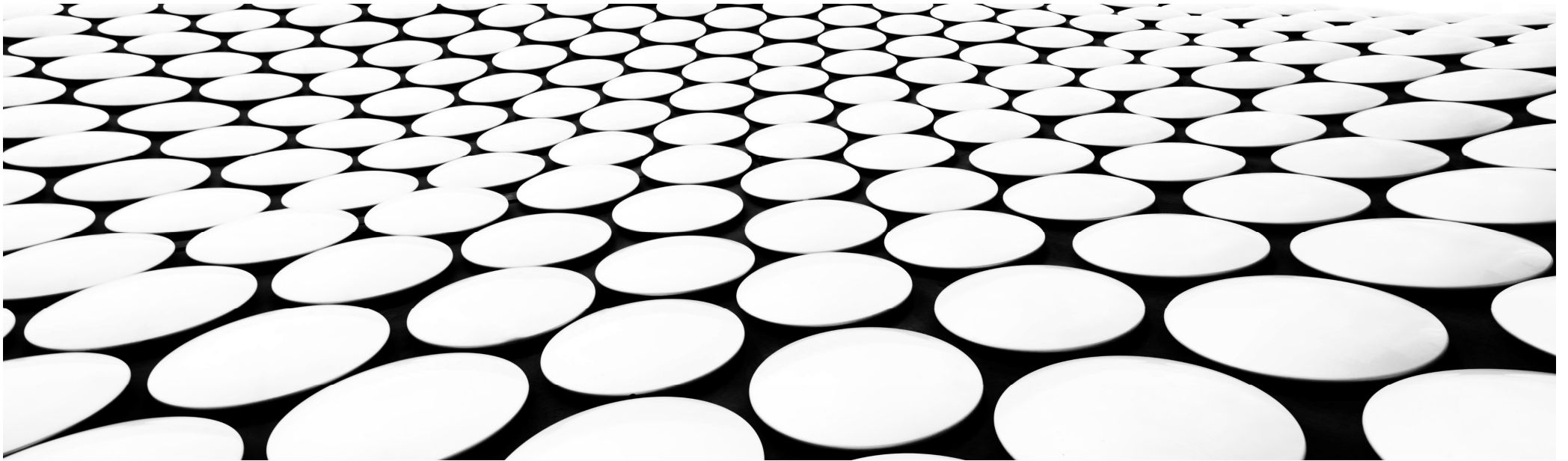

EDA ON LOAN RISK ANALYSIS

BY SHOYEB PATWEKAR



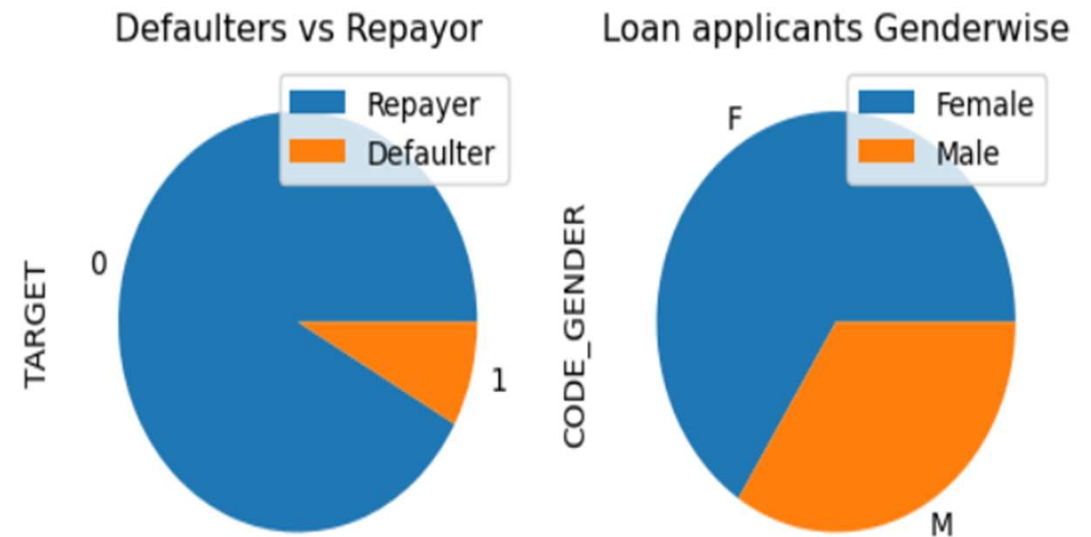
OBJECTIVE

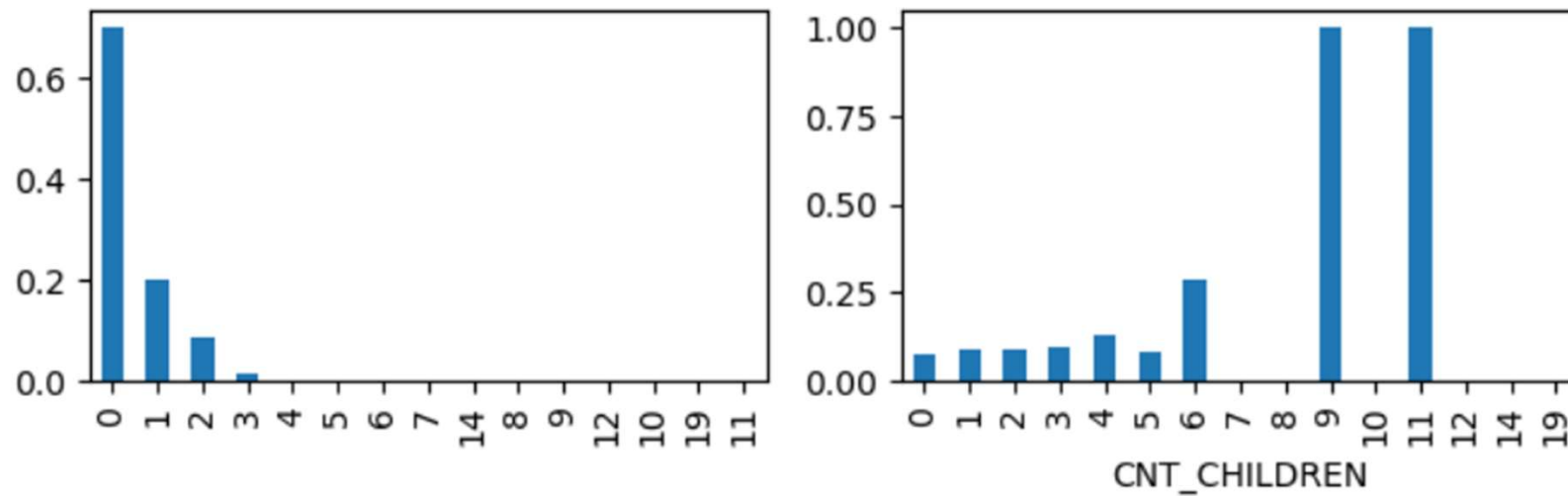
- Bank wants to perform risk based EDA for defaulter loan applicants
- Identify the patterns for defaulters in order to minimize the loss
- Identify the repayors in order to maximize the benefits

- Approach :
 - Perform Univariate analysis
 - Perform Multivariate analysis

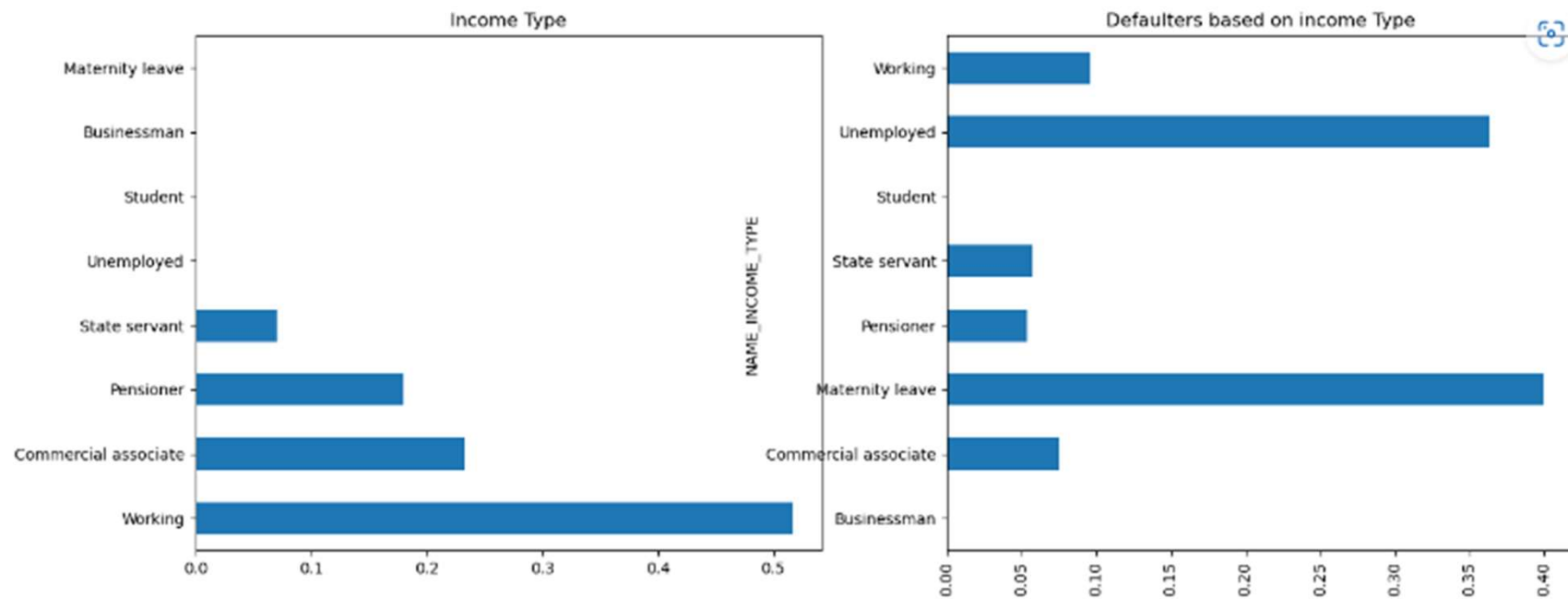
DATA AVAILABILITY IN THE DATASET

- 91 % are repayer and 9 % are defaulters
- Female Loan applications are more compared to Male
- We have 1:10 imbalance dataset.



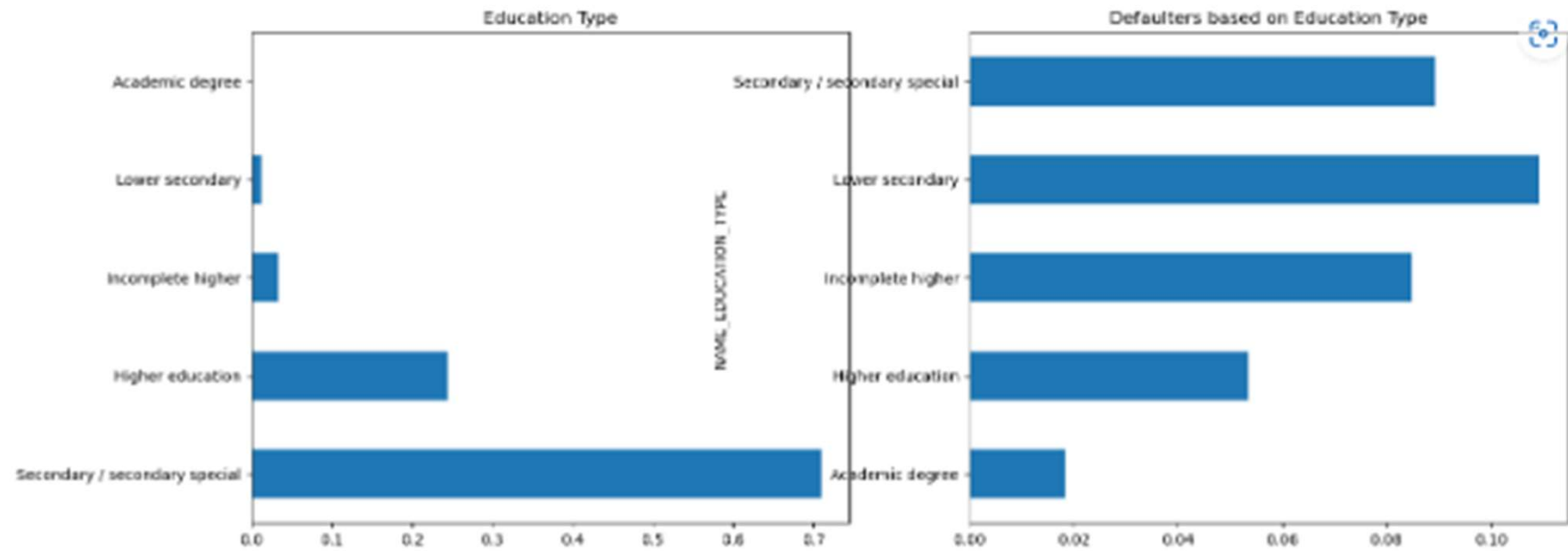


HIGHER THE COUNT OF CHILDREN AND FAMILY MEMBERS HIGHER THE DEFAULTER PERCENTAGE



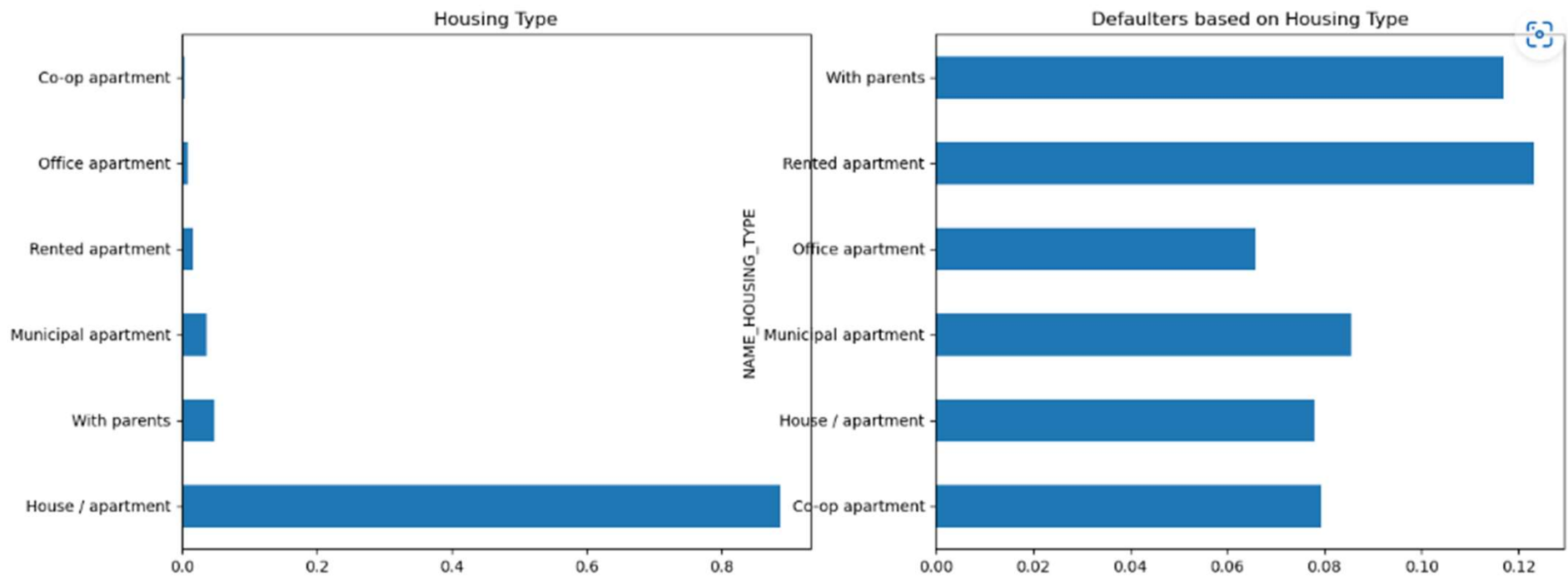
DEFAULTER VS INCOME TYPE

People who are on Maternity leave and unemployed are defaulting the most



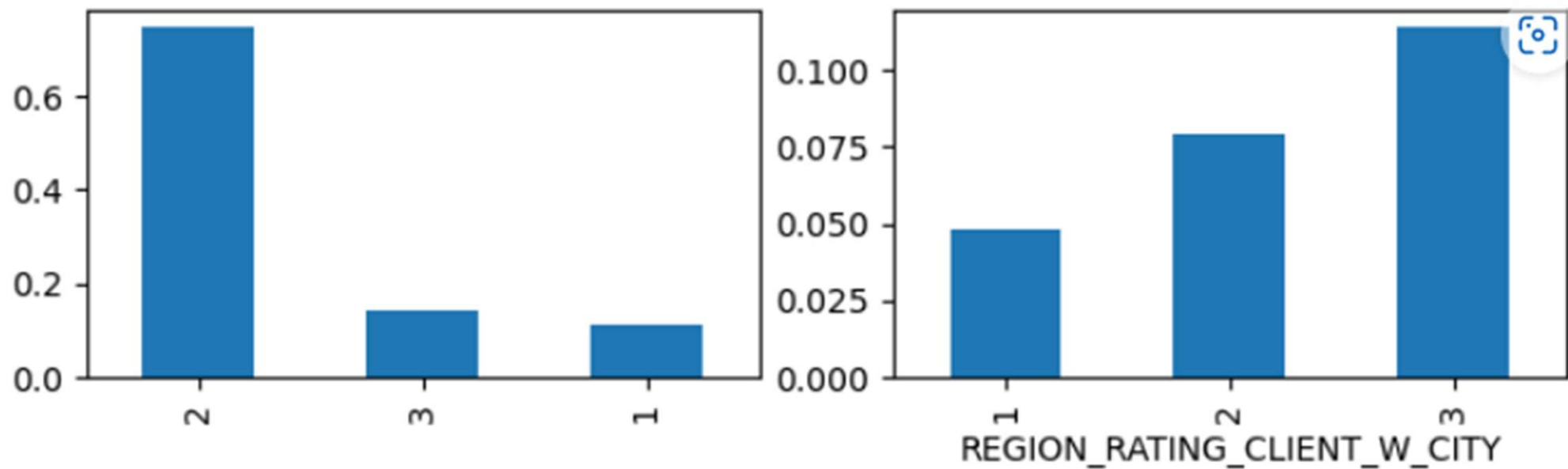
EDUCATION TYPE VS DEFAULTERS

There is high number of defaulters with lower education



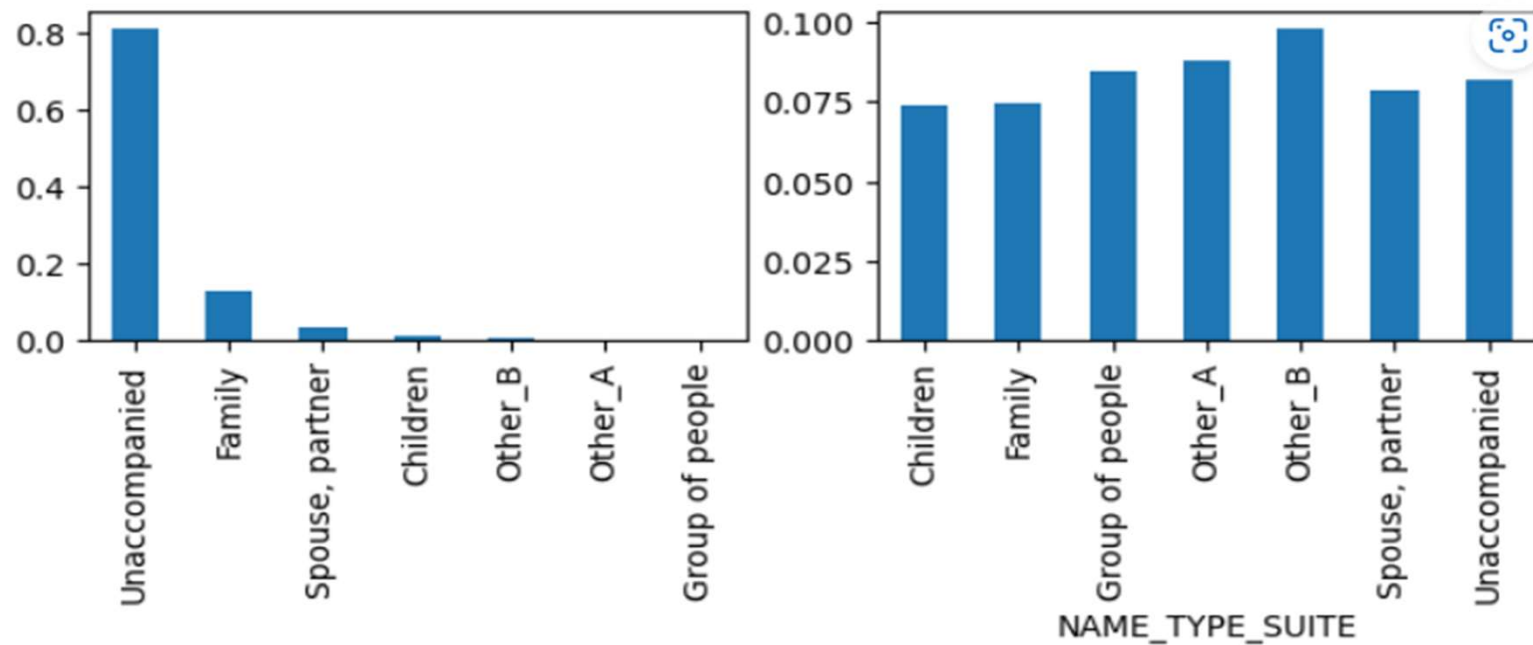
HOUSING TYPE

- People who are living in rented apartments and living With Parents are defaulting the most
- Less defaulters who are living in Office apartments



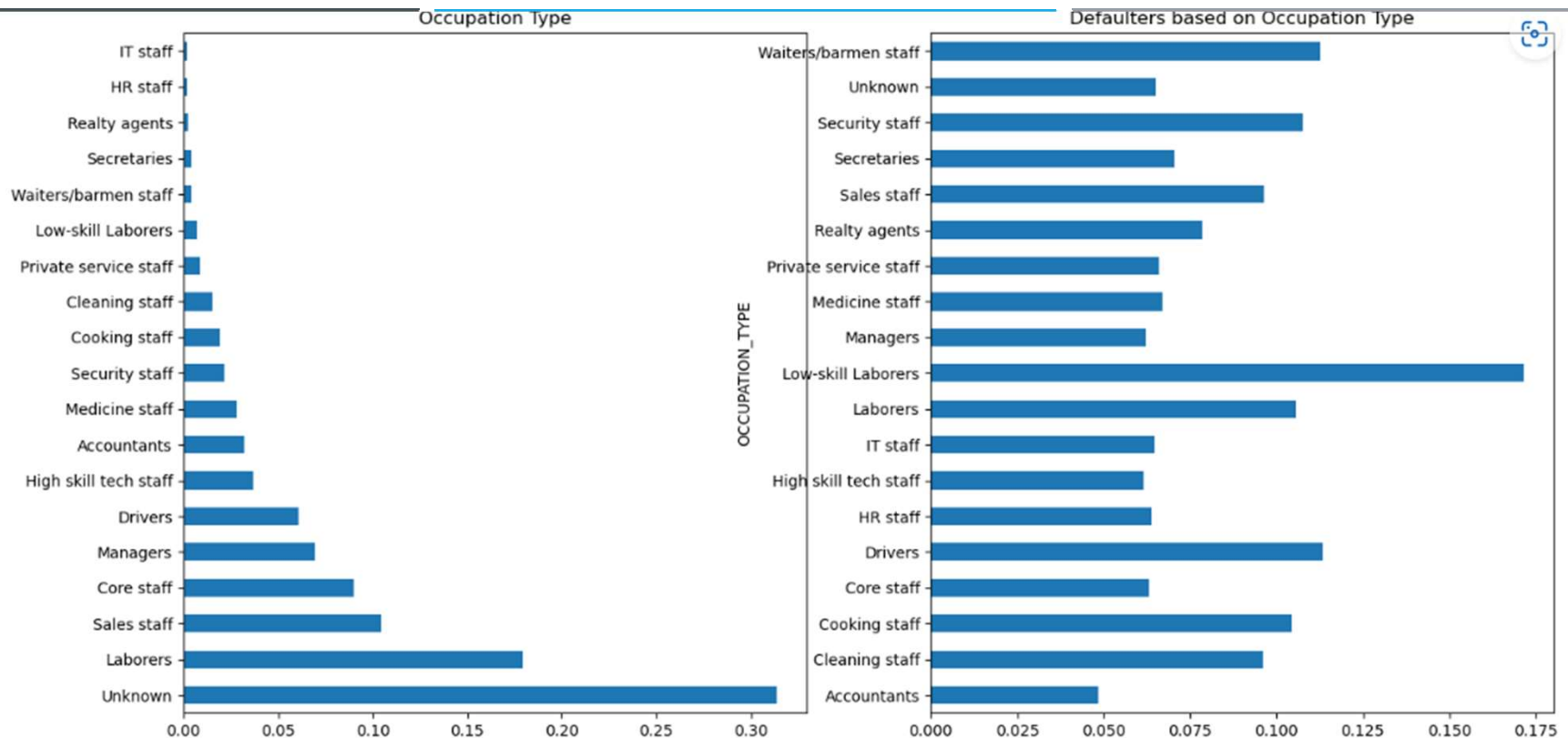
APPLICANT LIVING IN REGION

Lower the rating higher the default percentage



APPLICANT ACCOMPANIED BY

People applying along with other people are likely to be defaulters



OCCUPATION TYPE

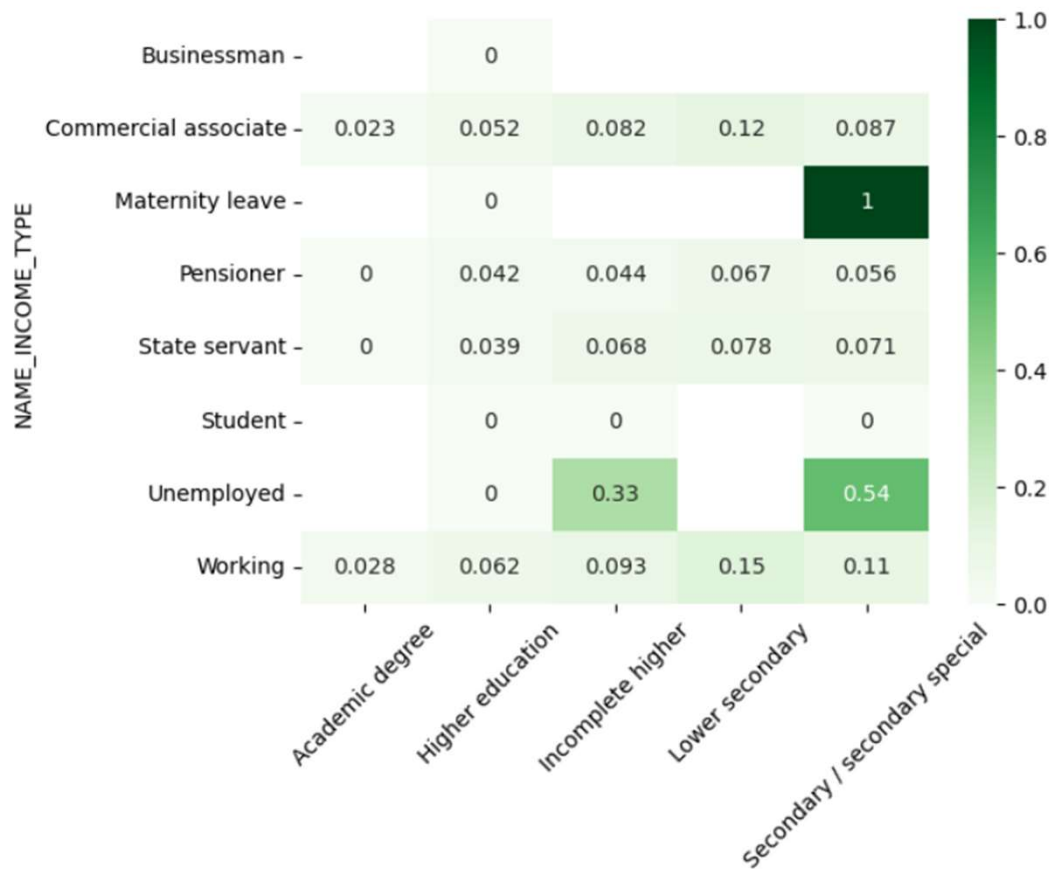
Low skill laborers are most like to default . Followed by drivers, waiter, barmen staff, labors, cooking staff and cleaning staff.

Also observed that highest number of defaulters for Org are Transport: type 3 with 16%. Industry: type 13 and Industry: type 8

Co relation between numerical variables

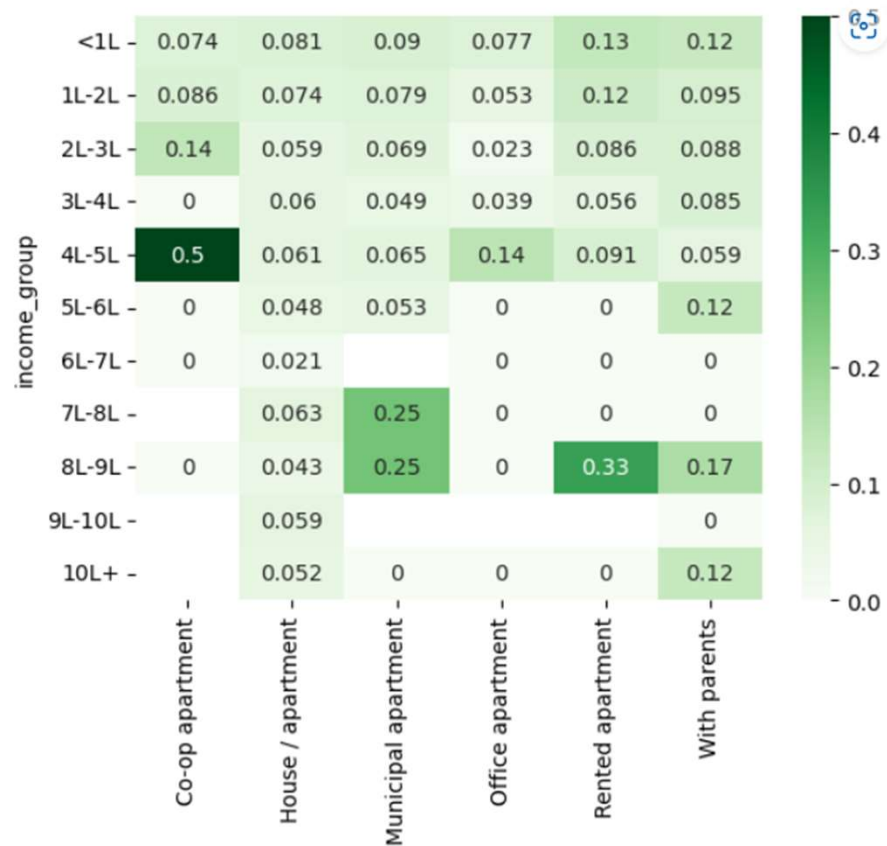


Income Type vs Education vs Defaulter



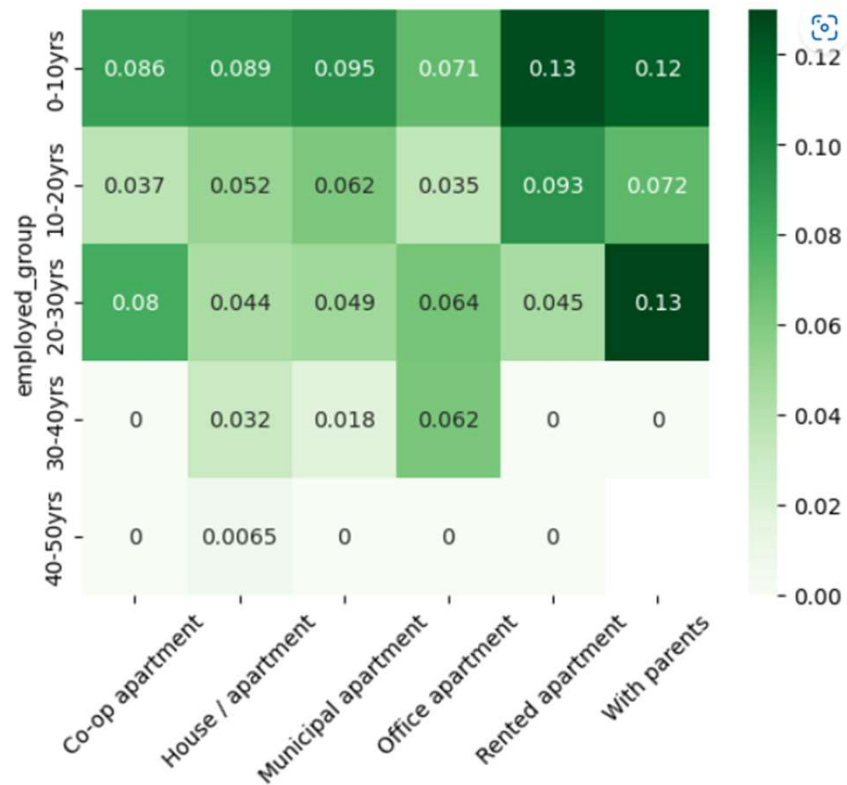
- People on maternity leave with Secondary education have highest level of defaulters
- Unemployed People with Incomplete are high defaults
- Higher education and Academic degree have low defaulters
- State servant , Pensioner and Commercial associates have low defaulters

Income vs Housing vs Defaulter



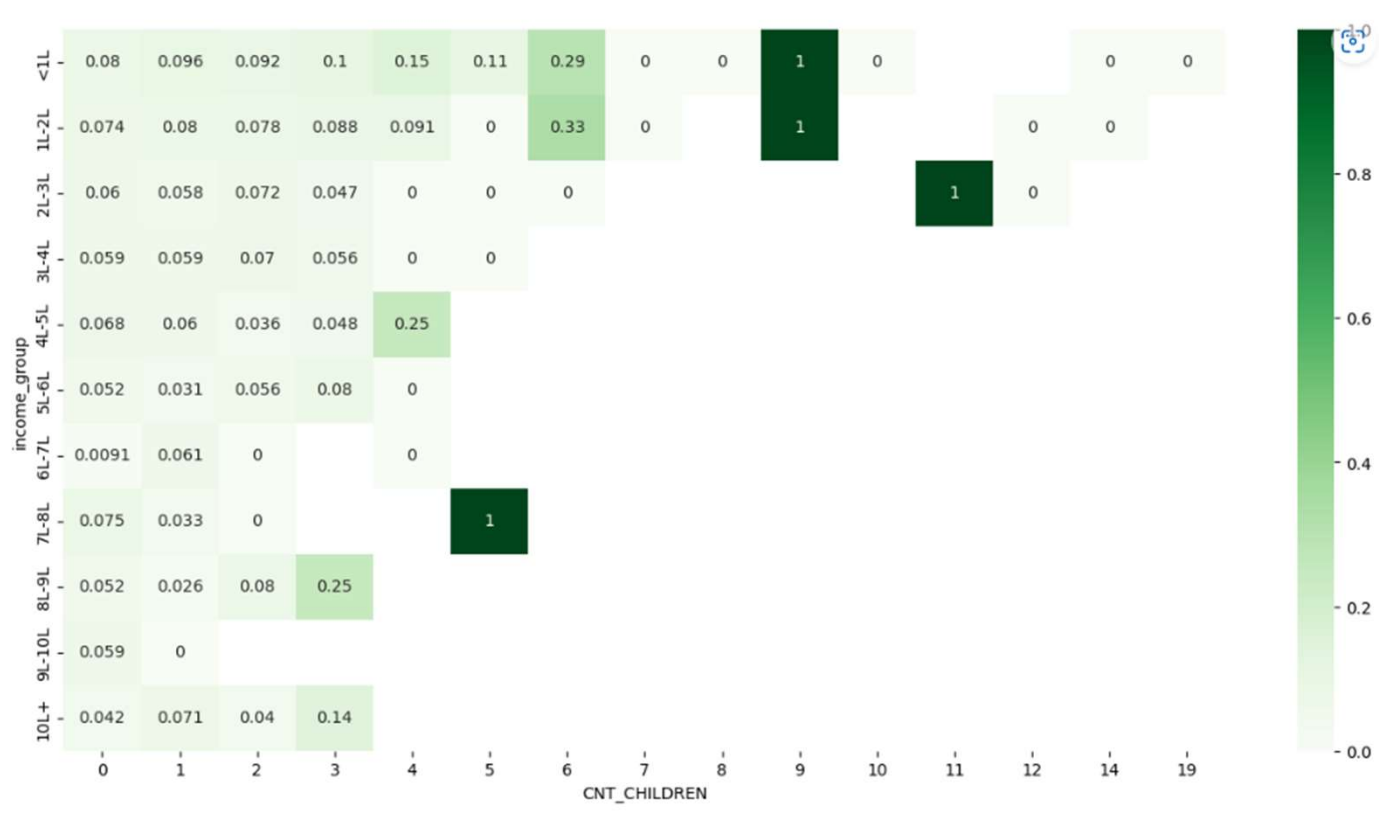
- Who are living in Co-op apartments with income between 4L-5L have higher rate of defaulters
- Similarly
- Applicants living in House or apartments have less defaulters

Experience vs Type of apartment



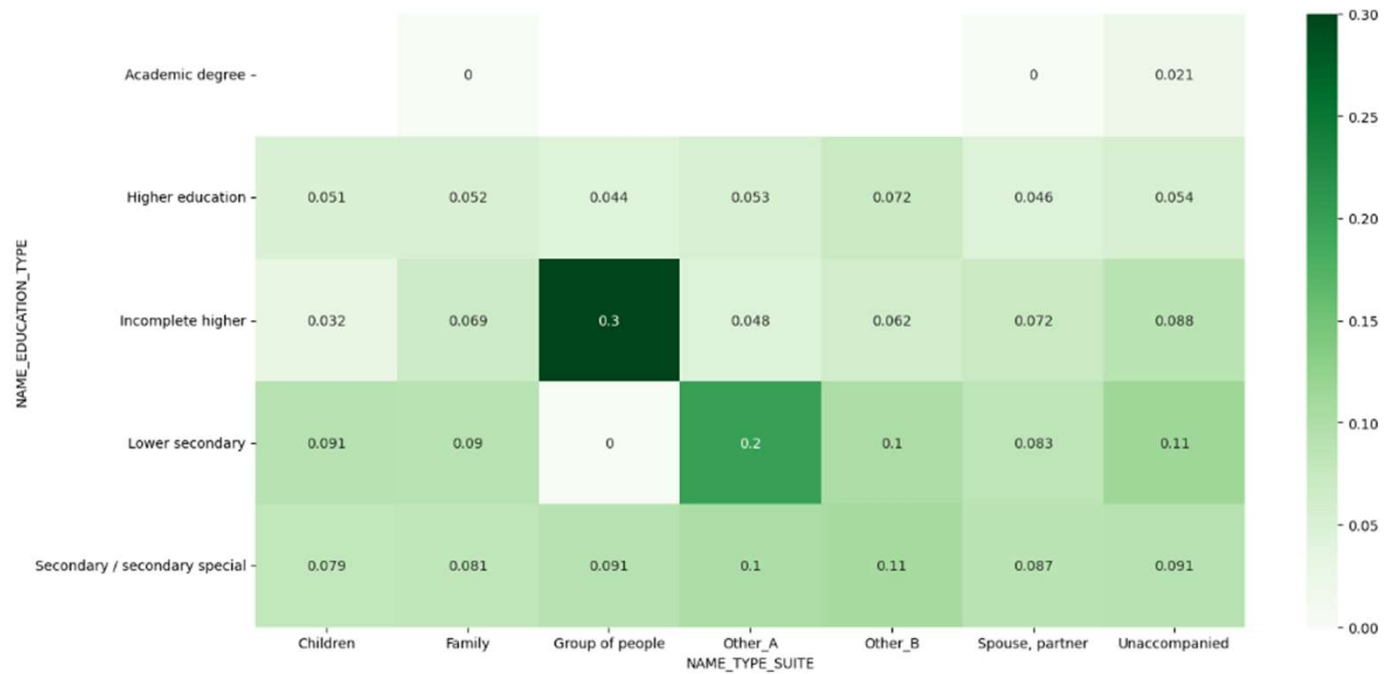
- Those having less experience are more likely to default. Loan applicants are higher in this category

Income vs count of children



People with less salary and high count of children are likely to default.

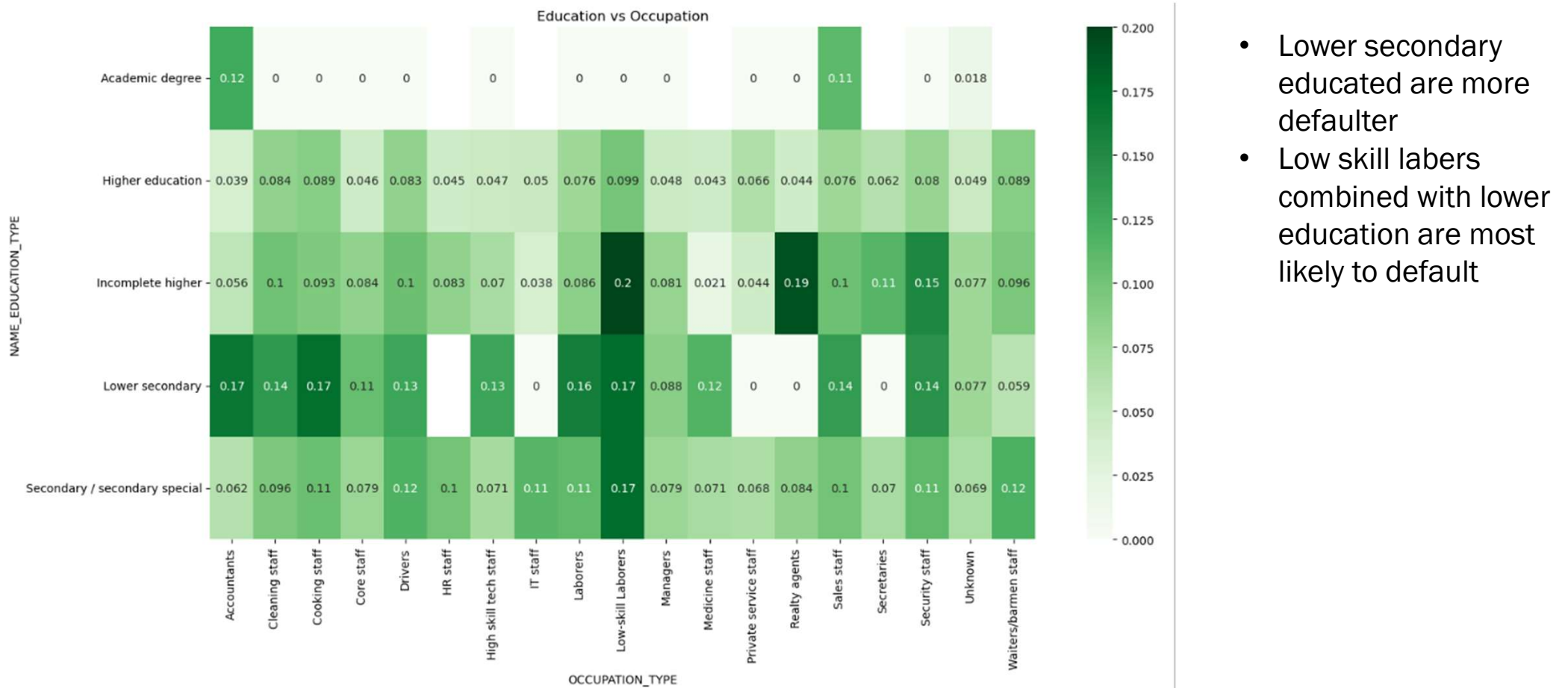
Education vs Name type

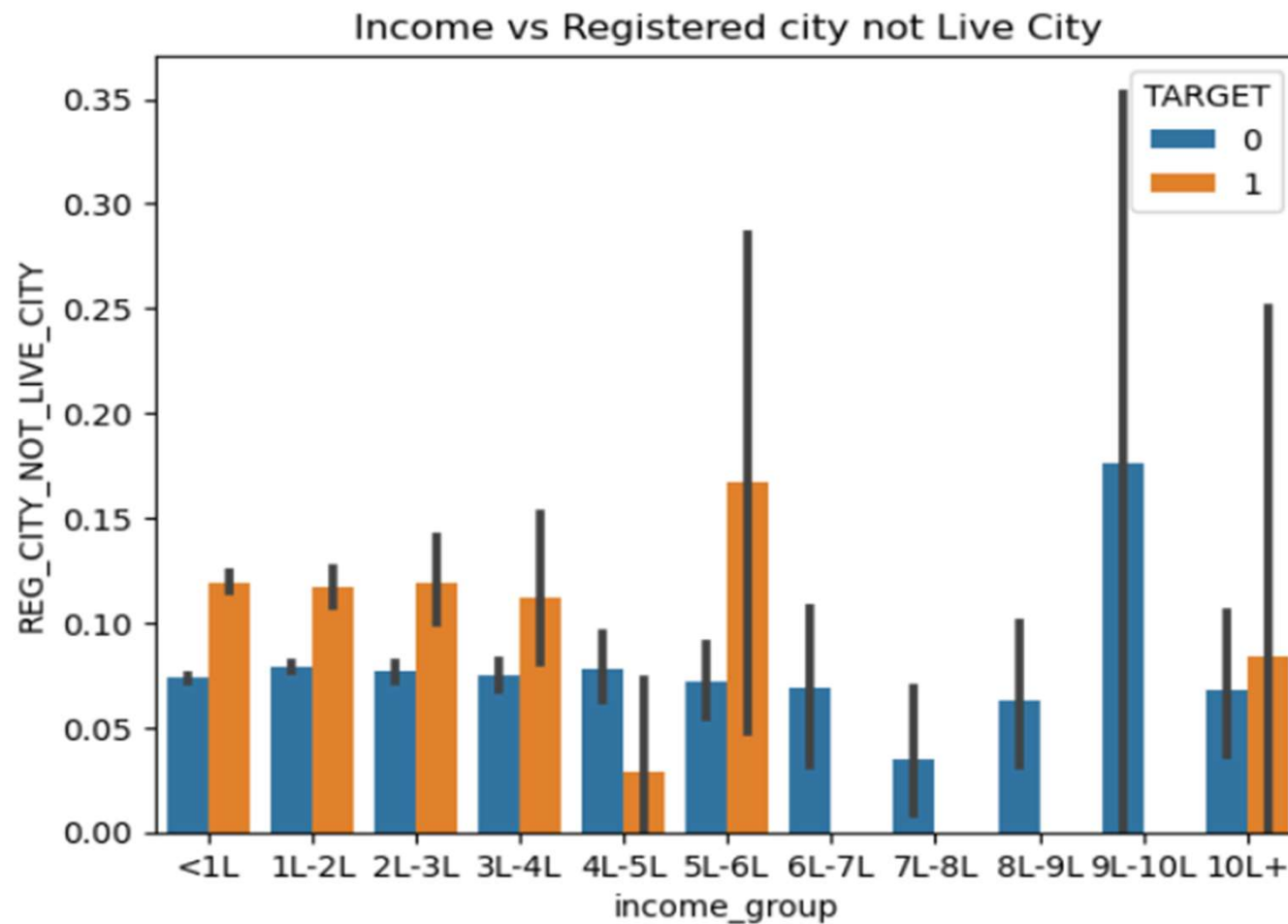


EDUCATION VS INCOME TYPE



Education vs Occupation

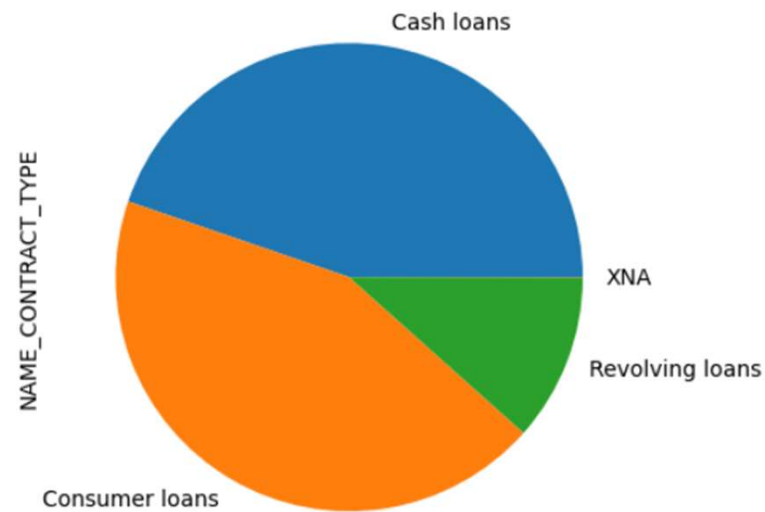




Income range 5L-6L
who is not from
registered city as
currently living has
higher chances of
defaulting

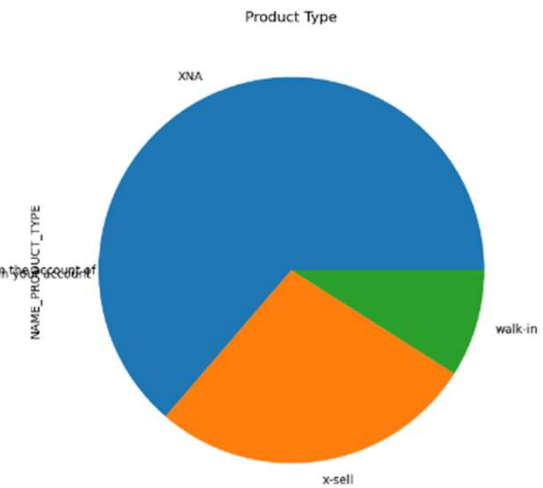
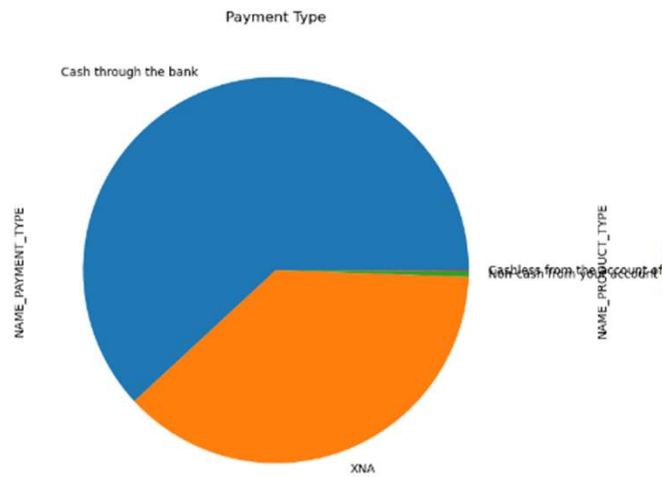
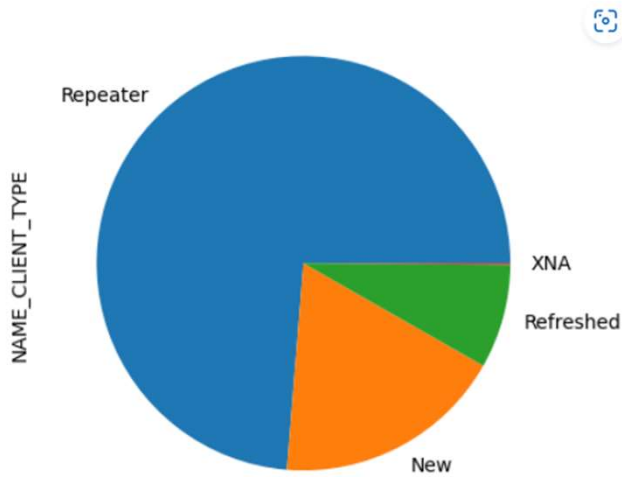
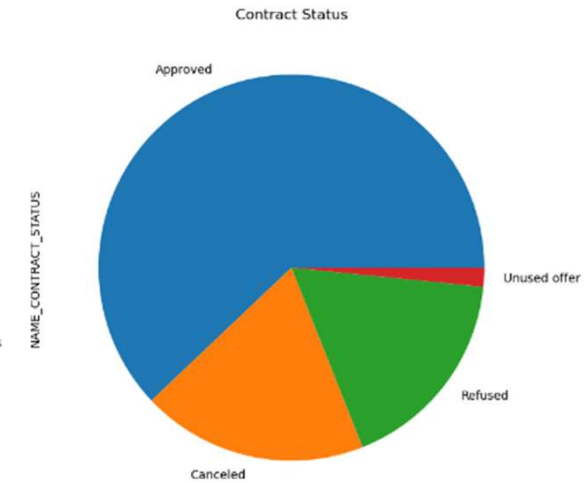
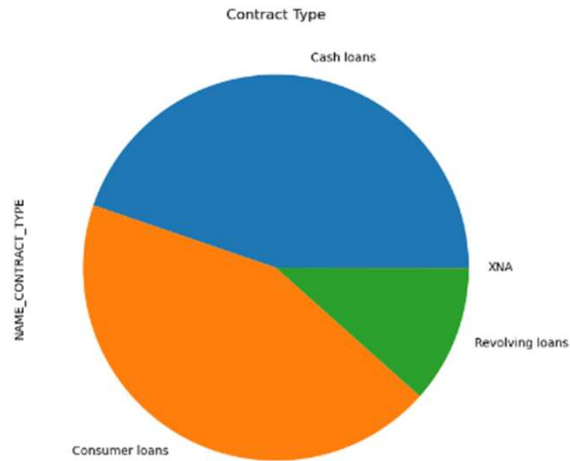
DATA AVAILABILITY IN THE PREVIOUS DATASET

- Data is balanced in terms of type of loan
- Cash Loans =45%
- Consumer loans – 44%
- Revolving loans -11 %

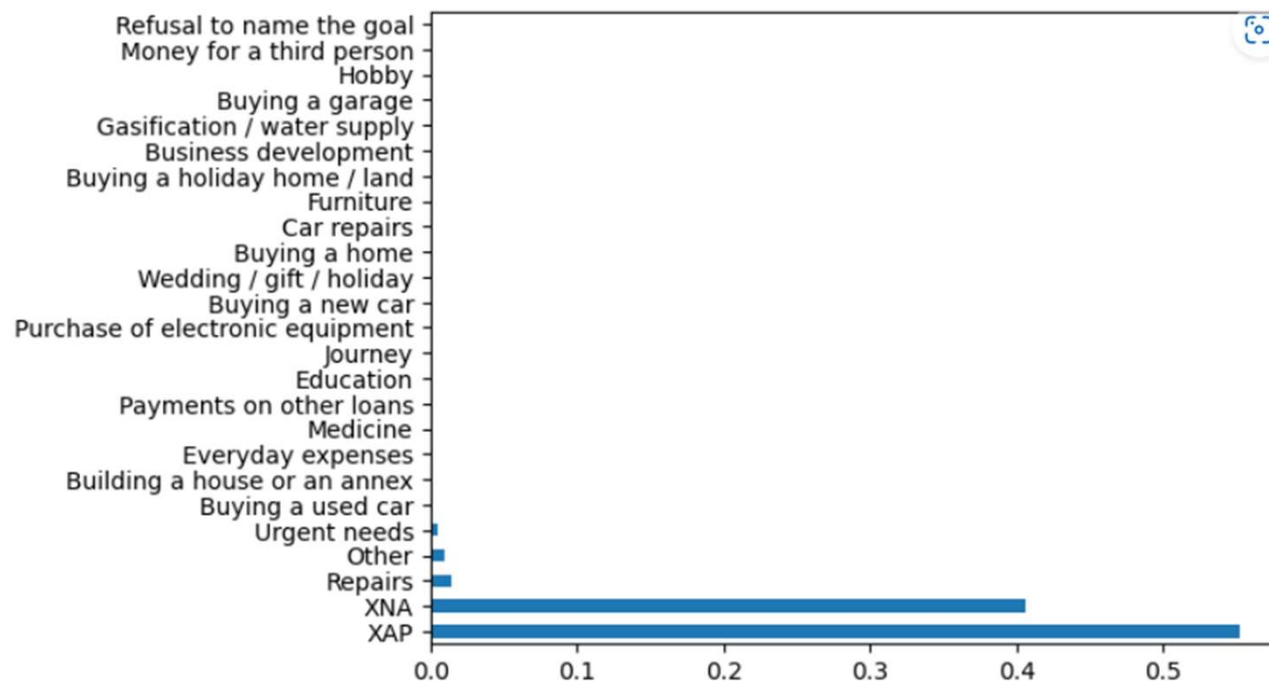


Data distribution for

- 1.Contract Type
- 2.Contract Status
- 3.Payment Type
- 4.Product Type
- 5.Name Type(whether client is new)



LOAN PURPOSE IN PREVIOUS APPLICATION DATA



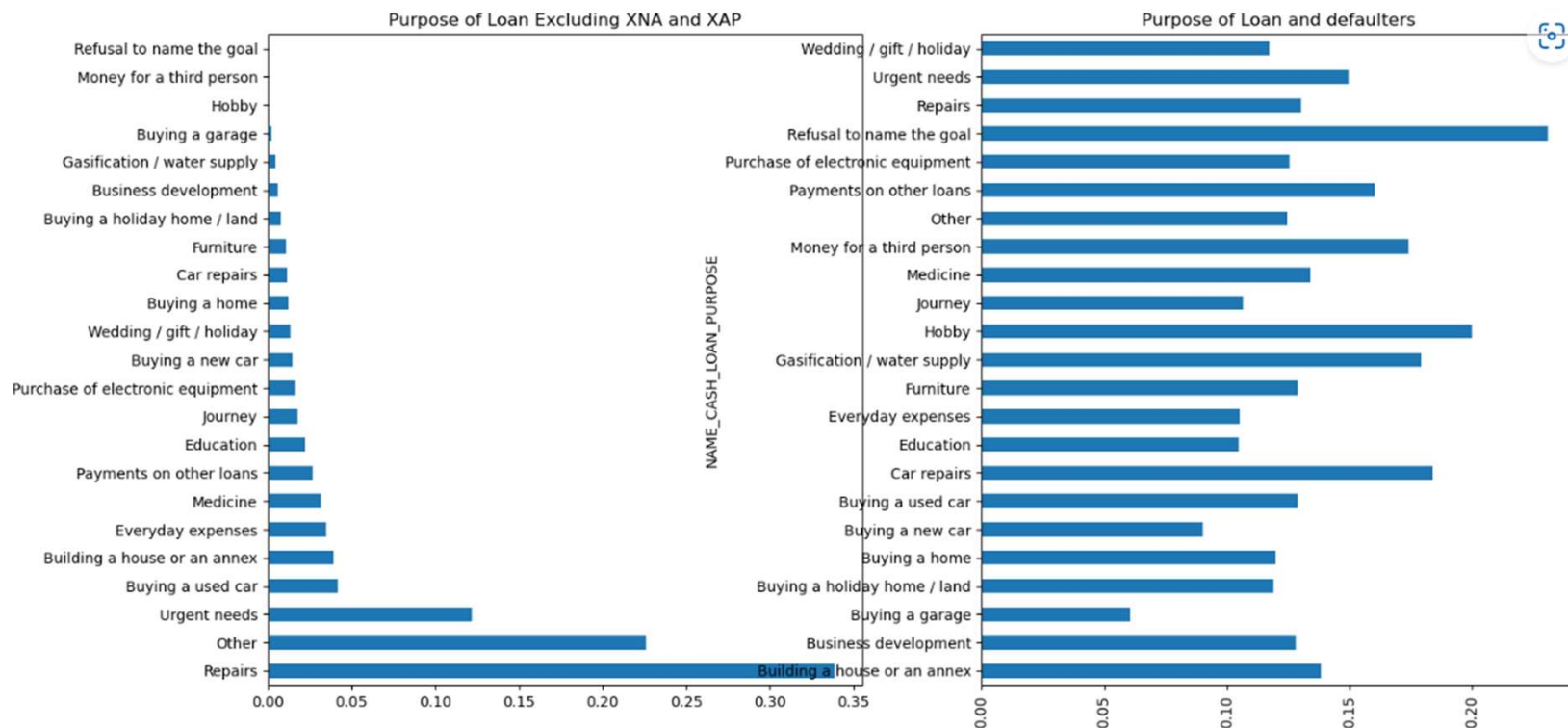
1) Most loans are taken for XAP and XNA, which means its unknown. Which might be incorrect

CORRELATION BETWEEN VARIABLES IN PREVIOUS APP



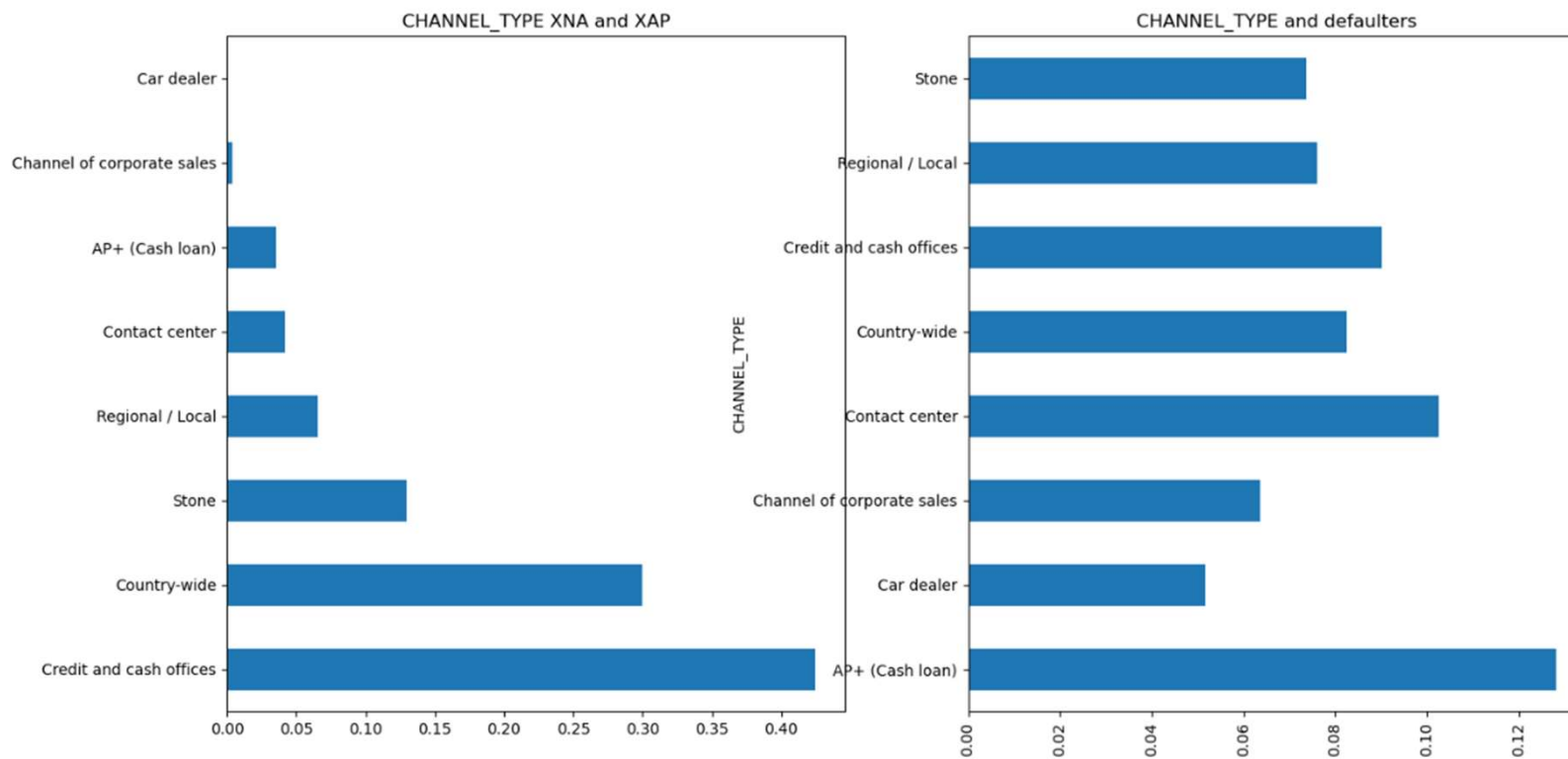
High relation observed between annuity, application amount, Credit amount and goods price

PURPOSE OF THE LOAN



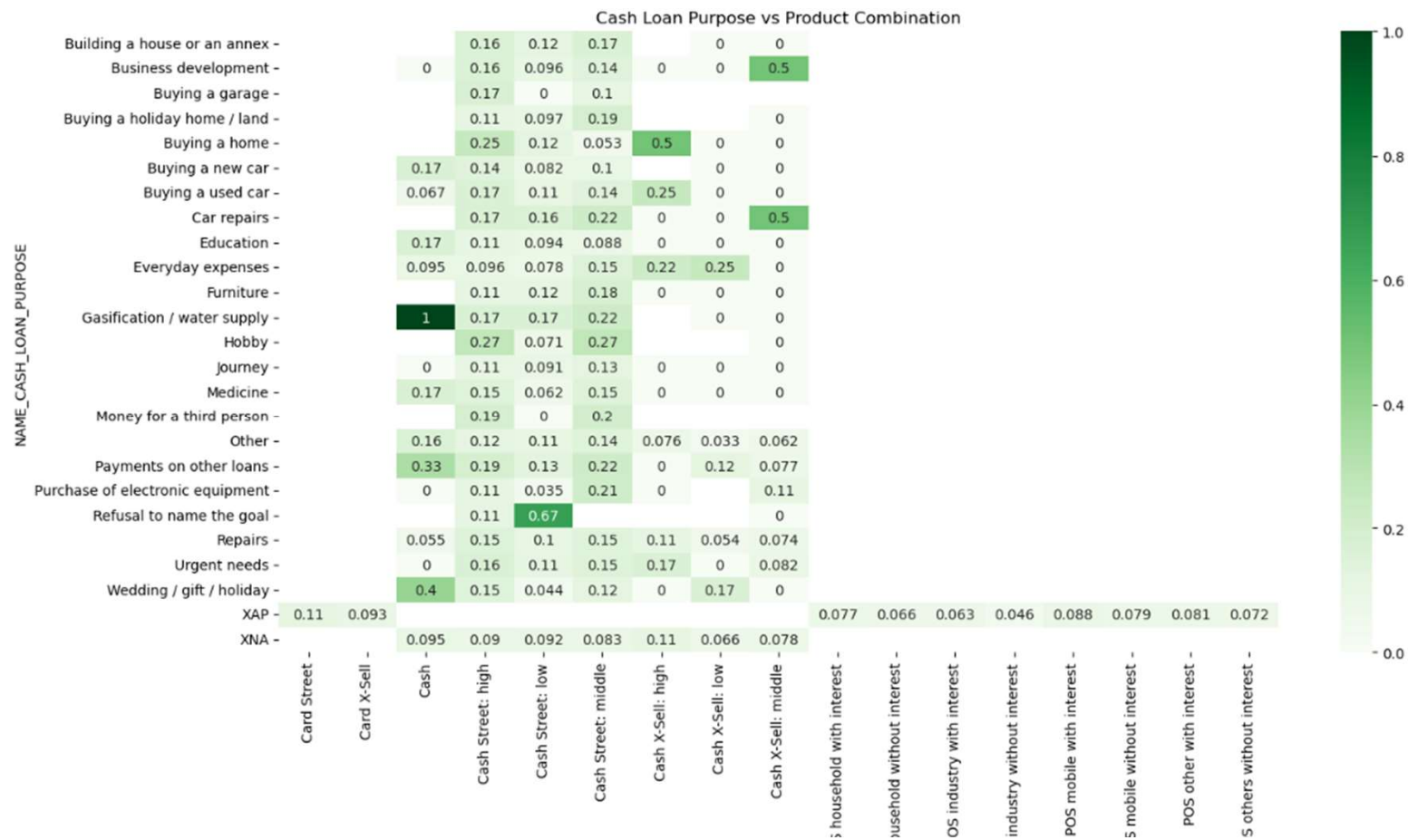
- People who refused to purpose tend to default more
- Next is Hobby and Car repairs

CHANNEL TYPE FOR LOAN



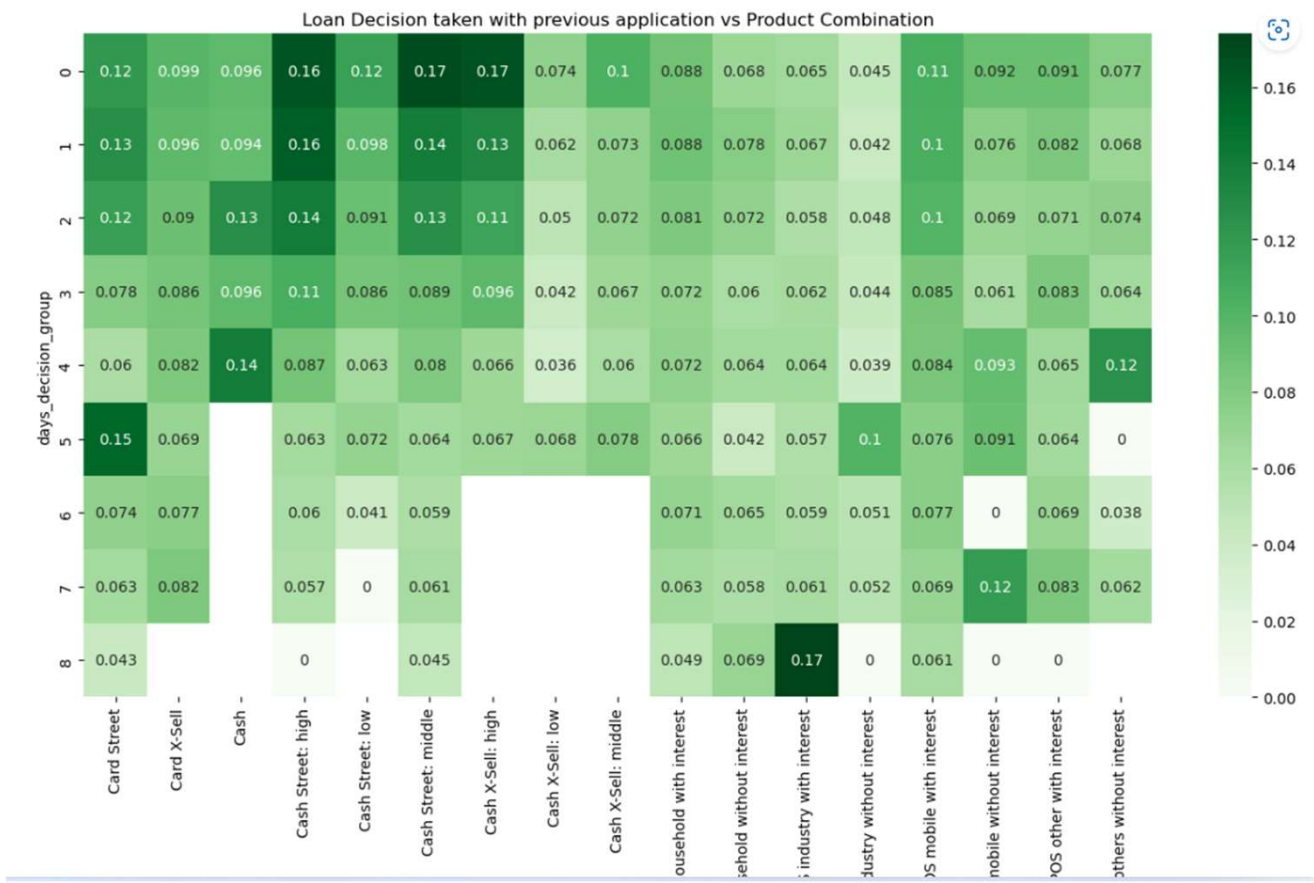
- AP+ Cash loans have higher rate of defaulters

CASH LOAN PURPOSE VS PRODUCT COMBINATION



- Cash and Gas/water supply have 100 % default rate

LOAN DECISION FOR PREVIOUS AND CURRENT APPLICATION AGAINST PRODUCT



Less number of days –
more the defaulters

CONCLUSION

	Defaulters	Repayor
Family member and count of Children	High	Less
Education	Incomplete or lower	More Educated
Income Type	Maternity Leave, unemployed	Working, Businessmen, State servant , pensioner
Housing Type	Rented or living with parents	Office apartments
Region rating	3	1,2
Occupation	Low Skill Laborers, Drivers, barmen	Accountants, managers, High skill and core staff