



Perceptual and theoretical review of tourism impacts on environmental attributes and environmental sustainability: A geographical case study of Temple town Bishnupur, Bankura District, West Bengal

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Abstract

The relationship between tourism and natural environment is very complex. The reverse effects include like the excessive price hiking of land resources, detrition of air, water, and soil, destabilization of landscapes, abrupt production of garbage's and wastes, loss of endogenous flora and fauna species. In this paper, it reflects how cultural tourism at Bishnupur temple town, influences environmental degradations and finally in which way it can contribute the environmental sustainability and conservations. The principal objective of this paper is to find out and assesses the level of positive and negative impacts made by tourism in the environment of Bishnupur. A descriptive and analytical approach has been taken for research methodology for present research paper. The Index Mean and Standard deviation also calculated for evaluating the level of individual status of these selected parameters. The cultural Tourism have an adverse impact on the surrounding environment through pollution made by hotels and tourist lodges, human intrusions in the core of natural forests by tourism activities. Thus local agencies and other organization need to pay attention to resolve the adverse impacts of tourism on environment.

Keywords: cultural tourism, environmental degradation, environmental impact assessment, eco-tourism, bio-diversity conservation

Introduction

Cultural and Religious tourism is one of the leading and rapidly growing tourism sector all over the world. Up to the second half of 20th century tourism generates a momentum in its revenue earning up to 1000 billion dollars. (UNWTO 2012). So we can easily be said that Tourism industry is a smokeless eco-friendly industry that can generate revenue, providing employment and financial security, firmly distribute the resources, accelerating multiplier effect in local economy, boost up the economy with minimal raw material costs. Although with the enhancing consciousness of the impact of tourism on environmental protection and economic acceleration various scientific investigation and research has been done. (Hall, 2001) This paper focusing upon theoretical assessment and evaluation the negative impact of tourism on physical environment of temple town Bishnupur. The reverse impact of tourism indicates the excessive level of change and detrition made by the tourists in the certain environment which is abruptly more than the level of changes are being adjusted and cope with the acceptable level of change. Abrupt and uncontrolled expansion and propagation of tourism in a tourist spot through expansion of tourist residence and amenities center and human encroachment generates lots of problems and environmental quality abolition This unplanned tourism may put tremendous pressure on sustainability of the concurrent environment showing its expression through air, water and noise pollution, increased amount of untreated sewage and garbage, road congestion, loss of species variation, deforestation and forest fires. Local population often competes for basic civic amenities like fresh drinking water and other usable resources. According to Cohen (1978) environmental influence depends on: (a) the level of intensity

of development strategy in the concern tourist sites; (b) the resiliency level of that ecosystem; (c) the temporal-aspect of the tourist promoter (d) the metamorphic nature of tourist devolvement (Belsoy, 2012) [12]. The propensity of environmental impacts appeared to depend on the interaction among: (a) usage rates (b) the type of recreational amenities; and (c) location wise distribution of flora, climatic and soil characters. (Sun and Walsh, 1998). Many reputed protected tourist spots famous for international arrivals are not soundly manage their tourism services because of the lack of infrastructure, skilled guide, abolition of values to the environment. (Dearden & Rollins, 2002). Buckley (2002) shows in his extensive survey that environment must be protected from all aspects of degradation and mismanagement through proper managerial efficiency.

Rationality of selection of this study area

Bishnupur in Bankura district one of the glorious heritage of west Bengal is dominated by Hindu culture and various artistic sculpture of terracotta temples assigns Hindu religions. The temples located at various portions of the town like Rasmancha, Madanmohon Temple, Jorbangla, temple and its fort structures of Malla dynasty are the key factors to charm and attract various tourists since various decades. Bishnupur is popular as temple town. It is located between 22^o12'32" N to 22^o57'15" N latitude and 87^o24'11" E to 87^o31'46" E longitude. The temple town Bishnupur has its historical significance. It was the capital of Malla king and their dynasty. Malla king patronize various handlooms and cottage industry like conch shell, brass metal, silk weaving, patachitra besides the spectacular terracotta temple. This various features show its potential cultural identity and possibility to grow itself as a

cultural tourist centre. Cultural tourism becomes one of the ideal tourism for this place. This ancient temples not only famous for its religious and spiritual significance but for its architectural values also playing a significant role. Globally this type of heritage tourism and landscape tourism becomes very popular. Bishnupur in west Bengal are expanding its popularity rapidly for its promotion and publicity. So the growing and expanding arrivals of tourists and related tourism activities and their role on exploitation in its physical environment are taken as an emerging and viable research issue.

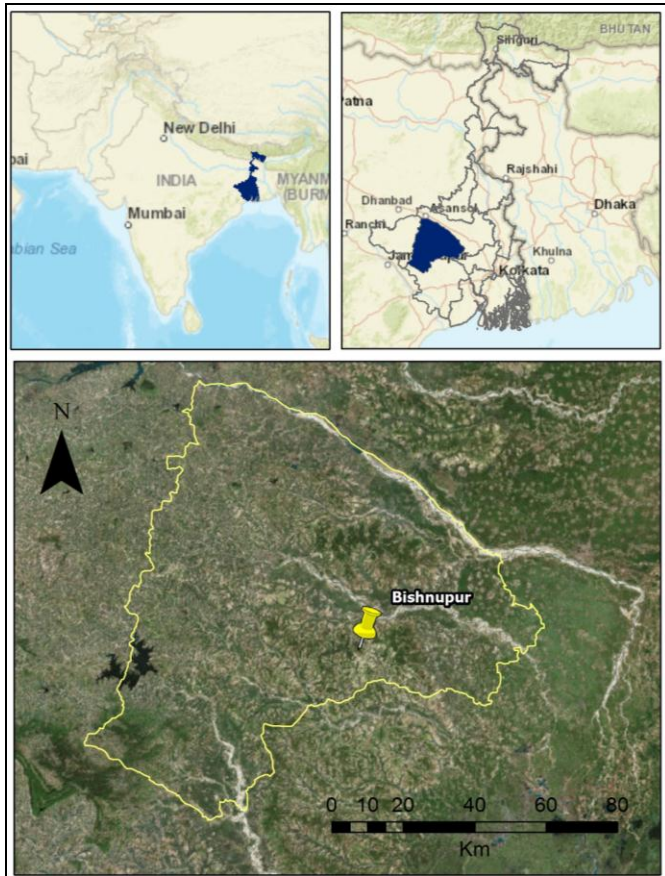


Fig 1: Study area map

Database and Methodology

The whole research work is based on primary and secondary data. Primary data has been collected through structured and semi structured interview. A questionnaire survey has been done in the study area upon various stakeholders like local peoples, hotel owners, craftsman and artisans and tourists. On the other hand secondary data has been collected through district hand books, various journals, and published and unpublished web documents. Various seminar books, research articles, report of research organization and task force committee, periodicals report on environmental impact are deeply assessed for this research work. This present research study focuses upon the tourism impact on environmental attributes and conditions of Bishnupur. The principal adverse impact of tourism on the environment that include: misutilisation of natural resources, loss of habitats and

biodiversity, excessive Pollution and sewerage, decaying values of Social and cultural systems which also engaged in biodiversity and environmental conservation.

Major objectives

This research work focusing upon its objectives like.

- To evaluate the positive and negative influence of tourism in the environment of Bishnupur.
- To make a statistical analysis for the direct impact of tourism industry on the physical environment of Bishnupur.
- To delineate theoretically the major problems made by tourism and its effective management strategies.

Literature review

M.Ramdas and B.Mohamed (2014) ^[17] conclude in their article the impact of tourism badly influences the attributes of that environment. The various tourism activities like boating, fishing, diving, snorkeling in an uncontrolled way may hampering the local physical environment. They strongly a strategic view and management is needed to apply there through environmental training as well as education and willingness to pay. UgurSunlu (2003) describes in his research paper that environmental quality both physical and manmade are very essential for tourism related activities. A strategic interventions is required to apply for prevention the adverse effect of tourism. Rabbany *et al* (2013) ^[13] explain environmental influences of tourism on international scale, well impacts of tourism on economy and finance and, how it can contribute positively in sustainable development, management and environmental conservations. Sharma and Raina (2014) ^[18] in their collaborative work shows the growing contribution of tourism and its popularity besides that, they also describes the positive and negative role of tourism in environmental, socio-cultural, economical sphere. Shiji. O (2016) ^[20] explains the various wings of adverse impact of tourism in environment as well as society and mentioned some stipulated suggestions for harmless tourism implementation.

A theoretical overview of the impact of tourism in physical environment

Tourism an amusement based, smokeless industry that accelerating its impact on global society and economics. It has its two faceted role that is positive and negative. In positive sphere it shows that tourism enhances the values toward nature, promoting Eco-tourism, Bio-diversity conservations. On other side it makes a threat to environment sometimes. Excessive and unmanaged growth of tourism makes depletion of environmental quality, decaying of resources, promotes pollutions, loss of bio-diversity also. The major negative impact of tourism are:

- Air, water, soil and noise pollutions.
- Sewage and untreated garbage productions.
- Price hiking of land and resources.
- Loss of endogen etc species.
- Loss of ethnicity and cultural traditions.
- Loss of social security (snatching, theft issues).

- Seasonality based income, outmigration of potential workforces.
- Lack of sound transport and accessibility and road congestion.
- Degradation of land and resources.

The impact of tourism have some of its own dimensions, those are:

1. Direct impact: It is related to direct decaying of environment and pollutions made by tourism.
2. Indirect impact: It is made by indirect way by generating greenhouse gases and ozone depletion activities.
3. Complex impact: It is combine effect of tourism.

It can be assessed another way like

- a. Advantage impact: This kind of tourism impact related to construction of roads, lodges, cafeterias related with tourism facilities.
- b. Tourism Activities: this impacts related with boating, snorkeling, diving, and other amenities that hampers the environment.
- c. Transmission Effect: This effect is related with generation of greenhouse gas and other harmful emission made by tourism activities.

The major thrusts of the adverse impact of tourism on physical environment in Temple Town Bishnupur:

Bishnupur is famous for its architectural values and Terracotta sculpture of its temple constructed during the dynasty of Malla Kingdom. Now a day's circuit Tourism becomes one of the very popular in here. Susunia hills, Biharinath hills, Mukutmanipur dam, jairambati, kamarpukura are some key attraction of tourists. Although it's a very positive sign for its rapid boom of its economy and development but it consists some of its own problems like:

1. Decaying of resources due to unplanned way of uses.
2. Increasing rate of pollutions.
3. Impact on natural environment.

1. Decaying of resources due to unplanned way of uses.

The increasing rate of tourist arrivals may cause high rate of depilation of resources which is higher than the replacement of that resources. The various type of impacts are

- a. Land resource depilation.
- b. Degradation of local resources.
- c. Contamination of water quality and lack of fresh drinking water.

2. Increasing rate of pollutions

Tourism activities may enlarge the various wings of pollution. Excessive emission of CO₂, NO₂, VOX and other suspended materials Degrade the air quality, massive amount of untreated sewage and garbage productions may decelerate the soil and

water quality. The major outcomes in temple town are as follows.

- a. Air pollution.
- b. Water pollution.
- c. Untreated sewage.
- d. Solid waste and organic littering production.
- e. Aesthetic pollution.

3. Impact on natural environment

Generally to meet the need of the tourists in this temple town, Bishnupur, numerous tourist lodge, cafeteria, hotels, amusement parks are being constructed at present time. It may hampers the land sustainability, groundwater depletion due to unplanned uses, deforestation due to construction purposes may become an alarming issues in here. This impacts are categorized as

- a. Construction of buildings.
- b. Unplanned use of groundwater.
- c. Deforestation and loss of Bio-Diversity.
- d. Changing habitat of wildlife. (Elephants movement in the fringe of Bishnupur).

Result and Analysis

Tourism itself having a complex interaction between host and guests which act as a catalysts in economic and social modification (Smith, 1998). The impact of tourism on the concurrent physical environment in a subjective or qualitative way is comparatively hard than quantitative assessment its impact on local economy. (Mason, 2003). Tourism activities and increasing rate of tourist's arrival may decay the environmental and ecological balance as well as sustainability. Tourists often thrown plastics, toilet papers, napkins, waste foods, plastic bottles, cups etc which remains in an untreated situations which may generate urban sewage and related pollution effects. A proper monitoring by municipal agencies is required in this context and appropriate management techniques need to implement by construction of flyovers to prevent congestion, eco-park for bio conservation, conservation of historical sites and temples, town beautification and cleanliness, afforestation etc. for its rejuvenation.

To get the tourists opinion regarding the impact of tourism on the physical environment Environmental Impact Assessment model is adopted. For this survey we choose 25 respondent (Tourists) through Random sampling methods during field survey in Bishnupur during Puja vacation in October 2017. Their frequencies and percentage distributions are given blow through tables. (Table: 1)

Environmental Impact Assessment

Tourist perception on some selected attributes of physical environment and their relative status in Bishnupur. (Table: 1)

Table 1

Selected environmental parameters	Area under tourism construction (Tourist opinion)						Tourism operational area (Tourist opinion)					
	Low Impact	%	Medium Impact	%	High Impact	%	Low Impact	%	Medium Impact	%	High % Impact	
1. Air quality	10	40	7	28	8	32	12	48	9	36	4	16
2. Water quality	12	48	10	40	3	12	13	52	7	28	5	20
3. soil quality	14	56	9	36	2	8	14	6	10	40	1	4
4. Noise quality.	15	60	6	24	4	16	15	60	6	4	4	16
5. Sewage and garbage	13	52	7	28	5	20	15	60	5	20	5	20
6. Flora and fauna.	14	56	7	28	4	16	13	52	10	40	2	8
7. Bio-diversity.	15	60	7	28	3	12	15	60	9	36	1	4
8. Sewage level.	14	56	6	24	5	20	15	60	4	16	6	24
9. Landuse	19	76	5	20	1	4	19	76	4	16	2	8
10. Natural scenery.	22	88	2	8	1	4	21	84	3	12	1	4

(Source: Data compiled by author, 2018)

From the above data generated by Environmental Impact assessment it can be said that the contamination of air, water, sewage production, urban waste is gradually increasing in its amount which is higher than other parameters value selected for this research work. As per the tourist review impact of tourism on land degradation, natural beauty, soil quality is not significant, although a proper strategic intervention need to apply for protection the environment and architecturally famous temples.

Perception of the local people regarding the impact of environment on pollution: Tourism itself a strong way to boost up the local economy, society, through job creation and financial security. Although it have some of its own harmful impact to the tourist centre as well as for the local residents. For our survey work in Bishnupur we select 50 inhabitant of this town from various ward through random sampling method. We collect numeric data through Likert three point

scale. So we easily categories the opinion quantitatively according to their level of intensity. (Table: 1)

Physical/Environmental effect of Tourism

Tourism are the key indicator for the development of a tourist spot by the modification of social and economic status. Physical attribute is corresponding to its natural divinity that are the centre of attraction of that places. Sometimes this tourism activity may hamper the quality of its physical environment and becomes a threat to the local residents. This may create a hindrance for their daily life and accessing civic amenities. In Bishnupur this impacts on local residents are calculated in here through statistical operation of field data collected by survey. (Table: 2)

Physical/Environmental effect of Tourism on local resident in the study area: (Table: 2)

Table 2

Selected Environmental Parameters	Mean values	Standard Deviation (SD)
1. Excessive crowding and road congestion.	0.92	1.85
2. Air and noise pollution	1.60	1.41
3. Nature of urban sewage and garbage	1.36	1.85
4. Crisis in civic amenities and public services and recreational facilities.	1.44	1.32
5. Nature of Road and its condition.	1.36	1.47
6. Parking place availability.	0.32	1.75
7. Need of fresh drinking water supply.	0.64	1.81
8. Infrastructural development	1.52	1.23
Index mean	1.15	1.58

(Source: Data compiled by author, 2018).

From the above table (Table: 2) it shows that the physical impacts of tourism on some certain selected parameters are remains high. As per residents attitude survey the mean values are high in Air and Noise pollution (+1.6), crisis in civic and urban amenities (+1.44), sewage and garbage productions (+1.36), Infrastructural development (+1.52) are remaining high. So higher the values showing high level of

environmental pollution. During winter session when mass tourism arrives here to enjoy the flavor of architecture the rate of pollution touches the apex. It has a gradual growth of pollution but at the initial phase it is need to arrest and manage the sustainability of environment.

Physical Perception Index based upon mean and percentage values of the respondents. (Table: 3)

Table 3

Sl. No.	Average Score	Percentage of Respondents(Residents)
1.	2-2.99	44
2.	1-1.99	12
3.	0-0.99	9
4.	0	2
5.	0-(-0.99)	10
6.	(-0.99)-(-1.99)	12
7.	(-1.99)-(-2.99)	11

(Source: Data compiled by author, 2018)

From the above table (Table: 3) it is found that 44% residents are strongly agree the threat of tourism on environment Nearly 12% residents are moderately agree, where as 9% are slightly agree in this issues. 2% residents are remaining at neutral situation. We also found that 10% are slightly disagree, 12% are moderately disagree, where as 11% are strongly disagree on the potential threat of tourism on physical environment. Residents perception Index Mean if the study area. (Table: 4)

Table 4

Index Mean	Standard Deviation
1.15	1.58
+ = Showing positive impact values. - = Showing negative impact values. Higher the values more impacts are found.	

(Source: Data compiled by author, 2018)

From this above table (Table: 4) it can be concluded that in the temple town Bishnupur, the Index Mean of respondent survey is found +1.15. So a slight moderate impact is noted from it. During the winter and spring time maximum tourists visited here. A strategic interventions is needed to apply on this period in this study area.

Suggestions and further recommendation

Tourism activity can't perform ignoring its physical entity and natural beauties. So in each and every part of tourism management it is very essential to maintain a proper balance between tourists demand and their satisfaction. We must introduce a rational and sustainable uses of local resources so that it can't prevent its misutilisation that can help to minimize the adverse impact of tourism in nature and society. Tourism can be a positive force to gear up the local economy and it can create awareness for mass conservation and promote ecological sustainability. The cultural uniqueness can be represented through this tourism activity in the study area. The negative impacts of tourism may minimizes through the help of environmental monitoring and environmental assessment. NGOs and other tourism agencies may play a significant role in this regard. Now a days Eco-tourism, landscape tourism, Nature tourism becomes very common wings of tourism. Basically Eco-Tourism model can be applied in our study area to sustain and conserve the forestry (Jaipur forest), Elephant ride in forest, Eco-park by which nature and ecological component can be remain in a sustainable way and it can also become a way of earning of local people that boost up the local economy also. To ensure a sustainable outcome of environmental impact, three dimensions (social, economic, ecological) of conservation need to be adopted. A proper monitoring, better management practice in a broader spectrum may implement this activities. So sustainable tourism, Eco-tourism strategy may be taken in this temple town as an alternative way of its up gradation.

Major Findings

The tourism industry in this temple town enhances its influence by three effective way. It may providing the financial security, environmental consciousness and awareness, values of ecological sustainability and protection. These are as follows.

- 1) Active Financial Participation: ecologically sensitive areas and flora and fauna can be conserved through Eco-park. Which can help for their preservation and it opens a way of earning of the local people. A charge can be drawn from visitors for its maintenance and protections.
- 2) Environmental consciousness and awareness: tourism creates a social gathering of people from various provinces with their distinct culture. In this tourist spots, tourists usually feel the unity, natural exotic beauty, that may grow values in their mind that provokes for environmental conservation.
- 3) Protection of nature: it accelerates the possibilities of conservation of nature. This temple town Bishnupur, may construct natural park and bio-reserve Center that may add a new flavor to tourists besides the conventional Architectural temple spots.

Conclusion

As above it can be said that tourism may have its two-sided impact on human life. In one side it makes the friendship and loyalty towards nature, peace, and biosphere conservations. On the other hand it threatens to proper resource utilization, deteriorating environmental destruction by attacking the privacy, dignity and personal excellence. Sometimes it may so enormous and catastrophic that it eliminate the local participation and spontaneous activities. So every residents, tourists, hotel owners, and administrators may aware about its harmful impact so that it can be minimizes. Thus to keep it in mind, a proper, managed, better balanced policy is need to apply in this town which is environmental friendly, economically viable and socially acceptable.

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