CREDIT RISK

TEAM

GROUP 6

ABHIRAM MANNAM

NEIL SAMUEL PULUKURI

JOSHUA HAWLEY

KUSHAL RAM TAYI

THE PROBLEM

HOME CREDIT

THE CLIENT

UNDERSERVED

THE CUSTOMERS

SHADY LENDERS

PREDATORS

SAFE BORROWING

THE GOAL

“It is not a calculated risk if you haven’t calculated it.”

Naved Abdali

PROCESS

Exploratory Data Analysis
Clean and prep the data

Hypothesis Testing
Are our assumptions plausible?

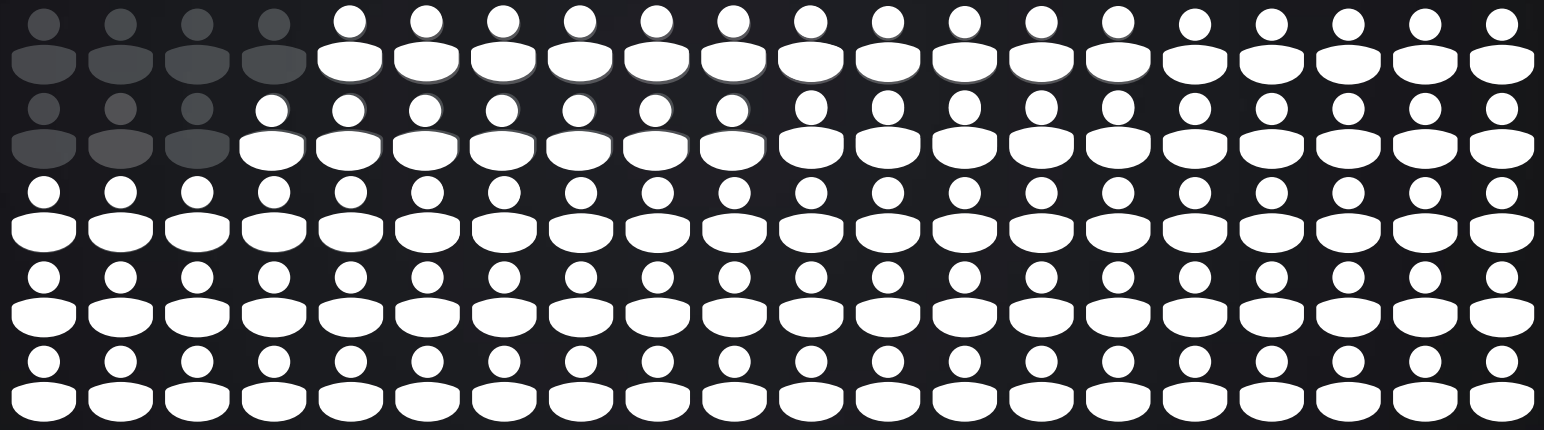
Descriptive Analysis
Know where we are

Statistical Analysis
Know where we are going

Modeling Analysis
How to get there

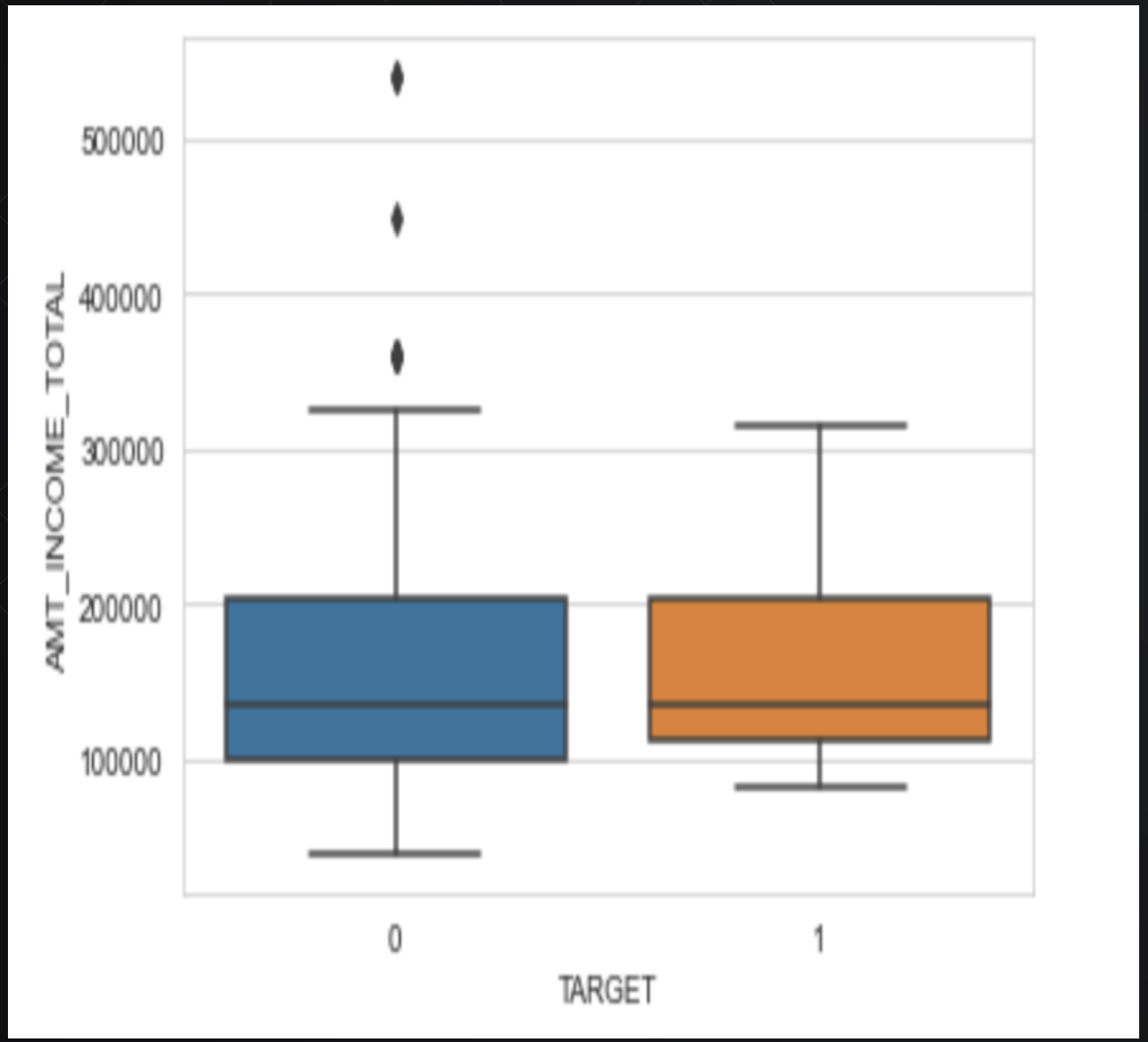
EDA

CLASS IMBALANCE



90% **DENIED – MAJORITY CLASS**

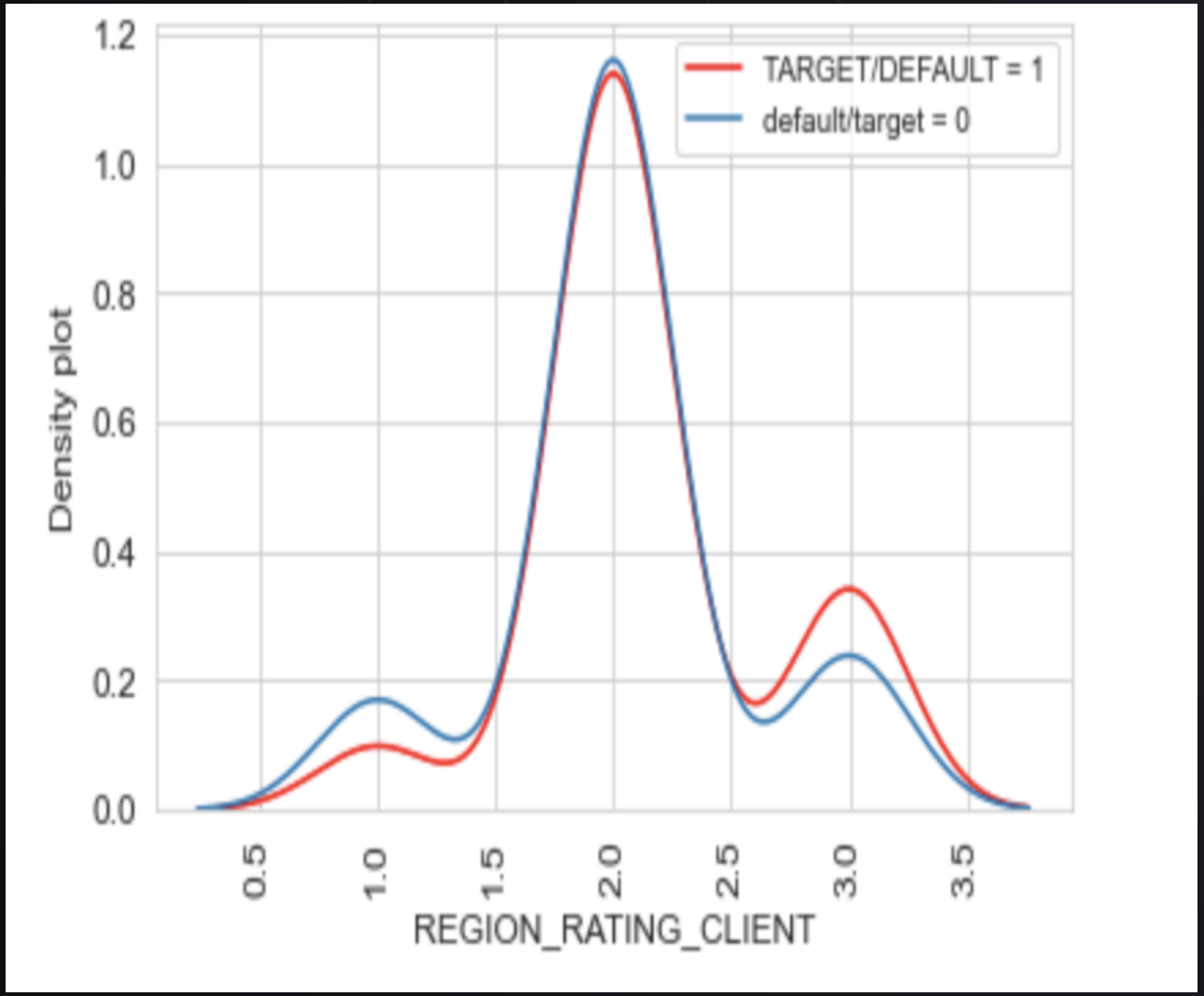
HYPOTHESIS



INCOME

Income doesn’t have effect on the default rate.

Boxplot provides that with default as 0 and 1 there is no major difference (except for some outliers).

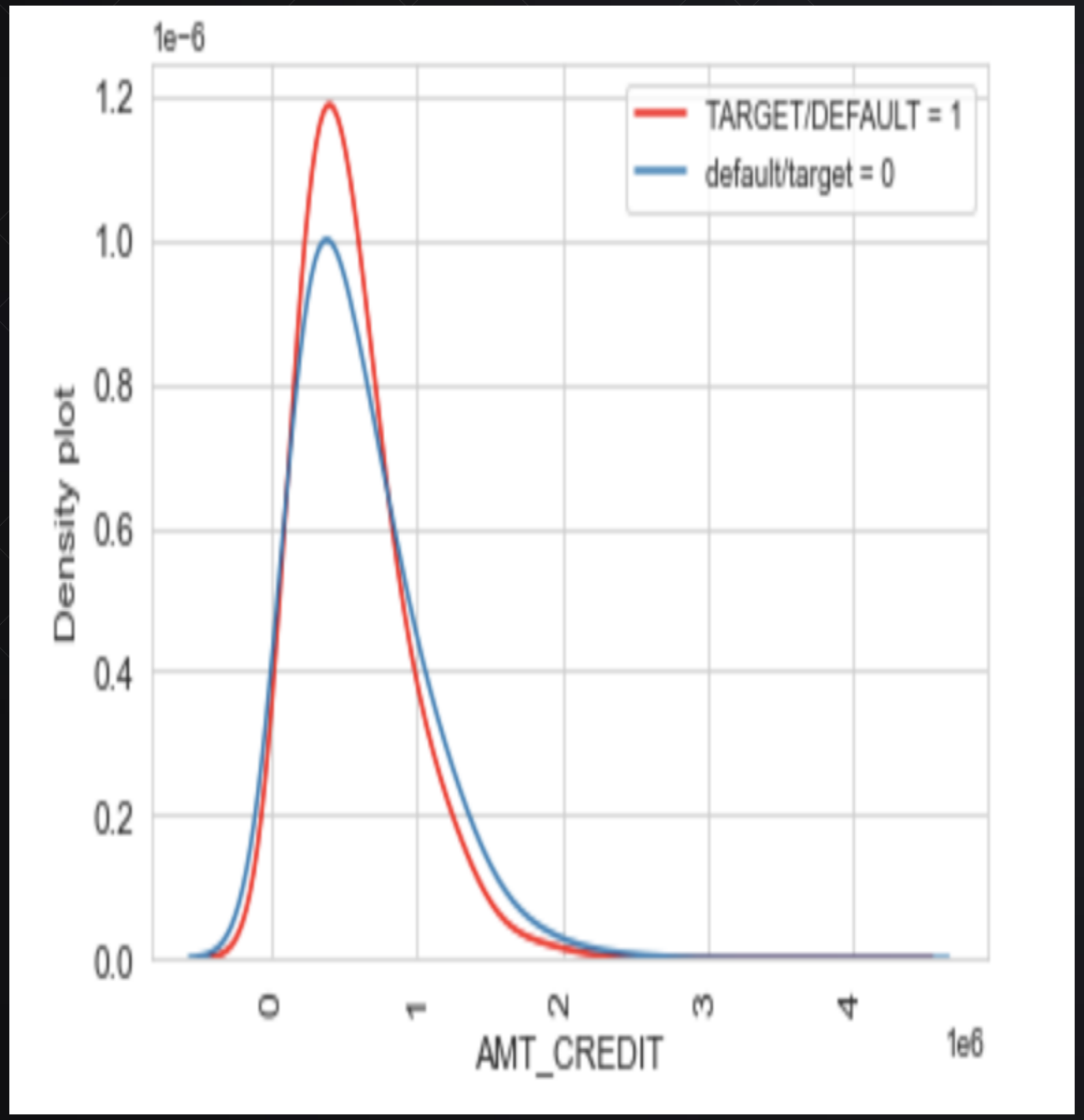


REGION RATING

The region ratings has ratings from 0 to 4 where 4 is low rated area and 0 as high rated.

For right part from 2.5 to 4 of the region rating we can see there is high risk of default whereas for the region rating of 0 to 1.5 on the left side of the plot has less default risk.

Region rating has an effect on the default rate.



AMOUNT CREDIT

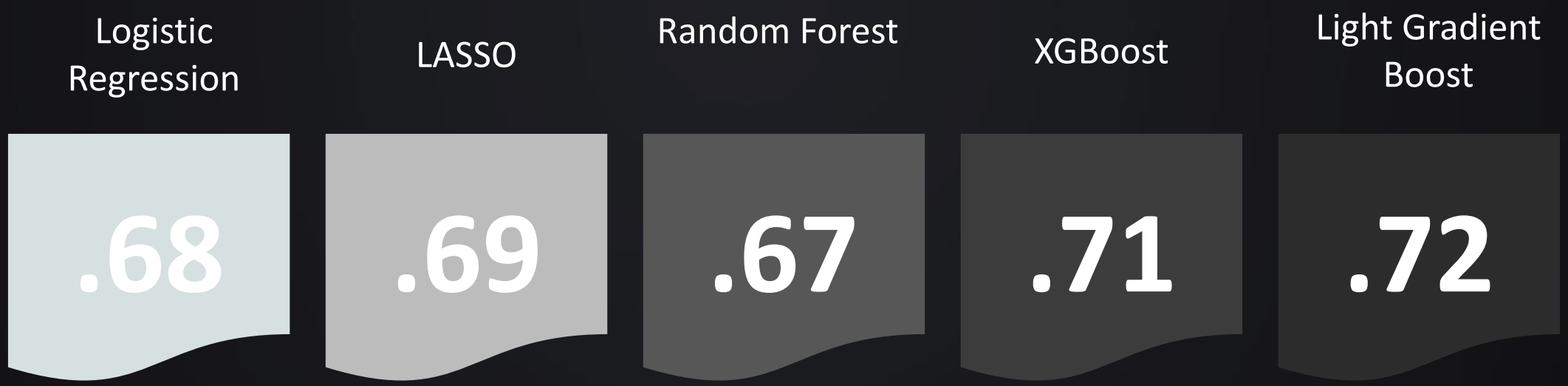
From the density plot the amount credit has no effect on the default rate.

The two plots have the same pattern for the default rate.

STATISTICAL AND PREDICTIVE MODELS ANALYSIS

MODEL EVALUATION

KAGGLE SCORE FOR EACH MODEL



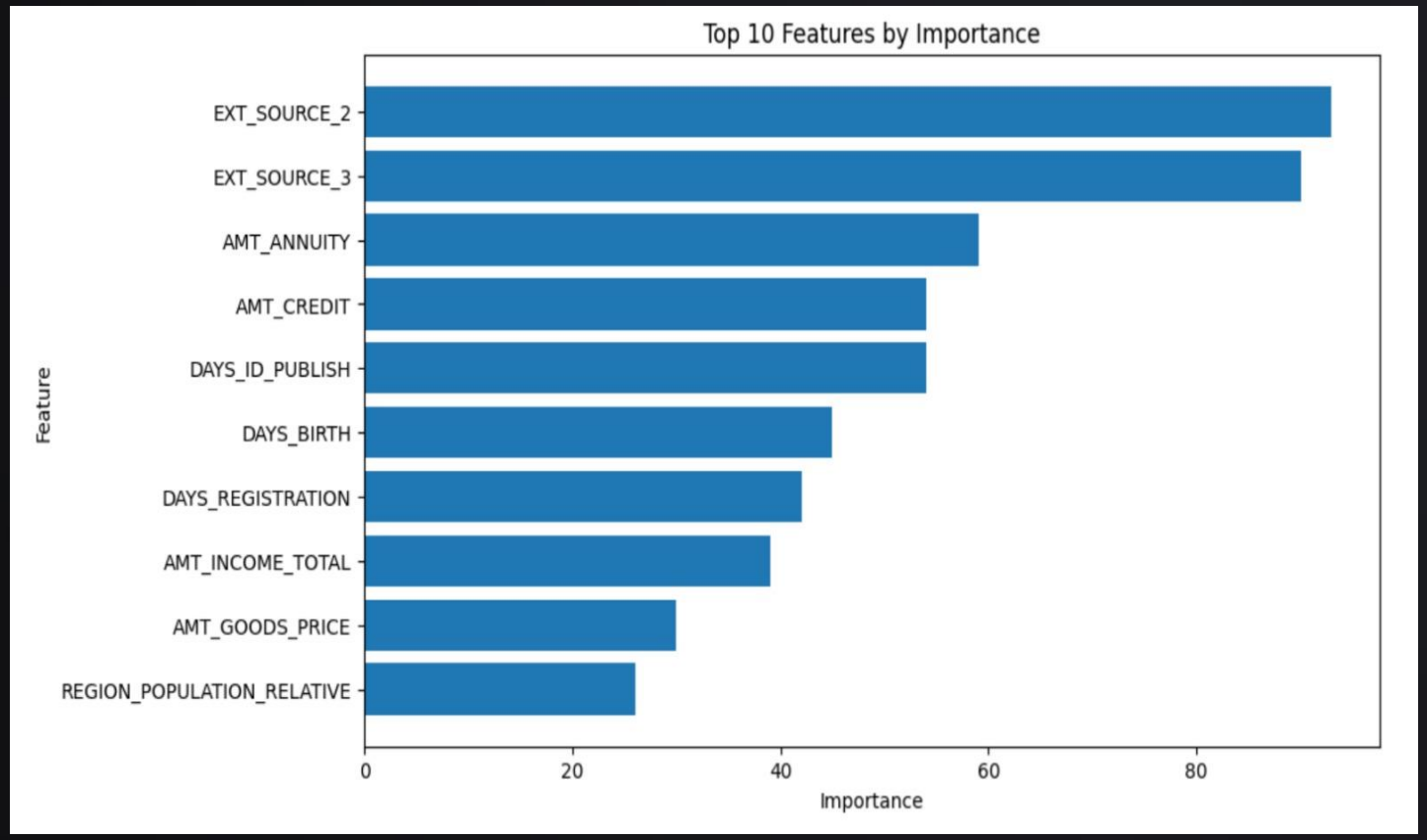
CONFUSION MATRIX

LIGHT GRADIENT BOOST

PREDICTED \ GROUND TRUTH	TRUE	FALSE
TRUE	3360	1501
FALSE	1657	3452

SENSITIVITY	.67
PRECISION	.69
SPECIFICITY	.69

IMPORTANT FEATURES



Correlation

Feature	Correlation
Amt_Goods_Price	-0.039
Days_Birth	0.078
Amt_Annuity	-0.012
Region_Population	-0.037
Region_Rating	0.058

CONCLUSION

The financial Institutions should concentrate on the goods for which the credit has been provided.

The region rating and also region population has an effect on the default rate.

The annual credit amount has an effect on the default rate.

The age of the customer has an effect on the repayment rate as the younger people are more likely to default.

THANKS

FOR LISTENING