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Sustainable Tourism as a Source of Income Diversification for Local Communities Through Mediating Effect of Community Empowerment

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ABSTRACT

Sustainable tourism is always concerned with fulfilling visitors' and local communities' requirements while keeping current and future generations' interests in mind. Meghalaya, a state of India well known for its natural beauty and rich cultural heritage, offers a wide opportunity for sustainable tourism. This research aimed to develop a framework for establishing the relationship between sustainable tourism and diversifying local communities' income sources in Meghalaya through the mediating effect of community empowerment. The proposed framework was tested and validated using the PLS-SEM approach in Smart PLS 4.0. A sample of 425 local community members was drawn for the research from the famous tourist places in Meghalaya: Shillong, Cherrapunji, Mawlynnong, and Dawki, based on the multistage cluster sampling technique. Primary data was collected using an enumerator survey. Research findings revealed that sustainable tourism activities significantly enhance income diversification beyond traditional earning sources like agriculture and handicrafts. Also, the research further confirmed the mediating role of community empowerment between sustainable tourism and income diversification. This study recommended strategies for sustainable tourism development and attaining long-term economic and social goals by integrating community empowerment with tourism and income generation in local communities. At the end of the study, future research directions were provided for further research.

KEYWORDS

Sustainable Tourism, Community Empowerment, Income Diversification, PLS-SEM.

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1. Introduction

Meghalaya is the smallest but one of the most beautiful hill states of north-east India, having astounding landscapes, rich biodiversity, and a quite distinct cultural heritage (Ministry of Tourism, 2021). The state, however, remains economically challenged, with the majority of its population dependent upon traditional agriculture and an underdeveloped local industry (Bordoloi, 2020). Also, the state is dependent on tourism to meet its requirements (Mukherjee, 2019). The state is taking a shift to sustainable tourism in light of SDGs, aware visitors and the local community. Meghalaya offers pristine natural beauty and cultural richness, thus providing a strong base for initiations in sustainable tourism (Mukherjee, 2019).

The concept of sustainable tourism refers to tourism and ancillary activities that reduce the negative impacts on the environment and culture but maximize the economic benefits to host communities (UNWTO, 2015). The challenge remains to see that the increased trend in tourism does not lead towards degradation of the environment or erosion of culture (Nongbri, 2018). The motive to implement sustainable tourism in Meghalaya is not only to conserve them; its utilization in the creation of sustainable livelihood opportunities with active local residence involvement (Pandiya, 2024). The Living Root Bridges of Meghalaya, a UNESCO (2020) World Heritage tentative list site, is a prime example of sustainable tourism that involves local communities. The project, supported by the Meghalaya government and various NGOs, has provided direct and indirect employment to over 1,000 residents. Villages like Nongriat, where the famous double-decker root bridge is located, have seen a 40% increase in household income since the project began. Villages like Mawlynnong, often referred to as the "cleanest village in Asia," have embraced eco-tourism by developing community-run homestays. These homestays promote local culture and offer tourists a chance to experience the rural lifestyle, while also supporting sustainable income for locals. (Ministry of Tourism, 2021).

Critical reports, such as the "United Nations World Tourism Organization's Sustainable Development of Tourism in the Indian Himalayan Region," (UNWTO, 2018) have been drawing attention to why sustainable practices are vital for the preservation of balance in these delicate ecosystems. Other research has also indicated that sustainable tourism, if carried out properly, will play a very important role in the conservation of natural and cultural resources (Cole, 2006).

The sampled areas- Shillong, Cherrapunji, Mawlynnong, and Dawki, in Meghalaya hold immense potential for sustainable tourism in a variety of ways, such as eco-tourism, cultural tourism, adventure tourism, and community-based tourism (Mukherjee, 2019). The eco-tourism spots represent issues related to conservation and education, while cultural tourism represents the traditional, unique tribal customs and styles of life. On the other hand, adventure tourism is represented by trekking or caving for those seeking adventure, and community-based tourism allows visitors direct contact with the local community for authentic experiences (Ellis, 2000). Each of these forms of tourism has the potential to diversify income through new revenue sources for members of local communities. Diversification of income is very important in reducing economic vulnerability and improving resilience, especially in agriculture or other seasonal industry-based economies. In addition, according to research conducted by Ashley et al., (2009), tourism has great potential to contribute substantially to poverty alleviation through offering alternative livelihood opportunities. Income diversification, therefore, refers to the expansion of the base of income sources with the view to reducing dependence upon any single economic activity (Ellis, 2000). In this regard, sustainable tourism is one sure avenue to achieve this diversification for the communities in Meghalaya (Bhat & Mishra, 2021). In an area with developed tourism infrastructure and services, locals can engage in numerous other economic activities related to hospitality, guiding, handicrafts, and transportation (Ashley et al., 2000). Such options are likely to afford more stable and higher household incomes, which would eventually lead to a decrease in the level of poverty and hence improved living standards (Goodwin, 2008).

Sustainable tourism, as it applies to Meghalaya, embodies some core aspects of Social Exchange Theory (1976). The theory holds that social relationships are interdependent on the reciprocal exchange of resources between interacting parties. In this respect, tourism offers both economic and non-economic benefits to the locals in exchange for preserving the environment and culture. This mutualism plays a critical role in the success of sustainable tourism in regions like Meghalaya, whose economic growth de-

pends on tourism but whose cultural and ecological integrity they retain (UNWTO, 2015). In this context, sustainable tourism in Meghalaya becomes an important part of understanding the model through which empowered communities can use tourism for diversified and sustainable economic benefits.

Studies by Moscardo (2008) and Bordoloi (2020) conclude the importance of tourism in community development, but detailed empirical data from the state of Meghalaya, which is confronted with a strong biodiversity base and a rich cultural heritage can be considered economically backward, are scant. It represents a prospective research exercise to find out how sustainable tourism mechanisms can empower the locals, generate multiple sources of stable income. Existing literature largely addresses sustainable tourism's environmental and cultural preservation aspects but provides insufficient empirical evidence on its role in community empowerment and income diversification, particularly in rural and economically underdeveloped regions like Meghalaya.This paper attempts to analyze how sustainable tourism contributes towards the sources of diversifying local communities' income in the context of Meghalaya, with special emphasis on how the empowerment of the communities serves as a mediator in this process. It aims to provide empirical evidence for how initiatives for sustainable tourism could improve the resilience of economic development and income diversification.

2. Theoretical Background

2.1 Sustainable Tourism

Sustainable tourism seeks to reduce the adverse impacts of tourism while maximizing its benefits, which are normally derived from local economies and communities. According to the UNWTO (2018), it can be defined as tourism that "takes full account of its current and future economic, social, and environmental impacts, addressing the needs of visitors, the industry, the environment, and host communities" (p.1). Various research efforts in this area have noted that sustainability-oriented tourism offers several benefits, which relate to conservation, preservation of cultures, and economic development (Sharpley, 2000; Stronza & Gordillo, 2008; Koščak & O'Rourke 2023). Butler (1999) concluded that the successful implementation of sustainable tourism requires the presence of active participation and support from the local communities.

2.2 Income Diversification

Income diversification pertains to the process whereby a person or household expands sources of income other than the single primary source of income (Moscardo, 2008). This is particularly important in rural areas, where dependence on agriculture or a single industry can result in communities that are vulnerable to economic shock (Barrett et al., 2001). Sustainable tourism can supply this diversification of income as an immense source, lending alternative employment opportunities and stimulating local economies (Ashley et al., 2000). Mitchell and Ashley (2010); Telfer and Sharpley (2008) indicate that tourism-related activities can improve household incomes and decrease poverty in rural communities. Moreover, sustainable tourism enhances the economic resilience of rural areas, encouraging entrepreneurial ventures and ensuring more stable income streams (Su et al., 2020).

2.3 Community Empowerment

Community empowerment is a process whereby individuals and communities exert greater influence and control over their lives and environment by acting on issues they define as important (Zimmerman, 2000). Community empowerment simply means enhancing the capacity of local people so they can take charge and handle tourism development for themselves in regards to tourism development (Scheyvens, 1999). According to Timothy (2007), the empowered communities are likely to support and engage in the application of sustainable tourism practices, leading to better outcomes for residents and visitors. Research shows that community empowerment is positively correlated with social cohesion, participation in decision-making, and improvement of life quality as reported in Boley and McGehee (2014).

2.4 Sustainable Tourism and Income Diversification

Various studies have tried to link sustainable tourism with income diversification. For instance, Wang et al. (2019) established that sustainable tourism development was an effective means of improving income diversification by creating other new economic opportunities and reducing what the people conventionally relied on for their livelihoods. On the other hand, Tao and Wall (2009) indicated that sustainable tourism ventures in rural areas can appreciably enhance household incomes and improve the level of economic stability. However, the degree to which sustainable tourism can diversify incomes is channelled by factors such as the degree of community involvement and the available supportive infrastructure (Tosun, 2000). Based on the arguments presented above, the first research hypothesis is proposed as:

H1. There is a significant direct positive relationship between sustainable tourism and income diversification.

2.5 Sustainable Tourism and Community Empowerment

Community empowerment forms a sine qua non for any sustainable tourism venture to be successful. According to Scheyvens (1999), empowered communities may be better placed to manage tourism resources sustainably for the wide sharing of benefits accruing from tourism. Cole (2006) underscores the requirement for involving local communities in tourism planning and decision-making processes to meet sustainable ends. Moreover, it has been recorded that empowered communities are likely to practice sustainable activities and fight against activities likely to negatively affect their environment or culture (Murphy, 1985; Pretty, 1995; Pandey & Kumar, 2019). Based on the cited reviews, it is hypothesized:

H2. There is a significant direct positive relationship between sustainable tourism and community empowerment.

2.6 Community Empowerment and Income Diversification

Recent studies have examined the role of community empowerment for income diversification. Lee and Jan (2019) establish that community empowerment significantly enhances the positive effect that sustainable tourism has on income diversification. Besides, empowered communities can seize opportunities availed by tourism better, hence increasing economic benefits (Moscardo, 2008). Empowerment will allow communities to dictate favourable terms with investors, control impacts effectively, and ensure advantage sharing is done equitably (Cole, 2006). Accordingly, Ashley et al. (2001) regarding maximizing the economic benefits of tourism, policies and programs geared towards promoting sustainable tourism have to pay equal attention to empowering local communities. Hence, the following is hypothesized:

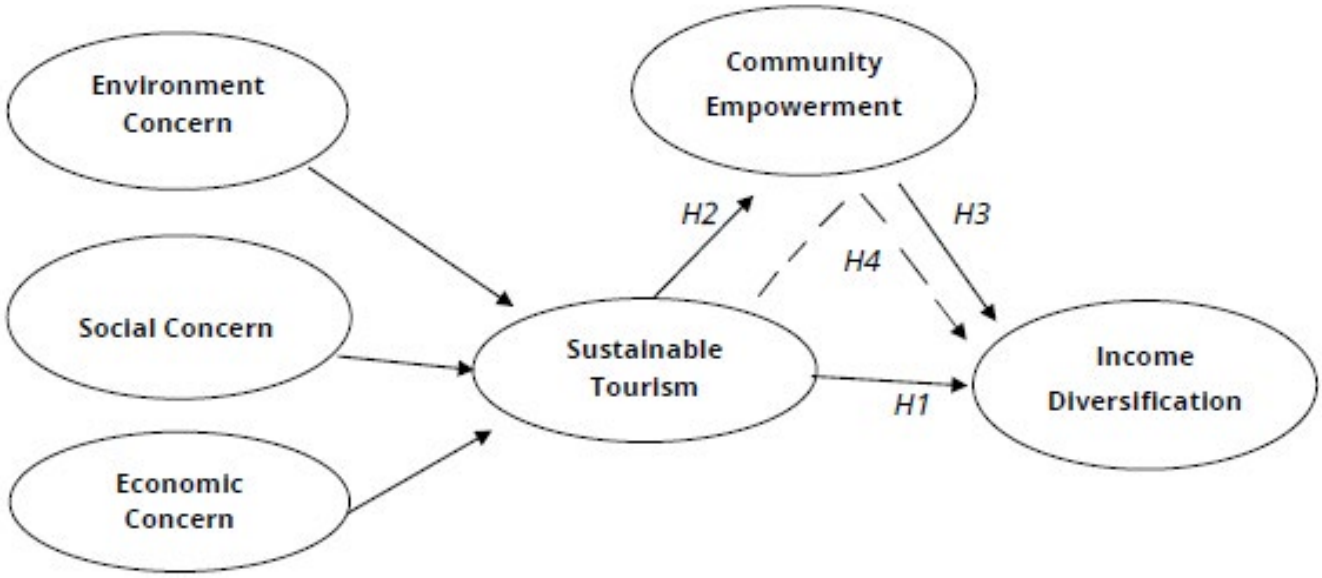
H3. There is a significant direct positive relationship between community empowerment and income diversification.

2.7 Mediating Role of Community Empowerment on Income Diversification

Concerning income generation, sustainable tourism brings in many opportunities, ranging from hospitality/guiding service operations to local crafts and agricultural product sectors (Briedenhann & Wickens, 2004). Spenceley (2008) in South Africa reported that sustainable tourism initiatives offer considerable improvements in enhancing the livable incomes of local people through job creation and running businesses from which the accruals derive. Community empowerment, therefore, serves to increase the benefits gained from sustainable tourism. According to Moscardo (2008), empowered communities can maximize their opportunities for income diversification out of tourism more sufficiently. The cited review helps frame the following hypothesis:

H4. There is a significant mediating role of community empowerment between sustainable tourism and income diversification.

Figure 1. Conceptual Framework



Source: Own Elaboration

3. Methods and Procedure

3.1 Methods

To attain the goal of the study, an empirical investigation based on descriptive cum diagnostics research design was conducted in Meghalaya, India. A sample of 425 community members was drawn based on a multi-stage cluster sampling technique during February-April, 2024, and was approached in person with the assistance of an enumerator. The sampling technique is justified on the ground that the research focuses on local communities, which may be spread across different geographical areas. Multi-stage cluster sampling allows for efficient data collection from dispersed populations (Malhotra & Dash, 2016). In the first stage, large clusters such as regions or districts can be selected. In the subsequent stages, smaller clusters, such as villages or households, can be chosen, making it practical for reaching diverse areas. Based on the major tourist activities in Meghalaya, the principal clusters of Shillong, Cherrapunji, Mawlynnong, and Dawki were selected at the first stage. From the discovered major clusters, smaller sub-clusters were formed, and the respondents from each sub-cluster were selected at random for primary data collection. All individuals in the sub-cluster were assigned unique identification numbers. A lottery method was used to select participants from the list.

3.2 Instrument Development

The study used an adapted scale where the standard statements were modified in the context of tourism to achieve the objectives of the study. Sustainable tourism was measured using three dimensions of sustainability: environmental concern, economic concern, and social concern (Cárdenas et al., 2015; Mehraj et al., 2015; Basak et al., 2021). Community empowerment was a unidimensional construct and was measured through five observed variables, referring to previous research by Satarat (2010). Five observed variables were used for measuring income diversification, referring to previous studies of Kim Kong et al., 2023; Brel et al., 2023. The observed variables were based on a five-point Likert scale where 1 represented strongly disagree and 5 represented strongly agree. The content validity of the instrument was assessed through expert opinion and a pilot study using a sample of 30 respondents.

3.3 Sample Description

425 community members were contacted to get the information. Ten respondents' responses were eliminated during the data cleaning and editing stage, while 415 respondents' responses were deemed suitable for data analysis. 230 (55%) of the 415 responses that were gathered were from women, and 185 (45%) were from men. Sixty-two percent of the respondents had incomes below ₹ 2,00,000 (€ 2257.90). Of those surveyed, 104 (or 25%) fall between ₹ 2,00,000 (€ 2257.90) and ₹ 5,00,000 (€ 5644.75). The remaining 249 respondents had incomes exceeding ₹ 5,000,000 (€ 5644.75). Agriculture accounted for 124% (30%) of respondents' principal source of income. 38% (158) of respondents said they were mostly engaged in tourism-related activities, while 25% (104) of respondents said their main source of income was from handicrafts. 7% (29) of respondents fall in the other category.

3.4 Statistical Tools Used

The Structural Equation Modeling (SEM) technique was employed to establish the relationship of sustainable tourism with income diversification with the mediating role of community empowerment. While measuring a sequence of dependent variables, causal models, and equations concurrently, SEM is an appropriate statistical tool for data analysis (Chin, 1998; Cohen et al., 2018; Hair et al., 2019, Prakash et al., 2022). CB-SEM and PLS-SEM are the major two approaches to SEM (Hair et al., 2019). A higher-order PLS-SEM approach using SmartPLS 4 was applied in this research. Due to the lack of arresting distributional assumptions (Hair et al., 2019), PLS-SEM has recently attracted the attention of academics, particularly those working in business research sectors (Sarstedt et al., 2019). There is a shift witnessed in PLS-SEM from lower-order constructs or small and focused models to higher-order constructs and advanced model designs (Ringle et al., 2019; Sharma et al., 2021). Gaining popularity of higher order constructs over lower order is because of numerous applications of higher order in terms of reduced path model relationships that are easier to comprehend, making path models more parsimonious (Edwards, 2001; Johnson et al., 2011; Sarstedt et al., 2019; Yadav et al., 2023). The issue of common method variance (CMV) bias in the survey samples is a major concern that arises when data are acquired from a single source (Podsakoff et al., 2003). A thorough collinearity assessment test was conducted using Smart PLS, a method that is efficient and concise according to Kock (2015). The VIF values of all the constructs were below the predetermined threshold of five (Hair et al. 2017) (Table 5), indicating that common method bias is not a significant concern in this study.

4. Analysis and Results

4.1 Measurement Model Assessment

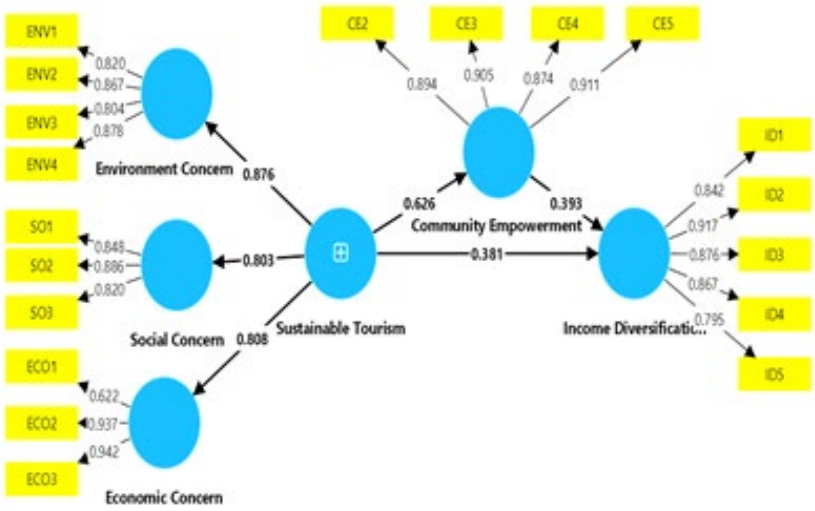
The desired model in the current research was reflective - reflective higher-order model (Figure 2). In the case of higher-order constructs, firstly the reliability and validity of lower-order constructs should be assessed, followed by higher-order constructs (Sarstedt et al., 2019). Reflective lower-order constructs were evaluated on the grounds of indicator loadings, reliability, convergent validity, and discriminant validity using the PLS algorithm. The recommended threshold value for indicator loading is 0.5 (Hulland, 1999; Truong & McColl, 2011) while some researches indicate that loading over 0.7 is appropriate for indicator reliability (Hair et al., 2021). Indicator CE1 was eliminated from the intended model due to inadequate indicator loading (less than 0.5). The loadings of the other eighteen indicators, except ECO1, as indicated in Table 1, ranged from 0.795 to 0.886 and were deemed suitable. The loading of indicator ECO1 was reported 0.662, between 0.6 and 0.7, still acceptable as the model was found reliable and valid overall.

Table 1. Lower Order Constructs and Standardized Indicator Loadings

Construct	Item	Description	Indicator loadings
Environment Concern	ENV1	I am concerned about the environmental impact of tourism in my community.	0.820
	ENV2	I believe that sustainable tourism practices are essential to preserving our local environment.	0.867
	ENV3	I strongly support tourism initiatives aimed at environmental protection.	0.804
	ENV4	Environmental sustainability in our community should be on top in tourism planning.	0.878
Social Concern	SO1	I care about the social impacts of tourism on our community.	0.848
	SO2	Tourism should benefit all members of our community.	0.886
	SO3	I do believe that tourism may also be a development tool for enhancing social cohesion within our community.	0.820
Economic Concern	ECO1	The economic development of our community is a necessity for tourism.	0.622
	ECO2	Sustainable tourism provides a significant economic benefit for the development of our community.	0.937
	ECO3	I am in favor of tourism initiatives that are run about the economic development of our community.	0.942
Community Empowerment	CE1	I feel empowered and capable of engaging in all tourism-related decision-making processes within our community.	Removed
	CE2	Our community is in control of how tourism is developed and managed locally.	0.894
	CE3	I am confident that our community can develop tourism in a sustainable manner.	0.905
	CE4	Community members are actively involved in tourism-related planning and development.	0.874
	CE5	Training and education programs related to tourism are accessible to all community members.	0.911
Income Diversification	ID1	Tourism has created new income for me/my family.	0.842
	ID2	My household's income is now more stable compared to before, because of tourism.	0.917
	ID3	I have diversified my income source with tourism-related jobs or businesses.	0.876
	ID4	Tourism has reduced our dependence on traditional livelihoods.	0.867
	ID5	My economic situation has improved due to the tourism industry.	0.795

Source: Primary Data (PLS-SEM output)

Figure 2. Sustainable Tourism and Income Diversification Model



Source: PLS-SEM Output

After evaluating the lower-order measurement model based on indicator loadings, the desired model is further evaluated based on reliability and validity criteria. Cronbach's Alpha (*α*), Roh_A, and composite reliability (CR) criteria were used for evaluating the reliability of the constructs. Measures of reliability that are commonly employed include Alpha (α), Roh_A, and Composite reliability (CR), with values better than 0.7 being considered appropriate (Bland & Altman, 1997; Hair et al., 2017). Contrary, Diamantopoulos et al. (2012) argued that Alpha (*α*) and Composite reliability (CR) value greater than 0.95 are considered problematic as they show the redundancy in data. All the lower-order constructs fulfilled the required criteria of reliability (table 2) and proved internal consistency. The convergent validity of the lower-order constructs was evaluated based on Average Variance Extracted (AVE) criteria with a threshold value of 0.50 (Hair et al., 2019). All the constructs fulfilled the condition of convergent validity, as their value ranges from 0.710 to 0.803 (Table 2), which was above the threshold limit.

Table 2. Reliability and Convergent Validity Assessment of Lower Order Constructs

Constructs	Cronbach's alpha	Roh_A	Composite reliability	Average Variance Extracted (AVE)
Community Empowerment	0.918	0.919	0.942	0.803
Income Diversification	0.911	0.914	0.934	0.740
Environment Concern	0.864	0.868	0.907	0.710
Social Concern	0.810	0.813	0.888	0.726
Economic Concern	0.793	0.873	0.881	0.718

Source: Primary Data (PLS-SEM output)

The discriminant validity of the constructs was further evaluated based on Heterotrait-Monotrait Ratio (HTMT) criteria (Table 3) and Fornell-Larcker criteria (Table 4). Heterotrait-Monotrait Ratio (HTMT) is a precise measure of discriminant validity with a cut-off limit of 0.85 (Henseler et al., 2015). On the other hand, the Fornell-Larcker Criteria measures the discriminant validity of the constructs based on variance. As per the recommendation of Fornell & Cha (1994), the variance of the latent variable for its indicators should be higher than that of other latent variables. Results of the study confirmed that all the lower-order constructs fulfilled the required HTMT criteria (Table 3) and Fornell-Larcker criteria (Table 4) and proved the discriminant validity of the model.

Table 3. Heterotrait-Monotrait Ratio (HTMT) Criteria for Discriminant Validity of Lower Order Constructs

Constructs	Community Empowerment	Environment Concern	Income Diversification	Social Concern	Economic Concern
Community Empowerment					
Environment Concern	0.551				
Income Diversification	0.689	0.691			
Social Concern	0.544	0.652	0.479		
Economic Concern	0.669	0.630	0.562	0.635	

Source: Primary Data (PLS-SEM output)

Table 4. Fornell-Larcker Criteria for Discriminant Validity of Lower Order Constructs

Constructs	Community Empowerment	Environment Concern	Income Diversification	Social Concern	Economic Concern
Community Empowerment	0.896				
Environment Concern	0.493	0.843			
Income Diversification	0.632	0.615	0.860		
Social Concern	0.471	0.546	0.413	0.852	
Economic Concern	0.606	0.541	0.500	0.521	0.847

Source: Primary Data (PLS-SEM Output)

The lower-order constructs i.e. outer model was further tested based on the Variance Inflation Factor (VIF) after successful attainment of reliability and validity (Table 5). Variance Inflation Factor (VIF) is a measure to assess the lateral-multi-collinearity effect among variables. Hair et al. (2017) recommended that a VIF value less than three or near three is considered excellent, three to five is considered acceptable, and greater than five shows the multi-collinearity issue among latent variables. The results of the study supported that there was no lateral multi-collinearity issue among lower-order latent constructs.

Table 5. Collinearity statistics (VIF) of the Outer Model

Indicators	VIF	Indicators	VIF
ENV1	1.915	CE2	2.887
ENV2	2.269	CE3	4.020
ENV3	1.806	CE4	2.627
ENV4	2.414	CE5	4.092
ECO1	1.221	ID1	2.586
ECO2	4.429	ID2	4.144
ECO3	4.310	ID3	3.061
SO1	1.829	ID4	2.793
SO2	2.283	ID5	1.908
SO3	1.807		

Source: Primary Data (PLS-SEM output)

In this research, PLS-SEM was run for higher-order constructs. As shown in figure 3, three lower-order constructs—environmental, social, and economic—were combined to form the higher-order construct of sustainable tourism. To assess the validity and dependability of higher-order constructs, a higher-order construct of the reflexive-reflexive type was created.

For evaluating the quality of the higher-order construct, again PLS algorithm was run, and statistical results found the higher-order measurement model reliability (table 6) with no issues in terms of convergent validity (table 6) and discriminant validity (Tables 7 and 8).

Table 6. Reliability and Validity of Higher Order Constructs

Constructs	Cronbach's alpha	Rho_A	Composite Reliability	Average variance extracted (AVE)
Community Empowerment	0.918	0.919	0.942	0.803
Income Diversification	0.911	0.914	0.934	0.740
Sustainable Tourism	0.776	0.785	0.869	0.689

Source: Primary data (PLS-SEM)

Table 7. Heterotrait-Monotrait Ratio (HTMT) Criteria for Discriminant Validity of Higher Order Constructs

Constructs	Community Empowerment	Income Diversification	Sustainable Tourism
Community Empowerment			
Income Diversification	0.689		
Sustainable Tourism	0.745	0.729	

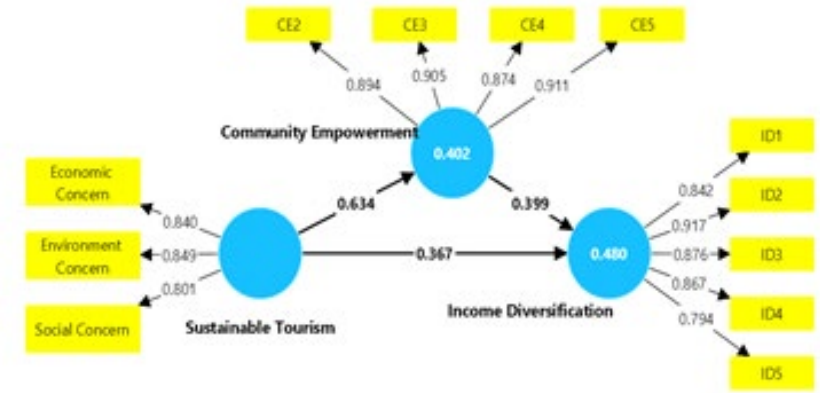
Source: Primary Data

Table 8. Fornell-Larcker Criteria for Discriminant Validity of Higher Order Constructs

Constructs	Community Empowerment	Income Diversification	Sustainable Tourism
Community Empowerment	0.896		
Income Diversification	0.632	0.860	
Sustainable Tourism	0.634	0.620	0.830

Source: Primary Data

Figure 3. Sustainable Tourism and Income Diversification Model with Higher Order Constructs



Source: PLS-SEM Output

5. Structural Model

Both the lower- order and higher-order measurement models were found statistically fit, which further offered an opportunity to test hypothesized relationships among latent variables. For testing hypothesized relationships, a structure model was developed and run for bootstrapping considering a sub-sample of 2000 with a confidence interval of 95%. The structure model was evaluated on the basis of standard criteria of coefficient of determination (R^2), strength of the effect (f^2), statistical significance, and relevance of the path coefficients.

The coefficient of determination (R^2) is an indicator of measuring the explanatory power of the model. Depending on the R^2 values of 0.25, 0.50, and 0.75, respectively, the model is considered weak, moderate, and substantial (Henseler et al., 2009). R^2 for income diversification was found to be 0.480, showing that community empowerment and sustainable tourism explained 48% variance of income diversification and fell in the moderate category. R^2 for community empowerment was 0.402 (moderate) depicting that 40.2% of the variance of community empowerment was explained by sustainable tourism. The value of adjusted R^2 was reported further for income diversification (0.478) and community empowerment (0.4000).

The strength of effect sizes (f^2) was reported for income diversification and community empowerment. The value of f^2 used to measure the strength of the model as small (0.02), medium (0.15), and large (0.35) (Henseler et al., 2015). Results of the study showed that sustainable tourism had a large effect on community empowerment (f^2 = 0.671; p= 0.00) followed by community empowerment on income diversification (f^2 = 0.184; p = 0.001) and Sustainable tourism on income diversification (f^2 = 0.155; p= 0.000). The model was further evaluated based on model fit indicators. Standardized root mean square residual (SRMR) value of 0.064 was discovered, falling within the acceptable range that Henseler et al. (2016) recommended. The intended model's chi-square statistic was 521.355. Unlike CB-SEM, PLS-SEM does not generate multiple model fit indications (Hair et al., 2019).

After evaluating the model based on R^2 and f^2, the hypothesised relationship among variables was tested using path coefficients. Results of the study (table 9) further showed that sustainable tourism had a significant direct and positive relationship with income diversification (β = 0.367; t= 7.950; p = 0.000). Thus, hypothesis H1 was supported hereby. The direct relationship between sustainable tourism and community empowerment (β = 0.634; t= 21.233; p = 0.000) and community empowerment on income diversification (β = 0.3999; t= 8.139; p = 0.000) were also found significant. As a result, alternate hypotheses H2 and H3 were supported under this research.

The mediating role of community empowerment between sustainable tourism and income diversification was found to be significant (β = 0.253; t= 7.323; p = 0.000). Results provided an opportunity for researchers to support alternate hypothesis H4 hereby. The total effect of sustainable tourism on income diversification (β = 0.620; t= 20.051; p = 0.000) was found to be significant (table 9). The total effect of sustainable tourism on income diversification was 0.620, out of which 0.367 effect was direct and the remaining 0.253 effect was generated through the mediating effect of community empowerment.

Table 9. Hypothesis Testing

Hypothesis	Relationship	Path coefficients	*t* Statistics	*p* Values	Remarks
H1	Sustainable Tourism -> Income Diversification	0.367	7.950	0.000	Supported
H2	Sustainable Tourism -> Community Empowerment	0.634	21.233	0.000	Supported
H3	Community Empowerment -> Income Diversification	0.399	8.139	0.000	Supported
H4	Sustainable Tourism -> Community Empowerment -> Income Diversification (Mediating effect)	0.253	7.323	0.000	Supported

Total effect
Sustainable Tourism -> Income Diversification (through mediating effect of Community Empowerment)
(β = 0.620; t= 20.051; p = 0.000)

Note: Community empowerment (R^2=0.402; Adj. R^2 = 0.4000); Income diversification (R^2 = 0.478; Adj. R^2 = 0.468); Sustainable tourism -> Community empowerment (f^2 = 0.671; p= 0.00); Community empowerment -> Income diversification (f^2 = 0.184; p= 0.001); Sustainable tourism -> Income diversification (f^2 = 0.155; p= 0.000).

6. Conclusion

This research study therefore gives key findings towards the insight into what role sustainable tourism may play in income diversification within Meghalaya, through a mediating effect of community empowerment serving as a key component. The results thus show a positive link between sustainable tourism and income diversification to support the findings of Sharpley and Telfer (2015) that sustainable tourism can improve the economic benefits of the local communities. This further underlines the ability of tourism to

reduce dependence on traditional livelihoods and, hence, expand other sources of income among locals.

The research establishes a positive relationship between sustainable tourism and community empowerment and strengthens the earlier reports by Matarrita-Cascante et al. (2010), who believe that the prevalence of local participation and influence over tourism initiatives is important. Community empowerment not only creates engagement but also develops a feeling of ownership and responsibility to maintain sustainable tourism ventures. This aspect makes sustainable tourism projects successful in the long run.

Furthermore, this research attempts to validate the argument that empowered communities are more likely to engage in diversified economic activities, a finding which finds a resonance with other similar works done by Beeton (2006) and Nwosu (2016). It was found during the research that mediation between income diversification and sustainable tourism happens through community empowerment. Only through empowerment can the economic benefits of sustainable tourism then be fully realized for local residents, equipping them with the know-how and the capacity to maximize the potential of tourism economically even as these are placed on a sustainable basis. In this respect, therefore, there seems to be an intrinsic link between sustainable tourism, community empowerment, and economic diversification pointing at empowerment as the key to unlocking wider benefits for local communities.

6.1 Implications of the Study

Meghalaya is well known for its natural and untouched beauty. This state has enormous potential for sustainable tourism. Sustainable tourism is a way to support economic development while preserving regional culture and environment for long-term benefits. The current study established a positive relationship between sustainable tourism and diversifying income sources via empowering local communities. The results of the study offer significant theoretical, societal, and practical implications for stakeholders. This study diverts academicians' and scholars' focus from investigating the current landscape of sustainable tourism and its prospects. Concerning sustainable tourism and income diversification, this study adds to the body of literature already in existence and provides insightful information.

Based on empirical findings, this study offers practical implications for locals, regulatory authorities and society members. The study's findings align with Social Exchange Theory (SET) by demonstrating that empowering local communities fosters a sense of ownership and enhances their willingness to support sustainable tourism practices. For local communities, the findings highlight the importance of community empowerment as a catalyst for income diversification through sustainable tourism. By participating in tourism-related activities, local communities can enhance their economic resilience, improve their livelihoods, and contribute to attaining sustainable development goals. The study provides valuable insights to regulatory authorities to develop environmentally sound and culturally sensitive policies and frameworks that support sustainable tourism practices with the support of local communities. Sustainable tourism can be seen as a significant income-generating source for the local population and authorities can organize training programs related to sustainable tourism for local communities to empower them. This study highlighted the value of sustainable tourism for the development of local economies. This study appeals to society members and tourists to choose eco-friendly tourism options and learn to respect local cultures. Also, they should contribute to the well-being of host communities through participating in sustainable tourism.

6.2 Limitations and Future Research Directions

In the end, there are some limitations to the study too. The current investigation is confined to Meghalaya only, which creates a hurdle to generalize the results of the study in other regions with different socio-cultural backgrounds.

Future research should address these limitations by expanding the scope of the research. Further research can be done across different cultures and regions to increase the generalizability of the results as well as to gain a better understanding of the degree of association between sustainable tourism and income diversification. Future research can be conducted by considering some other mediating and moderating variables like local support, government, and infrastructural support, etc. Longitudinal studies would also be valuable in tracking the long-term effects of sustainable tourism initiatives on community

empowerment and economic outcomes. The role of digital platforms in promoting sustainable tourism and diversifying income sources can be studied in the future.

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