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# Economic Valuation of Recreational-benefits and Visitation Rate of Selected Lakes in Coimbatore City: An Application of Travel Cost Method

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**Abstract**
*Lakes provide direct and indirect use values and benefits; it was support to human well-being. The recreational values and benefits are one of the direct use values of the lake. It includes enjoying nature with family and friends for relaxation,boating rides, parks, and enjoying other facilities available in the lakes. The Periyakulam/Ukkadam Lake and Valankulam Lake in Coimbatore City have been chosen for this study. The convenient sampling method was adopted to confirm the sample size,from Ukkadam Lake 70 sample visitors and from Valankulam Lake 50 sample visitors have been selected for this study. This study explores the recreational value and visitation rate of selected lakesby using the Travel Cost Method with application of multiple regression. The study found out the Ukkadam lake recreational value was Rs. 1062.78/visit and the Valankulam lake recreational value was Rs. 619.94/ visit gained by sample visitors. The regression result show that R2value was 0.377, and the lake visitation rate was determined by the travel cost, monthly income of the visitors, mode of transport, type of visit, recreational benefits,and distance traveled to reach the Lake. The Coimbatore City Municipal Corporation made a good effort in lake restoration process, it was benefits to the visitors. In this study, visitors stated some drawbacks in facilities available in lakes. The Coimbatore City Municipal Corporation should take necessary actions to improve the facilities in the lakes. This will make the path for sustainability of recreational benefits.*
**Keywords: Lakes, Recreation Benefits, Economic Value, Travel Cost Method and Visitation Rate.**

## Introduction

Lakes are valuable natural resources; it provides various direct and indirect benefits to local communities and the environment. It includes food, habitat for fish, plants, wildlife, flood protection, erosion control, water purification, carbon sequestration and opportunities for recreation activities, environmental and cultural education, and research. In urban areas greater demand for nature-oriented places with recreational amenities which have market or non-market values.

The recreation values of ecosystem services come under the cultural services and one of the direct use values of lake ecosystem services (Manikandan and Bhuvanesvari, 2023). The lack of awareness on the environmental, social, and monetary significance of freshwater bodies and their ecosystem services leads to lakes are facing various degrees of destruction and degradation. In Tamil Nadu, the Coimbatore City Municipal Corporation took good action to restore 8 lakes under the Smart City Mission, the lake's restoration cost was Rs.350 crore approximately. (Financial Express, 2023) and 92 percent of the lake restoration project work was already completed and open for visitors to enjoy the recreational benefits. The Lake's recreational benefits are boating rides, walking paths,and aesthetic view of the lake, etc. All these lake services have non-marketed values, The Travel Cost Method is non-market valuation method widely used for recreation value modelling, it was suggested by Harold Hotelling in 1947 and introduced by Wood and Trice (1958) and Clawson and Knetsch (1966). Lake recreation modelling is estimated the cost of consuming lake recreation benefits are specifically used as a proxy for their price or surrogate price. In other words, money and time spent for travel to reach the recreational site and time spent in the recreational site to enjoy recreational activities and benefits are indicates the true value of recreational site. The costs incurred for lake visitation reflects the recreational value of the lake. Hence, this study focus on economic valuation of recreational benefits of the selected lakes in Coimbatore City and analyse the visitation rate by applying the Travel Cost Method.

## Review of Literature

Manikandan and Bhuvanesvari (2023) analyse the benefits of lake restoration under Smart City Mission in Coimbatore city. The Garret ranking technique was used for analysis the benefits of lake restoration and identify the factors affects visitors to enjoy the recreation benefits of Lakes. The study found out that the visitors are spending weekend time for visiting lakes with friends and family. The lack of maintenance and parking facilities are the main factors affect the visitors to enjoy the recreational benefits. Manikandan and Bhuvanesvari (2022) discussed the importance of urban lake, threats, and conservation methods. This study discussed the various direct and indirect uses provided by the urban lake to human well-being, causes and impacts of lake degradation. This study concludes that Government should take measures for lake restoration and suggested the public - private partnership for lake restoration process and maintenance. Desta and Bersisa (2019) analysed the recreational value of Lake Ziway by using Travel cost method. The 223 local visitors of the lake were randomly selected. The study estimates that the on-site recreational benefits per visit per person was about 3353.64 birr per year. Jala and Nandagiri (2015) evaluated the economic value of recreational use of Pilikula lake. The travel cost method and contingent valuation method are used for ecosystem valuation through willingness to pay. In travel cost method, average willingness to pay by tourists is Rs. 238for recreational benefits. The contingent valuation method obtained Rs. 40.13 for improving water quality. The study found out the much more difference between the travel cost method and contingent valuation method values. Thapa (2013) analysed the recreational demand of Fewa lake by using travel cost method. The regression result revealed the travel cost, income, age, education, and location are the major determinants of recreational demand for Fewa lake and the consumer surplus was Rs.18.5/trip.

## Objectives

- To explore the socio-economic condition of the sample visitors of the selected lakes in Coimbatore city.
- To evaluate the direct use value of recreation benefits of the selected lakes.
- To analyse the factors influence the visitation rate of the selected lakes.

## Materials and methods

The Coimbatore city lakes are chosen for this study, total9 lakes are located within the Coimbatore City Municipal Corporation limit and 8 lakes are restored under the Smart City Mission in which two major lakes Periyakulam/Ukkadam and Valankulam have been selected for this study and in these two lakes the boating facilities and events are introduced.

The convenient sampling method was adopted. In Ukkadam Lake, 70 sample visitors, and from Valankulam Lake 50 sample visitors, the total 120 sample respondents (visitors) have been selected from both lakes. Both the primary and secondary data are used for this study. The secondary data was collected from Coimbatore City Municipal Corporation, Public Work Department, newspaper, and from various reports. The primary data was collected from the lake visitors with a well-structured questionnaire. For data analysis the percentage, mean, correlation, and regression was used.

**Results and Discussion**

This research analyses the socio-economic condition of lake visitors, visitors frequently visit the lakes to enjoy the recreational benefits, multi - purpose, and benefits of visiting the lake, evaluate the recreational value of lakes, drawback of facilities available in lakes and factors determining the visitation rate of the selected lakes.

Table 1 shows the socio-economic condition of the lake visitors. Gender of the respondents reveals that in Ukkadam lake majority 56 percent of the sample visitors are female, 43 percent of the respondents are male and 1 percent of the respondents are transgender and in Valankulam lake majority 52 percent of the respondents are female and 48 percent are male. In this study, majority 54 percent of the sample respondents are female.

The religion of the respondents shows that in Ukkadam lake, 71 percent of the respondents are belongs to Hindu religion followed by 17 percent of the respondents are Muslim and 11 percent of the respondents are Christian. In Valankulam lake 78 percent of the respondents are Hindu followed by 14 percent of the respondents are Muslim and 8 percent of the respondents are Christian. The majority 74 percent of the respondents are belongs to Hindu religion.

Caste of the respondents reveals that in Ukkadam lake, 58 percent of the respondents are belongs to Backward Caste, followed by 21 percent of the respondents are belongs to Scheduled Caste, 16 percent of the respondents are belongs to Most Backward Caste and 4 percent of the respondents are belongs to other caste. In Valankulam lake, 48 percent of the respondents are belongs to Backward Caste, 26 percent of the respondents were belong to Scheduled Caste and followed by 18 percent of the respondents are belongs to Most Backward Caste, 8 percent of the respondents are belongs to other caste. The majority 54 percent of the respondents are belongs to Backward Caste.

Marital status of the respondents shows that in Ukkadam lake majority 53 percent of the respondents were married and 47 percent of the respondents were unmarried. In Valankulam Lake majority 78 percent of the respondents were unmarried and 22 percent of the respondents were married. In both the lake majority 60 percent of the respondents were unmarried and 40 percent of the respondents are married.

Education status of the respondents shows that in Ukkadam lake majority 59 percent of the respondents are completed Under Graduate (UG) followed by 13 percent of the respondents are Post Graduate,10 percent of the respondents have higher secondary education,8 percent of the respondents are illiterate, 7 percent of the respondents have completed the secondary education,and 3 percent of the respondents are completed the primary education. In Valankulam Lake majority 80 percent of the respondents are completed Under Graduate followed by 10 percent of the respondents have completed Post Graduate, 8 percent of the respondents have completed secondary education and 2 percent of the respondents have completed higher secondary education. The majority 68 percent of the respondents are Under Graduate.

Occupation of the sample visitors shows that, in Ukkadam lake majority 37 percent of the respondents are students, 29 percent of the respondents are doing private jobs, 20 percent of the respondents are in other occupations such as housemaid, daily worker etc., 11percent of the respondents involved in own business and 3 percent of the respondents are Government employees. In Valankulam lake majority 56 percent of the respondents are students, 28 percent of the respondents are doing private jobs, and 12 percent of the respondents are other jobs and each 2 percent of the respondents are Government employees and engaged in own business. The majority 45 percent of the sample respondents are students followed by 28 percent of the respondents are doing private jobs.

The Ukkadam lake visitors average monthly income was Rs. 35,452.4 and Valankulam lake visitors average monthly income was Rs. 30,147.1. The monthly income of the sample visitors was estimated for those who are doing private jobs, government jobs, and other jobs. The average monthly income of the sample visitors was Rs. 33,683.9.

**Table 1 Socio-economic Condition of Lake vis**

| Particulars | Ukkadam Lake<br>No. of sample :70 | Valankulam Lake<br>No. of sample :50 | Total<br>Total sample :120 |
|---|---|---|---|
| **Gender** | | | |
| Male | 30 (42.9) | 24 (48) | 54 (45) |
| Female | 39 (55.7) | 26 (52) | 65 (54.2) |
| Transgender | 1 (1.4) | 0 (0) | 1 (0.8) |
| **Religion** | | | |
| Hindu | 50 (71.4) | 39 (78) | 89 (74.2) |
| Muslim | 12 (17.2) | 7 (14) | 19 (15.8) |
| Christian | 8 (11.4) | 4 (8) | 12 (10) |
| **Caste** | | | |
| SC | 15 (21.4) | 13 (26) | 28 (23.3) |
| BC | 41 (58.6) | 24 (48) | 65 (54.2) |
| MBC | 11 (15.7) | 9 (18) | 20 (16.7) |
| OC | 3 (4.3) | 4 (8) | 7 (5.8) |
| **Marital Status** | | | |
| Married | 37 (52.9) | 11 (22) | 48 (40) |
| Unmarried | 33 (47.1) | 39 (78) | 72 (60) |
| **Education Qualification** | | | |
| Illiterate | 6 (8.6) | 0 (0) | 6 (5) |
| Primary Education | 2 (2.9) | 0 (0) | 2 (1.6) |
| Secondary Education | 5 (7.1) | 4 (8) | 9 (7.5) |
| Higher Secondary Education | 7 (10) | 1 (2) | 8 (6.7) |
| Under Graduate | 41 (58.6) | 40 (80) | 81 (67.5) |
| Post Graduate | 9 (12.8) | 5 (10) | 14 (11.7) |
| **Occupation** | | | |
| Government Employee | 2 (2.9) | 1 (2) | 3 (2.5) |
| Private Job | 20 (28.6) | 14 (28) | 34 (28.3) |
| Own Business | 8 (11.4) | 1 (2) | 9 (7.5) |
| Students | 26 (37.1) | 28 (56) | 54 (45) |
| Others | 14 (20) | 6 (12) | 20 (16.7) |
| **Income of the Respondents** | | | |
| Average Monthly Income | 35452.4 | 30147.1 | 33683.9 |

**Source:** Primary data (2023)

**Table 2 Details about the Visitors Frequency Visit the Lakes**

| Particulars | Ukkadam Lake Sample:70 | Valankulam Lake Sample :50 | Total Sample :120 |
|---|---|---|---|
| **Location** | | | |
| Lake nearby Area | 6 (8.6) | 8 (16) | 14 (11.7) |
| Within Coimbatore city | 34 (48.6) | 21 (42) | 55 (45.8) |
| Coimbatore District | 22 (31.4) | 13 (26) | 35 (29.2) |
| Other District | 8 (11.4) | 8 (16) | 16 (13.3) |
| **Frequently Visit** | | | |
| After Restoration | 59 (84.3) | 40 (80) | 99 (82.5) |
| Before Restoration | 11 (15.7) | 10 (20) | 21 (17.5) |
| **Type of Visitors** | | | |
| Individually | 2 (2.9) | 0 (0) | 2 (1.7) |
| Couples | 7 (10) | 10 (20) | 17 (14.1) |
| With Family members | 30 (42.9) | 15 (30) | 45 (37.5) |
| With Friends | 31 (44.2) | 25 (50) | 56 (46.7) |
| **Visiting the Lake** | | | |
| Daily | 5 (7.1) | 3 (6) | 8 (6.7) |
| Weekly once | 5 (7.1) | 11 (22) | 16 (13.3) |
| Weekend | 28 (40) | 22 (44) | 50 (41.7) |
| Monthly once or twice | 26 (37.2) | 11 (22) | 37 (30.8) |
| Holidays | 6 (8.6) | 3 (6) | 9 (7.5) |
| **Mode of Transport** | | | |
| Public transport | 28 (40) | 24 (48) | 52 (43.3) |
| 2-wheeler | 23 (32.9) | 15 (30) | 38 (31.7) |
| 4-wheeler | 8 (11.4) | 4 (8) | 12 (10) |
| Walk | 2 (2.8) | 5 (10) | 7 (5.8) |
| Auto | 9 (12.9) | 2 (4) | 11 (9.2) |
| **Distance and Time Spending for Visiting the Lake (Average)** | | | |
| **Distance Travel to Reach the Lake (in km)** | | | |
| Within Coimbatore city | 14.03 | 14.66 | 14.29 |
| Coimbatore District | 37.02 | 35.29 | 36.38 |
| Other District | 50.25 | 49.98 | 50.12 |
| Time taken to reach the lake (in minutes) | 40.0 | 45.1 | 42.1 |
| No. of. Times Visit | 13.5 | 10.2 | 12.1 |
| Time Spend in the lake (in hours) | 2.20 | 1.30 | 2.00 |

**Source:** primary data (2023)

The table 2 depicts the details about the visitor frequently visit the lakes. The sample respondent's residential location reveals that in Ukkadam lake majority 49 percent of the respondents are come from within Coimbatore city to visiting the lake, followed by 31 percent of the respondents are from Coimbatore district, 10 percent of the respondents are come from other district, 9 percent of the respondents come from lake nearby areas. In Valankulam lake majority 42 percent of the respondents are from within Coimbatore city,26 percent of the respondents are from Coimbatore district, each 16 percent of the respondents are from other district and lake nearby areas. The majority 46 percent of the respondents are

from within the Coimbatore city to visiting lake for enjoy the recreational benefits.

Frequency of visit reveals that in Ukkadam lake, after lake restoration majority 84 percent of the respondents are visiting the lake, and 16 percent of the respondents are visiting the lake in before and after the restoration. In Valankulam Lake majority 80 percent of the respondents are visiting the lake only after the restoration and 20 percent of the respondents are visiting the lake in before and after restoration of lake. After the lake restoration, majority 83 percent of the respondents are visiting the lake for recreation activities.

Type of visit depicts that in Ukkadam Lake majority 44 percent of the respondents are visiting the lake with friends, followed by 43 percent of the respondents visiting the lake with their family members, 10 percent of the respondents are couples, and 3 percent of the respondents are individually visit the lake. In Valankulam Lake, majority 50 percent of the respondents visiting the lake with friends, 30 percent of the respondents are visiting the lake with their family members, 20 percent of the respondents are couples. The majority 47 percent of the respondents are visiting the lake with friends and around 38 percent of the respondents are visiting the lakes with their family members.

In Ukkadam lake majority 40 percent of the respondents are visiting the lake in weekends, 37 percent of the respondents are monthly once or twice visiting the lake, around 9 percent of the respondents are visiting the lake in holidays, each 7 percent of the respondents are visiting the lake in weekly once and daily. In Valankulam lake majority 44 percent of the respondents visit the lake in weekends,each 22 percent of the respondents are monthly once or twice and weekly once visiting the lake, and each 6 percent of the respondents are visiting the lakein holidays and daily. The majority 42 percent of the respondents are visiting the lake in weekends.

Mode of transport accessed by the visitors reveals that in Ukkadam lake majority 40 percent of the respondents are using public transport to reach the lake, 33 percent of the respondents are come by 2-wheelers, 13 percent of the respondents are travelled by auto to reach the lake, 11 percent of the respondents are travelled by car and around3 percent of the respondent are reached the lake by walking. In Valankulam lake majority 48 percent of the respondents are using public transport to reach the lake, 30 percent of the respondents are come by 2-wheelers, 10 percent of the respondents are reached the lake by walking, 8 percent of the respondents are travelled by car and 4 percent of the respondents are travel by auto to visit the lake. The majority 43 percent of the respondents are travelled by the public transport to visiting the lake.

The average distance travelled by the visitors to reach the Ukkadam and Valankulam Lake reveals that, an average of 14.29 km was travelled by visitors from within Coimbatore city, from Coimbatore district visitors have travelled 36.38 km and from other districts are travelling around 50 km. The average 42 minutes time taken by the visitors to reach the Ukkadam lake and Valankulam lake. The Ukkadam lake visitors are an average 13 times visit the lake and the Valankulam lake visitors are average 10 times visit the lake. The time spend in the lake for recreational benefits reveals that in Ukkadam lake visitors have spent around 2 hours and 20 minutes in the lake surrounding and the Valankulam lake visitors are spent around 1 hour and 30 minutes. After the lake restoration, the visitors are frequently visiting the lakes.

**Table 3 Evaluation of the Recreational Value of Lakes**

| Name of the Lake | Statistics | Snacks (Rs.) | Travel (Rs.) | Boating (Rs.) | Total (Rs.) |
|---|---|---|---|---|---|
| Ukkadam Lake | Sum | 11910 | 21820 | 40675 | 74405 |
| | Mean | 170.14 | 311.71 | 581.07 | 1062.78 |
| Valankulam Lake | Sum | 4385 | 8862 | 17750 | 30997 |
| | Mean | 87.70 | 177.24 | 355.00 | 619.94 |
| Total | Sum | 16295 | 30682 | 58425 | 105402 |
| | Mean | 135.79 | 255.68 | 486.88 | 878.35 |

**Source:** primary data (2023)

Table 3 evaluated the recreational value of lakes. In Ukkadam Lake sample visitors are spent Rs. 170.14 for snacks, Rs. 311.71 spent for travel costs to visit the lake, and Rs.581.07 spent for boating. All these expenses are for enjoying the recreational activities and benefits of lake. Therefore, the recreational value of Ukkdam Lake is Rs. 1062.78 per visit and Rs.74,405 of the direct use value of recreational benefits gained by the 70sample visitors. In Valankulam Lake sample visitors are spent Rs.87.70 for snacks, Rs. 177.24 for travel costs, and Rs. 355 for boating rides. The recreational value of Valankulam Lake is Rs. 619.94 per visit and Rs. 30,997 of direct use value of recreational benefits gained by the 50 sample visitors. When comparing the recreational value of both lakes, the Ukkadam Lake has a higher recreational value than the Valankulam Lake. The reason behind this Ukkadam is one of the largest lakes in Coimbatore City, the Coimbatore City Municipal Corporation constructed the walking path, floating bridge, sitting place, open auditorium, Lake view points, selfie/scenic spots, and children's park in Ukkadam lake it, was attracted the visitors and lake was located near to Ukkadam bus stand. So, the visitors can easily come to visit the Ukkadam lake for enjoying recreational benefits.

**Table 4 Multi-purpose and benefits of visiting the lakes**

| Name of the lake | Boating | Sight-Seeing | Walking | Aesthetic benefits | Children Park | Consume food and snacks | Taking photo | Birds watching | Relaxation |
|---|---|---|---|---|---|---|---|---|---|
| Ukkadam Lake | 39 | 64 | 56 | 57 | 36 | 31 | 57 | 19 | 67 |
| | (55.7) | (91.4) | (80.0) | (81.4) | (51.4) | (44.3) | (81.4) | (27.1) | (95.7) |
| Valankulam Lake | 10 | 47 | 44 | 33 | 9 | 32 | 45 | 14 | 50 |
| | (20.0) | (94.0) | (88.0) | (66.0) | (18.0) | (64.0) | (90.0) | (28.0) | (100.0) |
| Total | 49 | 111 | 100 | 90 | 45 | 63 | 102 | 33 | 117 |
| | | (92.5) | (83.3) | (75.0) | (37.5) | (52.5) | (85.0) | (27.5) | (97.5) |

**Source:** primary data (2023)
**() – row wise percentage**

Table 4 indicates the Ukkadam and Valankulam Lake sample visitors are visiting the lakes for multi-purpose and benefits. The 97 percent of the respondents are visiting the lakes for the mind relaxation and enjoy the nature, followed by 92 percent of the respondents are visiting the lakes forsight - seeing and enjoy the lake view and boating ride view, 85 percent of the respondents are visiting the lakes for taking photos in "I LOVE KOVAI" word status in Ukkadam lake and "LOVE" word status in Valankulam lake and in various selfie and scenic spots of lakes, 83 percent of the respondents purpose of visiting the lakes for walking, jogging and doing exercises, 75 percent of the respondents are visiting the lakes for enjoying the aesthetic benefits (i.e., sun shine, feel fresh air), 52 percent of the respondents are visiting the lake for consuming the variety of foods and snacks, around 41 percent of the respondents are visiting the lake for boating rides, 37 percent of the respondents are visiting the lake for their children are enjoy to

playing in children's park, and only 27 percent of the respondents are enjoying the birds watching.

**Table 5 Drawbacks of Facilities Available in the Lake**

| Name of the lake | Drawbacks | | | | | Total |
|---|---|---|---|---|---|---|
| | No parking and less equipment's | No proper maintenance | Lack of Toilet Facility | Public Nuisance | Rat Problem | |
| Ukkadam Lake | 24 | 29 | 15 | 2 | 0 | 70 |
| | (34.3) | (41.4) | (21.4) | (2.9) | (0.0) | (100.0) |
| Valankulam Lake | 6 | 24 | 4 | 8 | 8 | 50 |
| | (12.0) | (48.0) | (8.0) | (16.0) | (16.0) | (100.0 |
| Total | 30 | 53 | 19 | 10 | 8 | 120 |
| | | (44.2) | (15.8) | (8.3) | (6.7) | (100.0) |

**Source:** primary data (2023)

() – Row wise percentage

The table 5 drawbacks of facilities available in the lakes. In Ukkadam lake, majority 41 percent of the sample visitors are felt that there is no proper maintenance, lake surrounding filled with wastes and dustbins are overloaded, 34 percent of the respondents are stated that there is no parking facilities and less playing equipment's are the major drawback of the facilities, 21 percent of the respondents are said that toilet facility is available in Ukkadam lake but, no proper maintenance, and 3 percent of the respondents are suffered in public nuisance and disturbance. In Valankulam lake, majority 48 percent of the visitor stated that there is no proper maintenance in the lake, followed by each 16 percent of the respondents are suffered in public nuisance and rat problem, 12 percent of the respondents stated that there is no parking area and less playing equipments and 8 percent of the respondents are said that there is no toilet facility around the lake bund. The table concludes that, lack of maintenance, no parking and toilet facility are major drawback of facilities available in lake.

**Regression Analysis Result**

**Table 6 Factors Determining the Visitation Rate of the Selected Lakes**

| | Visitation Rate (Frequently Visit) | | | |
|---|---|---|---|---|
| | Estimate | Std Error | T-value | Significance |
| **Constant** | 251.613 | 149.948 | 1.678 | 0.034* |
| **Travel Cost** | -.268 | .137 | -1.953 | 0.053* |
| **Monthly Income** | .007 | .001 | 5.944 | 0.000** |
| **Mode of Transport** (Public transport = 1, others = 0) | 33.945 | 10.825 | 3.136 | 0.002** |
| **Distance Travelled** | -.765 | .386 | -1.983 | 0.050* |
| **Type of Visit** (with friends = 1, others = 0) | 57.087 | 25.097 | 2.275 | 0.025* |
| **Recreation Benefits** (Highly benefited & enjoyable = 1, others = 0) | 92.319 | 40.468 | -2.281 | 0.024* |
| **R Square** | 0.377 | | | |
| **Adjusted R Square** | 0.367 | | | |

**Note:** **1% level of significance, *5% level of significance

$Y=a+b_{X1}+b_{X2}+b_{X3}+b_{X4}+b_{X5}+b_{X6}+U$

$Y=a+b_{(TC)}+b_{(MI)}+b_{(MOT)}+b_{(DT)}+b_{(TOV)}+b_{(RB)}+U$

Visitation rate = f (Travel Cost (TC), Monthly Income (MI), Mode of Transportation (MOT), Distance travelled to reach the lake (DT), Type of visit (TOV), Recreational Benefits (RB))

$Y=251.613-0.268_{(TC)}+0.007_{(MI)}+33.945_{(MOT)}- 0.765_{(DT)} + 57.087_{(TOV)} + 92.319_{(RB)} + U$ (Error)

Table 6 presents the regression analysis of the factor that determined the visitation rate of the lake. The correlation was applied to find out the variables that highly determine the visitation rate and six variables are show a high percentage of correlation. The regression result reveals that the monthly income of the visitor, and mode of transport, are statistically significant at 1 percent level. The travel cost, distance travelled to reach the lake, type of visit, and recreation benefits after the lake restoration are statistically significant at 5 percent level. The R square value is 0.377 it indicates that 37percent of the dependent variable is determined by these independent variables such as monthly income, mode of transport (public transport), type of visit (visitors come with friends),recreation benefits (Highly benefited & enjoyable) have a positive relationship and all these variables are increasing the lake visitation rate. The travel cost and distance travel to reach the lake have a negative relationship, it indicates a one rupee increment in the travel cost will decline the frequency of visits the lake by 0.268 percent approximately and increase the distance of1km travel between the lake and the respondent's resident will decrease the lake visitation rate by 0.765 percent. This means the people living within Coimbatore city are easily and frequently visit the lakes, while those who residence was far away from the lakes, visit a few times.

## Conclusion

This study found that the recreation value of lakes and factors influence the lake visitation rate. The lake restoration provides various benefits to the visitors like open space, fresh air, aesthetic benefits, birds watching, children's park, boating, walking path, sight-seeing, relaxation, etc. The Coimbatore Municipal Corporation City has taken a good effort in lake restoration and maintains ecological balance. However, the visitors have some drawbacks such as lack of parking facilities, no proper maintenance, and lack of toilet facility. If, the Coimbatore City Municipal Corporation has to take necessary steps to improve the facilities available in the lakes,it will be helpful for the visitors to continuously enjoy the recreational benefits. This study infers that provision of an entry fee along with enhancement in lake maintenance will attract more visitors and generate revenue to support the maintenance of lake in a sustainable manner.

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