

Understanding the Tourism Industry through Ecotourism: A Qualitative Study of Himachal Pradesh

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ABSTRACT

Environmental degradation and poverty remain two of the most significant challenges confronting contemporary society, particularly in developing regions where communities often depend directly on natural resources for their livelihoods. This dependence frequently results in the overexploitation of environmental resources, thereby creating a conflict between economic survival and environmental conservation. In this context, ecotourism has emerged as a sustainable development strategy that seeks to balance environmental preservation with socio-economic advancement. As a form of responsible tourism, ecotourism promotes the conservation of natural and cultural resources while generating income and livelihood opportunities for local communities.

One of the biggest economic sectors in the world, tourism plays a major role in regional development, job creation, and economic expansion. Within this framework, ecotourism has gained increasing recognition as a sustainable alternative to conventional tourism. India, with its rich biodiversity, diverse landscapes, and cultural heritage, possesses considerable potential for ecotourism development. Among the various tourism destinations in the country, Himachal Pradesh occupies a prominent position owing to its unique ecological resources, scenic beauty, and cultural richness.

The present study is based on primary data collected from a sample of 100 respondents and examines various dimensions of tourism with particular emphasis on ecotourism in Himachal Pradesh. The study investigates the ecological and environmental conditions of the region, evaluates the resource base and developmental potential of ecotourism, analyzes the market characteristics of ecotourism, and explores strategies for promoting sustainable ecotourism development. Furthermore, the study examines the regional structure of ecotourism and identifies measures necessary for its effective implementation and expansion. The Chi-Square Test of Independence was used to examine the connection between variables. The results demonstrate the enormous potential of ecotourism in Himachal Pradesh as a vehicle for community development, environmental preservation, and sustainable tourist expansion....

Keywords:: Ecotourism, Sustainable Tourism, Environmental Conservation, Tourism Development in Himachal Pradesh, Community Development, Tourism Industry, Ecological Sustainability, Rural Livelihoods, Chi-Square Test..

INTRODUCTION:

In an increasingly interconnected world, tourism has emerged as a powerful engine of economic growth, social progress, and regional development, making it one of the most influential sectors of the global economy. According to the World Tourism Organization (UNWTO), the tourism industry accounts for approximately 9.9% of global Gross Domestic Product (GDP), reflecting its pivotal role in fostering economic prosperity worldwide (Chauhan et al., 2021). In India, tourism represents one of the largest service industries, contributing significantly to the national economy through income generation, employment creation, and foreign exchange earnings (Machnik, 2021; Xu et al., 2023). The sector directly and indirectly supports millions of livelihoods, while also stimulating the growth of related industries such as hospitality, transportation, and retail.

The travel and tourism sector employs over 260 million people worldwide, either directly within the sector or indirectly through associated economic activities (Bhardwaj, 2022). These employment opportunities are particularly important in developing countries, where tourism serves as a major source of income and foreign exchange (Mckercher, 2024). Indeed, tourism is recognized as the principal foreign exchange earner for a large proportion of developing economies, making it a critical instrument for economic development and poverty alleviation (Agarwal et al., 2013; Arnegger et al., 2024).

Despite its economic benefits, contemporary society faces the dual challenge of poverty reduction and environmental conservation. In many developing regions, local communities depend heavily on the exploitation of natural resources for their livelihoods. Activities such as deforestation, excessive resource extraction, and habitat conversion often provide short-term economic gains but

simultaneously contribute to environmental degradation. As a result, striking a balance between environmental sustainability and economic development continues to be a major worldwide challenge (Machnik, 2021).

Within this context, ecotourism has gained increasing attention as a sustainable development strategy capable of addressing both environmental and socioeconomic objectives. Ecotourism promotes responsible travel to natural areas, emphasizing environmental conservation, community participation, and sustainable livelihood generation (Fennell, 2025). By creating economic opportunities linked to the preservation rather than the exploitation of natural resources, ecotourism offers a viable mechanism for reducing poverty while encouraging environmental stewardship (Bhardwaj, 2022).

However, tourism development is not without challenges. The expansion of tourism infrastructure, including hotels, roads, restaurants, and recreational facilities, can exert significant pressure on natural ecosystems (Cossengue et al., 2025). Unplanned tourism growth may lead to habitat destruction, biodiversity loss, pollution, cultural disruption, and increased pressure on local resources (Thompson, 2026). Consequently, while tourism possesses considerable potential to support sustainable development, its benefits can only be realized through careful planning, effective management, and adherence to sustainable tourism principles (Thompson, 2026; Xu et al., 2023).

Given these opportunities and challenges, ecotourism has emerged as a promising approach for reconciling economic development with environmental conservation. By fostering responsible tourism practices and promoting community-based participation, ecotourism contributes to the broader goals of sustainable development while ensuring the long-term protection of natural and cultural resources.

1.1 Ecotourism

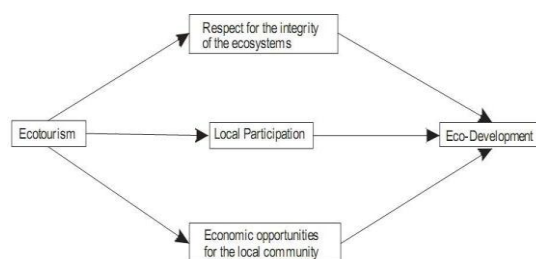
Ecotourism is responsible travel to natural regions that enhances local people' well-being and encourages environmental protection. Recognized as one of the fastest-growing segments of the global tourism industry, ecotourism extends beyond nature-based travel and recreation (Dowling, 2013; Valentine, 1993). It represents a sustainable approach to tourism that emphasizes the preservation of ecological integrity and cultural diversity while providing meaningful experiences for visitors (Dragomir & Mazilu, 2021; Fennell, 2025; Saxena, 2026).

Ecotourism is fundamentally committed to conserving the world's natural and cultural heritage (Fennell, 2025). It seeks to accommodate and engage tourists in a manner that minimizes environmental degradation and supports the traditions, values, and livelihoods of indigenous and local communities (Saxena, 2026). Activities such as nature camping, wildlife observation, trekking, and exploration of remote and pristine regions are conducted with a strong emphasis on environmental responsibility and respect for natural ecosystems.

Travelling to places where biodiversity, natural scenery, and cultural heritage are the main draws is often what defines ecotourism. In addition to promoting environmental awareness and cultural appreciation, responsible ecotourism includes methods that lessen the detrimental effects frequently connected to traditional tourism. Consequently, initiatives such as resource conservation, waste reduction, recycling, energy efficiency, water management, and the generation of economic opportunities for local populations are considered essential components of ecotourism development.

In 1983, H. Ceballos-Lascuráin, a special consultant for the International Union for Conservation of Nature (IUCN) and a Mexican environmentalist and tourism specialist, formally established the idea of ecotourism (Sobhani et al., 2023). He defined ecotourism as nature-oriented travel focused on observing and appreciating natural environments without causing ecological harm. Over time, the concept has evolved through scholarly discussions and practical applications, encompassing broader environmental, social, cultural, economic, and geological dimensions. Today, ecotourism is widely regarded as a sustainable development strategy that balances conservation objectives with community development and responsible tourism practices (Cossengue et al., 2025; Fennell, 2025).

Figure 1.1: The three concepts for variable ecotourism



(Source: Hawkins & Khan, 1998)

Experts from a wide range of fields, including Geographic Information Systems (GIS), wildlife management, wildlife photography, marine biology, oceanography, national and state park management, environmental sciences, women and development studies, history, and archaeology, have contributed to the creation of ecotourism policies (Sahani, 2020). The interdisciplinary nature of ecotourism reflects its broad environmental, social, cultural, and economic dimensions.

In 1994, the Australian Federal Government's Department of Tourism defined ecotourism as a sustainable and well-managed form of nature-based tourism that incorporates environmental education and interpretation as integral components of the visitor experience. This definition highlights the dual objectives of conservation and environmental awareness, emphasizing the importance of educating tourists about natural ecosystems and their preservation.

A more comprehensive conceptualization of ecotourism was provided by Valentine (1993), who identified several essential characteristics (Valentine, 1993). First, ecotourism should be based on relatively undisturbed natural environments. Second, tourism activities must avoid environmental degradation and ensure ecological sustainability (Saxena, 2026). Third, ecotourism should contribute directly to the conservation, protection, and effective management of natural resources and tourist destinations. Finally, the implementation of ecotourism requires a well-structured and effective management system to ensure compliance with sustainability principles.

Collectively, these perspectives underscore the fundamental principles of ecotourism, namely the conservation of natural landscapes, the protection of biodiversity, and the promotion of sustainable tourism practices. As concerns regarding environmental sustainability continue to grow, ecotourism has emerged as a significant component of the green economy and is increasingly recognized as a leading approach to tourism development. By balancing ecological conservation with economic and social benefits, ecotourism is expected to play a pivotal role in shaping the future of sustainable tourism worldwide.

1.2 Tourism Industry Growth

The growth and development of the tourism industry constitute a key objective of national tourism authorities and policymakers. Tourism is a significant contributor to economic development, employment generation, and foreign exchange earnings. However, the growth trajectory of the tourism sector is highly sensitive to prevailing economic conditions. During periods of economic downturn, financial instability, or rising unemployment, discretionary spending on travel and leisure activities tends to decline. Under such circumstances, individuals often reduce their tourism expenditures by choosing budget accommodations, economical dining options, local recreational facilities, and nearby destinations instead of undertaking long-distance or luxury travel (Selvan et al., 2026). Consequently, economic fluctuations have a direct impact on tourism demand and industry performance.

The sustainable development of the tourism sector requires the implementation of comprehensive tourism improvement programs (Selvan et al., 2026). Such initiatives generally focus on strengthening marketing and promotional strategies to enhance destination attractiveness and competitiveness. Emphasis is also placed on the recruitment and training of skilled personnel to improve service quality and visitor satisfaction. Furthermore, tourism development programs seek to encourage private-sector participation by creating a conducive environment for investment (Dragomir & Mazilu, 2021; Fennell, 2025). The formulation and implementation of tourism projects at national and regional levels, the promotion of research and innovation,

and the development of adequate infrastructure are additional priorities (Saxena, 2026; Selvan et al., 2026). Together, these measures contribute to the long-term growth and sustainability of the tourism industry.

Tourism is a multidimensional industry that maintains strong linkages with numerous supporting sectors of the economy. Its development generates substantial economic activity across a wide range of industries that provide goods and services to tourists. Key tourism-related industries include the hospitality sector, encompassing hotels and lodging services; the food and beverage industry; the real estate, finance, leasing, and insurance sectors; the retail trade industry; and the transportation, logistics, and warehousing sectors. The interdependence between tourism and these allied industries highlights the sector's extensive economic multiplier effects and its contribution to regional and national development.

1.3 Tourism in Himachal Pradesh

Himachal Pradesh is one of India's most prominent tourism destinations, renowned for its diverse natural landscapes, scenic beauty, rich cultural heritage, and adventure-based recreational opportunities (Saxena, 2026). The state's mountainous terrain, dense forests, snow-clad peaks, and tranquil valleys attract a significant number of domestic and international tourists annually. Tourism in Himachal Pradesh encompasses a wide range of activities, including adventure tourism, ecotourism, religious tourism, wildlife tourism, trekking, camping, and participation in local fairs and festivals.

Among the state's major tourist destinations, Shimla occupies a prominent position. Designated as the capital of Himachal Pradesh in 1966, Shimla is widely recognized as the "Queen of Hill Stations." Named after Shyamala, an incarnation of Goddess Kali, the city is well connected by air, rail, and road networks. Owing to its pleasant climate and colonial heritage, Shimla attracts tourists throughout the year, particularly from neighbouring states such as Punjab, Haryana, and Jammu and Kashmir.

Kufri, located along National Highway 22 and in close proximity to Shimla, is another significant tourist destination. The hill station is particularly known for winter sports and adventure activities, including skiing, trekking, tobogganing, hiking, and pony and yak rides. Major attractions include the Indira Tourist Park and the Himalayan Nature Park, which contribute to the region's growing tourism appeal.

Chail, a picturesque hill station established during the nineteenth century, is characterized by its cottages, expansive grasslands, and dense oak and deodar forests. The pheasant breeding centres at Blossom and Jhaja are notable attractions and play an important role in wildlife conservation efforts.

Other important tourist destinations in Himachal Pradesh include Chamba, Manali, Dharamshala, Lahaul, and Spiti. Manali is internationally recognized for its snow-covered

mountains and religious significance associated with Lord Manu. Dharamshala is renowned for its scenic landscapes, pine forests, Kangra Valley, and vibrant local markets such as Kotwali Bazaar. The Lahaul-Spiti region is distinguished by its rugged terrain, glaciers, and unique high-altitude ecosystems, making it an attractive destination for nature enthusiasts and adventure tourists.

The Department of Tourism, Government of Himachal Pradesh, has undertaken various initiatives to enhance tourism infrastructure and improve visitor experiences. As a result, the state has emerged as a leading tourism destination, often celebrated for its exceptional natural beauty and ecological diversity. While the entire state offers opportunities for adventure, religious, and ecotourism, its picturesque hill stations continue to constitute the principal attractions that shape the tourism landscape of Himachal Pradesh.

1.4 Major Tourist Attractions of Himachal Pradesh

Himachal Pradesh is endowed with diverse natural landscapes, rich cultural heritage, and numerous tourist destinations that contribute significantly to the state's tourism sector. The major tourist attractions of the state include Shimla, Dharamshala, Kullu, Manali, Rohtang Pass, Chamba, Dalhousie, and Kangra, each offering unique geographical, cultural, and recreational experiences (Bhardwaj, 2022).

Shimla, the capital city of Himachal Pradesh, is among the most renowned hill stations in India. Named after Goddess Shyamala, an incarnation of Goddess Kali, Shimla is celebrated for its pleasant climate, colonial architecture, and scenic beauty (Agarwal et al., 2013). The city attracts a large number of domestic and international tourists seeking leisure, recreation, and a tranquil natural environment.

Dharamshala, situated in the Kangra Valley against the backdrop of the Dhauladhar mountain range, is a prominent cultural and religious tourism destination. Established as a hill resort during the British colonial period, it gained international recognition as the residence of the 14th Dalai Lama and the headquarters of the Tibetan Government-in-Exile. Consequently, Dharamshala has emerged as an important center of Tibetan culture and Buddhist heritage (Nag, 2018; Selvan et al., 2026).

Kullu, often referred to as the "Valley of the Gods," is renowned for its picturesque landscapes, religious significance, apple orchards, handicrafts, and the internationally acclaimed Kullu Dussehra festival. The valley's natural beauty, coupled with the presence of the Beas River and surrounding Himalayan ranges, makes it a major tourist attraction (Rani, 2024).

Manali, located in the Kullu Valley, is one of the most popular tourist destinations in northern India. Known for its snow-capped mountains, lush forests, and adventure tourism opportunities, Manali attracts visitors throughout the year. Its scenic environment and proximity to several

adventure and ecotourism sites have enhanced its importance within the tourism sector.

Rohtang Pass, situated near Manali in the Lahaul-Spiti region, is famous for its dramatic landscapes and panoramic views. The pass serves as a gateway between the lush Kullu Valley and the arid high-altitude terrain of Lahaul and Spiti. Its unique geographical features and pristine natural environment make it a significant attraction for adventure and nature-based tourism.

Chamba is a historic town located amidst the Shivalik ranges and is widely recognized for its medieval temples, cultural heritage, and traditional festivals. The architectural significance of its temples reflects the rich history and legacy of the former rulers of the region.

Dalhousie is a serene hill station spread across five hills and characterized by dense deodar and pine forests, colonial-era architecture, and scenic landscapes. Compared to other popular hill stations, Dalhousie retains a relatively peaceful environment, making it an attractive destination for nature lovers and leisure tourists.

Kangra, situated at the foothills of the Dhauladhar range, is known for its historical significance, ancient temples, and picturesque surroundings. The region's cultural heritage, combined with its natural beauty, contributes substantially to its tourism appeal.

Collectively, these destinations play a pivotal role in promoting tourism in Himachal Pradesh by offering a combination of natural attractions, cultural experiences, religious significance, and adventure-based activities. Their diverse tourism resources contribute significantly to the state's economic development and strengthen its position as one of India's leading tourism destinations.

1.5 Ecotourism in Himachal Pradesh

Himachal Pradesh, situated in the northwestern Himalayan region of India, possesses exceptional natural and cultural resources that make it a prominent destination for ecotourism. The state's diverse topography, rich biodiversity, dense forests, alpine meadows, and unique cultural heritage collectively contribute to its ecotourism potential. The landscape is characterized by extensive coniferous forests interspersed with broad-leaved species such as oak, maple, walnut, horse chestnut, rhododendron, hazelnut, and bird cherry. The region's alpine ecosystems are further enriched by a variety of flowering plants and medicinal herbs, which enhance its ecological significance and aesthetic appeal.

The state is also recognized for its remarkable faunal diversity. Himachal Pradesh provides a suitable habitat for several Himalayan wildlife species, including the Himalayan Tahr, Ibex, Brown Bear, Musk Deer, and numerous pheasant species such as the Monal, Western Tragopan, Koklass, and Kalij (Rani, 2024). In addition, the higher reaches of the Himalayas support rare and endangered species, including the Snow Leopard and Snow Cock. These rich biological resources make the state an important destination for wildlife tourism, nature-based recreation, and biodiversity conservation initiatives.

Beyond its natural attractions, Himachal Pradesh possesses a rich cultural and religious heritage. Commonly referred to as the “Abode of Gods,” the state is home to numerous ancient temples, traditional architectural structures, and vibrant cultural festivals (Bhardwaj, 2022; Rani, 2024) . The presence of local deities, traditional processions, folk music, and indigenous customs reflects the region's unique socio-cultural identity (Nag et al., 2024; Prasad, 2024). The hospitality of local communities and their strong connection with nature further enhance the visitor experience and contribute to the sustainable development of tourism in the region.

Ecotourism is a form of sustainable tourism that emphasizes the conservation of natural resources, protection of cultural heritage, and promotion of community well-being(Fennell, 2025; Mckercher, 2024). It seeks to balance tourism development with environmental preservation by encouraging responsible travel practices and minimizing negative ecological impacts (Selvan et al., 2026). Unlike conventional mass tourism, ecotourism focuses on fostering meaningful interactions between visitors, local communities, and the natural environment.

The growing global popularity of ecotourism is particularly significant for developing regions where tourism serves as an important source of economic development. However, unplanned tourism development can often lead to environmental degradation and the marginalization of local communities(Hassan et al., 2026; PRADESH & GUPTA, n.d.; Prasad, 2024). Ecotourism addresses these challenges by promoting sustainable tourism practices that generate economic benefits while safeguarding ecological and cultural resources (Mekonnen & Mekonen, 2024; Verma et al., 2025). It aims to create livelihood opportunities for local residents, encourage conservation efforts, and ensure that tourism development contributes positively to community welfare.

The fundamental principles of ecotourism include minimizing environmental impacts, conserving biodiversity, promoting environmental and cultural awareness, empowering local communities through participation and economic benefits, fostering respect for local traditions and cultures, and ensuring mutually beneficial experiences for both visitors and host communities (Hassan et al., 2026; Khaledi Koure et al., 2023). By adhering to these principles, ecotourism serves as an effective mechanism for achieving sustainable development while preserving the natural and cultural heritage of destinations such as Himachal Pradesh (Nag, 2018).

Given its rich biodiversity, pristine landscapes, cultural distinctiveness, and growing emphasis on sustainable tourism, Himachal Pradesh has emerged as one of India's leading ecotourism destinations (Hafezi et al., 2023; Verma et al., 2025). The integration of conservation, community participation, and responsible tourism practices has the potential to strengthen the state's tourism sector while ensuring the long-term preservation of its

valuable natural and cultural resources (Rani, 2024; Saxena, 2026).

Review of Literature

The rapid growth of tourism has generated significant economic opportunities worldwide; however, it has also raised concerns regarding environmental degradation, cultural commodification, and the sustainability of tourism destinations(Saxena, 2026; Xu et al., 2023) . A fundamental paradox exists within tourism development whereby tourists are attracted to destinations because of their natural and cultural attributes, yet excessive tourism activity may contribute to the deterioration of those very resources. This challenge has prompted researchers and policymakers to emphasize the need for sustainable tourism practices that balance economic growth with environmental conservation and social well-being.

The concept of sustainable tourism gained international recognition through various global initiatives and conferences. One of the most significant milestones was the World Conference on Sustainable Tourism held in Lanzarote in 1995, which emphasized that tourism can be considered sustainable only when its development and management incorporate local community participation, environmental protection, equitable economic benefits, and mutual respect among all stakeholders (Dowling, 2013). This perspective highlights the multidimensional nature of tourism sustainability, encompassing economic, environmental, social, cultural, and institutional dimensions.

The environment occupies a central position in ecotourism theory and practice. Since ecotourism typically occurs in relatively undisturbed natural settings, the preservation of ecological resources is considered essential for its long-term viability. Earlier studies have frequently employed the concept of environmental carrying capacity to determine acceptable levels of tourism activity(Mckercher, 2024; Verma et al., 2025). However, scholars have criticized this approach for assuming fixed ecological thresholds, despite the dynamic and complex nature of environmental systems. Consequently, contemporary ecotourism research increasingly advocates adaptive and ecosystem-based management approaches rather than relying solely on predetermined carrying capacity limits (Khaledi Koure et al., 2023).

Education and awareness have also emerged as critical components of ecotourism. Ecotourism should serve as an educational process involving tourists, local communities, governments, non-governmental organizations, and tourism operators (Mowforth & Munt, 2015; Wight, 1993). Environmental interpretation and awareness programs can enhance visitors' understanding of conservation issues while encouraging responsible behavior. Effective ecotourism experiences therefore extend beyond recreation by fostering environmental stewardship and promoting appreciation of local cultures and ecosystems.

Despite its widespread adoption, ecotourism remains a contested concept with no universally accepted definition. Evans-Pritchard and Salazar (1992) observed that ecotourism has been interpreted both as a theoretical framework for sustainable development and as a marketing label used to promote nature-based tourism products. Similarly, two dominant perspectives were identified: one views environmental concern as a means of marketing tourism products, while the other regards ecotourism as a mechanism for conserving the natural resources upon which tourism depends (Wight, 1994). Although these perspectives are not necessarily contradictory, they underscore the need for greater conceptual clarity and authentic implementation of ecotourism principles.

A recurring theme in the literature concerns the distribution of benefits derived from ecotourism. Researchers widely agree that local communities must receive tangible economic and social benefits if conservation objectives are to be achieved. Community participation and benefit-sharing mechanisms are considered essential for fostering positive attitudes toward environmental protection and tourism development. In the absence of such benefits, local residents may perceive tourism as an external intrusion and may have little incentive to support conservation initiatives.

Critical scholars have further examined the socio-political dimensions of ecotourism. They argued that protected areas and national parks are often established without adequately recognizing the rights and interests of indigenous and local populations (Mowforth & Munt, 2015). They contend that, in some instances, ecotourism may reflect neo-colonial tendencies, where economic gains accrue primarily to external stakeholders while local communities experience restrictions on resource use and traditional livelihoods (Hassan et al., 2026; Khaledi Koure et al., 2023; Nag et al., 2024; Prasad, 2024). These

$$\chi^2 = \sum \frac{(\text{observed} - \text{exp. expected})^2}{\text{exp. expected}}$$

critiques highlight the importance of adopting inclusive and participatory approaches to ecotourism planning and management.

The existing literature collectively suggests that successful ecotourism development requires an integrated approach that simultaneously addresses environmental conservation, community empowerment, economic sustainability, and visitor education. While substantial research has examined the principles and impacts of ecotourism globally, there remains a need for region-specific studies that assess ecological conditions, tourism resources, market potential, and sustainable development strategies.

In the context of Himachal Pradesh, the present study seeks to contribute to this body of knowledge by examining the state's ecological and environmental conditions, evaluating its ecotourism resource base and competitive advantages, analysing market characteristics and development opportunities, and exploring regional patterns and strategies for sustainable ecotourism development (Bhardwaj, 2022; Saxena, 2026; Verma et al., 2025). Such an investigation is expected to provide

valuable insights for policymakers, tourism planners, and local stakeholders striving to promote ecotourism while ensuring environmental sustainability and community well-being.

Research Methodology

With a focus on ecotourism and its potential for growth, the current study examines at Himachal Pradesh's tourist sector. The analysis is predicated on original data gathered from a sample of one hundred respondents who were chosen specifically for the study. Perceptions, awareness, and attitudes toward ecotourism in the state were evaluated through a methodical analysis of the participant replies.

The Chi-Square Test of Independence was used to examine the connection between particular category variables. A non-parametric statistical method for figuring out whether two categorical variables have a significant relationship is the Chi-Square test (Hair et al., 2010). It contrasts each category's observed frequencies with what would be predicted if the variables were statistically independent. The Chi-Square test determines if the distribution of one variable changes substantially across the categories of another variable for a contingency table with r rows and c columns.

The following are the hypotheses for the Chi-Square Test of Independence: Null Hypothesis (H_0): There is no significant association between the two category variables since they are independent. Alternative Hypothesis (H_1): There is a substantial association between the two category variables because they are related.

The Chi-Square statistic is calculated using the following formula:

where:

f_o = Observed frequency

f_e = Expected frequency

While the predicted frequencies show the frequencies that would be expected if the factors were independent, the observed frequencies show the actual survey results. To decide whether to accept or reject the null hypothesis, the computed Chi-Square value is then compared with the critical value at the proper degrees of freedom and significance level (Hair Jr et al., 2019).

The contingency table used for the analysis consists of observed frequencies arranged according to the categories of the variables under investigation. This statistical technique enables the identification of significant associations among demographic characteristics and respondents' perceptions, awareness, and attitudes toward ecotourism in Himachal Pradesh below:

	Category I	Category II	Category III	Row Totals
Sample A	a	b	c	a + b + c
Sample B	d	e	f	d + e + f
Sample C	g	h	i	g + h + i
Column Totals	a + d + g	b + e + h	c + f + i	a + b + c + d + e + f + g + h + i = N

The row total times the column total divided by the grand total (N) may be used to determine the anticipated values for each cell in the table. For instance, the predicted result for cell would be $(a+b+c) \cdot (a+d+g)/N$.

Data Analysis and Interpretation

Ecotourism represents a sustainable approach to tourism that emphasizes the conservation of natural ecosystems, preservation of cultural heritage, and promotion of responsible travel practices. Unlike conventional forms of tourism, ecotourism seeks to minimize adverse environmental impacts while fostering meaningful interactions between visitors and local communities. It is founded on the principles of environmental stewardship, cultural sensitivity, and sustainable resource utilization, thereby contributing to the long-term protection of ecological and cultural assets.

Ecotourism also plays a significant role in enhancing local economic development. By generating employment opportunities and supporting local enterprises, it contributes to the economic well-being of host communities. Tourism-related expenditures on accommodation, transportation, handicrafts, local products, and other services help strengthen local economies and reduce dependence on external sources of income. Furthermore, ecotourism encourages the growth of small-scale and community-based enterprises, enabling local residents to derive direct benefits from tourism activities.

In addition, the revenue generated through ecotourism can serve as an important source of funding for environmental conservation programs, infrastructure development, and capacity-building initiatives. Governments, conservation agencies, and local communities often utilize tourism-generated income to support biodiversity conservation, environmental education, resource management, and sustainable development projects. Consequently, ecotourism contributes not only to economic growth but also to the preservation of environmental and cultural resources, thereby supporting the broader goals of sustainable development.

The subsequent analysis and interpretation of the collected data provide insights into respondents' awareness, perceptions, and attitudes toward ecotourism in Himachal Pradesh. The results advance knowledge of how ecotourism supports socioeconomic growth, environmental preservation, and sustainable tourist practices in the area.

Table 5.1: Knowledge of eco-tourism according to age

		Knowledge of eco-tourism			Total
		Know certain	General knowledge	Know some	
Age	Under18	1	13	5	19
	19-25	6	19	12	37
	26-35	3	13	4	20
	36-45	0	11	2	13
	46-55	0	6	5	11
	Total	10	62	28	100

The study's 100 respondents' age distribution is shown in Table 5.1. Of the overall sample, 19 respondents were younger than 18, 38 were between the ages of 19 and 25, 20 were between the ages of 26 and 35, 13 were between the ages of 36 and 45, and ten were between the ages of 46 and 55. According to the results, roughly 28% of the respondents said they had at least some awareness about ecotourism, while about 62% of the respondents said they had fair knowledge. The Chi-Square Test of Independence was used to investigate the relationship between respondents' age and their degree of ecotourism knowledge. The table's computed Chi-Square value was 10.185. The crucial Chi-Square value is 15.507 for eight degrees of freedom and a five percent significance level. The null hypothesis is accepted since the computed Chi-Square value (10.185) is less than the critical value (15.507). This finding suggests that there is no statistically significant correlation between respondents' age and their level of ecotourism expertise. Thus, it may be inferred that all age groups included in the sample had comparable levels of ecotourism knowledge.

Table 5.2: Understanding of eco-tourism according to age

		Understanding Of Ecotourism			Total
		Place with natural environment	Environmental protection	Protect the environment and also help local community	
Age	Under 18	8	1	10	19
	19-25	24	6	8	38
	26-35	18	2	0	20
	36-45	11	0	2	13
	46-55	6	0	4	10
	Total	67	9	24	100

The data presented in the table 5.2 indicate that 67 percent of the respondents perceive ecotourism as tourism conducted in areas characterized by a well-preserved natural environment. Further, 24 percent of the respondents view ecotourism as a comprehensive approach that not only emphasizes environmental conservation but also contributes to poverty alleviation within local communities and enhances tourists' environmental awareness through education. In contrast, only 9 percent of the respondents associate ecotourism primarily with environmental protection during tourism activities.

To examine whether the understanding of ecotourism differs across age groups, the Chi-Square Test of Independence was applied. The calculated Chi-Square

value for the table is 21.325. At 8 degrees of freedom and a 5 percent level of significance, the critical Chi-Square value is 15.507.

Since the calculated Chi-Square value (21.325) exceeds the critical value (15.507), the null hypothesis is rejected. This finding indicates a statistically significant association between age and respondents' understanding of ecotourism. Therefore, it may be concluded that the perception and understanding of ecotourism vary across different age groups, suggesting that respondents belonging to different age categories hold significantly different views regarding the concept of ecotourism.

Table 5.3: Understanding of the form of eco-tourism according to age

	Age	Understanding of the form of ecotourism					Total
		Historical and cultural scenery	Natural scenery	Place seldom damaged	Routes managed by agencies	Seldom interfered by humans	
	Under 18	3	11	3	0	2	19
	19-25	7	20	3	0	8	38
	26-35	4	13	1	0	2	20
	36-45	2	9	1	0	1	13
	46-55	2	6	1	1	0	10
	Total	18	59	9	1	13	100

Table 5.3 presents respondents' perceptions regarding the form of ecotourism. The findings reveal that 59 percent of the respondents consider ecotourism to be travel to destinations characterized by natural scenic beauty. Approximately 18 percent of the respondents perceive ecotourism as tourism undertaken in historical and cultural scenic areas with a well-preserved environment. Furthermore, 13 percent believe that ecotourism refers to visits to natural or cultural attractions that have experienced minimal human interference. In comparison, 9 percent of the respondents associate ecotourism with scenic locations that have remained largely undamaged by human activities, while only 1 percent identify ecotourism as participation in designated ecotourism routes managed by travel agencies.

To determine whether respondents' understanding of the form of ecotourism differs across age groups, the Chi-Square Test of Independence was conducted. The calculated Chi-Square value for the table is 14.912. At 16 degrees of freedom and a 5 percent level of significance, the critical Chi-Square value is 26.296.

Since the calculated Chi-Square value (14.912) is lower than the critical value (26.296), the null hypothesis is accepted. This result indicates that there is no statistically significant association between age and respondents' understanding of the form of ecotourism. Therefore, it may be concluded that the perception of the form of ecotourism remains consistent across all age groups included in the study.

Table 5.4: Objective of eco-tourism

	Age	Objective Of Eco-Tourism			Total
		Enjoying nature	Releasing pressure	Other	
	Under 18	17	1	1	19
	19-25	33	3	2	38
	26-35	13	3	4	20
	36-45	10	3	0	13
	46-55	8	2	0	10
	Total	81	12	7	100

Table 5.4 presents respondents' perceptions regarding the primary objective of ecotourism. The findings indicate that the majority of respondents consider the main objective of ecotourism to be the enjoyment of nature and scenic beauty. In contrast, 12 percent of the respondents perceive ecotourism as a means of relieving pressure arising from work and daily life, while 7 percent associate ecotourism with other objectives.

To examine whether perceptions regarding the objective of ecotourism differ across age groups, the Chi-Square Test of Independence was conducted. The calculated Chi-Square value for the table is 10.938. At 8 degrees of freedom and a 5 percent level of significance, the critical Chi-Square value is 15.507.

Since the calculated Chi-Square value (10.938) is lower than the critical value (15.507), the null hypothesis is accepted. This result indicates that there is no statistically significant association between age and respondents' perceptions regarding the objective of ecotourism. Therefore, it may be concluded that the perceived objectives of ecotourism are similar across all age groups represented in the study.

Table 5.5: Thinking about tourists' activities

	Age	Thinking about tourists' activities-discarding garbage, taking things away, etc.			Total
		Manage and maintain environment	Common responsibility	Necessity to teach	
	Under 18	3	15	1	19
	19-25	8	22	8	38
	26-35	9	9	2	20
	36-45	3	7	3	13
	46-55	2	6	2	10
	Total	25	59	16	100

Table 5.5 presents respondents' views regarding environmental responsibility within the context of ecotourism. The findings indicate that 59 percent of the respondents believe that environmental protection is a shared responsibility and that tourists should exercise care in the use and preservation of local resources. In contrast, 25 percent of the respondents are of the opinion that environmental management and maintenance are primarily the responsibility of cleaning and maintenance personnel, and that tourists may act freely since they have paid for the tourism experience. The remaining 16 percent of respondents emphasize the importance of environmental education, asserting that awareness and understanding of environmental protection are essential for achieving the true objectives of ecotourism.

To assess whether perceptions regarding environmental responsibility vary across different age groups, the Chi-Square Test of Independence was applied. The calculated Chi-Square value for the table is 11.621. At 8 degrees of freedom and a 5 percent level of significance, the critical Chi-Square value is 15.507.

Since the calculated Chi-Square value (11.621) is lower than the critical value (15.507), the null hypothesis is accepted. This finding indicates that there is no statistically significant association between age and respondents' views regarding environmental responsibility in ecotourism. Therefore, it may be concluded that the perceptions of respondents concerning environmental responsibility are similar across all age groups represented in the study.

Table 5.6: View on the construction

		View On The Construction Of Ropeway And Telpher In The Scenery Area			Total
		Construction necessary	Won't oppose if experts agree	No idea	
Age	Under18	16	2	1	19
	19-25	25	10	3	38
	26-35	13	4	3	20
	36-45	10	2	1	13
	46-55	7	2	1	10
Total		71	20	9	100

Table 5.6 presents respondents' opinions regarding the construction of infrastructure within ecotourism destinations. The findings indicate that 71 percent of the respondents support construction activities in tourism areas, considering them necessary for enhancing tourist convenience and accessibility. Further, 20 percent of the respondents stated that they would not oppose such construction if experts determined that it was appropriate and beneficial for the tourism area. The remaining 9 percent reported that they do not have a clear opinion regarding construction activities in ecotourism destinations.

To examine whether perceptions regarding the construction of ropeways and telpfers in scenic areas differ across age groups, the Chi-Square Test of Independence was conducted. The calculated Chi-Square value for the table is 3.711. At 8 degrees of freedom and a 5 percent level of significance, the critical Chi-Square value is 15.507.

Since the calculated Chi-Square value (3.711) is lower than the critical value (15.507), the null hypothesis is accepted. This result indicates that there is no statistically significant association between age and respondents' views regarding the construction of ropeways and telpfers in scenic areas. Therefore, it may be concluded that opinions concerning such construction activities are similar across all age groups represented in the study.

Table 5.7: Choice of transport

		Choice Of Transport Inside Tourism Area			Total
		Tourism bus	Ropeway	Walk	
Age	Under 18	12	2	5	19
	19-25	23	4	11	38
	26-35	11	1	8	20
	36-45	13	0	0	13
	46-55	7	2	1	10
	Total		66	9	25

The data presented in the table indicate that tourism buses are the most preferred mode of transportation within tourism areas, with approximately 66 percent of the respondents favoring this option. The remaining 34 percent of the respondents prefer walking and the use of ropeways as modes of transport within tourism destinations.

To examine whether transportation preferences vary across different age groups, the Chi-Square Test of Independence was employed. The calculated Chi-Square value for the table is 12.081. At 8 degrees of freedom and a 5 percent level of significance, the critical Chi-Square value is 15.507.

Since the calculated Chi-Square value (12.081) is lower than the critical value (15.507), the null hypothesis is accepted. This finding indicates that there is no statistically significant association between age and respondents' preferred mode of transportation within tourism areas. Therefore, it may be concluded that transportation preferences are similar across all age groups represented in the study.

Table 5.8: Grouping pattern

		Grouping Pattern			Total
		Whole family	By employer	Relative and friends	
Age	Under 18	16	0	3	19
	19-25	24	2	11	38
	26-35	8	7	5	20
	36-45	9	1	3	13
	46-55	4	4	3	10
	Total		61	14	25

Table 5.8 presents respondents' preferences regarding travel group composition for ecotourism activities. The findings indicate that approximately 61 percent of the respondents prefer undertaking ecotourism trips with their entire family. Further, 25 percent of the respondents prefer travelling with relatives and friends, while the remaining 14 percent expressed a preference for organized tours in which all arrangements are made by their employer.

To examine whether travel grouping preferences differ across age groups, the Chi-Square Test of Independence was conducted. The calculated Chi-Square value for the table is 27.232. At 8 degrees of freedom and a 5 percent level of significance, the critical Chi-Square value is 15.507.

Since the calculated Chi-Square value (27.232) exceeds the critical value (15.507), the null hypothesis is rejected. This result indicates that there is a statistically significant association between age and respondents' preferred grouping patterns for ecotourism activities. Therefore, it may be concluded that travel group preferences vary across different age groups, suggesting that respondents belonging to different age categories exhibit significantly different grouping patterns when participating in ecotourism.

Table 5.9: Dissatisfaction on Eco-Tourism Places

		Dissatisfaction On Eco-Tourism Places		Total
		Inconvenient transport	Low quality local service	
Age	Under 18	11	8	19
	19-25	26	12	38
	26-35	15	5	20
	36-45	10	3	13
	46-55	6	4	10
Total		68	32	100

Table 5.9 presents respondents' views regarding the factors contributing to dissatisfaction with ecotourism destinations. The findings indicate that approximately 68 percent of the respondents consider inconvenient transportation facilities to be the primary source of dissatisfaction at ecotourism sites. In contrast, 32 percent of the respondents believe that the poor quality of local services is the main factor contributing to their dissatisfaction with ecotourism destinations.

To determine whether the factors causing dissatisfaction vary across different age groups, the Chi-Square Test of Independence was employed. The calculated Chi-Square value for the table is 2.115. At 4 degrees of freedom and a 5 percent level of significance, the critical Chi-Square value is 15.507.

Since the calculated Chi-Square value (2.115) is lower than the critical value (15.507), the null hypothesis is accepted. This finding indicates that there is no statistically significant association between age and the factors contributing to respondents' dissatisfaction with ecotourism destinations. Therefore, it may be concluded that the causes of dissatisfaction are similar across all age groups represented in the study.

Figure 5.1 Feasibility of eco-tourism's four functions (Protection, Tourism, Education, Poverty Reduction)

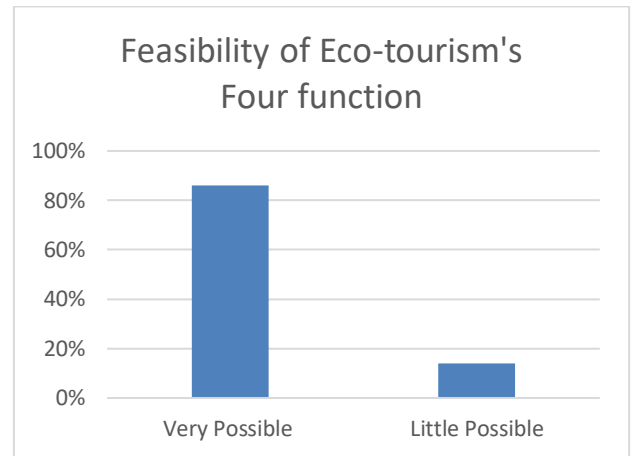


Figure 5.1 graphically illustrates respondents' views regarding the feasibility of achieving the four functions of ecotourism. The findings reveal that approximately 86 percent of the respondents believe that the four functions of ecotourism can be successfully achieved and are highly feasible in practice. In contrast, only 14 percent of the respondents perceive the likelihood of achieving these functions to be relatively low.

Figure 5.2 Protecting the environment self-consciously during the tour

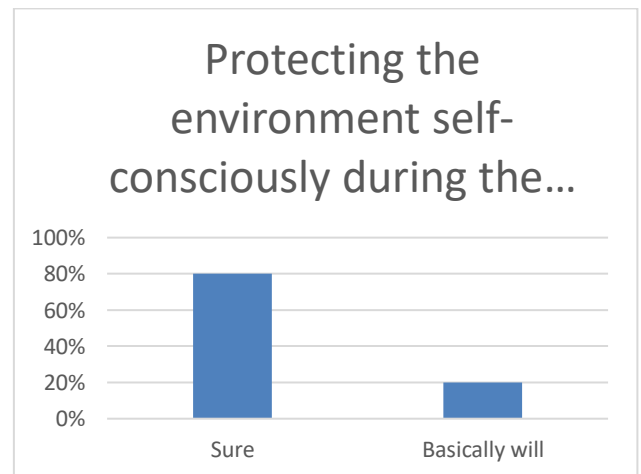


Figure 5.2 presents the respondents' views regarding their willingness to protect the environment. The findings indicate that 80 percent of the respondents are certain that they will consciously engage in environmental protection activities. The remaining 20 percent also expressed their willingness to protect the environment. Thus, the results suggest that all respondents demonstrate a positive attitude toward environmental conservation and acknowledge their responsibility in protecting the environment.

Figure 5.3 Impacts of Tourism on the Environment

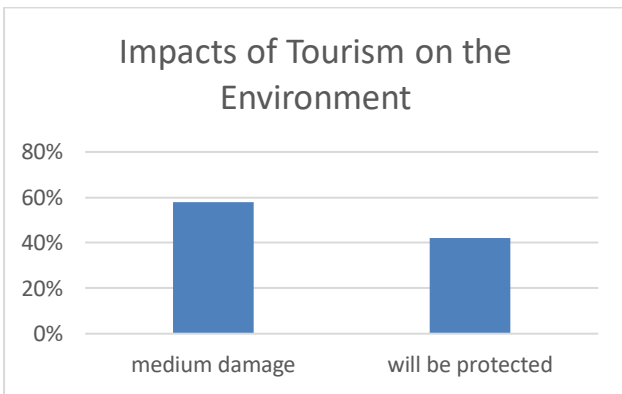


Figure 5.3 illustrates respondents' perceptions regarding the environmental impacts of tourism activities in natural scenic areas. The findings indicate that 58 percent of the respondents believe that tourism activities may cause a moderate level of environmental damage to natural attractions. In contrast, 42 percent of the respondents are of the opinion that the local environment can be effectively protected if appropriate measures are implemented by both the concerned authorities and the tourists visiting these destinations. These results highlight respondents' awareness of the potential environmental consequences of tourism as well as the importance of adopting responsible and sustainable tourism practices.

Figure 5.4 Activities you wish to See or Participate at Eco-tourism Area in the Future



Figure 5.4 illustrates respondents' preferences regarding activities and facilities that should be provided at ecotourism destinations. The findings reveal that 71 percent of the respondents support the establishment of amusement parks at tourism sites as a means of enhancing tourists' environmental knowledge and awareness. Additionally, 6 percent of the respondents expressed a preference for viewing movies related to environmental protection. The remaining 23 percent indicated their interest in participating in other activities during their

visits to ecotourism destinations in the future. These findings suggest a strong preference among respondents for recreational and educational activities that can contribute to environmental learning and awareness.

Conclusion

Ecotourism has emerged as an important approach to sustainable tourism development, emphasizing environmental conservation, cultural preservation, community participation, and responsible travel practices (Selvan et al., 2026). Unlike conventional tourism, ecotourism seeks to minimize adverse environmental impacts while promoting awareness, education, and appreciation of natural and cultural resources. It focuses on the conservation of biodiversity, protection of local traditions, and creation of socio-economic benefits for host communities.

The findings of the present study indicate that the region possesses substantial potential for the development and promotion of ecotourism. Its rich natural landscapes, environmental resources, and tourism attractions provide a strong foundation for sustainable tourism growth. However, the study also identifies several constraints that may hinder the effective development of ecotourism. These challenges include inadequate transportation facilities, limited accessibility, insufficient tourism infrastructure, and concerns regarding the quality of local services. Addressing these constraints is essential for enhancing visitor satisfaction and ensuring the long-term sustainability of tourism development. Accessibility should be improved not only through better physical connectivity but also through the provision of accurate and comprehensive tourism information.

Ecotourism can play a significant role in strengthening the regional economy by generating employment opportunities, supporting local enterprises, and increasing income for host communities. Since a large proportion of tourists visit the region to experience its scenic beauty, natural environment, and cultural heritage, ecotourism offers considerable opportunities for sustainable economic development. Nevertheless, the expansion of tourism activities may also pose challenges, particularly in terms of environmental degradation, ecological imbalance, and socio-cultural disruption. These potential threats highlight the need for careful planning, effective management, and the adoption of sustainable tourism practices.

To maximize the benefits of ecotourism, coordinated efforts are required from government agencies, tourism stakeholders, local communities, and tourists. Conservation-oriented policies, environmental awareness programs, community participation initiatives, and sustainable infrastructure development should be prioritized. Furthermore, tourists and local residents must actively contribute to environmental protection and the preservation of cultural heritage. Through a balanced approach that integrates economic development, environmental conservation, and community well-being, ecotourism can serve as an effective instrument for achieving sustainable regional development and enhancing the overall tourism experience..

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