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Pro-Environmental Behavior of Visitors to National Parks in India: Role of Recreation Involvement and Environmental Activism

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Executive Summary

This study investigates the impact of recreational involvement and environmental activism in forming pro-environmental behavior in tourists visiting national parks. The objective is to understand how tourists spend time with nature and their level of environmental contribution to their willingness to adopt pro-environmental behavior within the National Park. In addition, it aims to examine the mediating role of environmental satisfaction between tourists' pro-environment behavior and their place attachment. Based on the theory of Place Attachment, which asserts that humans form feelings of association with specific locations, the authors intend to understand how tourist attachment to the national park affects their attitudes and actions related to the environment. Visiting a national park is a recreational involvement for tourists, allowing them to sense responsibility toward the environment. In addition, environmental activism is featured as an individual involvement to protect the environment. Three hundred and fourteen national park visitors in India participated in the current study. WarpPLS (7.0), a variance-based structural equation modeling (SEM), was used to test the research model. By revealing the factors impacting pro-environmental behavior in a national park in India, findings provide an understanding to the national parks authorities in designing interventions and education programs that promote recreation involvement and environmental activism to foster sustainable tourist behavior toward conservation and preservation of national parks in India.

Keywords

Pro-environmental behavior, national parks, recreation involvement, environmental activism, place attachment, environmental satisfaction

Introduction

There has been a widespread concern surrounding the rapid growth of sustainable tourism and its impact on protected and conserved areas. Nature-based tourist destinations, especially national parks, are considered a good source of recreation and entertainment (Mandić & Walia, 2023; Markowski et al., 2019; Moyle et al., 2017). The rise in the number of tourist influxes at a destination is seen as an economically viable activity, but environmentally, it is seen as a challenge that poses several threats (Mandić, 2020; Mandić & Petrić, 2021). The negative impacts, especially on tourist destinations' environment, are often associated with visitor behavior (Pearce, 2005). Tourists' pro-environmentally responsible behavior at a destination has a crucial role in reducing negative impressions and helps in the promotion of sustainable tourism development (Dolnicar & Leisch, 2008; Yang, 2013). However, concentrations of visitors in certain areas can adversely affect ecosystems and visitor experiences (Mandic & McCool, 2023; McMahan et al., 2023). Therefore, promoting sustainable consumption through responsible tourist behavior is a valuable strategy for enhancing a destination's life span (Li & Wu, 2020; Wynveen et al., 2013). Further, inspiring pro-environmental behavior has become a priority for sustainable tourism development in protected and conserved areas (Cazalis & Prevot, 2019; Sharma & Gupta, 2020), particularly amid escalating climate change concerns (Mandić et al., 2024). Researchers studying environmentally responsible behavior have often used psychological derivatives like the theory of planned behavior (Huang et al., 2020; Lin & Lee, 2020), knowledge and attitude (Buta et al., 2013; Kollmuss & Agyeman, 2002), norm activation model (Schwartz, 1977), and value belief norm theory (Stern et al., 1999). Place attachment is conventionally described as a "blend of functional and emotional connection to a particular location" (Hong & Kim, 2019; Mandic et al., 2024). This context encompasses individuals' sentiments toward a place and their activities and engagements within it. However, the position of strong place-attachment and cognitive tie in depicting the pro-environmental behavior of tourists visiting national parks in India is overlooked.

Recent studies suggest that sustainable tourism development is crucial for nature-based conservation and the livelihoods of communities in and around protected areas (Mandić, 2019; Spenceley et al., 2021; Zhang et al., 2020). Understanding the factors influencing visitor behavior in these areas is essential for effective policymaking (Mandic & McCool, 2023). Previous literature suggests that place attachment (PA) and environmental attitude (EA) are precursors in depicting tourists' pro-environmental behavior (Halpenny, 2010). Lee et al. (2015) highlighted the role of tourist pro-environmental behavior by taking recreation experience (RE) and environmentally responsible behavior (ERB) as the mediating factors in depicting the behavioral intentions of nature-based tourists.

While post-COVID-19, there have been multiple types of research on responsible tourist behavior (Han, 2021; Loureiro et al., 2021) and the prediction of visitors' pro-environmental behavior (Esfandiar et al., 2022; Kim, 2012), limited attention has been given to understanding the visitor emotional and cognitive behavior in protected and conserved areas. Factors such as connectedness with nature (He & Filimonau, 2020; Meng & Choi, 2016; Saleem et al., 2021), personal customs, morals, place attachment, responsiveness to consequences, and acknowledgment of responsibility have been found to influence visitors' pro-environmental behavior in the destinations (Ramkissoon, 2023). Further, the researchers also suggest that personal attachment (Cazalis &

Prevot, 2019), environmental passion (He et al., 2022), place attachment, place identity, and place dependence (Halpenny, 2010) highly influence the tourist pro-environmental behavior in protected areas. It is also important to note that the context can influence tourist pro-environmental behavior (Chwialkowska & Flicinska-Turkiewicz, 2020; Juvan & Dolnicar, 2017; Lin et al., 2022; Nguyen & Johnson, 2020). According to Lin et al. (2022), most pro-environmental behavior research focuses on the Western world. As a result, the unique setting of protected and conserved areas, especially in the non-western world, is ideal for theoretical and behavioral explanations of environmental behavior (Mandic & McCool, 2023). However, there is a need for more such research. Measuring the on-site behavior of visitors, especially children and youth, and examining the cultural factors have been identified as a significant challenge in understanding tourist pro-environmental behavior in nature-based destinations (Esfandiar et al., 2022).

An empirical investigation into pro-environmental behavior in India remains limited, underscoring the need for studies that reflect its distinct socio-cultural milieu. Mandić et al. (2023) reveal that biospheric values and emotions like shame profoundly influence Generation Z's environmental behaviors in India. These findings highlight the importance of culturally resonant research in understanding pro-environmental behavior. Similarly, Mandić et al. (2023) show that for youth, including those in India, pro-environmental behavior is interwoven with nature connectedness and personal well-being, suggesting that conservation strategies should be culturally attuned to effectively foster sustainable practices among this crucial demographic. The nexus of place attachment, recreation involvement, and environmental activism profoundly affects the conservation ethos within Indian protected areas. While global studies have shed light on pro-environmental behavior in natural settings, India's distinct sociocultural and environmental dynamics present unique considerations. For example, the diverse religious practices, such as the worship of rivers and trees, and the traditional ecological knowledge embedded in rural communities, play a crucial role in shaping environmental attitudes and behaviors. Furthermore, the high population density and the associated pressures on natural resources, as well as the seasonal variations caused by the monsoon, significantly influence environmental engagement. Sharma and Gupta (2020) articulate that visitors' direct interactions with natural landscapes are markedly influenced by environmental behavior, underscoring the necessity to examine these behaviors through an indigenous lens. In extending the existing knowledge to the Indian national framework, this study seeks to interrogate and contextualize the relationship between visitors' PEB and their attachment to place within the protected areas of India, a concept that remains underexplored. The "Indian national framework" refers to the specific socio-cultural, economic, and environmental contours that define the experiential engagement of tourists with the Indian protected areas. Understanding these nuances is crucial in gauging the relevance and applicability of Western literature in the Indian context.

Empirical research on pro-environmental behavior in non-western settings suggests that cultural and national identity significantly shape environmental perceptions and behaviors. Tourists' perceptions of protected areas are deeply intertwined with national pride and cultural values, influencing their PEB (Halpenny, 2010; Ramkisson, 2023). In India, where national parks are not only conservation areas but also emblems of national heritage, this relationship warrants a tailored exploration. Li and Wu (2019) suggest that demographic variables alone do not encapsulate the pro-environmental

propensities of tourists, advocating for a broader cultural understanding that is particularly pertinent in the Indian setting. Furthermore, the quintessentially Indian experiences within national parks, from the recreational engagement with biodiverse hotspots to the burgeoning environmental activism, are essential in shaping conservation behaviors. The present study contends that the environmental satisfaction derived from such experiences acts as a pivotal intermediary between place attachment and the PEB of national park visitors, echoing the sentiments of Havitz and Dimanche (1997). While globally scoped, insights from Lenox and Eesley (2009) and Ergen et al. (2014) resonate with the Indian context, where a solid attachment to place is often the precursor to conservation activism. By integrating India's cultural, national, and locational specifics, this research aims to fill the identified gaps and provide a nuanced understanding of PEB within Indian protected areas. Recognizing the interplay of these factors is imperative for conservation organizations and policymakers as they craft strategies tailored to the Indian ethos to foster sustainable tourism and environmental stewardship.

This research also provides insights for policymaking that encourage visitors to engage in environmentally friendly behaviors, particularly in India, where political attitudes toward environmental activism are starting to shape pro-environmental behavior (Marquart-Pyatt, 2012; Paco & Rodrigues, 2016). Ultimately, the outcomes of this study contribute to promoting the long-term sustainability of protected and conserved areas in India and the conservation of the natural environment as a whole in this emerging destination.

Literature Review

Tourists' neglectful behavior negatively impacts destinations, but pro-environmental and destination-specific behavior can lead to sustainability (Han, 2015; Bizikova et al., 2014). Pro-environmental behavior involves the ecological use of natural assets (Ramkissoon et al., 2013) supported by various theories, including place attachment theory. Place attachment theory suggests that individuals develop emotional attachments to specific places, influencing their attitudes and behaviors toward those places (Scannell & Gifford, 2010).

People's attachment to a place results from sociocultural and psychological processes (Gosling & Williams, 2010) and affects their environmental behavior (Bamberg & Schmidt, 2003; Stern et al., 1999). Current research improves the analytical power of the theory of place attachment model in the Indian national framework by incorporating recreational involvement and environmental activism. This builds upon earlier research on Place Attachment theory (Gosling & Williams, 2010; Lewicka, 2011).

Place Attachment and Tourist Pro-Environmental Behavior

Place attachment encapsulates individuals' profound emotional and cognitive connections with specific locations, fostering a deep sense of belonging and reverence for the natural world (Hong & Kim, 2019). This intimate bond shapes how people perceive and engage with their surroundings and cultivates a heightened environmental consciousness, motivating them to actively advocate for actions that preserve and honor the beauty and sanctity of these cherished spaces (Daryanto & Song, 2021). Drawing on attachment theory, this concept underscores the intense emotional and cognitive bonds individuals forge with their natural environments, akin to those formed in childhood, from the perspective of environmental psychology (McMahan et al., 2023;

Steg & Vlek, 2009). Given its significant influence on people's attitudes and well-being toward their surroundings, understanding and nurturing place attachment is crucial for fostering sustainable behaviors and conservation efforts (Raymond et al., 2011).

Pro-environmental behavior, also called green or sustainable behavior, encompasses actions aimed at safeguarding the environment (Esfandiar et al., 2022). It denotes individuals' conscious efforts to preserve and enhance the natural world. Pro-environmental behavior is often synonymous with terms like environmentally responsible or sustainable behavior (Orams, 1995). The correlation between place attachment and pro-environmental behavior hinges directly upon an individual's emotional and cognitive attachment, inspiring them to act responsibly toward their surroundings.

Pro-environmental behavior in tourists promotes sustainable destinations, with a mutualistic relationship between responsible tourist behavior and destination sustainability (Weaver & Lawton, 2011). However, tourists often prioritize experiences over the environment, leading to environmental problems (Santana-Jimenez & Hernandez, 2011). Studies show that tourist satisfaction and environmental standards are connected, and careless behavior exacerbates environmental issues (Kiatkawsin & Han, 2017; Ramkissoon et al., 2013; Wynveen et al., 2021). Pro-environmental behavior helps preserve natural habitats (Murava & Korobeinykovo, 2016; Wyngaard & de Lange, 2013) and includes waste and water recycling, eco-friendly behavior, and natural resource conservation. Many terms have been used to describe pro-environmental behavior, with research focusing on identifying factors that influence it (Kollmuss & Agyeman, 2002; Pelletier et al., 1996). Factors such as education, morality, and community control the effect of pro-environmental behavior (Esfandiar et al., 2022; Takahashi & Selfa, 2015), and psychological attitudes toward the environment play a vital job (Steg & Vlek, 2009). Environmentally responsible travel is rising, particularly among young tourists (Kiatkawsin & Han, 2017; Meng & Han, 2016).

Our study intends to clarify the workings of national parks by investigating how place attachment influences pro-environmental behavior intentions through recreational engagement, environmental activism, and environmental satisfaction. This highlights the complex attachment between environmental behaviors and emotional attachment to a location.

Research by Lee (2011) confirms the strong relationship between recreation involvement, place attachment, and environmentally responsible behavior. Li et al. (2023) highlighted the importance of place attachment for promoting environmentally responsible behavior.

H1: Place attachment positively and significantly influences tourism pro-environmental behavior.

Recreation Involvement and Tourist Pro-Environmental Behavior

Recreation involvement is effectively connected to enthusiasm (Kyle et al., 2006). Most of the time, the definitions of recreation or leisure involvement occurring in leisure and literature are taken from consumer behavior (Havitz & Dimanche, 1997). The term *involvement* is derived from the social justice theory, which mainly focuses on forming a concept of social matters, behavior change, and judgment action (Kyle et al., 2007). Havitz and Dimanche (1997) explained that recreational involvement is an unnoticeable state of motivation, encouragement, or passion for recreational activities or related products, which recalls all the movements. It has natural properties that are significant, emblematic, happiness, and hazardous and elicited by a specific destina-

tion (Bradford & McIntyre, 2007; Havitz & Dimanche, 1997). Several research scholars have considered recreational involvement a state of mind tendency (Wiley et al., 2000) and evaluated recreation with three components: evoke interest, individual personality, and lifestyle equality. Besides, components like self-knowledge, requirements, personal morals, and encouragement act on the recreational involvement of visitors (Kyle et al., 2006). Destinations with more recreational involvement raise the emotionality characteristics, recreational dedication, and faithfulness to the recreational tourist places (Lee et al., 2007). The term *recreation involvement* has been evaluated in areas of hazardous activities, camping, physical activity, and hiking using the construct of fascination, marginality, and creativity (Kyle et al., 2004). Researchers have evaluated recreation involvement through significance, creativity, and pleasure (Lee et al., 2007). For the first time, Lee (2011) identifies the significance of a link between recreational associations and tourists' use of ecologically friendly practices.

Exploring recreation involvement and environmentally responsible behavior remains relatively scarce, leaving a prominent gap in our understanding of their intricate relations and potential impact on practices and conservation efforts. Experiences can boost tourists' engagement in general and site-specific environmental responsibility behavior (Lee et al., 2015). Similarly, Cheung and team (2017) identified a positive association between the birdwatchers' specialization and pro-environmental behavior among Chinese birdwatchers in Hong Kong. Moreover, Lin and Lee's study (2020) shed light on the direct link between recreational engagement and environmentally responsible behavior among tourists exploring ancient trails in Taiwan. Conversely, Lee and Lee's investigation (2021) explored the potential pitfalls of specialized recreation, focusing on hiking enthusiasts in Taiwan. Their survey of 291 hikers examined whether specialization in hiking negatively impacts pro-environmental behavior. Results confirmed that highly specialized hikers often prioritize personal interests over environmental concerns, leading to actions detrimental to the environment. This adverse impact is partly attributed to individuals' perceived control over their behavior.

H2: Recreational involvement positively and significantly influences Tourist Pro-environmental behavior.

Environmental Activism and Tourist Pro-Environmental Behavior

Researchers across multiple disciplines, including sociology, psychology, education, and political science, have examined the concept of environmental activism through various lenses. Numerous studies have framed environmental activism as a "function of specific behavior" (SGuin et al., 1998), utilizing various behaviors to introduce this notion. These behaviors include participation in environmental organizations such as the Fellowship of the Environment (Edwards & Oskamp, 1992), involvement in political activities (Stern et al., 1999), active engagement in environmental planning and initiatives (Stern, 2000), carrying out aggressive environmental practices (Seguin et al., 1998), influencing policy or management decisions (McFarlane & Hunt, 2006), and contributing to environmental preservation efforts (Syme et al., 1993).

Although Stern (2000) argues that environmental activism comprises various pro-environmental behaviors with varying consequences and aims for environmental preservation, it nonetheless fits under environmental behaviors. Green purchasing and eco-friendly practice promotion are the two main goals of environmental activism. It is defined as a dedicated and proactive involvement in behaviors aimed at maintaining environmental quality and increasing public knowledge of environmental challenges

by Seguin et al. (1998). This covers initiatives like advocacy and fundraising campaigns aimed at swaying lawmakers.

There is a strong correlation between pro-environmental behavior intentions (PEBI) and environmental activism. Numerous research studies have demonstrated that environmental activism positively and considerably impacts people's intentions to engage in pro-environmental behaviors. For example, Romano et al. (2024) established a clear association between environmental activism and pro-environmental behavior, as both involve individuals and groups taking action to address environmental challenges and promote sustainability. Similarly, Syropoulos and Markowitz's (2024) study discusses the importance of addressing climate change and protecting the environment, central themes in environmental activism and pro-environmental behavior.

H3: Environmental activism positively and Significantly influences Tourist Pro-environmental behavior TPEB.

Mediating Role of Environmental Satisfaction

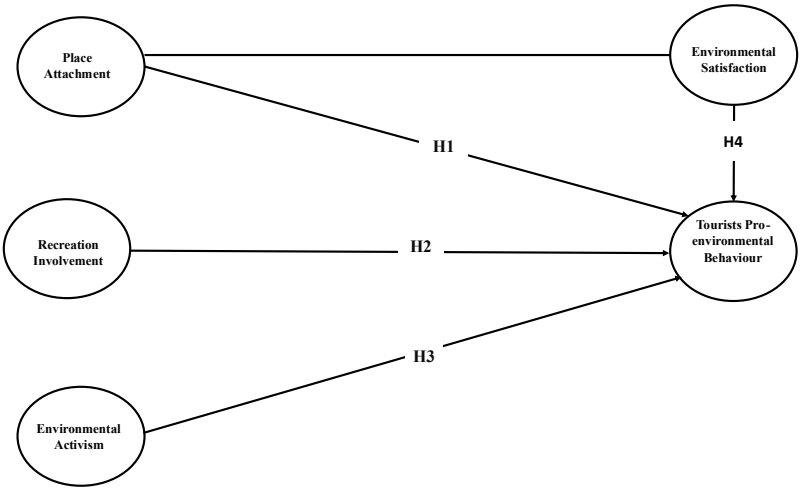
Visitor satisfaction is widespread in tourism, leisure, and recreation and has been researched extensively (Neal & Gursoy, 2008; Sirgy, 2010). Satisfaction is the key to success in various associations (Del Bosque & San Martin, 2008). In any organization, emotions are significant in satisfaction (Yu & Dean, 2001; Pelletier et al., 1996). Stedman (2002) explained place satisfaction as an intricate conciseness of the considered quality of the environment, fulfilling the needs of an individual, its facilities, and social elements. Place satisfaction is essential to success, particularly for nature-based tourist destinations in a competitive market (Tonge et al., 2011; Ramkissoon et al., 2013). Park managers apply the concept of place satisfaction to know about visitors' level of place satisfaction (Tonge & Moore, 2007). Some studies found that Place Attachment and place satisfaction have a positive bond (Prayag & Ryan, 2012; Ramkissoon et al., 2013; Ramkissoon et al., 2014).

H4: Environmental Satisfaction significantly mediates the relationship between Place attachment and Tourist pro-environmental behavior

In order to examine the association between place attachment, recreational involvement, environmental activism, environmental satisfaction, and pro-environmental behavior, we present a conceptual model in this study (Figure 1). The theory of place attachment, which holds that people create strong emotional and cognitive ties with specific locations, influencing their attitudes and behaviors toward the environment, is the foundation for our approach. Expanding upon this notion, we propose that people's pro-environmental behavior is directly influenced by their affinity to particular locations, recreational pursuits, and involvement in environmental activism. The literature on environmental psychology highlights the importance of place attachment and recreational involvement in forming environmental attitudes and behaviors.

Furthermore, research on environmental activism highlights its capacity to encourage environmentally friendly behavior. Moreover, we propose that environmental happiness plays a pivotal role as a mediator in these associations, connecting people's experiences in their surroundings to their actions. We hypothesize that more significant levels of place attachment, recreational involvement, and environmental activism will be positively associated with environmental satisfaction. Based on the suggested model and theoretical framework, this would predict increased pro-environmental behavior.

Figure 1
Conceptual Framework



Methodology

Research Instrument

Considering various dimensions, the study explored how place attachment influences tourists' pro-environmental behavior intentions. It also examined the mediating role of place satisfaction in the relationship between place attachment and PEB intentions and the impact of recreation involvement and environmental activism on PEB intentions. Data was collected online using a self-administered survey instrument. Demographic questions, including gender, age (in years), marital status, the highest level of education achieved, monthly income (in US$), and participants' occupation, were asked in the first section of the survey. Forty items measure research constructs using a 5-point Likert scale, ranging from '1' being strongly disagreed to '5' being strongly agreed. Items were chosen for their robust psychometric properties, alignment with established theories, and relevance to research goals. To measure Environmental Activism, 11 items were adapted from Dono et al. (2010) and Alisat and Riemer (2015). Four items assessing Environmental Satisfaction and nine for Place Attachment were adapted from Pelletier et al. (1996). Ten items measuring Recreation Involvement were adapted from Lee (2011), while six items evaluating Tourists' Pro-Environmental Behavior were adapted from Li et al. (2020). This enhances the survey's capacity to gather high-quality data, contributing to a deeper understanding of the phenomena under investigation.

Sample and Sampling Technique

Any adults who visited the national park in India were considered the population for the present research. Data was gathered using an online questionnaire (Google Forms) and self-selection sampling from November 2022 to January 2023. Three hundred twenty-one responses were received, and seven were discarded due to missing data, which would have negatively affected the analysis.

Nonresponse bias was assessed by taking 50 early and 50 late responses for the paired sample *t*-test. The statistical outcome of the *t*-test presented *p*-values that were

all above 0.05, which means there is no significant difference between the early and late responses, which ensures the non-appearance of non-response bias in the current study. Common method bias (CMB) was assessed by conducting Harman's single-factor test. The current study demonstrated no issue with the common method bias since the total variance extracted by a single factor was 41.3 (41.3%), which is lower than the suggested threshold of 50%.

It was found out that 53.5% of the participants were female. Most of the respondents fall under the age group 21-30 (30.6%), followed by 31-40 (24.5%) and 20 years or below (23.2%). Regarding marital status, most of the respondents were single (60.8%), followed by married (36.0%). Surprisingly, 29.9% of the participants held a master's degree, while 27.4% had attained a PhD as their highest educational qualification. The findings indicate that half of the participants earned a monthly salary of less than US$1,000, while 17.5% earned between US$5,001 and $7,000. In contrast, only 4.5% of respondents earned a salary between US$1,001-$2,000. Regarding occupation, most respondents (43.0%) were public employees, followed by self-employed individuals (20.1%). Meanwhile, 21.0% of the participants were students, and 8.3% were retirees.

Data Analysis and Findings

This research utilized WrapPLS 7.0, a variance-based structural equation modeling (SEM) software, to analyze the conceptual path model. The data analysis consisted of two main parts: the measurement model and the structural model. The validity and reliability of the measures for the outer model-theoretical constructs were evaluated in the measurement model. The estimation of the path model was tested in the inner model through the structural model. PLS path modeling is a robust method for analyzing conceptual models in social sciences, particularly in the hospitality and tourism arenas (Ali et al., 2018). Additionally, to increase the predictability of the dependent constructs, reflective measurement was used in the multidimensional conceptual model, which does not conform to multivariate normality assumptions (Gefen & Straub, 2005; Hair et al., 2021).

Measurement Model Assessment

Examine outer loading, Cronbach's alpha, composite reliability, and average extracted variance first to assess validity and reliability. The factor loading should be higher than 0.5, the Cronbach's alpha (CA) and composite reliability (CR) of the constructs should be better than 0.7, and the value of average variance extracted (AVE) should be greater than 0.5 to establish the reliability and convergent validity (Hair et al., 2021). The measurement models' evaluation results (see Tables 1 and 2) demonstrated reliability and convergent validity for every structure.

The Fornell-Lacker criterion and the heterotrait-monotrait (HTMT) ratio were used to test discriminant validity. According to the Fornell-Larcker criterion, the square root of each construct's AVE should be greater than the correlation of that construct with all other constructs in the framework, or the HTMT values for each construct should be less than 0.9 to show discriminant validity (Hair et al., 2021). Tables 3 and 4 demonstrate that both approaches allowed for the successful establishment of discriminant validity.

Table 1
Results of Reliability and Validity

Constructs		Loadings	CA	CR	AVE
Environmental Activism (EA)					
EA1	I give financial support to an environmental group.	0.708			
EA2	I circulate petitions demanding an improvement of government policies regarding the environment.	0.736			
EA3	I participate in protests against current environmental conditions.	0.732			
EA4	Educated myself about environmental issues (e.g., through media, television, internet, blogs, etc.).	0.585			
EA5	Participated in an educational event (e.g., workshop) related to the environment.	0.748			
EA6	Talked with others about environmental issues (e.g., spouse, partner, parent(s), children, or friends).	0.685			
EA7	Used online tools (e.g., YouTube, Facebook, Wikipedia, Myspace Blogs) to raise awareness about environmental issues.	0.765	0.919	0.932	0.555
EA8	Consciously made time to be able to work on environmental issues (e.g., working part-time to allow time for environmental pursuits, working in an environmental job, or choosing environmental activities over other leisure activities).	0.822			
EA9	Participated in a community event that focused on environmental awareness.	0.827			
EA10	Organized a community event that focused on environmental awareness.	0.779			
EA11	Participated in nature conservation efforts (e.g., planting trees, restoration of waterways).	0.776			
Environmental Satisfaction (ES)					
ES1	The local environmental conditions in National Park are excellent.	0.816			
ES2	In most ways, the quality of the government environmental programs for National Park is very good.	0.859			

Table 1 (cont.)

ES3	The government policies developed to deal with the environmental situation in National Park are excellent.	0.876	0.872	0.912	0.721
ES4	In my opinion, the amount of attention given to the environment in National Park by the government has been satisfactory.	0.845			
Place Attachment (PA)					
PA1	I feel a deep feeling of oneness with the natural environment.	0.569			
PA2	I would feel less attached to the National Park if the native plants and animals that live here disappeared.	0.579			
PA3	I learn a lot about myself when spending time in the natural environment in the National Park.	0.794			
PA4	No other place can compare to the National Park.	0.783			
PA5	I would not substitute any other area for the activities I do in the National Park.	0.819	0.907	0.925	0.581
PA6	Doing my activities in the National Park is more important to me than doing them in any other place.	0.856			
PA7	The National Park is the best place for the activities I like to do.	0.851			
PA8	Belonging to volunteer groups in the National Park is very important to me.	0.779			
PA9	The friendships developed by doing various community activities strongly connect me to the National Park.	0.770			
Recreation Involvement (RI)					
RI1	Visiting National Park is very important to me.	0.828			
RI2	Visiting National Park is one of the most enjoyable things that I do.	0.826			
RI3	Visiting national parks attracts me.	0.795			
RI4	Visiting National Park offers me relaxation.	0.730			
RI5	A lot of my life is related to visiting National Park.	0.782			
RI6	Visiting National Park plays a central role in my life.	0.760	0.926	0.938	0.603
RI7	Most of my friends are in some way connected with visiting National Park.	0.657			

Table 1 (cont.)

RI8	I like to discuss visiting national parks with my friends.	0.735			
RI9	When visiting the National Park, I can demonstrate my ability and personality.	0.791			
RI10	When visiting the National Park, I can be myself/While visiting the National Park, I can be myself.	0.841			
Tourists' Pro-Environmental Behavior (TPEB)					
TPEB1	Volunteer to reduce my use of a favorite spot in National Park if it needs to recover from environmental damage.	.768			
TPEB2	Tell my friends not to feed animals in National Park.	0.747			
TPEB3	Sign petitions in support of National Park.	0.722	0.872	0.904	0.614
TPEB4	Participate in a public meeting about managing National Park's programs.	0.854			
TPEB5	Volunteer my time to projects that help National Park.	0.895			
TPEB6	Donate money to conservation projects to help protect National Park.	0.697			

Table 2
Discriminant Validity Using Fornell-Larcker Criterion

Variables	EA	ES	PA	RI	TPEB
Environmental Activism	**0.75**				
Environmental Satisfaction	0.31	**0.89**			
Place Attachment	0.72	0.40	**0.72**		
Recreation Involvement	0.66	0.46	0.77	**0.76**	
Tourists' Pro-Environmental Behavior	0.67	0.37	0.71	0.62	**0.73**

Note. The bold diagonal elements represent the square root of AVE.

Table 3
Discriminant Validity Using HTMT Ratio

Variables	EA	ES	PA	RI	TPEB
Environmental Activism					
Environmental Satisfaction	0.43				
Place Attachment	0.87	0.42			
Recreation Involvement	0.79	0.41	0.81		
Tourists' Pro-Environmental Behavior	0.77	0.38	0.85	0.73	

Structural Model Assessment

The R^2 and Q^2 for all endogenous constructs were calculated and evaluated to assess the structural model. The proposed model demonstrated that 52.8% (Q^2=0.314) of the variance of TPRB was described, which was above the minimum threshold R^2 value of 20% in the behavioral studies (Hair et al., 2021). Furthermore, the mediating variable of environmental satisfaction's R^2 value was 16.8% (Q^2=0.109). According to Chin (2009), all Q^2 values were larger than 0, demonstrating the model's predictive usefulness. In addition, the research work also examined the effect size (f^2), which is used to determine whether a specific exogenous structure substantially affects the endogenous variable. Following the suggestion of Cohen (1988), the results show that f^2 is acceptable in support of the hypothesis (see Table 4).

Table 4
Results of Hypotheses Analysis

Hypothesis	Relationship	Path Coefficient	*P*-value	$CI_{0.95}$ Bias Corrected	Effect Size	Supported
H1	PA->TPEB	0.410	0.000	[0.275,0.501]	0.202	YES
H2	RI->TPEB	0.363	0.000	[0.253,0.501]	0.148	YES
H3	EA>TPEB	0.414	0.000	[0.300,0.523]	0.203	YES
H4	PA->ES->TPEB	0.017	0.228			NO

Note: Place Attachment = PA; Environmental Satisfaction = ES; Recreation Involvement = RI; Environmental Activism = EA; Tourists Pro-Environmental Behavior = TPEB

Hypothesis Testing

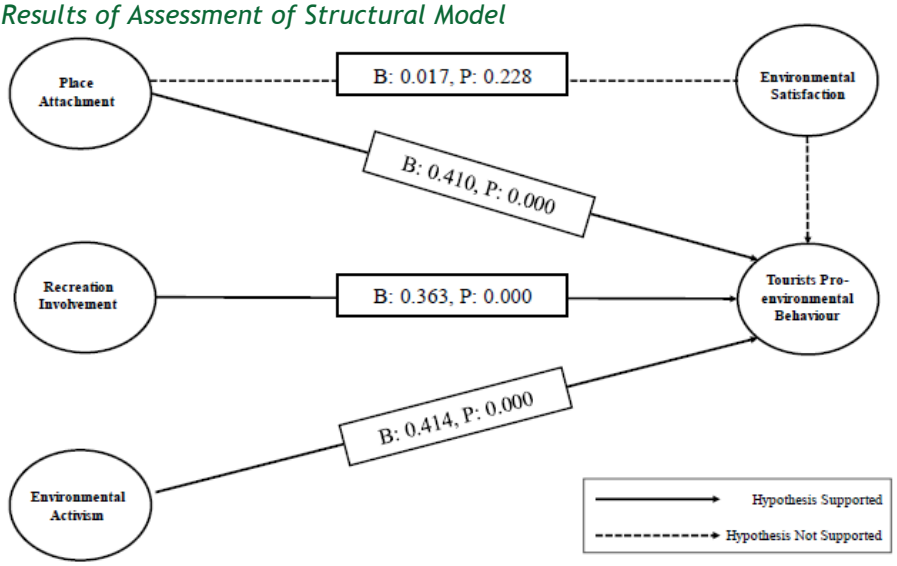
The proposed hypothesis was evaluated using structural equation modeling. The analysis showed that three hypotheses were supported, and one was rejected, as shown in Table 4 and Figure 2. H1 was therefore supported since place attachment was positively correlated with tourist pro-environmental behavior (ES) (=0.410, p .000). H2 was corroborated by the finding that recreational involvement was positively correlated with TPEB (=0.363, p .000). H3 was supported by the finding that environmental activism was positively correlated with TPEB (=0.414, *p* .000). H4 was not supported (=0.017, *p* >.05) as the mediating role of environmental satisfaction between tourists' pro-environmental behavior and place attachment).

Discussion and Conclusions

Theoretical Contribution

The current research examines and validates an integrated hypothetical framework of the Pro-environmental behavior of visitors to wildlife-protected areas, i.e., national parks in India. The work anticipates and investigates the direct effect of recreation involvement and environmental activism (politicized attitude of visitors) on tourist pro-environmental behavior. It also explores environmental satisfaction as a mediator between place attachment and tourist pro-environmental behavior in one multidimensional model that has not previously been carried out.

Figure 2
Results of Assessment of Structural Model



Hypothesis H1 and H2 confirmed the findings of the previous research. The environmentally responsible behavior of tourists visiting national parks and its relationship with place attachment increases the likelihood of sustainable development, as shown in the earlier literature (Raymond et al., 2011; Tonge et al., 2015). The relationship between place attachment and tourist pro-environmental behavior in the present study showed a significant and positive relationship. This confirms the previous research work (Daryanto & Song, 2021; Ramkissoon et al., 2014).

The factor analysis results of place attachment have tested the two sub-factors of positive and negative relation of place attachment and tourist pro-environmental behavior. Since the reliability and the convergent validity of the structure model were successfully established, and the results were found following the previous studies (Thogersen, 2004; Vaske & Kobrin, 2001) and are further supported by the study (Daryanto & Song, 2021; Ramkissoon, 2013). Place attachment was positively related to environmental satisfaction (β =0.410, $p < .000$), therefore supporting the argument that place attachment positively and directly affects the tourist pro-environmental behavior of visitors in national parks.

In the present study, the recreation involvement of tourists visiting national parks proved to be a conservation commitment directly related to the tourists' motivation. This is equally supported by the previous literature (Kyle et al., 2006; Lee et al., 2007). Research findings add to the current body of literature that the recreational involvement of tourists visiting national parks increases their conservation commitment and promotes sustainable development, as depicted by the tourist's pro-environmental behavior. The results in the present study showed that recreation involvement was significantly and positively related to tourist pro-environmental behavior (TPEB- β =0.363, $p < .000$), which supports the argument that recreation involvement positively influences tourist pro-environmental behavior. Recreation involvement is, therefore, a main reason for the conservation commitment and sustainable utilization of resources and shows the positive attitude of park visitors toward the tourist's pro-environmental behavior.

Current research investigates the mediating effect of environmental satisfaction in the relationship between place attachment and tourist pro-environmental behavior. Hypothesis H4, mediating the role of environmental satisfaction between place attachment and tourist pro-environmental behavior, was found insignificant. The results of the mediating effect of the environmental satisfaction between place attachment and tourist pro-environmental behavior were (β =0.017, p >.05). Therefore, the argument that environmental satisfaction mediates the relation between place attachment and tourist pro-environmental behavior was not supported in the present study.

However, the results were contrary to the earlier studies conducted by (Prayag & Yuksel et al., 2010) and in leisure and recreational fields (e.g., Halpenny, 2010; Williams & Vaske, 2003). In the present study, visitor tourist pro-environmental behavior and place attachment are unrelated to environmental satisfaction as mediating factors. This may be because data were collected online and, as a result, could not relate to the previous studies and the positive relationship that emerged. However, environmental satisfaction negatively affects tourist pro-environmental behavior, which had been proved in the earlier stage of the 1980s era of environmental movements, as shown in the studies conducted by Prester et al. (1987). However, our study shows that place attachment directly affected the tourist pro-environmental behavior of tourists visiting national parks, which helps promote responsible behavior and tourists' positive attitude towards the preservation.

There has not been much discussed earlier on the role of environmental satisfaction and its relationship with tourist pro-environmental behavior. The present study addressed this gap and showed a positive relationship between environmental satisfaction and tourist pro-environmental behavior, considering the importance of nature as an essential element of sustainable tourism. In one of the studies on environmental satisfaction (Stern, 2000; Wynveen et al., 2013), it was shown that environmental activism is different when it comes to the conservation and protection of nature, as it is not related to tourist pro-environmental behavior in terms of its impact. The empirical findings in the present study indicate that environmental activism significantly and directly affects the tourist pro-environmental behavior of national park visitors. The structural model in the present study depicts the linearity of the relationship between the constructs of environmental satisfaction and tourist pro-environmental behavior, as well as the role of place attachment and other mediating variables. Therefore, this is the original addition to the existing body of literature corresponding to wildlife-protected areas and conservation concepts for the sustainable development of tourism. The results (β =0.414, p < .000) showed that environmental activism positively influences tourist pro-environmental behavior, which confirmed our argument that environmental activism positively influences tourist pro-environmental behavior.

Managerial Implications

National parks have vast natural scenery and animal and plant resources to explore. Moreover, through recreational programs, national parks can offer tourists cultural and ecological awareness about the national park, achieving an ecological sense (Lee et al., 2007). In this study, India was chosen as a study site to develop a behavior framework effectively. Kiatkawsin and Han (2017) and Ramkissoon et al. (2013) have demonstrated that tourist pro-environmental behavior is the top indicator in managing a sustainable national park tourism destination, suggesting that improving tourist pro-environmental behavior should become an influential agenda in managing sus-

tainable national park tourism. As per the analytical findings, managerial suggestions for improving the tourism pro-environmental behavior for managing national park tourism are discussed below.

Firstly, recognizing the importance of place attachment and recreational involvement in fostering pro-environmental behavior can guide park management strategies to enhance tourist experiences and promote conservation efforts. Park authorities should develop initiatives that strengthen tourists' emotional attachment to the park and encourage active participation in recreational activities to foster a sense of responsibility towards environmental protection. Managers must ensure the infrastructure quality of the national park for recreational involvement that enhances ecological awareness and knowledge, which leads to the tourist's pro-environmental behavior. Therefore, developing interventions that sustainably promote recreational involvement activities may result in more sustainable tourist practices. These interventions include creating eco-friendly recreational activities like hiking, bird watching, and nature photography, offering educational programmes like guided tours and interactive exhibits, promoting eco-friendly behaviors, enticing tourists to lessen their carbon footprints, and supporting volunteers.

This research highlights the significance of fostering environmental activism to promote sustainable tourism practices within national parks. The positive relationship between environmental activism and tourist pro-environmental behavior suggests that managerial interventions to encourage and support environmental activism initiatives can effectively cultivate more responsible tourism practices among tourists. Therefore, national park authorities and tourism management entities should prioritize collaborations with environmental organizations to develop and implement strategies that promote sustainable behaviors and engage tourists in conservation activities.

Furthermore, it is strongly recommended that national park authorities prioritize the maintenance of high-quality environmental conditions within parks. Such efforts not only serve to enhance tourist experiences but also play a crucial role in fostering pro-environmental behavior among park tourists. By ensuring pristine natural environments, park authorities contribute to a deeper appreciation and connection with nature, which can, in turn, inspire tourists to act in environmentally responsible ways. Therefore, investing in preserving and enhancing environmental quality within national parks is beneficial for conservation efforts and instrumental in promoting sustainable behaviors among park tourists, thus safeguarding these natural treasures for future generations.

National parks should focus on tourists' attitudes toward the environment, social conventions, and personal traits. This will help promote environment-friendly behavior, such as litter cleanup or wildlife conservation initiatives, in alignment with existing social norms. Hence, it is recommended that national parks should offer educational programs that can further empower tourists to contribute actively to conservation efforts. Collaboration with stakeholders and tourism operators is crucial for successful implementation, ensuring long-term sustainability and preserving natural resources within national parks.

Limitations

Although the current research provides evidence on how place attachment, recreational involvement, environmental activism, and the pro-environmental behavior of visitors to national parks are related when evaluating the results, more or fewer con-

straints should be considered, self-reported measures of pro-environmental behavior, which are potentially biased by the popularity in society to visit the national park, were used in the research work. Participants exaggerated their pro-environmental behavior to seem reasonable. The research was conducted in a unique setting, national parks in India, limiting the scope of the results. National and cultural factors may influence the relationship between place attachment, recreational involvement, environmental activism, and pro-environmental behavior. The link between place attachment, recreational involvement, environmental activism, and pro-environmental behavior was not examined in the research work regarding the potential moderating effects of variables, including gender, cohort, or educational level.

Future Research Direction

In light of the present research work's findings and limitations, there are many potential directions for future investigation. Firstly, forthcoming research can explore the role of environmental attitudes, social norms, and individual characteristics as latent mediators between place attachment and pro-environmental behavior. This can provide a better insight into the aspects influencing responsible behavior towards the environment in national parks. Secondly, further research can investigate the relationship between diverse recreational events and pro-environmental behavior. This helps identify which specific activities are more likely to lead to responsible behavior toward the environment and can inform the design of interventions that promote sustainable tourism practices. Thirdly, future investigation can emphasize the impact of different interventions, such as environmental education programs or community-based initiatives, on promoting pro-environmental behavior among tourists visiting national parks. This can help to identify effective strategies for promoting sustainable tourism practices. Finally, research can explore the role of different stakeholder groups, including park managers, local communities, and tour operators, in promoting sustainable tourism practices. This can help to identify the most effective ways to engage these groups and promote responsible behavior toward the environment among tourists visiting national parks.

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