LEAD SCORING CASE STUDY

SUMMARY REPORT:

Problem Statement:

An education company X Education sells online courses for industry professionals on their website and acquire leads through website forms, referrals & marketing campaigns. The potential leads or else known as hot leads have a conversion rate of 30% which is low. So, they want a model which identifies potential leads which gives them high conversion rates. So, we have built a logistic regression model to help the company in identifying the potential leads.

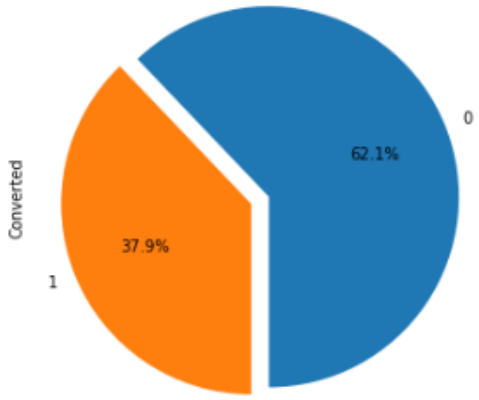
The model building process followed the bellows steps:

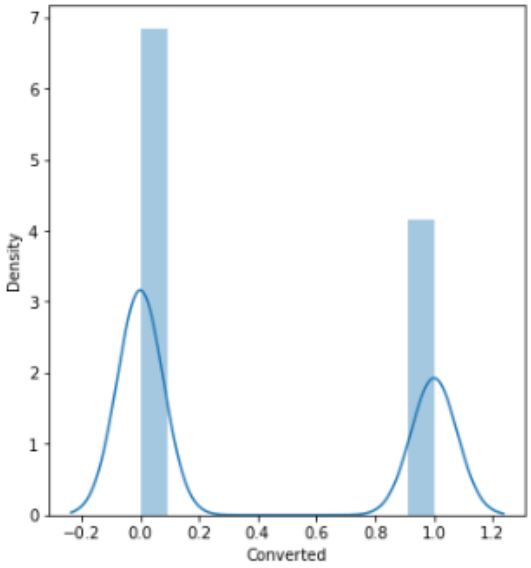
1. Data Cleaning & Manipulation:

- Identified the unique values in the columns of data & dropped which are less important for the analysis.
- Some of the category columns have values as SELECT which are as good as nulls were replaced by Not Available.
- Columns having the null values are identify those having >35% nulls were dropped to make the data precise.
- The rows that having less % of nulls were dropped.

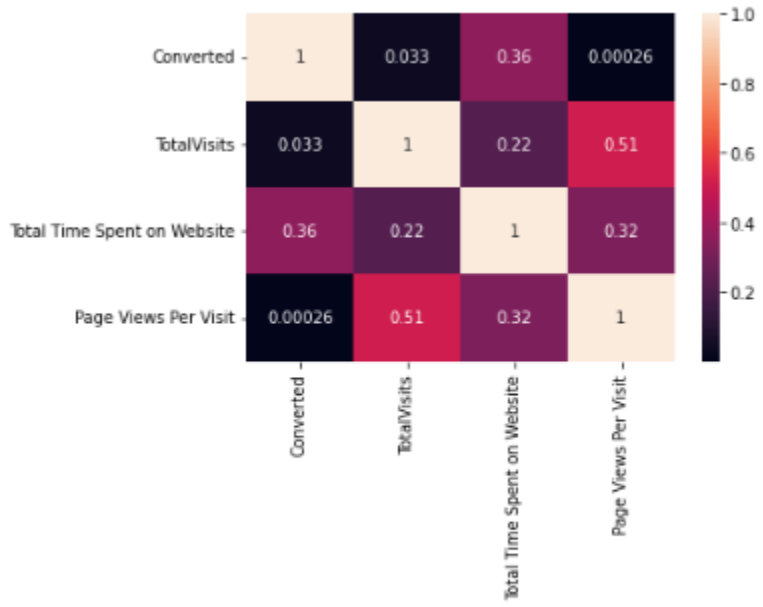
2. Exploratory data analysis:

- The probability of lead getting converted is high when 'Lead Origin' is from 'Lead add form'.
- The large number of leads comes from Google and direct traffic but the referral sites convert most of the leads.
- Leads opting for emailing option have more probability of getting converted.
- The Conversion rate is higher when the information is sent through SMS
- Unemployed people have more conversion rate as well as more count.





From the plot we can observe that 37.9% are converted & rest are not converted



From the heat map above we can say Total visits shows high correlation with pages per visit

3. Data Modelling:

- The dummy variables were created and the Train - Test split was done at 70% and 30% respectively.
- Model Building: 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.
- Model Evaluation: A confusion matrix was made. Later, the optimum cut off value (using ROC curve) was used to find the accuracy, sensitivity and specificity which came to be around 80% each.
- Prediction: Prediction was done on the test data frame and got the optimal cut-off of 0.35 and the final model gave the accuracy of 80% with 79% sensitivity and 80% specificity.

• Precision – Recall: This method was also used to recheck and a cut off of 0.41 was found with precision of 79% and Recall of 69% on the test data frame.

Conclusion:

1) From the given data the conversion rate was 39%.

2) When ‘Lead Origin’ is ‘Lead add form’, the probability of lead getting converted is high.

3) Google and direct traffic generating majority of leads, but referral sites shows high Conversion rate.

4) Most of the leads are opting for mailing them.

5) Conversion rate is higher when the information is sent through SMS.

6) Unemployed people have more conversion rate as well as more count.

7) Our model gives accuracy of 81% with our selected cut-off of 0.5.

8) An optimal cut-off comes out to be 0.35 which gives the accuracy of 80% with sensitivity and specificity at 79% and 80%.

9) Lead Origin Lead Add Form, Last Notable Activity Had a Phone Conversation, What is your current occupation, Working Professional are the features shows high promising leads.

10) Last Activity Converted to Lead, Last Activity_Olark Chat Conversation shows less lead conversion rate.