

# A Rank-Based Investigation Of Factors Affecting Tourist Preferences For Eco-Tourism Activities

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## Abstract

This study examines the factors influencing tourist preferences for eco-tourism activities, emphasizing the increasing significance of sustainable and experience-driven travel choices. Building upon prior behavioural and management frameworks (Vicente, 2024; Lukoseviciute et al., 2024), the research bridges the gap between tourists' pro-environmental motivations and their tangible activity preferences. Using a rank-based approach, the study identifies five key determinants shaping visitor decisions: opportunities to engage with local culture and traditions, availability of eco-activities such as trekking and nature walks, scenic and natural appeal, wellness-oriented experiences, and affordability. Findings indicate that earning members tend to prioritize adventure-based activities, whereas non-earning members show a stronger inclination toward cultural immersion. Despite these differences, both groups display a high degree of alignment, reflecting a shared preference for authentic, nature-centred experiences that promote cultural appreciation and environmental consciousness. The study contributes to sustainable tourism literature by demonstrating how behavioural intentions and participatory destination management principles converge in shaping eco-tourist preferences, offering practical insights for policymakers, destination managers, and eco-tourism operators.

**Keywords:** Eco-tourism, Tourist behaviour, Sustainable tourism, Cultural immersion, Travel preferences

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## Introduction

Eco-tourism has emerged as a significant segment within the global tourism industry, emphasizing responsible travel to natural areas that conserve the environment and enhance the well-being of local communities. As awareness of sustainability grows, eco-tourism offers travellers opportunities for authentic experiences that balance recreation, cultural engagement, and environmental stewardship.

Although eco-tourism is gaining importance as a sustainable travel segment, understanding how tourists prioritize specific experiential attributes remains limited. Previous research has primarily emphasized either the management of eco-cultural landscapes (Lukoseviciute et al., 2024) or the behavioural determinants of green tourism choices (Vicente, 2024). However, there is a lack of empirical evidence connecting tourists' pro-environmental motivations with the tangible factors that shape their eco-tourism preferences. This gap restricts policymakers and destination managers

from designing tourism offerings that effectively integrate environmental stewardship, cultural authenticity, and visitor satisfaction. The present study addresses this gap by employing a rank-based analysis to identify and prioritize the key determinants influencing tourists' choices of eco-tourism activities, thereby linking behavioural intentions with experiential preferences within the framework of sustainable tourism development.

The present study, titled "*A Rank-Based Investigation of Factors Affecting Tourist Preferences for Eco-Tourism Activities*," seeks to identify and prioritize the key elements influencing tourists' choices. It focuses on five dimensions commonly associated with eco-tourism: opportunities to experience local culture and traditions, availability of nature-based activities such as trekking and nature walks, scenic beauty and natural attractions, wellness-related activities, and affordability.

By analysing these factors through a rank-based approach, the study aims to provide insights that can support the development of sustainable tourism offerings tailored to diverse visitor segments and contribute to more effective destination management strategies.

## **Literature Review**

### **Sustainable Tourism Criteria for India (STCI)**

Sustainable tourism aims to balance economic growth with the preservation of natural and cultural heritage. It is considered a means of providing inclusive growth, especially for rural communities. The Ministry of Tourism in India promotes sustainable tourism through various initiatives. The focus is on attracting low-volume, high-yield visitors compatible with the local environment. The principles of sustainable tourism are based on environmental, economic, and social sustainability. Tourism service providers, such as accommodation units and tour operators, must balance biodiversity conservation with quality visitor experiences. Local communities play an essential role in preserving cultural identities and natural heritage. The government sets policies and creates an enabling environment for sustainable tourism. The private sector significantly impacts the environment through its actions. The STCI follows several principles: effective sustainable management; respect for the design and construction of buildings and infrastructure; maximizing social and economic benefits to local communities while minimizing negative impacts; maximizing benefits to cultural and historical heritage while minimizing negative impacts; and maximizing benefits to the environment while minimizing negative impacts. (Ministry of Tourism, 2024)

### **Sustainable Tourism Features**

Eco-tourism involves responsible travel to natural areas, with the goals of protecting the environment and enhancing the well-being of local communities. This includes using natural resources with minimal human interference (Lukoseviciute et al., 2024). Eco-tourism is increasing in popularity as travellers become more environmentally aware (Vicente, 2024). Tourism is seen as a tool for economic development and employment (Manoj, 2008). The study analyses data from 160 economies (1995–2019)

to explore the link between tourism and sustainable development, emphasizing GDP per capita. It finds that while tourism drives economic growth, education, and social well-being, it also strains healthcare and harms the environment in less developed nations. In contrast, developed countries benefit more consistently. The study underscores the need for tailored, sustainable tourism policies aligned with SDGs and calls for post-pandemic adjustments. (Elgin & Elveren, 2024) This study analyses the impact of economic growth, CO2 emissions, green technology innovation, government effectiveness, and globalization on tourism growth in G-7 nations (1996–2019) using the CS-ARDL model. Findings show that economic growth boosts tourism by improving resources and workforce quality, while higher CO2 emissions negatively impact tourism growth. Green technology innovation supports tourism expansion, emphasizing the need for government investment in sustainable practices. Policymakers should focus on reducing emissions and promoting green technologies to ensure long-term tourism sustainability. (Jannat et al., 2025). Ecotourism, a growing segment of the tourism industry, focuses on environmental conservation while attracting tourists. A study on Ooty's ecotourism assesses tourist satisfaction and challenges, using survey data from 130 visitors analysed through statistical methods. Findings show no significant difference in satisfaction across socio-economic groups, but overcrowding is a major issue. The study suggests government and tourism management interventions to enhance sustainability and improve visitor experiences. (Maheswari & Thenmozhi, 2022). This study explores challenges faced by tourists at the Periyar Tiger Reserve, Kerala, across peak and lean seasons using a mixed-method approach. It identifies key issues through expert interviews and statistical analysis, emphasizing the need for strategic destination management. The findings highlight the importance of sustainable tourism practices to enhance visitor experience while ensuring long-term ecological and economic benefits. (Annapoorani, 2019). The study evaluates the economic value of ecotourism at Kerala's Peechi Reservoir, focusing on its cultural ecosystem services (CES). Using the travel cost methodology (TCM), it estimates visitor consumer surplus and factors influencing visit frequency. The findings highlight that the reservoir's economic benefits from ecotourism surpass revenue from entry and parking fees. It underscores the need for sustainable tourism and conservation practices to balance economic gains with environmental preservation. (Meharroof et al., 2024)

## **Research Methodology**

### **Data Collection Methods**

The study employed both primary and secondary data sources to examine tourist preferences for eco-tourism activities. Secondary data were obtained from the Ministry of Tourism's official reports and open-access academic journals relevant to sustainable tourism. Primary data were collected through a structured questionnaire comprising rating-scale items designed to capture tourists' ranking of five key eco-tourism factors: local culture and traditions, availability of eco-activities, scenic beauty, wellness activities, and affordability.

A convenience sampling method was adopted, yielding responses from 89 participants. This approach was chosen for its practicality in reaching tourists from diverse backgrounds within a limited timeframe. However, it is acknowledged that convenience sampling may introduce bias, as respondents may not represent the broader tourist population. Future studies employing probability sampling could enhance the generalizability of findings.

### **Sample Size Adequacy**

The final sample size of  $N = 89$  was considered sufficient for the study's rank-based analysis, particularly given the limited number of factors evaluated. While larger samples generally strengthen statistical reliability, rank correlation techniques such as Spearman's rho can produce meaningful insights with moderate sample sizes when the number of variables is small and the ranking structure is clearly defined. Nonetheless, the modest sample size is recognized as a limitation that may affect the external validity of the results, and subsequent research should consider expanding the participant pool to validate the observed trends across broader demographic and geographic contexts.

### **Data Analysis Methods**

#### **Garrett Ranking**

Garrett Ranking is a statistical technique used to analyse preferences by converting ranks into scores and averaging them to derive a final ranking order. The study considers five factors related to eco-tourism activities, ranked separately by earning and non-earning members.

The data obtained was converted to percentage position using the formula  $100 * (R - 0.5) / N$ . The percentage position thus obtained was converted to scores using Garrett Ranking Table (Garrett, 1926). The scores for each factor were aggregated, and the mean value was computed to assess the participants' perspectives on their significance. The results were determined by ranking the mean scores.

#### **Spearman's Rank Correlation Analysis**

Spearman's Rank Correlation (Kothari, 2004) was employed to determine the strength and significance of the relationship between the rankings of the two groups. A one-tailed test was conducted to evaluate positive correlations. The data analysis was conducted using JASP. The hypothesis is:

#### **Hypothesis**

**Null Hypothesis ( $H_0$ ):** There is no significant correlation between the rankings of earning and non-earning members.

**Alternative Hypothesis ( $H_1$ ):** There is a significant correlation between the rankings of earning and non-earning members.

## Findings & Discussions

### Demographic Profile

**Table 1.1: Demographic profile of the respondents**

| Category            | Subcategory         | Count | Percentage |
|---------------------|---------------------|-------|------------|
| Frequency of Travel | Occasionally        | 59    | 66.29%     |
|                     | Frequently          | 17    | 19.10%     |
|                     | Rarely              | 13    | 14.61%     |
|                     | Total               | 89    |            |
| Age Category        | 42-57 years         | 7     | 7.87%      |
|                     | 26-41 years         | 10    | 11.24%     |
|                     | below 25 years      | 72    | 80.90%     |
|                     | Total               | 89    |            |
| Occupation          | Salaried Individual | 13    | 14.61%     |
|                     | Homemaker           | 2     | 2.25%      |
|                     | Student             | 73    | 82.02%     |
|                     | Own Business        | 1     | 1.12%      |
|                     | Total               | 89    |            |

Of the 89 survey respondents, most are tourists. About 66.29% travel occasionally, while 19.10% travel frequently. Most are under 25 (Gen Z), followed by those aged 26-41 (Millennials), and a few from Gen X. There are 14 earning members and 75 non-earning members who participated in the survey. The Garret Ranking will be conducted for each category, and the corresponding ranks will be analysed using Spearman's rank correlation to determine if a significant correlation exists between earning and non-earning members.

### Garret Ranking Analysis

#### Ranking of Factors by Earning Members

**Table 1.2: Garret mean score and ranking in case of earning members**

| Factors   | Garret Mean Score | Rank |
|---|-------------------|------|
| Availability of eco-tourism activities (trekking, nature walks, etc.) | 57.71428571       | 1    |
| Opportunity to experience local culture and traditions                | 55.71428571       | 2    |
| Scenic beauty and natural attractions                                 | 46.57142857       | 3    |
| Wellness activities (yoga, meditation, etc.)                          | 46.28571429       | 4    |
| Affordability and cost of the trip                                    | 44.71428571       | 5    |

## Ranking of Factors by Non-Earning Members

**Table 1.3: Garret mean score and ranking in case of non-earning members**

| Factors   | Garret Mean Score | Rank |
|---|-------------------|------|
| Opportunity to experience local culture and traditions                | 56.01333333       | 1    |
| Availability of eco-tourism activities (trekking, nature walks, etc.) | 53.28             | 2    |
| Scenic beauty and natural attractions                                 | 52.34666667       | 3    |
| Wellness activities (yoga, meditation, etc.)                          | 44.74666667       | 4    |
| Affordability and cost of the trip                                    | 44.61333333       | 5    |

- Earning members ranked "Availability of eco-tourism activities" as their top priority, while non-earning members ranked "Opportunity to experience local culture and traditions" as the most crucial factor.
- "Scenic beauty and natural attractions" were consistently ranked third by both groups, indicating a shared preference for nature-based tourism.
- "Wellness activities" and "Affordability and cost of the trip" were ranked lower by both groups, suggesting they are less influential factors in eco-tourism decision-making.

## Spearman's Rank Correlation Analysis

**Table 1.4: Spearman's rank correlation analysis**

|              |   |                  | Spearman's rho |   | p     |
|--------------|---|------------------|----------------|---|-------|
| Earning Rank | - | Non-earning Rank | 0.900          | * | 0.042 |

*Note.* All tests one-tailed, for positive correlation.

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ , one-tailed

- The Spearman's correlation coefficient ( $\rho$ ) = 0.900 indicates a strong positive correlation between the rankings of earning and non-earning members.
- The p-value (0.042) is less than the 0.05 significance threshold, suggesting that the correlation is statistically significant.

- Since  $p < 0.05$ , we reject the null hypothesis ( $H_0$ ) and accept the alternative hypothesis ( $H_1$ ), confirming that earning and non-earning members have significantly similar preferences for eco-tourism activities.

## Conclusion

This study provides a structured understanding of the factors influencing tourist preferences for eco-tourism activities, contributing to the expanding body of knowledge on sustainable tourism behaviour. The analysis revealed that both earning and non-earning participants share closely aligned preferences, with adventure-based and culturally immersive activities emerging as the most valued experiences. Earning members tended to emphasize nature-based adventure opportunities, while non-earning participants placed greater importance on cultural engagement.

The findings of this study align with the growing body of literature that emphasizes the integration of ecological sustainability and cultural engagement in shaping tourism behaviour. (Vicente, 2024) highlighted that tourist's pro-environmental attitudes and exposure to digital green marketing significantly influence their intention to visit and revisit eco-tourism destinations. The present study extends this behavioural foundation by demonstrating that tourists translate these environmental values into specific experience-based preferences—particularly for adventure activities and cultural immersion.

Furthermore, the results resonate with the eco-cultural management framework proposed by (Lukoseviciute et al., 2024), who underscored the importance of stakeholder collaboration and trail-based eco-cultural experiences in ensuring destination sustainability. While their work focused on the strategic and managerial dimensions of eco-cultural trail development, the present study complements it by identifying the visitor-side preferences that can inform such participatory planning. Together, these findings suggest that sustainable tourism design should not only focus on infrastructure and environmental protection but also incorporate tourists ranked preferences to align management priorities with evolving visitor motivations.

## Managerial and Policy Implications

From a managerial perspective, these linkages highlight the necessity for policy frameworks that integrate eco-cultural trail management strategies (Lukoseviciute et al., 2024) with behaviourally informed marketing and experience design (Vicente, 2024). By embedding tourists ranked preferences into the design of eco-tourism products, destination planners can bridge the gap between visitor expectations, sustainable management goals, and long-term ecological resilience.

Destination planners and tour operators should emphasize community-based cultural experiences alongside low-impact adventure offerings to enhance tourist satisfaction and strengthen local economies.

From a policy perspective, these insights can guide regional and national tourism authorities in formulating frameworks that promote sustainable practices, encourage

local participation, and align with Sustainable Development Goals (SDGs). Strategic support for eco-tourism infrastructure, interpretation centres, and local entrepreneurship can foster long-term sustainability and inclusivity within the sector.

### Limitations and Future Scope

While the study offers meaningful insights, it is constrained by certain limitations. The sample size (N = 89) and the use of convenience sampling limit the generalizability of results. Moreover, the sample was predominantly composed of younger, student respondents, which may have influenced the prioritization of adventure and cultural factors. Additionally, the study's focus on a specific geographic region restricts its applicability across diverse eco-tourism contexts.

Future research could expand the sample size and adopt probability-based sampling methods to strengthen representativeness. Cross-regional comparative studies, longitudinal tracking of tourist motivations, and integration of behavioural and psychographic variables would further enrich the understanding of eco-tourism decision-making and enhance the practical value of such analyses.

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