

The background is a dark blue gradient with faint, concentric circles. In the corners, there are white, stylized circuit-like lines with small circles at the ends, resembling a network or data flow diagram.

RISK ANALYSIS

EDAPROJECT

BY

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Problem Statement

The loan providing companies find it hard to give loans to the people due to their insufficient or non-existent credit history. Because of that, some consumers use it to their advantage by becoming a defaulter.

To use EDA to analyze the patterns present in the data, which will ensure that the applicants capable of repaying the loan are not rejected.

Risk Statement

- When the company receives a loan application, the company has to decide for loan approval based on the applicant's profile. Two types of risks are associated with the bank's decision:
- If the applicant is likely to repay the loan, then not approving the loan results in a loss of business to the company
- If the applicant is not likely to repay the loan, i.e. he/she is likely to default, then approving the loan may lead to a financial loss for the company.

STEPS INVOLVED IN EDA:

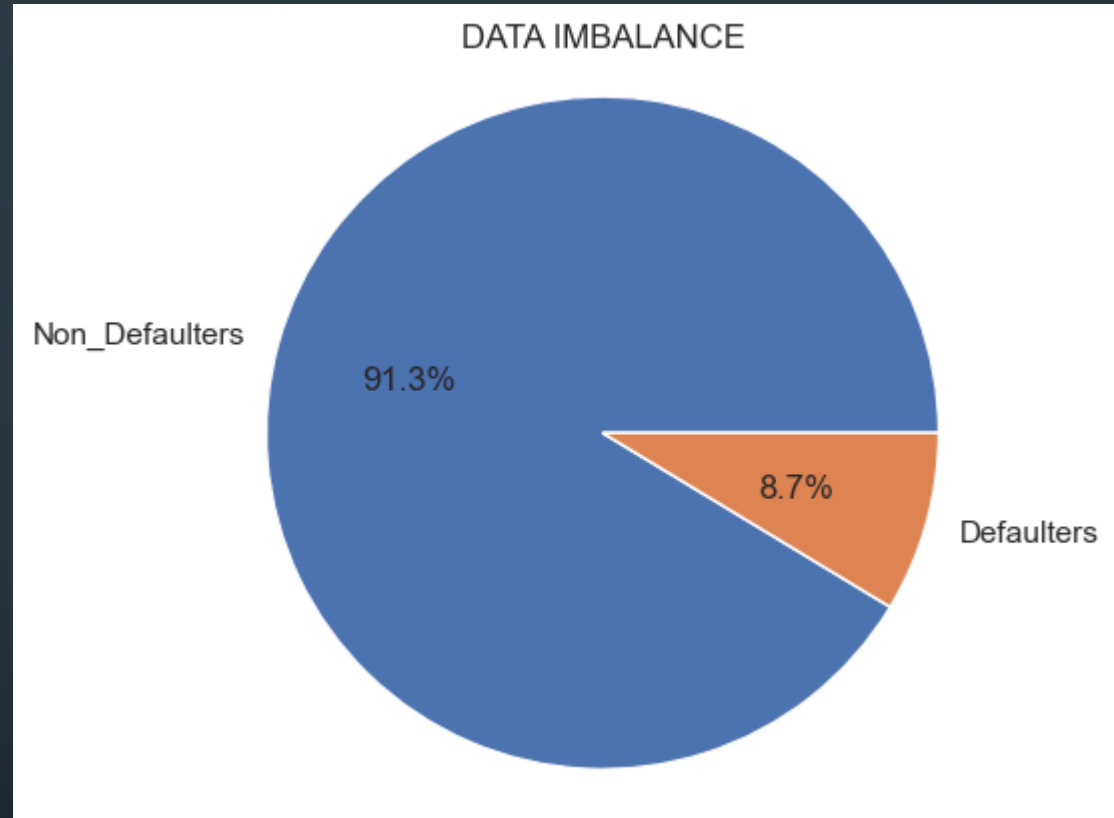
- Importing the data
- Cleaning the data
 1. Fixing the rows/columns
 2. Imputing the missing values
 3. Handling outliers
- Univariate Analysis
- Bi-Variate Analysis
- Multi-Variate Analysis
- Data Visualization

The background is a dark blue gradient with several faint, concentric circles centered in the upper half. In the corners, there are white line-art elements resembling circuit boards or data paths, with small circles at the end of the lines.

UNIVARIATE ANALYSIS

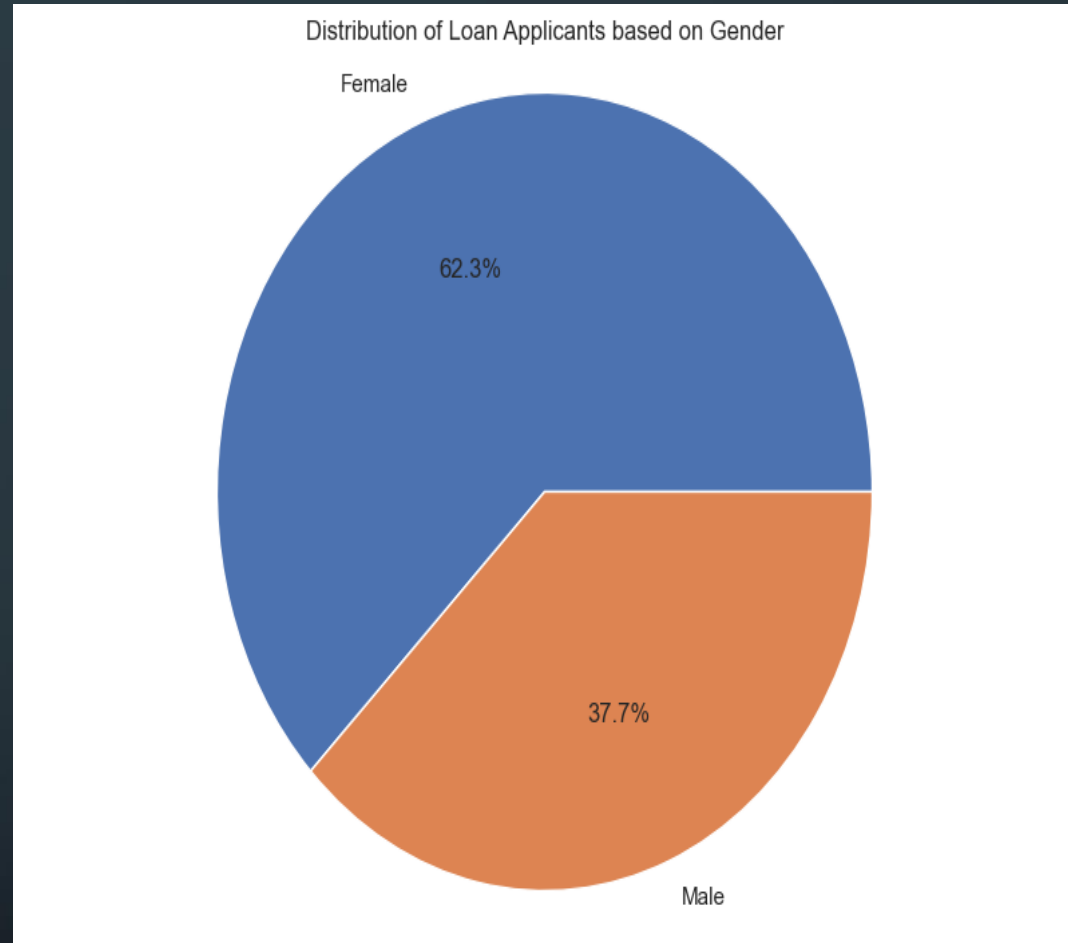
DATA IMBALANCE

The chart depicts that there is huge imbalance between Non-Defaulters and Defaulters.



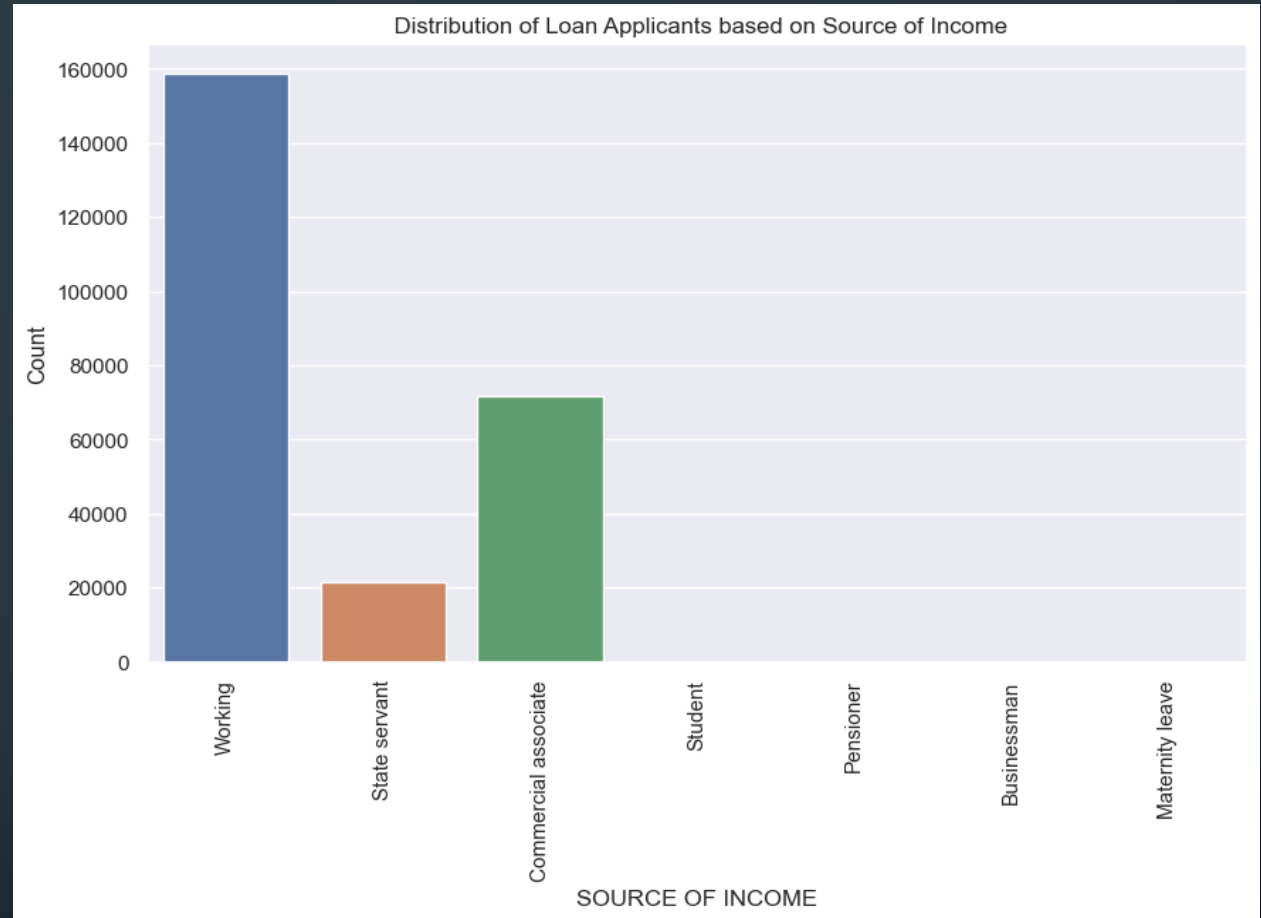
DISTRIBUTION OF LOAN APPLICANTS BASED ON GENDER

The chart depicts that there Female Applicants are more than Male Applicants.



DISTRIBUTION OF LOAN APPLICANTS BASED ON SOURCE OF INCOME

From the chart we can depict that the loan applications are higher from people whose source of income is by working.

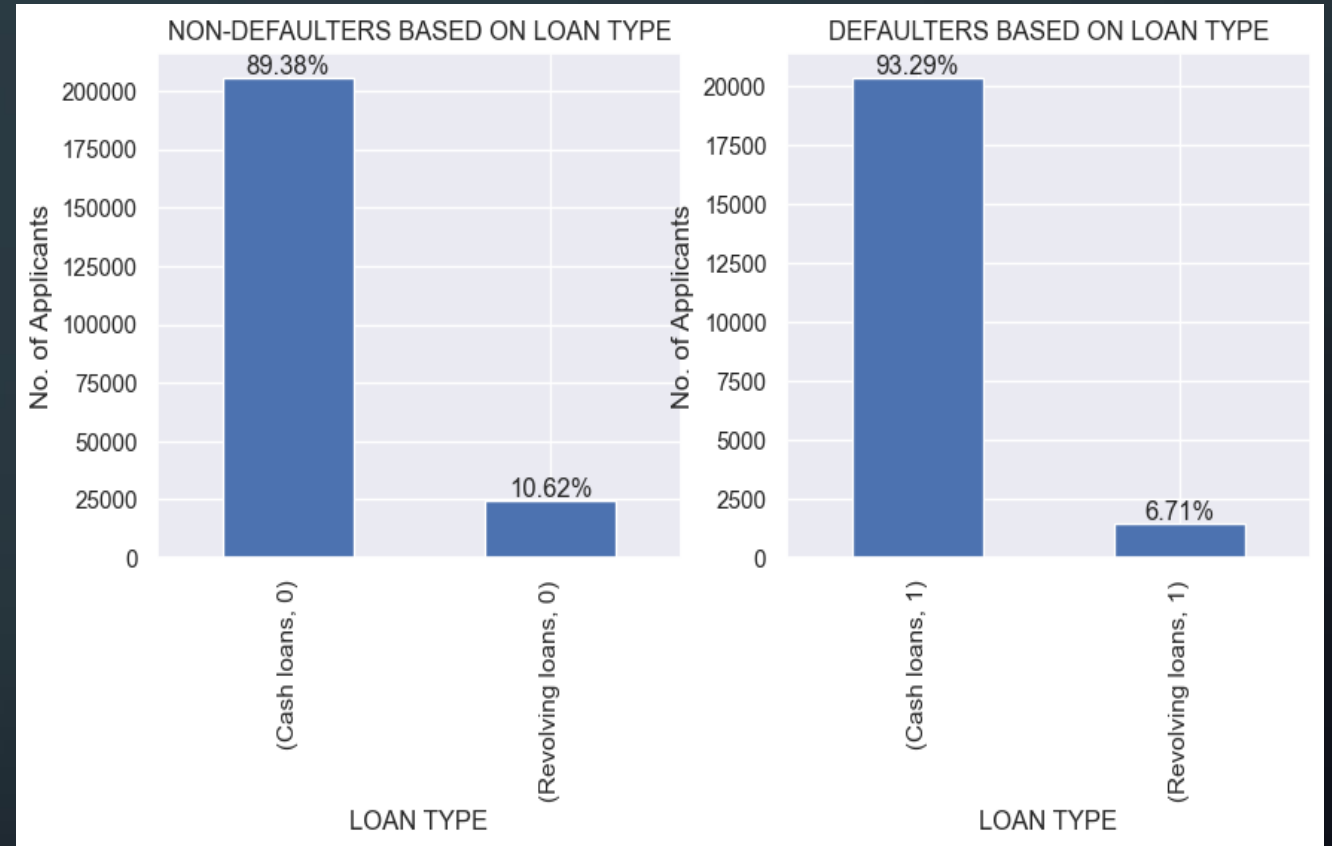


The background is a dark blue gradient. In the center, there are three concentric circles of increasing size, each with a lighter blue tint. The corners of the image are decorated with white, stylized circuit board traces and small circles, resembling electronic components or data paths.

BI-VARIATE ANALYSIS

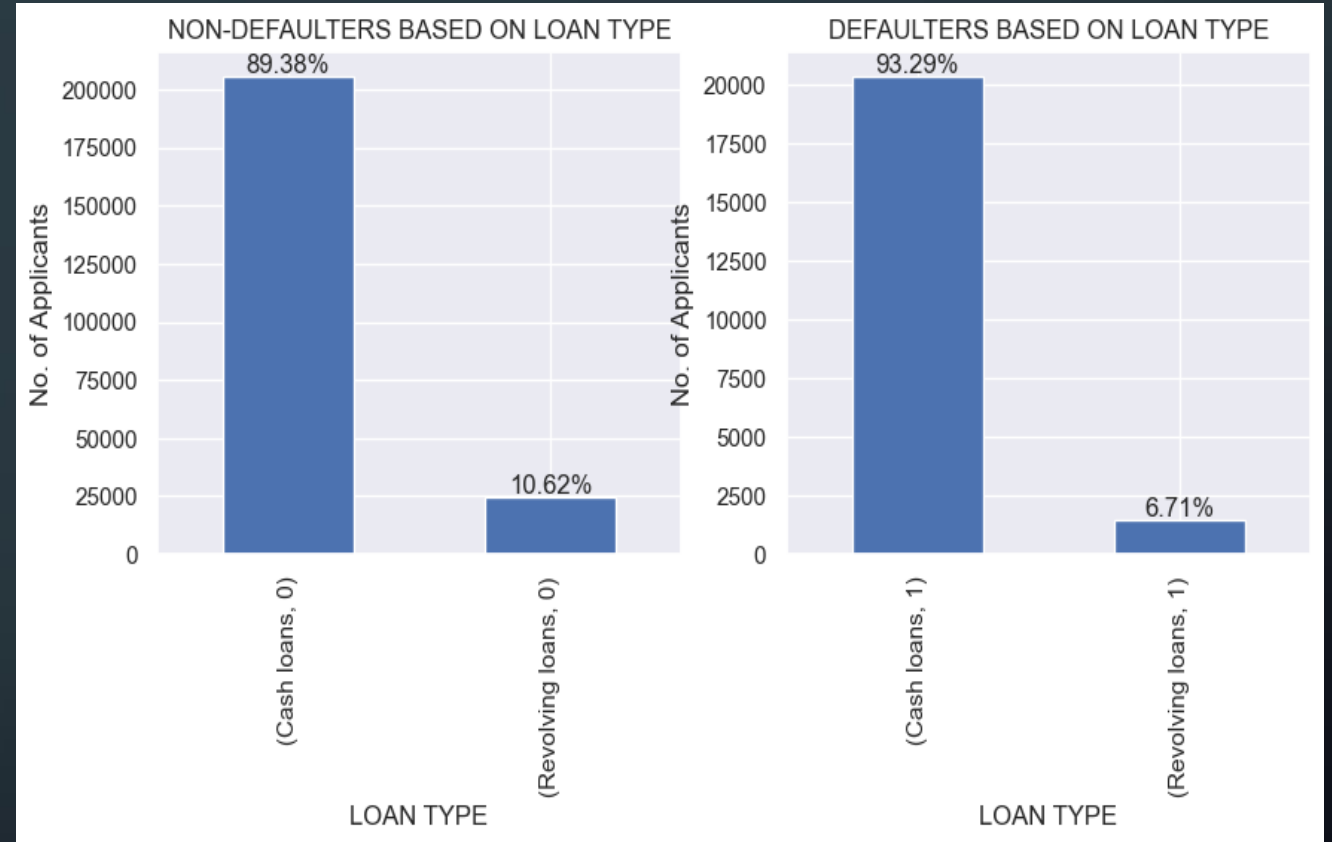
DEFAULTERS & NON-DEFAULTERS BASED ON LOAN TYPE

From the chart we can depict that the defaulters are little higher in cash loans.



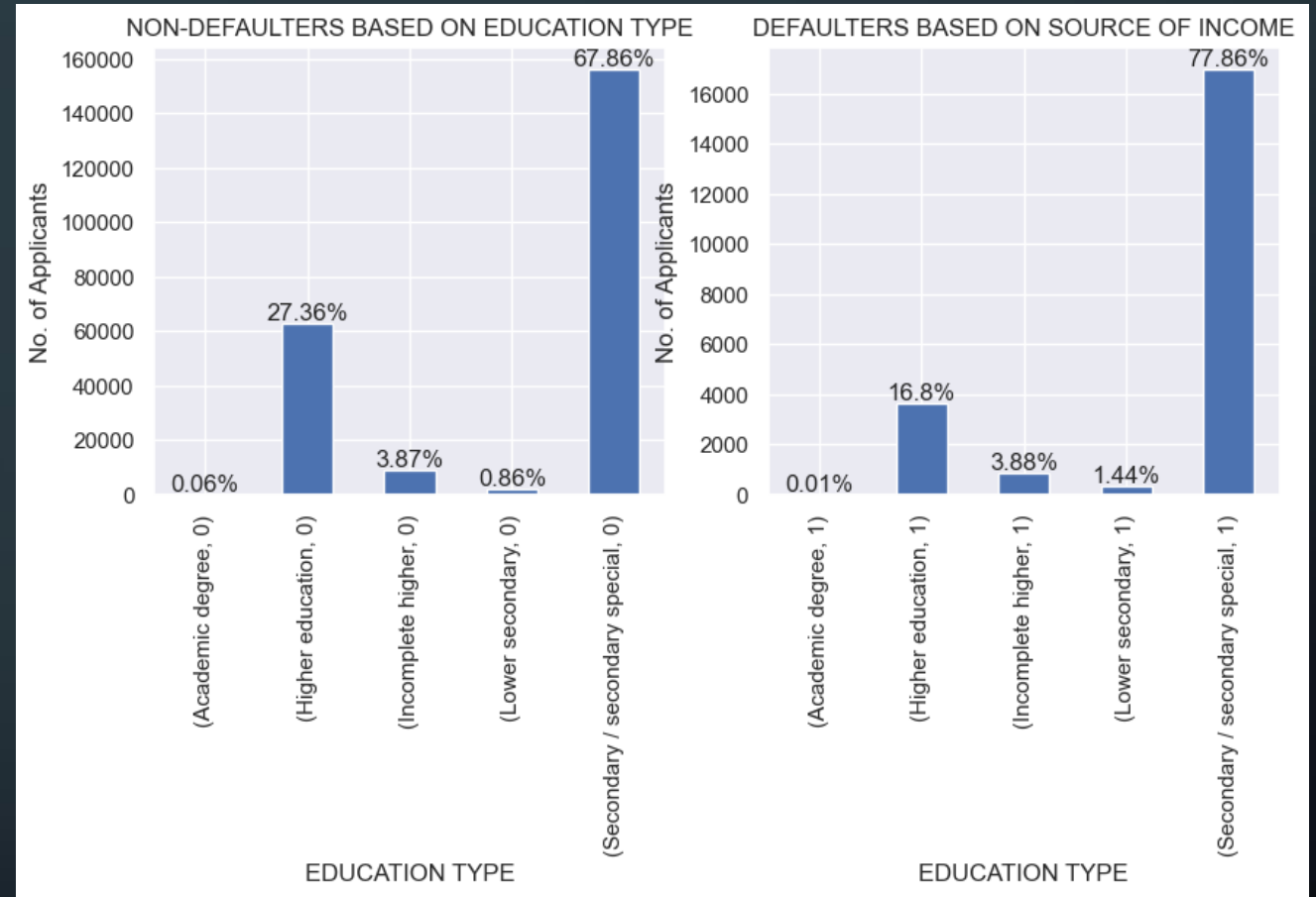
DEFAULTERS & NON-DEFAULTERS BASED ON SOURCE OF INCOME

From the chart we can depict that the working categories are more likely to default.



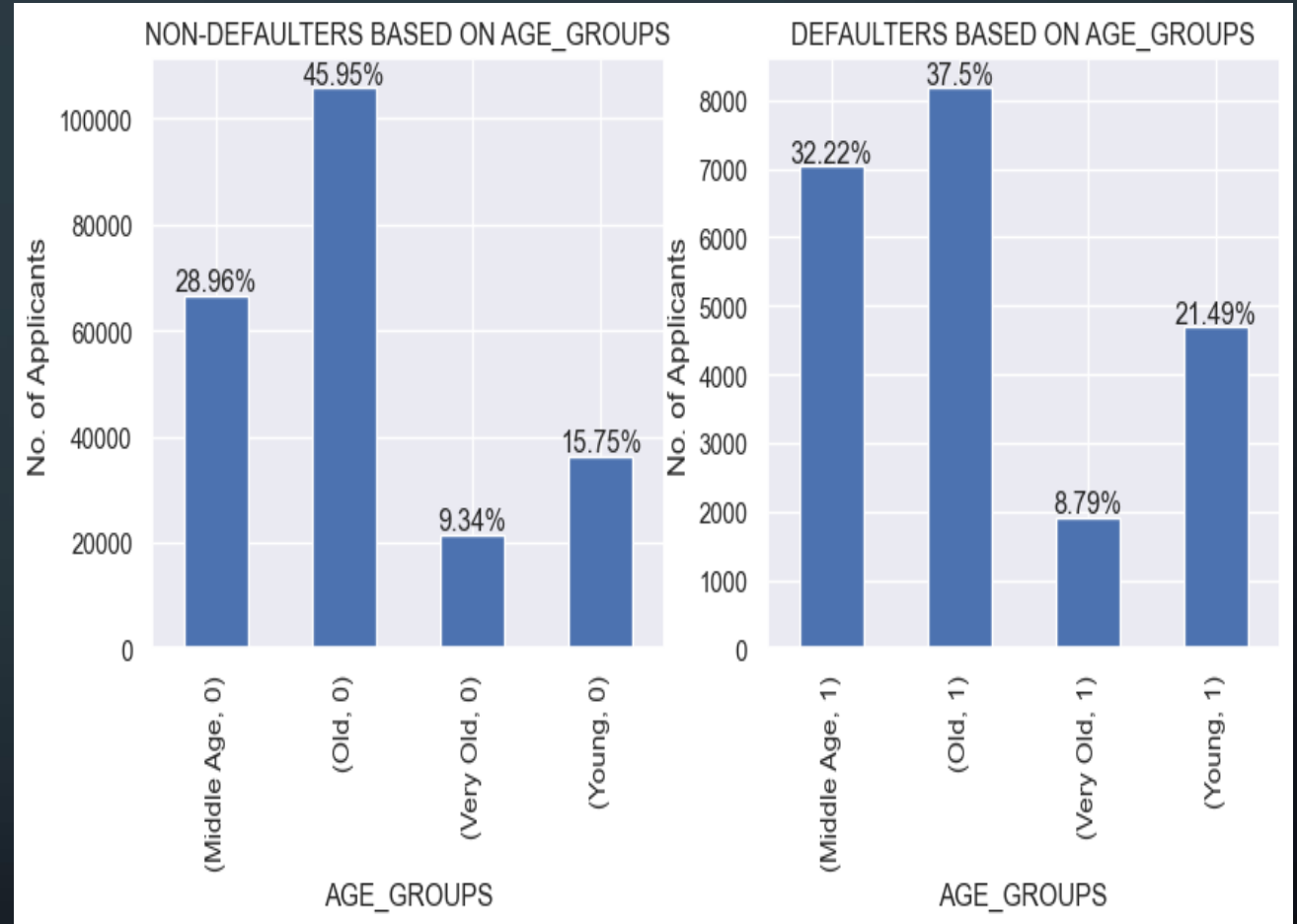
DEFAULTERS & NON-DEFAULTERS BASED ON EDUCATION

From the chart we can depict that the **Secondary/ Secondary special** are more likely to default.



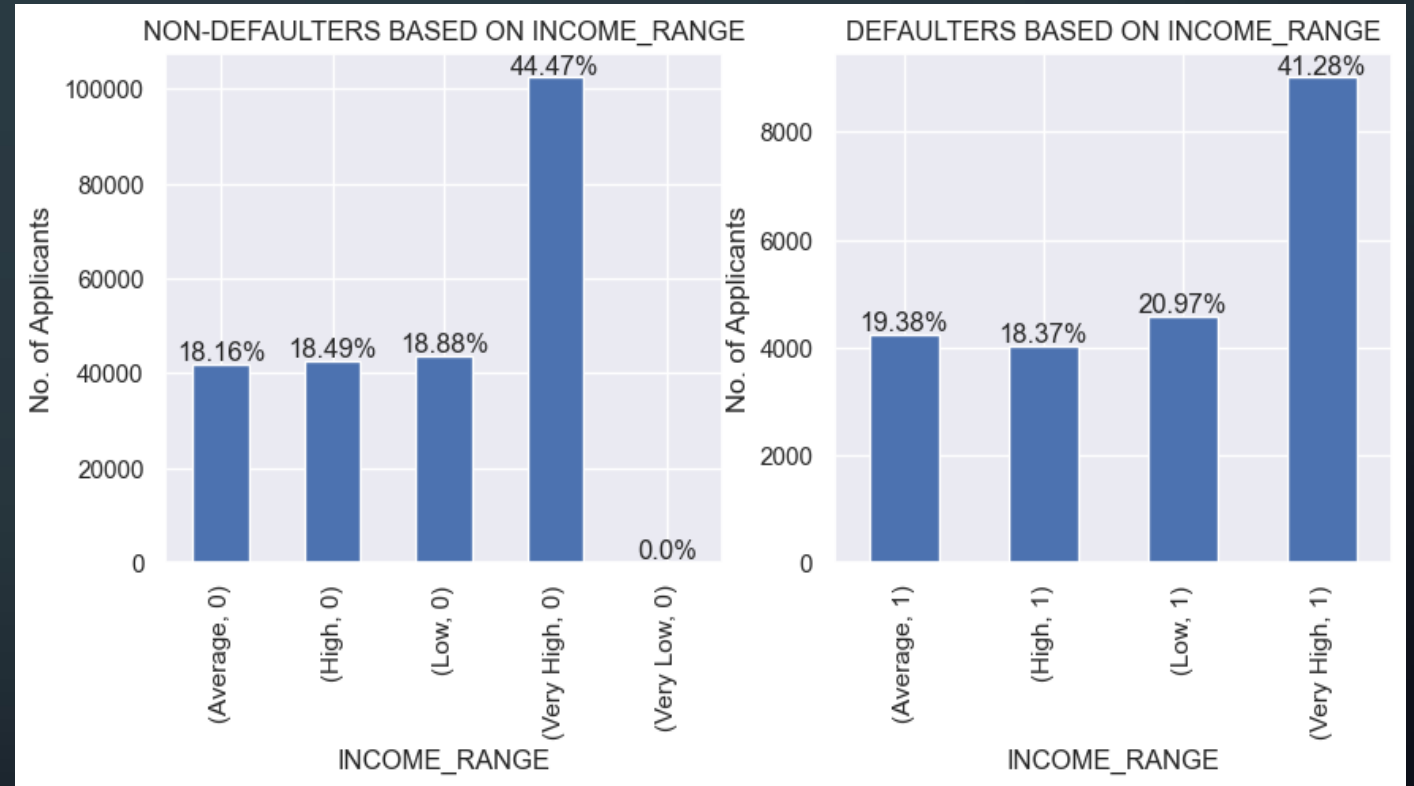
DEFAULTERS & NON-DEFAULTERS BASED ON AGE GROUP

From the chart we can depict that young age group are more likely to default.



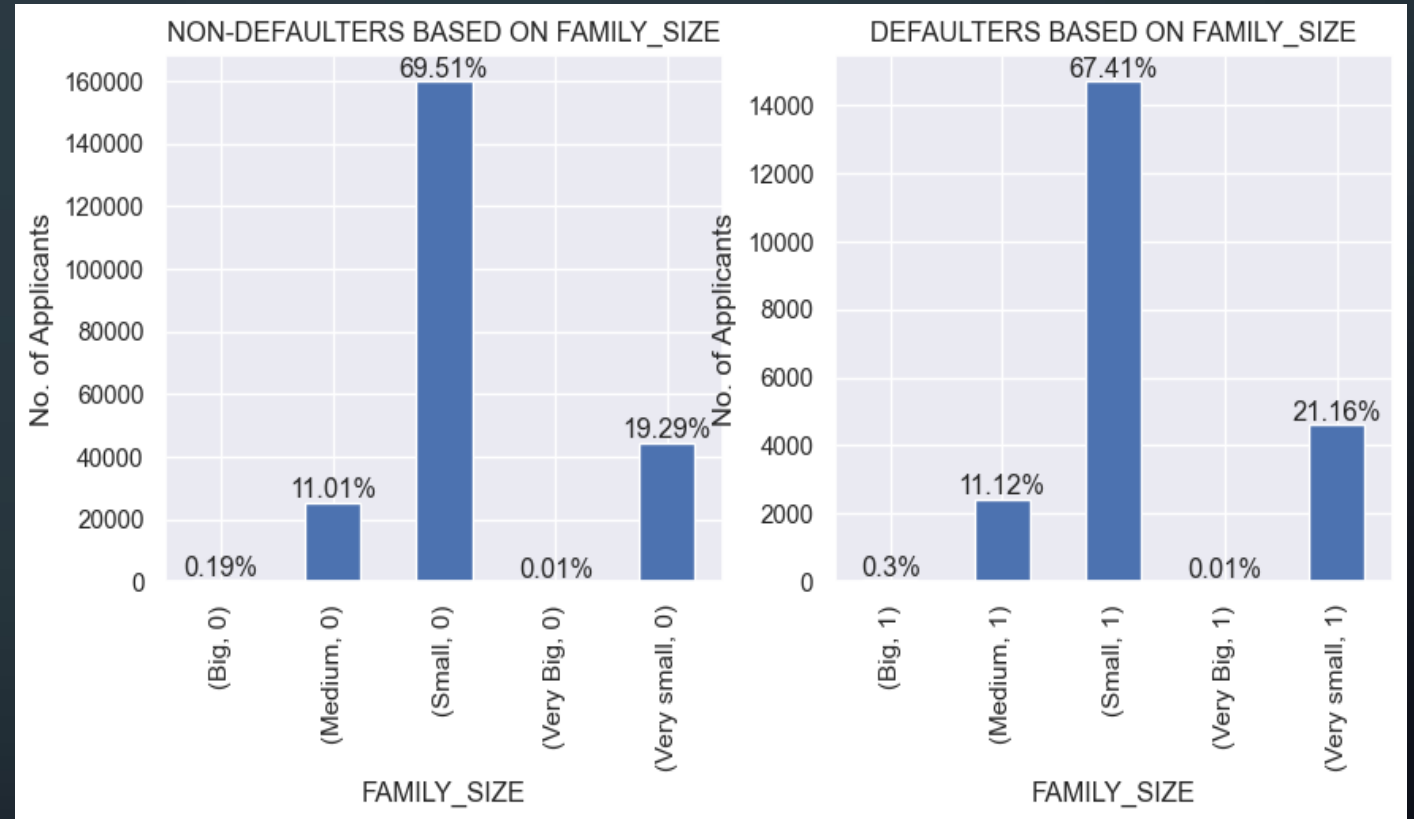
DEFAULTERS & NON-DEFAULTERS BASED ON INCOME RANGE

From the chart we can depict that High Income Range people are more likely to default.



DEFAULTERS & NON-DEFAULTERS BASED ON FAMILY SIZE

From the chart we can depict that the Small family Size are more likely to default.

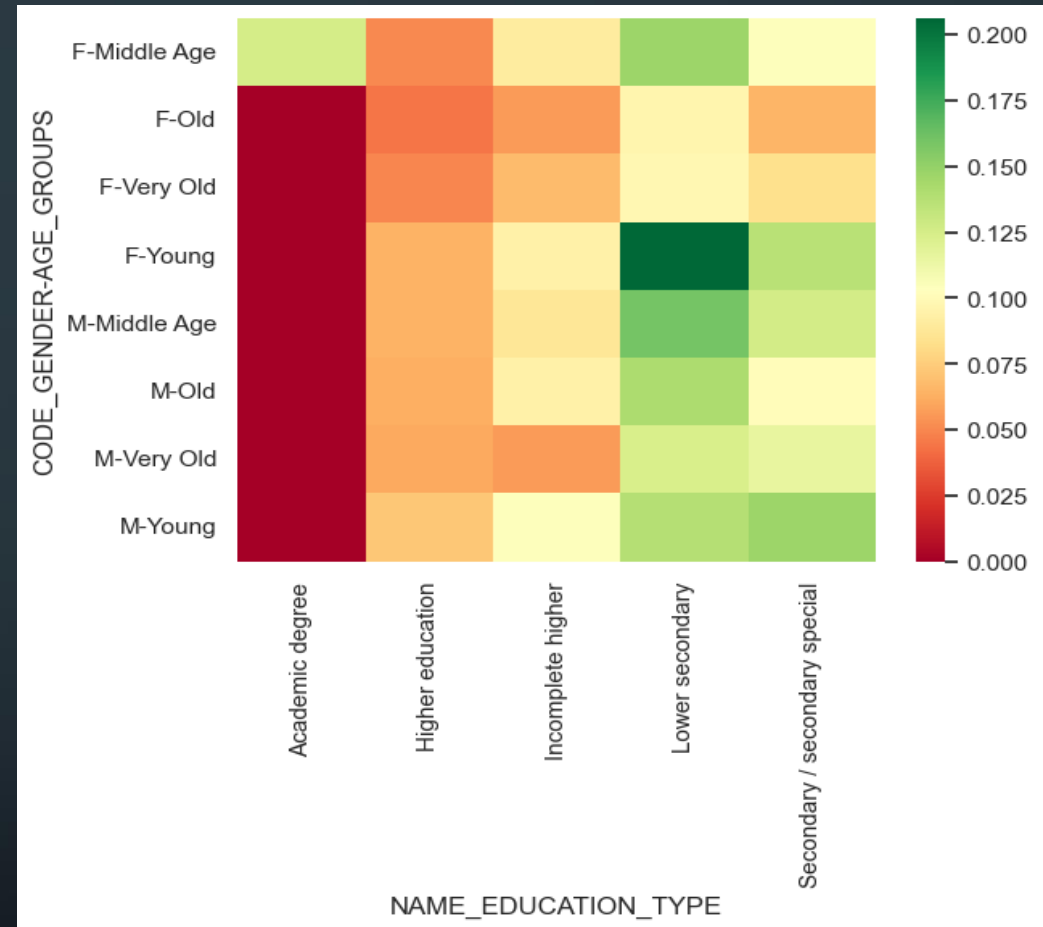


The background is a dark blue gradient. In the center, there are three concentric circles of increasing size, each with a lighter blue tint. The corners of the image are decorated with white, stylized circuit board traces and small circles, resembling electronic components or data paths.

MULTI VARIATE ANALYSIS

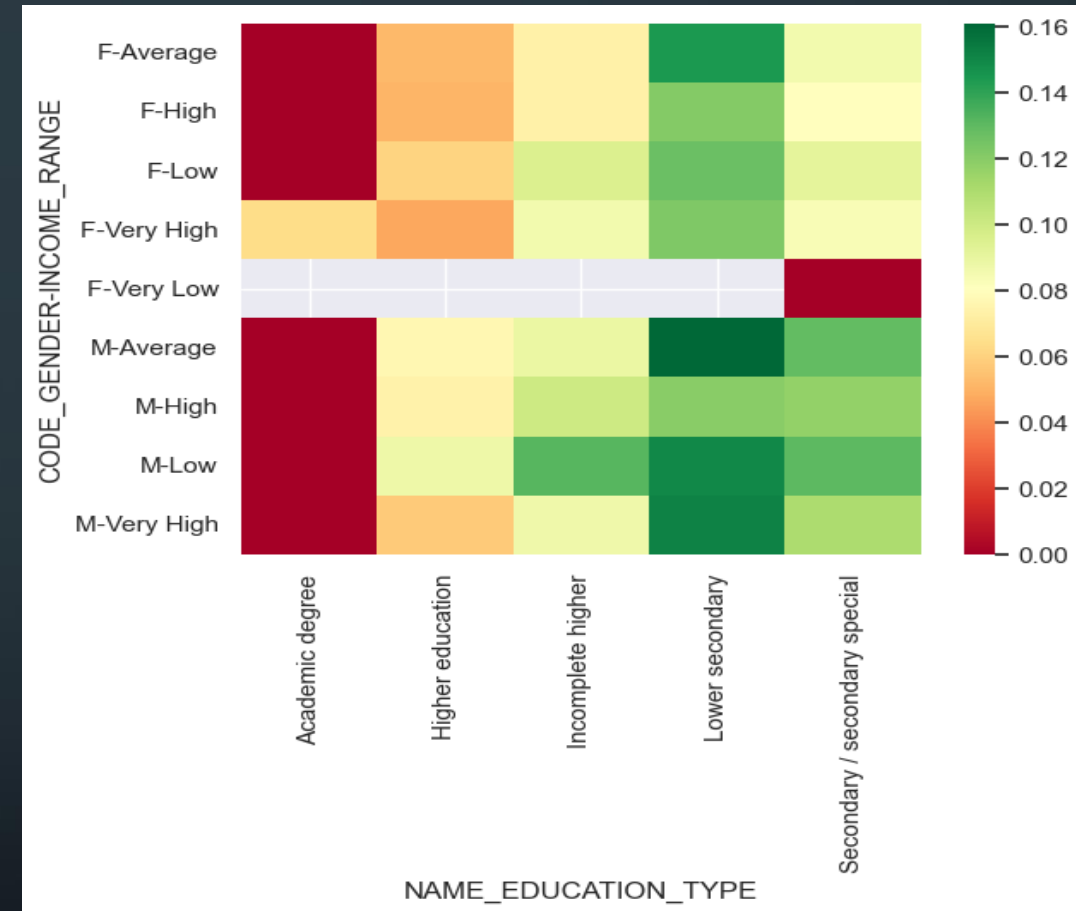
GENDER & AGE_GROUPS AGAINST EDUCATION TYPE

1. From the heat map, we can depict that people who have completed Academic degree are generally less likely to default irrespective of the GENDER & INCOME RANGE.
2. Female who are young and completed lower Secondary Education type are more likely to default.



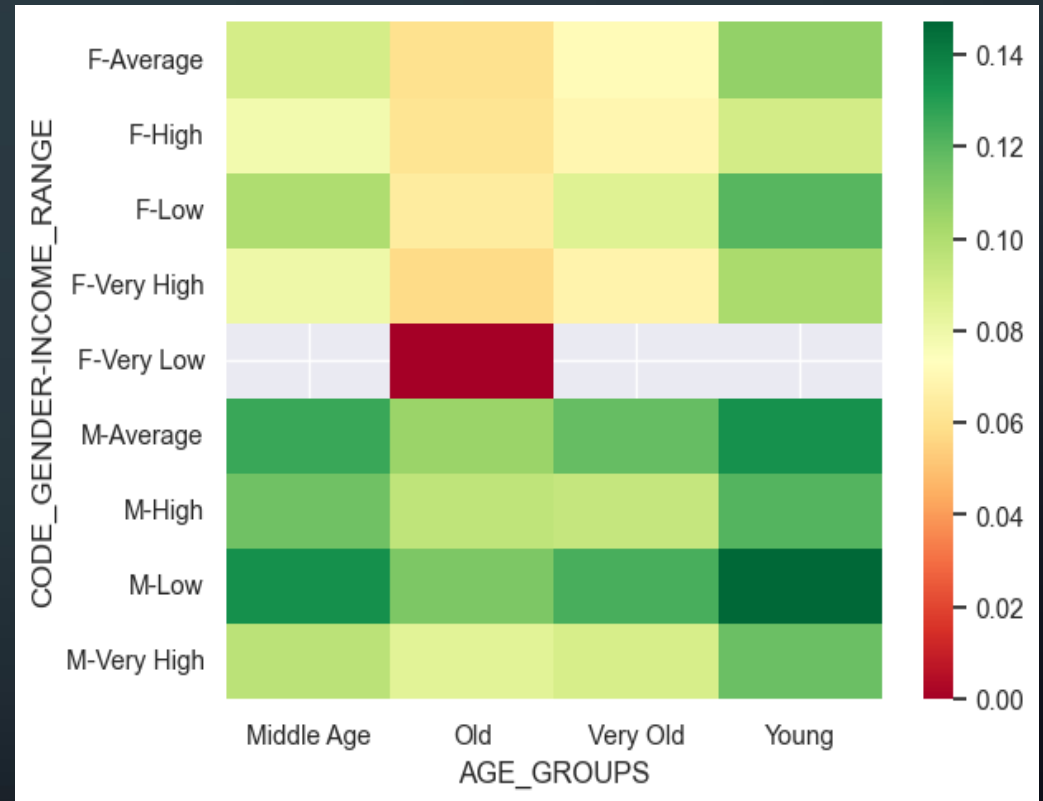
GENDER & INCOME RANGE AGAINST EDUCATION TYPE

1. From the heat map, we can depict that people who have completed Academic degree are generally less likely to default irrespective of the GENDER & INCOME RANGE.
2. Male who are in Average Income Range and completed lower Secondary Education type are more likely to default.

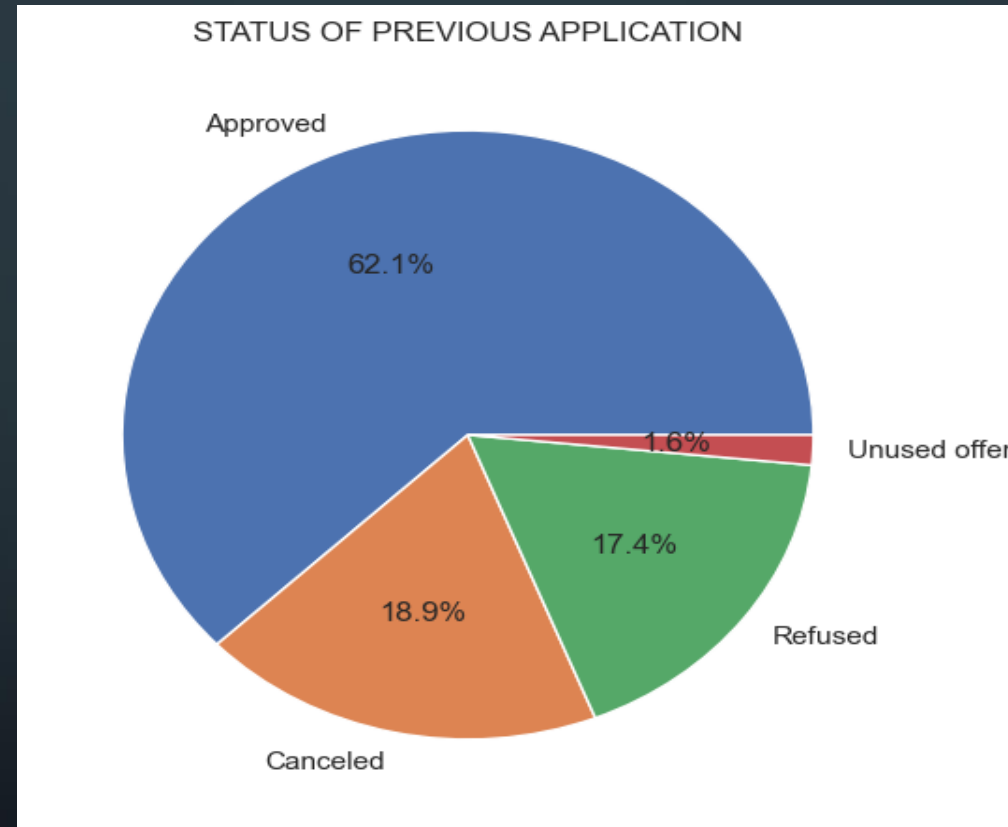


GENDER & INCOME RANGE AGAINST AGE GROUPS

From the heat map, we can depict that Male applicant who are young and in lower income Range are more likely to default.



STATUS OF PREVIOUS APPLICATION DATA

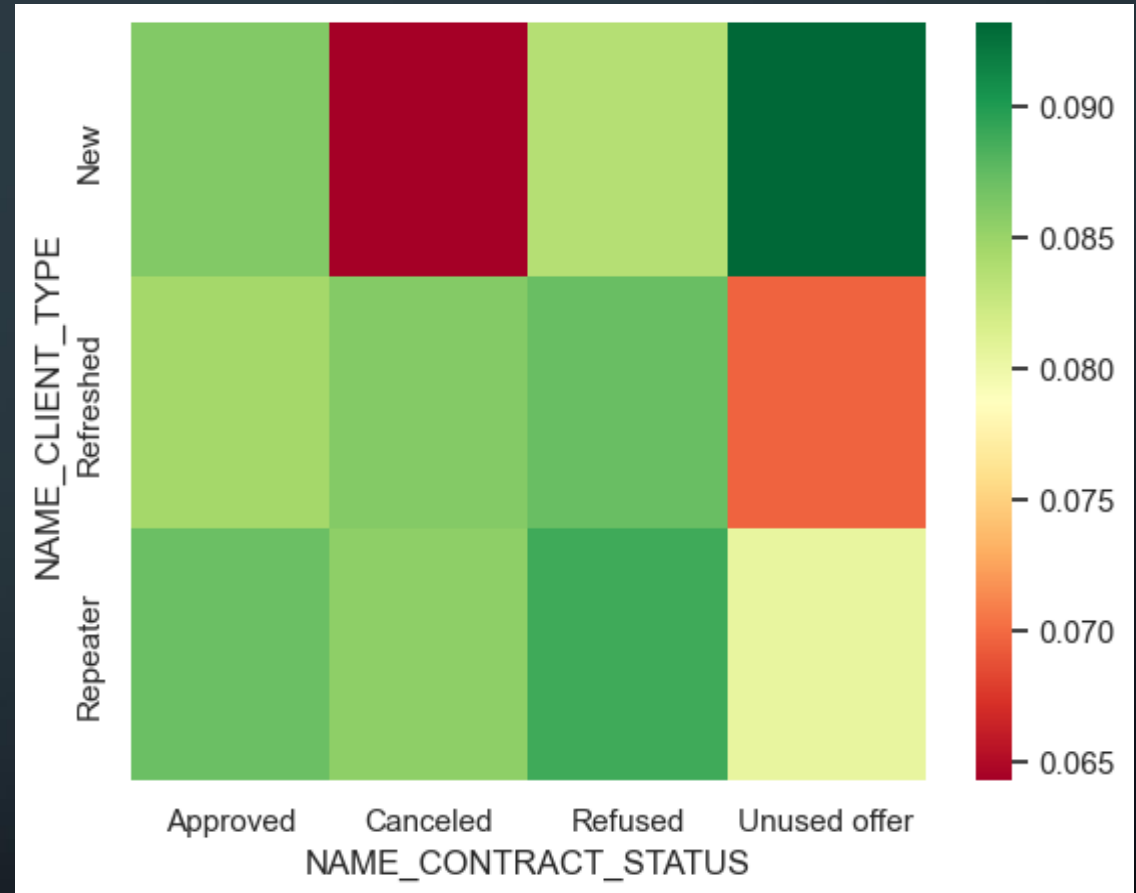


APPLICATION_DATA
+
PREVIOUS_APPLICATION_DATA

INSIGHTS

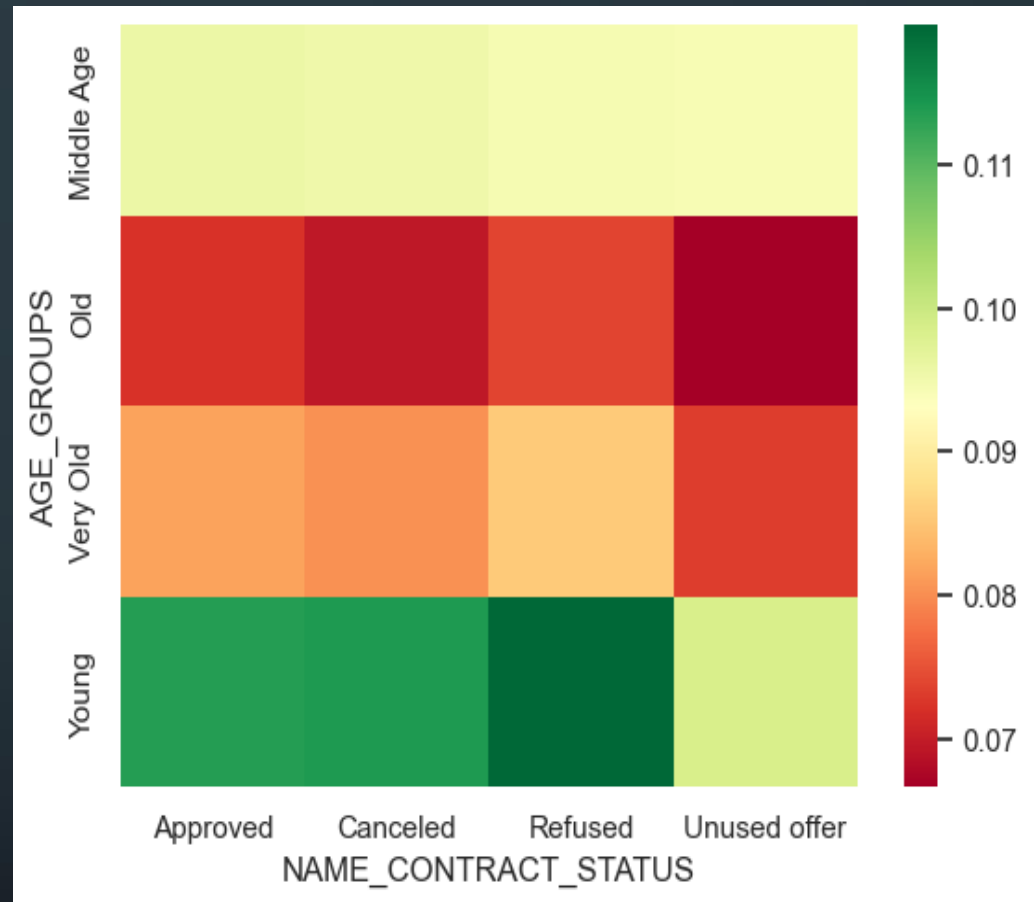
CLIENT TYPE AGAINST CLIENT STATUS

From the heat map, we can depict that New applicant who have canceled the previous loan application are most likely to default.



AGE GROUPS AGAINST CLIENT STATUS

From the heat map, we can depict that young people whose the previous loan application refused are most likely to default.



SUMMARY

- **The Female Applicants are more than Male Applicants.**
- **The loan applications are higher from people whose source of income is by working.**
- **The defaulters are little higher in cash loans.**
- **The working categories are more likely to default.**
- **The Small family Size and Female who are young and completed lower Secondary Education type are more likely to default.**
- People who have completed Academic degree are generally less likely to default irrespective of the GENDER & INCOME RANGE.
- New applicant who have canceled the previous loan application are most likely to default.
- Young people whose the previous loan application refused are most likely to default

Recommendations

- The people who have completed Academic degree are generally less likely to default irrespective of the Gender, Income range & Age group.
- People living in the “Regional Rating-1” are generally less likely to default.
- People working as State Servant are generally less likely to default.
- People living in the “Very Highly Populated” area are generally less likely to default.
- People who have applied for revolving type of loans are generally less likely to default.