Lending Club Case Study

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Problem Statement

- Apply risk analytics in banking and financial services on data that institution has collected tracked as history of loans.

- Main objective to prevent or define the parameters by which out client can identity a risky customer who most likely to defaults in repayment of loan such that can avoid lending money in order to save money and mitigate credit risk

- We as a data analyst expected here to identify the main driving variables using which can identify a defaulter matric form raw data after applying EDA

- To learn and understand how data is used to minimise the risk of losing money while lending to customers for financial system

Strategy Followed

Clean Data

- Drop columns with null values, all random values or single category value
- Convert values to proper int, float, date representations

Univariate Analysis

- Check distributions and frequencies of various numerical and categorical variables
- Create derived variables

Segmented Univariate Analysis

- Analyze variables against segments of other variables
- Create derived variables

Bi-Variate Analysis

- Do correlation analysis Check how two variables affect each other or a third variable -
- Analyze joint distributions

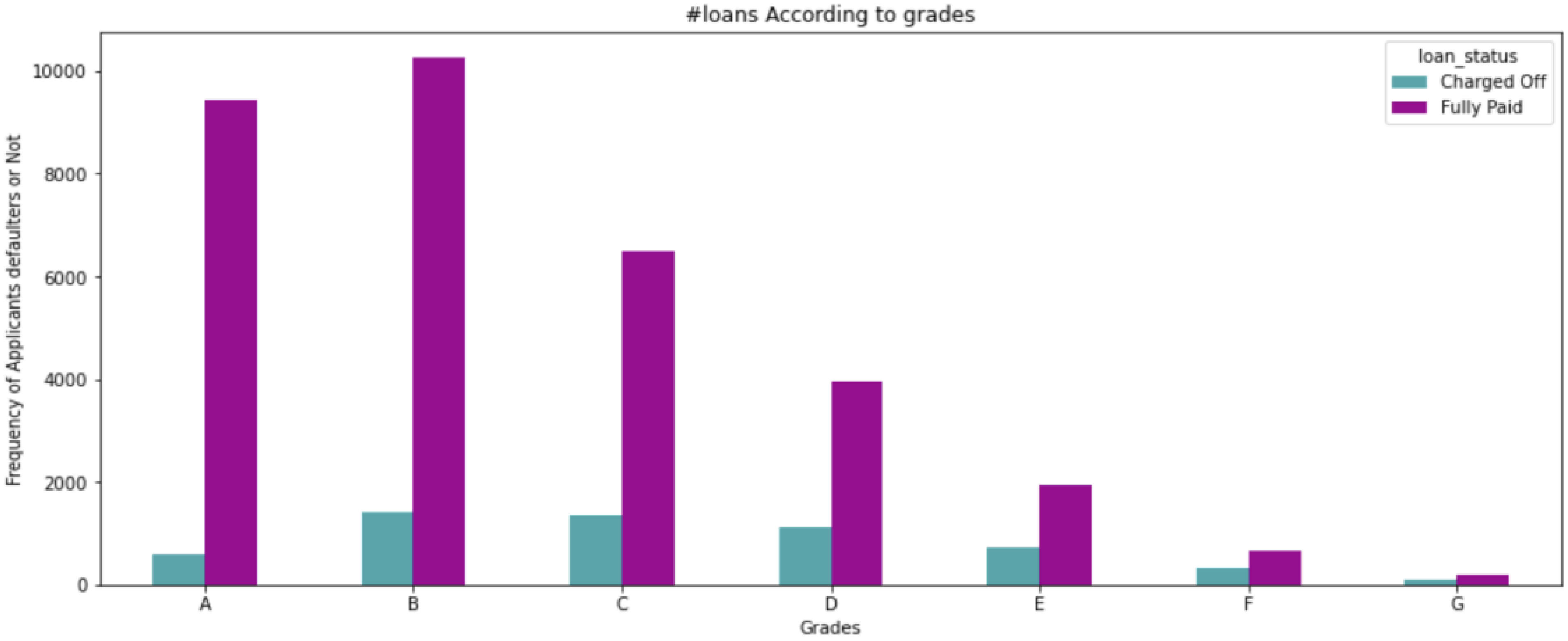
Graph Plot

Plot the graph and analysis to get the hidden insight of the data

Publish Insights

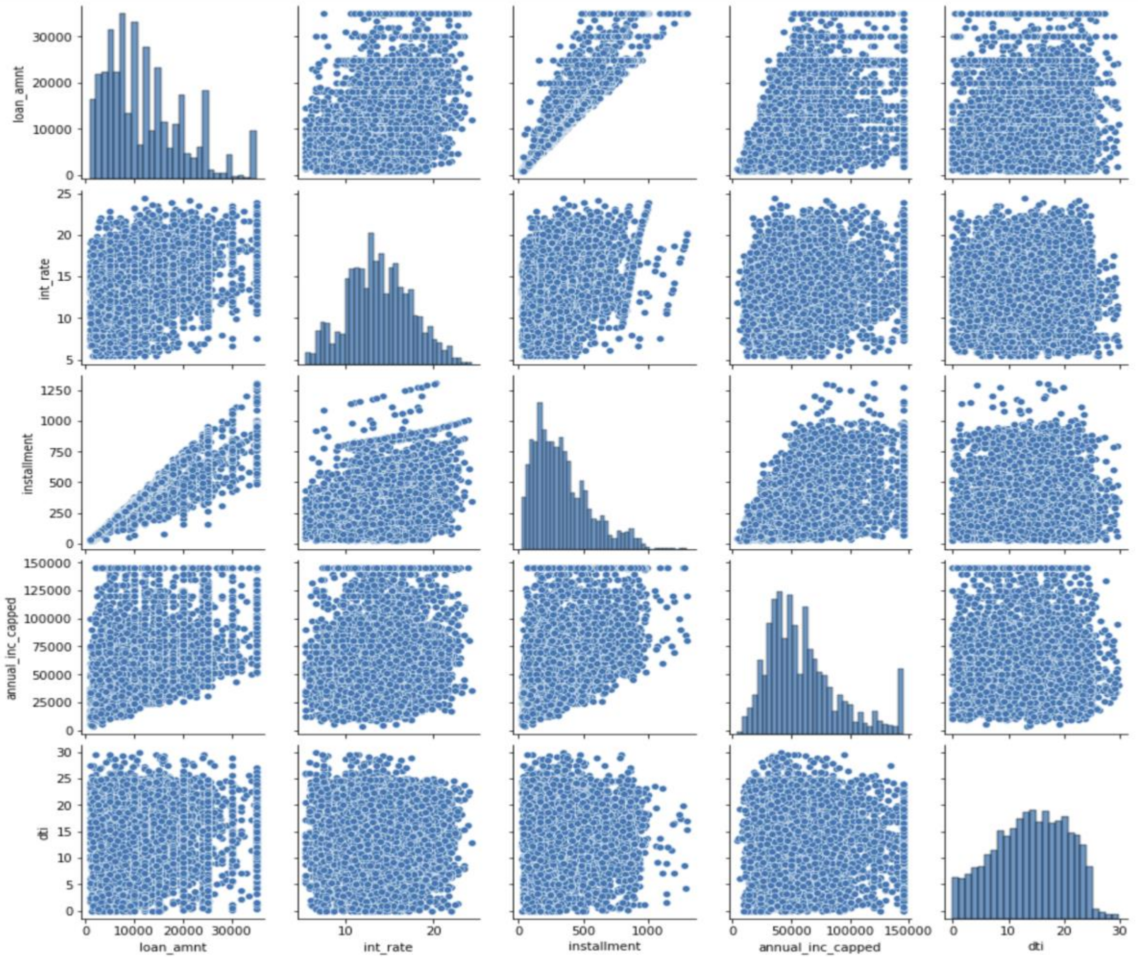
Publish insights and observations

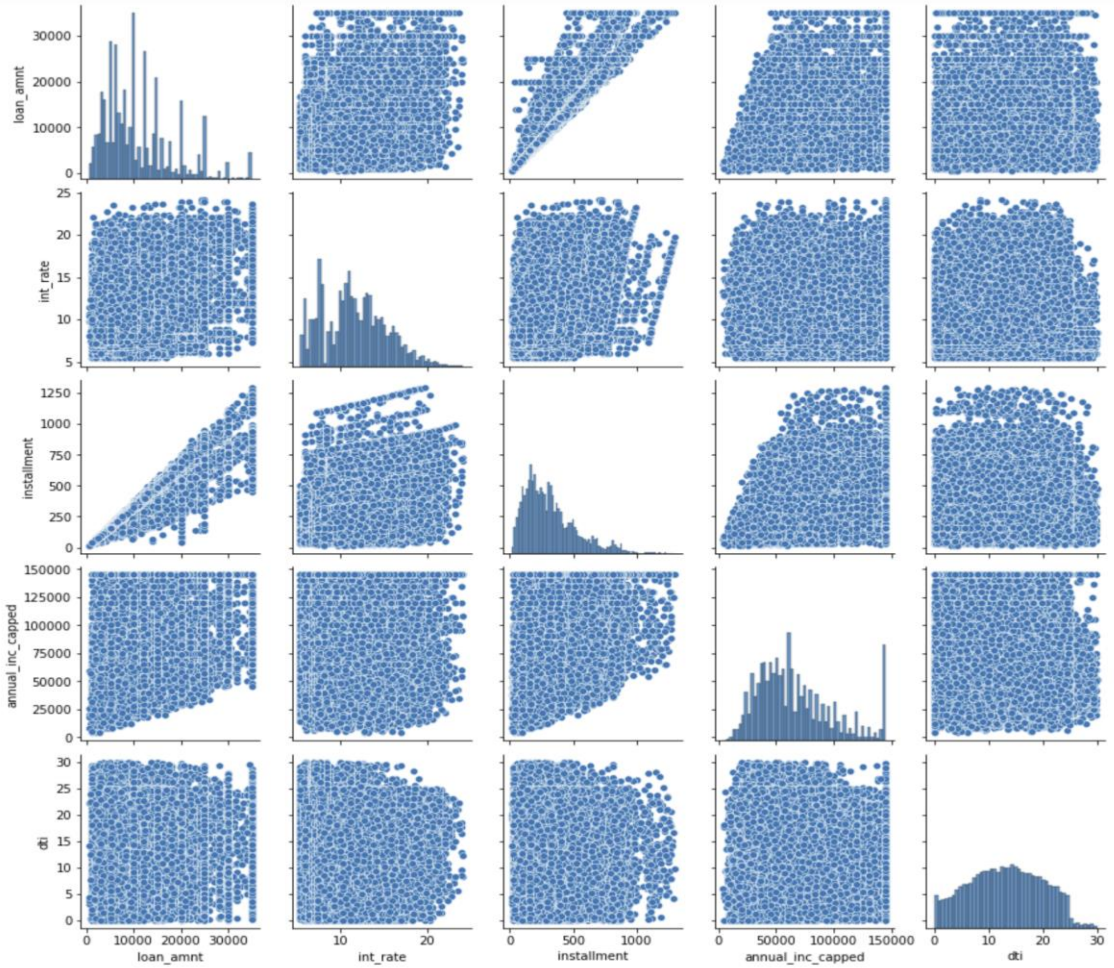
- Analysis: univariant



Loan applicants who fall under grade G -are mostly going to be non-defaulters even when loan amount requested is high

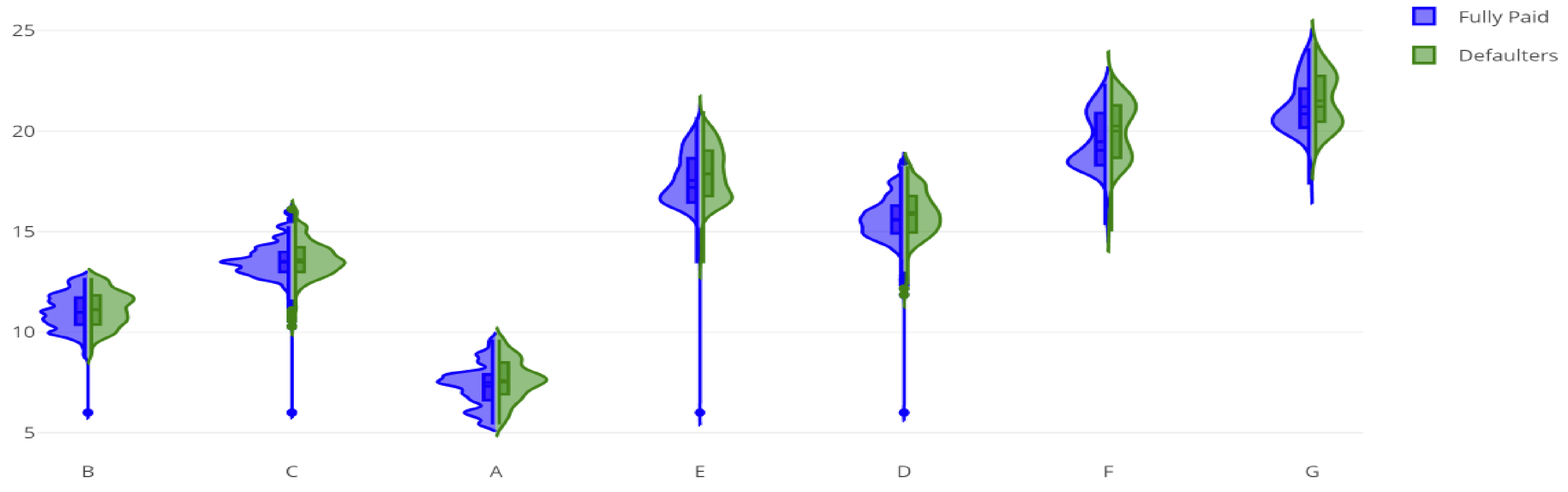
Analysis: Bivariant





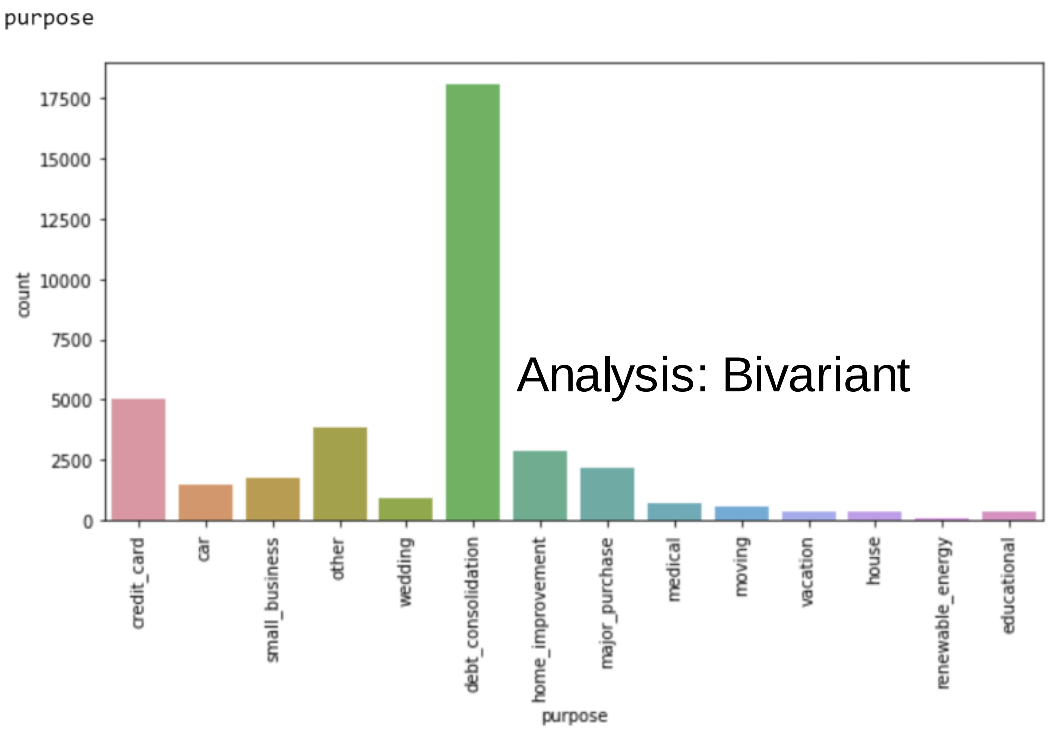
Installment, Income and loan amount highly corelated for both the case for including fully charge and charged off

Analysis: Bivariant

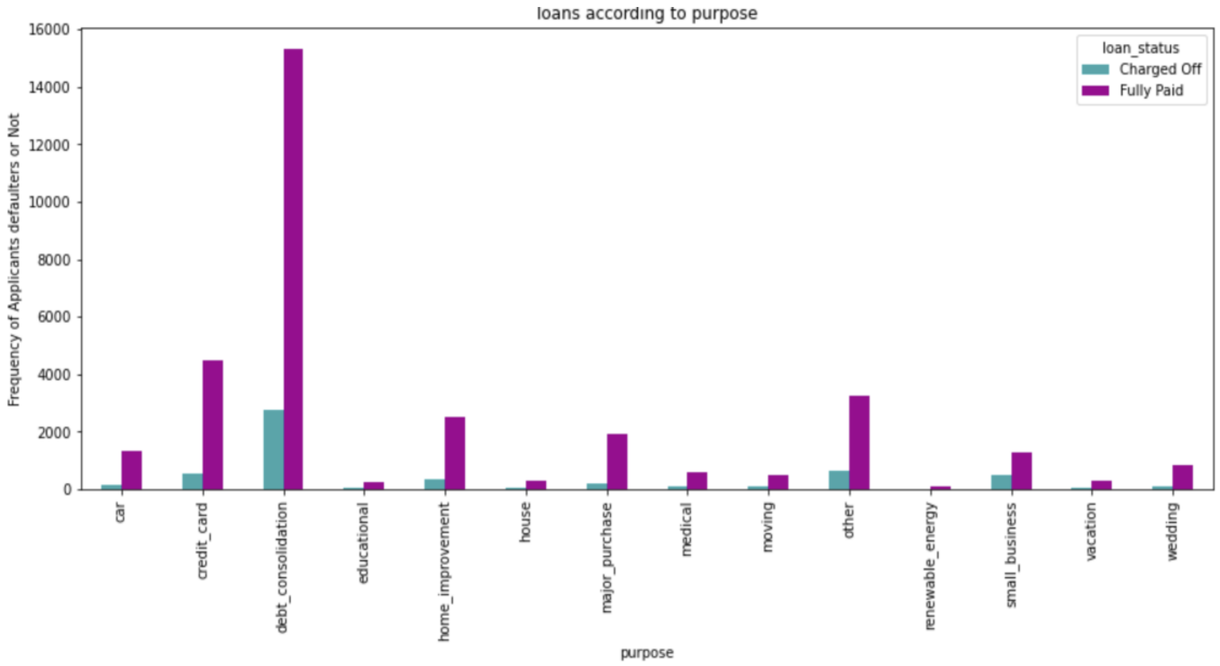


Interest rates grows linearly with grade from A to G.

Analysis: Loan Types

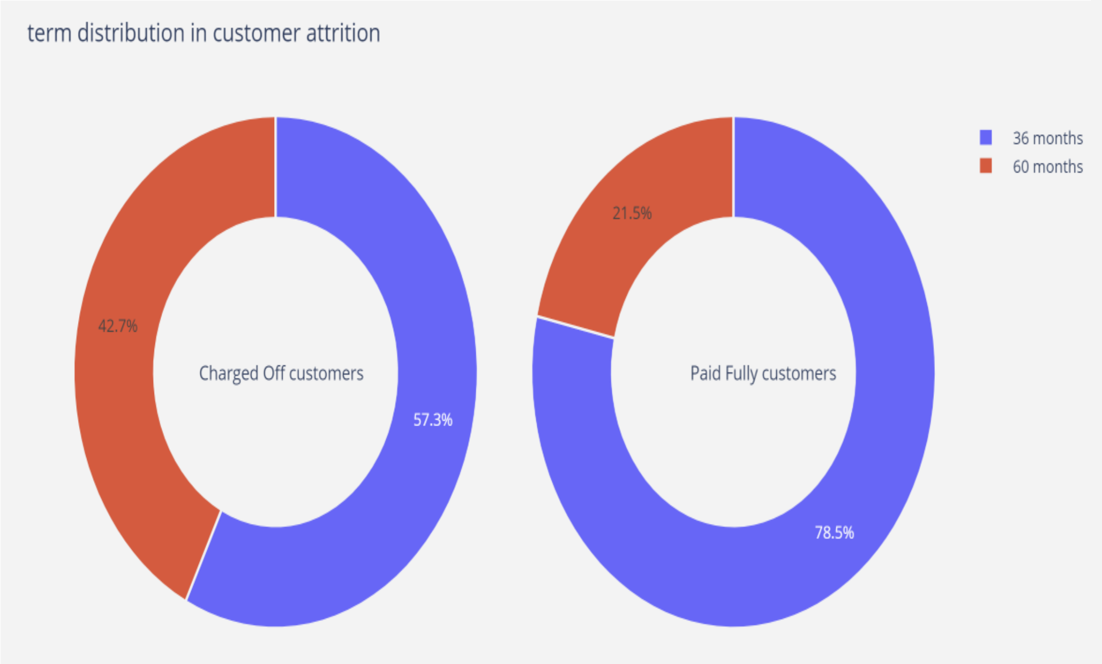


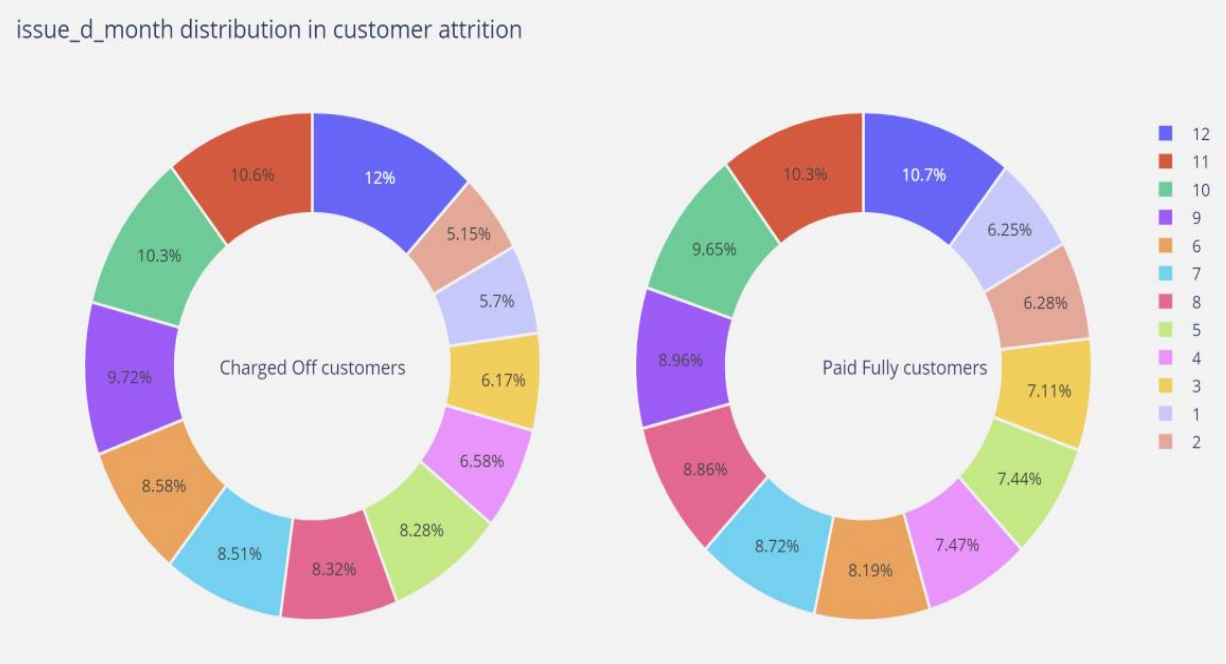
Analysis: Bivariant



Debt consolidation have a high diff in ratio to be fully charge and charged off

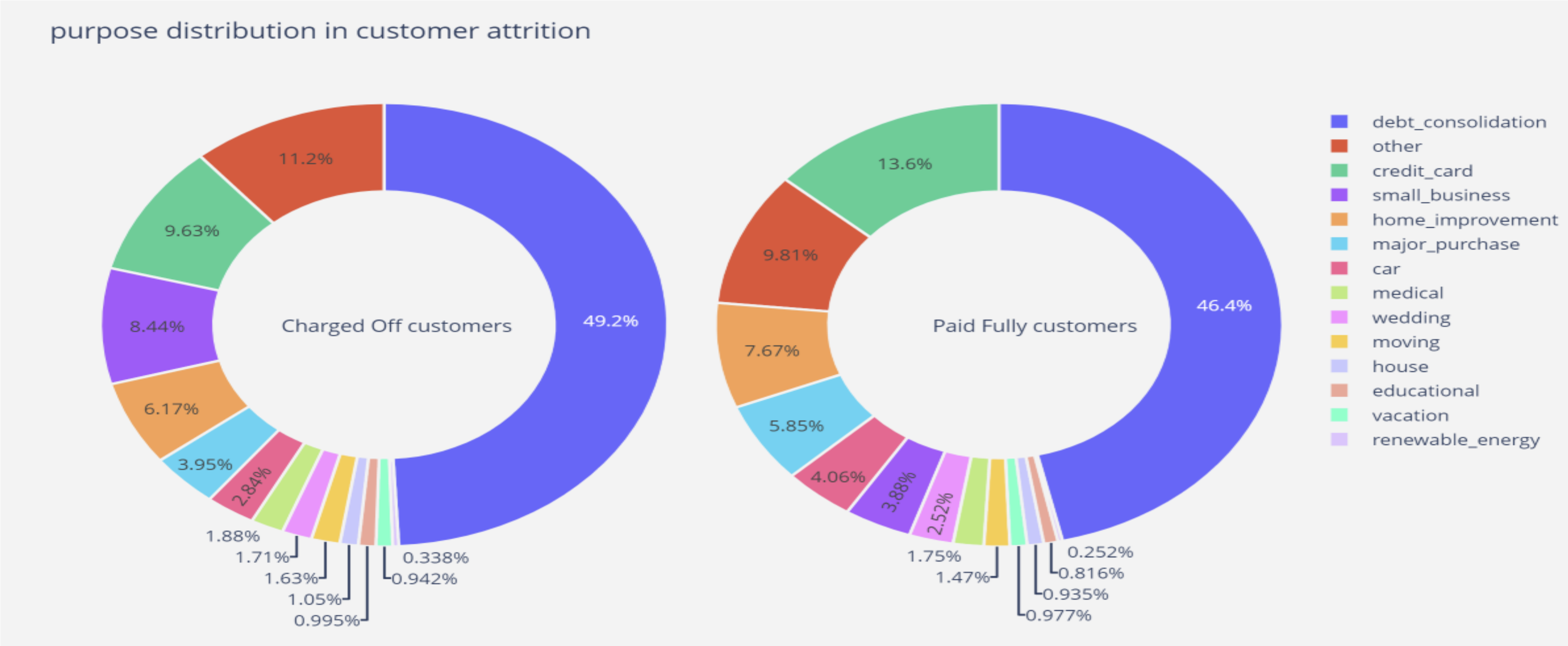
Analysis





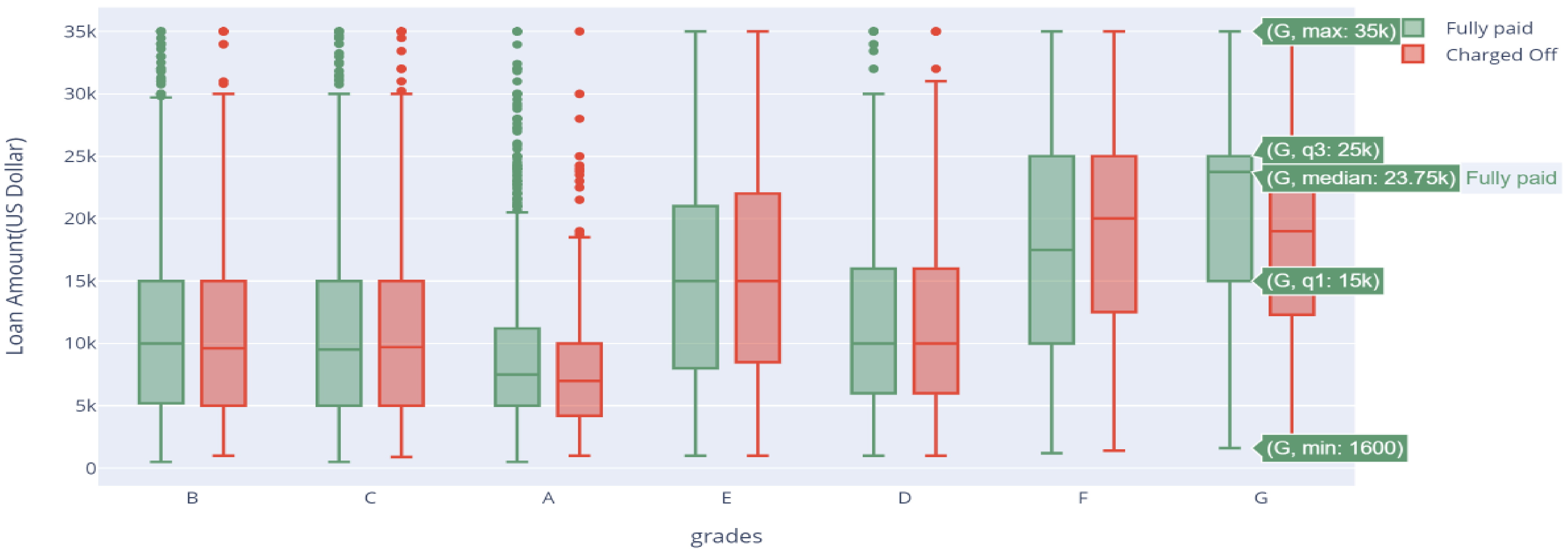
Customer who apply for 36 months term most likely to pay in full so we can avoid customer ask for 60 months Also observe most of the customer apply for loan in last month of year

Analysis



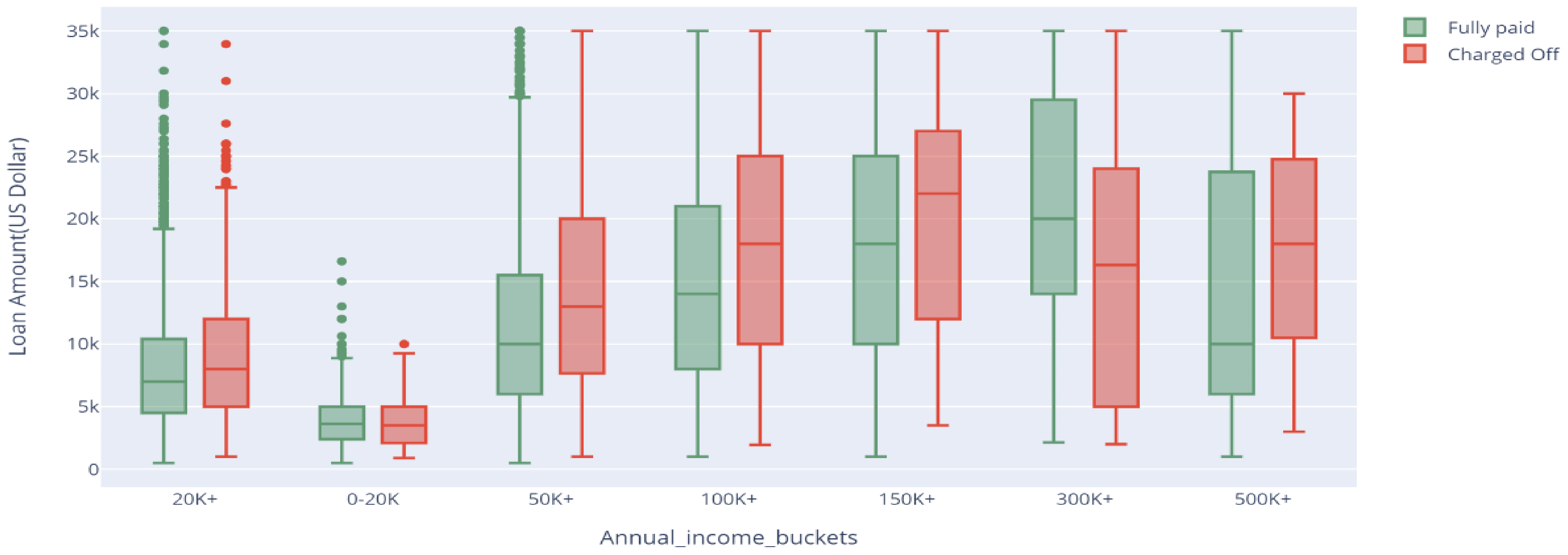
Debt_consolidation and credit card is the top purpose of the loan

Analysis



Loan applicants who fall under grade G -are mostly going to be non-defaulters even when loan amount requested is high

Analysis



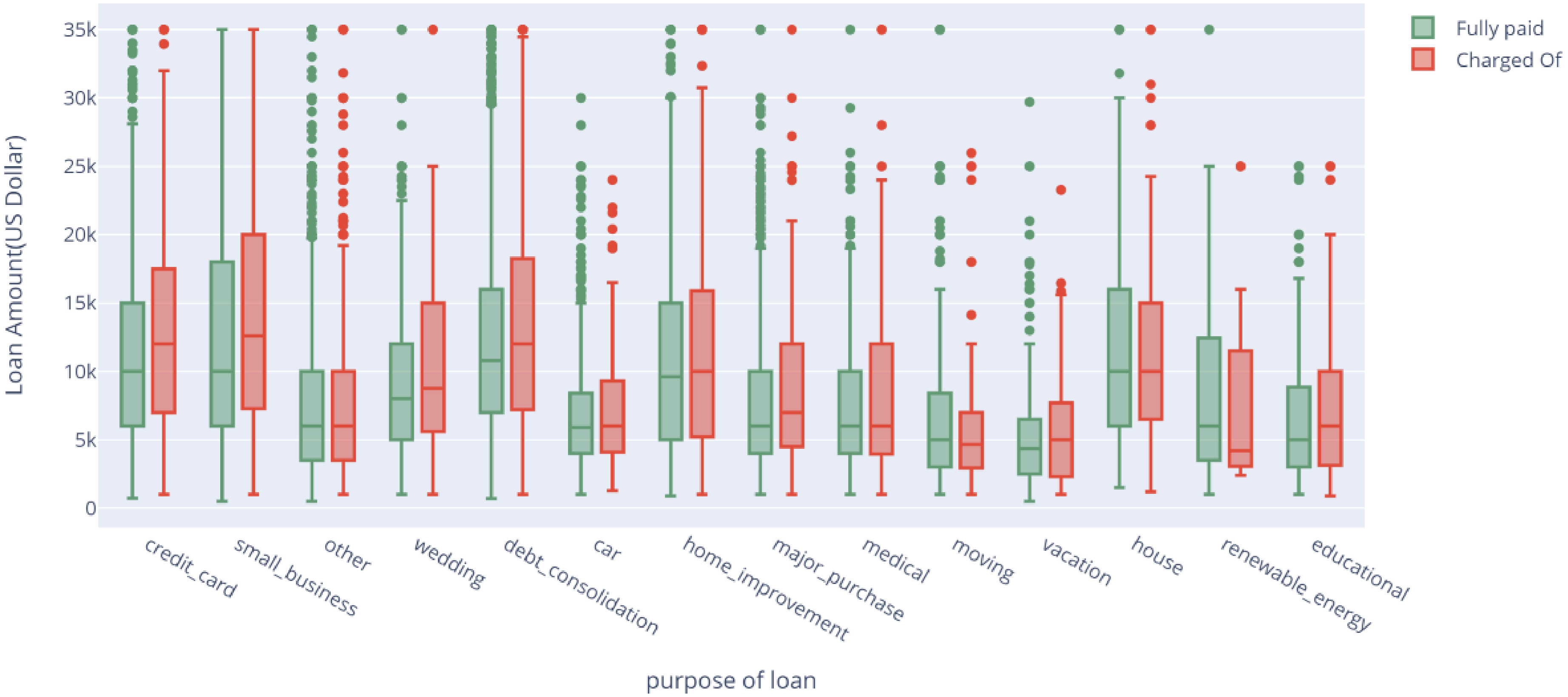
The applicants have annual income between 50K to 150K are more likely to be defaulters when their Loan amount requested is higher than 7K

Also, we can notice that Borrowers whose income in 300K+ are most likely to be non defaulters even though the loan amount requested is higher, adding more value to business

Analysis

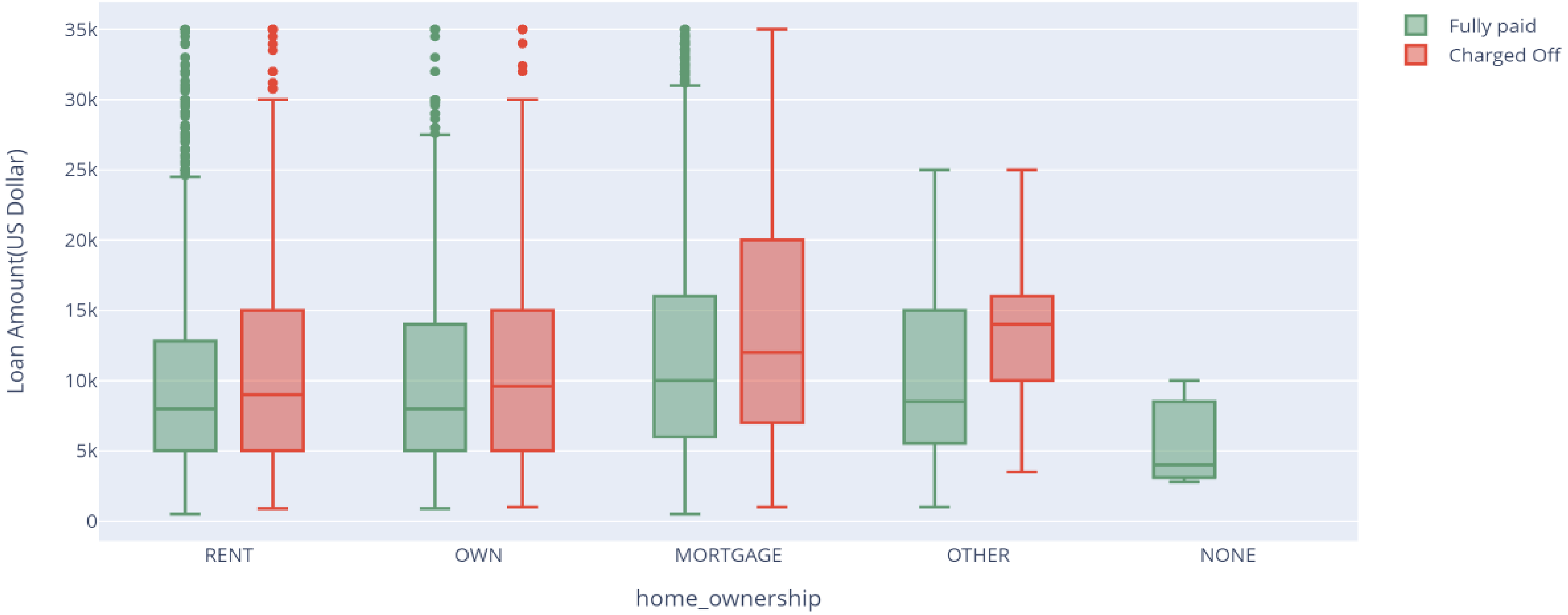
Applicants whose DTI is lower ranging from [0-8.5] and thier annual income is 500K+ are likely to be defaulted.
More the annual income but thier DTI ratio is lesser , they are more likely to be defaulters

Analysis



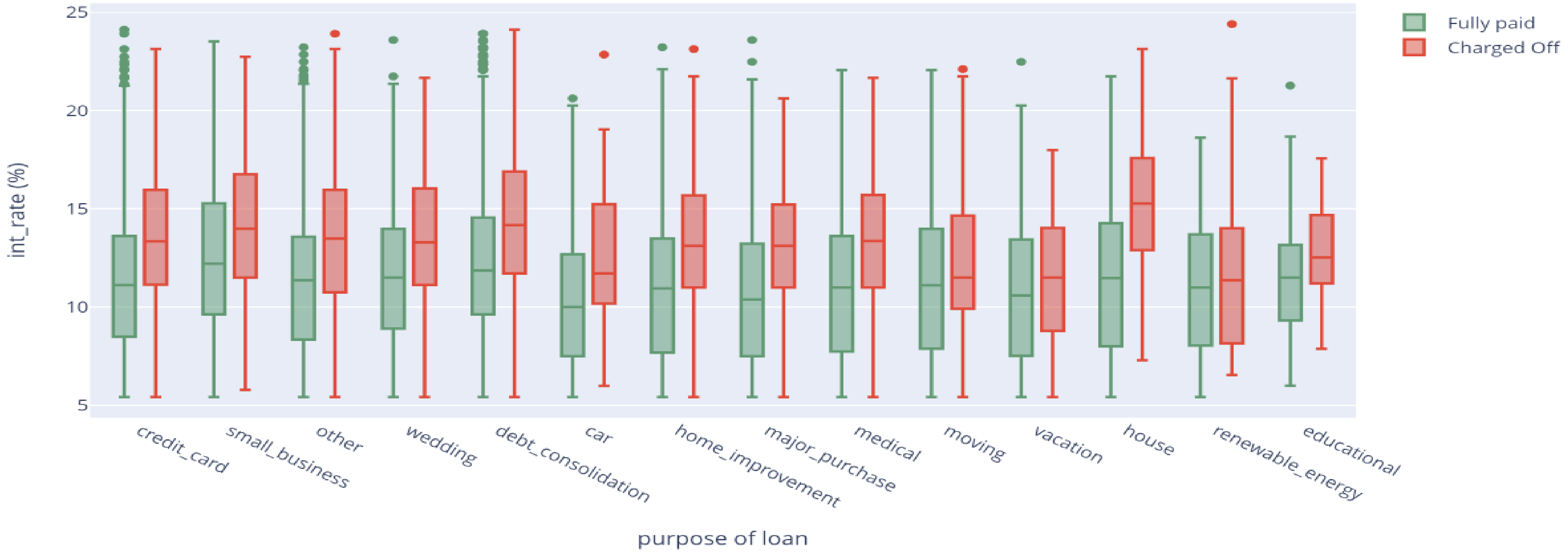
Customer asking loan for debt repayment of credit card payemt are most likely to get default

Analysis



Loan applicants who has Mortgage property is tend to be defaulter when higher loan amount is requested

Analysis



Customer provided housing loan on a higher interest rate(around 15%) are most likely to be charged off. Generally, if interest rates are higher than usual for a particular purpose of loan, its more likely that, applicant will be a defaulter

Similar trend observed for debt consolidation as well

Conclusion on Insight Revealed

Results

- Customer who apply for 36 months term most likely to pay in full so we can avoid customer ask for 60 months
- Loan applicants who fall under grade G -are mostly going to be non-defaulters even when loan amount requested is high
- The applicants have annual income between 50K to 150K are more likely to be defaulters when their Loan amount requested is higher than 7K
- Installment, Income and loan amount highly corelated for both the case for including fully charge and charged off
- Also, we can notice that Borrowers whose income in 300K+ are most likely to be non defaulters even though the loan amount requested is higher, adding more value to business
- Applicants whose DTI is lower ranging from [0-8.5] and their annual income is 500K+ are likely to be defaulted.
- More the annual income but their DTI ratio is lesser , they are more likely to be defaulters
- Customer asking loan for debt repayment of credit card payment are most likely to get default
- Loan applicants who has Mortgage property is tend to be defaulter when higher loan amount is requested
- Customer provided housing loan on a higher interest rate(around 15%) are most likely to be charged off. Generally, if interest rates are higher than usual for a particular purpose of loan, its more likely that, applicant will be a defaulter Similar trend observed for debt consolidation as well
- Interest rates grows linearly with grade from A to G.

Thank You…