

# Sustainable Tourism Development in India: Perception of Tourism Business Operators about Goa Tourism

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## ABSTRACT

This research paper examines the impacts of tourism on the economy, environment and society of Goa from the perspective of the tourism business operators to understand the sustainability of tourism development in Goa, and to identify the factors which are contributing to economic, environmental and socio-cultural sustainability of Goa. A questionnaire survey was conducted among the tourism business operators across the destinations of Goa. Descriptive statistics and factor analysis have used for examining the sustainability of Goa tourism. The descriptive statistics prove that tourism in Goa is ensuring the economic and environmental sustainability of tourist destinations. The factor analysis discloses that the factors like resource exploitation, destination management, socio-cultural sustainability, destination empowerment, environmental management, resource management, destination development, community benefits of tourism, and economic empowerment determine the economic, environmental and socio-cultural sustainability of tourism development in Goa. The Government and tourism industry have to introduce improved programmes and strategies for sustainable exploitation of natural, social and cultural resources of Goa. The Government and tourism industry have to introduce improved programmes and strategies for sustainable exploitation of natural, social and cultural resources of Goa.

**Keywords:** Sustainability, non-conventional energy, destination development, community management

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## 1. Introduction

The tourism industry is considered an engine of economic growth in both developed and developing countries. The tourism industry contributes precious foreign exchange, generates employment and helps in infrastructure development and alleviation of poverty. However, the inconsiderate tourism development brings about disastrous implications on the economy, society and environment of the tourist destinations. The massive growth of tourism and the concentration of tourist activities in certain destinations imposed a perceptible strain on local society and resources. Sustainable tourism has emerged as the most comprehensive approach to achieve sustainable development and mitigate the adverse impacts of tourism.

The United Nations Commission on Sustainable Development (UNCSD) urges governments to “maximize the potential of tourism for eradicating poverty by developing appropriate strategies in cooperation with all major stakeholders including the indigenous and local communities”. The World Tourism Organization (UNWTO) defines sustainable tourism as “tourism development that meets the needs of present tourists and host regions while protecting and enhancing opportunities for the future. It is envisaged as leading to management of all resources in such a way that economic, social and aesthetic needs can be fulfilled while maintaining cultural integrity, essential ecological processes and biological diversity and life support systems”. It emphasizes a balance among economic, environmental and social aspects of tourism; the need to implement sustainability principles in all segments of tourism; and global aims such as poverty reduction. Sustainable tourism takes full account of its current and future economic, social and environmental impacts and addresses the needs of visitors, industry, environment and the host communities.

India has recognised tourism as an engine of inclusive socio-economic growth and development. However, the lacunae of planning and haphazard implementation of tourism plans have brought a plethora of problems and issues, which challenge the economic, social and environmental existence of destinations. The tourism plans and programmes are planned and implemented in such a way that the fruits of economic development have benefited the tourism business operators, promoters of hotels and restaurants and big

corporations at the cost of local communities. Therefore, the central government and state governments have accepted sustainability as the basic premise of development processes and achieving sustainable development through sustainable tourism is considered as the major objective of tourism development in India. However, there has been little research conducted to empirically evaluate the impacts of tourism on the environment, economy and society, and the effectiveness of the Government policies and programmes in achieving sustainability of tourist destinations. Hence, this research paper has identified Goa tourism for studying various dimensions of sustainable tourism development and the important factors affecting the sustainability of tourist destinations. This research paper also examines how far the implementation of tourism policies and programs are effective in achieving economic, environmental, and socio-cultural sustainability of tourist destinations. As this research paper evaluates the sustainability of Goa tourism empirically from the perspective of tourism business operators, the research findings may not only help the tourism decision-makers while designing and implementing tourism policies and programmes but also contribute to the tourism management literature immensely.

The precise objectives of the research paper are to study the impacts of tourism on the economy, environment, and society of Goa from the perspective of the local community, and to identify the factors contributing to the economic, environmental, and socio-cultural sustainability of Goa. It also explores how far the government policies and programmes are successful in achieving sustainability of tourism in Goa. A questionnaire survey was conducted among the tourism business operators across the destinations of Goa. Descriptive statistics and factor analysis have been used for examining the sustainability of Goa tourism. The descriptive statistics prove that tourism in Goa is ensuring the environmental, economic, and social sustainability of tourist destinations. The factor analysis establishes that the factors like resource exploitation, destination management, socio-cultural sustainability, destination empowerment, environmental management, resource management, destination development, community benefits of tourism, and economic empowerment determine the economic, environmental, and socio-cultural sustainability of tourism development in Goa.

This paper is organised as follows. The section 2 review of literature, provides a discussion on previous researches on sustainable tourism. Section 3, research methodology describes the sample, methods, and materials adopted for measuring the variables and analyzing the data. Section 4, analysis of the result, examines the data derived out of the structured questionnaire survey conducted across Goa using descriptive statistics and exploratory factor analysis. Section 5, Conclusion, concludes the research paper and discusses future directions for research.

## 2. Review of Literature

Goa is projected as a model tourism destination of India. Meticulously designed and developed tourism products and destinations such as beach tourism, adventure tourism, wildlife tourism, pilgrim tourism, cultural tourism, architectural tourism and village tourism are unforgettable experiences to the visitors. Tourism is considered an important sector of Goa and contributes to the achievement of sustainable development. Tourism generates both positive as well as negative impacts on the economy, environment, and society. The following section provides a brief discussion of the empirical findings on the impacts of tourism on the economy, environment, and society. Tourism serves as a major segment of the economy, which provides many economic benefits and changes the destiny of millions of people from the disadvantaged sections of the society. Tourism reduces widespread poverty by boosting national income, generating employment, earning foreign currency, ensuring regional development and promoting handicrafts, etc. The surge in charter flight brought a new breed of tourists who demanded western amenities because of which foreign investors started investing in building hotels, swimming pools, and even golf courses that never benefited the local community. The majority of the money spent by tourists went to foreign hotels or foreign tour companies, Solomon (2009). About 80% of the travellers' expenditure is siphoned off by international companies by way of airline fares and hotel reservations. The local business entrepreneurs in Goa are not getting any share from these revenues. Roy (2011), Fallerio (2015), Menon (1993)

There is also leakage effect of tourism revenue in Goa through either import of construction materials and equipment or consumer goods from other states. The tourism industry is depending on Karnataka and Maharashtra for food products and the potential profits from tourism are siphoned off by these neighbouring states. Leakage of income could have been avoided if the tourism industry had a locally sourced food supply. Consequently, the locals have been fighting to prevent major hotel projects and their extension programmes, Solomon (2009). Despite having the active involvement of local people in tourism development, the gains derived from tourism are not substantial. The large hotels, restaurants and tourism developers are cornering the economic benefits leaving the local population to bear the social and environmental burden, Solomon (2009).

Tourism is seasonal in Goa and during the off seasons, the tourism resources remain unutilized or underutilized. During peak seasons, the industry has to scale up its infrastructure to meet the demand as the tourist population outnumbers the local population, which puts pressure on tourism resources. (Solomon (2009)) The traditional system of cultivation is disturbed and agriculture has become a part-time activity for the workers, who have shifted to the tourism-related service sector. The unskilled workers of the tourism industry, who

experience the sharpest downswing in income and employment, always become a social cost of the industry and state government. Sawrkar et al. (1998)

Tourism has been the reason for the excessive increase in the cost of living in popular tourist destinations. The rising prices of goods and services and increasing cost of housing and properties are big disadvantages to the local community, as they have to pay high prices for food, entertainment, housing, etc. (Menon (1993)) Besides, the increase in land and property prices increase the dominance of outsiders in the area make things difficult for the local people, Harcombe (2010). Tourism development in Goa is not balanced. The tourism development has concentrated in four coastal stretches of Bardez, Salcete, Tiswadi, and Marmagoa, which accounts for approximately 66% of Gross State Domestic Product (GSDP). There are many regions in the hinterland of Goa that have huge tourism potential but very little has been done to develop these regions. Thus, there is a huge interregional imbalance existing in Goa especially between the coastal and hinterland regions in terms of economic and infrastructure development. Sawrkar et al. (1998)

The rapid and uncontrolled tourism development often brings about environmental damages because tourism developers prefer to maintain their economic interests rather than the ecosystem. The tourism infrastructure development is often built in the most beautiful landscapes and places, which destroy the environment and exhaust limited natural resources not only for the present generation but also for future generations. (Solomon (2009)) The nexus between the promoters of luxury hotels and the central and state governments is always to the detriment of the local people. The programmes of widening subsidies and incentives and manipulation of the legal and planning framework, favour the star hotels under the pretext that this form of tourism development favours the development of the small-scale sector. Menon (1993)

The environmental challenges faced by Goa are numerous. The over utilised waste management system, lack of education and awareness about environment conservation, dumping of solid and liquid wastes, limited enforcement of deterrent measures against beach pollution, water bodies and ecologically sensitive areas, and violation of coastal zone regulation are some of the pressing challenges of Goa tourism. (KPMG and Department of Goa Tourism (2015)) Goa is the hub of a variety of tourism activities and over 50 lakhs of domestic and international tourists visit every year. Mass tourism in Goa exceeded carrying capacity and the water resource in many coastal areas is stressed due to tourism-related activities. The groundwater quality has deteriorated due to the indiscriminate disposal of human-generated waste, including disposal from septic tanks and cesspools. Marine life is being damaged by irresponsible and unregulated tourism by water sports and coastal tourism. Tourism also led to the loss of mangrove forests, reduction in fish catch and decline in fish species. The indiscriminate construction activities along the coastal stretches of North Goa have led to the problem of loss of sand dunes, increasing tidal waves, soil erosion and deposition. Solomon (2009), Solomon et al. (2011), Sawrkar et al. (1998), Alvares (1993)

The scarce land and land resources are extracted and exploited at a large scale for tourism in Goa. The rapid tourism development and urbanisation, which are taking place in Goa, is changing the structure and character of the colonial towns. Panaji city, the most popular and largest heritage has witnessed tremendous change for the last two decades. The disproportionate high-rise buildings have overshadowed the heritage buildings. The heritage sites have almost lost their value and identity due to the absence of adequate mechanisms for conservation and development of heritage sites, Ahmed and Shankar (2012).

Tourism puts pressure on transportation infrastructure and the Government is not able to meet the travel requirements of both the local community and tourists. The absence of efficient public transport systems has led to the growth of motorbikes and cars substantially, which in turn has aggravated environmental pollution such as air pollution and noise pollution. Waste generation and littering have become major problems in Goa and there is no mechanism existing in Goa for managing and recycling huge quantity of liquid and solid waste generated by the tourism industry, Solomon et al. (2011). Tourism contributes to 8.4% of the total solid waste produced in the state. The municipal bodies and local bodies are responsible for the collection, transportation and disposal of solid waste. In major towns, door-to-door garbage collection has started. The government has initiated setting up waste recycling plants. KPMG and Department of Tourism Goa (2015)

Tourism has brought about positive impacts on society and culture. It has transformed Goa into a cosmopolitan city. The conservation of social heritages, cultural events and skills, first-hand knowledge about foreign cultures, easy acceptance of social differences, removal of prejudices, etc. are the positive impacts of tourism on the culture and society of Goa. Tourism is also instrumental in protecting and promoting many art forms and traditions, which would otherwise have gone extinct. The infrastructure facilities and recreational activities developed for tourism have benefited the local communities. Tourism has also empowered females financially through increased job opportunities and the household decision-making power has been shifted away from males to females, Fellerio (2015).

Tourism also puts adverse impacts on society and culture. Goa is affected by the influence of western culture, especially among young people. The tourism industry could not portray the Goan culture, tradition and events, Solomon (2009) and Fellerio (2015). Commercialization and vulgarization of local folk traditions including art, culture and festivals cause gradual destruction of the purity and

originality of these unique traditional assets. The uncontrolled tourism development has led to the displacement of local people, often without resorting to suitable resettlement and rehabilitation plans and programmes. Tourism has become a big business in Goa. The coastal regions as tourist destinations that cover up things such as money laundering, drugs, prostitution and trafficking in women and children. Solomon (2009), Menon (1993). Tourism is also responsible for the displacement of traditional coastal communities and wrecked their homes and livelihood, culture and heritages, sacred religious sites. Tourism development in Goa has caused forcible eviction of coastal communities especially the vulnerable indigenous groups from their traditional lands, Solomon (2009). Tourism development also leads to loss of access to natural resources. Tourism brings together people having different cultures, languages, lifestyles and religions, which lead to cultural clashes. Sawrkar et al. (1988)

To alleviate the negative impact of tourism, the central government and state government have made positive intervention through various Acts and policies such as the National Tourism Policy 2002, Goa Registration of Tourist Trade Act 1982, Goa Tourist Places (Protection and Maintenance) Act 2001, Water Sports Policy 2013, Environmental Protection Act 1986, Coastal Regulation Zone Notification 2011 and Sustainable Tourism Criteria Indicators, Policy and Guidelines on Eco-tourism, etc.

### 3. Research Methodology

**Sample and Research Design:** The focus of the research paper has been on three aspects of sustainable tourism development: environmental sustainability, economic sustainability and socio-cultural sustainability. Primary research has been conducted for evaluating the sustainability of tourism through the questionnaire survey conducted at different tourist destination across Goa. A structured questionnaire was prepared based on the review of literature, which composed of 32 statements representing 32 sustainable indicators on the economy, environment, society and culture and tourism governance. The 5-point Likert scale, a non-comparative scaling technique has been used for designing the questionnaire. The destinations were selected based on judgment sampling by which the tourist destinations were chosen based on popularity in domestic and international tourism markets. The survey was conducted across Goa covering popular tourist destination such as Anjuna, Baga, Calangute, Candolim, Miramar, Colva, Benaulim, Palolem, Aguada, Cavelossim, Sinquerim, Vagator and Panaji. A data set consisting of the responses of 130 business operators related to tourism was prepared from the questionnaire survey which had executed randomly among the tourists. The number of tourism business operators who participated in the survey was 130 and out of which 58% were small-scale business houses, 32% were medium scale business and 10% were large-scale business houses. From the total tourism business operators, 46% represented the food and accommodation sector, 29% represented tourism activities and 25% represented tourist guides and travel agents. This research paper has utilised descriptive statistics and factor analysis for examining the perception of tourism business operators on the economic, environmental and socio-cultural sustainability of tourism in Goa.

## 4. Results and Discussion

### 4.1 Descriptive Statistics

Descriptive statistics such as mean and standard deviation have been used for describing the perception of respondents about the sustainability of tourism development in the destinations across Goa. Table 1 provides the descriptive statistics for various sustainability indicators such as tourism governance, economic sustainability, environmental sustainability and socio-cultural sustainability, which are the pillars of sustainable development.

**Table 1: Descriptive Statistics on Sustainability Indicators**

Pillars of Sustainability	Variables	Mean	Std. Deviation	Communalities
Tourism Governance	Tourism Plans	3.53	1.26	.770
	Local Government Involvement	3.21	1.22	.683
	Legal System	3.25	1.18	.685
	Public Private Partnership	3.09	0.90	.719
	Integration of Government Departments	3.11	1.03	.584
	Managed Tourist Destinations	3.50	1.02	.597
Economic Sustainability	Financial Assistance	3.15	1.15	.709
	Employment Generation	3.22	1.20	.626
	Implementation of Labour Laws	3.72	0.99	.718
	Skill Development programmes	3.34	1.06	.682
	Poverty Reduction	3.60	0.88	.733
	High Inflation	2.96	1.26	.625

	Local Education and Healthcare	3.80	1.02	.852
	Facilities Benefit Local Community	3.63	1.01	.820
	Prefer Locally Made Products	3.61	0.76	.757
	Homestay Accommodation	3.58	1.17	.774
	Promote Locally Made Products	3.29	1.03	.769
	Empowerment of Women	3.30	0.92	.725
	Tax Incentives	3.06	1.18	.625
Environmental Sustainability	Pressure on Water	3.22	1.35	.830
	Pressure on Land	3.35	1.40	.796
	Pressure on Transportation	2.98	1.38	.795
	Pressure on Natural Vegetation	3.13	1.40	.813
	Water Management	3.28	1.47	.804
	Land Management	3.23	1.14	.759
	Transportation Management	3.59	1.13	.680
	Management of Natural Vegetation	3.08	1.21	.733
	Waste Generation	3.19	1.31	.807
	Waste Management	3.37	1.19	.799
	Energy Conservation	3.23	1.00	.795
	Environmental Education	3.72	1.05	.770
	Environment Management by Business	3.93	0.97	.868
Socio-cultural Sustainability	Promote Socio-Cultural Heritages	3.35	1.16	.743
	Revive Festivals and Folklores	3.89	1.08	.782
	Commercialization of Culture	2.01	0.95	.691
	Cultural Clashes	2.80	1.22	.825
	Anti-social Activities	2.25	1.08	.633
	Loss of Habitat	2.57	1.07	.695
	Bad Influence on Children	2.98	0.94	.708
	Local Community Behaviour	3.40	1.03	.688

Source: SPSS output from primary survey

Table 1 discloses the descriptive statistics on the tourism governance, economic sustainability, environmental sustainability and socio-cultural sustainability of tourism in Goa from the perspective of tourism business operators.

**Tourism Governance:** The tourism business operators awarded a mean score of 3.53 to Tourism Plan, which explains that the tourism plans and programmes formulated and implemented by the Goa Government, is positively contributing to the sustainable development of the destinations. Tourism business operators believe that the government ensures the active Involvement of Local Governments (3.21) while formulating and implementing tourism plans, policies and programmes. The Legal System has recorded an average score of 3.25, which shows that the Goa government has established efficient and effective legal systems to deal with the violation of rules and regulations related to tourism. The government is ensuring efficient and effective tourism development through the Integration of Government Departments (3.11). Public-Private Partnership (3.09) establishes that the Goa government is not very effectively encouraging the formation of public-private partnerships for the development of tourism. The descriptive statistics on sustainability indicator, Managed Tourist Destinations (3.50) reveals that tourism is giving importance to the protection and conservation of natural and socio-cultural heritages. Thus, tourism governance indices strongly support the empirical prediction that tourism governance is directly contributing to sustainable development.

**Economic Sustainability:** Table 1 demonstrates the perception of tourism business operators, which shows that tourism development brings economic sustainability across tourism destinations in Goa. Tourism business operators perceive tourism as an important segment of the economy that Generates Employment (3.22) to skilled, semi-skilled and unskilled unemployed youth from the local community. The mean value of Implementation of Labour Laws (3.72) provides strong support for the argument that the tourism industry is implementing the labour laws and regulations regarding minimum wage and satisfactory working conditions. Business operators expressed that there are various government and private institutions and agencies, which provide training and Skill Development Programmes (3.34) to the local community to set up ventures in tourism-related business activities.

The mean score of 3.60 on Poverty Reduction shows that tourism is facilitating the eradication of poverty and improvement of the quality of life of the local population. In contrast, the low mean score of High Inflation (2.96) repudiates the general argument that the tourist destinations experience invariably high level of inflation and exorbitant prices of goods and services, housing and properties. Tourism business operators find that the massive development of tourism activities has improved Local Education and Healthcare (3.80). The average score on tourism Facilities Benefit Local Community (3.63) shows that the tourism infrastructure, recreational activities and other facilities developed for entertaining the tourists are also accessible to the local community. Similarly, business operators express that tourists Prefer Locally Made Products (3.61). The business community has assigned a mean score of 3.58 to Homestay Accommodation. In Goa, the concept of homestay accommodation has been gaining popularity and more and more tourists are preferring homestay accommodation that provides additional income to the local community.

The tourism business operators also Promote Locally Made Products (3.29) to tourists. The descriptive statistics on Financial Assistance (3.15) discloses that the government agencies and financial institutions are providing financial and non-financial assistance to tourism business operators. Tourism business operators advocate that tourism is facilitating the Empowerment of Women (3.30) by providing meaningful employment, satisfactory remuneration and decent working conditions to the members of the local community, especially the women and the disadvantaged groups. However, the tourism business operators do not support the argument that the government offers various financial assistance (3.15) and Tax Incentives (3.06) to business operators to promote tourism in Goa. Thus, the descriptive statistics on economic sustainability indicators strongly support the empirical hypothesis that tourism development in Goa is directly contributing to economic sustainability.

**Environmental Sustainability:** The Pressure on Water has recorded a mean score of 3.22, which establishes that the tourism industry is putting pressure on water resources. In contrast, the average score on Pressure on Land (3.35) supports the argument that tourism leads to pressure on land resources. The tourism business operators have assigned an average score of 2.98 to Pressure on Transportation, which discloses that tourism development is not exerting pressure on the transportation infrastructure and facilities. The business communities have awarded a mean score of 3.13 to Pressure on Natural Vegetation and Wildlife that lead to the conclusion that tourism development in natural heritages and protected areas are destroying the biological diversity and physical integrity of the destinations. The descriptive statistics on Water Management (mean score 3.28) prove that tourist destinations have effective and efficient mechanisms for mitigating pressure on water resources. The mean score of 3.23 on Land Management leads to the conclusion that the Government has introduced and implemented a proper land management system to mitigate the pressure on land due to tourism development. The average score on Management of Transportation (3.59) leads to the conclusion that the government has taken suitable measures to mitigate the pressure on transportation. The mean score of Management of Natural vegetation and wildlife (3.08) provides weak support for the argument that the conservation programmes introduced by the government are mitigating the degradation of natural vegetation and loss of wildlife due to tourism development.

The mean score of Waste Generation (3.19) leads to the conclusion that tourism activities generate huge quantities of waste in tourist destinations. The mean score on Waste Management (3.37) discloses that the Government has installed efficient and effective waste management systems to dispose and recycle waste in various tourist destinations. Descriptive statistics on Energy Conservation (3.23) disclose that the government is promoting sustainable utilisation of conventional and non-conventional energy. The mean value of 3.72 on Environmental Education substantiates that the government is providing environmental education and awareness to the local community, business operators and tourists for adopting sustainable tourism practices. Similarly, the tourism business operators are actively contributing to Environment Management (3.93). Thus, the findings from descriptive statistics on sustainability indicators strongly support the empirical hypothesis that tourism is directly contributing to the environmental sustainability of the tourist destinations in Goa. However, the tourism industry and the Goa government have to devise and introduce appropriate resource utilisation strategies.

**Social Sustainability:** The tourism business operators support that tourism Preserves Socio-cultural Heritages (3.35) and Goa tourism ensures the protection and conservation of rich and varied social and cultural heritages. Similarly, the business operators strongly support the argument that the tourism Revives Local Festivals and Folklores (3.89) of the indigenous communities. A very low mean score on Commercialisation of Culture (2.01) reveals that the tourism development in Goa has not led to excessive commercialisation of indigenous culture and traditions. Cultural Clashes scored a mean value of 2.80, which also shows that tourism is not leading to cultural clashes between the tourists and the local community. The business community believe that tourism development does not lead to Anti-social Activities (2.25) such as crime, drug abuse, alcoholism, prostitution, etc. The average score on Loss of Habitat (2.57) also explains that tourism development does not cause loss of habitats to human beings, animals and natural vegetation in the tourist destinations.

Likewise, the business community has assigned an average score of 2.98 for Bad Influence on Children, which repudiates the argument that tourism adversely affects the attitude and behaviour of the young generation, especially children and juveniles. On the contrary, the mean score of Local Community Behaviour (3.40) establishes that the local community maintains good behaviour towards tourists and tourism business operators. Thus, the descriptive statistics on social sustainability indicators strongly support the empirical prediction that tourism is directly contributing to the social sustainability of Goa.

The descriptive statistics precisely described the perception of tourism business operators, which establishes that the tourism development is leading to the economic, ecological and social sustainability of tourist destinations of Goa. However, the Government and tourism industry have to introduce appropriate programmes and strategies for sustainable exploitation of natural, social and cultural resources of Goa.

#### 4.2 Factor Analysis

Factor analysis is used for examining the sustainability of tourism development and identifying the factors, which influence the economic, environmental and socio-cultural sustainability of tourist destinations of Goa from the perspective of tourism business operators. The suitability of data for factor analysis is examined by applying the Keiser-Myer-Olkin test and Bartlett Test of Sphericity. Keiser-Myer-Olkin test measures the sampling adequacy and Bartlett's test of Sphericity the Bartlett's test of Sphericity examines the null hypothesis that the original correlation matrix is an identity matrix. (Hair et al. (2019)) Table 2 shows the results of the sampling test and data assumption from the Bartlett test of Sphericity and Kaiser-Meyer-Olkin (KMO).

**Table 2: KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy:	.547
Approx. Chi-Square	1720.748
Bartlett's Test of Sphericity	
Degree of Freedom	351
Significance	.000

*Source: SPSS output from primary survey*

Table 2 shows that the Bartlett test of Sphericity is statistically significant and reject the null hypothesis that the original correlation matrix is an identity matrix (Chi-square = 1720.748,  $p < 0.000$ ). The Kaiser-Meyer-Olkin (KMO) overall measure of sampling is 0.547, which indicates that data are suitable for the principal component analysis. The Kaiser-Meyer-Olkin (KMO) test value above 0.50 provides an adequate indication for performing the factor analysis.

This paper has used factor analysis based on the principal component analysis (PCA) for examining the economic, environmental and socio-cultural sustainability of the tourism destinations. Table 2 and Figure 1 represent the results of factor analysis including the factors, eigenvalues, percentage of variance and percentage of the cumulative variance of initial eigenvalues and rotation sum of squared loadings for 32 variables after performing factor analysis and varimax rotation using Principal Component Analysis (PCA).

**Table 3: Total Variance Explained**

Factors	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.026	14.912	14.912	3.151	11.669	11.669
2	3.310	12.261	27.172	2.757	10.212	21.881
3	2.849	10.552	37.724	2.576	9.543	31.424
4	2.150	7.962	45.686	2.371	8.783	40.206
5	1.864	6.903	52.589	2.131	7.891	48.097
6	1.742	6.451	59.040	1.935	7.167	55.264
7	1.406	5.209	64.249	1.690	6.259	61.523
8	1.292	4.785	69.033	1.615	5.981	67.504
9	1.173	4.346	73.379	1.586	5.875	73.379

*Source: SPSS output from primary survey*



Figure 1: Scree Plot

Table 3 and Figure 1 Scree Plot exhibit the variances and cumulative variances of twelve factors after performing factor analysis using Principal Component Analysis (PCA). The cumulative variance for the nine significant factors after varimax rotation is 73.38, which explains 73.38% of the total variance. These factors are named Resource Exploitation (11.669), Destination management (10.212 %), Sociocultural sustainability (9.543%), destination empowerment (8.783%), Environment management (7.891%), Resource management (7.167%), Destination development (6.259%), community benefits of tourism (5.98%1), and Economic empowerment (5.875%).

Table 4 shows the rotated factor matrix of twelve factors generated from the factor analysis. The principal factors and variables with factor loadings above 0.50 are shown in the table, which indicates the nature and magnitude of correlation existing between the variables and factors.

Table 4: Rotated Component Matrix

Variables	Factors								
	1	2	3	4	5	6	7	8	9
Pressure on Natural Vegetation	.834								
Pressure on Water	.811								
Pressure on Land	.783								
Pressure on Transportation	.774								
Energy conservation		.762							
Waste Management		.750							
Legal System		.685							
Skill Development Programmes		.612							
Commercialisation of Culture			.780						
Anti-social Activities			.765						
Behaviour of Local Community			.530						
Empowerment of Women				.767					
Vegetation Management				.705					
Tax Incentives				.643					
Government Involvement				.575					
Environment Management by Business					.861				
Environmental Education					.835				
Land Management						.836			
Water Management						.717			
Transportation Management						.593			
Managed Tourist Destinations							.739		
Business Promote Locally Made Products							.642		

Beneficial to Local Community								.862	
Integration of Government Departments								.569	
Public-Private Partnership								.508	
Poverty Reduction									.769
Revive Festivals and Folklores									.704

*Note: Table 8.12 shows the results on factor analysis, extraction method based on Principal Component Analysis after Varimax Rotation of principal factors with Kaiser Normalisation. Factors 1 to 9 are resource exploitation, destination management, socio-cultural sustainability, destination empowerment, environmental management, resource management, destination development, community benefits of tourism, and economic empowerment*

### 4.3 Discussion

Table 4 shows the results from the rotated factor matrix after performing varimax rotation with Kaiser Normalisation. In varimax rotation, the 27 variables are clustered into twelve major factors. These factors are named; resource exploitation, destination management, socio-cultural sustainability, destination empowerment, environmental management, resource management, destination development, community benefits of tourism, and economic empowerment.

- (1) **Resource Exploitation:** Resource Exploitation is the most important factor that influences the sustainability of tourist destinations in Goa. It includes the variables like Pressure on Natural vegetation (.834), Pressure on Water (.811), Pressure on Land (.783) and Pressure on Transportation (.774) that have wide implications on the sustainability of the tourist destinations. Tourism business operators argue that infrastructure is an indispensable ingredient of tourism development and the increased construction activities and recreational facilities putting huge pressure on precious resources such as land, water, natural vegetation and wildlife and transportation. The Goa government and tourism industry should introduce and implement appropriate resource utilisation strategies that can ensure sustainable conservation of resource for meeting the requirements of present and future generations.
- (2) **Destination Management:** Destination Management is the second most important factor that contributes to sustainable tourism development in Goa. The destination Management is composed of the variables such as Energy Conservation (.762), Waste Disposal Management (.750), legal system (.685) and Skill Development Programmes (.612). The Goa government and tourism industry have taken appropriate measures to manage and market the tourist destinations for attracting tourists across the world. The government encourages tourism business operators to achieve energy efficiency by sustainably utilising conventional and non-conventional energy. Adequate security arrangements have been provided by the government at all destinations for ensuring the safety and security of tourists by installing efficient and effective security systems and legal mechanisms to deal with the violation of tourism-related rules and regulations. Embracing sustainable destination management in principle, the Government and tourism industry have successfully implemented sustainable destination management programmes by developing suitable mechanisms to dispose and recycle the waste in all tourist destinations. In Goa, the government and private agencies and institutions provide training and skill development programmes for developing productive human resources required for the tourism industry.
- (3) **Socio-cultural Sustainability:** Sociocultural sustainability, is another factor that makes tourism socially unsustainable. Sociocultural sustainability is composed of the variables such as commercialization of culture (.780), antisocial activities (.765), the behaviour of the local community (.530). The skewed distribution of tourism benefits, prevalence of high economic disparity among different sections of the society and increasing competitions for scarce resources have resulted in many social evils such as commercialisation of culture and antisocial activities. The active cooperation of the local community is a prerequisite for successful tourism development. In Goa, the local community should maintain a friendly attitude and positive behaviour towards tourism in general and towards tourists and tourism business operators in particular.
- (4) **Destination Empowerment:** Factor analysis reveals that sustainability of tourism in Goa is reinforced by the destination empowerment factor, which is composed of the Empowerment of Women (.767), Management of Natural Vegetation (.705), Tax Incentives (.643) and Local Government Involvement (.573). Tourism majorly provides unskilled employment opportunities, which helps women, especially disadvantaged and marginal sections of the society. The availability of economic opportunities facilitates the eradication of poverty and improves the living standard of women and disadvantaged groups. The government has introduced various legal enactments, financial provisions and logistical supports for protecting and conserving the natural vegetation and wildlife. To promote tourism in Goa, the state government provides various tax and non-tax incentives to tourism business operators.

- (5) **Environmental Management:** Factor analysis shows that Environmental Management is also an important factor that contributes to the sustainability of tourist destinations in Goa. Environment Management by Business (.861) and Environmental Education (.835) are the variables, which contribute to the Management of Environment. The Government has identified that environmental education and stakeholders' participation in environmental management are the essential elements of sustainable tourism development. Thus, the government has been spreading environmental education and awareness among the tourists, tourism business operators and local communities through various programmes. The tourism business operators are also contributing to the management of the environment and actively participating in keeping the environment clean and hygienic.
- (6) **Resource Management:** Resource Management is the most important factor that contributes to the sustainability of destinations in Goa. Resource management is composed of three variables: Land management (.836), Water Management (.717) and Transportation Management (.593). The high factor loadings of these variables disclose that Goa tourism has adopted suitable strategies for sustainable exploitation and conservation of resources in various destinations without damaging the habitats of human beings and animals. It has introduced efficient and effective destination management systems to address pressing problems like pressure on land and water resource.
- (7) **Destination Development:** Destination marketing is another important factor that influences the sustainability of Goa tourism. The Managed Tourist Destinations (.739) and Preference for Local Products (.648) are important destination characteristics that enable the tourism industry to market Goa tourism in international and domestic markets. Goa tourism has identified the conservation of physical integrity, biodiversity and environmental purity as essential elements of sustainable tourism management. The Goa government and tourism industry have adopted efficient and effective destination management strategies for marketing the natural and socio-cultural heritage of Goa. The high factor loading of the variable preference for locally made products reminds us that the tourism industry is effectively marketing the Goan products in tourist destinations.
- (8) **Community Benefits of Tourism:** Community benefit of tourism is another important factor that makes tourism sustainable are the governance Beneficial to the local community (.862), integration of government departments (.569), and public-private partnership (.569). the high factor loading of the variables shows that the government formed public-private partnerships for undertaking massive investment in the development of tourism infrastructure through the coordination of different government departments. The infrastructure developed for tourism has been benefiting the local community.
- (9) **Economic Empowerment:** The Economic empowerment. is another factor, which contributes to the sustainability of tourism development in Goa. The Poverty Reduction (.769), and Revive Festivals and Folklores (.704) are the major variables that explain the social and economic impacts. Tourism is being used as an effective tool for alleviating poverty and ensuring local prosperity by integrating the tourism industry with agriculture, manufacturing, and other service sectors. This integration enables the tourism industry to create alternative livelihood options and empowering the disadvantaged and the marginalized sections of society. Goa is actively promoting the indigenous culture and tradition among tourists, which provide immense opportunities for the local communities to earn livelihoods from the performance of traditional art forms and folklores.

## 5. Conclusion

This research paper has examined the economic, environmental and social sustainability of Goa tourism and factors affecting the sustainability of tourism from the perspective of tourism business operators using descriptive statistics and factor analysis. The descriptive statistics establish that tourism development in Goa is ensuring economic, environmental and socio-cultural sustainability.

The factor analysis establishes that the factors like resource exploitation, destination management, socio-cultural sustainability, destination empowerment, environmental management, resource management, destination development, community benefits of tourism, and economic empowerment determine the economic, environmental, and socio-cultural sustainability of tourism development in Goa. The Government and tourism industry have to introduce improved programmes and strategies for sustainable exploitation of natural, social and cultural resources of Goa.

## Limitations of the Research and Future Directions for Research

There are several areas of limitation of this research that may cast a shadow over the reliability and validity of the research results. The tourism industry involves a multitude of stakeholders having diverse interests, objectives and aspirations. In this research, we could not incorporate the opinion of Government agencies and Non-Governmental Organizations (NGOs) because of time constraints and the seasonal nature of tourism in Goa. An important extension of this research would be to examine the economic, environmental and socio-cultural sustainability from the perspectives of the different stakeholders such as tourists, local community, tourism business, government agencies, and NGOs. For examining the sustainability of tourism in the future, the researcher can adopt the most rigorous methodologies such as multiple regression models or structural equation models (SEM).

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**Reference**

1. Ahmed, Sheik Ali & Shankar, B. (2012). Guidelines for Regulating the Heritage Monuments and Areas in Old Goa, *International Journal of Modern Engineering Research*, 2(6), pp.4732-4735.
2. Alvares, C. (1993). Fish, Curry and Rice: A Citizen's Report on the State of the Goan Environment, Ecoforum. Goa, p. 260; Gadgil, M. and S. Chandran. (1993). Konkan Lessons-A Railway Project and the Environment, *Frontline*, 26 March, pp. 62.
3. Brammer, N., & Beech, J. (2004). Use and Abuse of Tourism: the Goan Experience, *Tourism, Culture & Communication*, 5, pp. 23-35.
4. Bramwell, B., & Sharman, A. (2003) Approaches to Sustainable Tourism Planning and Community Participation: The Case of the Hope Valley, *Tourism and Sustainable Community Development*, Routledge, PP. 17-35.
5. Hair, J.F., Black, W. C., Babin, B.J. & Anderson, R.E. (2019) *Multivariate Data Analysis*, 8<sup>th</sup> ed., Cengage, New Delhi.
6. Gama, D. A., & Solomon, R. (2011). Reclaiming Water Rights: Towards an Equitable Social Contract in Goa, *Water Equity in Tourism (WET) program*, Centre for Responsible Tourism, Goa and Tourism Concern, UK., pp. 1-70.
7. Grossman G.M. & A.B. Krueger (1993). Environmental Impacts of a North American Free Trade Agreement, in P.M. Garber (ed.), *The Mexico-U.S. Free Trade Agreement*, Cambridge (Mass.), MIT Press, pp.13-56.
8. Noronha, L., Lourenco, N., Lobo-Ferreira, J.P., Leopart, A., Feoli, E., Sawarkar, K. & Chachadi, A. (2002). Coastal Tourism, Environment, and Sustainable Local Development, TERI, New Delhi, pp. 1-51, [www.teriin.org](http://www.teriin.org).
9. Page, J. S., Brunt Paul, Busby, G., & Connell, J. (2001). *Tourism: A Modern Synthesis*, Thomson Learning.
10. Solomon, R. (2009). The Challenges and Prospects of Tourism in Goa Today, *Council for Social Justice and Peace*, Goa, pp. 1-100.
11. Sunlu, Ugur. (2003). Environmental Impacts of Tourism, pp. 263- 270. <http://om.ciheam.org/>
12. Sustainable Tourism for India Criteria and Indicators, Applicable to Accommodation Sector and Tour Operators. (2011). Ministry of Tourism, Government of India. <http://www.incredibleindia.org>
13. Swarbrooke, John. (1999). Sustainable Tourism Management, Library of Congress Cataloging in Publication Data. [www.blueandgreentomorrow.com](http://www.blueandgreentomorrow.com).
14. Swarkar, K., Naronia, L., Mascarenhas, A., & Chauhan, O. S. (1998). Tourism and the Environment: Issues of Concerning the Coastal Zone of Goa, *The International Bank for Reconstruction and Development/ The World Bank*, pp. 1-19.
15. UNCTAD. (2010). Promoting Foreign Investment in Tourism. Investment Advisory Series. Series A, No. 5. UNCTAD/DIAE/PCB/2009/16. New York and Geneva.
16. UNEP & UNWTO. (2005). Making Tourism More Sustainable, A Guide for Policy Makers, <http://www.worldtourism.org>
17. Vellas, François. (2011). The Indirect Impact of Tourism: An Economic Analysis, Toulouse University - TED AFL, Third Meeting of T20 Tourism Ministers Paris, France.
18. Venugopalan, T., & Dharmendra, Kumar. (2017). Sustainable Development through Sustainable Tourism: A Case Study of Kerala Tourism. *Asian Journal of Research in Business Economics and Management*, 7(12), pp.10-17.
19. Wilson, D. (1997). Paradoxes of Tourism in Goa, *Annals of Tourism Research*, 21 (1), pp. 52-75.
20. World Commission on Environment and Development. (1987). Report of the World Commission on Environment and Development: Our Common Future. <http://www.un-documents.net>