Factors Influencing the Development of Ecotourism in and Around Kanha National Park, India

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Abstract

The Kanha National Park has a high potential for the development of ecotourism. The Present Study was Carried out to explain the factors influencing Ecotourism Development in and around Kanha National Park, India. Data were collected using an offline survey from those households and Business enterprises that have Significant interactions with Ecotourism Activities, tour Guides and local Business owners located near Kanha National Park. A total of 365 responses were considered to meet the selection criteria. Structured Equation Model (SEM) and Path Analysis were used to test the Proposed Research Model. The Results of the Structured Equation Model Show that Infrastructure Facilities, Managerial Factors, and Potential Attractions along with Socio-economic Factors were positively associated with the Ecotourism Development in and Around Kanha National Park and the model has better predictive power for the development of ecotourism in the area. The study proposed a model based on the factors influencing ecotourism development in the area. The model has its empirical value. Sustainable ecotourism development in Kanha National Park requires a balanced approach that considers ecological conservation, local community participation and responsible tourism practices.

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1. Introduction

Tourism is one of the biggest and most lucrative industries in the world, so Governments are paying more attention to it (Faria, 2015). In many nations, tourism policies are seen as the design and formulation of extensive national programs and policies and a useful tool for monitoring the development process (Faraji et al., 2017). Ecotourism is now widely recognised as a form of sustainable travel that emphasises protecting local populations and natural habitats (Samal & Dash,2023). Ecotourism ventures must be managed to balance economic gains, socio-cultural advantages, and environmental preservation (Kiper, T. 2013). This research attempts to investigate the crucial elements that support the growth of ecotourism while illuminating the essential elements of effective ecotourism management.

Ecotourism encompasses responsibly visiting natural areas to learn about their advantages and associated cultural elements (Ehsani, 2016). Many nations with the potential to grow their ecotourism industries have developed and put into action investment and development strategies for the industry to build the infrastructure necessary to draw tourists interested in ecotourism (Ruhanen & Axelsen,2022). In actuality, ecotourism is a viable way to make money while preserving the environment (Davoodi, 2015; Abbas et al., 2019).

2. Review of Literature and Hypothesis Development

B Rhama, JR Palangka, and JH Timang (2020), in their study, offered numerous suggestions for managing ecotourism in national parks. These suggestions included flora-type restrictions to allow for the proper development of the ecotourism infrastructure, management of environmental activities, role sharing, attractions, participation marketing and de-marketing, conflict, tourist demographic, resources, communication of the highest calibre, collaborative management, along with service strategies.

Moradi, H., Poursaeed, A., Vehedi, M., & Arayesh, M. B. (2020) carried out a study to explain the development of ecotourism in the tourist village in Kermanshah Province. The study included Social, Cultural, Economic factors, Participatory, Potential Attraction, Ecotourism Development, Management and Infrastructure. The results show that economic factors had a significant effect on ecotourism development.

Research on the development of ecotourism in and around Kanha National Park, India, highlights the need for a national ecotourism policy to ensure sustainable livelihoods for local communities (Sinha, 2012). While the potential for ecotourism in India is recognised, there is a demand for more all-inclusive research that addresses all principles of ecotourism (Puri, 2019). Visitor perspectives on environmental impacts, such as litter and biophysical conditions, are also crucial in guiding management actions (Dixit, 2010). The positive impact of ecotourism on economic welfare, mostly in terms of improved living conditions and positive attitudes towards conservation, is evident in studies conducted in other national parks in India (Das, 2016).

2.1 Infrastructure Facilities (INF)

Infrastructure facilities and ecotourism development are two interrelated aspects of sustainable tourism planning and management (Moradi et al.,2020). Developing infrastructure facilities is essential to support and enhance the experience of ecotourists while ensuring minimal negative impact on the natural environment (Choi et al.,2017). Ecotourism, on the other hand, focuses on responsible travel to natural areas that preserve the environment, maintain the well-being of local communities and educate visitors about the importance of conservation (Baloch, 2022).

The development of infrastructure facilities for ecotourism is a vital aspect of sustainable tourism. Dovhal (2020) and Maslovskaia (2020) both highlight the need for innovative models and sustainable development principles in the creation of such infrastructure. They also highlight the potential for increased rural earnings, job creation, and public-private partnerships. However, Tesfaye (2017) points out that challenges such as poor infrastructure, resource conflicts, and lack of trained workforce can hinder the development of community-based ecotourism. Makhmudova (2022) recommends ways to improve

ecosystem infrastructure and services in the context of ecotourism development. These studies collectively highlight the importance of well-planned and sustainable infrastructure development in the promotion of ecotourism.

H1. Infrastructure and ecotourism facilities contribute to the development of ecotourism.

2.2 Management (MG)

Managerial factors are crucial for ecotourism development (Drumm et al.,2004). Highlighting the economic well-being of local people in the context of an ecotourism project is crucial for sustainable and responsible development (Karami, F.2017). By involving local communities in the decision-making process, Policymakers can ensure that their insights and concerns are taken into account in the ecotourism project's design and execution (Chirenje et al.,2013). Tourists' opinions on the Park Ecotourism can provide valuable insights into the attractiveness and sustainability of the ecotourism project (Zheng et al.,2021). Input from the local community can help find their economic needs and concerns, ensuring that the activities align with their priorities (Chan, 2021).

Managerial factors influence the success of environment friendly tourism villages (Oetomo, 2020). The specific and interdisciplinary knowledge required for managing ecotourism destinations underscores the importance of education for destination managers (Jurdana, 2008). Understanding the critical success factors, including environmental, community, and economic aspects, is essential for ensuring the sustainability of ecotourism projects (Parker, 2005). The involvement of small and medium enterprises (SMEs) in the supply chains of multinational corporations is also important for the sustainable development of the ecotourism industry (Turekulova, 2022).

H2. Management factors are effective in the development of ecotourism.

2.3 Potential Attractions (PA)

Potential attractions are key to the growth of ecotourism since they can draw tourists and make the region popular. Protected regions with

intact natural habitats present fantastic ecotourism potential (Cetin & Sevik,2016). Learning about and interacting with nearby indigenous groups, their traditional knowledge, and traditional customs can be part of ecotourism (Coria & Calfucura,2012). Nature hikes guided eco-tours are provided with insights into the surrounding ecosystem, fauna, and conservation activities by skilled local guides (Mekonnen & Mekonen, 2023).

The growth of ecotourism is contingent on the presence of attractive natural and cultural resources (Agrawal, 2012; Ayala, 1996). These resources, when effectively managed, can enhance the tourism value of a destination and contribute to its sustainability (Çetin, 2016). For example, the coastal zone of Bangladesh has been identified as having significant potential for ecotourism development due to its rich natural and cultural assets (Islam, 2011). However, it is important to ensure that the development of ecotourism is sustainable and does not contribute to environmental damage (Agrawal, 2012).

H3. Potential attractions in the region are effective in the development of ecotourism.

2.4 Socio-economic Factors (SE)

Socio-economic factors play a significant role in shaping the development of ecotourism, the marketing of local products, and the establishment of small and medium handicraft manufacturing units (Tamta, A. K., & Tripathi, D. 2023). By addressing this factor and fostering a sustainable and community-centred approach, these sectors can thrive and contribute to local economic growth and environmental conservation (Birendra & Suman 2018). Providing excellent customer service and hospitality is vital for creating positive experiences for visitors (Olorunsola et al.,2022). The well-trained and friendly staff can leave a lasting impression and encourage repeat visits and positive word-of-mouth promotion (Hashemi & Abbasi,2017).

Socio-economic factors significantly shape the development of ecotourism, as evidenced by several studies. Mudzengi (2014) and KC (2015) both highlight the importance of political and macroeconomic stability, as well as the positive impact of ecotourism on local income

and employment. Kummitha (2020) further emphasises the role of eco-entrepreneurs in driving sustainable community ecotourism development, with a focus on social, economic, and environmental factors. Lastly, Barkauskienė (2013) underscores the need for a balanced approach to ecotourism development, considering its economic, ecological, social, and cultural aspects. These studies collectively demonstrate the multifaceted influence of socio-economic factors on ecotourism.

H4. Socio-economic Factors contribute to the development of ecotourism.

2.5 Ecotourism Development

Ecotourism, a rapidly growing form of sustainable tourism, has been identified as a potential tool for economic development and conservation (Barkauskienė, 2013; Kiper, 2013). The development of ecotourism in recreational forest areas, such as those in Malaysia, requires strategies that prioritise ecological integrity, community participation, and government support (Bhuiyan, 2011). In Lithuania, the development of ecotourism is influenced by political and marketing changes and is hindered by certain drawbacks (Barkauskienė, 2013). Despite these challenges, ecotourism is perceived as a model for sustainable tourist development, with a strong emphasis on natural and cultural preservation (Ştefănică, 2010).

The growth of ecotourism in national parks is a complex process that requires careful management to minimise negative impacts. Anggraini (2021) and Rhama (2020) both emphasise the need for comprehensive management planning, with Rhama (2020) providing specific recommendations for ecotourism management in national parks. Yang (2020) highlights the importance of ecotourism education in guiding visitors and promoting environmental awareness. Bansal (2011) underscores the role of local communities in ecotourism, suggesting the need for capacity building and community participation. These studies collectively underscore the importance of sustainable management, education, and community participation in the development of ecotourism in national parks.

Table:1 Research associated to Ecotourism Development

Author & Year	Objective	Nation	Type of Data	Sample Size	Technique	Variables	Findings
Heshmat Moradi et al. (2020)	This article aims to examine the factors that influence the development of ecotourism in the tourist villages of the Kermanshah province, Iran, using a quantitative-qualitative method.	Iran	Survey	N=439	PLS- SEM	Infrastructure Services and Facilities, Policy, Potentials and Attractions, Management, Social and Cultural Factors, Participatory, Economic, Ecological Development Indicators.	The finding shows that factors Related to Infrastructure services and Facilities of Ecotourism had a Significant impact on Ecotourism Development. Other factors also positively affect ecotourism development consistently.
Mosayeb Heshmati et al. (2022)	To study the factors affecting the development of ecotourism and the conservation of natural resources using a SWOT analysis of western Iran.	Iran	Survey and Personal Interview	N=75	SPSS, ArcGIS	Strengths, Weakness, Opportunities, Threats	Findings Revealed that the Weaknesses and threats of Ecotourism are Changing Land use, Improper Waste Disposal, water contamination, Soil Disturbance, and local Conflicts that Impact Unsupervised Ecotourism. Therefore, ensuring regular patrols, strict protection and limiting destructive activities such as poaching, destruction of plants, fire destruction, garbage and plastic destruction can balance ecotourism development and natural resources.

Author & Year	Objective	Nation	Type of Data	Sample Size	Technique	Variables	Findings
Zakia (2021)	This study intends to examine how the local population participates in managing ecotourism in Indonesia and the fundamentals that influence that management.	Indonesia	Conceptual	--	Conceptual	Local Community Involvement-Operational Factor, Structural and Cultural Conservation	The study revealed that Limited numbers of trained persons, the legal System, the uncooperative behaviour of professionals and the monopoly of the local elite became the limitations to Local Community Participation. Lack of Public awareness is a cultural barrier to ecotourism development.
Vidanage & Kotagama (1996)	The study's primary goal was to determine the potential for nature-based tourism in Sri Lanka and the factors influencing it.	Sri Lanka	Survey	N=81	Regression	SCR, WTP, ANU, VIS	Findings showed that there is a Substantial Demand for ecotourism in Sri Lanka. The study identified that the interpretation and Infrastructure facilities at Potentials areas are minimal. Natural tourism should be started with pilot projects which provides better interpretive services. Conflicts can be avoided when local people play an integral role in selecting and Managing Protected areas.
Yadav et al. (2023)	to investigate how ecotourism affects the neighbourhood in Kanha National Park on a socio-economic level.	India	Survey	N=100	PLS-SEM	Income/Goods Tourism and crime Improvement of Living Standards and Infrastructure Development Benefit to the community and exploitation.	The study Reveals that the Policymaker should indulge the local community and Youth for the Decision-Making and Ecotourism Development.

Author & Year	Objective	Nation	Type of Data	Sample Size	Technique	Variables	Findings
Tuan & Rajagopal (2019)	To study the influential factors affecting the tourism sustainable development for Vietnam.	Vietnam	Conceptual	--	--	Economics Environment Society Sustainable Tourism Development	Findings Revealed that three main factors affecting to sustainable tourism which is Societal, Economic and Environmental.
Kirtika & Manoj (2022)	To identify various factors affecting the potential of Ecotourism in the State of Assam. To integrate SWOT analysis to understand the strength, weaknesses, opportunities and threats in the context to Ecotourism in Assam. To provide strategies using a pairwise matrix for sustainable development of Ecotourism in Assam.	India	Survey	N=15	Conceptual	Strengths, Weakness, Opportunities, Threats Sustainability	The research Revealed that environmental assets must be considered strategically solutions, simultaneously with the establishment of the necessary infrastructure for the growth of ecotourism. To encourage and grow legal ecotourism activities, local governments must the business sector and local stakeholders must work together. Therefore, regular patrols, strict enforcement of safeguards, and restrictions on degrading activities such as destroying plants, burning, depositing waste and releasing plastic into the environment are needed.

Source: Compiled by Authors

Figure-1. Conceptual Framework
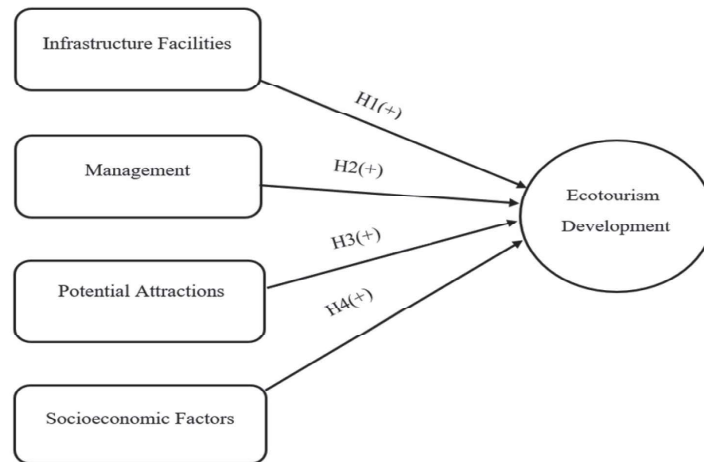
Sources: Author's Contribution

3. Research Methodology

3.1 Data Collection

The data has been collected through questionnaires and 365 responses were considered for the study. The population for this study is the local community that has significant interactions with ecotourism activities, including individuals such as tour guides, local business owners, or park rangers living in the villages near Kanha National Park. The purposive method was used for sampling because it could reduce the likelihood of receiving uninformed opinions or data from individuals who might not be affected by or aware of the ecotourism development in the area. The Period of the Survey was from 1st June to 2nd July 2023.

3.2 Questionnaire Development

3.2.1 Objective of Questionnaire

The primary objective was to assess the various factors influencing ecotourism development. This included exploring infrastructure facilities, managerial factors, potential attractions, and socio-economic factors. The questionnaire was designed to capture data on these aspects to determine their influence on ecotourism development.

3.2.2 Source of Items

The items in the questionnaire were adopted from different previous studies to ensure that they are grounded in established research and have proven effective in gathering relevant data.

Each construct in the questionnaire, such as Infrastructure Facilities (INF), Socio-economic Factors (SE), Management (MG), Potential Attractions (PA), and Ecotourism Development (ED), had items specifically tailored to address distinct aspects identified as relevant in prior research.

- Infrastructure Facilities (INF)- Items were adapted from Moradi et al. (2020), focusing on the availability and quality of ecotourism facilities like food and beverage shops, quality accommodation, and local transportation.

- Socio-economic Factors (SE)-Adapted from Vuong & Rajagopal (2019), items focused on local product marketing, the development of handicraft units, and hospitality towards visitors, reflecting the socio-economic impacts on ecotourism.

- Management (MG)-Items adopted from Kia (2021) included aspects like waste disposal, security of tourists, and training for park employees, which are crucial for effective ecotourism management.

- Potential Attractions (PA)-Taken from Cetin & Sevik (2016), these items highlighted the importance of natural and cultural attractions such as landscapes, climate, historical sites, and local festivals.

- Ecotourism Development (ED) -Items were adapted from Moradi et al. (2020) to assess community participation, environmental preservation, economic benefits, and community involvement in tourism investment.

3.3 Justification for Item Selection

3.3.1 Relevance to Study Goals

Each item was selected based on its relevance to the study's goals of identifying and analysing factors that significantly influence the

development of ecotourism. This ensured that each dimension of ecotourism development was adequately covered. The selection of items from previous studies also allowed for a comparison with existing data and provided a benchmark against which new data could be evaluated.

3.3.2 Validity and Reliability

Using previously validated items ensured the reliability and validity of the data collection instruments. This was critical in supporting the robustness of the study's findings. Adapting items from credible sources helped in maintaining a high standard of research integrity and alignment with the scientific community's expectations.

3.3.3 Comprehensive Coverage

The chosen items covered a wide range of factors, from infrastructure development and management to socio-economic impacts and attractions. This comprehensive approach was crucial to understanding the multifaceted nature of ecotourism development.

3.4 Data Analysis

3.4.1 Structural Equation Modelling (SEM)

SEM was utilised to test the proposed hypotheses based on the relationships among the constructs defined by the questionnaire items. This method was chosen for its ability to handle multiple relationships simultaneously and to test the fitness of the proposed model.

3.4.2 Statistical Techniques

Confirmatory Factor Analysis (CFA) was performed to assess the measurement model, ensuring the constructs were measured accurately by the questionnaire items. Various fit indices were calculated to evaluate the adequacy of the model, including CMIN/DF, CFI, TLI, NFI, IFI, GFI, AGFI, SRMR, and RMSEA.

4. Findings

4.1 Respondents Details

For the data analysis, 365 Responses are taken into account. There are 26% women and 74% men in the population. 21.1% of respondents were between the ages of 18 and 30, 37.8% were between the ages of 30 and 40, 30.1% were between the ages of 40 and 50, and 11.0% were over the age of 50. In addition, the majority of respondents (44.9%) have a bachelor's degree, followed by a master's (30.4%), an intermediate (18.6%), and a high school (6.0%). 41.9% of respondents are single, compared to 58.1% of married people. In terms of income, 34.5% of respondents make between 5000 and 20,000 rupees. In the monthly income group, 2000–30000 rupees make up 29.6%, 3000–40000 rupees, 25.8%, and 40000–50000 rupees, 6.3%. And 3.8% of people had a monthly income of 50001 or more. (Table-2)

Table-2. Demographic Details of the Respondents (N=365)

Particulars	Classification	Frequency	Percentage
Gender	Male	270	74 %
	Female	95	26 %
Age (in Years)	18 -30	77	21.1 %
	40 -50	110	30.1 %
	30- 40	138	37.8 %
	Above 50	40	11.0 %
Marital Status	Unmarried	153	41.9 %
	Married	212	58.1 %
Education	Bachelor Degree	164	44.9 %
	Master Degree	111	30.4 %
	Intermediate	68	18.6 %
	High School	22	6.0 %
Monthly Income (In Rs.)	5000-20000	126	34.5 %
	20001-30000	108	29.6 %
	30001-40000	94	25.8 %
	40000-50000	23	6.3 %
	50001 or more	14	3.8 %

Source: Primary Survey

4.2 Descriptive Statistics

The Mean Score Values of all the variables are mentioned in the table 2. The Range of Standard Deviation lies between 0.5484 to 0. 7751. Among all Constructs, Potential Attractions (PA) has the greatest

mean score (3.912) and Socio-economic factors (SE) has the lowest mean score (2.548). Furthermore, Management (MG) has the Largest Standard Deviation (0.7751), while Ecotourism Development (ED) Displays the lowest (0.5484) Standard Deviation. (Refer to the table-3)

4.3 Measurement Model

Examining the internal consistency reliability, discriminant validity, and convergent validity of the suggested model is important before doing the final analysis and evaluating it (Hair et al., 2010). The scale's reliability, discriminant validity, and convergent validity were confirmed using CFA. Measurements are more reliable in terms of internal consistency when Cronbach's alpha values are higher than 0.70 (Cronbach, 1951). Every Cronbach's alpha construct has a value that is higher than the recommended value (Table). Additionally, SEM was used to test the hypothesis that were put forth to describe the causal link between constructs (Ullman & Bentler, 2012). Bartlett's test of Sphericity was 4864.210 with 190 degrees of freedom, and the KMO value was 0.880 as well. Construct validity refers to the extent to which the test accurately assesses what it predicted. Convergent and discriminant validity are checked to validate the construct validity.

Table 3: Descriptive Statistics and EFA Results

Variables	Items Code	Factor Loading	Eigen Value	M	SD.	Skew	Kurt	Cronbach's Alpha
Infrastructure Facilities (INF)	INF1	0.735	7.071	3.113	0.7661	-.068	-0.240	0.885
	INF2	0.877						
	INF3	0.819						
	INF4	0.765						
	INF5	0.790						
Socio-economic Factors (SE)	SE1	0.819	1.438	2.548	0.6304	-.026	-0.484	0.772
	SE2	0.817						
	SE3	0.783						
Potential Attractions (PA)	PA1	0.745	1.686	3.912	0.6793	-.752	1.567	0.883
	PA2	0.872						
	PA3	0.883						
	PA4	0.777						
Management (MG)	MG1	0.766	2.002	3.691	0.7751	-.487	0.466	0.905
	MG2	0.883						
	MG3	0.859						
	MG4	0.864						

Variables	Items Code	Factor Loading	Eigen Value	M	SD.	Skew	Kurt	Cronbach's Alpha
Ecotourism Development (ED)	ED1	0.815	2.831	3.451	0.5484	-.643	1.283	0.934
	ED2	0.845						
	ED3	0.877						
	ED4	0.867						

Total Variance Explained-75.141%

The Convergent Validity of the model is measured by the Composite Reliability (CR) and Average variance extracted (AVE). Convergent Validity defines the correlation among items of the same construct; as per the criteria, the value of AVE Should be higher than the Threshold value of 0.50 (Fornell & Larcker, 1981). Hence, all the values of AVE mentioned in the table are higher than 0.50. So, all the Variables considered in this model have Strong Convergent Validity.

Table-4.CFA Results

Variables	Items	Standardised Factor Loadings	CR	AVE	MSV
Infrastructure Facilities	INF1	0.688	0.888	0.614	0.166
	INF2	0.891			
	INF3	0.786			
	INF4	0.768			
	INF5	0.772			
Socio-economic Factors	SE1	0.731	0.774	0.534	0.142
	SE2	0.776			
	SE3	0.682			
Potential Attractions	PA1	0.713	0.889	0.670	0.300
	PA2	0.889			
	PA3	0.917			
	PA4	0.735			
Management	MG1	0.760	0.908	0.711	0.175
	MG2	0.873			
	MG3	0.861			
	MG4	0.874			
Ecotourism Development	ED1	0.789	0.934	0.782	0.300
	ED2	0.890			
	ED3	0.922			
	ED4	0.928			

Source: The Author's.

The recommendation to use the rule to evaluate the scale's discriminant validity was Given by Fornell and Larcker in 1981. The degree to which factors can differentiate between latent variables is known as discriminant validity (Kang & Ahn, 2021). The results of the present study show that all HAVE values are more than the square of the correlation between the constructs. This confirms the discriminant validity. (Table-4)

Table-5. Discriminant Validity Test

	INF	ED	MG	PA	SE
Infrastructure Facilities	**0.784**				
Ecotourism Development	0.352***	**0.884**			
Management	0.408***	0.418***	**0.843**		
Potential Attractions	0.246***	0.547***	0.289***	**0.819**	
Socio-economic Factors	0.377***	0.278***	0.303***	0.132*	**0.731**
Notes: Significance of Correlations *p<0.050 **p<0.010 ***p<0.001					

4.4 Structured Model

Structured Equation Modelling was applied using AMOSv24. The Findings of the study are mentioned in the table 6

Table-6. Model Fit Indices

Model fit indices	Value	Threshold
CMIN/DF	1.941/160	Between 1 and 3
CFI	0.968	>0.95
TLI	0.963	>0.60
NFI	0.937	>0.60
IFI	0.969	>0.60
GFI	0.921	>0.60
AGFI	0.900	>0.60
SRMR	0.045	<0.08
RMSEA	0.051	<0.06
P Close	0.424	>0.05

Following the guidelines proposed by Byrne (2013) and Hair et al. (2006) in the study, a set of items was used to evaluate the underlying

constructs. According to the standards defined by Hair et al. (2010), all of the indices produced by CFA in this investigation support a good model-data fit. Degree of freedom (DF) is 160, CMIN is 1.941, which is between the Threshold value of 1 and 3; Goodness of fit indices (GFI) is 0.921; Adjusted Goodness of fit indices (AGFI) is 0.900, Incremental Fit Indices is 0.969, Comparative Fit Index (CFI) is 0.968; Tucker Lewis Index (TLI) is 0.963, Standard Root Mean Residual (SRMR) is 0.045 and Root Mean Square Error Approximation (RMSEA) is 0.051.

Table-7. Hypothesis Testing Results

Hypothesis	Estimate/Stan. Bata	S.E.	CR/t-Statistics	P	Findings
INF→ ED	0.074	0.033	2.220	.026*	Supported
MG→ED	0.148	0.032	4.594	***	Supported
PA→ ED	0.379	0.034	11.307	***	Supported
SE→ ED	0.110	0.038	2.864	.004**	Supported

Source: The Author's

Significance *p<0.05, **p<0.010, ***p<0.001

The findings show that ecotourism development is significantly impacted by infrastructure facilities, managerial factors, socio-economic factors and potential attractions in the area. (Table-7) In this study, researchers found significant correlations between different variables. Specifically, researchers found a significant correlation between Potential Attractions and Ecotourism Development (β= 0.379, t-value = 11.307, p<0.001) and Between Managerial Factors and Ecotourism Development (β=0.148, t-value=4.594, p<0.001) indicate a strong relationship. Similarly, there was a significant correlation between Socio-economic Factors and Ecotourism Development (β = 0.110, t-value =2.864, p<0.010), suggesting a moderate Influence. Furthermore, a significant correlation was found between e-Infrastructure Facilities and Ecotourism Development (β = 0.074, t-value = 2.220, p<0.05), indicating a strong connection. Based on these results, this research concluded that hypotheses H1, H2, H3, and H4 are supported. This implies that the variables of Ecotourism Development, Infrastructure Facilities, Managerial Factors, Socio-economic Factors and Potential Attractions are indeed related as hypothesised. A summary of the hypotheses and their corresponding results can be found in Table 7.

Figure – 2: Structural Model and Hypothesis Results
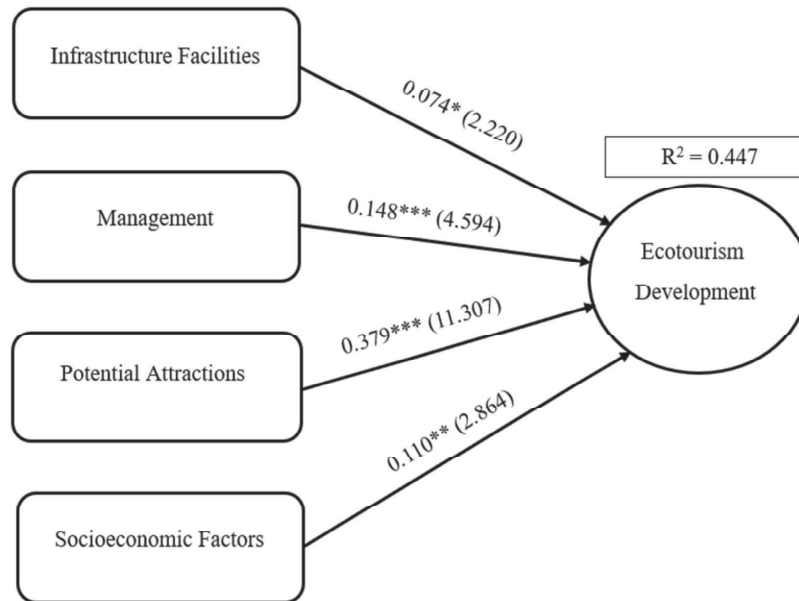
Source: The Author's.

5. Discussion

The research on ecotourism development in and around Kanha National Park is comprehensive in its approach, integrating socio-economic, infrastructural, managerial, and environmental dimensions to outline the pathways for sustainable ecotourism. The study effectively uses Structural Equation Modeling (SEM) to validate its proposed models, affirming the significant positive associations among the key variables. However, several critical perspectives merit further discussion:

5.1 Sampling Methodology

The use of purposive sampling enhances the relevance of the responses for the study's objectives but may compromise the extensiveness of the insights gained. While this method ensures data collection from directly affected stakeholders, it potentially overlooks the broader community impacts, which might offer a more holistic understanding of ecotourism impacts.

5.2 Seasonality and Longitudinal Study

The study's time frame does not account for seasonal variations in tourism activities, which can significantly affect the sustainability and perceptions of ecotourism. Future research could benefit from a longitudinal approach, allowing for the assessment of these variations and their long-term impacts on the community and environment.

5.3 Stakeholder Dynamics

The study acknowledges the role of local communities and managerial practices but could dive deeper into the power dynamics and stakeholder relationships that significantly shape ecotourism outcomes. Understanding these relational dynamics is crucial for implementing effective and equitable ecotourism strategies.

6. Conclusion

This study was conducted to explain the factors influencing the development of ecotourism in and around Kanha National Park. In the current study, ecotourism development is considered a critical issue. The Factors contributing to the development of ecotourism include Infrastructure Facilities in the area, Managerial Factors, Potential Attractions in the area and Socio-economic factors. Additionally, the results show that Infrastructure Facilities have a Positive influence ($\beta=0.074$) on Ecotourism Development (Figure 2). This Outcome is Consistent with Prior Research (Heshmati et al.,2022). The findings indicated that socio-cultural elements have an impact on the growth of ecotourism (Garcia,2017). This study's findings show that the infrastructure, services and facilities associated with ecotourism have a major impact on the growth of ecotourism (Salehi et al.,2016). Additionally, the region's potential and attractions have a big impact on the growth of ecotourism (Ghaderi, A. 2004). The distribution of questions gathered from interviews and testing of the conceptual model derived from AMOSv24 are additional novelties of the current study.

Importantly, the study lays a strong foundation for policy recommendations, advocating for enhanced infrastructure, more inclusive community participation, and strategic marketing to promote Kanha as a model for sustainable ecotourism. It also

calls for adaptive management practices that can respond to ongoing environmental and social changes, ensuring the long-term sustainability of ecotourism initiatives.

7. Implications

The findings from this study on the development of ecotourism in and around Kanha National Park offer several important implications for both policymakers and practitioners involved in the ecotourism sector. Primarily, the positive associations identified between infrastructure, managerial, socio-economic factors, and potential attractions with ecotourism development underline the need for a holistic approach to ecotourism planning and implementation. Here are some specific implications derived from the study:

7.1 Policy Formulation and Enhancement-

- Governments and non-governmental organisations should consider these factors when formulating policies aimed at promoting ecotourism. Infrastructure improvements, like better transportation and accommodations, are crucial and should be aligned with environmental conservation standards.

- The establishment of a comprehensive national ecotourism policy could ensure the sustainable development of ecotourism while preserving local communities' lifestyles and the natural environment.

7.2 Community Involvement and Socio-economic Benefits

- Local communities should be actively involved in ecotourism projects. This study shows that ecotourism can lead to improved living standards and positive attitudes towards conservation. Policies need to facilitate local civic participation in decision-making processes to enhance the socio-economic impact.

- Training and capacity-building initiatives for local communities can enhance their ability to benefit from and contribute to ecotourism development.

7.3 Management Practices

- Effective management practices are essential for balancing economic gains, socio-cultural benefits, and environmental preservation. The study suggests incorporating the community's insights and concerns into ecotourism projects to make them more sustainable.

- Regular monitoring and adaptive management strategies are necessary to mitigate any negative impacts of tourism and enhance visitor experiences.

7.4 Promotion of Potential Attractions

- Marketing strategies should highlight the unique natural and cultural resources of the area. This involves developing infrastructure that allows easy and sustainable access to these attractions without harming the environment.

- Educational programs and interpretive centres can play a significant role in educating tourists about the local ecology and conservation efforts, which can enhance the ecotourism experience and promote responsible tourism behaviours.

7.5 Strategic Development and Investment

- Investment in ecotourism should be strategic and focused on areas with the highest potential for sustainable development. Public-Private Partnerships model could be explored to leverage resources for the development of ecotourism infrastructure.

- Innovative and sustainable models of ecotourism should be encouraged, promoting an integration of environmental, economic, and social goals.

Addressing these implications will enable the improvement of the ecotourism development at Kanha National Park and other similar regions in such a way that it will effectively contribute to the overall conservation effort and development of local areas, giving satisfaction and pleasurable experiences to visitors.

Despite efforts to fully implement and frame this study, which contributes to ecotourism development, several limitations need to be addressed in future studies, which are mentioned below.

8. Limitations

The study on the development of ecotourism in and around Kanha National Park identifies several limitations that may have influenced the results and their interpretation. These limitations, which should be addressed in future research, include-

- The study primarily collected data from individuals such as tour guides, local business owners, and park rangers who have significant interactions with ecotourism activities. This could limit the generalizability of the results as they may not fully represent the views of the whole community, including those indirectly affected by ecotourism.

- The research was limited to the areas immediately surrounding Kanha National Park. This restriction might have excluded important perspectives from other regions where ecotourism could be impacting or benefiting the community differently.

- The use of purposive sampling, while beneficial for focusing on a specific group of interest, limits the ability to generalise findings to the whole population. This sampling method may introduce selection bias, as it does not provide a random or comprehensive sample of the population.

- The data collection was conducted over a relatively short period (from 1st June to 2nd July 2023), which may not account for seasonal variations in ecotourism activities and their impacts. The study's results might not reflect the full variability and dynamics of ecotourism development throughout different times of the year.

- The study relies heavily on self-reported data, which can be subject to biases such as social desirability or recall bias. Respondents may provide answers that they think are socially acceptable or may not accurately remember past events, which can skew the results.

- The study's cross-sectional design does not allow for the observation of changes over time. Without longitudinal data, it's difficult to determine causal relationships or track the development and long-term impacts of ecotourism.

- The study primarily utilised Structural Equation Modeling (SEM) for data analysis. Future studies might benefit from incorporating additional or alternative statistical methods that could provide deeper insights or address different types of research questions.

- The study did not extensively engage with foreign tourists, who are a significant part of ecotourism. The lack of perspectives from international visitors may overlook important aspects of ecotourism's impact from a global visitor's viewpoint.

Addressing these limitations in future research could improve understanding and provide more robust support for the development of ecotourism policies that benefit both local communities and conservation efforts.

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