



THE ROLE OF INFRASTRUCTURE IN THE DEVELOPMENT OF TOURISM IN CHILIKA LAKE OF ODISHA

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Abstract: Despite being the largest brackish water lake in Asia with immense tourism potential and natural beauty, Chilika lake falls behind in utilising its full potential as a tourist destination. There are a number of factors responsible for the slothful growth of tourism. Among those, infrastructure is one of the crucial factors. The purpose of this study is to find out the perception of the tourists about the existing quality of infrastructure in Chilika wetland. The survey method has been adopted in this study. Responses have been collected from the tourists through structured questionnaire. The study found that tourists have very low perception about the Toilet facilities and hygiene, drinking water quality, health care facilities which are the essential attributes of tourism infrastructure of any tourist destination and are the main reasons for the sluggish growth of tourism in Chilika lake.

Keywords: Chilika Lake, Infrastructure facilities, Tourist perception and Tourism

1. INTRODUCTION

Chilika is the biggest saline water lake of Asia, located in the state of Odisha covering an area of 1,100 square kilometers. The wetland has obtained the international importance and was declared as a Ramsar site in 1982. The water spread area raises to 1165 Sq. Km in the Rainy season and comes down to 906 Sq. km during the Summers (www.chilika.com). The lake spreads over three districts namely, Puri, Khurda and Ganjam and is one of the prominent tourist places of Odisha. It gives shelter to a huge number of migratory birds during the winter months. The Lake is an extremely dynamic ecosystem and its rich fishery resources safeguard the income of more than 2,00,000 fisherfolk who live in the lake area. It is considered as one of the biodiversity hotspots of India. The saline water of the lake is favourable particularly for the lucrative tiger prawn (Nayak., p.k and Baker, F., 2010). It has wide array of attractions, such as bird watching, Dolphin cavorting, boating, landscape viewing, exploring mouthwatering dishes of fish, crab and prawn and visiting Kalijai temple located in one of the islands of the lake. Though the lake is the biggest saline lake of Asia and has wide array of attractions but its tourism potential is underutilized. Infrastructure is one of the primary factors which is responsible for the lack of tourism development in the region. Infrastructure has a crucial role

for development of any tourist destination. There is a strong relationship between the growth of tourism and its infrastructure which has been recognised by various authors (Adebayo, Iweka,2014). Infrastructure is the cornerstone of tourism development and it paves the way for the better utilisation of resources in a tourist destination. Tourism infrastructure consist of four fundamental elements, such as accommodation, food and beverage facilities, supplementary facilities and communication facilities (Panasiuk,2007). According to Gunn (1998) and Inskeep (1991) the quality of infrastructure of a nation is the determinant factor for the attractiveness of a destination, which broadly includes road, seaport and airport facilities etc. The residents of a developed region are habituated to sophisticated and modern infrastructure that is facilitated with high quality service and such tourists always expect the similar comfort when they travel to a particular destination (Cohen,1979; Howard, Mo, & Havitz,1993). Smith (1994) notes that the service infrastructure influences the product experience and argued that the service infrastructure always exist within the vast surrounding of that destination and it is the major aspect which enhances the product experience. Authors like Seetanah B, Jawaher T D and Lamport M J(2011) who have conducted a study in Mauritius, have claimed that infrastructure influences positively to the tourist arrival particularly the tourists from Europe, America and Asia. Marrocu and Paci (2013) believe that destinations which are easily accessed, tend to receive increasing number of tourists and they have identified two indicators of accessibility. The first one is the possible accessibility of the area by motorway, railway, air and time taken to reach the market and second one is availability of economical direct flight. Zovanovic and Ilic (2016) have conducted a study on tourism competitiveness of South East European countries and their degree of competitiveness of tourism infrastructure. Their result shows that the increase of hotel rooms is a major factor which enhances the degree of tourism competitiveness. Tourists are not only influenced by the physical beauty and space of a particular destination but also with the presence of the people whom they encounter there ((DeCrop,2001; Kozak & Decrop,2009). The interpersonal experience of the tourists is a combination of social encounters ranges from hospitality professionals, interpreter and the local people along with other tourists who are also present in a particular destination((Yagi,2003).

2. LITERATURE REVIEW

Several authors have conducted studies on the attractiveness of infrastructure of the tourist destination. They have stressed on infrastructural attributes such as roads and highways, water supply, electricity, gas, healthcare and the communication facilities (Khdaroo and Seetanah,2007). Gearing(1974) who has conducted a study on Turkey found that facilities such as road, water, safety measures, healthcare facilities, communications help immensely in attracting tourists. According to Boit & Doh (2014) who have conducted a study on Lake Nakuru National Park of Kenya have taken the attributes like cost and price of the area, climate, natural attractions and scenery, hospitality, friendliness, accessibility, quality of service, personal safety and language barrier and found that some of the aspects of the destination affected visitor's satisfaction like hospitality, friendliness and activities etc., whereas natural attractions and adventurous activities of the lake influence the tourist for repeating the visit to the destination. Jovanovic and Ilic (2016) have a conducted a study on the importance of infrastructure for development of tourism in Southeast European countries and

found that the addition of a greater number of rooms in the hotel increases the number of tourists in South East European countries and it is told that there is a positive association between the tourism competitiveness and degree of tourism infrastructure competitiveness in the destination countries. Liu's(2017) study on the importance of hygiene and cleanliness in China concluded that cleanliness is given highest priority and there is a strong correlation between cleanliness and positive attitudes of the customers and customers prefer to go to those public places and restaurants where toilets and restrooms are very hygienic.

3. METHODOLOGY

Based on the objective, the data has been collected from the respondents through the structured questionnaire. Tourists are the respondents here. The survey method has been adopted for this research. Balugaon and Barkul have been chosen as the study areas as both of the villages are main hubs of tourism in Chilika lake. The responses were collected in the scale ranging from 1 to 5. 1 signifies as least important and 5 as most important. The statistical tools used for this research are Frequency, Mean analysis and factor analysis. The purpose of Mean analysis is to identify the most important variable whereas factor analysis is used to factorise the variables.

3.1 DEMOGRAPHIC PROFILE

Demographic variables consist of gender, marital status, age, educational qualification, occupation and annual income. Based on the Frequency analysis the total number of respondents in the study is 309. Out of total respondents (309), 185(59%) are male and 124(41%) female respondents. Of the respondents, 19 (6.1%) are less than 20 years old, 115 (37.2 %) are between 21-30 years, 84(27.2%) are between 31-40 years, 54 respondents (17.5%) are between 41-50 years, whereas those, who fall in the age group of above 50 are 37 in number (12.00%). So, it can be concluded that the tourists who belong to the age group 21- 30 years are highest in number followed by 31-40 age group. The distribution of marital status is as follows; 195 respondents (63.1%) are married and 114 respondents (36.9%) are unmarried. So far as the distribution of educational qualification of the tourists surveyed is concerned, 27(8.7%) respondents are found to be High school pass-outs, 34(11%) have done intermediate or diploma, 73(23.6%) are graduates, 108(35%) are post graduates and 67(21.7%) are to be professional degree or PhD holders. From the values of the frequency analysis, it can be concluded that the tourists with higher educational degree are more attracted to Chilika lake than the ones who are less educated. The distribution of annual income of the respondents are as follows; 149 (48.2 percent) with below 2.5 lakhs, 85(27.5) are between 2.5 to 7 lakhs, 41(13.3) are between 5-7 lakhs and 34(11%) respondent's annual income is more than 7 lakhs.

4. DATA ANALYSIS

Tourists Perception about the Infrastructure Facilities at Chilika Wetland

Infrastructure plays an important part in every tourist destination. Without the sound infrastructure tourism development cannot be possible. So, the researcher has adopted seventeen variables to evaluate the infrastructure facilities of the Chilika Lake. Tourists are asked to rate their opinion about the infrastructure

facilities available at Chilika lake using five-point likert scale. Mean analysis is used to know whether infrastructure facilities available at Chilika lake are good or not.

Table1: Mean Analysis of Infrastructure Facilities

Infrastructure Facilities	Mean	Rank
Personal safety	3.40	IV
Friendliness of the people	3.62	I
Drinking water quality	2.57	XV
Toilet facilities	2.38	XVI
Healthcare facilities	2.84	XIV
ATM facilities	3.34	V
Restaurant and eateries	3.26	VIII
Toilet facilities and hygiene	2.35	XVII
Visitor centres and staff	3.31	VII
Affordability at the destination	3.32	VI
Road condition	3.59	III
Accommodation facilities	3.10	XI
Facilities for children	3.23	IX
Availability of information	3.07	XII
Commutations (Internet & Telephone) facilities	3.01	XIII
Convenience and access to local transport	3.60	II
Local arts and crafts	3.22	X

It is observed from the above table that, “Friendliness of the people” obtains the maximum mean value among the variables, followed by “Convenience and access to local transport”, “Road condition”, “Personal safety”, “ATM facilities”, “Affordability at the destination”, “Visitor centres and staff”, “Restaurant and eateries”, “Local arts and crafts”, “Accommodation facilities”, “Availability of information”, and “Commutations (Internet & Telephone) facilities. In addition, mean values for these variables are greater than three which shows that tourists have positive opinion that availability of the above said infrastructure facilities are good at Chilika wetland. However, the mean value is less than three for the variables such as “Drinking water quality”, “Toilet facilities and hygiene” and “Healthcare facilities” indicating that quality of drinking water, toilet facilities, and healthcare facilities are poor at Chilika lake. From the above discussion, it can be concluded that drinking water quality, toilet facilities, healthcare facilities are not good at Chilika lake but these are very essential for tourists. Therefore, it can be suggested that tourism department or service providers should provide high quality of drinking water, good toilet facilities and good healthcare facilities, so that tourists may be attracted to stay for a long duration in Chilika lake. The factor analysis is used to determine important infrastructure facilities in Chilika lake.

Table 2: Perception of Tourists about Infrastructure Facilities: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.827
Bartlett's Test of Sphericity	Approx. Chi-Square	1.497E3
	Df	136
	Sig.	.000

The above Table explains that the KMO value 0.827 is greater than 0.60, is therefore sufficient for the factor analysis. The significant value of Bartlett's test .000 is less than 0.05 specifies the association among the variables which are adequate for factor analysis.

Table 3: Perception of Tourists about Infrastructure Facilities -Total Variance Explained

Component	Initial Eigen Values			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Eigen values	% of Variance	Cumulative %
1	4.965	29.208	29.208	2.556	15.038	15.038
2	1.778	10.462	39.669	2.503	14.726	29.763
3	1.231	7.239	46.908	1.866	10.975	40.738
4	1.115	6.556	53.464	1.763	10.370	51.108
5	1.042	6.129	59.594	1.442	8.485	59.594
6	.966	5.685	65.278			
7	.890	5.233	70.512			
8	.779	4.583	75.095			
9	.643	3.785	78.879			
10	.620	3.645	82.525			
11	.548	3.222	85.747			
12	.528	3.107	88.854			
13	.488	2.872	91.726			
14	.403	2.372	94.098			
15	.378	2.226	96.324			
16	.352	2.073	98.397			
17	.272	1.603	100.000			

Extraction Method: Principal Component Analysis.

From the above table, five factors have been extorted whose Eigen values are greater than 1 and the total variance is 59.594 percent. The 1st factor explains 15.038 %, 2nd factor 14.726 %, 3rd factor 10.975%,

and 4th and 5th factors describe 10.370 and 8.485 percent of variance respectively. So, it can be said that five factors are adequate to explain the seventeen variables of infrastructure facilities available at Chilika Lake.

Table 4: Perception of Tourists about Infrastructure Facilities -Rotated Component Matrix

	Component					
Toilet facilities and hygiene	.798					
Toilet facilities	.774					
Healthcare facilities	.668					
Drinking water quality	.636					
Facilities for children		.717				Infrastructure
Accommodation facilities		.603				
Road condition		.572				
ATM facilities		.546				
Restaurant and eateries		.543				
Local arts and crafts		.512				
Visitor centres and staff			.722			Friendliness
Friendliness of the people			.708			
Communication (Internet & Telephone) facilities				.794		Communication and information
Availability of information				.640		
Personal safety				.550		
Affordability at the destination					.805	Accessibility
Convenience and access to local transport					.622	

The rotated component matrix signifies the association between the variables and the factors. The variables with high factor loading show that the specific variable is decidedly characterized by the particular factor. The above table tells that number of variables comes under each factor and its corresponding factor loading value after varimax rotation of seventeen statements. First factor contains four variables such as toilet facilities and hygiene, toilet facility, healthcare facility and drinking water quality. All these four variables are related to hygiene and called as “Hygiene”. Second factor contains six variables such as facilities for children, accommodation facilities, road condition, ATM facilities, restaurant and eateries, local arts and crafts and visitor centres and staffs which can be named as tourist Infrastructure factor. The third factor is related with friendliness of the people of the destination so it is named as Friendliness. The fourth factor related to information and communication facilities so it is named as Communication and information and the fifth factor is Accessibility.

5. Discussion and conclusion

Chilika is the biggest brackish water lagoon of Asia. It has wide array of attractions stretching from bird watching, boating, landscape viewing, visiting Goddess Kalijai, Dolphin cavorting and exploring dishes of brackish water fish and crabs, and undertaking researches. Though the lake is blessed with high tourism potential, but it hasn't been able to utilise its resources fully and couldn't convert the potential demand into real demand. The quality of infrastructure is a crucial factor for the growth and development of every tourist destination and in case of this lake, the lack of proper infrastructure facilities has been one of the prime reasons for its slothful growth. The major findings show that Out of 17 variables in the category, the high mean score for the statements such as; friendliness of the people, convenience and access to local transport

and road condition indicates that tourists have positive perception about these statements whereas other statements whose mean values are less than 3, such as drinking water quality, healthcare facilities, toilet facilities and hygiene at the destination indicate that tourists are found to be dissatisfied. The factorisation shows that 17 variables have been minimised into five meaningful factors such as Hygiene, Infrastructure, Friendliness, Communication and Information and Accessibility. In order to attract greater number of tourists the Government should take special initiatives to improve the drinking water quality, toilet facilities and hygiene, accommodation facilities and healthcare facilities in the destination.

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