

COMMUNITY-BASED ECOTOURISM IN PROTECTED AREAS TOWARDS INCLUSIVE DEVELOPMENT: AN EVIDENCE OF BHITARKANIKA WILDLIFE SANCTUARY OF INDIA

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ABSTRACT

Community-based ecotourism (CBET) is one of the tourism segments used to protect the natural environment by the host communities in many countries; however, empirical studies involving active involvement, understanding, and level of satisfaction of the community and tourists in various ecotourism projects are still scarce in the context of developing countries. Thus, this study empirically examines the potential of community-based ecotourism in and around the Bhitarkanika Wildlife Sanctuary (BKWS) from the perspectives of the community and tourists in Odisha, India. Primary data were collected through a structured questionnaire prepared based on an expert view. In this study, both descriptive and exploratory research designs were considered the most appropriate. A total of 470 respondents participated in this study. Cronbach's α was used to ensure reliability and validity of the instrument used for the survey. Data analysis was performed using SPSS 23.0. Collected data were tested for outliers using stem and leaf chart analysis, and all data were normally distributed for further analysis. Finally, a clear picture of the study was drawn based on the analysis and interpretation. The ANOVA (F-test) results demonstrated that community-based ecotourism was quite significant for inclusive development and conservation practices, as supported by all five statistically significant explanatory factors. The one-way ANOVA test for Hypothesis 1 found that community-based eco-tourism can be leveraged as a unique selling point (USP) to boost tourism in Odisha. Furthermore, one-way ANOVA was used to test the second hypothesis, which demonstrated that community-based ecotourism raises awareness within the local population about the importance of protecting Odisha's tourism resources. Similarly, the t-test results demonstrated that tourists and communities do not differ significantly in terms of satisfaction with event settings, art and craft, performance, infrastructure, guide services, and information. The findings of the study revealed that CBET was a major tool for promoting Odisha Tourism and creating awareness among the local community for the conservation of protected areas to embrace sustainability. Practical implications have been suggested for policy improvement in Odisha Tourism.

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1. INTRODUCTION

Tourism has grown steadily over the previous years, becoming one of the world's greatest economic sectors. Tourism generates employment, foreign exchange revenues, investment, economic growth, and helps to alleviate poverty in many developing nations (UNWTO, 2020; WTTC, 2021). Tourism is an important development agent since it boosts the local economy while capitalizing on destination resources such as the natural environment, climate, cultural legacy, and people resources, all of which developing nations have a competitive advantage (UNWTO, 2020). As globalization continues, several fragile protected areas in the world have become popular tourist destinations, whereas others remain less known and undeveloped (Dologlou & Katsoni, 2016). However, the accelerating expansion of mass tourism in vicinity of the protected areas is also stressful and unfavourable (Su et al., 2016; Tarpey, 2018; Wilson & Tisdell, 2015). Protected areas are vulnerable to the immense tourist influx causing serious ecological imbalance, dwindling of natural resources, habitat and erosion of cultural heritage (Job et al., 2017; Lew & Cheer, 2017). Nonetheless, Protected areas are struggling with ecological and environmental crises in many parts of the world (Bergstrom & Randall, 2016; Melnykovich et al., 2018), especially in developing nations. Thus, ecotourism is a holistic practice in protected areas to tackle this global phenomenon. Community-based ecotourism plays a crucial role in addressing climate change and preserving socio-cultural life of local community. Hence, the interplay of CBET is necessary to understand the possible tensions and synergies between economic empowerment and environmental conservation within the particular socio-cultural and environmental setting by examining the nuances of this complex phenomenon.

Protected areas (PAs) are frequently used as the cornerstone for nature-based tourism because they allow visitors to enjoy and learn about the natural world while simultaneously working to conserve and safeguard it. The development of protected areas is considered a successful biodiversity protection technique in developing countries (Wang, 2019). Protected areas (PAs) address the two most central themes of biodiversity preservation and community livelihood improvement (Stone & Nyaupane, 2017). Community-based Ecotourism (CBET) is an increasingly popular approach for ecosystem conservation across developing countries (Kibria et al., 2020). Its efficacy has been understood as an effective strategy for mitigating a wide range of socio-ecological challenges and achieving higher sustainability in the periphery of protected areas (PA) (Anup et al. 2015; Stronza & Gordillo 2008). CBET provides several benefits (Gan, 2020). The benefits offered by CBET ultimately enhance local community well-being by eradicating poverty and conflict (Agyeman et al., 2019). Community-based ecotourism is becoming more and more prominent as the world becomes more conscious of sustainability. It provides a means of safeguarding delicate ecosystems while also giving local people economic power. Community-Based Eco-tourism programs are

environmentally sensitive, with the goal of ensuring that residents of local communities have major control over the activities that take place and benefit from them. A community-based ecotourism approach prioritizes both human well-being and resource conservation.

This current form of tourism is gradually acquiring tourists' appeal due to the active participation of the local community (Lucchetti & Font, 2013). CBET sponsors community events to develop interactions between residents and visitors. Tourists are frequently persuaded to gain knowledge on local tradition, culture, lifestyles and cultural environment. In sum, the overarching objective of community-based ecotourism (CBET) is to improve economic, socio-cultural, environmental, and life satisfaction conditions, which encourages community members to support CBET development (Lee & Jan, 2019). Additionally, community-based ecotourism is a prominent example of how environmental preservation and economic empowerment intersect in the complex tapestry of local community and their livelihood. In order to better understand the dynamics of this symbiotic relationship, the CBET will investigate the ways in which community-led initiatives might act as catalysts for the preservation of the environment and the promotion of economic empowerment in rural areas.

Participatory and collaborative approaches are strategic tools for successful ventures in community-based ecotourism. The promotion of CBET within and around protected areas (PA) strongly advocates local community participation. Local community participation in ecotourism development is becoming increasingly important to attain ecotourism sustainability (Cheng et al., 2017; de Lima & King, 2017; Zorpas & Pedreo, 2018). Mtapuri and Giampiccoli (2016) advocate the funding role of International bodies, such as the World Bank and the United Nations leveraging the local involvements in CBET. Hence, CBET is promoted in developing nations as a win-win strategy for achieving long-term ecological, economic, and social goals for both protected areas and the local community (Dodds & Galaski, 2018). Furthermore, collaborative approaches are crucial from a developmental standpoint because they foster community engagement and empowerment (Andrade & Rhodes, 2012; Hiwasaki, 2006). Nonetheless, successful CBET implementation mandates community empowerment (Goodwin & Santilli, 2009; Lapeyre, 2010; Ruiz-Ballesteros & Cáceres-Feria, 2016) in tourism planning, implementation, management, and performance (Idziak et al., 2015; Murphy, 2013;).

This present study is highly needed in terms of protected area conservation and preservation of ecological balance to eradicate the myriad of environmental problems and economic inequality. The study needs to contextualize environmental preservation and significant economic gains for locals, with ecotourism acting as a spur to protect natural resources and strengthen local economies. Additionally, this study stresses how community-based ecotourism has the power to change the lives of local communities while also advancing economic development and environmental preservation. Nonetheless, the insights from Bhitarkanika Wildlife Sanctuary add to the broader discussion on inclusive development by emphasizing the necessity of community involvement and flexible strategies in fostering a harmonious and mutually beneficial interaction between communities, the environment, and ecotourism. However, many protected areas poorly implement the local community's participation in conservation activities and benefit sharing. The contribution of community-based ecotourism to protected areas conservation and inclusive development is poorly understood in our country as a whole, particularly in the Bhitarkanika wildlife in Odisha, therefore to breach these gaps this study was initiated.

Thus, this study explores the potential of community-based ecotourism (CBET) in protected areas and its contribution to inclusive development through the active participation of local communities and tourists. Furthermore, the following three objectives were developed to meet the study's goal: 1) to examine the potential of community-based ecotourism in Odisha, 2) to measure the satisfaction level of the local community and tourists through their active participation in CBET, and 3) to understand the role of community-based ecotourism in creating awareness among local communities for the conservation of protected areas.

This study advances the current body of research by shedding light on the potential of community-based eco-tourism and the active participation of local communities. Considering the above-mentioned objectives, the following hypotheses were formulated

- a) Hypothesis 1 (H01): Community based ecotourism (CBET) be used as a unique selling point (USP) for promoting tourism in Odisha
- b) Hypothesis 2 (H02): Community-based ecotourism (CBET) creates awareness among local communities to protect tourism resources in Odisha.
- c) Hypothesis 3 (H03): Tourists and local communities are significantly different in their levels of satisfaction with community-based ecotourism (sites, art and craft, performance, infrastructure, guide services, and information).

2. THEORETICAL PERSPECTIVES

2.1. Stakeholder Theory

In order to make the theoretical underpinning more robust and resilient towards community based eco tourism in protected areas, we used the Stakeholder Theory as a theoretical foundation for our research. This idea initially offered by Freeman in 1984, claims that organizations are made up of numerous stakeholders, each with their own interests and objectives. These stakeholders include the local community, governmental entities, non-governmental organizations, and the corporate sector in the context of CBET (Rahman et al., 2022) Every stakeholder has a part to play in the administration and successful execution of CBET projects. The Stakeholder Theory allows us to better comprehend the dynamics between various stakeholders, as well as their roles and difficulties. As a result, this theoretical framework provides a more complete understanding of the roles of associated stakeholders in achieving inclusive development (Wondirad et al., 2020)

2.2. Collaboration Theory

According to collaboration theory, when important stakeholders engage really and comprehensively in problem identification, direction setting, structuring, and endorsement, decisions have a high chance of being implemented and succeeding (Gray, 1989). Collaboration theory is used to assess the efficacy of stakeholder collaboration frameworks. Collaborative efforts are considered effective (1) when fair and lasting agreements are reached and whether agreed issues are implemented (2) when collaboration requires joint decision-making among participating stakeholders in the tourism domain to resolve planning and development issues and (3) if collaborative efforts are sufficiently inclusive and enhance collective learning that leads to consensus building (Bramwell & Sharman, 1999)

Protected areas (PAs) are crucial because they provide myriad direct and indirect contributions to society, including ecological, socioeconomic, cultural, and institutional benefits (Dudley, 2008; Eagles, 2002). The IUCN governs protected areas (Leung et al., 2018), which are distinctive geographical locations/spaces that are recognized, designated, and regulated by statutory or other effective procedures in order to achieve continual safeguarding of nature and related cultural and ecological advantages. Protected areas were established with the intention of conserving endangered species until the second part of the 20th century. Subsequently, there was a paradigm shift in the transformation of protected areas for the benefit and well-being of the community (Torri, 2011). Tourism eventually became a driver of socioeconomic development in the protected regions. Tourism resources are leveraged by the contributions of parks, wildlife sanctuaries, and biosphere reserves (Eagles & McCool, 2002; Spenceley, 2015). Protected areas have recently become effective tools for linking biodiversity conservation and community livelihood improvement. However, in many parts of the world, protected areas struggle to survive and are encountering environmental crises (Bergstrom & Randall, 2016; Melnykovich et al., 2018). The notion of community-based ecotourism (CBET) has evolved to address these global phenomena.

Protected areas are utilized as a prominent strategy to manage biodiversity protection, even though their support to enhance employment opportunities and inclusive development is still debatable (Mascia et al., 2010; Mearns & Lukhele, 2015; Stone & Nyaupane, 2014). Local community involvement is crucial for accomplishing the sustainability and inclusive development of protected areas (Cheng et al., 2017; de Lima & King, 2017; Zorpas & Pedreo, 2018). The significance of CBET is evidenced by various international agencies, such as the World Bank, and UNWTO (Mtapuri & Giampiccoli, 2016). The nexus between the local community and protected areas can be perceived as symbiotic, leading to the local community being the custodian of the protected areas' resources (Aguiaga et al., 2018; Boley & Green, 2016; Ndivo & Cantoni, 2016). Priming and valuing the livelihoods of the local community within and around protected areas is a win-win situation for CBET (Kiss, 2004). Currently, the development of peripheries in protected areas is accomplished through community-based ecotourism (Bushell et al., 2007). Community-based ecotourism (CBET) has unearthed a myriad of economic, sociocultural, and environmental benefits for developed and developing nations over the past two decades (Kunjuraman 2020). According to Gan (2020), community-based ecotourism (CBET) is a subset of alternative tourism that serves the interests of the local residents.

Previous researchers have evidenced the contributions of CBET to community development, and ongoing empirical research has been conducted (Kunjuraman 2020). Additionally, other scholarly works by Okazaki (2008), Jones (2005), Manyara and Jones (2007), and Burgos and Mertens (2017) addressed that CBET is an alternative strategy to improve the inclusive growth in the periphery of protected areas. CBET encompasses a multitude of collaborative and participatory activities for safeguarding of the protected areas, as well as community development (Kibria et al., 2021). The empowerment of the local community is essential for the conservation of protected areas and is responsible for carrying out numerous tourism activities. CBET has unique tourism activities aimed at empowering and enhancing the quality of the local community. CBET stresses that the livelihood of the local community is the cornerstone of inclusive development. However, significant barriers are key bottlenecks, such as a lack of active participation and decision-making, creating sluggish development around protected areas (Gan, 2020). Thus the efficacy of CBET ventures (Yang, 2019) relies on strong relationships between key stakeholders in the periphery of protected areas

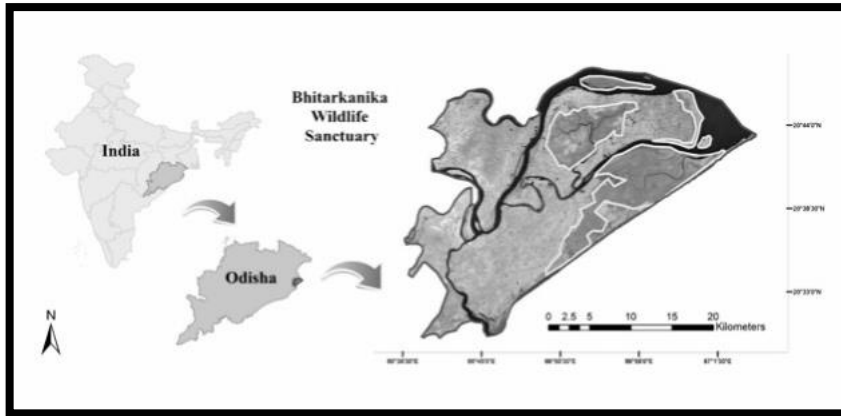
In CBET, the local community plays a pivotal role for inclusive development and strongly reinforces CBET to foster socio-cultural, environmental, and livelihood conditions (Lee & Jan 2019). CBET considers a management model that provides opportunities for empowerment (Ernawati et al., 2017). Hence, local community empowerment is a critical success factor in the conservation of protected areas. Thus, the local community's continuous participation in CBET schemes is necessary for the betterment of the residents (Kunjuraman, 2020).

Community participation is key to the success of CBET (Dodds & Galaski, 2018). Recognizing local communities and tapping their values leads to inclusive development. However, there is still a significant incidence of conflict between community members and administrative employees in protected areas (Chen et al. 2017; De Pourcq et al. 2017; Nakakaawa et al. 2015). To address these difficulties, collaborative partnerships should be developed between protected area workers and community members through capacity-building initiatives (Bennett, 2016; Bennett & Dearden, 2014; Oldekop et al., 2016; Hiwasaki, 2006; Stone, 2015). Strong partnerships based on trust between protected area employees and local communities may outcome in inclusive development and conservation (Holmes, 2013; Mutugang, 2017).

3. STUDY AREA

The Bhitarkanika Wildlife Sanctuary (BKWS) was chosen as the study location (Fig.1). This sanctuary is located in the Kendrapara district in the state of Orissa, India. The study location possesses ecological, biological, and geomorphological significance and is popularly known as India's second largest mangrove ecosystem. The study area includes wetlands, ponds, estuaries, and backwaters and is surrounded by three rivers: Brahmani, Baitarani, and Dhamara. This mangrove wetland is situated in the northeast corner of Kendrapada district and spreads to the districts of Cuttack and Bhadrak. Bhitarkanika was designated as a Wildlife Sanctuary in 1975 and a National Park in 1998 (Das & Chatterjee, 2020). For its rich avifauna, it was also declared a "Ramsar Site" in the year 2002.

Figure 1: Location map of Bhitarkanika Wildlife Sanctuary, Odisha.



Source:(Shrestha et al., 2019.)

Bhitarkanika, a treasure trove of nature, is home to diverse and exquisite biodiversity. This unique habitat is surrounded by the Baitarani, Brahmani, and Dhamara rivers, and is crisscrossed by numerous creeks. The delta, river mouth, sea, estuarine forest, mangroves, avifauna, reptiles, amphibians, and different fauna and flora contribute to the richness of its ecological diversity. The Bhitarkanika Mangroves comprises 650 square kilometers and are home to one of India's greatest populations of saltwater crocodiles (*Crocodylus porosus*).

4. METHODOLOGY

In this study, both descriptive and exploratory research designs were considered the most appropriate (Patra et al., 2021). The survey instrument for the questionnaire was constructed based on a literature review and suggestions from experts along with pre-testing by using a pilot test on 15 local communities and tourists. Local communities and tourists in the study area were approached to answer the survey questionnaires. The respondents were asked to provide their opinions on a five-point Likert scale ranging from 1 to 5 (5-strongly agree, 4-agree, 3-indifferent, 2-disagree and 1-strongly disagree).

A total of 470 respondents participated in this study. Cronbach's α was used to ensure reliability and validity of the instrument used for the survey. Data analysis was performed using SPSS 23.0. Collected data were tested for outliers using stem and leaf chart analysis, and all data were normally distributed for further analysis. Finally, a clear picture of the study was drawn based on the analysis and interpretation.

5. ANALYSIS & RESULTS

Table1: Demographic Profiles of Communities (N = 470)

	Category	Frequency	Percent
Gender	Male	365	77.66
	Female	105	22.34
Age	Below 25 yrs	117	24.8
	25 - 40 yrs	243	51.7
	41 - 60 yrs	85	18
	Above 60 yrs	25	5.5
Marital Status	Married	389	82.7
	Single	81	17.3
Education	Upto Matriculate	321	68.2
	Graduation	128	27.2
	Post Graduate & Above	21	4.6
Annual Income	Upto 2 Lakhs	381	81.06
	2 - 4 Lakhs	89	18.94
Occupation	Agriculture	154	32.8
	Local Transporter	113	24
	Handicraft/ Handloom Shop	84	17.9
	Restaurant/Eateries roadside	44	9.4
	Priest	13	2.8
	Vending Shop	58	12.3
	Others	4	0.09

Source: developed from the survey data

Table (1) shows that 82.7% of the participants were married and 17.3 percent were unmarried. Most respondents (68.2 percent) were high school educated, while only a small percentage (27.2 percent) were graduates or post-graduates (4.6 percent). Furthermore, most of the respondents (81.06 percent) earned less than two lakhs per year, while only a few (18.94 percent) earned between two and four lakhs per year. Under the occupation category, most of the respondents (32.8 percent) were engaged in agricultural activities, followed by vending shops (12.3 per cent), handicraft/handloom shops (17.9 percent), and transportation businesses (24 per cent) and roadside eateries (9.4 per cent).

Reliability analysis

Fourteen statements were framed to study the Community Based Eco-Tourism (CBET) in Bhitarkanika Wildlife Sanctuary of Odisha. The Cronbach's Alpha of each item as well as combined value is coming more than 0.8. Cronbach's Alpha (Cronbach, 1951) was calculated to understand how much the items are positively correlated to one another in any given set of

questions and to check the reliability of the items included in the questionnaire. After reviewing Table 2, it can be concluded that the items used in the questionnaire are internally homogenous and consistent (Cronbach’s alpha value >0.8) thus validated the questionnaire.

Table 2: Reliability analysis (N = 470)

Items	Mean	Std. Deviation	Cronbach's Alpha	Cronbach's Alpha
I feel the tourists visit to Odisha during the time of community-based ecotourism events is more advisable (CBT1)	4.40	0.89	0.889	
Community based ecotourism can be used as an USP for promoting tourism in Odisha (CBT2)	4.33	0.89	0.886	
I feel the present marketing strategy of the community-based ecotourism is relevant and meaningful (CBT3)	4.43	0.89	0.887	
I feel the community-based ecotourism being organized by the Govt or NGOs are sufficient for promoting ecotourism (CBT4)	4.45	0.81	0.889	
I feel good about the local community’sbehaviour at the community-based ecotourism event sites (CBT5)	4.26	0.95	0.890	
I feel the advertisement/ Publicity of the ecotourism in our Govt. website are upto the mark (CBT6)	4.18	0.95	0.888	
Community based ecotourism enhances the income of the local community (CBT7)	4.34	0.90	0.885	0.900
Community based ecotourism produce large number of garbage which pollutes the environment (CBT8)	4.38	0.80	0.888	
Community based ecotourism does not create noise pollution (CBT9)	4.33	0.89	0.889	
Community based ecotourism create more employment opportunities (CBT10)	4.39	0.81	0.888	
Community based ecotourism provide the socio-cultural integration (CBT11)	4.35	0.88	0.887	
Community based ecotourism create cross cultural or host–guest conflict (CBT12)	4.36	0.84	0.913	
Community based ecotourism create good infrastructure for the community (CBT13)	4.47	0.74	0.911	
Community based ecotourism create an awareness among the local community (CBT14)	4.47	0.71	0.910	

Further, the mean value of each of the items/ statements are coming more than 4 and the combined Cronbach’s Alpha values is coming above 0.80, which indicates that there is a good consistency among the items used in the questionnaire.

Factor Analysis of Community based ecotourism

All the fourteen variables/ statements of community-based ecotourism were applied Explorative Factor Analysis. The KMO (Kaiser-Meyer-Olkin Measure) value of factor analysis is coming 0.822, reveals factor analysis is reliable and significant since significant value of factor analysis 0.000.

Table 3: KMO and Bartlett's Test (Community based ecotourism)

Sampling Adequacy of Kaiser-Meyer-Olkin Measure		0.822
Bartlett's Test of Sphericity	Approx. Chi-Square	308.442
	Df	91
	Sig.	0.000

Source: developed from the survey data

Table 4: Total Variance Explained (Community-based ecotourism)

Component	Initial Eigen values			Rotation Sums of Squared Loadings		
	Total	Variance (%)	Cumulative (%)	Total	Variance (%)	Cumulative (%)
1	3.08	22.05	22.05	2.92	20.85	20.85
2	2.01	14.40	36.49	1.98	14.12	34.98
3	1.40	10.01	46.46	1.44	10.26	45.25
4	1.29	9.24	55.74	1.31	9.34	54.59
5	1.04	7.48	63.16	1.20	8.60	63.20
6	0.95	6.83	70.03			
7	0.81	5.84	75.87			
8	0.76	5.42	81.30			
9	0.64	4.59	85.90			
10	0.52	3.77	89.67			
11	0.47	3.38	93.06			
12	0.43	3.06	96.13			
13	0.28	2.04	98.18			
14	0.25	1.81	100.00			

Source: developed from the survey data

As shown in the total variance explained table, five factor were extracted. First factor explained 20.852 per cent of the total variance, second factor 14.129 per cent, third factor 10.268 per cent, fourth factor 9.344 per cent and fifth factor explained 8.603 per cent of the total variance respectively.

Table 5: Rotated Component Matrix (Community-based eco tourism)

Variables/statements	Component				
	1	2	3	4	5
I feel the tourists visit to Odisha during the time of community-based ecotourism events is more advisable (CBT1)			0.573		
Community based ecotourism can be used as an USP for promoting tourism in Odisha (CBT2)				0.733	
I feel the present marketing strategy of the community-based ecotourism is relevant and meaningful (CBT3)				0.511	
I feel the community-based ecotourism being organized by the Govt or NGOs are sufficient for promoting ecotourism (CBT4)		0.527			
I feel good about the local community’s behaviour at the community-based ecotourism event sites (CBT5)					0.928
I feel the advertisement/ Publicity of the ecotourism in our Govt. website are up to the mark (CBT6)				0.585	
Community based ecotourism enhances the income of the local community (CBT7)	0.726				
Community based ecotourism produce large number of garbage which pollutes the environment (CBT8)		0.714			
Community based ecotourism does not create noise pollution (CBT9)	0.825				
Community based ecotourism create more employment opportunities (CBT10)	0.613				
Community based ecotourism provide the socio-cultural integration (CBT11)	0.303				
Community based ecotourism create cross cultural or host–guest conflict (CBT12)		0.768			
Community based ecotourism create good infrastructure for the community (CBT13)	0.731				

Community based ecotourism create an awareness among the local community (CBT14) 0.809

Source: developed from the survey data

Table 6: New factors of CBET

Factors	Statements/ variables	Factors/ Parameters named
Factor 1	Statement, 9, 10, 11 & 13	Create Employment & Infrastructures
Factor 2	Statement 4, 8 & 12	Cross Cultural Conflict
Factor 3	Statement 1 & 14	Awareness
Factor 4	Statement 2, 3 & 6	Promotion
Factor 5	Statement 5	Behaviour

Source: developed from the survey data

All 14 statements/variables of community-based tourism are reduced to five different factors. The factors were extracted using principal component analysis and the varimax method, where the eigenvalue was greater than 1. Statements/variables 7, 9, 10, 11, and 13 comprise factor 1, which is named as "create employment and infrastructure," similar to statements 4, 8, and 12 make up factor 2, which is named as "cross-cultural conflict." statements 1-14 comprise factor 3, named "awareness." Statements 2, 3, and 6 encompass factor 4, which is referred to as "promotion." Lastly, statement 5 named as "behavior".

Cause and Effect relationship (Multiple Regression Analysis) of Community-based eco-tourism

Table 7: Regression Summary Output (Community-based ecotourism)

Regression Statistics			
Multiple R		0.989	
R ²	0.978	Standard Error (SE)	0.02
Adjusted R ²	0.984	Observations (N)	100

Source: developed from the survey data

The R2 value of the regression model is 0.978, indicating that all five reduced factors/explanatory variables influence the dependent variable, community-based ecotourism. Employment and infrastructure, cross-cultural conflict, awareness, promotion, and behavior all increased by 97.8 percent, which is a good indicator for establishing well-planned community-based ecotourism.

Table 8: ANOVA(F-test) results of Multiple Regression

	Df	SS	MS	F	Significance F/ p-value
Regression	5	19.564	3.913	10139.93	0.000
Residual	93	0.036	0.000		
Total	98	19.600			

Source: developed from the survey data

According to the ANOVA (F-test), the scale/factor "Community-based Ecotourism" was quite significant for inclusive development and conservation practices. All the five explanatory variables are significant statistically. Further, the significant value (significance F)/ p-value of ANOVA is coming 0.000, reveals all the five explanatory variables are significant to the explained factor i.e. 'community-based ecotourism.'

Table 9: Multiple Regression Coefficients (Community- based ecotourism)

Factors	Coefficients	S.E.	t-Stat	P-value
Intercept	-0.002	0.012	-0.998	0.321
Factor 1(F1)	0.195	0.022	100.327	0.000*
Factor 2(F2)	0.200	0.013	100.809	0.000*
Factor 3(F3)	0.200	0.030	100.574	0.000*
Factor 4(F4)	0.203	0.010	102.183	0.000*
Factor 5(F5)	0.198	0.002	99.698	0.000*

Source: developed from the survey data; S.E.: Standard error

*Significant at 1 percent level

Based on multiple regression coefficient results of community-based ecotourism and its constituent variables, the following equation is formulated.

$$\text{Community- based ecotourism (Y)} = -0.002 + 0.195 (\text{F1}) + 0.200 (\text{F2}) + 0.200 (\text{F3}) + 0.203 (\text{F4}) + 0.198 (\text{F5})$$

The regression equation reveals an increase of 1 unit in Factor 1(F1) delivery, resulting in an increase of 0.195 units in community-based eco-tourism (Y). The highest beta value indicated that the independent variable was the most important variable in relation to the dependent variable. Based on the above table, the fourth (F4) independent beta value, that is, 0.203 has contributed the most and has a greater influence on community-based ecotourism than the other independent factor/variables. Furthermore, the significant value of t-statistics (t-test) of the entire five factors is 0.000, indicating that all the five explored factors are highly significant for the explained element, i.e. "community-based ecotourism."

H₀₁: Community-based ecotourism can be used as an USP for promoting tourism in Odisha.

Table 10: One-way ANOVA (USP for promoting ecotourism)

Source of Variation	SS	df	MS	F	Sig.
Between Groups	0.344	2	0.172	0.549	0.041*
Within Groups	30.406	97	0.313		
Total	30.750	99			

Source: developed from the survey data; SS: Sum of squares; MS: Mean square

*significant at 5 per cent level

For hypothesis testing, community-based ecotourism can be used as a unique selling point for promoting tourism in Odisha. We used one-way ANOVA. The results showed that using an event as a USP to promote tourism in Odisha is significant. Because the significance value of one-way ANOVA was 0.041, it was less than 0.05. This demonstrates that the null hypothesis is rejected and the alternative hypothesis has been accepted. This means that community-based eco-tourism can be used as a unique selling point (USP) to promote tourism in Odisha.

Table 11: One-way ANOVA (Creating Awareness)

Source of Variation	SS	df	MS	F	Sig.
Between Groups	8.588	2	4.294	25.773	0.000*
Within Groups	16.162	97	0.167		
Total	24.750	99			

Source: developed from the survey data; SS: Sum of squares; MS: Mean square

*Significant at 1 percent level

H₀₂: Community-based ecotourism create awareness among local community to protect tourism resources in Odisha.

Further, to test this hypothesis, community-based ecotourism creates awareness among the local community to protect tourism resources in Odisha. One-way analysis of variance (ANOVA) was used. The result revealed that community-based ecotourism creates awareness among the local community to protect tourism resources in Odisha, which is highly significant (sig. = 0.000). The significant value of one-way ANOVA is 0.000, which is less than 0.01. This reveals that the null hypothesis is rejected and the alternative hypothesis is accepted. This signifies that community-based ecotourism creates awareness among the local community to protect the tourism resources in Odisha.

Table 12: t-Test: Paired Two Sample for Means (Tourists Vs. Communities)

Tourists (%)	Communities (%)
Ranks	Ranks
Mean (0.168)	Mean (0.165)
Variance (0.009)	Variance (0.04)
Pearson Correlation (0.1458)	
df(5)	
t Stat (0.037)	
P(T<=t) one-tail (0.023*)	P(T<=t) two-tail (0.036*)
t Critical one-tail (2.015)	t Critical two-tail (2.571)

Source: developed from the survey data

*Significant at 5 percent level

H₀₃: Tourists and local communities are significantly different in the level of satisfaction against community-based ecotourism (site, art &craft, performances, infrastructure, guide services and information).

The p-values in the t-test table were 0.023 in the one-tail test and 0.036 in the two-tail test. In both cases, the p-value is less than 0.05, implying that the alternative hypothesis is accepted; that is, tourists and communities do not differ significantly in terms of satisfaction with regard to event sites, art and craft, performance, infrastructure, guide services, and information. Further, correlation analysis helps to clarify this, as tourists and communities have similar levels of satisfaction regarding site, artist, performance, infrastructure, guide services, and information. The correlation between tourists and communities was 0.1458. This reveals there is relationship exist between the perceptions of tourists and the local community.

6. FINDINGS & DISCUSSION

This study strongly examines the potential of community-based ecotourism in the state of Odisha, which has been used to promote state tourism and has proven substantial. This study also sheds light on the possibility of community-based ecotourism leading to inclusive development through active engagement and awareness among the local community and tourists. The current study is consistent with previous research conducted in the Malaysian Borneo region which demonstrated that local communities engaging in CBET projects (homestay programs and B&Bs) are capable of changing their livelihoods from an economic, socio-cultural, and environmental perspective (Knajurman, 2020). Furthermore, the study's conclusions are consistent with earlier research by Kunjuraman (2022) in Malaysian Borneo and Gupta and Bhatt (2009) in the Indian Kedarnath sanctuary zone, which both highlighted the potential of community-based ecotourism to strengthen local communities in protected areas. Based on environmental imperatives that consider the preservation and protection of protected areas, the current study's findings demonstrate how community-based ecotourism can function as a proactive measure to lessen these problems. It is also corroborated by earlier research conducted at the Bhitarkanika Wildlife Sanctuary in Odisha by Das and Chatterjee (2015, 2020).

There is a strong agreement among the local community that CBET projects exert positive influences on their livelihoods in terms of providing green job opportunities, generating income, strong social capital, preservation of local culture, women empowerment, and awareness of environmental protection. The present study also revealed in the same way that CBET assisted in conserving local natural resources, ecosystems, and building socioeconomic improvement (Rockett & Ramsey, 2017). The multifarious benefits derived from CBET projects further increased the value of ecotourism as a livelihood activity in rural destinations as well as supports for tourism development (Lee & Jan, 2020). Thus, the study strongly favors the potential of community-based eco-tourism as a USP in promoting state tourism. Moreover, this study harmonizes with the previous study by (Hussin et al., 2015), which explicitly argued that ecotourism potential as a tool for development increased in rural locations like Bilit, as well as in other CBET sites in Malaysia. Furthermore, the study findings pave the way for local residents to achieve economic stability by implementing the CBET, which is consistent with Demkova et al.'s (2022) study on community-based ecotourism in the Sikkim Himalaya region, which sheds light on the Himalayan ecology's unique problems and opportunities. This study's findings also unleash the socioeconomic empowerment of local residents through livelihood enhancement, as supported by Kumar and Vyas (2022), who emphasize that CBET is the only means of providing a comprehensive overview of the socioeconomic empowerment of local communities through ecotourism.

Besides inclusive development, CBET has strived to attract tourists to the state. This has become a unique and emerging type of tourism in which tourists interact with all forms of tourism. This kind of tourism has immense potential for spreading awareness among the local community, which further strengthens its resources. A previous study (Chand et al. 2015) also strongly supports the present study, emphasizing that CBET has gained prominence in a short period of time and attracted an increasing number of tourists.

This study also highlights community-based activities such as selling souvenirs, managing transport services at the local level, selling food and beverages in roadside eateries and kiosks, guiding services, and conducting small events to attract visitors to help support livelihoods and simultaneously create awareness and provide satisfaction to tourists. As a result, the current study confirms that the best strategy to involve the local community in protected area conservation and tourism development appears to be "spontaneous participation" (Tosun, 2006).

7. THEORETICAL IMPLICATIONS

The present research provides a noteworthy theoretical advancement. First, by critically examining earlier research on CBET, the current study adds to the continuing conversation regarding the successes and shortcomings of the CBET in developing nations like India. The study also gives more local and worldwide perspectives on community-based ecotourism, emphasizing empowerment and locating collaborators in the procedure for development. The study theoretically strengthens the literature highlighting the diverse aspects of community-based ecotourism, its capacity to strengthen local communities, and its essential role in preserving the environment. To that aim, the research advances the power of CBET empowering local community in developing nations, as well as being recognized as an alternative livelihood method. The findings of the study offer pertinent theory to the CBET and empowerment body of knowledge by including an

autonomous feature for local culture in the empowerment framework, which was previously missing.

Together, the study highlights the necessity of context-specific strategies, cooperative alliances, and community involvement to guarantee the prosperity and long-term viability of community-based ecotourism projects, both in developing and developed nations. The study also enriches the theoretical perspectives through highlighting economic empowerment and improves the well-being of local inhabitants. Community members' interviews suggest a range of economic advantages, such as higher revenue from tourism-related ventures including guided tours, handcrafted goods, and hospitality services. CBET has boosted the economy and enhanced infrastructure, education, and healthcare in local community. The contribution also sheds lights on Bhitarkanika wildlife sanctuary through effective community engagement approaches that prioritize collaboration between locals and ecotourism operators. The study also fosters the significance of community involvement in ecotourism decision-making, as it creates a sense of ownership and responsibility. Stakeholders' engagement and collaboration approach showcase instances where local traditions and cultural practices are integrated into the ecotourism experience, enhancing the overall appeal for visitors.

8. PRACTICAL IMPLICATIONS

This study suggests that to accomplish inclusive development in protected areas, CBET calls for the active participation of local community as well as other stakeholders. The study's findings have immense implications for the local community and its involvement in CBET. CBET enhances the development through capacity building initiative focusing on local community. Capacity building among the local community brings social harmony, livelihood enhancement and eradicates the poverty. The present study's implications are clear from CBET's capacity to encourage community empowerment participation. The study's implications will also help in mapping a perspective that serves as a foundation for assessing the viability and effectiveness of community-based ecotourism near protected areas. The research also broadens the geographical scope and emphasizes the role of local community context in affecting the outcomes of CBET projects.

The study's implications highlight the potential of community-based ecotourism as a transformative force that encourages the active participation of local communities in attaining inclusive development. The positive association between environmental conservation and economic empowerment positions ecotourism as a dynamic instrument for attaining sustainable development objectives. The knowledge gained from the empirical insights makes a substantial contribution to the larger conversation of protected areas by highlighting the necessity of adaptable tactics and the active participation of local communities to promote a balanced connection between stakeholders and protected areas tourism. Essentially, this study sheds light on the many effects of community-based ecotourism, offering insightful information to researchers, practitioners, and policymakers who wish to support inclusive development in protected areas.

The study further contributes insights into collaborative partnerships and stakeholder-based scenarios that underpin successful community-based ecotourism initiatives. The study may also

assist in home stays and indigenous community empowerment investigates though active participation and empowerment leveraging CBET experience.

Additionally, the study's implication induces the involvement of local communities is crucial in achieving inclusive development. Furthermore, CBET implications contribute significantly to the empowerment of marginalized and deprived communities through team building and collaborative approaches to earn income.

The major obstacle to successful tourism development in developing nations is the lack of community capacity and insufficient awareness and understanding of the impact of tourism; thus, CBET strives to address these difficulties by focusing on the capacity building of local communities, individuals, and organizations to participate in the development process. As a matter of fact, placing local community in the right place in tourism development can mitigate conflicts between hosts and guests and boot inclusive development. The study results can be implemented for the sake of more research, participation, and strategic planning to fully realize the symbiotic relationship that exists between ecotourism, communities, and the environment in order to create a sustainable and prosperous future.

9. CONCLUSION

As globalization continues, some fragile protected areas are becoming popular tourism destinations, whereas others remain less established and undeveloped. This study revealed that the Bhitarkanika wildlife sanctuary and protected areas gained momentum among both international and domestic tourists through the widespread promotion of CBET. The current study addressed the various predicaments encountered by local communities while participating in and implementing CBET in the vicinity of protected areas. This study also theoretically contributes to the body of knowledge by signifying the importance of the local community's participation in successful CBET in developing countries. This research also looks into the contribution of community-based ecotourism (CBET) to the field of protected areas, which is sometimes overlooked by scholars in underdeveloped countries. Despite numerous challenges faced by the local community in the periphery of protected areas, the study shows the incredible motivations exerted by the local community in participating CBET program.

This paper also provides an understanding of the fragile nature of protected areas, local communities, and tourists, which sublimely interact and interrelate among attitudes, awareness, and perceptions to gain inclusive development. The increased level of local community participation and involvement towards inclusive development has been found satisfactory and also necessary at this juncture because maintaining the right balance among these trio i.e.; local community, tourists, and protected areas leads to the successful community-based ecotourism development.

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