB (Lin & Lee, 2019; Xu et al., 2018), emphasizing the potential risks of establishing wetland tourism primarily around hedonic experiences. Overall, the data support the mediation function of satisfaction (Baloglu et al., 2004; Lee, 2009), which implies that TRE only contributes to ERB when visitors have positive appraisals of their experience. This highlights the importance for wetland managers to incorporate interpretative and conservation-oriented elements into recreational programs to guarantee that satisfying experiences foster responsible behavior rather than passive enjoyment.

Managerial, Theoretical Implications and Limitations

Our findings present an important challenge for managing wetland. The recreational experience itself does not directly initiate the environmentally responsible behavior. Hence, the development of recreational experiences must be planned carefully that not only entertainment is offered but also satisfaction levels are increased, and environmentally responsible behaviour values are promoted. Through enhancing satisfaction using interpretive programs, nature storytelling, or green infrastructure, tourism managers can enhance the likelihood that tourists translate their positive experience into environmentally friendly behaviour. It is recommended to cooperate with local community on the conservation program. As well as, collaboration with tourism operators, teachers, and social media influencers can also be a critical factor in raising awareness and creating a positive destination image.

The SOR theory illustrates its relevance to eco-tourism behaviour, particularly by indicating how satisfaction acts as a mediator of recreational experiences and environmentally friendly behaviour.

This research provides evidence of its applicability in explaining pro-environmental behavioural norms in natural tourism contexts. It adds to eco-tourism literature by conceptualising satisfaction as an important psychological process by which stimuli (experience) affect responsible responses, hence deepening the knowledge of sustainable tourist behaviour. This shows that satisfaction is not only a behavioural antecedent but also a psychological process that transforms recreational pleasure into significant, conservation-oriented actions.

This theoretical advancement enhances the understanding of sustainable tourists' behaviour in wetlands.

Though this research has yielded some useful findings, it does have a number of limitations, which are noted. In the first place, the study was undertaken in one wetland (Ramsar Site), Pong Wetland, within Himachal Pradesh, India. This could restrict the applicability of the findings to other natural environments. Secondly, the study utilised a cross-sectional survey design, where tourists' answers are captured at one point in time, and a quantitative method.

Thirdly, the study's main concern was tourists' recreational experience (Stimulus), impact satisfaction (Organism), and environmentally responsible behaviour (Response). Although this follows the SOR theory, future research can utilise destination image or environmental education (Stimulus), affect place attachment, or ecological concern (Organism), and reconsider intentions or word of mouth (Response). Lastly, this research did not apply any moderating variables.

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