C2\_T2

**LESSON LEARNED**

The task for this project is to build model to predict credit card applicants who can default their credit card payment. Also, to build a model for credit card limit for applicants. Credit one provided a dataset which comprises of 25 variables, and 30203 observations. Default payment (Binary) is target variable while 23 other variables are independent variables. Sex, Marriage, Education and Default payment are all categorical variable. Exploratory data analysis was performed on the dataset, and lot of findings were revealed when the dataset was analyzed. Also, there are several business value lessons learnt from the dataset and will be discussed in the course this report.

**Payment Default vs Age**

One of the findings revealed when exploratory data analysis was performed on the dataset was the distribution of credit limit among different age groups. The variable, age, was split into different age groups: 20-24; 25-39; 40-55; and 56-60. It was revealed that age group 25-39, 40-55, and 56-60, have higher credit limit compared to age group 20-24. It was also revealed that 25-39 age group has higher number not default counts compared to other age groups. Putting default and not default together in the age group 25-39, revealed that the number of counts for not default is far greater than the count for default payment, which is significant.

**Recommendation:** Loan should be approved for any applicant who falls into 25-39 group, with high credit limit. This age group has highest credit limit, and highest not default payment counts as revealed during the exploratory data analysis.

**Payment Default vs Marital Status**

Another important business lesson learnt while analyzing this Credit One dataset is the relationship between payment default and marital status. It was revealed that married credit card owners have lower default rate compared to single, divorce, and other (marital status), while single and divorce both higher not default rate compared to married and others. It was also revealed that married credit card owners have highest amount balance, i.e., they used the credit card for transaction more compared to single, divorce, and other.

**Recommendation:** More loan should be approved for married applicants, with higher credit limit because they have lower risk of defaulting the payments.