

**A SUSTAINABLE APPROACH FOR THE DEVELOPMENT OF TOURIST
DESTINATION BHITARKANIKA THE MANGROVE BIODIVERSITY: AN
ANALYSIS**

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Abstract:

The importance of sustainability has been understood by the current generation. It is a prominent trend in today's world in terms of development and operation, including in the tourism industry. The goal of this research is to demonstrate the importance of long-term tourist development as well as the considerable concern for the environment that will be used by future generations.

Furthermore, an attempt has been made to examine the current state of sustainable tourism development in the tourist destination of Bhitarkanika, as well as the need for change. The improper practices in the name of tourism must be detected and immediately halted in order to make the entire tourist process in Bhitarkanika sustainable, so that the current biodiversity can be well preserved for future benefit. The challenges deriving from the purpose are to present the economic, environmental, and socio-cultural factors that influence sustainable tourism. In the current research design, exploratory and descriptive research design methodologies were employed, in which the researcher investigated the factors and degree of sustainable management, and then characterized the impact of the elements on the sustainability of the organization.

At this moment, the relevance of sustainability in tourist activities is being felt strongly all over the world. Since a decade, the demand for ecotourism has been steadily expanding. Every stakeholder in this industry has become more concerned about the long-term viability of any tourism site. Bhitarkanika in Odisha is India's second largest mangrove forest. The two river deltas of the Brahmani and Baitarani create the woodland. It is one of India's most significant Ramsar wetlands. The Bhitarkanika is a magnificent forest with unique species of flora and wildlife. It is an important ecotourism location in India due to its rich and diverse biodiversity, and it has enormous potential to draw visitors from all over the world. There has yet to be a research conducted on this eco tourist destination's sustainable tourism practices. However, it is critical to investigate each and every aspect of this gorgeous location in order to build a sustainable tourism strategy for this destination. The study's goal is to examine the long-term determinants needed to practice tourism in the ecotourism destination Bhitarkanika. Here in

the study both primary and secondary data are collected from various sources as well as through an appropriate design questionnaire through a case analysis.

Key Word: Sustainability, Mangrove, Ecotourism, Stakeholder, Sustainable, Destination, Flora and Fauna.

Introduction

Bhitarkanika is a naturally diverse and wonderful tourist attraction that is home to a diverse range of flora and wildlife that is unique to this natural ecosystem. It has a significant potential to draw in a large number of tourists from all over the world. Bhitarkanika is a one-of-a-kind tourism site in Odisha's Kendrapara district. It is also a national park that has been designated as a Ramasar site. This habitat also includes the Bhitarkanika wildlife sanctuary. This wetland and the distinctive mangroves are separated from the gulf of Bengal by the Gahirmatha beach and marine sanctuary. Many rivers, including the Bhramahni, Baitarani, Dharma, and Pathsala, are connected to the Bhitarkanika. Bhitarkanika is home to a diverse range of flora and wildlife, including saltwater crocodiles, wild deer, Indian pythons, sea turtles, and a variety of bird species, including thousands of migrating birds that flock to the area during the winter months. This area also contains a variety of therapeutic plants. A picturesque island called Hikitola is located near Bhitarkanika and attracts a large number of tourists. It also has a smattering of mediaeval Hindu temples strewn across the sanctuary. The abundance of wildlife, though, remains the main draw. Bhitarkanika is an ecologically diverse and culturally diverse destination that draws a large number of visitors. Several government initiatives have been taken to protect this natural habitat, such as declaring it a national park, but on the ground, many misdeeds are occurring in the name of tourism, such as poaching of various wild animals and cutting down the unique mangroves for a variety of reasons, posing a threat to the sustainability of this natural beauty. Increased local knowledge, favourable participation of governments and other tourism stakeholders involved with this location, and suitable majors are all needed to ensure that this unique location remains viable for years to come. Many forest bungalows have sprouted all throughout Bhitarkanika, which accommodates a large number of tourists, sometimes exceeding the carrying capacity of the area, resulting in undesirable visitor behaviour such as poaching and interfering with forest resources. And the only way to get into this place is by boat, and during peak seasons, the excessive movement of water transporters causes water and noise pollution, which has an impact on the diverse creatures. The development of a tourism attraction is a complex process including a number of factors. For the survival of a tourism location like Bhitarkanika, local people and tourist awareness, knowledgeable workforce, and adequate planning are all essential.

LITERATURE REVIEW

Sustainable tourism is key issue in tourism industry, being one of the recent practices employed in tourism and hospitality industry (Abd Hamid, Salmi Mohd, & Isa., (2020). A type of tourism geared toward sustainability by reducing its impact on and giving back to the local community (Kalen, K. (2020). Practices of the Ecotourism protect the natural environment is being based on the natural environment which needs to be protected and conserved (Conway & Cawley, 2016). According to TIES, Activity of sustainable ecotourism is travel to natural area which do not the destroyed the environment, conserved the wildlife, wellness of the local people, improvement of health and education (Karst & Gyeltshen, 2016, p. 1)". Growth of the local

economy, change of the people's attitude on the way to conservation effort (Das & Hussain, 2016)". Adopt the concept of sustainable practices on ecotourism in a developing country like India – improve the standard of living, growth of local economy & livelihood (Atun et al., 2019). Sake of the future generation sustainable practises should respect the characteristics of people, settlement the stakeholder and protect the natural environment (Ali, Kuriqi, Abubaker & Kisi, 2019). Involved of the local community is very crucial (Arkwright & Kaomaneng, 2018). Evolutionary growth of the social capital (Situmorang, 2018). Together of explored the social-economic dimension (Hakim et al., (2017). Maximum number of tourist flow to the natural area a serious threat of change the climate (Jamaliah, Powell, & Sirima, A. (2020).

Research Design

The goal of research design is to combine relevance to the study purpose by organising data collection and analysis in a way that aims to combine relevance to the research objective. It's a map for gathering, measuring, and analysing data.

The researcher attempted to build an appropriate research design using a set of identified objectives and a pre-determined scope of the investigation. The entire research effort was broken down into three stages.

At the outset of this investigation, the researcher conducted a literature review using secondary data sources. For understanding the sustainable environment management of tourism places in Odisha, the researcher studied a variety of periodicals, research journals, databases, and books. The researcher then goes over the existing study literature to come up with a collection of questions that match the research goals.

Exploratory and descriptive research design methodologies were utilised in this study, with the researcher first exploring the factors and degree of sustainable environmental management before describing the elements' impact on their demographic profile. Due to the nature of the investigation, an ex post facto research approach was used. Ex post facto research allows you to have a deeper knowledge of a topic or circumstance after it has occurred. When a problem hasn't been precisely identified, exploratory research is used. Exploratory research can help you choose the best study plan, data collection method, and topics. Ex post facto study, often known as statistical research, describes data and characteristics of the population or event being studied after the fact. The questions who, what, where, when, and how are answered by descriptive research. As a result of the foregoing, the two research designs were found to be suitable for the current investigation. Both primary and secondary data sources were employed in this study. The next sections go over the data collection procedure in depth.

Sampling Design

A sampling design is a set of instructions for taking a sample from a group of people. A sample plan is a technique for selecting things from the universe that is decided before to doing the survey. It refers to a researcher's method or methodology for selecting a sample and sample size.

The two types of sampling procedures are probability sampling techniques and non-probability sampling techniques. The current experiment used the probability sampling technique, i.e. simple random sampling. In a simple random sampling technique, the researcher selects sampling units at random from the population.

DATA ANALYSIS

Relationship between service provider and the destination

In this part, around 16 statements related to the relationship between service provider and the destination. People do not have the right to modify the natural environment to suit their needs, When excessive interfere with nature occurs, it often produces disastrous consequences, The earth has plenty of natural resources if we just learn how to develop them etc. and so on.

Reliability Statistics (service provider and the destination) (N = 337)

Reliability and descriptive Item Statistics (service provider and the destination)

Items	Mean	Std. Deviation	Cronbach's Alpha	N
1. carrying capacity	3.88	1.213	0.626	337
2. responsible tourist	3.52	1.312	0.824	337
3. Tourists excessive interfere with nature, create destruction.	3.98	1.044	0.911	337
4 Tourists should not make the destination dirty.	4.08	1.07	0.91	337
5. Tourists are severely abusing the destination	3.85	1.117	0.86	337
6. proper management of natural resources	4.31	1.15	0.901	337
7. priority of flora and fauna	3.14	1.561	0.857	337
8. considering balance of nature with the impact of tourism.	3.98	1.051	0.874	337
9. Despite the special abilities, tourists are still not subject to the laws of nature.	3.84	1.23	0.785	337
10. so-called "pollution" crisis	3.92	1.136	0.758	337
11. considering destinations limitations.	3.71	1.104	0.761	337
12. Tourists were not meant to rule over the nature.	4.2	1.025	0.756	337
13. The balance of nature is very delicate and easily upset.	3.76	1.27	0.897	337
14. Tourist will never acquire enough knowledge to control nature.	3.67	1.206	0.798	337
15 continuing the tourism practice with aview to approaching ecological catastrophe.	4.11	1.152	0.809	337

Source: developed from data analysis

The Cronbach's Alpha value for all the items used for measurement of relationship between service provider and the destination coming more than 0.7, which indicates that all the items

are reliable, thereby validating the questionnaire. Further, the items used in the questionnaire to study the of relationship between service provider and the destination internally homogenous and consistent which was reflected by corrected item-total correlation. It is significant that the instrument used for collecting the opinion of the respondents is a valid and appropriate instrument.

Total Variance Explained(Relationship between people and the destination)									
Component	I value			Extraction Loadings			Rotation Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	8.08	53.865	53.865	8.08	53.865	53.865	4.45	29.677	29.677
2	1.73	11.583	65.448	1.73	11.583	65.448	3.66	24.447	54.124
3	1.07	7.173	72.621	1.07	7.173	72.621	2.77	18.496	72.621
4	0.91	6.126	78.747						
5	0.55	3.692	82.439						
6	0.52	3.437	85.876						
7	0.43	2.878	88.754						
8	0.31	2.089	90.843						
9	0.29	1.917	92.759						
10	0.25	1.693	94.452						
11	0.20	1.352	95.804						
12	0.19	1.317	97.121						
13	0.17	1.131	98.252						
14	0.15	0.994	99.246						
15	0.12	0.754	100.000						

Extraction Method: Principal Component Analysis.

Source: developed from data analysis

The above factor analysis has been done for all the 15 variables and it has been reduced to three different factors .

Rotated Component Matrix (Relationship between people and the destination)

Items	Component		
	1	2	3
1. carrying capacity			0.811
2. responsible torist		0.646	
3. Tourists excessive interfere with nature, create destruction.	0.637		
4 Tourists should not make the destination dirty.	0.601		
5. Tourists are severely abusing the destination		0.648	
6. proper management of natural resources	0.702		0.573
7. priority of flora and funna		0.678	
8. Considering balance of nature with the impact of tourism.	0.621		
9. Despite the special abilities, tourists are still not subject to the laws of nature.	0.849		
10. so-called “pollution” crisis		0.531	
11. considering destinations limitations.		0.871	

12. Tourists were not meant to rule over the nature.	0.734		
13. The balance of nature is very delicate and easily upset.		0.856	
14. Tourist will never acquire enough knowledge to control nature.	0.792		
15 continuing the tourism practice with a view to approaching ecological catastrophe.	0.617		

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 14 iterations.

Source: developed from data analysis

Multiple Regressions (tourists and Environment)

Regression Statistics	
Multiple R	0.989
R Square	0.978
Adjusted R Square	0.984
Standard Error	0.020
Observations	337

Source: developed from data analysis

The R square value of the above model is 0.978, which means the dependent variable humans and environment is influenced by all this three explanatory variables proper management(F1), Ecological issues (F2) and destination maintenance (F3) by 97.8 percent.

Hypothesis 1: There exist an significant impact of tourism on practices of sustainability in business of tourist destinations

Total Variance Explained(Management Practices in destinations)									
Component	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.022	58.521	58.521	7.022	58.521	58.521	5.177	43.141	43.141
2	1.625	13.543	72.064	1.625	13.543	72.064	3.471	28.923	72.064
3	.851	7.092	79.156						
4	.570	4.750	83.905						
5	.433	3.611	87.516						
6	.361	3.012	90.529						

7	.28 3	2.359	92.888						
8	.24 0	1.997	94.885						
9	.20 4	1.697	96.583						
10	.17 9	1.493	98.076						
11	.12 7	1.062	99.137						
12	.10 4	.863	100.000						
Extraction Method: Principal Component Analysis.									

Source: developed from data analysis

Rotated Component Matrix (Management Practices in tourist destination)

Items	Component	
	1	2
1 tourism practice with ethics		0.788
2. tourism practice for the destination operation.	0.721	
3. cost effective		0.848
4. effective management will increase positive image and reputation	0.898	
5. effective management will diminish the impacts.	0.539	
6. effective management will increase the market value of the destination.	0.694	
7. destination should obey conservation efforts.		0.696
8. impact should be considered at the time of policy making.	0.870	
9. activities have a negative effect.		0.891
10. effective management improves employee motivation and production.	0.690	
11. effective management can give destinations access to a new market.	0.807	
12. effective management contributes to safety and healthy atmosphere for the staff	0.880	

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Source: developed from data analysis

Multiple regression coefficients (Effective management in tourist destination)

Particulars	Coefficients	Standard Error	t Stat	P-value
Intercept	1.202	0.078	2.596	0.011
Effective management (F1)	0.217	0.043	5.035	0.000
Cost reduction (F2)	0.204	0.043	4.719	0.000

Source: developed from data analysis

Based on the Multiple Regression Output table of “effective management Practices in destinations” and its constituent variables, we able to derive the following equation.

$$\text{Effective Management Practices in tourist destination (Y)} = 1.202 + 0.217 (F1) + 0.204 (F2)$$

The largest Beta signifies that the independent variable has the most impact on the dependent variable. According to the table above, independent factor 1 (effective management) contributes the most and has a bigger effect on environmental management practises in tourist destinations than the other independent variables. Furthermore, the table shows that the t-test significant value (p-value) for all items is 0.000, indicating that these two reduced factors through factor analysis are very significant in relation to the explained factor, namely "Effective management in tourist destinations."

Total Variance Explained (Effective management in tourist destination)									
Component	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.96	33.112	33.112	5.96	33.112	33.112	4.06	22.559	22.559
2	3.17	17.640	50.752	3.17	17.640	50.752	3.69	20.499	43.058
3	2.22	12.384	63.136	2.22	12.384	63.136	2.63	14.639	57.697
4	1.44	8.030	71.165	1.44	8.030	71.165	2.42	13.469	71.165
5	.955	5.305	76.470						
6	.868	4.820	81.290						
7	.809	4.496	85.786						
8	.668	3.711	89.498						
9	.525	2.914	92.412						
10	.305	1.695	94.107						
11	.263	1.462	95.569						
12	.203	1.125	96.695						

13	.14 8	0.821	97.515						
14	.14 1	0.786	98.301						
15	.11 2	0.621	98.922						
16	.09 9	0.549	99.471						
17	.06 0	0.333	99.804						
18	.03 5	0.196	100.000						

Extraction Method: Principal Component Analysis.

Source: developed from data analysis

For each of the 18 variables, a factor analysis was run. All of these variables were reduced to four distinct factors, which accounted for approximately 71.165 percent of the total variation. The first component, based on its loading pattern, indicates that a common factor runs through all of the elements, accounting for approximately 22.559 percent of the variance. The second component accounts for approximately 20.499 percent of the variance, the third factor for 14.639 percent, and the fourth factor for 13.469 percent of the variance. The total variance is explained by all four factors to the tune of 71.165 percent.

Relationship between management practices in the in the tourist destination

After finding out the factors involved in management Practices in the tourist spot, the next step is to find out the relationship between management Practices factors in the study area. ‘Multiple regression analysis’ has been done to identify the relationship between the factors and the overall environmental practices. The function is as follows:

The regression co-efficient of the independent variables has been estimated and the results are shown in Table

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.887	0.787	0.712	0.125

Source: developed from data analysis

The R square value of the above model is 0.787, which means the dependent variable Environmental Practices in tourist destinations is influenced by the four explanatory variables i.e. responsible tourist, Eco-friendly attitude, knowledgeable staff, appropriate plan by 78.7 percent which is a good indicator for establishing a well set relationship of management practices in tourist destinations and its associated factors.

Multiple regression of management practices in the tourist destination (ANOVA)

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	5.476	4	1.369	306.69	0.000
Residual	1.482	332	0.0045		

Total	6.958	336		
Dependent Variable: Environmental Practices in the in the tourist destination				

The ANOVA (F-test) indicates that the scale/ factor i.e. “effective management in tourist spot” was quite significant for studying the sustainability and destination industry in the prospective of tourist destination Bhitarkanika. All the explanatory variables i.e. four factors for studying sustainability and destination industry in the prospective of management practices in Bhitarkanika are quite significant since the significant value (p-value) of F-test are 0.000, which means that these four explanatory variables are highly significant with respect to the explained factor i.e. “management practices in tourist spot”.

Multiple Regression Coefficients (Management practices in the in the tourist destination)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	0.801	1.296		-0.618	0.545
Energy efficient (F1)	0.240	0.081	0.385	2.942	0.009*
Eco-friendly (F2)	0.244	0.067	0.434	3.635	0.002*
Recycling (F3)	0.201	0.066	0.368	3.032	0.008*
Reusable (F4)	0.228	0.082	0.396	2.784	0.013**

Source: developed from data analysis

*Significant at 1 per cent level, **Significant at 5 per cent level

Based on the Multiple Regression Output table of “Management Practices in tourist spot” and its constituent variables, we able to derive the following equation.

Management practices in Environmental Practices in the in the tourist destination

$$(Y) = 0.801 + 0.240 (F1) + 0.244 (F2) + 0.201 (F3) + 0.228 (F4)$$

This can be read as an increase of 0.244 units in environmental practises at destinations for every unit of delivery of Factor 1(F2), i.e. eco-friendly (Y). The largest Beta signifies that the independent variable has the most impact on the dependent variable. According to the table above, independent factor 2 (Eco-friendly) contributes the most and has a bigger effect on environmental practices in destinations than the other independent variables. Furthermore, the table shows that the t-test significant value (p-value) for all items is 0.000, indicating that the four reduced factors identified through factor analysis are highly significant in relation to the explained factor. i.e. “Management practices in the in the tourist destination”.

Conclusion

Bhitarkanika is a highly unusual picture square area with huge potential to draw tourists from all over the world, but neither the government nor the many tourism stakeholders are paying attention to its long-term development. The development of a destination is a one-of-a-kind procedure. This is due to a number of causes. Although the government has placed some rigorous restrictions to safeguard the mangrove forest, these are not being followed correctly. Unwanted visitors encroaching on the protected region in the name of tourism are wreaking

havoc on the ecology as a whole. The required infrastructure has yet to be constructed. Local communities, as well as service providers, do not yet have a sufficient level of awareness. It is significant that the impact of Humans on Environment practices of sustainability in tourist destination is very important for destination development.

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