ASSIGNMENT CREDIT EDA CASE STUDY

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PURPOSE

- Credit EDA will help the bank to make decisions of loan approval based on applicants profile.

- This will reduce the loss of bank by not lending money to customers likely to default loan.

- This will ensure that the consumers capable of repaying the loan are not rejected.

STEPS PERFORMED FOR EDA

- Data Sourcing and understanding.

- Checking Data quality issues.

- Eliminating blank cells and imputing required values.

- Univariate Analysis.

- Bivariate Analysis.

- Merging 2 Data sets.

- Data analysis of merged data set.

- Recommendations and Risks.

# UNIVARIATE ANALYSIS OF LOAN APPLICATION DATA

DISTRIBUTION ACCORDING TO WITH / WITHOUT PAYMENT DIFFICULTIES

- Percentage of customers having payment difficulties are very less as compared to customers having payment difficulties.
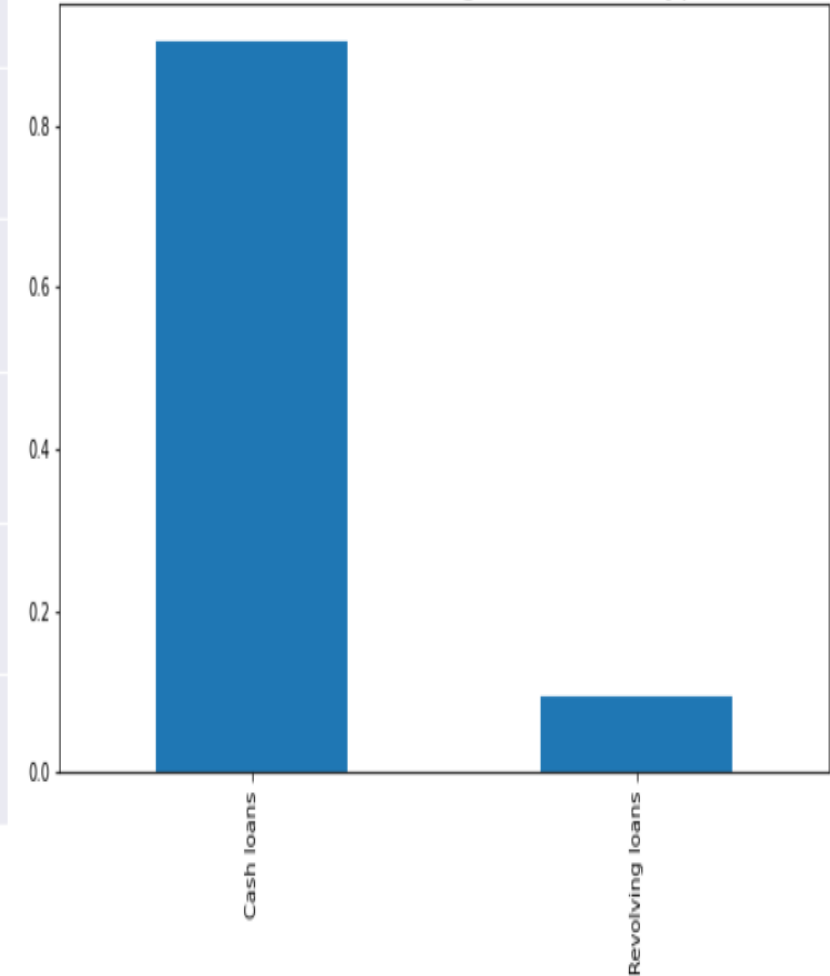
DISTRIBUTION ACCORDING TO CONTRACT TYPE

- Customers are more intrested in cash loans than in revolving loans.

Distribution according to With / Without Payment Difficulties
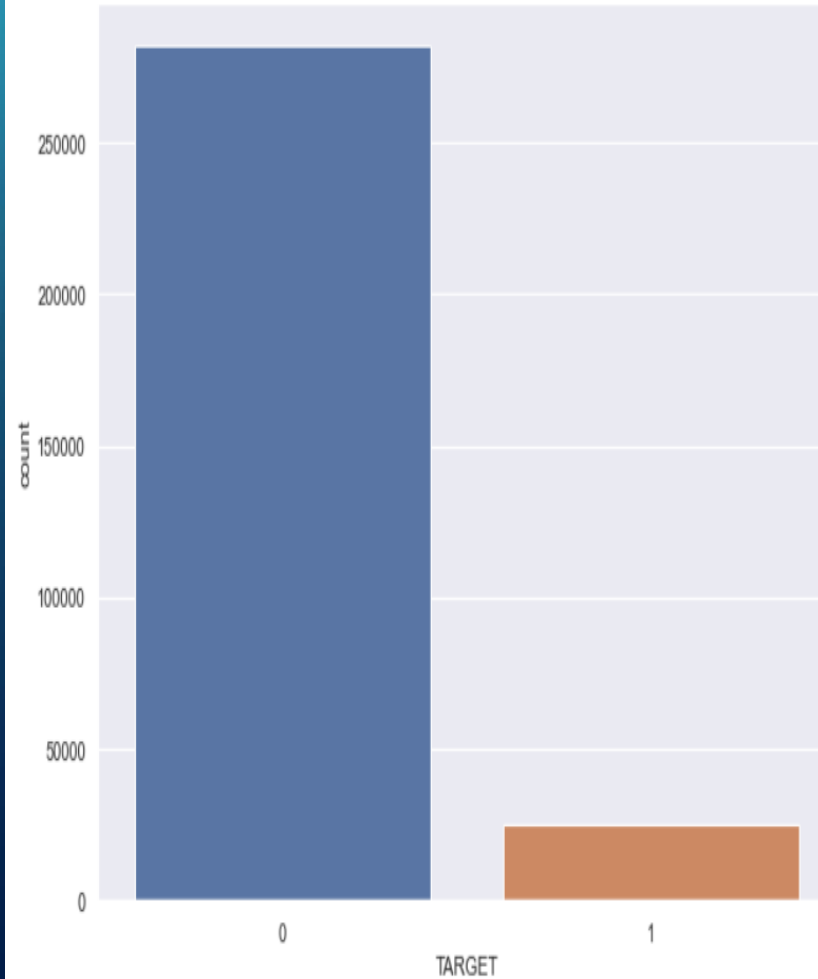
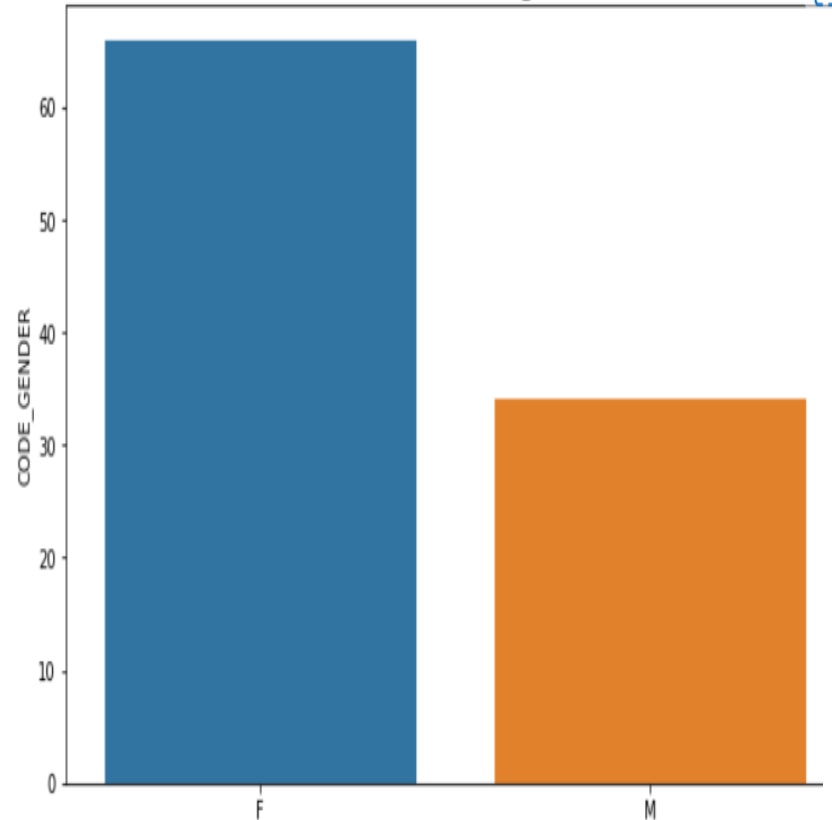Distribution according to Contract Type

DISTRIBUTION ACCORDING TO GENDER.

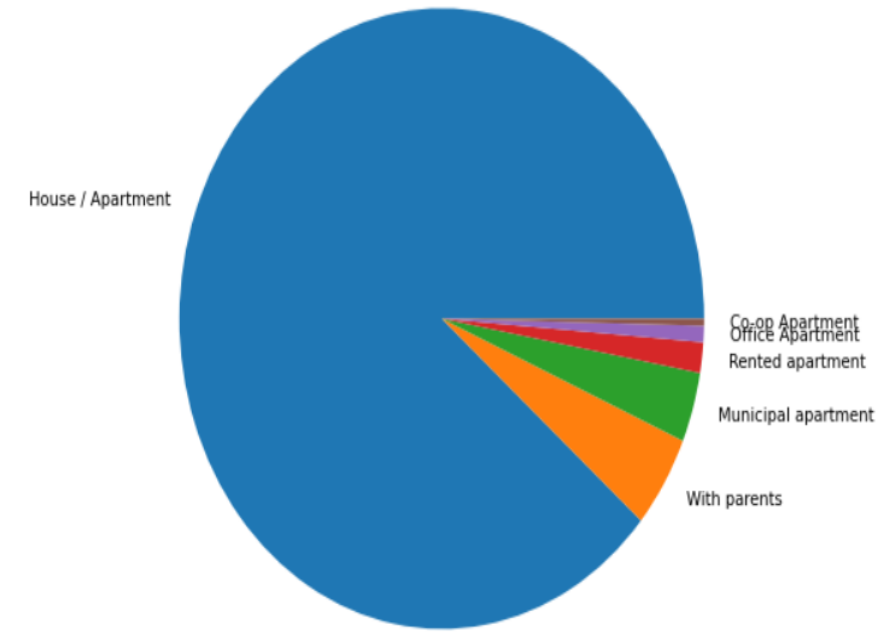- Number of female customers is more than male customers.

DISTRIBUTION ACCORDING TO HOUSING TYPE

- Customers owning House/Appartment are significantly high in numbers.

- While Cooperative appartments and Office appartments are very less.

Distribution according to Gender

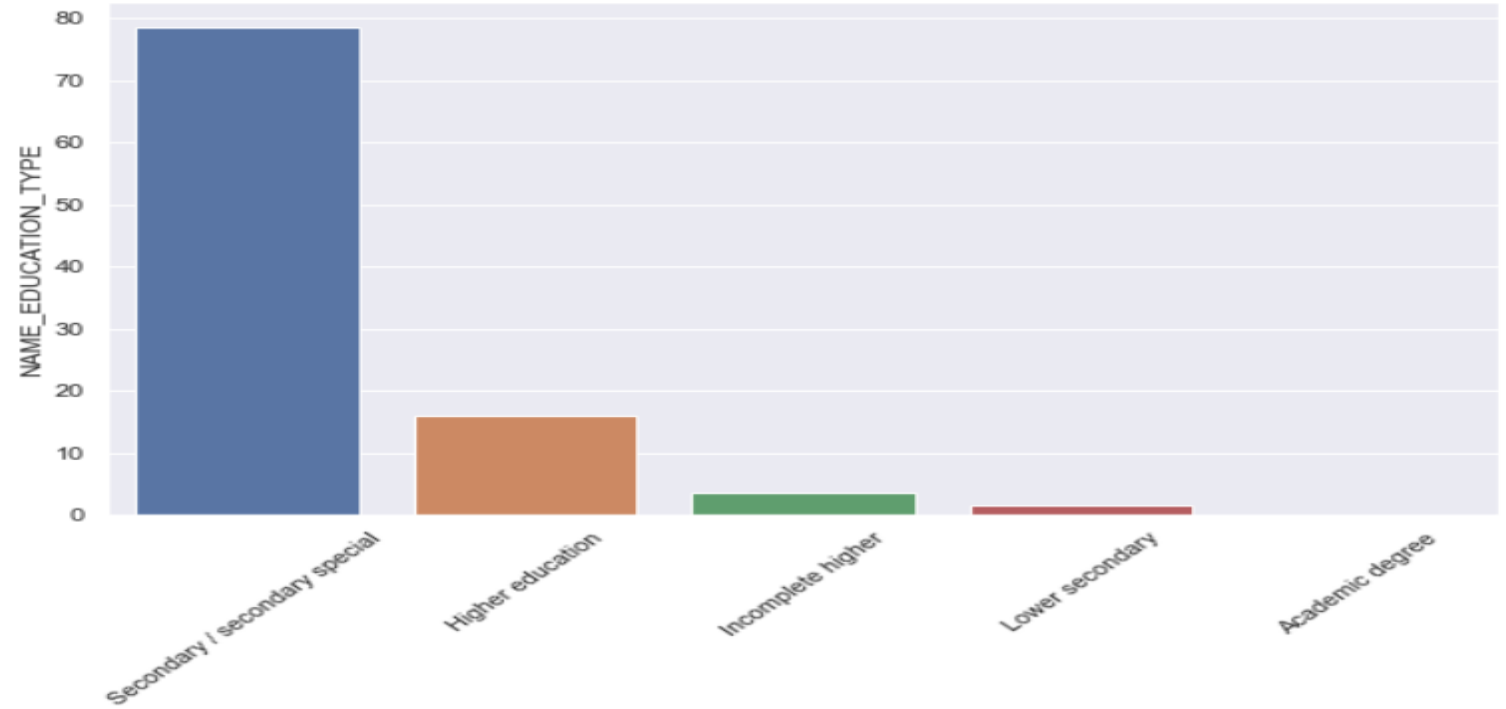Distribution according to Housing Type

DISTRIBUTION ACCORDING TO EDUCATION OF CUSTOMERS WITH PAYMENT DIFFICULTIES.

- Customers with secondary/secondary special education with payment difficulties are very high and comprise about 80% of total customers.
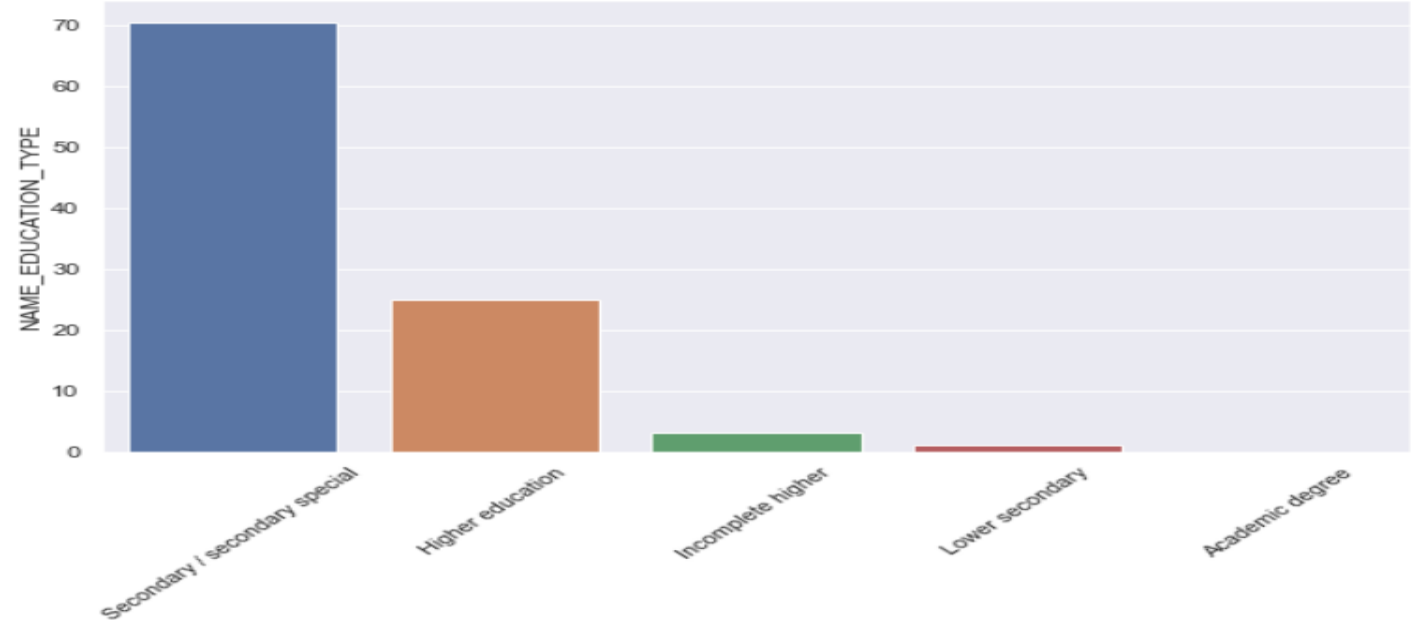
DISTRIBUTION ACCORDING TO EDUCATION OF CUSTOMERS WITHOUT PAYMENT DIFFICULTIES.

- No. of Customers with higher education without payment difficulties are high compared to previous graph

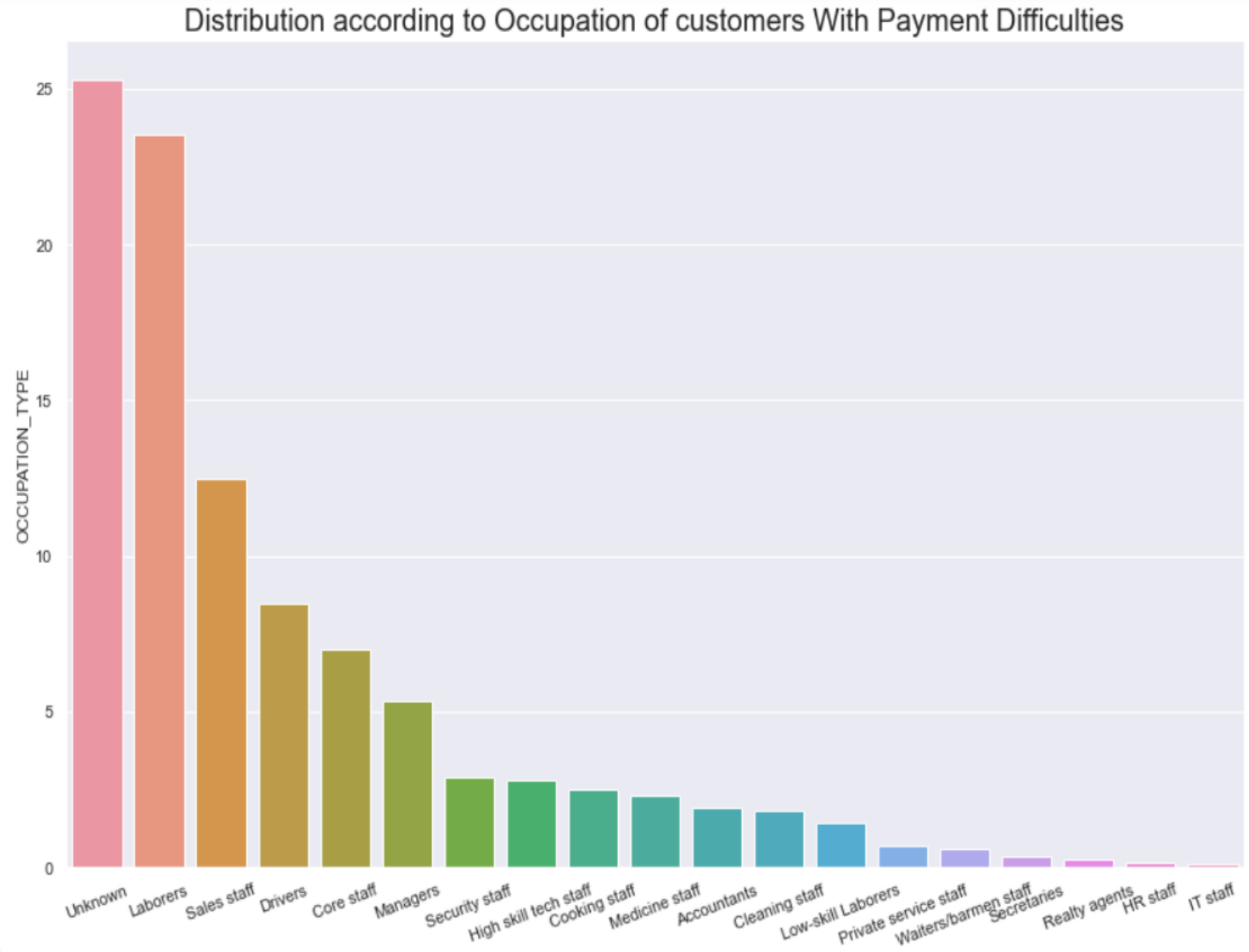Distribution according to Education of customers With Payment Difficulties

Distribution according to Education of customers Without Payment Difficulties
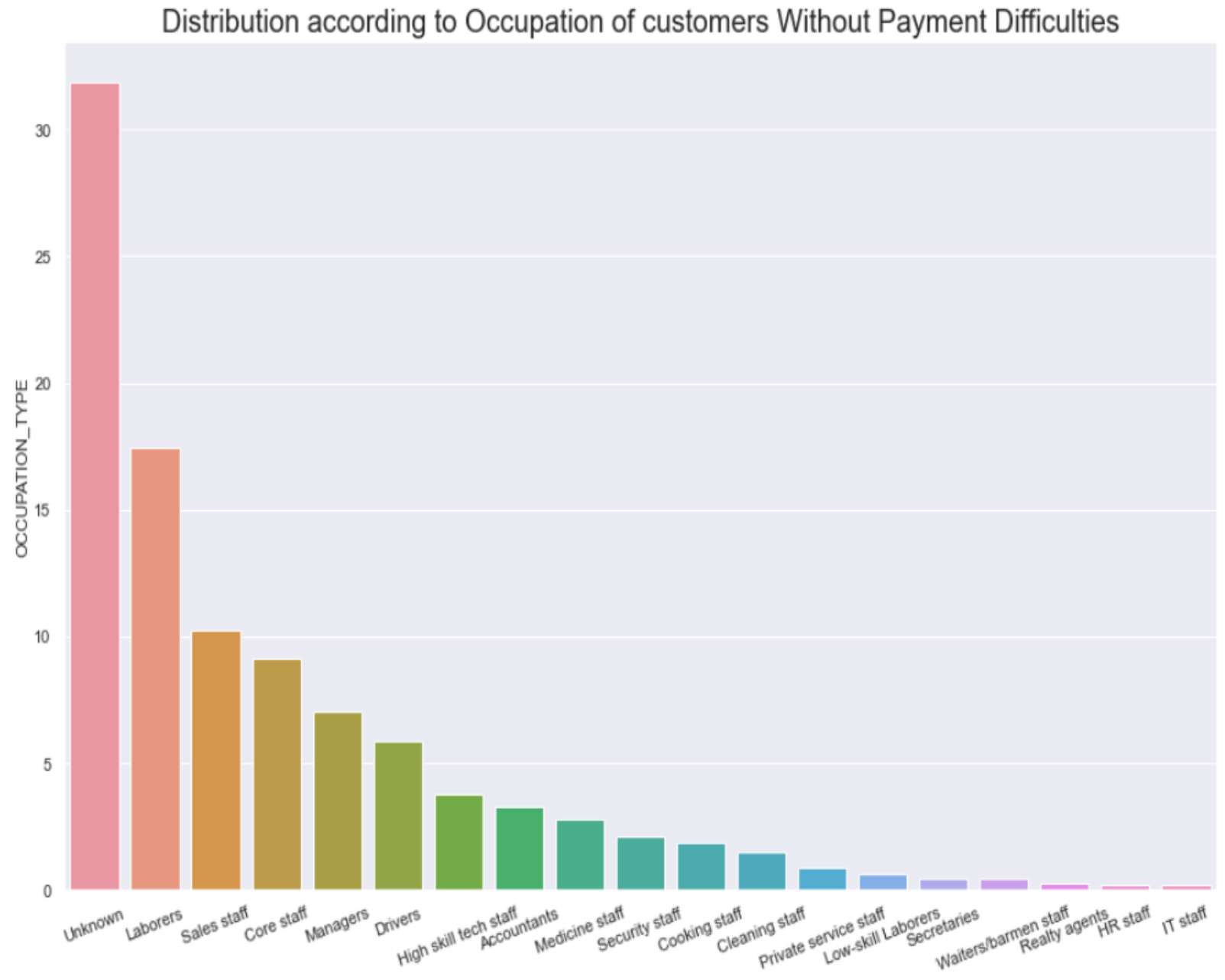
DISTRIBUTION ACCORDING TO OCCCUPATION OF CUSTOMERS WITH PAYMENT DIFFICULTIES.

- Customers with Unknown and labour occupation having Payment difficulties are significant and comprise about 26% and 23% respectively.

Distribution according to Occupation of customers With Payment Difficulties

DISTRIBUTION ACCORDING TO OCCCUPATION OF CUSTOMERS WITH PAYMENT DIFFICULTIES.

- Customers with Unknown and labour occupation without Payment difficulties are significant and comprise about 32% and 17% respectively.

Distribution according to Occupation of customers Without Payment Difficulties
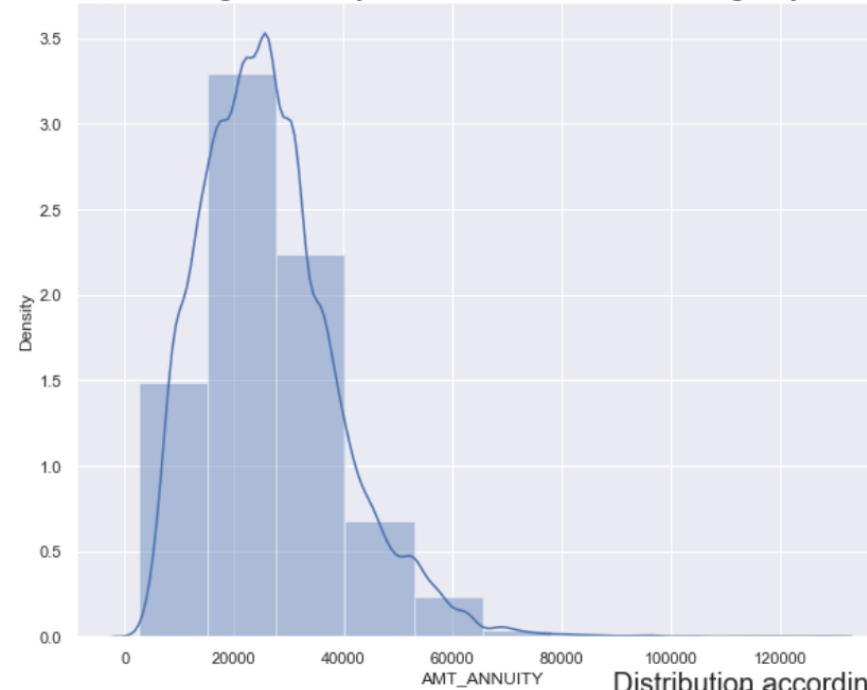
DISTRIBUTION ACCORDING TO ANNUITY AMOUNT OF CUSTOMERS WITH PAYMENT DIFFICULTIES.

- Customers with Annuity amount ranging in 20000 to 30000 are most.

- While customers with Annuity amount ranging above 70000 are very less.
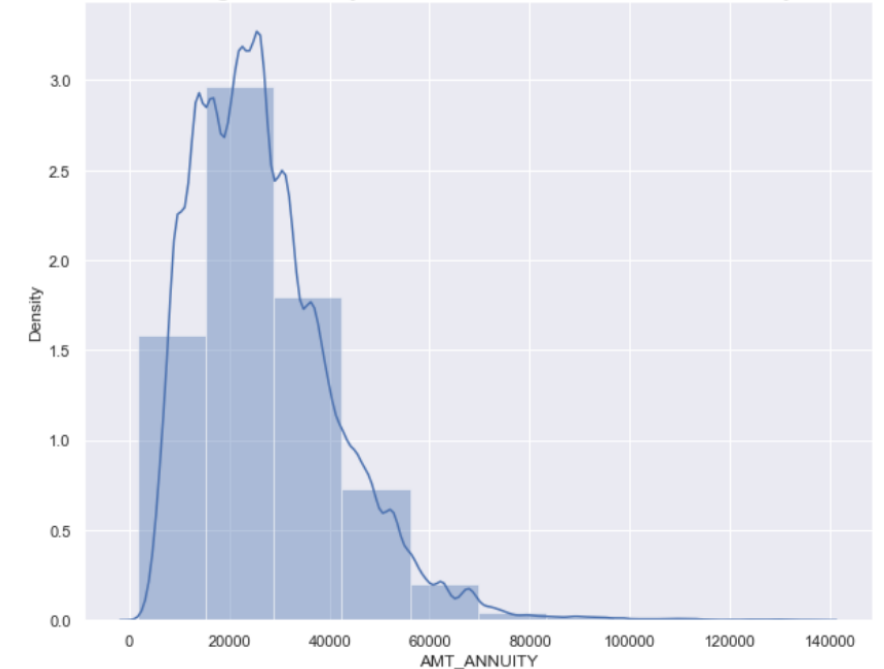
DISTRIBUTION ACCORDING TO ANNUITY AMOUNT OF CUSTOMERS WITHOUT PAYMENT DIFFICULTIES.

- Customers with Annuity amount ranging in 20000 to 30000 are most.

- While customers with Annuity amount ranging above 70000 are very less.

Distribution according to Annuity Amount of customers having Payment Difficulties

Distribution according to Annuity Amount of customers Without Payment Difficulties

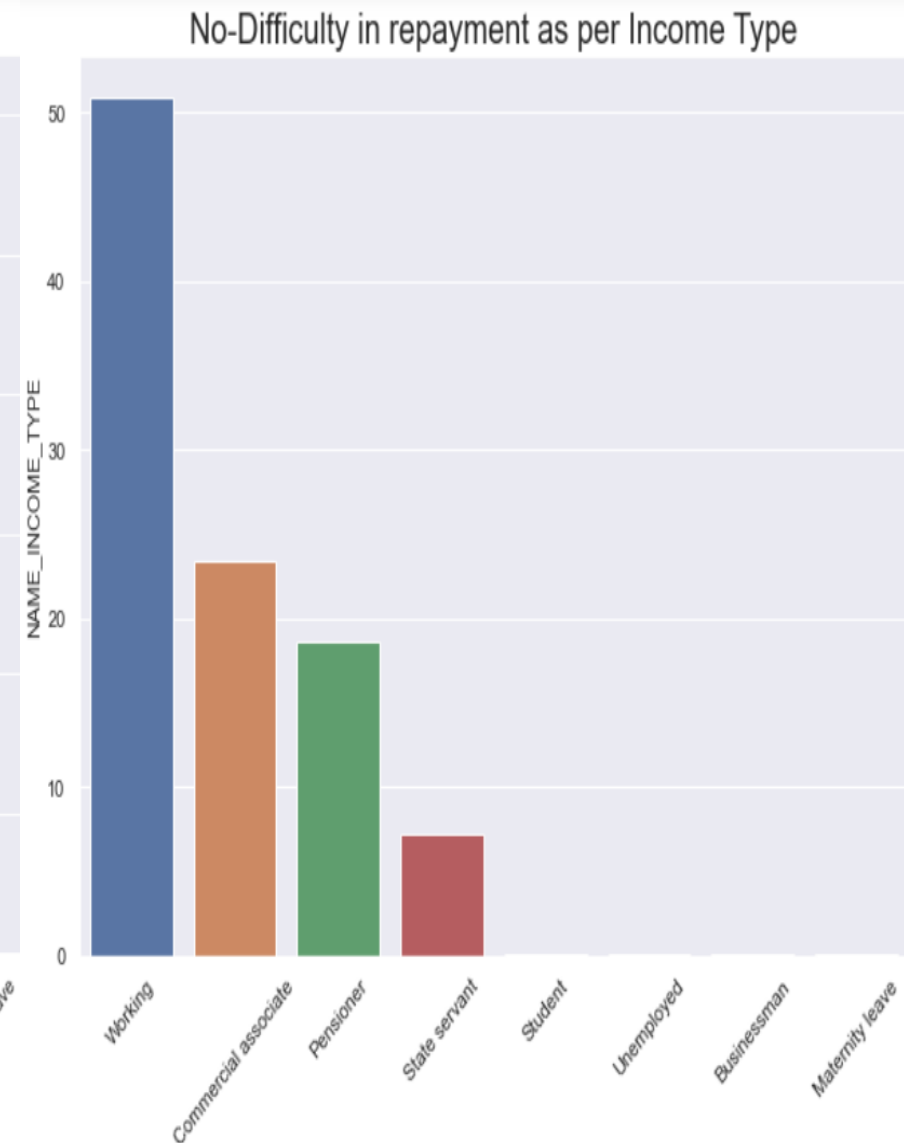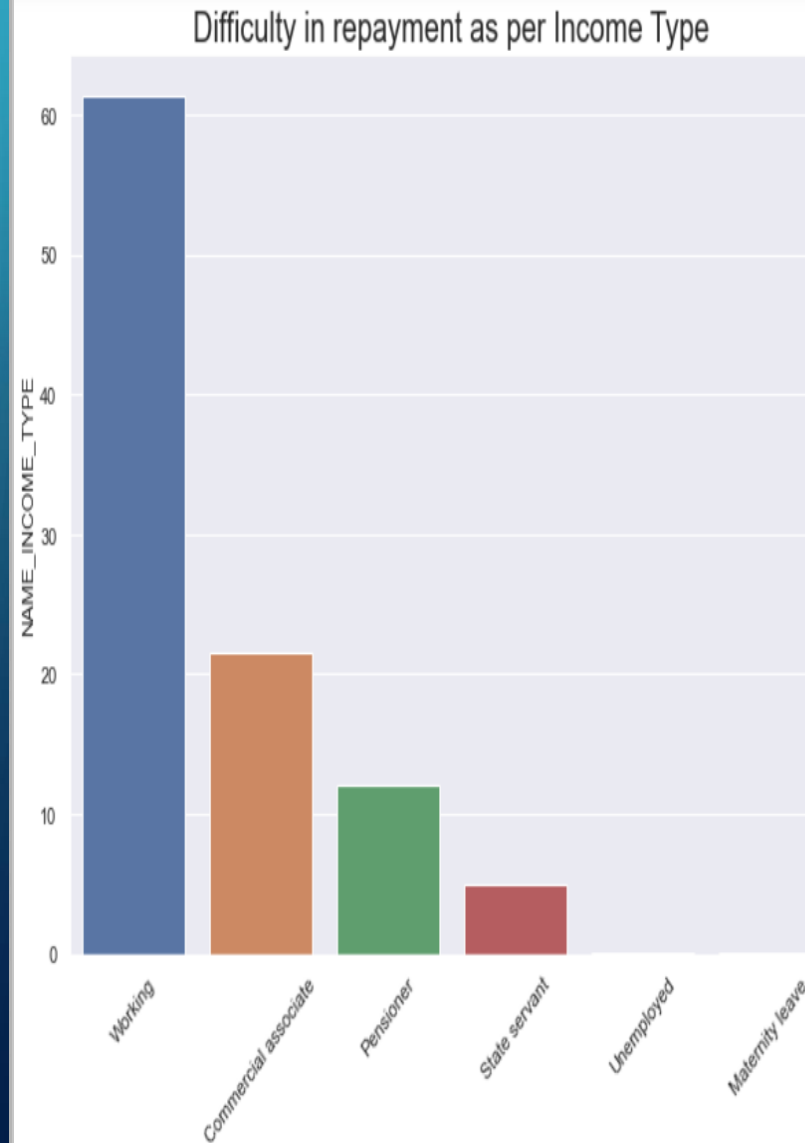# BIVARIATE ANALYSIS OF LOAN APPLICATION DATA

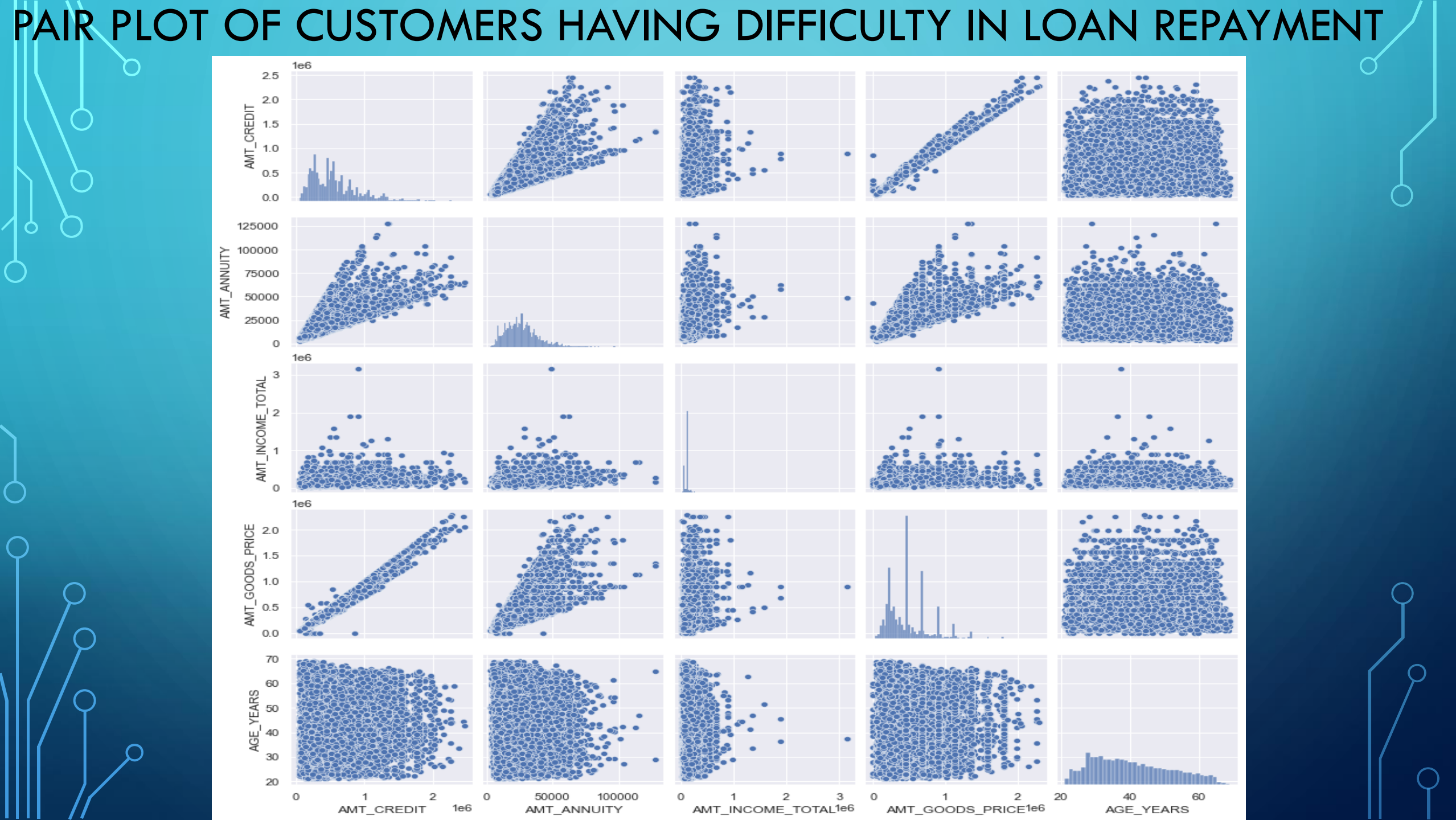# CREDIT AMOUNT VERSUS EDUCATION AS PER FAMILY STATUS

- Civil marriage category with academic degree have high amount credit.

- Married category with Higher education have highest credit amount with upper fence at about 2 million.

Credit Amount VS Education as per Family Status
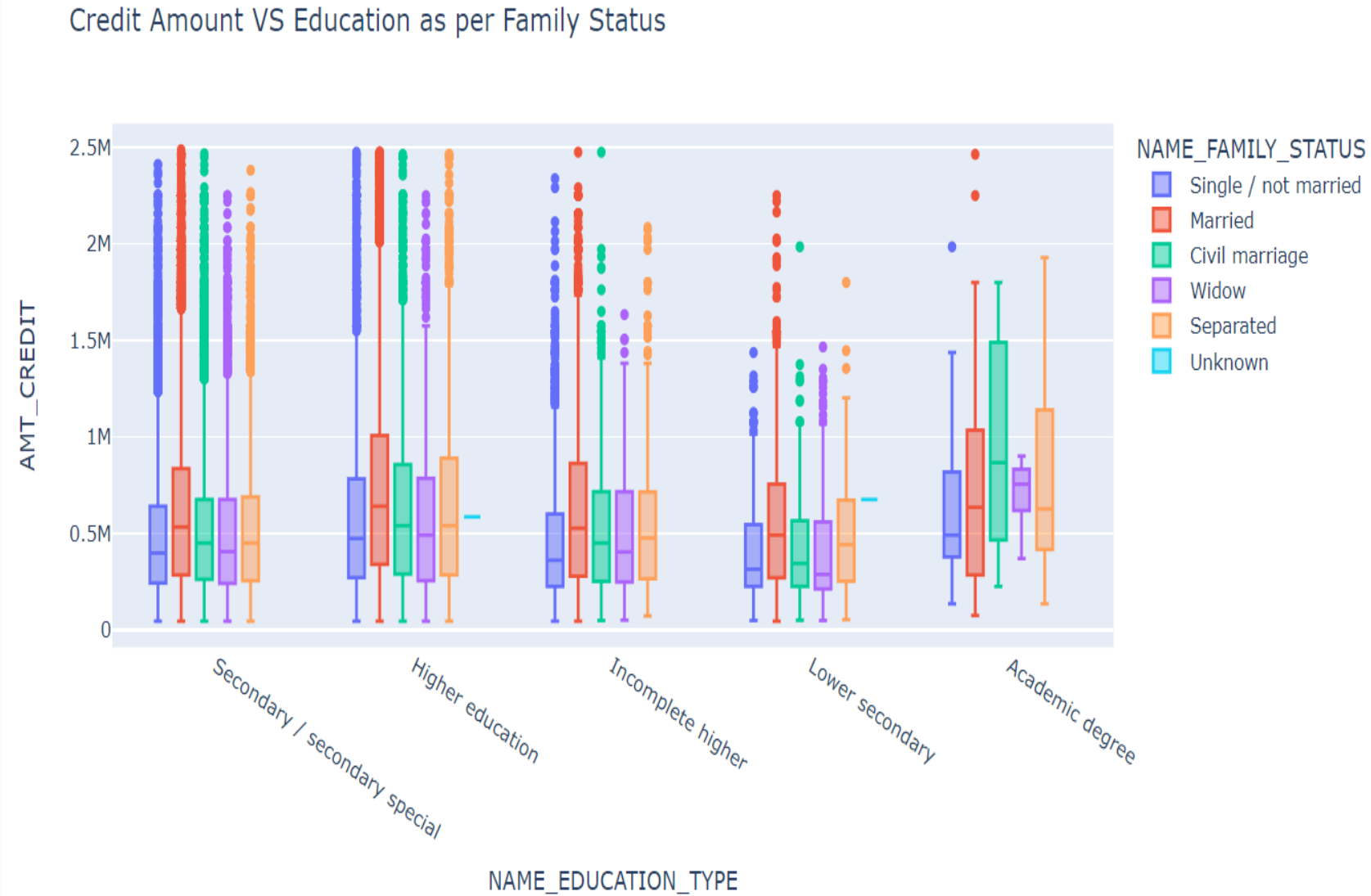
LOAN REPAYMENT DIFFICULTY AS PER INCOME TYPE

- From these graphs we can draw insight that Commercial associate, Pensioner and state servants are more likely to repay the loans.

- No. of working category having repayment difficulty is more.

PAIR PLOT OF CUSTOMERS HAVING DIFFICULTY IN LOAN REPAYMENT

# PAIR PLOT OF CUSTOMERS HAVING NO DIFFICULTY IN LOAN REPAYMENT

INFERENCES FROM PAIR PLOTS.

- AMT_CREDIT and AMT_GOODS_PRICE has good positive linear correlation in both the pair plots.

- AMT_ANNUITY and AMT_CREDIT also has good positive linear correlation in both the pair plots.

- Other than this there is no any observation from above pair plot.

AMOUNT CREDIT VS OCCUPATION TYPE
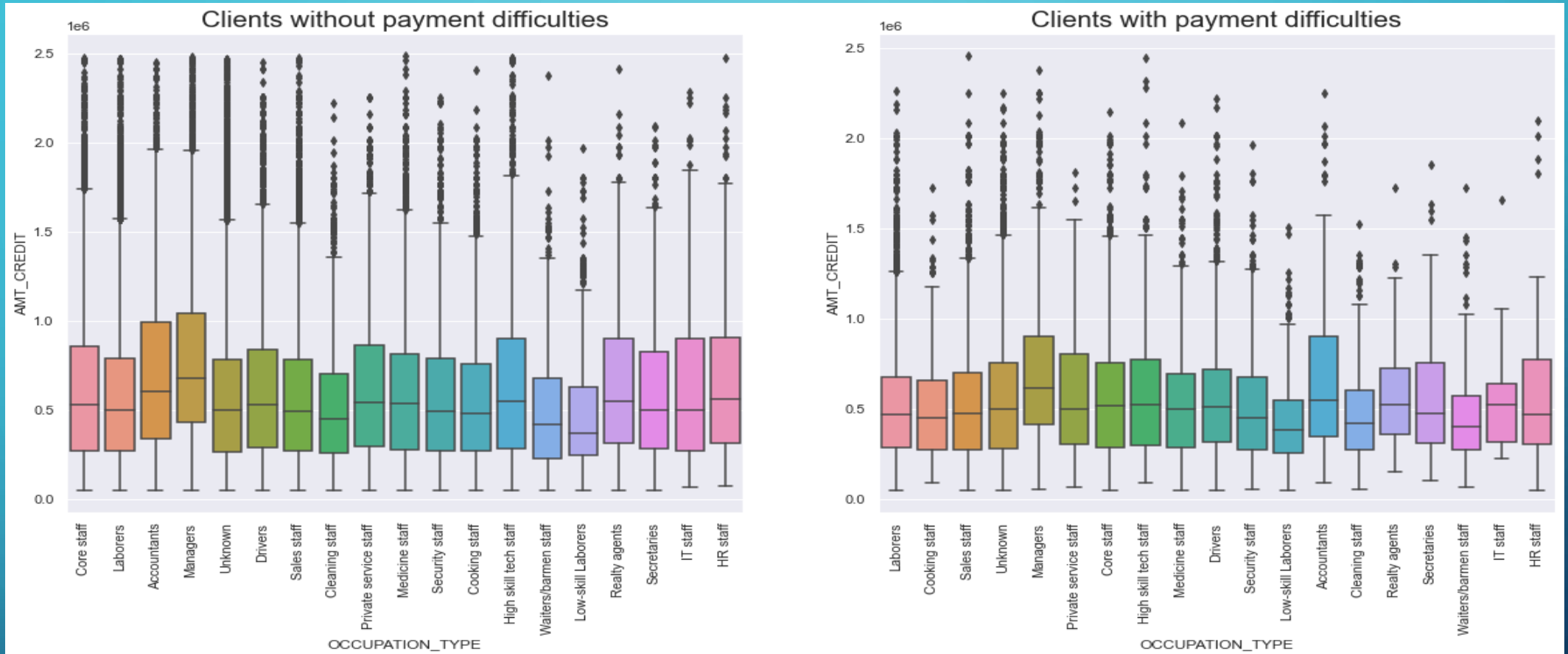
- Range of customers without payment difficulties is more as compared to customers with payment difficulties.

- Number of outliers of customers without payment difficulties is more as compared to customers with payment difficulties.
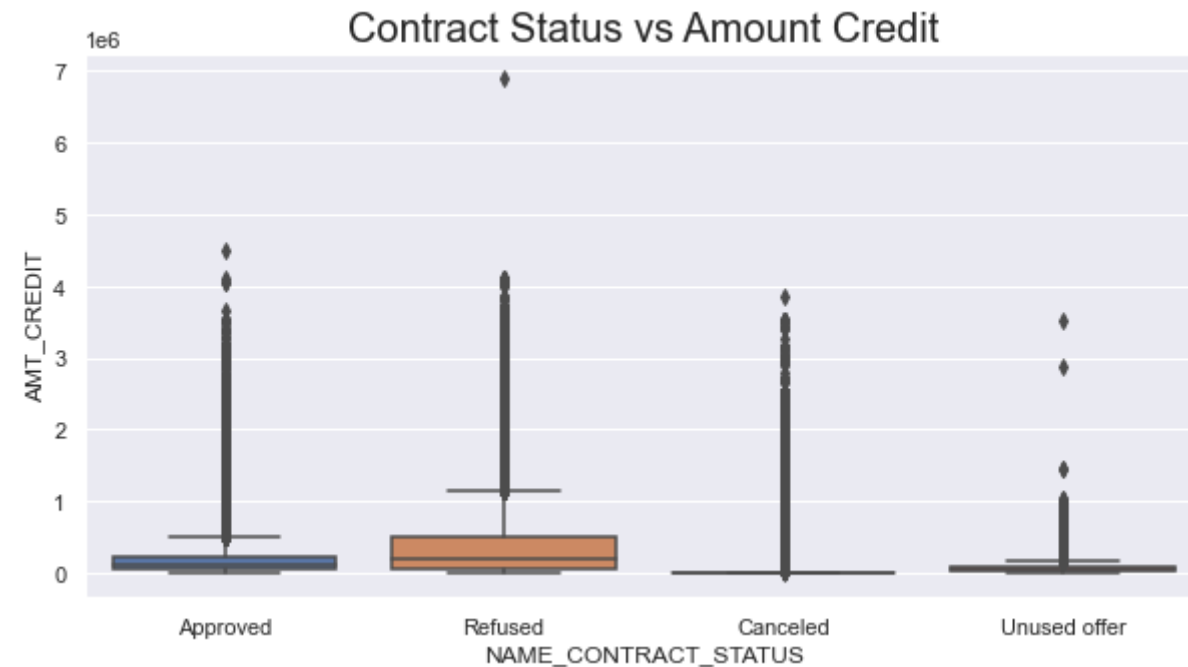
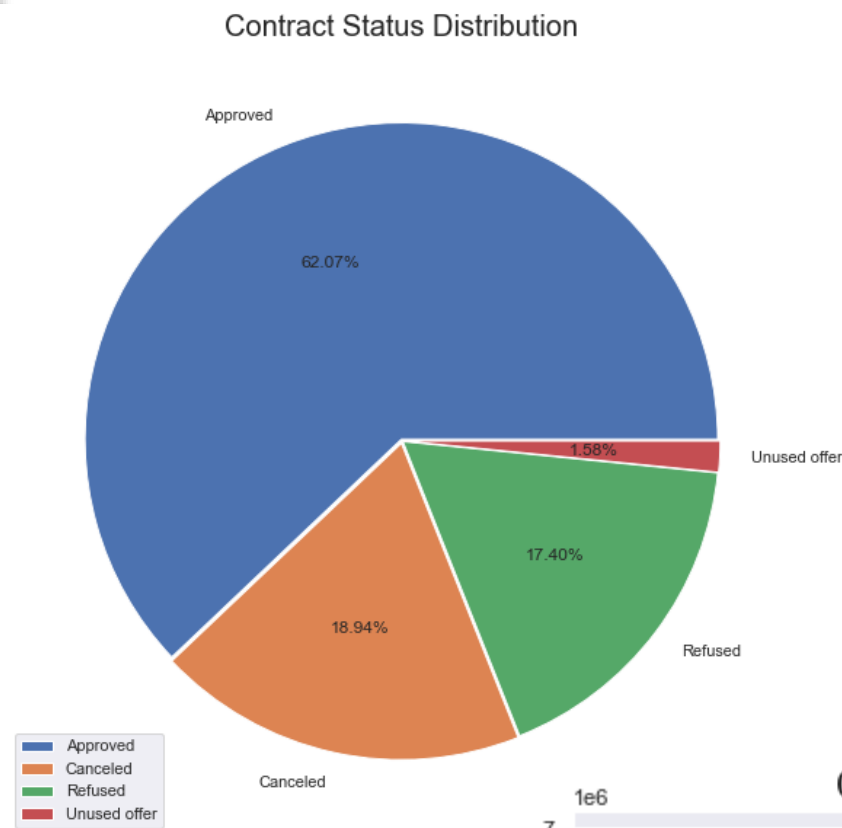# ANALYSIS OF PREVIOUS LOAN APPLICATION DATA

CONTRACT STATUS DISTRIBUTION

- 62% of customers are Approved.

- Only 1.58% customers have unused offer.

CONTRACT STATUS VERSUS AMOUNT CREDIT

- Refused customers have highest amount of credit.

- Cancelled customers have lowerst or near to 0 credit amount.

ANALYSIS OF MERGED DATA SET

DISTRIBUTION OF PURPOSES WITH TARGET

Few points can be concluded from the graph.

- Loan purposes with 'Repairs' are facing more difficulties in payment on time.

- There are few places where loan payment is significant higher than facing difficulties. They are 'Buying a garage', 'Business development', 'Buying land', 'Buying a new car' and 'Education' Hence we can focus on these purposes for which the client is having for minimal payment difficulties.
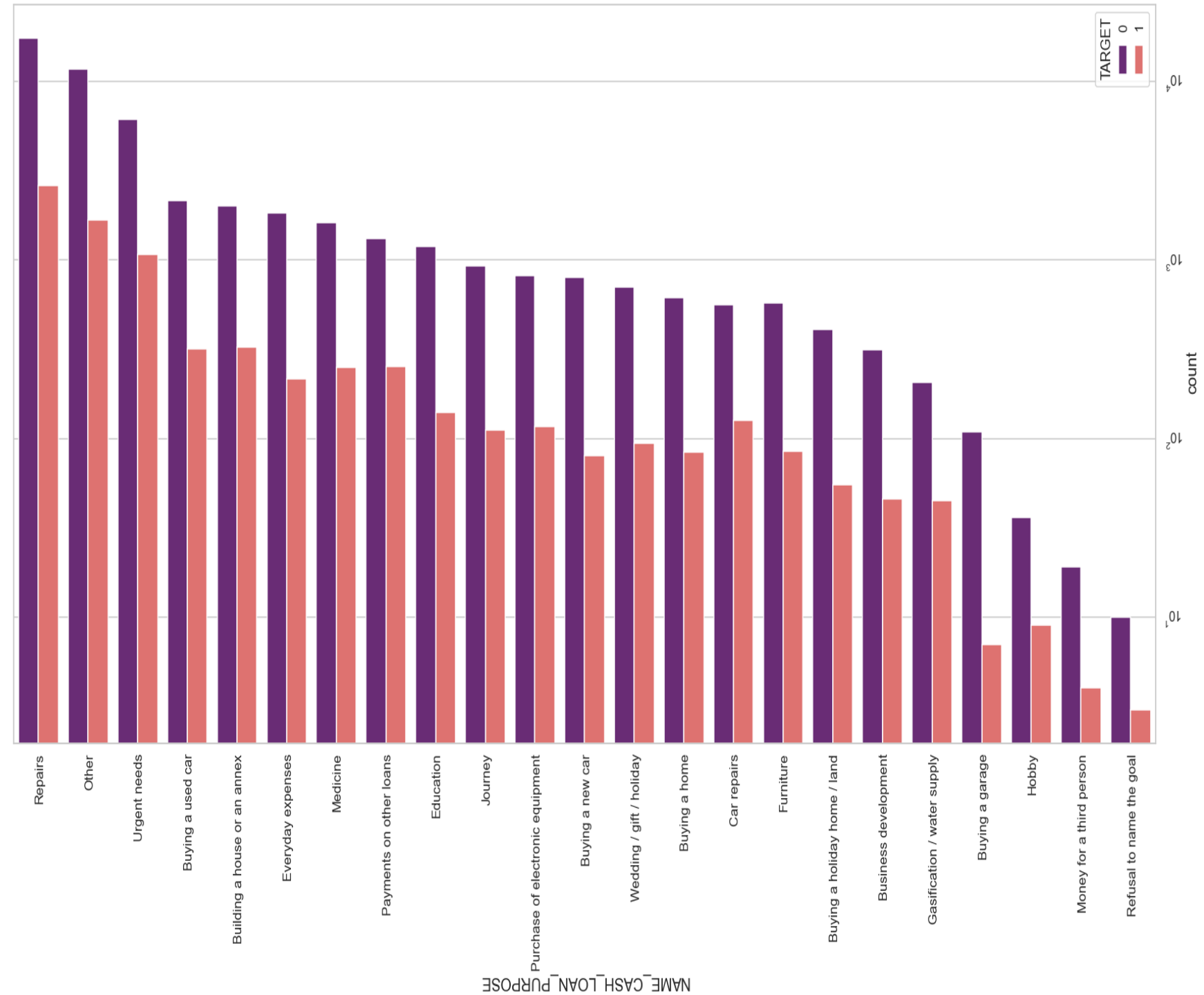
# PREV CREDIT AMOUNT VS HOUSING TYPE

Few points can be concluded from the graph.

- Here for Housing type, office apartment is having higher credit of target 0 and co-op apartment is having higher credit of target 1.

- So, we can conclude that bank should avoid giving loans to the housing type of co-op apartment as they are having difficulties in payment.

- Bank can focus mostly on housing type with parents or House\apartment or municipal apartment for successful payments.
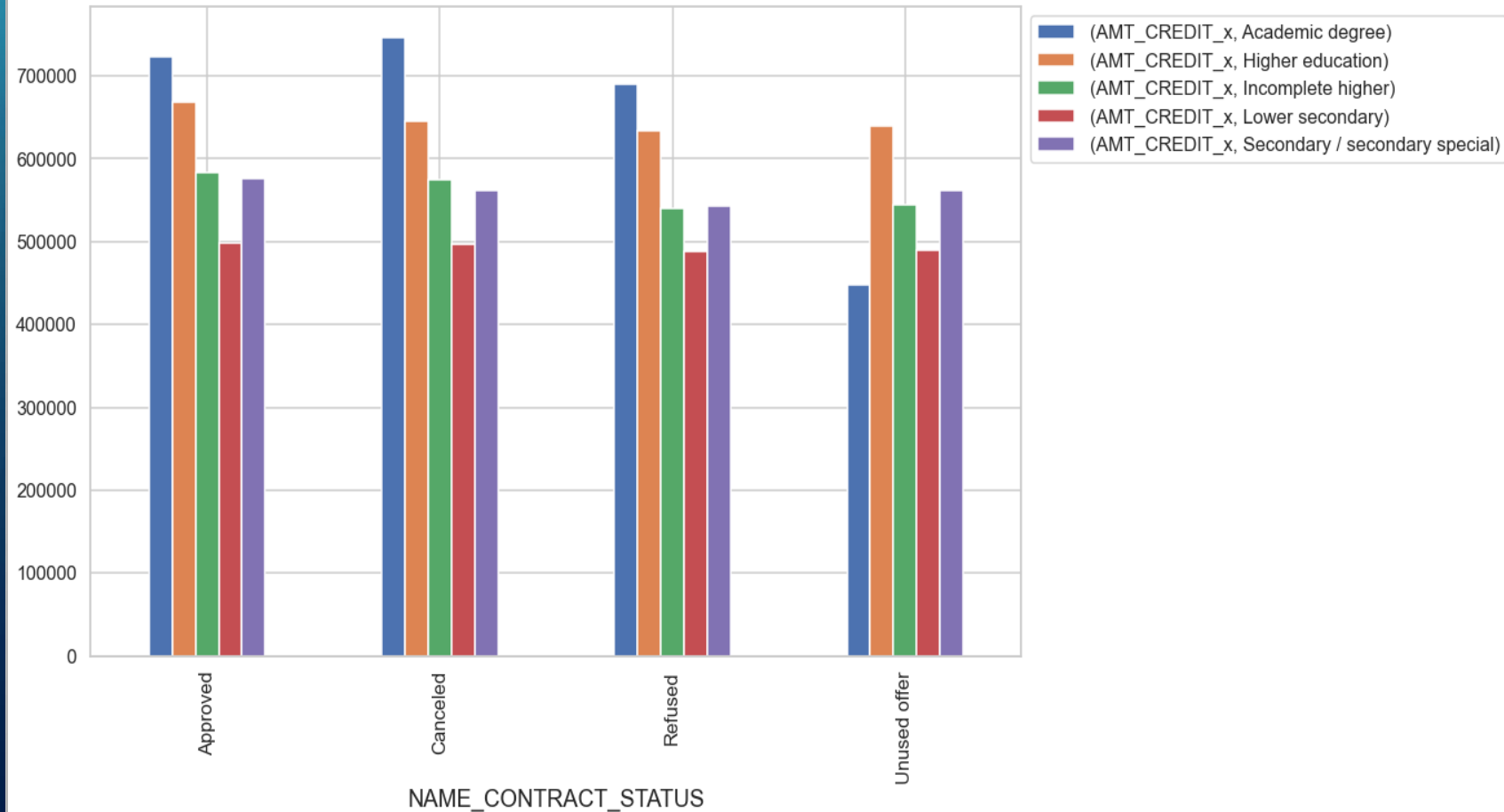

Prev Credit amount vs Housing type
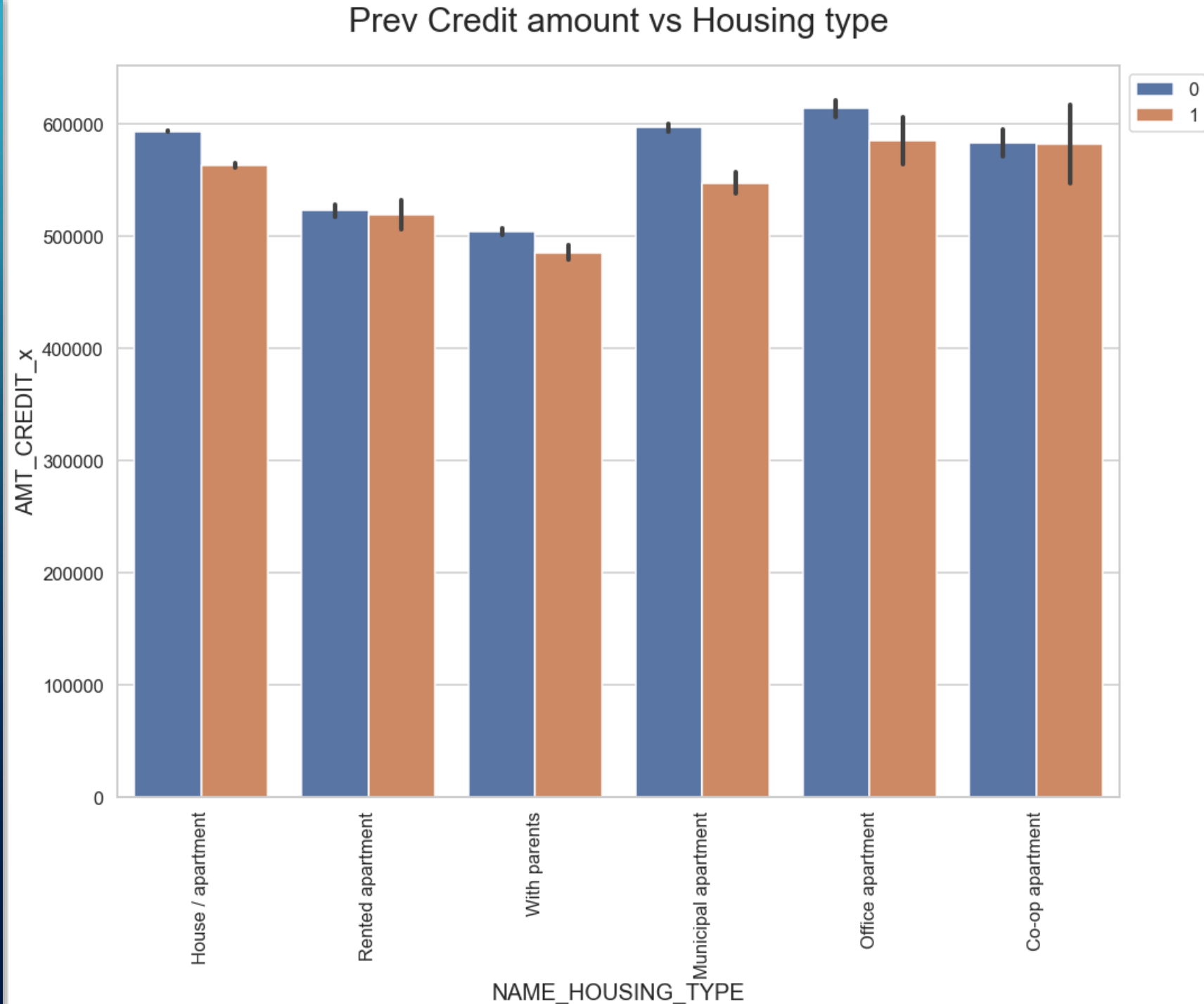
CONTRACT STATUS VS CREDIT AMOUNT AS PER EDUCATION TYPES

Few points can be concluded from the graph.

- No. of customers with higher education and incomplete higher education are more likely approved as compared to other contract status.

- Customers with academic drgree are more likely to cancel the loan application.

Credit Amount as per Contract Status according to Education Types

CONTRACT STATUS VS CREDIT AMOUNT AS PER CLIENT TYPES
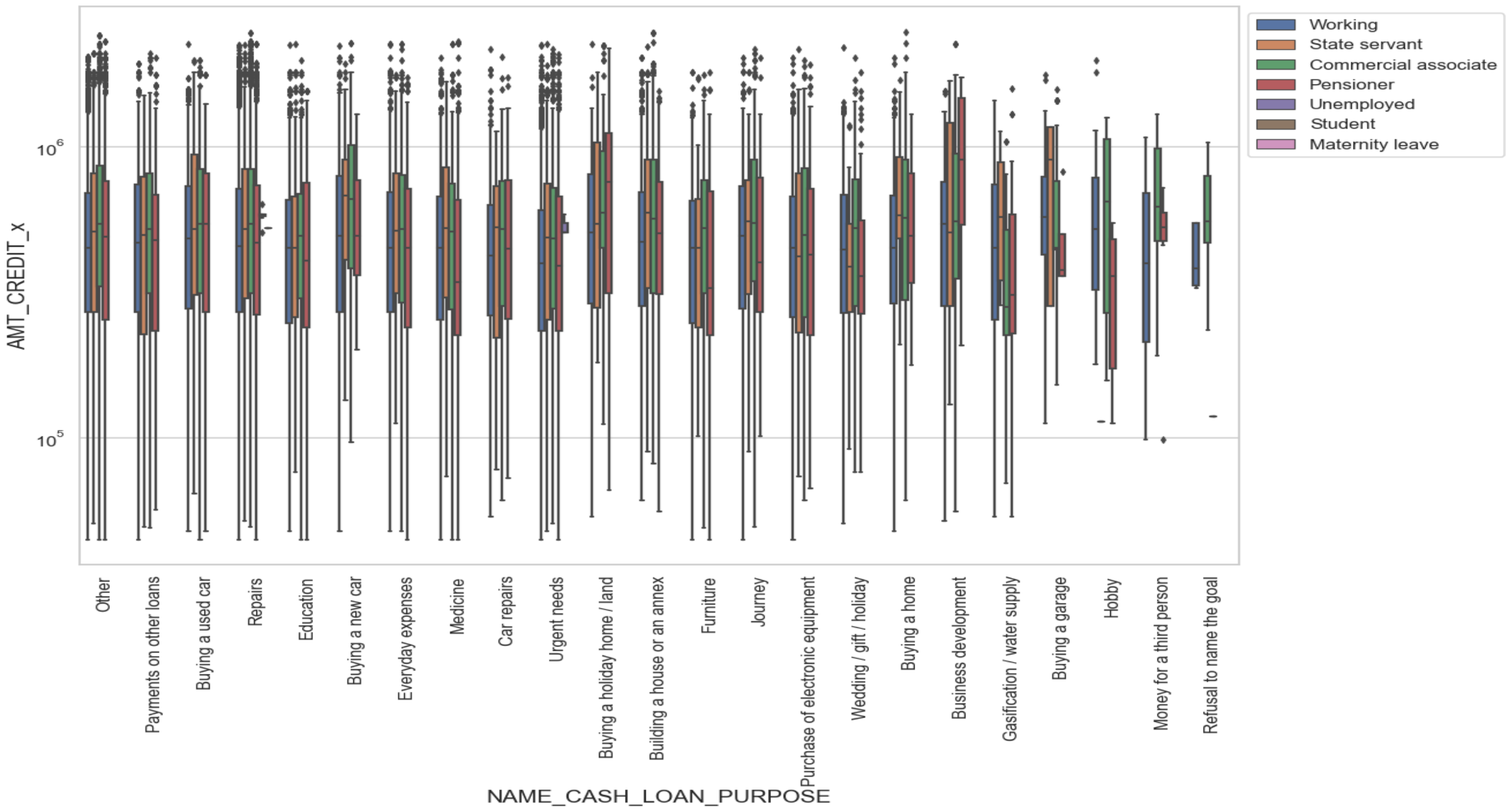
Few points can be concluded from the graph.

- Refreshed and Repeater Customers are approved with highest credit amount.

- New customers with credit amount between 5-6 lakhs are more likely refused as compared toother two customer types

Credit Amount as per Contract Status according to Client Types
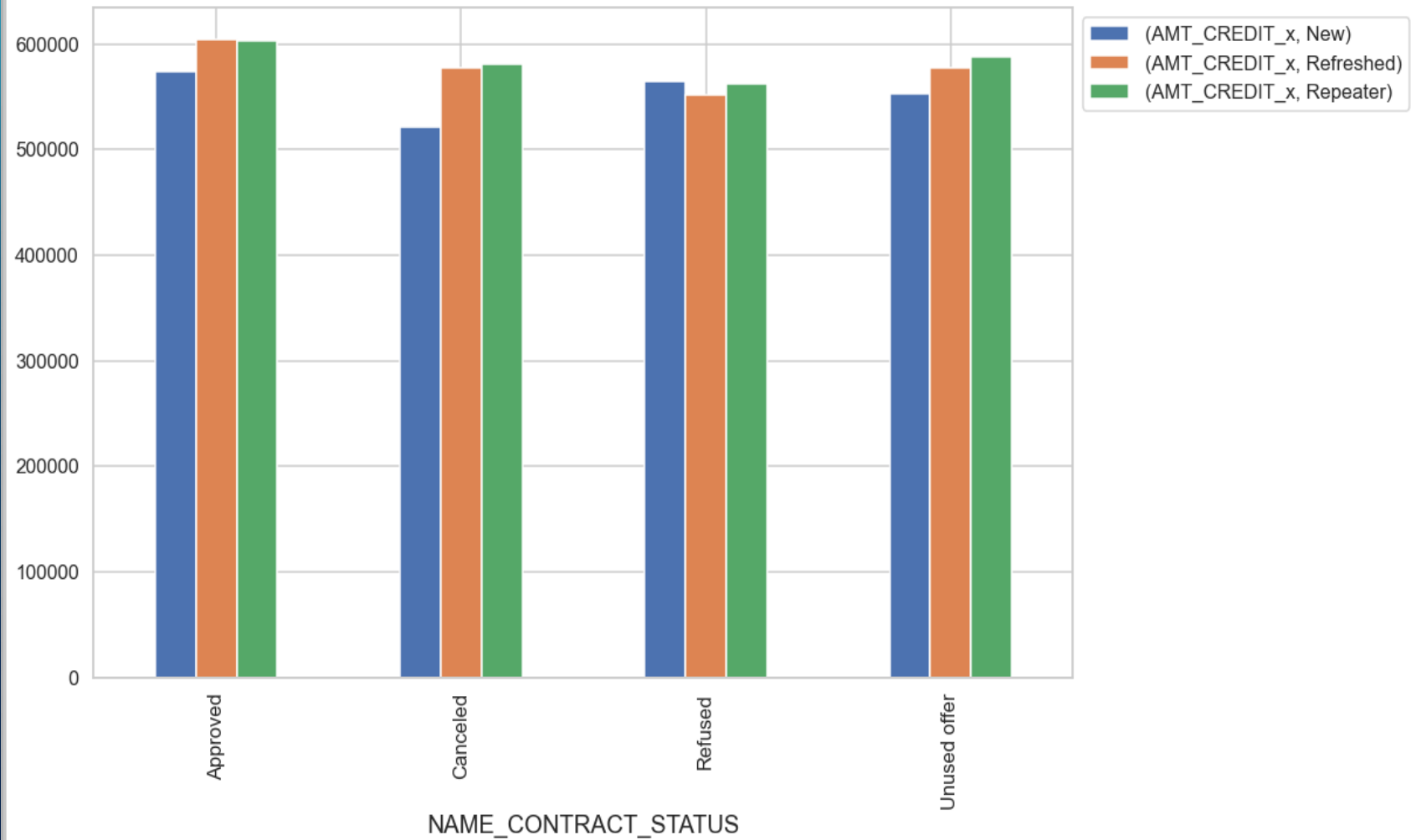
Prev Credit amount vs Loan Purpose

PREV CREDIT AMOUNT VS LOAN PURPOSE

From the previous graph we can conclude the below points:

- The credit amount of Loan purposes like 'Buying a home', 'Buying a land', 'Buying a new car' and 'Building a house' is higher.

- Income type of state servants have a significant amount of credit applied

- Money for third person or a Hobby is having less credits applied for.

CONCLUSION – (RECOMENDATION)

- No. of peoples without payment difficulties is more.

- More people are intrested in cash loans.

- Banks should focus on people with higher education.

- Customers with annuity amount between 20000 to 30000 should be focused more.

- Commercial associate, Pensioner and state servants are more likely to repay the loans hence they can be targetted.

- Banks can focus on Loan purposes like 'Buying a garage', 'Business development', 'Buying land', 'Buying a new car' and 'Education'.

- Bank can focus mostly on housing type with parents or House\apartment or municipal apartment for successful loan repayments.

- Banks should review the Customers with academic drgree, because they are more likely to cancel the loan application.

CONCLUSION – (RISKS)

- Banks should avoid lending money to Customers with secondary/secondary special education as they high difficulties in repaying loan

- People in Working category should be avoided.

- Loan purposes with 'Repairs' are facing more difficulties in payment on time.

- Bank should avoid giving loans to the housing type of co-op apartment to minimise the losses.

THANK YOU