**Report**

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**E-commerce Customers- A Multiple Linear Regression Analysis**

Aim: The main aim of this report is to identify the impact of Email , address, Avatar , Average Session Length , Time on App , Time on Website , Length of Membership on the Yearly Amount Spent by the customer on the E-commerce Website.

Independent/Explanatory Variables:

1. Email
2. Address
3. Avatar
4. Average Session Length
5. Time on App
6. Time on website
7. Length of Membership

Out of these 7 variables we have used Average Session Length , Time on App , Time on Website , Length of Membership as our predictor variables for the purpose of our Analysis Intuitively.

Observations: By using the above variables as the predictor variables the equation of our Multiple Linear Regression comes out to be

Y= 25.7343 \*Average Session Length + 38.7092\*Time on App + 0.4367\*Time on website + 61.5773 \* Length of Membership -1051.5943

Where -1051.5943 is our intercept , and rest are the coefficients of our predictor variables.

We got 98.2% Accuracy in predicting the Yearly Amount Spent by the Customer. So we can say that the Yearly Amount spent by the customer does not depend on the Email , Address , Avatar of the customer, also the impact of Time on Website on predictor on Y is nearly negligible. So we can drop the Time on App feature for further Analysis. It only depends on the Average Length of the Session , Time spent on App and the Length of the Membership.

Out of all predictors Length of Membership has the maximum impact.

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| --- | --- | --- | --- | --- |
| Yearly Amount Spent | Avg Session Length | Time on App | Length of Membership | Percentage Change |
| 126.020 | 1 | 1 | 1 | 0 |
| 151.75 | 2 | 1 | 1 | 20.41 |
| 164.72 | 1 | 2 | 1 | 30.7094 |
| 187.59 | 1 | 1 | 2 | 48.8862 |

Conclusion : We can conclude with 98.2% confidence that with every –

1) 1 minute increase in Avg Session Length the Yearly Amount Spent by the customer increases by 20.41 %

2) 1 minute increase in Time on App the Yearly Amount Spent by the customer increases by 30.7094%

3) Unit increase in the Length of Membership the Yearly Amount Spent by the customer increases by 48.8862%

4) Length of Membership is the most dominant predictor variable.