Cave Tourism in Kerala: With Special Reference to Edakkal Caves

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ABSTRACT

Cave tourism within geo tourism has gained popularity in Kerala. The Edakkal archive of the Neolithic - Iron Age engravings stand out distinct among the magnitude of prehistoric visual archives of paintings and graphic signs all over the world. It is believed that similar straight-line cave drawings that are considered 7,000 years old can be seen only in Stiriya in the European Alps and a few rocky places in Africa. The present study attempts to investigate the satisfaction level of tourists coming to the Edakkal Cave. It also aims at finding out the factors which yields maximum satisfaction to the tourists. The study is designed as a descriptive one based on both secondary and primary data. The sample population for this study consists of both domestic and international tourists who have visited Edakkal cave. Purposive sampling technique was adopted for the collection of data. A total of 61 questionnaires were distributed among the tourists. The study reveals that there exists significant difference on the satisfaction level of domestic and international tourists.

KEYWORDS: *Ecotourism, Geotourism, Cave tourism, Edakkal Cave, Satisfaction level.*

INTRODUCTION

Meanwhile cave tourism which comes under geo tourism is gaining popularity in Kerala. An important cave tourism destination is located in Wayanad district, "the land of spicy hills", namely "Edakkal Cave". It is known to lie on an ancient route connecting the high ranges of Mysore to the ports of Malabar. The route was in continuous use during several historical periods. The Edakkal cave is on the crest of a hill known as "Ambukuthi mala" belonging to the Western Ghats, about 4600 feet Mean sea level and situating about 10 Kms Southwest of Sultan Bathery. It is a Prehistoric rock-shelter formed naturally out of a strange disposition of three huge boulders making one to rest on the other two with its bottom jutting out in between and serving as the roof. The cave is famous for the New Stone Age pictorial writings on the walls, which were the relics of the pre-historic civilization that existed in these regions. It also has the rock engravings during the New Stone Age. The name "**Edakkal**" literally means "a stone in between", and this describes how the cave is formed by a heavy boulder straddling a fissure in the rock. Inside the cave is on two levels, the lower chamber measures about 18 feet long by 12 feet wide and 10 feet high and can be entered through an opening of 5 x 4 feet. A passage opposite the entrance leads upward to a small aperture in the roof through which one climbs up to the next storey whose interior is about 96 feet long, 22 feet wide, and 18 feet high. Light enters the cave through a big gap at the right-hand corner of the roof where the boulder does not touch the facing wall. The drawings have found on the two walls of the rock shelter. On the left wall, the depictions consist of human figures, an elephant, a wild dog, a peacock and a couple of wild dogs, plants and flowers, a wheeled cart etc. On the right wall the representations comprised a few geometrical signs, a few male and female figures, a triangular sign representing a human figure, a human figure, a human figure on a wheeled cart, and a human figure with conical sign attached. The representations collectively signify a scene of ritual festivity of a tribe inhabiting the forest and subsisting on hunting and shifting cultivation. It could probably be the archaeo-anthropological context of the co-existence and interaction of the Neolithic and iron smelting societies that is reflected in the

structure of relations in the totality of representations characterised by the presence of a simple style at the core seem to be Neolithic and those in the periphery. In short the representations seem to be symbolic of a new Stone Age society in transition. It is true that the representations in Prehistoric Art signify a realm of strange meaning intelligible only to the people of their times. The images and signs jointly signify a strategy of combining deep incisions and their shadows in fire light for generating three-dimensional visual effect. Edakkal archive of the Neolithic - Iron Age engravings stand out distinct among the magnitude of prehistoric visual archives of paintings and graphic signs all over the world. It is the world's richest pictographic gallery of its kind. Archaeologists consider these as one of the earliest centres of human habitation. It is believed that similar straight-line cave drawings that are considered 7,000 years old can be seen only in Stiriya in the European Alps and a few rocky places in Africa.

Problem Definition

Thousands of tourists are coming to Wayanad to visit the Cave. The tourists include both Domestic and International tourists. The Domestic tourists , apart from Kerala, are coming mostly from nearby states viz. Tamil Nadu, Karnataka, Andrapradesh etc it also include tourists from Northern part of the country. The International tourists include tourists from U.S.A., France, Switzerland, England etc. The flow of tourists gives innumerable socio-economic benefits to the locality. It is the need of the authorities to increase the flow of the tourists to enjoy the benefits of tourism. The study makes an attempt to analyse the satisfaction level of tourists visiting this destination.

Objectives

(1) To measure the satisfaction level of Tourists coming to Edakkal cave. (2) To study whether there is any significance difference in the satisfaction level of Domestic and International tourists.

Hypothesis

Based on the objectives the following hypothesis has been formulated.

H0: There is no significant difference in the satisfaction level of domestic and international tourists.

Methodology

The study was conducted in descriptive style using both secondary and primary data. The secondary data were collected both from published and unpublished sources. Primary data were collected with the help of a structured questionnaire. Informal discussions were conducted with various officials at the destination. Purposive sampling technique was adopted for the collection of data. The questionnaire was constructed based on the SERVQUAL technique designed by Parasuraman, et.al. to record various factors relating to service quality. It consists of 23 statements relating to the quality of service at the cave destination. These questions were developed to fit within the five dimensions of SERVQUAL instrument, viz. Tangibility, Reliability, Responsiveness, Assurance and Empathy. The responses are measured on a 5 point Likert scale, with one indicating much dissatisfied and five indicating much satisfied.

Sample design

Purposive sampling technique was adopted for the collection of data. A total of 61 structured questionnaires were distributed to collect data. Among these 61 questionnaires 41 were distributed among Domestic tourists and 20 were distributed among international tourists.

Data Analysis

The collected data was analysed using S.P.S.S. 12.

Results

Table (i) Demographic profile

State	Total number
Kerala	16 (39%)
Karnataka	13 (31.7%)
Tamil Nadu	10 (24.4%
Other States	2 (4.9%)
Total	41 (100%)

Table (ii) Occupation wise classification

Particulars	Professional	Salaried	Student	Business	Total
Domestic	21 (51.2%)	41 (19.5%)	3 (7.3%)	9 (22%)	41 (100%)
International	16 (80%)	4 (20%)	----	----	20 (100%)
Total	37 (60.6%)	12 (19.7%)	3 (4.9%)	9 (14.8%)	61 (100%)

Table (iii) Age wise classification

Particulars	Below 20	20-30	30-40	Above 40	Total
Domestic	2 (4.8%)	28 (68.3%)	7 (17.1%)	4 (9.8%)	41
International	---	12 (60%)	8 (40%)	---	20
Total	2 (3.3%)	40 (65.6%)	15 (24.6%)	4 (6.5%)	61(100%)

Table (iv) Gender wise classification

Particulars	Male	Female	Total
Domestic	38 (93%)	3 (7%)	41 (100%)
International	10 (50%)	10 (50%)	20 (100%)
Total	48 (79%)	13 (21%)	61 (100%)

Satisfaction Level of Tourists

The responses of tourists for each of the statements were summed up and divided by total number of attributes (i.e. 23), to find out the mean score. From the results of analysis of data, it is found that around 59% of tourists are satisfied about the destination. The following table shows the total number and percentage of satisfaction level of Tourists. (Detailed Table showing mean score of each of the respondents was given in Appendix I).

Satisfaction level of tourists

Particulars	Much Satisfied	Satisfied	No opinion	Dissatisfied	Total
Domestic	----	16 (39%)	24 (58.6%)	1 (2.4%)	100%
International	2 (10%)	18 (100%)	-----	------	100%
Domestic+International	2 (3.28%)	34 (55.74%)	24 (39.34%)	1 (1.64 %)	100%

Source: Survey data.

Mean score of attributes

To find out the most satisfying and dissatisfying factors, each of the factors were summed up and divided by total number of tourists, (i.e. 61), to get the mean score. From the mean score it is clear that the tourists were satisfied about almost 23 attributes and dissatisfied about only one attribute. The attributes which give maximum satisfaction to them include friendliness of local people, scenery and attractiveness of destination, relaxed atmosphere and solitude in the destination. The dissatisfied attribute is the availability of medical facility at the destination. Since the tourists have to take around 500 metre. trekking to reach the caves, sufficient medical facilities should be there. But unfortunately sufficient medical facilities are not there at the destination. And the nearest hospital is around 6 K.M. away from the destination. The two attributes which yields no satisfaction/dissatisfaction is the availability of information from tourist information centre, and adequate safety and security facilities at the destination. Again this safety and security facilities are having link with the medical facilities. All these things stress the need to improve medical, safety and security facilities at the destination.

The table given below shows the mean scores of 5 dimensions in SERVQUAL.

Mean Score of 5 Dimensions

	N	Minimum	Maximum	Mean	Std. Deviation
Tangibles	60	2.86	4.29	3.7310	.42500
Reliability	61	2.00	4.67	3.3005	.69310

Responsibilities	61	1.67	4.33	3.5191	.76139
Assurance	57	2.67	4.67	3.7632	.55183
Empathy	59	2.00	4.75	3.7288	.72410
Valid N (listwise)	56				

Source: Survey data.

From the table it is clear that mean score of Tangibles, Assurance, and Empathy are more or less equal. But when comparing with standard deviations Tangibles stands first, Assurance second and Empathy third. (responsiveness forth and reliability fifth).

Hypothesis Testing

Null Hypothesis : There is no significant difference in the satisfaction level of Domestic and International Tourists.

Test Statistics(a)

	individual satisfaction
Mann-Whitney U	7.000
Wilcoxon W	673.000
Z	-6.046
Asymp. Sig. (2-tailed)	.000

Source: Survey data.

The above table shows the results of hypothesis testing. On the basis of Mann-Whitney test (Since the data does not posses normality, Mann-Whitney test was adopted) at 5% level of significance the null hypothesis was rejected and alternate hypothesis has accepted. That is to say, there is significant difference exist between the satisfaction levels of Domestic and International Tourists. The following table shows the details of satisfaction levels of both Domestic and International Tourists on the various attributes.

Domestic Tourist's Satisfaction level on various attributes

	N	Minimum	Maximum	Mean	Std. Deviation
Relaxed atmosphere	41	2.00	5.00	3.7073	.90122
Scenery	41	2.00	5.00	3.9512	.77302
Communication	40	2.00	5.00	3.2750	.90547
Food	39	1.00	5.00	3.4359	.99459
Transportation	41	1.00	5.00	3.7317	.86673
Guide availability	41	1.00	4.00	3.1220	.87164
Courteousness	41	2.00	5.00	3.2195	1.03712
Cleanliness	41	1.00	5.00	3.5122	1.09822
Drinking water	41	1.00	5.00	3.2195	1.08426
Refreshment	41	1.00	5.00	3.0976	1.30009
Shopping	41	1.00	4.00	3.4878	.86954
Safety & security	41	1.00	5.00	2.8293	1.02231
Parking space	39	1.00	5.00	3.7949	.97817
Information centre	41	1.00	5.00	2.9512	.94740
Willingness	41	2.00	5.00	3.3415	.85469
Staff response	39	2.00	5.00	3.3590	.77755
Sincere effort	41	2.00	5.00	3.3659	.76668
Knowledge	41	1.00	5.00	3.1951	.78165
Operating hours	41	2.00	5.00	3.4878	.84030
Personal attention	40	1.00	5.00	3.3250	1.04728

Accommodation facility	41	2.00	5.00	3.4878	.67535
Medical facility	41	1.00	3.00	2.0976	.62470
Friendliness	41	4.00	5.00	4.4390	.50243
Valid N (listwise)	36				

Source: Survey data

From the above table it can be seen that the Domestic tourists were satisfied on 6 attributes (values above 0.5 was taken as 1). They have no satisfaction/dissatisfaction on 14 attributes and dissatisfied on three attributes, i.e. the medical facility at destination, adequate safety and security facilities at the destination and availability of information from tourist information centre.

International Tourist's Satisfaction level on various attributes

	N	Minimum	Maximum	Mean	Std. Deviation
Relaxed atmosphere	20	4.00	5.00	4.4500	.51042
Scenery	20	4.00	5.00	4.8000	.41039
Communication	20	4.00	4.00	4.0000	.00000
Food	20	4.00	5.00	4.6000	.50262
Transportation	20	4.00	5.00	4.2000	.41039
Guide availability	20	5.00	5.00	5.0000	.00000
Courteousness	20	4.00	5.00	4.8500	.36635
Cleanliness	20	2.00	4.00	3.7000	.73270
Drinking water	20	4.00	5.00	4.7500	.44426
Refreshment	20	3.00	5.00	4.1000	.44721
Shopping	20	3.00	5.00	3.7500	.71635
Safety & security	20	3.00	4.00	3.5500	.51042
Parking space	20	3.00	5.00	3.9500	.75915
Information centre	20	3.00	4.00	3.6500	.48936
Willingness	20	4.00	5.00	4.3000	.47016
Staff response	20	4.00	5.00	4.4000	.50262
Sincere effort	20	4.00	5.00	4.5500	.51042
Knowledge	20	4.00	5.00	4.4000	.50262
Operating hours	20	4.00	5.00	4.1500	.36635
Personal attention	20	4.00	5.00	4.2000	.41039
Accommodation facility	20	2.00	5.00	4.1500	1.03999
Medical facility	20	3.00	4.00	3.2000	.41039
Friendliness	20	4.00	5.00	4.8000	.41039
Valid N (listwise)	20				

Source: Survey data.

From the above table it can be rightly said that the International Tourists were much satisfied on 7 attributes, satisfied on 15 attributes and have no opinion about the medical facility at the destination. By simply comparing the two tables it can easily understand that significant difference exist between the satisfaction levels of Domestic and International Tourists.

Findings

Demographic profile

1. Most of the Domestic tourists (39%) come from the home state Kerala, 31.7% from Karnataka, 24.4% from Tamil Nadu and 4.9% from other states of the country (Table (i)).
2. The Foreign tourists mainly come from Switzerland, United States, Canada, England, Croasia etc.

3. 60.6% of Tourists are Professionals.19.7% are salaried persons, 14.8% are business people and 4.9% are students (Table (ii))
4. Majority of Tourists are belonging to the age group of 16-30, (65.6%). Least number of tourists is coming under the age group of Up to 15 (1.6%) and above 45 (3.3%). (Table (iii)).
5. Around 93% of Domestic tourists are male, only 7% female. But in the case of Foreign tourists the figure is 50%.

Level of Satisfaction

6. Around 56% of total tourists visiting the location were satisfied and 3.28% of tourists were much satisfied.
7. Three most important attributes which yields maximum satisfaction to both Domestic and International Tourists are, scenery & attractiveness of destination, relaxed atmosphere & solitude in the destination and friendliness of local people.
8. The most dissatisfied attributes for both Domestic & International Tourists are, availability of medical facility at the destination, adequate safety & security measures and availability of information from tourist information centre.
9. It is found from the study that there is significant difference between the satisfaction level of Domestic and International tourists. 100% of International and 39% of the Domestic tourists were satisfied. But in the case of domestic tourists 58.5% were at break even and 2.4% were dissatisfied.
10. The mean score of 5 dimensions shows that Tangible dimension is first, assurance second and empathy stands third.

CONCLUSION

Cave tourism is an important part of the tourism industry in areas with cave resources. The development of cave tourism plays a key role in local social and economic development. The cave tourism development should be sustainable development as it is of great value to environmental protection. In a district like Wayand, which is purely based on agriculture, tourism is another good source of revenue. Tourism development has great significance in pulling the economical development and social progress of undeveloped area and promoting the harmonized development between the rural and urban areas. The tourism industry will promote employment opportunities and generate income to the residents. The cave tourism in the district is in the initial development stage. The Edakkal cave is having high archaeological significance. The Neolithic-Iron Age engravings at the Edakkal cave stand out distinct among the magnitude of prehistoric visual archives of paintings and graphic signs all over the world. It is the world's richest pictographic gallery of its kind. If the Archaeological department is going to take over the caves, then its importance will be more prominent in the national level. If due care is taken by the authorities to overcome the dissatisfying factors, more and more people will be attracted to the destination. Then the isolated cave location can become a mass tourism destination by attracting too many visitors to the cave destination. The authorities should take the tourism exploration as the economical growth point of eliminating unemployment and increasing income and promote regional economical development. Depending upon the endeavours of the authorities the economic development of the locality will go up.

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APPENDIX I
Table Showing Mean Score of Domestic Tourists

Respondents	Mean Score
Respondent 1	3.7
Respondent 2	3.39
Respondent 3	3.48
Respondent 4	3.35
Respondent 5	3.09
Respondent 6	2.96
Respondent 7	3.65
Respondent 8	3.65
Respondent 9	3.43
Respondent 10	3.35
Respondent 11	3.61
Respondent 12	3.61
Respondent 13	3.83
Respondent 14	3.87
Respondent 15	3.22
Respondent 16	3.13
Respondent 17	3.57
Respondent 18	2.78
Respondent 19	3.65
Respondent 20	3.34
Respondent 21	4.13
Respondent 22	3.30
Respondent 23	3.39
Respondent 24	2.74
Respondent 25	3.04
Respondent 26	3.75
Respondent 27	3.57
Respondent 28	3.61
Respondent 29	3.22
Respondent 30	3.17
Respondent 31	3.00
Respondent 32	2.65
Respondent 33	3.65
Respondent 34	4.19
Respondent 35	3.35
Respondent 36	3.61
Respondent 37	3.30
Respondent 38	2.91
Respondent 39	3.26
Respondent 40	2.87
Respondent 41	2.87

Table Showing Mean Score of International Tourists

Respondents	Mean Score
Respondent 1	4.04
Respondent 2	4.48

Respondent 3	4.30
Respondent 4	4.04
Respondent 5	4.26
Respondent 6	4.30
Respondent 7	4.26
Respondent 8	4.04
Respondent 9	4.26
Respondent 10	4.04
Respondent 11	4.52
Respondent 12	4.00
Respondent 13	4.52
Respondent 14	4.04
Respondent 15	4.48
Respondent 16	4.30
Respondent 17	4.04
Respondent 18	4.26
Respondent 19	4.30
Respondent 20	4.26

Source: Survey Data