

Summary:

This analysis is done for X Education and to find ways to get more industry professionals to join their courses. The basic data provided gave us a lot of information about how the potential customers visit the site, the time they spend there, how they reached the site and the conversion rate.

The following were the steps used:

1. Cleaning data:

The data was mostly clean except for a few null values and the option select had to be replaced with a null value since it did not give us much information. Few of the null values were changed to 'not available' so as to not lose much data. They were later replaced with dummy variables. Since there were many from India and few from outside, the elements were changed to 'India', 'Outside India' and 'not provided'.

2. EDA:

EDA was done. It was found that a lot of elements in the categorical variables were irrelevant. The numeric values were good and no outliers were found.

3. Dummy Variables:

The dummy variables were made and relaced and later on the dummies with 'not available' elements were removed. For numeric values we used the MinMaxScaler.

4. Train-Test split:

The split was done at 70% and 30% for train and test data respectively.

5. Model Building:

6. Firstly, RFE was done to attain the top 15 relevant variables. Later the rest of the variables were removed manually depending on the VIF values and p-value (The variables with $VIF < 5$ and $p\text{-value} < 0.05$ were kept).

7. Model Evaluation:

A confusion matrix was made. Later on the optimum cut off value (using ROC curve) was used to find the accuracy, sensitivity and specificity which came to be around 80% each. 7. Prediction: Prediction was done on the test data frame and with an optimum cut off as 0.35 with accuracy, sensitivity and specificity of 80%.

- The variables which mattered most to potential buyers were:
 - Total time spent on the website
 - Total number of visits
- When the lead source was:
 - Google
 - Direct Traffic
 - Organic Search
 - Welingak wensite
- When the last activity was:
 - SMS
 - Olark chat conversion
- When the lead origin is lead add format
- When they were working professional
 - X education should focus on these points in order to increase their lead conversion rate and spend less time on calling prospective buyers