Case Study on risk analysis in the banking and financial services

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In this section we see graphical representations and statistical analysis which will be used to explore the factors that can identify the risk of defaulters when credit is forwarded to the customers.

Part A: The results of our univariate, segmented univariate and bivariate analysis is explained.

Part B: We perform statistical correlation analysis to explain the relationship between various variables

---- **Exploratory Data Analysis**

Here we see the number of Money Lenders with respect to their Occupations.
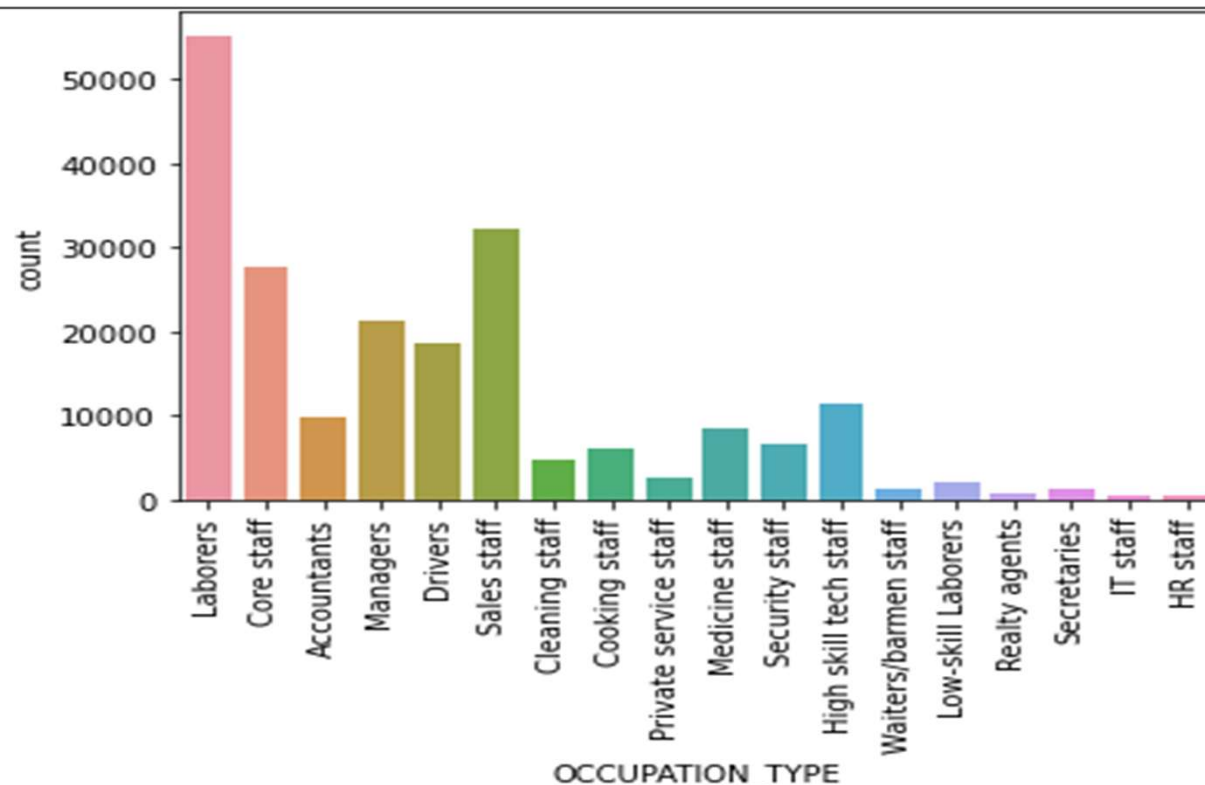
# Now let us DEDUCE this using various Statistical Data

➤ We can see that Female contribute 67% to the non-defaulters while 57% to the defaulters.

➤ We can conclude that:

➤ More female applying for loans than males hence the more number of female defaulters as well.

➤ But the rate of defaulting of FEMALE is much lower compared to their MALE counterparts.
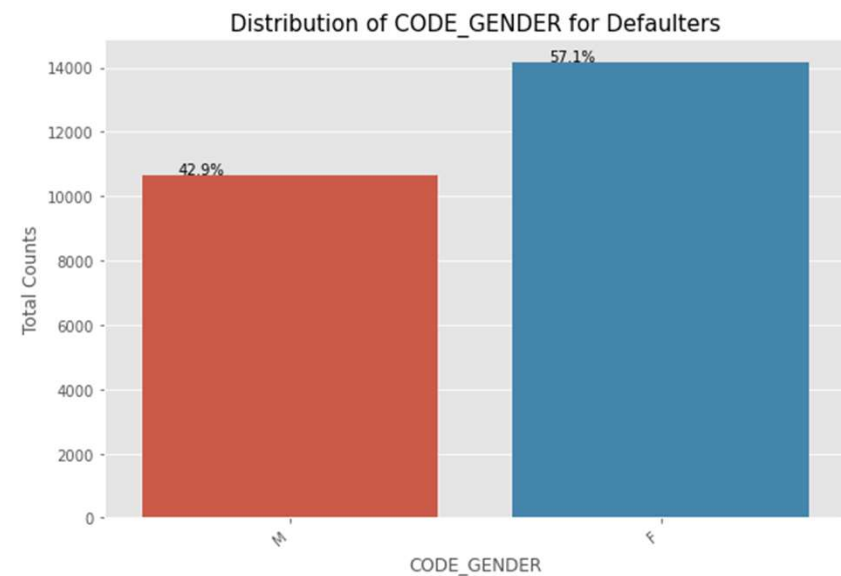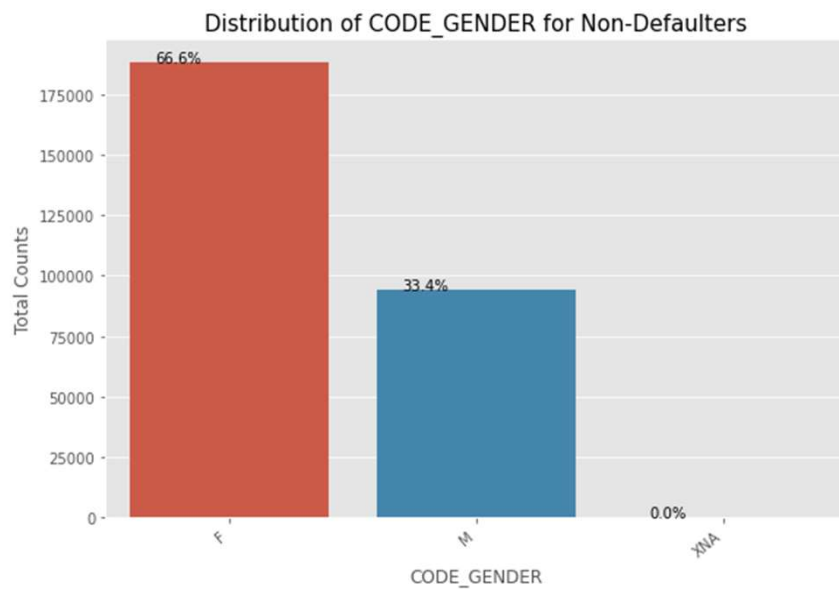
- Now we see that people with cars contribute 65.7% to the non-defaulters while 69.5% to the defaulters.

- We can conclude:

- People who have car default more often, the reason could be there are simply more people without cars.

- Looking at the percentages in both the charts, we can conclude that the rate of default of people having car is low compared to people who don't.
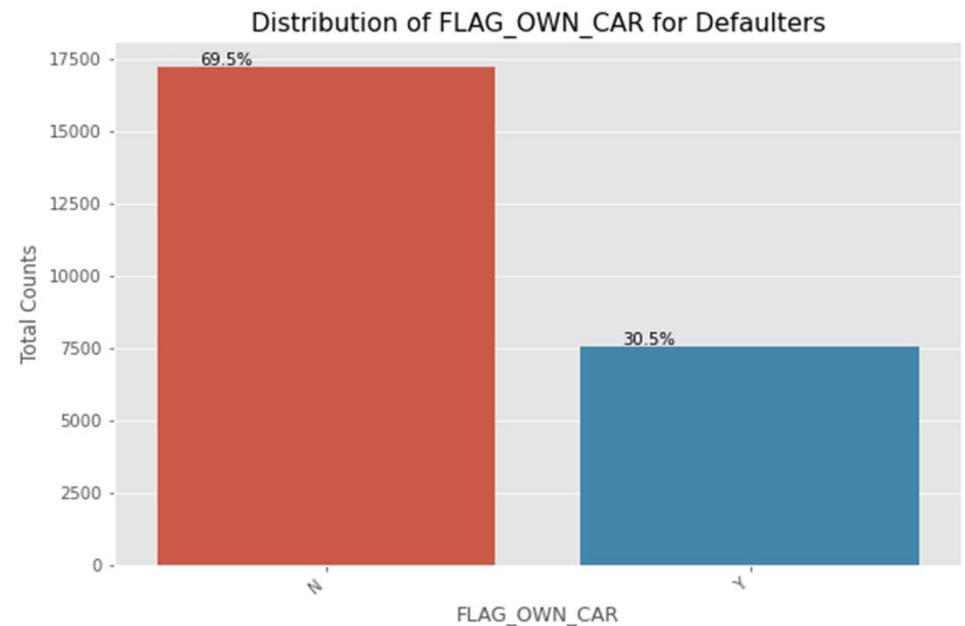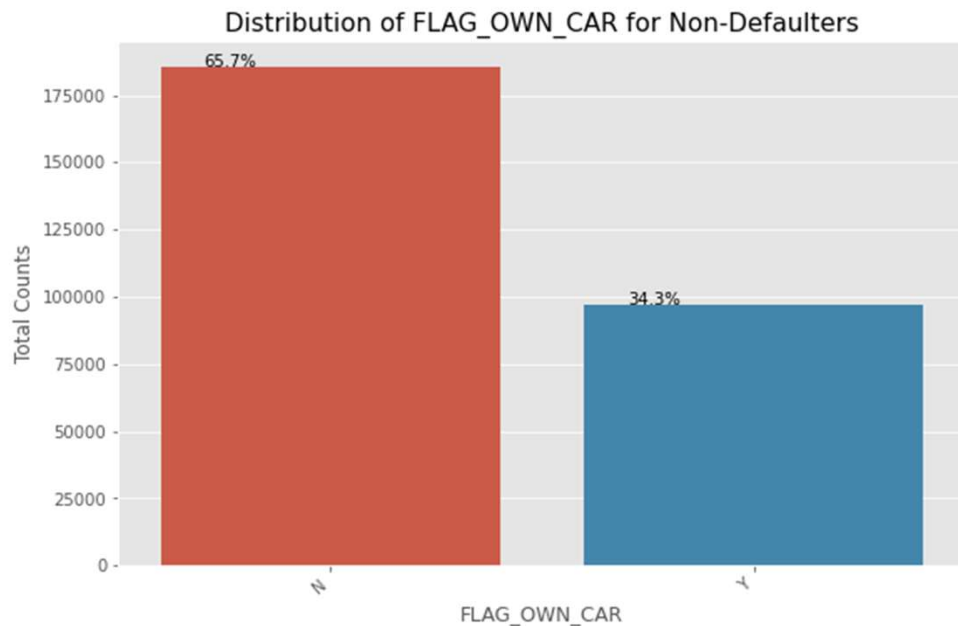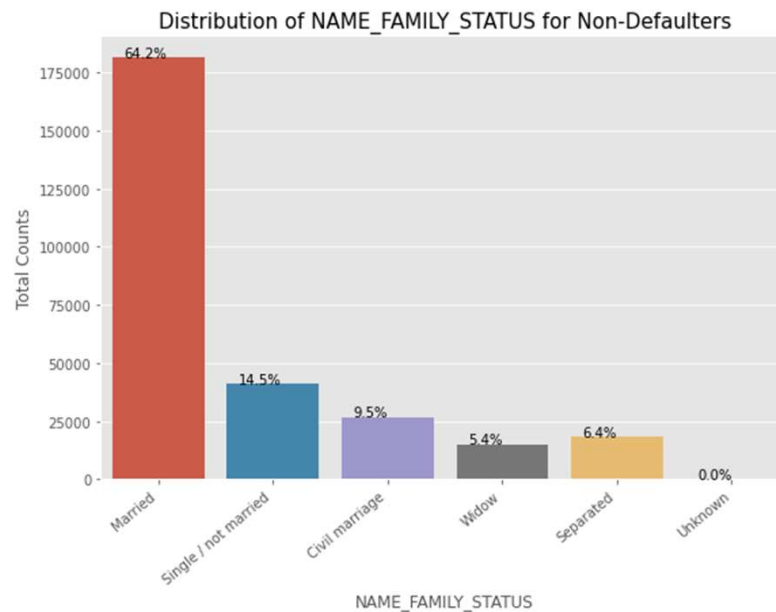
- Clearly, the students don't default.

- We can also see that the Business Men never default.

- Most of the loans are distributed to working class people. We also see that working class people contribute 51% to non defaulters while they contribute to 61% of the defaulters. Clearly, the chances of defaulting are more in their case.
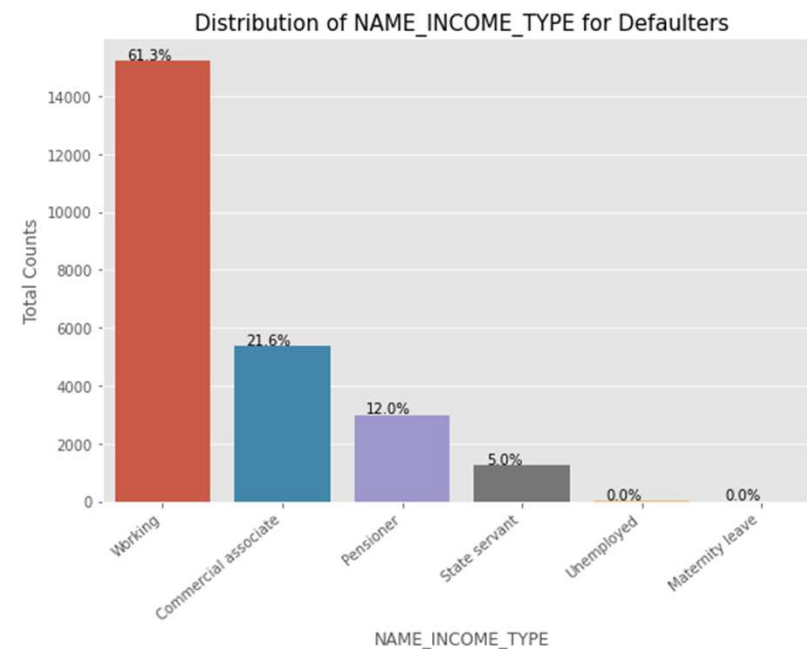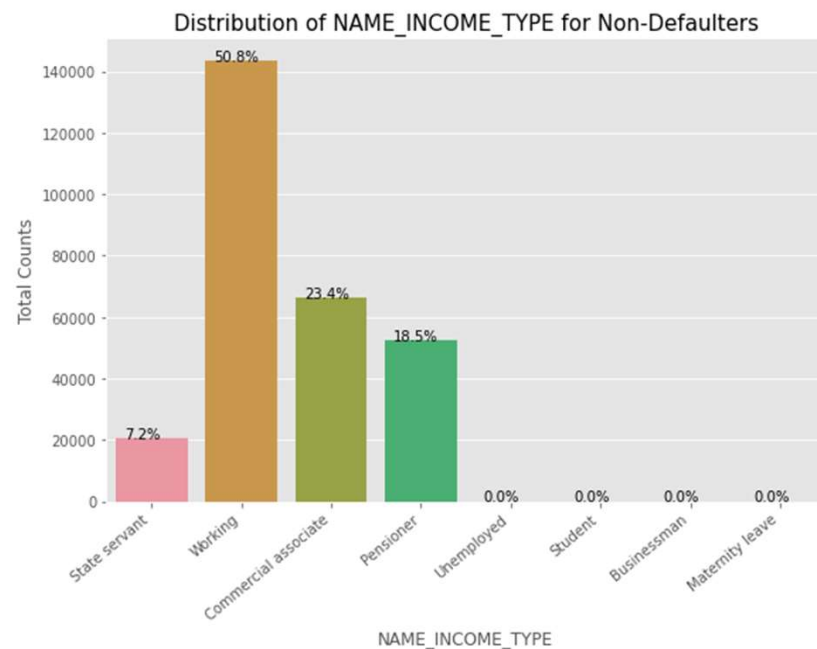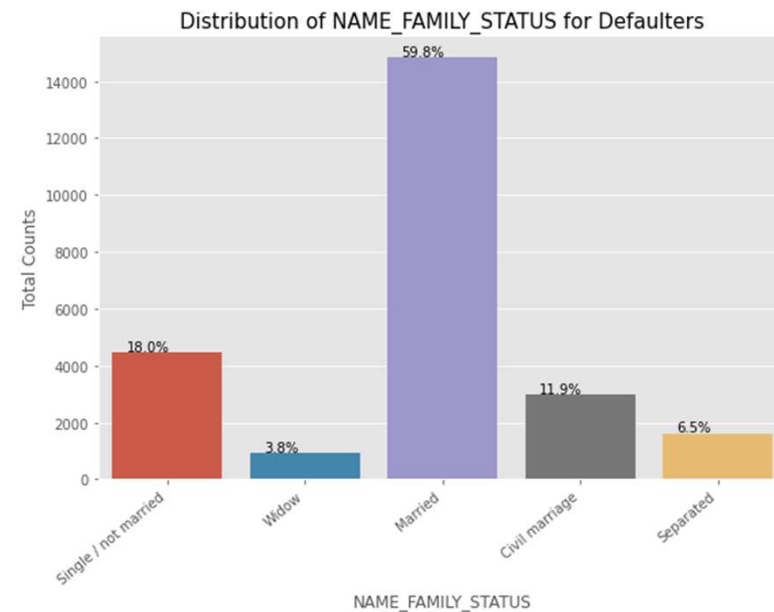
Married people tend to apply for more loans comparatively. But from the graph we see that Single/non Married people contribute 14.5% to Non Defaulters and 18% to the defaulters. So there is more risk associated with them.

SINGLE NON DEFAULTER 14.5%

Distribution of NAME_FAMILY_STATUS for Non-Defaulters

SINGLE DEFAULTER 18%

Distribution of NAME_FAMILY_STATUS for Defaulters

It is clear from the graph that people who have House/Apartment, tend to apply for more loans. People living with parents tend to default more often when compared with others. The reason could be their living expenses are more due to their parents living with them.

Distribution of NAME_HOUSING_TYPE for Defaulters
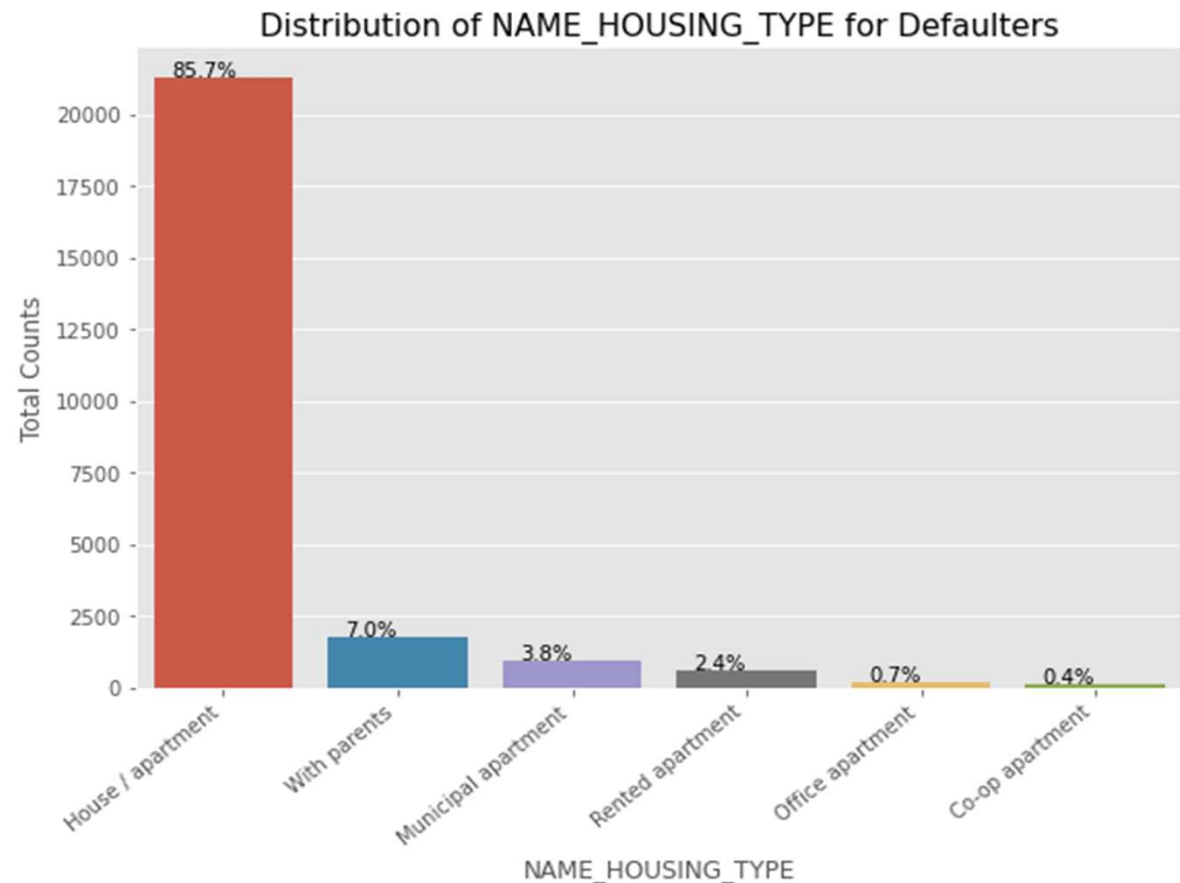
➤ We see that (25,30) age group tend to default more often. So they are the riskiest people to loan to. With increasing age group, people tend to default less starting from the age 25. One of the reasons could be they get employed around that age and with increasing age, their salary also increases.

Distribution of AGE_GROUP for Non-Defaulters

Distribution of AGE_GROUP for Defaulters
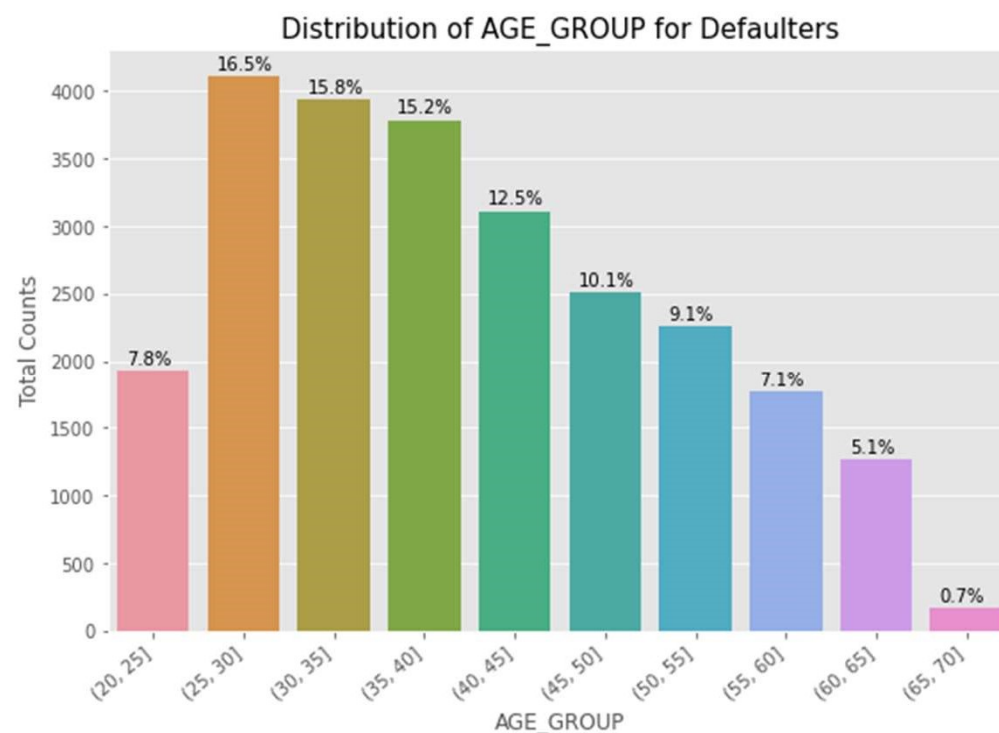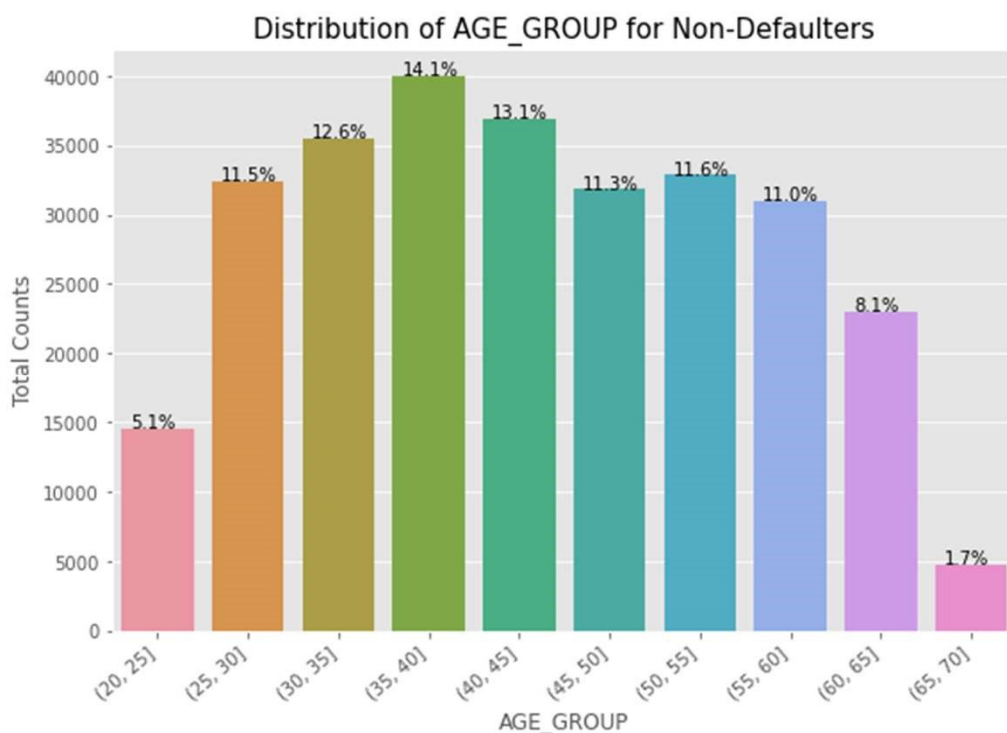
The Very High income group tend to default less often. They contribute 12.4% to the total number of defaulters, whereas medium income groups contribute 29.1% to the total numbers.
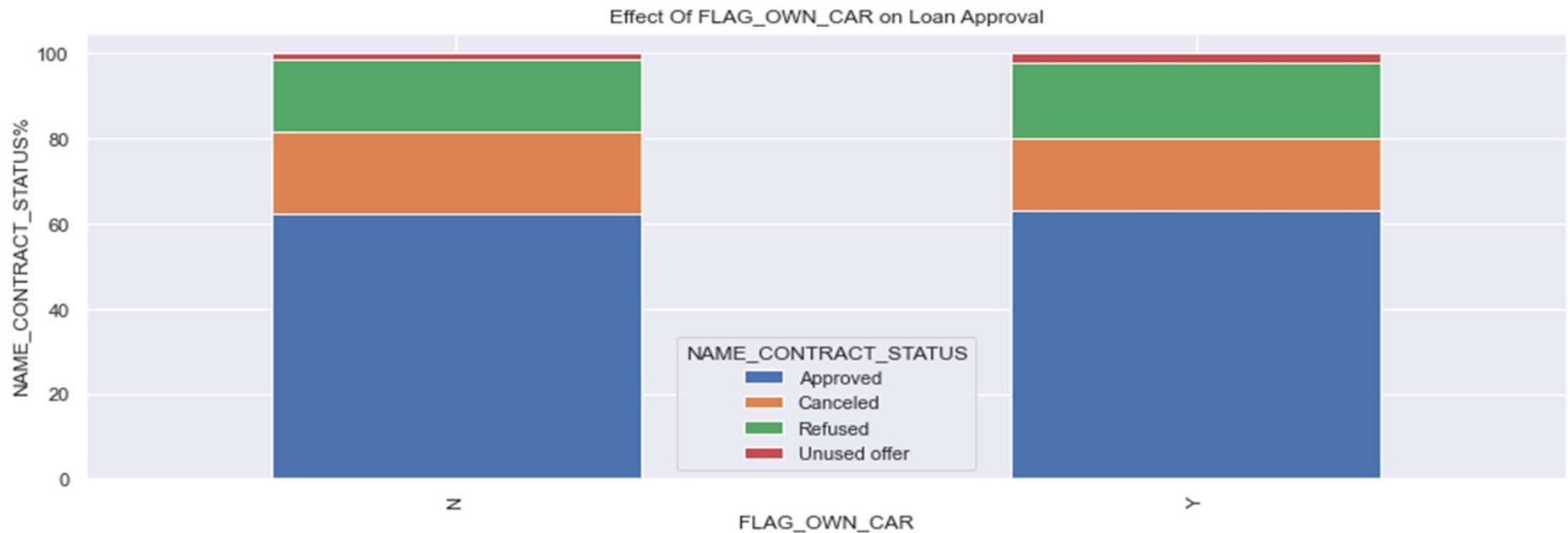

Distribution of INCOME_GROUP for Defaulters
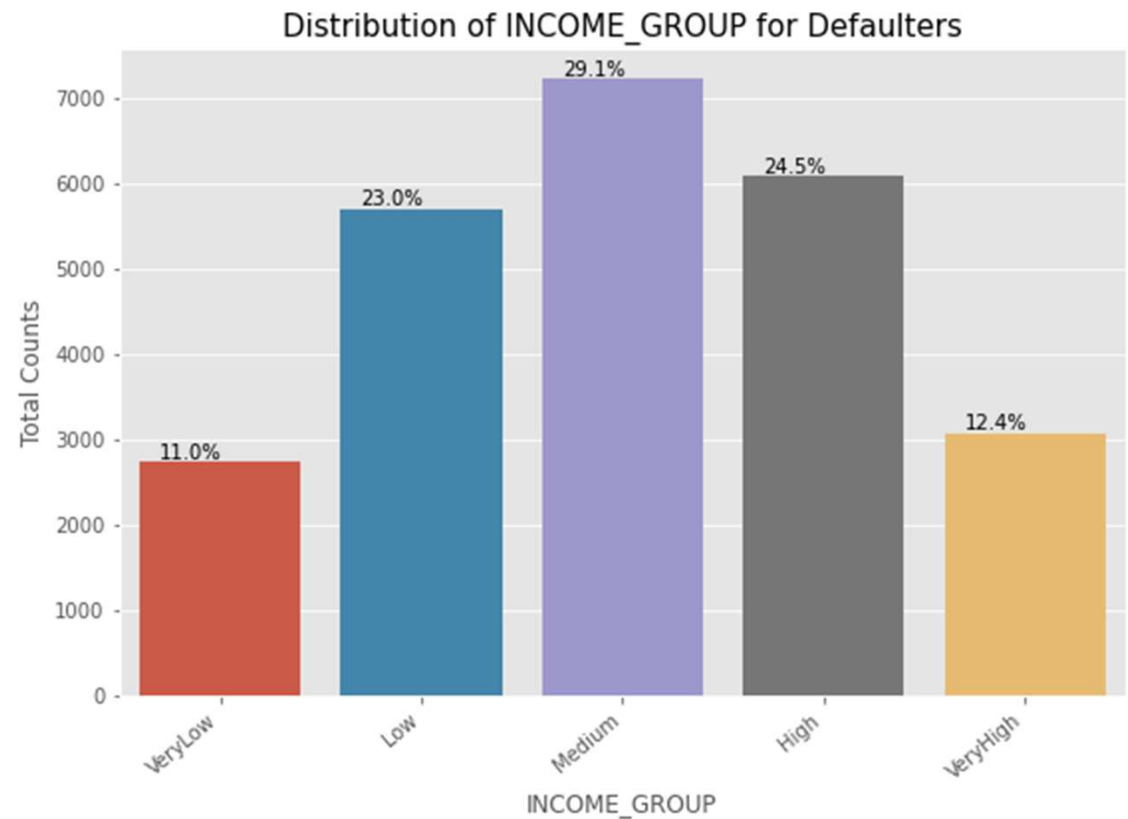
Let's take 2 best examples : Car Owners and Gender. And conclude to whom the bank should be more focused with.

# The bank can add more weightage to car owners.

WHY?

We see that car ownership doesn't have any effect on application approval or rejection. But we saw earlier that the people who has a car has lesser chances of default.

The bank can add more weightage to female.

WHY?

We see that code gender doesn't have any effect on application approval or rejection. But we saw earlier that female have lesser chances of default compared to males.
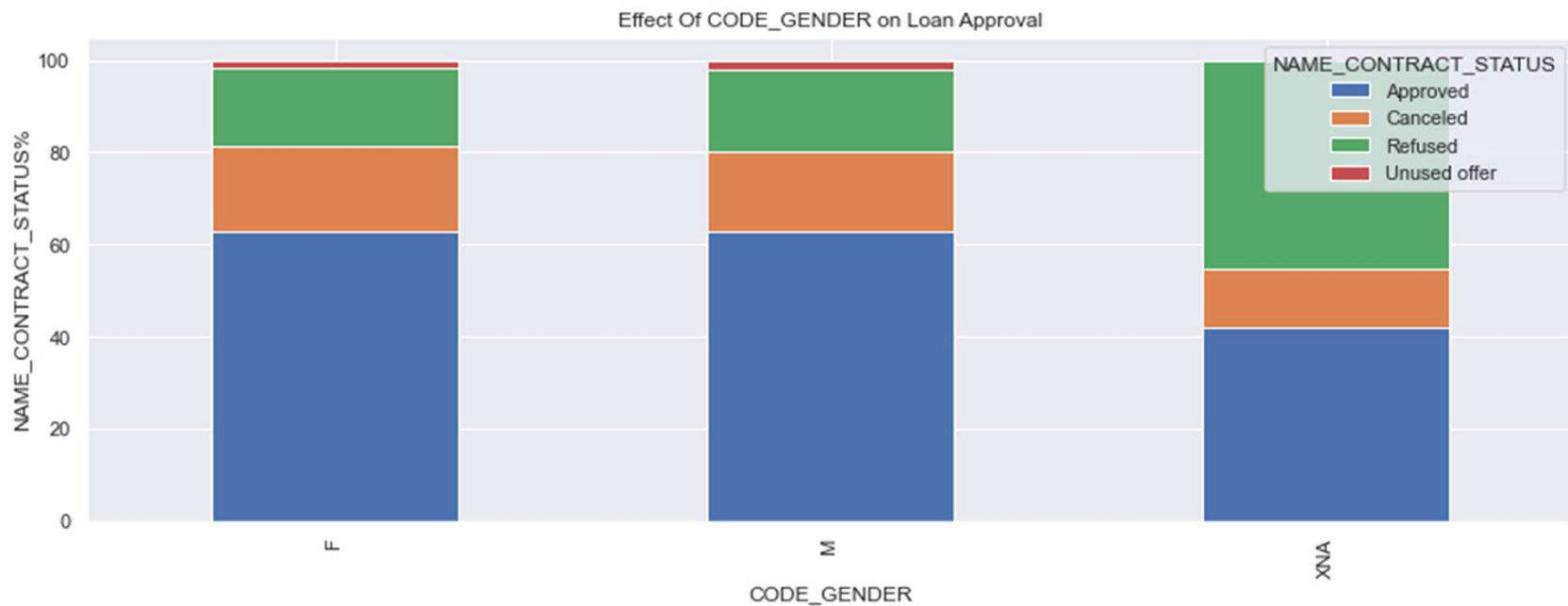
Let's now conclude on the basis of our analysis, who should be a matter of interest for bank and who is less likely.

SAFE MONEY-LENDERS

1. Clients working as state servants

2. Old people of income group

3. Client with high income category

4. Old female client

5. Female client with higher education

6. Client who's previous loan was approved

7. Widow who has unused previous loan status

8. Refreshed clients who have unused previous loan status

RISKY MONEY-LENDERS

1. Lower secondary educated clients are the most in number to be defaulters when their previous loans were cancelled or refused.

2. Male clients with civil marriage

3. Previously refused loan status group

4. Moderate Salaried Employees

5. Working Unmarried men

6. People belonging to age group 25 to 30

THANK YOU

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