

Environmental Issues and Challenges of Tourism Inkodagu District, Karnatak, India

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Abstract

The present research paper studies the challenges in the tourism sector and also the harmful impact of tourism on the environment in Kodagu district, Karnataka, India. Quantitative data were collected from 118 local respondents district belonging to the three taluks of Kodagu using questionnaire, following the stratified random sampling technique. The data was subjected to statistical analysis using the SPSS statistical package version 24 and meaningful inferences were drawn. The descriptive analysis of the study variables in terms of the mean and standard deviation were computed. Along with this, the objectives of the study were met using correlation and regression analysis. The results showed that there was a lack of awareness among the local population regarding the environmental issues. Tourism and improper practices of tourists had created the most adverse effect on the environment. In addition, poor and improper maintenance of historic sites and monuments was determined to be the major challenge in the tourism sector. Further, the challenges and adverse impacts on the environment significantly affected the economic development of the region. Therefore, it is recommended that suitable measures such as increasing the information centres and conducting awareness programmes to local population can be done to overcome the problems.

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I. INTRODUCTION

Travel forms a major source of rejuvenation, recreation, holiday or official business individuals (Gautam, 2004). Therefore, exotic travel destinations are taking precedence over the other places. Kodagu or 'Coorg' is one such place, which is fast growing into an important tourist destination in India due to the abundance of natural resources, rich cultural legacy, historical significance and prominent tourist destinations. Geographically, it is located in South India and is sometimes called the 'Scotland of India'. Its natural resources of forests, waterfalls, coffee plantations, rivers and hills form a major attraction for the tourists. It has been observed that there has been three times increase in the number of tourists (domestic and foreign) visiting Kodagu on 2000-2001 to 2012-13. However, a

massive decline in the number of visitors has been observed since then (Aiyappa, 2019). From 2017-18, the number of tourists visiting Kodagu has reduced from 1.48 million to 0.8 million in 2018-2019. The reception of the tourists and the facilities offered to them are the major factors affecting the opinion of the tourists regarding the travel destination. However, the increase in the number of tourists also increases the problems related to tourism and also causes adverse impacts on the environment. Therefore, it becomes imperative to study the dynamics of tourism industry pertaining to such a popular place. Hence the current study was conducted with an aim to understand the challenges in the tourism sector and the harmful impact of tourism on the environment in Kodagu district, Karnataka, India.

II. REVIEW OF LITERATURE

Font and Ahjem (1999) analyzed the strategies in tourism sector based on demand in the market. The study revealed that social and economic issues coupled with environmental problems were used to elaborate the results of systematic strategy. It was remarked that the formulation of sustainable strategies required a collaborative effort through the association between the stakeholders of the local population, government organizations, NGOs, etc.

Brezovec and David (2009) assessed the challenges in towns with historic importance regarding tourism and related activities and stated that tourism had an impact on economic life, social status and urban and natural environment. The study revealed that the inherent obstacles of walled towns and cities exemplified and crystallized the various facets of running a successful tourism industry. The scholars observed certain issues such as development of products to decrease the seasonality and concentration of tourism demands, involvement of residents in tourism development and providing adequate tourist information. Practices for better tourism development were presented.

Huubin et al. (2013) evaluated the sustainable tourism development in modern times. The study showed that the stakeholders involved in the management of tourism did not completely comprehend the importance of cultural heritage sites and also the increasing environmental problems and societal pressure due to improper tourism practices. The scholars highlighted that it was imperative to find a solution for sustainable tourism on heritage sites of cultural importance. The scholars recommended that a complete model of sustainable development should be designed and adopted for strategic tourism management.

Dayananda (2014) studied the function of tourism sector in the economic and social development of Kodagu District of Karnataka state. It was observed that tourism industry had encouraged the business

and other hospitality services, eating and drinking establishments of retail shops, entertainment, accommodation and transportation in the district. The scholar stated that tourism had generated employment opportunities to the local people and contributed to their social and economic development. The scholar recommended that government should enlist the active participation of local community in the expansion of the tourism industry.

Shivaraju and Kumar (2015) examined the impact of tourism in Kodagu district of Karnataka state with respect to the environment, economic and social aspects. The study revealed that Kodagu district was internationally recognized as one of the 'biodiversity hotspots' due to the biological diversity and distribution of the Western Ghats. The scholars confirmed that the unique culture heritages of the area had attracted a large number of tourists and provided substantial contributions to the livelihoods of local communities. The scholars recommended that tourism should be developed in Kodagu district through implementation of culture-friendly, environment friendly and sustainable ecotourism practices.

Soonthodu (2015) conducted an investigation on the health tourism in Kodagu district of Karnataka state. The study revealed that Kodagu district had many waterfalls which attracted the tourists in good number. The scholar emphasized that Kodagu had the capability of improving health tourism by utilising waterfalls as the focal point of rejuvenation and Ayurveda centres. The scholar recommended that waterfalls should be developed as attractive tourist centres and health service centres by the government and local community.

Honnappa and Sujathamma (2016) carried out a study on the problems and prospects in the tourism industry in Karnataka state. The study revealed that Karnataka had several prominent tourist destinations and attracted both domestic and foreign tourists. The

scholar indicated that Karnataka state had formulated progressive tourism policy and developed certain initiatives for the promotion of the tourism industry. The scholars recommended that features like infrastructure facilities, transportation, international hotels, cleanliness, hospitality of the population, nature, professionalism of service, safety/security and other aspects should be developed for better tourism management.

Anitha and Chandrashekara (2017) evaluated the problems and prospects of heritage tourism in Karnataka. The study revealed that heritage tourism had become an important branch of modern tourism in the state. The scholars emphasized that the heritage tourism potential of Karnataka was not properly understood by the policy makers. The scholars recommended that heritage tourism should be promoted on the basis of protection of historical monuments and heritage tourism centers.

Dayananda and [Leelavathi](#) (2017) investigated the role of tourism in the employment growth in Kodagu district. It was illustrated that tourism had contributed to the development of Kodagu district by preserving cultural heritage, sustaining natural resources and promoting local economy. The scholars observed that tourism industry in Kodagu district had very high potentiality in creating employment opportunities for illiterates, literates, skilled and unskilled. The scholars recommended that the stakeholders of tourism development should adopt sustainability principle and safeguard the environment and the economy.

Konakoglu et al. (2019) analyzed tourism in Poland and Turkey with the viewpoint of sustainable tourism. The study revealed that the tourism indicators development was not recorded in central statistical offices, which hindered the assessment considerably. The scholars remarked that tourism promotion activities were not undertaken on the basis of authentic data based on land use intensity and technological infrastructure. The scholars

recommended that local people should be made aware of the issues concerning sustainable development of tourism in these countries.

From the review, it was observed that although the prominence of Kodagu district in the tourism sector of India has been well documented, however, the challenges, problems and environmental issues due to tourism in the district has not been investigated in detail. The present paper aims to bridge this gap. To analyze the impact of problems in the tourism sector and adverse impact on the environment due to tourism on the economic development of the district, the following hypotheses were proposed.

Hypothesis 1: The economic development of Kodagu district is negatively affected by improper management of the environment.

Hypothesis 2: Problems in the Kodagu tourism industry have a negative influence on the economy of Kodagu district.

III. METHODOLOGY

An exploratory study undergoing descriptive research approach was considered to understand the environmental issues and challenges faced by the tourism industry. The quantitative data were collected using a structured self-prepared questionnaire during October to November 2019 with the active participation of the respondents. A stratified random sampling technique was used for the selection of the respondents from the population. The study area considered for the research included three major tourist centres in Kodagu district, namely, Madikeri, Virajpet and Somwarpet. The sample comprised of 54, 36 and 28 local respondents from each taluk, respectively; amounting to a total sample size of 118.

The questionnaire was constructed with a 5-point Likert scale to understand the extent of responses ranging from 1 to 5, implying strongly disagree [1]

to strongly agree [5]. The variables of the study include:

1. Economic benefits (new jobs and businesses, income, government revenue, tourists, bigger markets, living standards, cottage industry, civic amenities and self-employment)
2. Resources of tourism (local products and attractions)
3. Government support (infrastructure development, tourist centres, awareness programmes, tax waivers, exhibitions and environment-friendly practices)
4. Adverse impact on environment (commercialisation, destruction of wildlife and natural resources, pollution and improper tourist activities)
5. Problems in the tourism industry (marketing, non-maintenance of heritage sites and museums, tariffs of hotel, information on tourist centres, unregularized lodgings, professional and adequate staff)
6. Promotion of tourism (online and offline promotion)

The collected data was tabulated and analysed for evaluating mean, standard deviation, correlation and regression among the study variables using SPSS software to draw meaningful inferences. In addition, factor analysis was conducted to identify the main factors within the study variables. The Pearson's coefficient of correlation (r) was assessed for testing the strength of association between the study variables and was considered to be statistically significant when the p value was less than 0.05. Hypothesis testing was conducted through regression analysis between adverse impact on environment and challenges in tourism on economic benefits. The hypotheses are accepted when the

standardized coefficient (β) is significant with a p -value of less than 0.05 at 95% confidence level.

IV. RESULTS

Factor analysis on the challenges in tourism sector of Kodagu district (Table 1) yielded the result that facilities and marketing were the major factors contributing 43.081% variance whereas maintenance contributed to 10.656% variance. Similarly, the factor analysis on the environmental issues due to tourism (Table 2) revealed that physical degradation of the environment caused a variance of 43.616% and the spoiling of the aesthetics of the environment was responsible for a variance of 14.061%.

Table 1 Factors of challenges in tourism

Factors	Factor loadings	% of Variance	Cumulative %
Facilities and Marketing		43.081	43.081
There is no effective marketing of the tourist places in my area	0.676		
There are no trained tourist guides in my area	0.556		
The government tourism department in my area does not have adequate information about the tourist spots here	0.713		
The tariffs of the hotel in my area are not standardized.	0.670		
There is absence of basic facilities	0.662		

like washrooms near the tourist spots and tourist information centres in my area				Tourism destroyed natural landscape like waterfalls and hills of my region	0.712		
Maintenance		10.656	53.737	Spoil the aesthetics of the environment		14.061	57.677
Heritage sites and monuments in my area are not maintained properly.	0.785			Destroying of forests for commercial tourist buildings have increased the entry of wild animals in my area	0.946		
There are fewer employees in the tourist places in my area than required	0.747			The people in my area are not aware of the environment pollution in my area due to tourism.	0.537		
In my area, new types of lodging like home stays are not regulated	0.547			Tourist activities like campfires, walking, skiing and trekking caused damage to the environment in my area	0.669		

Table 2 Factors of adverse impacts of tourism on environment

Factors	Factor loadings	% of Variance	Cumulative %
Physical degradation of the ecosystem		43.616	43.616
Building of hotels on farm and forest lands destroyed environment and caused floods and landslides in my area	0.641		
Tourism destroyed wildlife in my area	0.734		

The analysis on the environmental issues due to tourism in Kodagu district showed that the biggest issue was that the local population was not aware of the environmental pollution (3.824 ± 1.106). As the population was not aware of the pollution, proper measures could not be taken. Further, destruction of natural landscapes such as waterfalls and hills (3.804 ± 1.186), unregularized tourist activities such as campfires, walking, skiing and trekking in Kodagu (3.790 ± 1.172) and destruction of environment through construction of hotels on farm and forest lands and causing calamities such as

floods and landslides (3.756 ± 1.173). The tourist activities cause destruction of natural resources which can lead to damage of the biodiversity of the environment. Table 3 shows the extent of the adverse effects on the environment.

Table 3 Adverse impacts on environment

Impact on environment	Mean	Std. Deviation
Building of hotels on farm and forest lands destroyed environment and caused floods and landslides in my area	3.756	1.173
Tourism destroyed wildlife in my area	3.810	1.248
Destroying of forests for commercial tourist buildings have increased the entry of wild animals in my area	3.761	1.215
The people in my area are not aware of the environment pollution in my area due to tourism.	3.824	1.106
Tourism destroyed natural landscape like waterfalls and hills of my region	3.804	1.186
Tourist activities like campfires, walking, skiing and trekking caused damage to the environment in my area	3.790	1.172

Further, according to local people as well as the tourist facilitators, the primary challenge in the tourism sector in Kodagu district was found to be the improper and ineffective maintenance of the historical sites and monuments in the area (2.435 ± 1.268). This reveals that there has been increasing defacement and damage to the structures which might eventually lead to complete destruction of the structure. Other challenges were the absence of basic facilities such as washrooms near tourist

spots and tourist information centres (2.233 ± 1.158). Other challenges in the tourism sector were unregularized lodgings (2.165 ± 1.115), unstandardized tariffs of hotels (2.159 ± 1.131) and lack of required number of tourist guides and professionals (2.153 ± 1.088). This might lead to poor response from tourists regarding the local attractions. Table 4 shows the challenges of the tourism.

Table 4 Challenges in tourism

Challenges	Mean	Std. Deviation
There is no effective marketing of the tourist places in my area	2.060	1.035
Heritage sites and monuments in my area are not maintained properly.	2.435	1.268
The natural resources of my area like wildlife, trees, waterfalls, etc. are not properly maintained.	2.142	1.111
There are no trained tourist guides in my area	2.122	1.109
There are fewer employees in the tourist places in my area than required	2.153	1.088
The government tourism department in my area does not have adequate information about the tourist spots here	2.091	1.072
The tariffs of the hotel in my area are not standardized.	2.159	1.131
There is absence of basic facilities like washrooms near the tourist spots and tourist information centres in my area	2.233	1.158
In my area, new types of lodging like home stays are not regulated	2.165	1.115

Correlation analysis was carried out to examine the strength of the relationship between the variables. Based on the correlation analysis on the responses of the local people, the results depicted that adverse impact of tourism on the environment had a strong positive relationship with the economic benefits

derived from tourism ($r = 0.723$, $p < 0.01$). However, the problems of tourism had a strong negative relation to adverse impact of tourism on the environment ($r = -0.710$, $p < 0.01$). Table 5 presents the correlation between variables for the responses of local people.

Table 5 Correlation between the study variables

Variables	Mean	Std. Deviation	1	2	3	4	5	6
Economic benefit (1)	3.871	0.642	1					
Resources of Tourism (2)	3.812	0.697	0.556**	1				
Government Support (3)	3.474	0.752	0.666**	0.392**	1			
Adverse impact of tourism on environment (4)	3.791	0.778	0.723**	0.383**	0.520**	1		
Problems of tourism industry in Kodagu district (5)	2.173	0.728	-0.800**	-0.356**	-0.650**	-0.710**	1	
Tourism promotion (6)	3.674	0.686	0.744**	0.384**	0.667**	0.642**	-0.699**	1

In line with the analysis, the hypotheses formulated were tested using linear regression analysis. Firstly, the responses of the local people were considered. As per the model summary (Table 4), the R^2 value of 0.522 indicates that 52.2% of the variation in economic development can be explained by an adverse environmental impact of tourism. The adverse environmental impact of tourism statistically significantly predicted the economic development, $F(1, 350) = 382.35$, $p < 0.05$. Environmental issues such as pollution, damage of the natural landscape and environment, disturbance

of natural habitat will decrease the attractiveness and touristic value of the destination and can reduce the tourist flow. The overcrowding, touristic activities like campfire, rafting can lead to loss of natural habitat, pollution, degradation of natural resources which can destroy the natural scenic beauty and biodiversity of the environment. Thus, *Hypothesis 1: The economic development of Kodagu district is negatively affected by improper management of the environment*, was accepted.

Table 6 Model summary of the adverse impact of tourism on environment and economic development

R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
				R Square Change	F Change	df1	df2	Sig. F Change
0.723	0.522	0.521	0.444	0.522	382.235	1	350	0.000

Table 7 Coefficient of regression for the adverse impact of tourism on environment and economic development

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	5.188	0.071		72.663	0.000
Adverse impact of tourism on environment	-0.596	0.030	-0.723	-19.551	0.000

The impact of problems in the Kodagu tourism industry on economic benefits was also tested using regression analysis. As per the model summary (Table 8), the variance of the independent factor in the dependent variable is explained by R^2 value, implying that 64.0% of the variation in the economy of Kodagu tourism is explained by the problems in Kodagu tourism industry. A significant association was found between the two variables $F(1, 350) = 621.028$, $p < 0.05$. It can be inferred that to increase the economic benefits, it is essential to address

various problems related to tourism industry such as maintenance of tourist spots, provision of basic amenities, etc. The various problems in tourism such as lack of efficient marketing and promotional strategy, lack of maintenance near the tourist spots, inefficient services like untrained tourist guide, non-standardized hotel tariffs will lead to a poor touristic experience which can hinder the economic benefits. Thus, *Hypothesis 2: Problems in the Kodagu tourism industry have a negative influence on the economy of Kodagu district*, has been accepted.

Table 8 Model summary of influence of problems in Kodagu tourism industry on economic benefit

R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
				R Square Change	F Change	df1	df2	Sig. F Change
0.800	0.640	0.639	0.386	0.640	621.028	1	350	0.000

Table 9 Coefficient of regression for influence of problems in Kodagu tourism industry on economic benefit

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	5.403	0.065		83.347	0.000
Problems of tourism industry in Kodagu district	-0.705	0.028	-0.800	-24.920	0.000

V. CONCLUSION

The present study analysed the various challenges and environmental issues due to tourism in Kodagu district with respect to local people. The results showed that there was a lack of awareness among the local population regarding the environmental

issues due to tourism was the most important problem. Further, foremost challenge in the tourism in Kodagu was the improper maintenance of the historical monuments and sites. It was also revealed that both the challenges and adverse impact on the environment had a significant effect on the economic development of the district. Therefore,

effective measures such as increasing information centres, enumeration of sustainable tourist activities and conducting awareness programmes in local population to invoke the maximum participation of the local population at all levels of tourism sector in the district needs to be prepared. This will ensure sustainable tourism in the Kodagu district of Karnataka. In addition, to improve the economy of the district, steps to establish a strong relationship between the different stakeholders of the sector (local population, facilitators, tourists and government) can be drafted..

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