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Recreational use Value of Tourism Using Metadata

K. R. HAMSA, G. V. ROHITH, K. S. RASHMI, P. S. SRIKANTHAMURTHY AND M. G. CHANDRAKANTH
Department of of Agricultural Economics, College of Agriculture, UAS, GKVK, Bengaluru - 560 065

ABSTRACT

This study demonstrates the relative expenditure made by visitors to tourism sites. The results indicated that the visitor days are largely towards pilgrim sites as they constituted 76 per cent of the total visitor days followed by visits to ecotourism sites which formed the balance 23 per cent of the visitor days. The price elasticity of demand for ecotourism visits is nearly perfectly inelastic (0 to 0.004), while that for pilgrim places was relatively inelastic ranging from -2.88 to - 0.33. The minimum number of visitor days for pilgrimage site is 52 in a year and that for ecotourism is 18. For every one rupee increase in the price per visitor day, the demand for ecotourism feel by 0.001 visitor day, while, for every one rupee increase in price per visitor day, demand for pilgrimage fell by 0.04 visitor day. Thus, the demand for pilgrimage and ecotourism is near perfectly inelastic state, which implied that there is a continuous flow of demand for ecotourism and pilgrimage irrespective of the travel cost. This has the relationship could be established between agricultural extension and pilgrimage spots.

THE natural resources are the gift of nature to the human kind. It has a total economic value (TEV), which is sum of direct and indirect use values, option value and existence value (Pearce and Moran, 1994). Ecotourism is a direct consumptive benefit, which is highly under priced. Ecotourism or visit to pilgrimage for the Non-consumptive use benefit and eventhough, the ecotourism site is free of cost, accessing through travel makes it an economic good. Ecotourism is thus becoming popular in the recent years. However, environmental implications are crucial as natural endowments need to be conserved for its existence. The International Ecotourism Society (TIES) in 1991 defined Ecotourism as: "Responsible travel to natural areas that conserves environment and improves the welfare of local people". IUCN (now called the World Conservation Union) states (1996) that ecotourism: "is environmentally responsible travel and visitation to relatively undisturbed natural areas, in order to enjoy and appreciate nature and any accompanying cultural features (both past and present) that promotes conservation, has low negative visitor impact and provides for beneficially active socio- economic involvement of local populations (Anitha and Santheep, 2006).

This study pertains to visits made by tourists from Bengaluru to different ecotourism / pilgrimage destinations in Karnataka, Andhra Pradesh, TamilNadu and Kerala during 2013 to assess the non-consumptive use value of ecotourism from the supply side perspective using Travel Cost Method (TCM). TCM is one of the popular techniques used to estimate the economics of recreation benefits. This comprises of collecting primary data on travel cost and associated expenses incurred by the tourists. This needs physical presence of the enumerator at the recreation / pilgrimage site in order to elicit the data on recreation benefits realized and costs incurred. This involves substantial time and cost in collecting data from the visitors, but, in addition encroache on the precious time of the visitors. Visitors also commonly escape from providing the information as the data include personal details in addition to psychological and aesthetic benefits. In this study, it is proposed to use Meta data available from travel agency at the cost of sacrifice of personal information of the visitors, but, at the same time will reveal substantial travel cost. Data from a travel agency who cooperated in sparing their data has been used to obtain a close estimate of the travel cost component involved in recreation.

The state of Karnataka is one of the top ten domestic tourism destinations in India, Ranking IV among the states, where ecotourism is promoted under the tagline "One state, many worlds". The number of domestic tourist visitors to states in India was 1,145 million in 2013 as compared with 1,045 million in 2012,

registering a growth of 9.59 per cent. There was an increase of 20.9 per cent in 2012 over 2011. About 865 million Indians travelled in 2011 (Department of Ecotourism, Karnataka 2011-12).

The maximum inflow of tourists for both the domestic and international categories is seen in the months of December to February. The seasonal trends are more pronounced for international visitors with around 74 per cent of international tourist arrivals concentrated from October to March. In case of domestic tourists, around 63 per cent of tourist arrivals took place in the period from October to March.

Methodology

In this study, the trip sheet data maintained with tourist operator from their log books have been used to estimate the demand function for tourism and pilgrimage. The data on number of visitors per tourist vehicle, distance travelled from source to destination in Kms, cost of travel, driver incentive paid, are tabulated. In all, data from 144 trip sheets were obtained. These data are used in the travel cost method is the most common indirect method used to estimate the value of natural recreational use areas. This method was initially suggested by Harold Hotelling in the 1930s as a potential means of valuing national parks. Clawson and Knetsch (1966) developed Hostelling's approach and used the name Travel Cost Method (TCM) (Tisdell, 1991). TCM is based on the assumption that total expenditures made by an individual for visiting a recreation site reflect his / her willingness to pay for this site. The sole decision variable is the number of visits to a certain recreation site in a certain period of time (generally one year).Travel cost demand function is a specific application of demand functions to recreational trips. Theory predicts that higher the prices per trip, visitors will tend to visit less often.

Nature and sources of data : For evaluating the specific objectives of the study, secondary data were collected from the travel agency during Jan. to Dec. 2013. The data were collected on place of origin and tourist destination, number of days vehicle (car or cab / tempo traveller) was hired for reaching one destination, number of tourists travelled in car / TT and hire charges of car / tempo traveller. The data were tabulated and analyzed. It was found that the destinations most preferred by the travellers were Madikeri, Udakamandalam, Kodaikanal, Dharmasthala, Tirupathi, Mantralaya, Shabarimalai and Sigandhur. For the purpose of evaluating the objectives of the study, based on the nature and extent of data, descriptive analytical tool and regression analysis technique were employed for processing the data to draw meaningful conclusions. The descriptive analysis was carried out to study the percentage of visitor days in 2013 undertaken to different tourist destinations. Multiple regression analysis was used to analyze travel cost function for different destinations travelled by visitors.

Results and Discussion

The results indicated that the proportion of visitor days was the highest for pilgrimage sites (76%) followed by ecotourism sites (24%). Among the ecotourism sites, the largest proportion of visitor days was to Madikeri. Among the pilgrimage sites, the largest proportion of visitor days was to Dharmasthala followed by Sigandhur Chowdeshwari (Table I).

TABLE I

Percentage of total visitor days in 2013

Tourist Place	Visitor Day	Percentage of Visitor days undertaken to different tourist destinations
Kodaikanal	456	0.20
Udakamandalam	810	0.36
Madikeri	50172	22.52
(Ecotourism spots) Total	**51438**	**23.08**
Shabarimalai	1872	0.84
Tirupathi	1946	0.87
Mantralaya,	1955	0.88
Sigandhur	13362	6.00
Dharmasthala	152240	68.33
(Pilgrimage spots) Total	**171375**	**76.92**
Total	**222813**	

Legend ;

Visitor days = Number of persons travelled X Number of days.

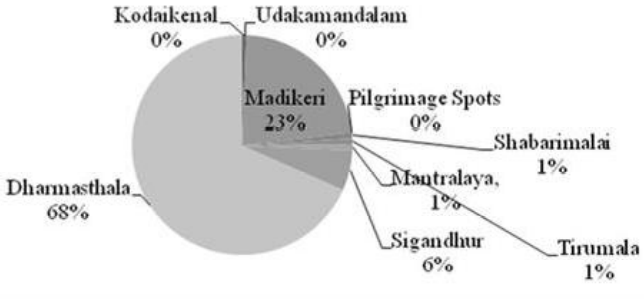

Fig.1: Percentage of total visitor days in a year

Considering the number of visitor days in terms of kilometers travelled in 2013, the travel to ecotourism spots formed 24 per cent of the total distance, while the travel to pilgrim spots formed 76 per cent of the total. Among the ecotourism spots, travel to madikeri formed highest 17 per cent of the total distance. Among the pilgrimage spots, travel to Dharmasthala accounted highest for 33 per cent of the distance followed by Shabarimalai (23 %), Sigandhur (10 %) (Table II).

TABLE II

Percentage of total number of visitor kilometers in 2013

Tourist Place	No. vistor kilometers	Percentage of total number of visitor kilometers towards different tourism destinations
Kodaikanal	85500	2.95
Udakamandalum	111600	3.85
Madikeri	504000	17.40
Ecotourism spots	**701100**	**24.2**
Tirupathi	125100	4.32
Mantralaya	155250	5.36
Sigandhur	284000	9.81
Shabarimalai	666000	22.99
Dharmasthala	965000	33.32
Pilgrimage spots	**2195350**	**75.8**
Total	**2896450**	

Legend ;

The number of visitor kilometers = Number of persons travelled X Number of days travelled X Number of kilometers travelled.

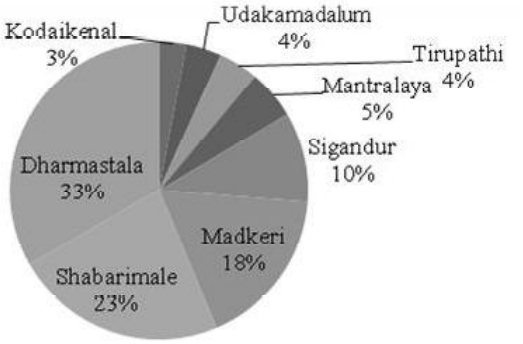

Fig. 2: Percentage of total number of visitor kilometres in a year

The result obtained from the Table III indicated that the percentage of travel cost to different destinations, the proportions follow the visitor kilometers and hence travel to ecotourism by all visitors formed 24 per cent of travel cost while visit to pilgrim places formed 76 per cent of the travel cost.

TABLE III

Percentage of total cost of travel

Tourist Place	Total Travel Cost	Percentage of total cost of travel
Kodaikanal	999000	2.91
Udakamandalum	1339200	3.90
Madikeri	5905200	17.20
Ecotourism spots	**8243400**	**24.01**
Tirupathi	1501200	4.37
Mantralaya	1863000	5.43
Sigandur	3334400	9.71
Shabarimale	7992000	23.28
Dharmastala	11388000	33.18
Pilgrimage spots	26078600	**75.99**
Total	**34322000**	

Legend;

The number of travellers X Number of kilometers travelled in different types of vehicles X Price per kilometer travelled in different types of vehicles gives the total travel cost.

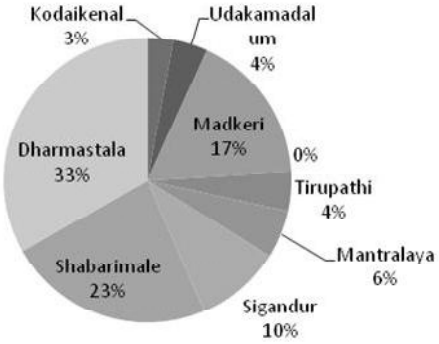

Fig. 3: Proportion of total cost of travel for different purposes of tourism

Travel function : In this study, the linear travel demand function is estimated using slope and intercepts dummy variables to capture the influence of price per visitor day on the demand for travel, the location on the demand for travel and the interaction between price per visitor day and the location. The model is specified as

$$V = \alpha + \beta_1 P_x + \beta_2 D + \beta_3 D*P_x$$

Where,

V = Number of visitor days undertaken in 2013

D = 1 for visit to ecotourism place (Madikeri, Udakamandalam,Kodaikanal)

D= 0 for visit to pilgrimage (Dharmasthala, Sigandhur, Tirupathi, Mantralaya, Shabarimalai)

P_x = Price per visitor day

α = Minimum number of visitor days undertaken to pilgrimage per year

$\alpha + \beta_2$ = Minimum number of visitor days undertaken to ecotourist place per year

$V = \alpha + \beta_1 P_x$ is the travel demand function for pilgrimage

$V = (\alpha + \beta_2) + (\beta_1 + \beta_3) P_x$ is the travel demand function for ecotourist place

Conceptually, the number of visitor days varies inversely with the price per visitor day if the demand function is downward sloping.

The estimated linear demand function with slope and intercept dummy variables for ecotourism and pilgrimage had adjusted R^2= 0.52, F = 51.78***, for n= 144 visits with intercept, slope coefficient as well as coefficient for dummy variable being significant (Table IV).

TABLE IV

Estimated coefficients of linear demand function for visiting ecotourism and pilgrimage from Bangalore

	Coefficients	Standard Error	t Stat
Intercept	52.54396	2.650349	19.8253
Price per visit	-0.04261	0.004374	-9.74044
Dummy variable for Eco tourism	-34.4249	2.913289	-11.8165
P*ET	0.041797	0.005967	7.004279

Legend;

P*ET- Slope Dummy for Ecotourism.

The linear demand model for travel to ecotourism sites, using slope and intercept dummy variables is estimated. The estimated travel demand function is V = 52.5 - 0.042(Px) - 34.4* (Ecotourism dummy) + 0.041 (Price*Ecotourism dummy). Conceptually, the number of visitor days varied inversely with the price per visitor day for the downward sloping demand curve. The estimated linear demand function with slope and intercept dummy variable for ecotourism and pilgrimage had R^2 = 0.52, F = 51.78***, for n= 144 visit observations. With the intercept, slope coefficients as well as coefficient for dummy variable were statistically significant.

The demand function for ecotourism is estimated to be $V_e = 18 - 0.001P_x$. Thus, irrespective of price

the minimum number of visitor days for ecotourism is 18 days during 2013. For every rupee of increase in the price per visitor day, the demand for ecotourism will fall by 0.001 day. If the price per visitor day increases by Rs. 100, then the demand for ecotourism falls by 0.1 day. The price elasticity of demand for ecotourism thus has a narrow range from -0.07 to 0.00. Thus, the demand for ecotourism is almost perfectly inelastic. Hence, the consumer surplus must be enormous and cannot be estimated.

Demand function for pilgrimage is estimated to be $V_p = 52.54 - 0.042\ P_x$. Thus, the minimum number of visitor days for pilgrimage is 52.54 during 2013. For every rupee of increase in price per visitor day, the demand for pilgrimage will fall by Rs. 0.04 day. If price per visitor day increases by Rs. 100, the demand for pilgrimage falls by 4 days.

From this, it could be clearly inferred that the visitor days are largely towards pilgrim places since they constitute 76 per cent of the total demand followed by demand for ecotourism which attracted the balance 23 per cent of the visitor days. The estimated price elasticity of demand for ecotourism visits is perfectly inelastic, while that for pilgrim places is relatively inelastic ranging from - 2.88 to - 0.33.

This study highlights the use of metadata for assessing the travel cost incurred by tranvellers for different ecotourism spots. The metadata obtained from travel agencies indicated that out of the different tourism spots preferred by the visitors in Karnataka, the demand for pilgrimage places formed around 76 per cent of the total, while, the demand for ecotourism places formed 25 per cent of the total. Thus, agricultural extension efforts can be focused in pilgrimage spots. Extension efforts such as arranging field visit to the agriculture research station, visit to the progressive farmer's farms an arranging the inspiring talks from progressive farmers and Agricultural specialists. Since 76 per cent of the travellers visit such spots frequently in comparison the ecotourism spots where 24 per cent of the tourists do visit. This will not only benefit the farmers conglomerating the pilgrim spots, but also reduces the transaction costs of outreaching the farmers by the Department of agriculture / Horticulture. The price elasticity of demand for ecotourism is perfectly inelastic which shows that the price per visitor day in ecotourism is largely a demand phenomenon, as the ecotourism spots are unique and there are no substitutes. Price elasticity of demand for pilgrimage spots is relatively inelastic, which indicates that eventhough, for a one per cent increase in the price per visitor day, the poroportion of the number of visitor days falls by less than one per cent. Thus, there are close but not perfect substitutes in pilgrimage spots, in comparison with ecotourism spots. Therefore, extension efforts in diffusion of innovations can be efficiently heralded and focused in pilgrimage places in relation to ecotourism spots for wider adoption and dissemination.

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