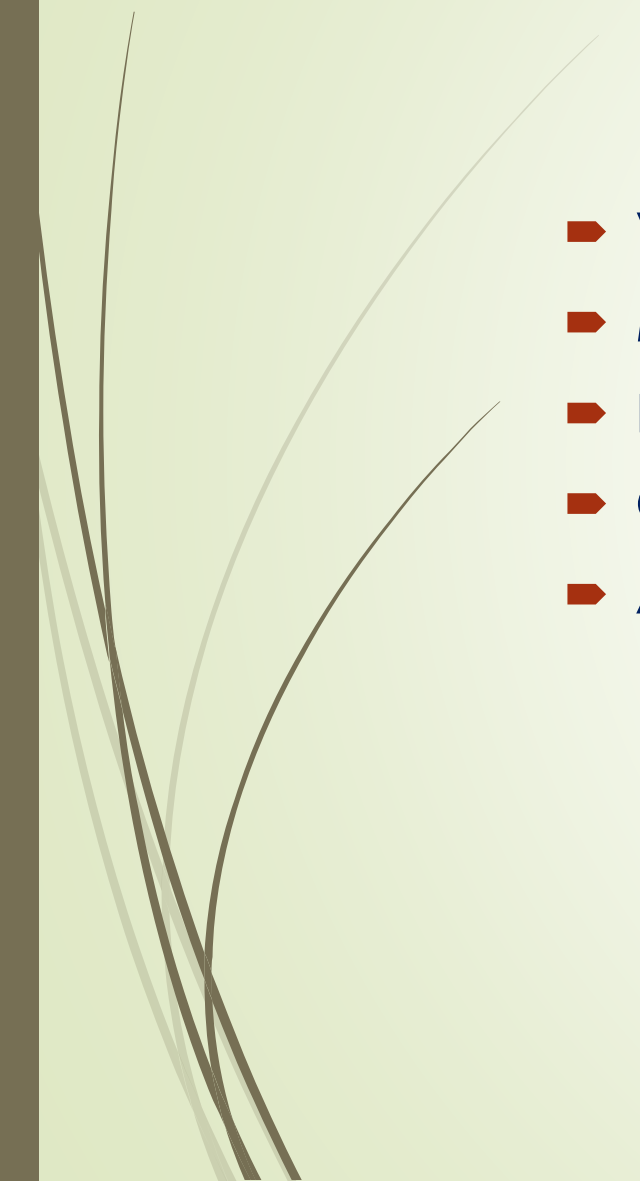# CREDIT EDA CASE STUDY

-HEMANT KOKANE

PROBLEM STATEMENT

- The bank provides customer's information such as age, education, income, job-type, loan-type, clients who has payment difficulties, previous application status and so on. In order to increase its overall revenue, bank conducts various marketing campaigns such as credit card, term deposit, loan etc. These campaigns need to be cost-efficient so that the bank not only increase their overall revenues but also total profit. So I am going to apply my EDA knowledge on the given dataset to analysis the pattern and provide recommendation for upcoming loan campaign.

- In this case study I am going to identify pattern which indicate if client has any difficulty in paying their installments. So bank can reduce its Non-Performing-Asset by approving loan to appropriate customer.

ASSUMPTIONS

- Variables with more than 40 % missing values were EXCLUDED.

- Missing values of categorical data-type were replace by MODE.

- Rows of negligible missing value variables were DROPPED.

- Outliers in numerical variables were DROPPED.

- Analysis done on 20-25 important variables.

OVERALL APPROACH

- **Data Understanding**
- **Data Cleaning**
- **Data Analysis**

    Application data :

        Univariate Analysis

        Segmented Univariate Analysis

        Bivariate Analysis

        Multivariate Analysis

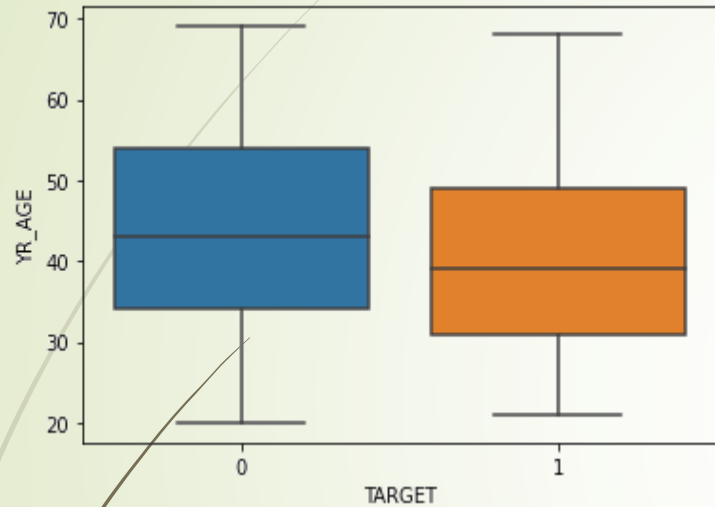   **Previous Data :**

        Univariate Analysis

        Bivariate Analysis

    Merge data :

        Bivariate Analysis

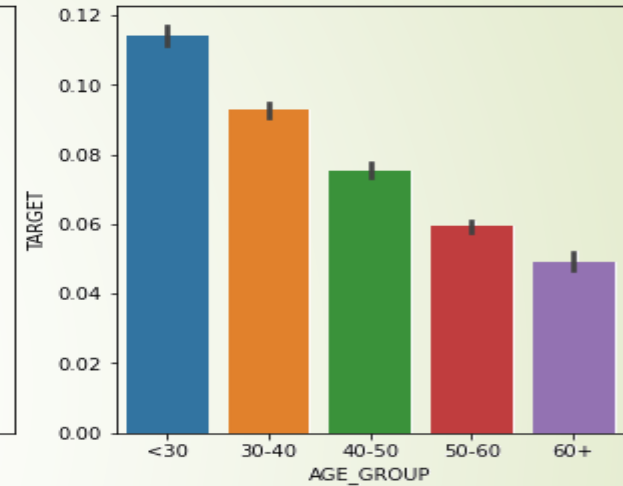   **Multivariate Analysis**

- **Recommendation**

Analysis of Target Variable and Age-group
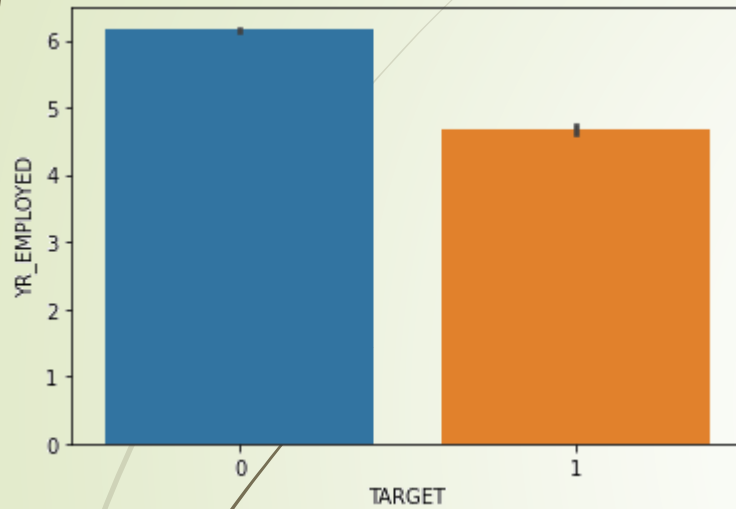

Age-group vs Target Boxplot
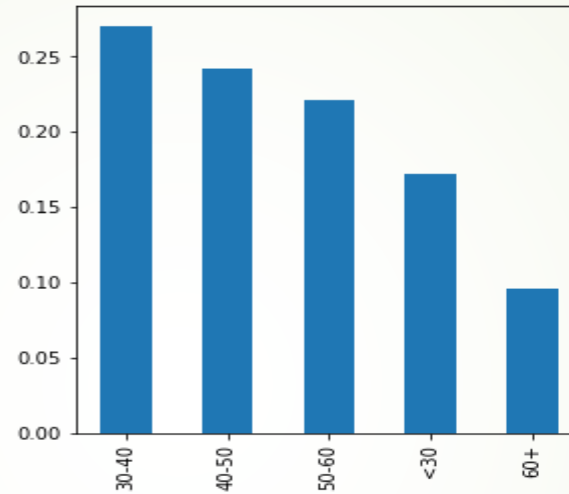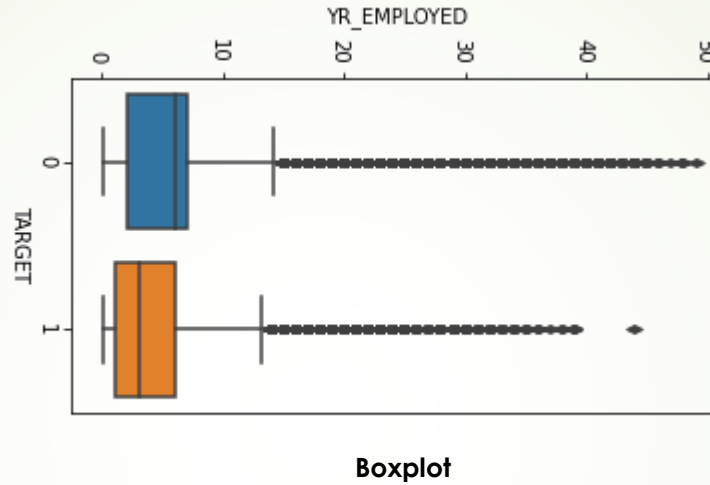

Age-group count plot

Age-group vs Target Bar-plot

➤ From above age group analysis we can say that clients with age less than 30 make more default while paying loan-installments. Because their total population is at fourth rank but they are making default with highest average.
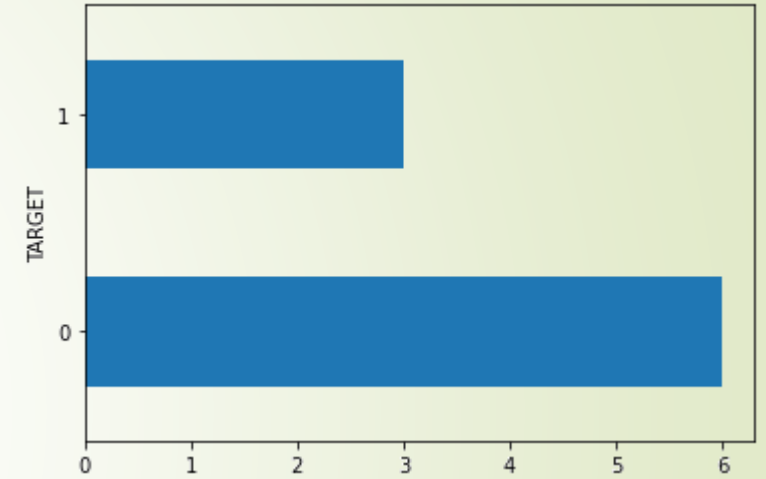
Analysis of Target Variable and Current employment years
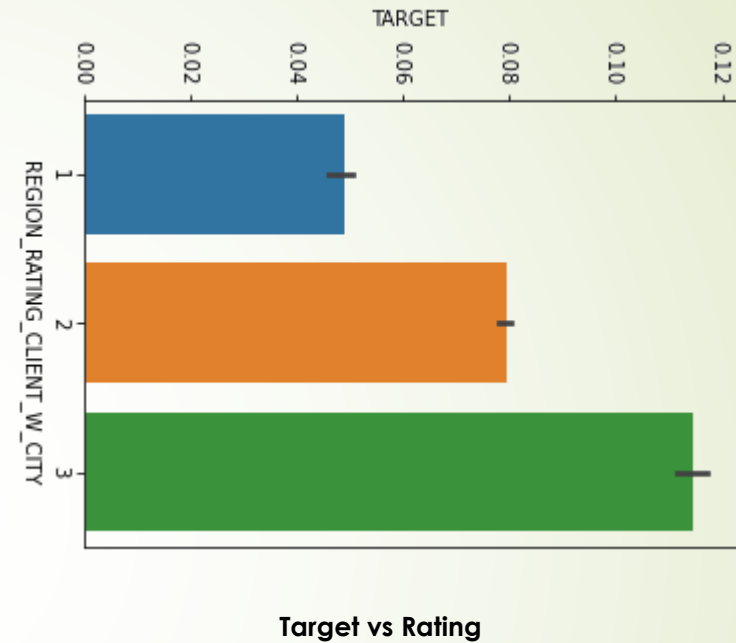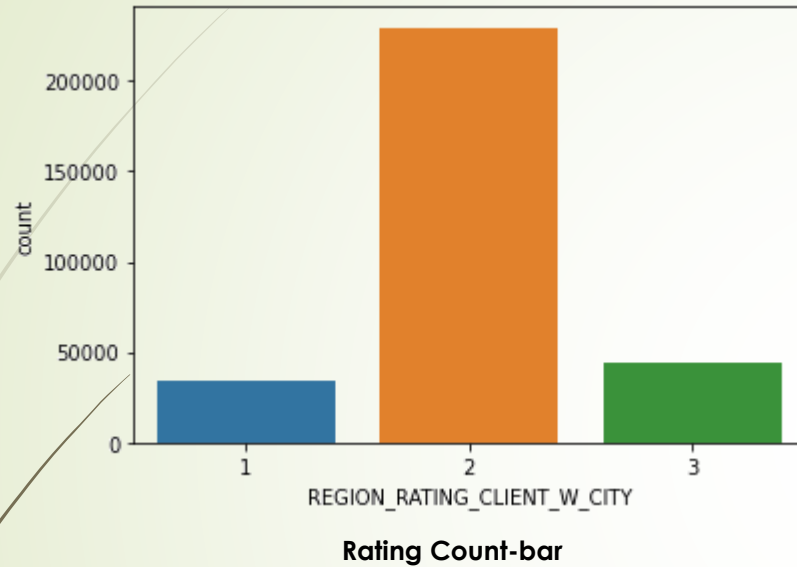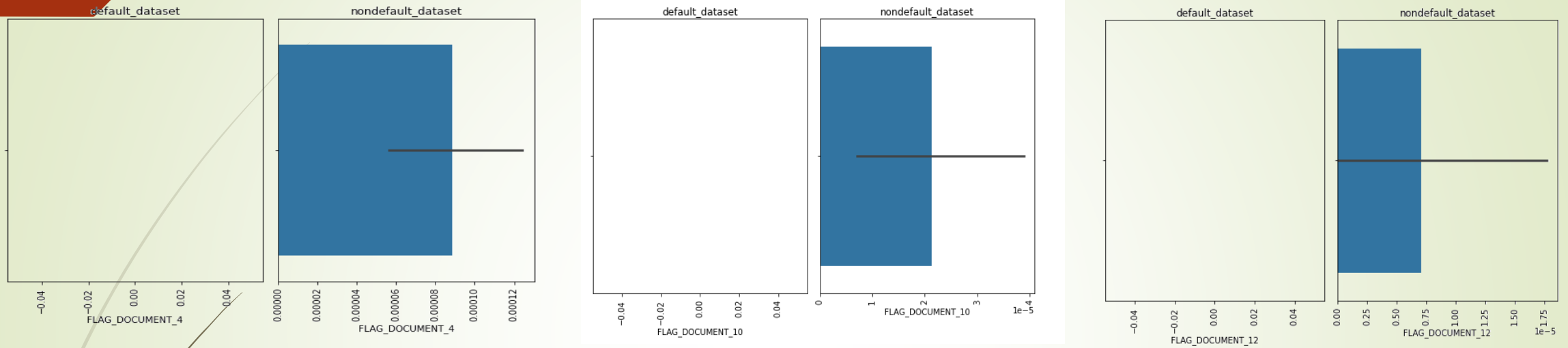

Bar-plot

Boxplot

Year median bar-plot

➤ From above graphs we can say that clients with less current employment experience make more default. Because median of non-defaulting clients is 6 and of defaulting clients is 3.

Analysis of Target Variable and City Rating

Rating Count-bar

Target vs Rating

➢ From above bar chart of city rating and Target variable we can say that clients with city rating 3 makes more default than city rating 1 & 2. Total population of rating 2 is highest still city rating 3's default average is more than Others.
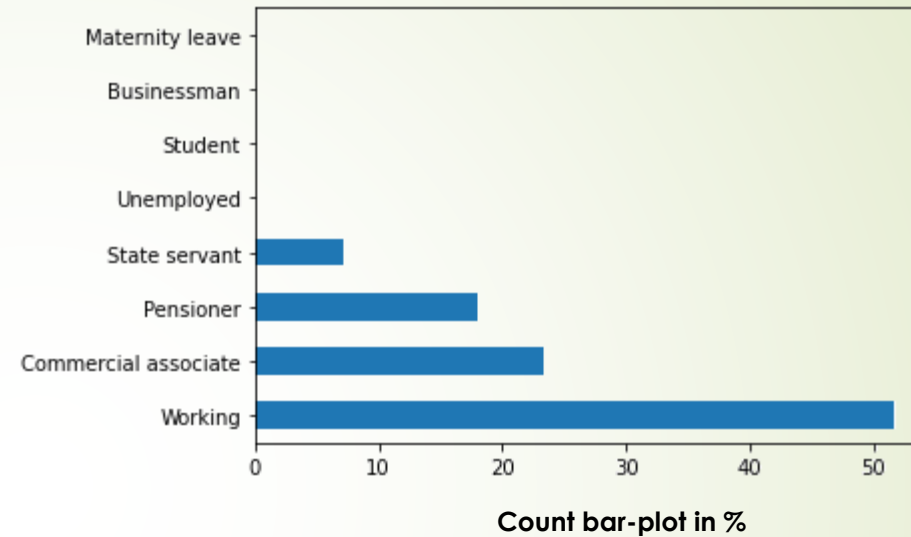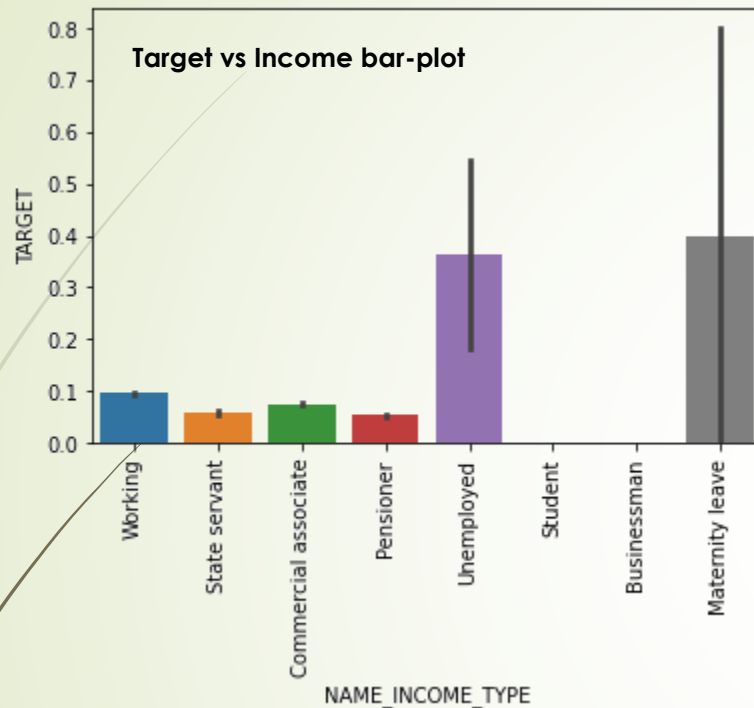
Analysis of Target Variable and Documents


Target vs documents bar-plot

➢ From above three Target vs Documents bar-plot we can say that default making clients did not provide Document No. – 4, Document No. – 10 and Document No. – 12.
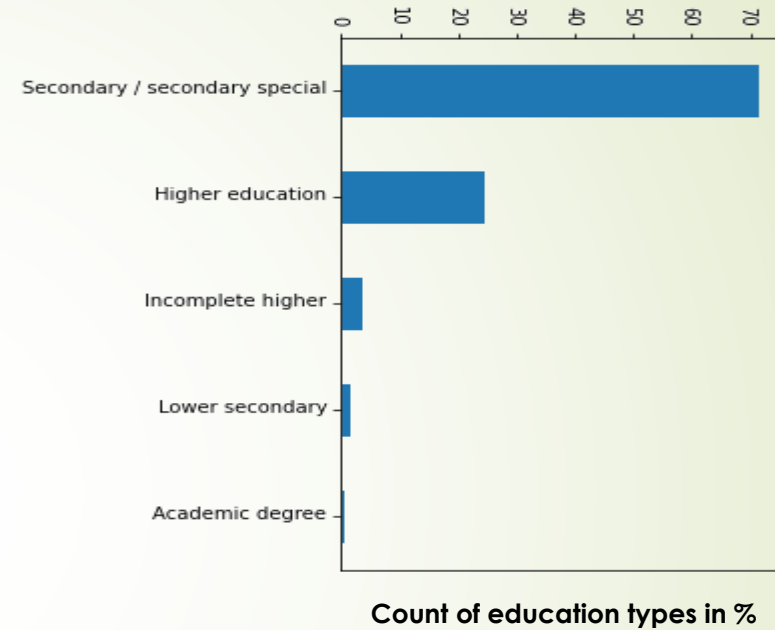
Analysis of Target Variable and Income Type

➢ From above two graph we can conclude that client with income type like Unemployed and Maternity leave makes more default while Paying installments.
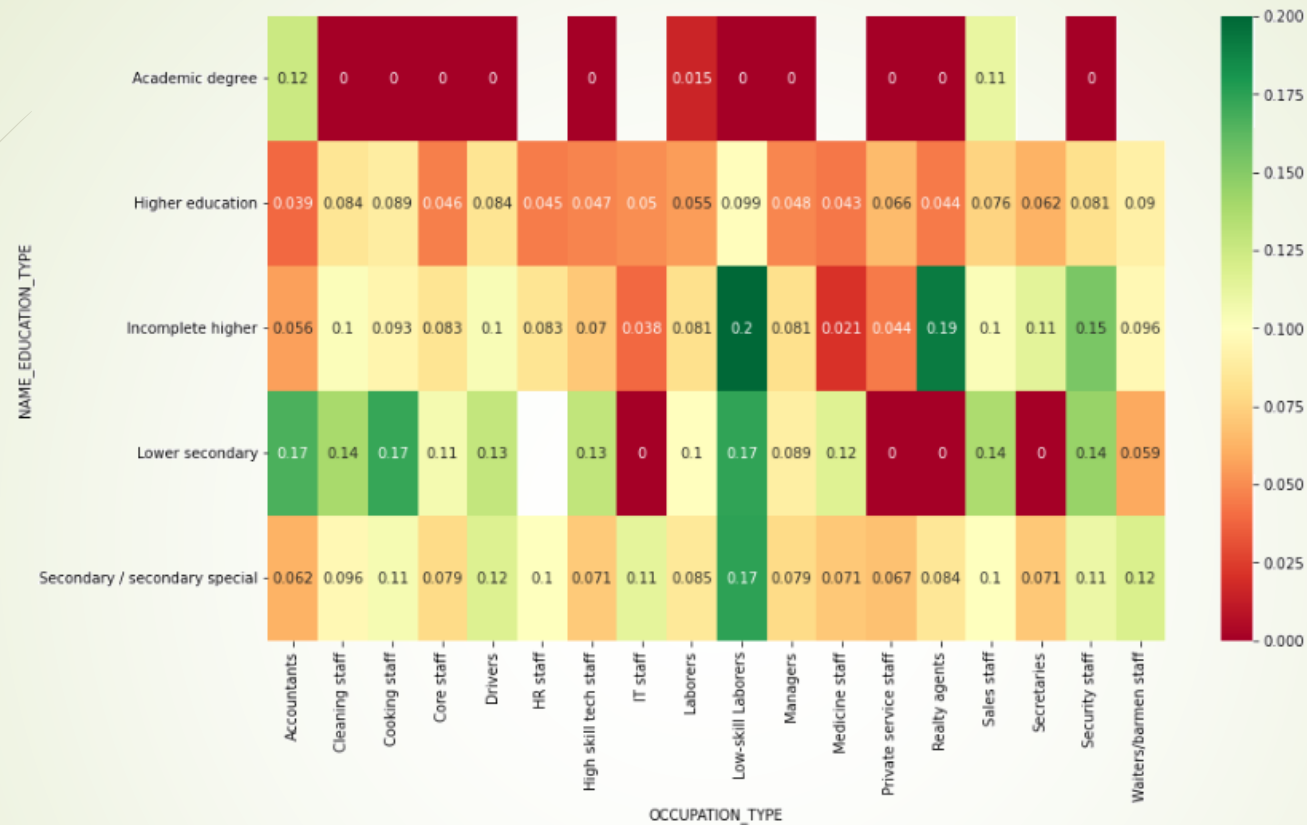
Analysis of Target Variable and Education Type
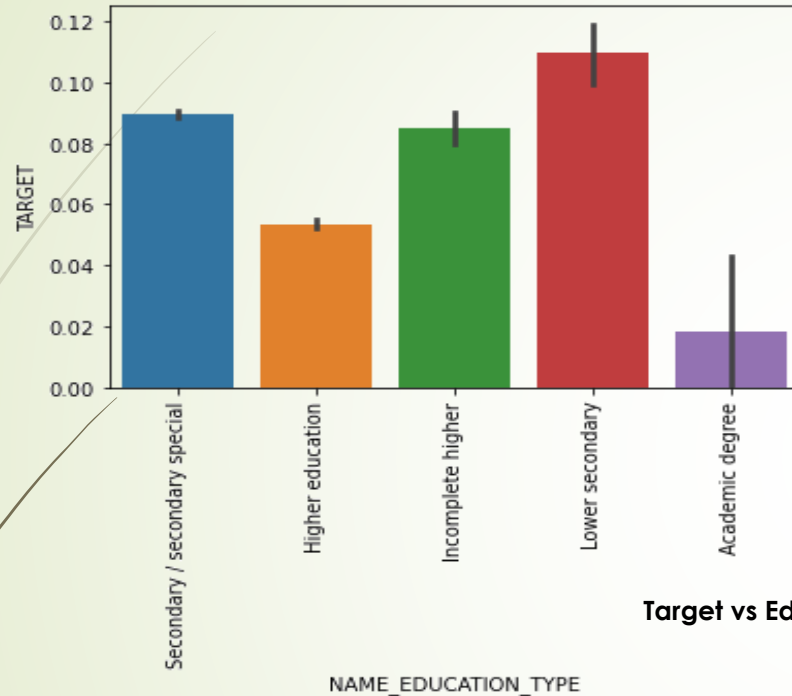
Target vs Education Bar-plot

Count of education types in %

➢ From above charts we can say that percentage of client with secondary education is higher than any other education type. But average of default Payment is max in Lower Secondary education type.
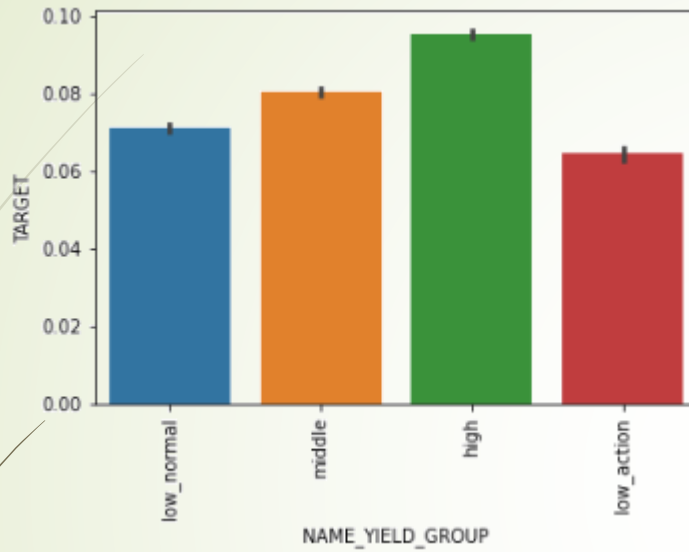
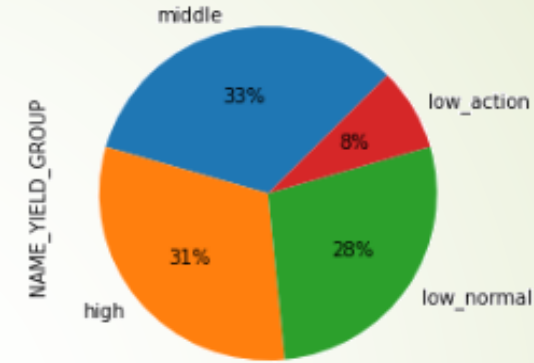# Analysis of Target Variable vs Education vs occupation type

Heat-map of Target vs Education vs occupation

➢ From above heat-map we can say that client with "Lower-skill Laborers and Incomplete higher education" & "Realty agents and Incomplete higher education" category made more defaults while paying installments.

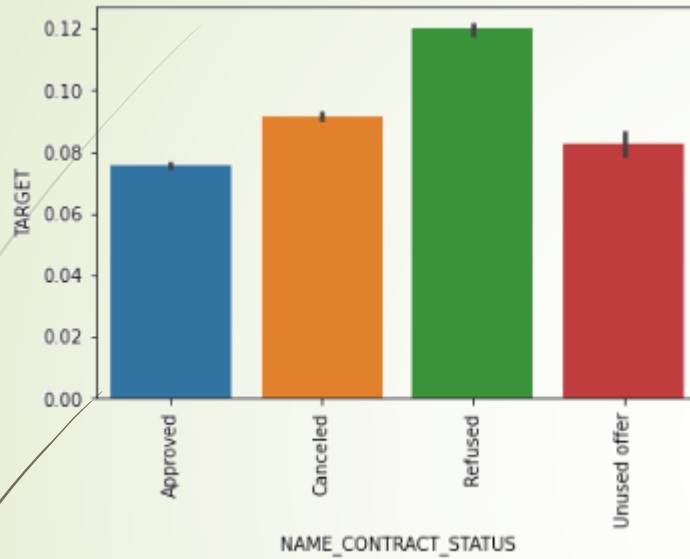# Analysis of Target Variable vs Interest rate
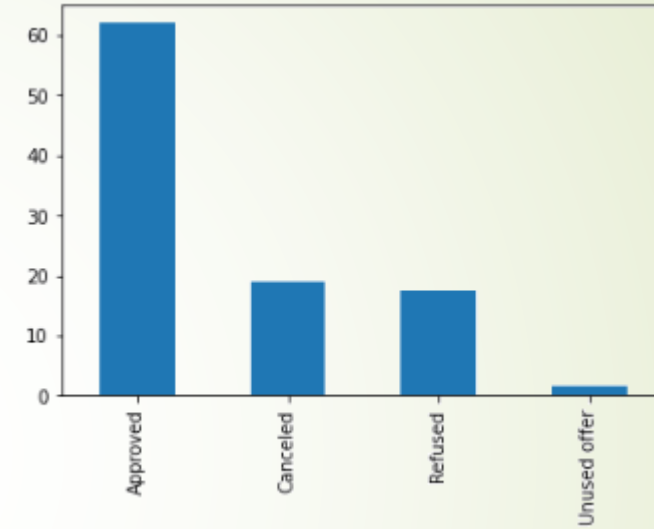

Bar-chart of Target vs Interest

Count Pie-chart of interest in %

➢ From above interest bar-chart we can say that clients with high interest ret Loans makes more default while paying installments.

Analysis of Target Variable vs Contract status

Target vs contract status

Counts of contract status in %

➢ From above bar chart we can conclude that clients whose previous application refused were making more defaults in current loan installments.

Recommendations

1. Do a thorough check while approving loan to lower age group.
2. Do not approve loan to clients who has less than one year experience with current employer.
3. Do scrutiny while approving loan to city rating 3 clients.
4. Do not approve loan without collecting Document No. - 4,10,12.
5. Do not approve loan to unemployed clients or clients who are on maternity leave .
6. Cross verify while approving loan to clients having lower secondary education or low-skill laborers.
7. Take precaution while handling high interest rate .
8. Do scrutiny while approving loan-application for the clients who were rejected previously.