

Ecotourism as a Catalyst in Economic Resilience: A Socio-Economic Analysis of Majuli District Island

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ABSTRACT

Ecotourism really can make a difference. It's good for the environment, it supports conservation, and it preserves culture and history. For those living in poor countries, ecotourism can offer a path out of poverty. Majuli is a very different place with unique natural beauty and traditions. This study aims to evaluate the impact of ecotourism on society and economy from the perspectives of local people. To assess the effects of ecotourism 200 respondents were selected as sample from Majuli district Island. One-Sample Wilcoxon Signed-Rank Test were used. The results suggest that ecotourism has positive socio-economic impact on the Majuli district Island. The present study would reflect the implications of ecotourism in Majuli Island, its possibilities to ensure the well-being of people, tourism industry and environment.

Keywords: Ecotourism, Social Impact, Economic Impact, One-Sample Wilcoxon Signed-Rank Test.

Introduction

Agrawal and Redford (2006) argue that there are many organizations that seek both to reduce poverty and to protect nature. But our findings indicate that every study we've seen that examines this issue oversimplifies the analysis and fails to consider the broader perspective. We looked at 37 research, most of which skipped over important details and concentrated on specific cases. As a result, it becomes challenging to make trustworthy judgments about what works. Despite all of that expense, we still need sufficient proof that we can accomplish these two tasks simultaneously. New research approaches are needed to better understand how to combat poverty and preserve the environment. Ecotourism – a powerful tool to help eliminate poverty in the third world. They are advocating for inclusive business models and supportive policies to make sure the benefits are felt on the ground. It has the potential of reducing poverty, and success largely depends on interventions that respond to specific needs, partnership and the conditions for the fulfilment of human rights. Employment As one of the major benefits of ecotourism for local socioeconomic development, employment leads to an increase in income earning and skills improvement (Mitchell & Ashley, 2010). while high-end ecotourism can provide significant economic opportunities—such as jobs, skills development, and infrastructure improvements. Beyond their contribution to incomes, wages and salaries have a direct positive impact on household welfare by enabling investment in productive assets, providing future security, and enabling ecotourism employees to diversify their sources of income. The local involvement, equitable benefit-sharing, and

supportive policies to enhance positive outcomes. The high-end ecotourism can contribute to rural development if effectively integrated with community needs and participation (Snyman, 2013).

Tourism can play a vital role in protecting the environment, conserving biodiversity and maintaining sustainable development. Furthermore, tourism has the power to enhance the environment, to provide fund for conservation, to preserve culture and history, to set sustainable use limits, to protect wildlife and to add value to biodiversity. Ecotourism can encourage conservation, particularly when it leads to favourable economic change. However, it brings about a lot of changes to communities: positive and negative, social and economic (Stronza, A. & Gordillo, J. 2008)

It has the power to enhance the environment, to provide fund for conservation, to preserve culture and history, to set sustainable use limits and to protect wildlife and add value to biodiversity (Mcintosh, Goeldner & Richie, 1995).

Wearing (2011) indicates that the fundamental principles of ecotourism refer to minimising negative impacts on the environment, representing local cultures and actively contributing to the financial stability of the host/ local communities as well as the stakeholders involved. Ecotourism can support sustainability of the environment while offering financial and social benefits to localities.

In this paper, the researcher aims to answer the following research questions:

- How do ecotourism activities influence the social well-being and standard of living of Majuli locals?
- What impact does ecotourism have on the prices of goods and services in the area?
- Does ecotourism increase labour demand and create sustainable job opportunities?
- How do ecotourism activities contribute to local income generation, small business growth (including handicrafts, ceramics, and transportation), and expanded business opportunities?
- To what extent does ecotourism enhance tax revenue and tourism-generated income for local governments, and drive infrastructure development (such as roads, transportation, and public amenities etc.)?

Understanding the socio-economic impacts of ecotourism is essential for industry, stakeholders and government agencies to guarantee the sustainability over the long run of tourism. The current study aims to evaluate the socio-economic impact of ecotourism on Majuli district island from the perspectives of the local people.

Literature Review

Kumar et al 2019 addressed that ecotourism creates economic opportunities and preserves the cultural integrity of the local populace that sustain their livelihood. Their research on Jim Corbett National Park in Uttarakhand, India demonstrated that ecotourism offers assistance for the livelihood of local communities. Saikim et al 2017 argued that sustainable Ecotourism ought to be ensured through the involvement of nearby communities in the management of conservation activities and control of revenue generation. Abud Darda & Anowar Hossain Bhuiyan 2022, explores the socio-economic impacts of ecotourism development in Terengganu, Malaysia, focusing on Lake Kenyir and Sekayu Recreational Forest. Findings show positive effects like employment and community participation, but also negatives like resource degradation and religious disruptions. Baloch et al 2023 explores the link between tourism development and environmental suitability, aiming to develop a sustainable ecotourism framework. It reveals that while tourism offers socio-economic benefits, it also leads to environmental degradation, cultural intrusion, and pollution. The research suggests a balanced approach, supported by government policies, for ecotourism success.

The community-based ecotourism in Sabah, Malaysia, revealing positive impacts across economic, socio-cultural, and environmental spheres, but also highlighting potential negative consequences for its sustainability (Kunjuraman, V., Hussin, R., & Aziz, R. C. 2022). The ecotourism positively impacts rural employment and income in Samarkand, Uzbekistan, however issues include poor infrastructure and a shortage of skilled workers, and weak regulations hinder its full potential. (Abdurakhmanova, A., & Ahrorov, F. 2025). The socio-economic effects of ecotourism in Khawa village, Botswana show it boosts tourism awareness, reduces poaching, creates jobs, and generates income. However, it also highlights negative impacts like noise pollution and disruption during events (Moswete, N. N., Saarinen, J., & Thapa, B. 2022). Miralles et al 2024 proposes A framework for evaluating social effects of tourism packages, especially in Mediterranean Protected Areas. Nine packages are used to test

the Product Social Impact Assessment approach, revealing its suitability for quantifying and qualifying social impacts. Lim, T. S., Geetha, C., & Mohidin, R. 2021, investigated the effects of rural travel development on environmental, social, and economic aspects in three Sabah locations: Kundasang, Kota Belud, and Paper. Results showed positive perceptions of rural tourism, but significant differences in economic activities, business opportunities, and property values were found. The study suggests strategies to manage perceptions and bridge these gaps for community support and industry growth.

Research Methodology

Research Areas

Majuli stands as the world's longest river-line island and India's first island district which spans 800 square kilometres in the powerful Brahmaputra region. Majuli stands as a remarkable geological wonder that combines diverse habitats of natural flora and fauna with cultural heritage which UNESCO recognized as one of the world's wonders. The famous areas which were also taken into account for this study include-Satra monasteries such as Auniati Satra, Dakhinpat Satra, Samaguri Satra (Mask Making), Garamur Satra, Bengena Ati Satra, and Kamalabari Satra are the satra monasteries of Majuli among others. The unique peculiarities Dakhinpat Satra, Samaguri Satra, Garamur Satra and Kamalabari are preserves many within dances, is famous for its mask-making, houses ancient manuscripts and priceless utensils, and the contribute in the field of acting, art, and literature in Majuli respectively. The tribal theme village called Jengraimukh was also taken into consideration as this place offers ecotourism facilities to both domestic and international tourist to its own way. The Bhakatiduar Cleanest Village of Majuli is also considered for our research due to its popularity with both domestic and foreign tourists. The Kumar people, who live in Salmara, Chintoli, and Dakhinpat, are the main artisans in Majuli's pottery. More than 23 commercial hotels and cottages are considered as a data gathering region due to the interactions that occur between domestic and foreign tourists

Data Collection Approach and Analysis

200 responders were chosen as a sample from various locations across Majuli district island randomly. Respondents were asked to rate their perceptions of ecotourism's socio-cultural impacts using a Likert scale, where 1 indicated 'strongly disagree', 2 'disagree', 3 'neutral', 4 'agree', and 5 'strongly agree'. To assess the sociocultural effects of ecotourism on Majuli District Island, the following hypotheses are put forth-

- Null Hypothesis 1: Ecotourism activities do not promote the social wellbeing of the local community.
- Null Hypothesis 2: Ecotourism activities increase the price for products and services in the locality.
- Null Hypothesis 3: Ecotourism activities do not increase the demand for labour
- Null Hypothesis 4: Ecotourism activities do not create jobs opportunity for local people
- Null Hypothesis 5: Ecotourism activities do not enhance the living standard of local people.
- Null Hypothesis 6: Ecotourism activities of Majuli district do not help infrastructure development
- Null Hypothesis 7: Ecotourism does not allow the creation of income for local people
- Null Hypothesis 8: Ecotourism activities of Majuli district do not help to solve the unemployment problems in Assam.
- Null Hypothesis 9: Ecotourism activities do not expand the business opportunities of local people.
- Null Hypothesis 10: Ecotourism activities do not help to sell out local handicraft to the tourists and thus help to generate income for local people.
- Null Hypothesis 11: Ecotourism activities of Majuli district do not help to sell out pottery
- Null Hypothesis 12: Ecotourism does not help to increase the transportation business of local people
- Null Hypothesis 13: *Ecotourism does not help to generate revenue for the government*

One-Sample Wilcoxon Signed-Rank Test was carried out with IBM SPSS Version 27 to analyse the data gathered from these locations.

Data Analysis and Discussion

The survey data was conducted of 200 respondents of which 120 are Male and 80 are female. The sample comprises a higher proportion of male respondents (60%). A significant majority (74%) of respondents are under 40 years, indicating a youthful demographic. All respondents are from India, indicating a homogeneous national background, as the researcher aims to evaluate the perceptions of the local people of Majuli regarding the impact of ecotourism on society and culture. Out of the 210 distributed questionnaires, 200 were completed and returned. The Wilcoxon Signed Rank Test is a non-parametric method which was used to determine whether the median of a single sample differs from a specified value i.e. 3 neutral point in the Likert scale. The following is the summary of One-Sample Wilcoxon Signed Rank Test –

Table 1: One-Sample Wilcoxon Signed Rank Test Summary

	Total N	Test Statistic	Standard Error	Standardized Test Statistic	Asymptotic Sig. (2- sided test)
Ecotourism activities promote the social wellbeing of the local community.	200	4862.500	322.423	5.614	.000
Ecotourism activities increase the price for products and services in the locality.	200	7819.000	673.135	-.619	.536
Ecotourism activities increase the demand for labour	200	7566.500	510.524	3.730	.000
Ecotourism activities create jobs opportunity for local people	200	16893.000	673.633	12.307	.000
Ecotourism activities enhance the living standard of local people.	200	15881.000	714.630	9.527	.000
Ecotourism activities of Majuli district help infrastructure development	200	17205.000	683.432	12.587	.000
Ecotourism allows the creation of income for local people.	200	16158.500	668.032	11.311	.000
Ecotourism activities of Majuli district help to solve the unemployment problems in Assam	200	16093.500	655.363	11.430	.000
Ecotourism activities expand the business opportunities of local people.	200	17057.000	667.165	12.533	.000
Ecotourism activities help to sell out local handicraft to the tourists and thus help to generate income for local people.	200	16763.000	678.541	11.752	.000
Ecotourism of Majuli district help to sell out pottery	200	16961.000	660.555	12.513	.000
Ecotourism helps to increase the transportation business of local people	200	19396.000	748.131	12.492	.000
Ecotourism helps to generate revenue for the government	200	14851.000	641.203	10.317	.000

Source: SPSS

- **Ecotourism Activities Promote the Social Wellbeing of the Local Community:** The Wilcoxon Signed Rank Test is a rank test that does not assume a parametric distribution for the variable under consideration but seeks to determine that the median of a single sample does not

differ from a given value (3 in the Likert scale). Here the test checks the level of income of ecotourism is median not equal to some neutral value. The p-value is 0.000 thus less than the standard $\alpha=0.05$ and hence there is significant evidence to reject the null hypothesis at 5% level of significance. The positive Z-score (5.614) indicates that the median perception is above the neutral point which means the people of study areas see the ecotourism linkage for social well-being in advancement. As a result, we fail to accept the null hypothesis.

- **Ecotourism activities increase the price for products and services in the locality:** The negative Z-score (-0.619) denotes that the median value was less than the expected (neutral) median. The p-value of 0.536 is well over 0.05, indicating that it's not a statistically significant outcome. That is, attitudes toward this issue seem ambivalent or mixed based on the 200 respondents. This means that, as far as this study is concerned, ecotourism is not seen as obviously contributing to localized price inflation.
- **Ecotourism activities increase the demand for labour:** The Z of 3.730, p-value < 0.05 show strong deviation from the null hypothesis and the result is statistically significant. Consequently, there is firm evidence to believe that Participants believe that ecotourism considerably raises the need for workers in the area. The positive Z-score indicates that the majority of participants rated the statement higher than the neutral point, i.e. agree or strongly agree.
- **Ecotourism activities create jobs opportunity for local people:** The p-value of 0.000 is significantly less than the standard cutoff point of 0.05. This suggests that the difference between the responses' median and the neutral value is statistically significant. The majority of respondents indicated agreement or strong agreement with the statement, as indicated by the positive Z-value (12.307). Simply said, participants overwhelmingly agreed that ecotourism gives locals access to employment options. The test offers solid statistical proof that ecotourism is seen by the local population as a major source of job development.
- **Ecotourism activities enhance the living standard of local people:** Because the p-value (.000) is less than 0.05, suggesting that the result is statistically significant, and because the Z-score of 9.527 is extremely high, showing a large divergence from the null hypothesis, we reject the null hypothesis and accept the alternative hypothesis. According to statistical data, ecotourism considerably enhances the living standard of local people in the study areas.
- **Ecotourism activities of Majuli district help infrastructure development:** A p-value of .000 confirms statistical significance, while the normalized Z-score of 12.587 is considerably higher, showing very strong positive agreement among responders. To put it simply, Majuli's ecotourism is thought to play a major role in the development of the city's infrastructure.
- **Ecotourism allows the creation of income for local people:** The p-value of 0.000 is significantly below the common alpha level of 0.05 and the Z-score of 11.311 suggests a substantial deviation from the null hypothesis indicating that ecotourism has a notable impact on local income generation. The analysis provides robust statistical evidence that ecotourism significantly contributes to the creation of income for local populations
- **Ecotourism activities of Majuli district help to solve the unemployment problems in Assam:** The p-value (.000) is far below the conventional significance level of 0.05 and the positive Z-score of 11.430 reflects a strong deviation above the neutral median, suggesting that the majority of participants gave positive responses. The respondents strongly agree that ecotourism activities in Majuli help address unemployment issues in Assam
- **Ecotourism activities expand the business opportunities of local people:** Asymptotic Sig. (2-sided) = .000 and a Standardized Test Statistic (Z) = 12.533 means the result is statistically significant and a strong deviation from the null hypothesis (that ecotourism has no effect on business opportunity) respectively. Values this large are very unlikely under the null hypothesis. The test strongly supports the idea that ecotourism activities significantly expand business opportunities for local people in the region studied.
- **Ecotourism activities help to sell out local handicraft to the tourists and thus help to generate income for local people:** The p-value 0.000 which is less than any conventional significance level (e.g., 0.05), meaning the result is statistically highly significant and Standardized Test Statistic (Z-value): 11.752 — a very high value indicating a strong deviation from the null hypothesis. The extremely high standardized test statistic (11.752) coupled with a

p-value effectively zero strongly suggests that there is a statistically significant positive effect of ecotourism on selling local handicrafts.

- **Ecotourism of Majuli district help to sell out pottery:** Asymptotic Significance (p-value): 0.000 indicating the result is statistically significant beyond conventional thresholds and Standardized Test Statistic (Z-value): 12.513 — a very large value that points to a strong effect. The very high standardized test statistic (12.513) and a p-value of 0.000 indicate a strong and statistically significant positive effect of ecotourism on the sale of pottery in Majuli district
- **Ecotourism helps to increase the transportation business of local people:** The p-value (Asymptotic Sig.) is 0.000, which is less than the conventional alpha level of 0.05 and the large positive standardized test statistic (Z = 12.492) suggests a strong tendency for the respondents to agree that ecotourism increases the transportation business for local people.
- **Ecotourism helps to generate revenue for the government:** Asymptotic Significance (p-value) = 0.000: This is less than the typical alpha level (0.05), indicating the result is statistically significant and Standardized Test Statistic (Z) = 10.317: A very high value indicating a strong deviation from the null hypothesis. The large standardized test statistic (Z = 10.317) suggests a strong effect size, meaning respondents generally agreed that ecotourism contributes positively to government revenue.

Conclusion

Ecotourism is a game-changer for Majuli district island. Brings a lot of benefits to the local people such as better social well-being, generation of employment, better standard of living, Infrastructure development, additional income, fall in unemployment rate, proliferation of business, opportunity to sell home-based pottery and handicrafts and a handsome money-flow to the government. Ecotourism can have a beneficial or detrimental impact on the social, economic, and environmental well-being of local populations (Amoamo et al). It supports locals' livelihoods by preserving their cultural heritage and opening up economic opportunities (Kumar et al). Ecotourism boosts family income, supports local goods, and gives residents access to jobs and business prospects (Amalu et al). To realize such benefits, the Government of Assam, Ministry of Tourism, will need to intervene and facilitate training programs among local people especially in the tourist areas. The travel and hospitality industry should also assume a central role in promoting the development of sustainable ecotourism. Our study provides important lessons for the Department of Tourism, Assam, in order to make the most of ecotourism opportunities and for successful formulation and implementation of sustainability-oriented policies. By informing decision-making, we can enforce that ecotourism benefits local communities, government, and industries.

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