



# SOCIO-ECONOMIC IMPACT ASSESSMENT OF TOURISM IN PITHORAGARH DISTRICT, UTTARAKHAND

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**ABSTRACT:** Impact assessment of tourism is a complex activity requires GIS (Geographic Information System) as a tool for effective assessment and proper management. GIS approach of visualization is an innovative discipline to recognize the socio-economic assessment of tourism by integrating spatial and non-spatial data. This paper practices a GIS based visualization of impact assessment of tourism in Pithoragarh district Uttarakhand. The district has potentialities of the development and expansion of tourism industry but postulate to make an effort in this direction to make the region attractive and suitable for tourist as well as the region itself. In this paper, an approach has been described to allow the geovisualization of the tourism impact assessment by linking spatial and non-spatial data in the form of map display as resultant. Tourism assessment was done through the growth and socio-economic impact of tourism. Growth analysis is done through non-spatial data, as international and domestic tourist arrival data calculated with the method of compound annual growth rate (CAGR) and coefficient of variation that correlates with the spatial data by using geospatial tool in a GIS domain. The said analysis is done by ten years period non-spatial data, which was collected from the tourism department. Socio-economic assessment is examined by the integration of secondary data as tourism employment, government expenditure on tourism planning, increment of accommodation facilities and roads. The Study presents the tourism development in context of socio-economic aspect and geovisualization is done by tourism growth and tourist variation map of the study area. The finding reveals that the growth of tourist arrival increased to 2.35 percent from year 2000 to 2010. The growth of the Gangolihat, Patal Bhuwneshwar and Muniyari tourist places of Pithoragarh district also shows an increment in the annual growth rate by 8.20, 9.18 and 14.61 percent respectively.

**KEY WORDS-** Tourism GIS, Decision Planning, Socio-economic assessment

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**1. INTRODUCTION:** Tourism is a movement of people from one place to another for recreation, enjoyment, religious, natural, culture and social attributes. The tourism depends on the people upon their leisure time, desire and their interest in wildlife, and forest (1). Tourism is a leading industry in the service sector at the global level. It is a vast dimension industry which supports socio-economic development of the destination. Tourism is an aspect of economic geography, strengthened the economies of many countries. It provides job opportunities in different tourist sectors like accommodation, catering, transport, entertainment and others which related to tourism activities. It plays an important role in a country's balance of payments. Lloyd (2) records that the tourist industry is a composite group of heterogeneous services and industries. Therefore, the 'recreational studies are multifarious and complex, constituting a fruitful field of research in economic geography (3). The significance of Tourism, as defined by Ghosh (4) is one of the major items of international trade.

Tourism is many faceted phenomenon which strengthens the economies of tourism destinations and forges bonds of international-national and inter-regional relationship. Travel and tourism has taken a place among the world industries and it offers a significant share in Gross Domestic Product (GDP), employment and different opportunities of developing countries for their better growth. Tourism destinations behave as dynamic evolving complex systems, encompassing numerous factors and activities which are interdependent and whose relationships might be highly nonlinear (5). The present research discusses the international and regional trend of tourist arrivals in the Pithoragarh district located at Kumaon region in Uttarakhand. It also explores the socio-economic impacts of the tourism development because district is famous for its scenic and glacier beauty that attracts a development, then it must be economically viable, ecologically sensitive and culturally appropriate (10). The success of tourism in any country depends on the ability of that country to sufficiently develop, manage and market the tourism facilities and activities in that country (11).

Tourism industry earns the gross revenue and foreign exchange earnings, play an important role in economic development. Therefore it is a generator of foreign exchange at the national level and also a fastest growing industry in the

global economy. But, it has both socio-economic and environmental implications. Socio-cultural transformation can be seen due to the mass tourism. Some of the socio impacts like promotion of social mobility, urbanization in host region, preserve ancient monuments, exchange culture values, and promote pilgrimage to holy places and many other factors related to society and tourism. The social impacts of tourism should not be confused with the popular term “social tourism”. The objective of social tourism is to ensure that it is accessible to all people. Social impact of tourism refers to the changes in the quality of life of residents and of tourist destination (12). Tourism can, therefore be a catalyst of national and regional development, bringing employment, exchange earning, balance of payment advantages and important infrastructure development benefiting locals and visitors alike (13). Therefore, the backward countries have been endeavoring to promote this sector because it is an instrument of economic growth. Similarly, the economic development as the establishment of the new avenues, employment generation and earnings of foreign currency is one of the major functions of tourism. Therefore, the backward countries have been endeavoring to promote this sector because it is an instrument of economic growth.

GIS is a now recognized as a valuable tool for the tourism analysis. Way back in the eighties, handling GIS data from the tourist point of view was thought (14). In the past decade, there have been many fold advances in information, technology in general, and telecommunication technology in particular, including the internet, (15), as a result, GIS is now becoming an essential part of main stream information technology. GIS is now recognized widely as a valuable tool for managing, analyzing, and displaying large volumes of diverse data pertinent to many local and regional planning activities (16). In the tourism industry, government strategy, decision making, GIS is used to provide: digital basic map, digital files for analyzing and mapping, digital files for mobile mapping and modelling, digital multimedia (17). Through GIS, one can extract and use the different set of information from a map. GIS is able to show a large amount of tourist information which is always up to date (18). This study used GIS for map representation by the integration of spatial and non-spatial data.

**2. RESEARCH AREA:** The study investigated a case study in Pithoragarh district shown in Fig. I. It has extensive potentialities for expansion of the tourism industry, so in the study area it is needed to make efforts in this direction and make region more attractive and suitable for tourist as well as the region itself. It also provides a better environment and potentialities for tourism. The necessity of the region is to develop the tourism by exploring the resources which are not defined and also may develop the artificial attractive resources according to the tourist need. Pithoragarh district provides almost all the resources for the development of the tourism industry but think to explore and manage it. Therefore tourism has multiplier affect like employment generation, better infrastructure facilities, dependency on subsistence farming reduce, engaged in tourist related activities, self business as hotels, restaurant, travel agencies, money exchanger, and some others related to tourism. With the development of economic condition automatically social conditions also are affected as better health care, high living standard, better educational facilities, and decrease in migration rate. The current research area is chosen by keeping the above perception in the mind, to analyze the socio- economic conditions of the region which are affected by tourism and also to examine the role of the tourism industry in the economy of the region that is a need of the development.

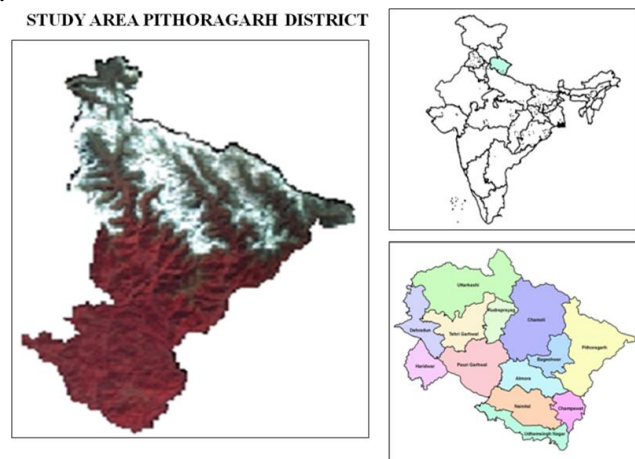


Fig I: Study Area-Pithoragarh District

**3. METHODOLOGY:** The information contained in the present study has been collected from both primary and secondary data sources. Primary data involved tourist location data and sample survey data of the region. Global Position

System (GPS) instrument is used to locate the selected tourist spots of Pithoragarh district. In the form of sample survey data Questionnaire was filled by tourist, host, shopkeeper, and villagers and interview also were taken for the analysis. Secondary data were collected through the various government organizations, offices and departments. Tourist related data were collected from the regional tourism office of Pithoragarh and some collected from literature like Sankhyakik Patrika.

**3.1. TECHNIQUES OF DATA ANALYSIS:** For the data analysis of the present study various techniques and methods have been adopted as described below:

**3.1.1. STATISTICAL TECHNIQUE:** Growth analysis of tourist at various tourist spots of Kumaon districts have achieved with the help of statistical techniques. Statistical techniques like Standard Deviation and coefficient of variation are used to find out the variation of tourist growth of selected tourist spot of the study area. Compound Annual Growth Rate method (CAGR) is also used to calculate the growth rate of tourist arrivals of selected tourist places.

**3.1.2. GEOGRAPHIC INFORMATION SYSTEM (GIS):** With the help of this technique, integration of spatial and non-spatial data has been done to show the tourist arrival and variation of growth rate on the district boundary map of Pithoragarh.

**3.2. SOFTWARE'S USED:** During the study Arc GIS©, and SPSS© software has been used for analysis and map preparation. Arc GIS is used for the map preparation from the spatial data and non-spatial data collected from the field and Department of Tourist and SPSS is used for the non-spatial data statistics analysis.

**4. RESULTS:** Results of the present study are discussed under the following sections:

**4.1. INTERNATIONAL AND DOMESTIC. TOURISM ARRIVAL TREND:** Tourism is an important service sector at the global level and a significant generator of foreign exchange earnings. Tourism growth and development of the Pithoragarh district affects the economy of the state. According to the regional tourism department, tourist arrival in 2000 was 49597 numbers of tourists which was increased to 62539 in 2010. During the ten - year period, from 2000-10 tourist arrival grew at an average annual rate of 2.35 percent. Table I identified the annual growth rate of ten years from 2000-10, concludes that the result of growth rate is not satisfactory. In some periods it would be negative which is not favorable for the tourism industry in the destination area. To know the reasons behind this growth field work was done to analyze. The explore reasons are mentioned below:

- a. In some years the district had suffered from heavy landslide.
- b. Infrastructural facilities like hotels, resorts, medical, food; ATM, etc. are scanty or negligible.

Natural Hazards and climate change is also a big cause behind this decreasing trend, uncertain rainfall and snowfall makes havoc in the mind of visitor

Period	Average Annual Growth Rate of Domestic Arrivals (%)	Average Annual Growth Rate of International Arrivals (%)	Total Annual Growth Rate (%)
2000-01	19.06	529.82	19.64
2001-02	7.50	-20.89	7.33
2002-03	-2.34	42.61	-2.13
2003-04	3.45	40.99	3.70
2004-05	10.09	-2.63	9.97
2005-06	0.06	-22.66	-0.12
2006-07	-2.92	13.95	-2.82
2007-08	-3.33	12.45	-3.39
2008-09	1.93	23.08	4.34
2009-10	-4.63	-22.35	-16.37

Source: District Tourism Office, Pithoragarh

Table I: Tourist arrival growth rate (2000-10)

**4.2. TREND OF SELECTED MAJOR SPOTS OF PITHORAGARH DISTRICT:** Growth of three tourist sites was studied to know the development of tourism in the district. Munsiyari, Gangolihat, Patal Bhuwneswar, are taken for the study. Table II mentioned the growth of major tourist sites has been going up.

<i>Tourist Places</i>	<i>Arrivals of Domestic arrivals</i>		<i>Arrivals of International Tourist</i>		<i>Total</i>
	<b>2000</b>	<b>2010</b>	<b>2000</b>	<b>2010</b>	
Gangolihat	5500	12065	62	170	8.20
Patal Bhuwneswar	13000	31200	31	170	9.18
Munsiyari	2824	11720	249	300	14.61

Source: District Tourism Office, Pithoragarh

Table II: Tourist traffic at major tourist places in Pithoragarh district (2000-10)

From Table II, total tourist arrivals in Gangolihat increased from 5562 in 2000 to 12235 in 2010. This increased growth rate is noted by the District Tourism Office (DTO), Pithoragarh (2011), which states that tourist arrival growth in Gangolihat have grown up from 2000 to 2010 with an average annual rate of 8.20%. DTO records largest share of tourist arrival in another two tourist sites. This increased in tourist arrivals in recent past years in Pithoragarh implies that the socio-economic impacts bound the destination by tourism activities. Figure II (A) shows a map of tourist arrivals in three sites of tourism of Pithoragarh district. This is developed by the integration of spatial and non-spatial data in a GIS environment.

The coefficient of variation in tourist arrivals of three major tourist destinations of Pithoragarh district has been calculated to know the exact variation in tourist arrival at three major tourist sites (Patal Bhuwneswar, Gangolihat and Munsiyari) in the district, a Standard deviation technique from Mean position has been adopted. Coefficient of Variation (C.V) is given by

$$CV = (\sigma / \bar{x}) 100$$

Where, Standard deviation  $\sigma = (\sum X^2 / N)^{1/2}$   
and  $\bar{x}$  = actual average defined by the relation  $\bar{x} = \sum X / N$

The coefficient of variation is 44.25, 40.40 and 24.08 in Munsiyari, Gangolihat and Patal Bhuwneswar respectively. Highest variation is found in Munsiyari and lowest found in Patel Bhuwneswar as shown in Fig II (B). This variation is found due to undulating trend of all tourist sites in Pithoragarh district which is not good for the tourism industry.

Figure II shows the integration of spatial and non-spatial data of tourist arrival with the help of GIS techniques. Geovisualization is of tourist data is easy to understand for the particular destination. Tourist arrival is shown by linking the pie-diagram with spatial data and variation of tourist by the point density

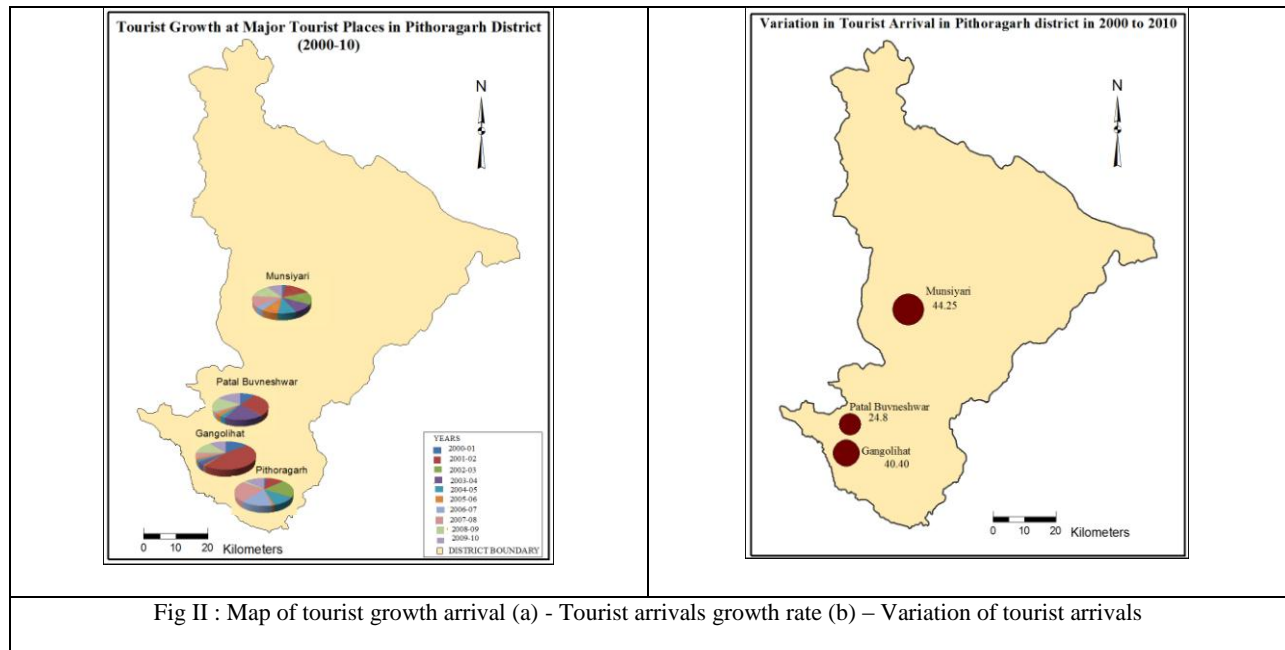


Fig II : Map of tourist growth arrival (a) - Tourist arrivals growth rate (b) – Variation of tourist arrivals

**4.3. INTERNATIONAL TOURIST DESTINATION:** Pithoragarh becomes a famous among the international tourist and famous for trekking, natural beauty, adventure and religious. Table III depicts that U.S.A is the fastest growing tourist destination in Pithoragarh district with an annual average growth of about 38 per cent over the ten years. Despite disasters and various crises in Pithoragarh district, succeeded in maintaining a positive trend in the growth of annual international tourist arrivals over the ten year period from 2000-10. Second and third largest tourist destination are U.K. and Japan respectively. This trend of international tourist arrivals is also noted by the regional department of Tourism, Pithoragarh.

Countries	Arrivals of Number Tourist		Average annual growth Rate (%) 2000 to 2010
	2000	2010	
U.S.A	10	250	38
U.K	15	95	22
Japan	1	6	20
France	22	29	3
Australia	17	22	3

Source: District Tourism Office, Pithoragarh

Table III: International tourist arrival by major countries

**4.4. SOCIO-ECONOMIC IMPACTS:** An assessment of socio-economic development in host region is analyzed to know the development of tourism and its beneficiaries of its economic and other impacts. If tourism provides a strong influence in the region then it should have better linkage with the economy of the destination area. The study found the importance of tourism in Pithoragarh are as follows:

**4.4.1. IMPACTS ON TOURISM EMPLOYMENT:** The primary impact of tourism is to create the employment for the people of Pithoragarh. Linkage between the tourism and other relate sectors influence the extent of employment. With the establishment of tourist facilities like hotels, resorts, safari, parks, etc. influence the tourism employment. According to the samples which collected during field work analyzed that accommodation and recreation are the main activities by

which people find employment and should be engaged. But the employment is seasonal in nature and if any natural disaster occurs it affects the tourism growth. Some people are fully depending upon the tourism activities but if negative tourism affects fall then the economy of the host region affected.

From 2003 to 2010, tourism employment secondary data is gathered from the Department of tourism, Pithoragarh to indicate the trend of employment in the host region as shown in table IV.

This estimation is notified an undulating trend of tourism employment bound the host region. This shows an increase trend except the years from 2005 to 2006 and 2009 to 2010. Low trend years were suffered from natural disasters, concludes that here tourism employment depends upon the weather. This effect prevails due to uncertain whether which is unfavorable for the tourism development. The study conducted in 2010 to collect the samples of tourism employment, suggests that in total of 100 samples collected randomly, there are 57 people are engaged in tourism related activities and rest engaged in non-tourism activities. In a total of 57 people, 29 are employed in accommodation and remained 28 employed in recreation, tea stalls, and transportation. Thus tourism provides a works to the peoples of host area but locals are engaged in more manual work. Finding concludes that there is an income disparity between the highly qualifies and low quailed people. Because highly qualified engaged in service class and get their salary monthly but low qualified peoples engaged as taxi man, cook, suffered from fixed income, earn only during the peak season.

<i>Years</i>	<i>Employment in %</i>
2003-04	23
2004-05	32
2005-06	10
2006-07	71
2007-08	88
2008-09	106
2009-10	89

Source: District Tourism Office, Pithoragarh

Table IV: Tourism employment in tourism activities

**4.4.2. GOVERNMENT CONTRIBUTION IN TOURISM DEVELOPMENT PLANNING:** Tourism provides revenue earning for the government by the various taxes like luxury, transportation, and income from tourist protected areas. Tourism development shows a positive contribution in the destination economy. The government should try to plan an area for better tourist inflow rate and development of the tourism industry. In the area, the government tried to incur the investment to the planning for the tourism development. According to Department of Tourism, Pithoragarh, in 2000-01 government invests Rs. 14 lakh for the tourism development planning to the district which increases to Rs. 90 lakh in 2010-11. It seems that government got benefits from tourism so they increase their investment in the tourism planning. This means that tourism provides a meaningful economic benefit to the government. The Government also indicates a good expenditure on the district planning by the data of the DOT. This expenditure on district planning also shows an increase trend, Rs. 14 Lakh in 200-01 period which goes up to Rs. 90 Lakh in the period of 2010-11. If the government casts attention towards the district planning, tourism should be developed at the destination. By this infrastructure facilities would establish in the area which is an elegant demand of tourism industry.

**4.4.3. IMPACTS ON INFRASTRUCTURAL FACILITIES DEVELOPMENT:** Infrastructure development is an important factor for the tourism development and affects the domestic economy through tourism. In Pithoragarh there is an expansion of infrastructural facilities support the tourism. Some of the facilities are described below:

**4.4.3.1. ACCOMMODATION FACILITIES:** The proliferation of tourism industry is consociated with the growth of accommodation facilities like hotels, lodges, tourist rest house, etc. in the Pithoragarh district. The accommodation expansion provides the employment to the people in the district. Finding divulges that there is an increment of rooms and beds during 2000 to 2010. This indicates showed by the Department of tourism, Pithoragarh, an increase of 10.85% and 11.72% of the rooms and beds respectively in the private hotels and Lodges. The tourist rest house also shows an increase of 6.66% and 4.39% of the rooms and beds respectively from 2000 to 2010. In 2010 there are 1051 rooms and 2113 bed

spaces are available. These accommodation facilities provide works to the many peoples. Thus, accommodation facilities effect the socio-economic development of the Pithoragarh district.

**4.4.3.2. ROAD NETWORK EXPANSION:** Road network plays a significant role in the growth of the tourism industry as well as regional growth of the region. Connectivity of roads with other regions, villages and states is a big problem in the Pithoragarh hilly region. The government takes an action for the expansion of roads but some hindrances comes in the development path and the district also suffered due to hilly undulating surface. According to the Public Work Department (PWD), during 2000 to 2010, the government gives an acceptance to 422.18 Km length of road in which 140 Km are developed and 74.95 Km are in developing stage but remaining 206.63 Km are bounded by the forest land. It is important to link the districts with other district and states, which is a need of tourism development and allied sectors.

**5. CONCLUSION:** This study demonstrated that tourism in Pithoragarh district is in early stage of development. The finding reveals that the growth of tourist arrival increased to 2.35 percent from year 2000 to 2010. The growth of the said tourist places of Pithoragarh district also shows an increment in the annual growth rate by 8.20, 9.18 and 14.61 percentage in Gangolihat, Patal Bhuwadeshwar and Munsiyari respectively. But the tourist variation found high in Gangolihat and Munsiyari which is bad tiding for the tourism development. Data records of tourism department display that U.S.A and U. K are the important tourist destination in the study area, despites some crisis during disaster Tourism is a generator of employment in the destination, directly as well as indirectly. Sample study estimates that 57 people out of 100 samples are engaged in tourism related work. The study also generates a role of Governments towards the tourism development. It suggests that government cast an attention towards tourism industry and districts itself, invests Rs.90 lakh for the tourism planning in the year 2010. The study also showed the impact of infrastructural facilities by the aid of tourism. It is found these facilities are affected by the tourism. But roads become a hindrance in the path of the development due to the disaster and undulating terrain. The study adopts a geospatial tool for the visualization of the tourist arrival growth and its variant at the tourist places of Pithoragarh district, helps the planner to know the tourism development. By the geovisualization it is easy to know the effect of tourism on the various tourist places.

Keeping the view of high relevance of modern tourism catering large tourist traffic, various types of better facilities for accommodation, transportation, recreation, and some tourism related aspect should be developed in a planned way at the tourist places for the need and comforts of the tourists. Government should provide a financial support to the undeveloped tourist areas for the development of infrastructural facilities. Government and local authorities should adopt a staff planning for various sectors of the tourism industry. This would further strengthen the long-term socio-economic development with the help of tourism of Kumaon region.

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