# Logistics Regression:

**Business Objective: Affairs**

Output Y = Affair YES or NO; Input X = ender, age, yearsmarried, children,religiousness,occupation,education,rating.

Step 1 : Convert the Affair variable using factor in r code. Gender , Children needs to be converted to binary form .

Step 2 : Logistic Regression, Using generalized linear model find the logit.

Null deviance: 675.38

Residual deviance: 587

The Residual deviance is less than Null deviance so the input variables are appropriate to predict the output.

AIC: 637.51

Step 3 : Prediction some are correct but some are not rightly predicted.

Step 4: Confusion Matrix: in confusion matrix we get to know the number of true correctly identified and also the false.

Step 5: Accuracy = 0.74

**Business Objective : Bank Data**

Output Y = has the client subscribed a term deposit? (binary: "yes","no")

X = age,job,marital,education,default,balancing,housing,loan,contact ,day,month,duration,campaign,pdays,previous,poutcome.

Step 1 : Convert the y variable using factor in r code. Job,marital,education,housing,loan,default,poutcome,month,contact needs to be converted to numeric variable to find the logit values. Using str find the datatype of each variable and use factor for all the categorical data of each variable.

Step 2 : Logistic Regression, Using generalized linear model find the logit.

Null deviance: 32631

Residual deviance: 21562

The Residual deviance is less than Null deviance so the input variables are appropriate to predict the output.

AIC: 22281

Step 3 : Prediction some are correct but some are not rightly predicted

Step 4: Confusion Matrix: in confusion matrix we get to know the number of true correctly identified and also the false.

Step 5: Accuracy = 0.889

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