

## Executive Summary

1. Univariate Analysis Conclusion: There is low variation in *Page Views Per Visit* and *Total Visits* but higher variation in *Total Time Spent on Website*. There are a lot of outliers in *Page Views Per Visit* and *Total Visits* which needs to be treated before modelling.
2. Bivariate Analysis Conclusion: There is positive correlation between *Total Time Spent on Website* and *Conversion*. There is some correlation between *Conversion* and some categorical columns like *Lead Origin* and *Lead Source*.
3. Correlation Analysis (Heatmap) Conclusion: There is positive correlation between *Total Time Spent on Website* and *Conversion*. There is almost no correlation in *Page Views Per Visit* and *Total Visits* with *Conversion*.
4. Bivariate Analysis Conclusion: The following dummy variables seems to have some effect on *Conversion*. *Lead Origin\_Lead Add Form*, *Last Activity\_Email Bounced*, *Lead Source\_Reference*, *Total Time Spent on Website*
5. Correlation Analysis (Heatmap) Conclusion: The heatmap is not very clear due to huge number of columns, however, we do see a lot of correlation amongst columns, especially dummy variables. Hence we would further reduce the number of columns so as to reduce multicollinearity.
6. Overall accuracy on Test set: 0.786
7. Sensitivity of our logistic regression model: 0.733
8. Secificity of our logistic regression model: 0.823
9. Top 3 variables in model, that contribute towards lead conversion are: a. Total Time Spent on Website b. Last Notable Activity\_SMS Sent c. TotalVisits
10. Top 3 variables in my model, that should be focused are: a. Last Activity\_SMS Sent (positively impacting) b. Last Activity\_Olark Chat Conversation (negatively impacting) c. Lead Source\_Olark Chat (negatively impacting)
11. Our Logistic Regression Model is decent and accurate enough, when compared to the model derived using PCA.
12. X Education Company needs to focus on following key aspects to improve the overall conversion rate:
  - a. Increase user engagement on their website since this helps in higher conversion
  - b. Increase on sending SMS notifications since this helps in higher conversion
  - c. Get Total Visits increased by advertising etc. since this helps in higher conversion
  - d. Improve the Olark Chat service since this is affecting the conversion negatively