Lending Club Case Study

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Background

Lending Club is a marketplace for personal loans that matches borrowers who are seeking a loan with investors looking to lend money and make a return.

Business Objective

A consumer finance company has to identify risky loan applicants, based on their profile.

Which controls loss of business of the company and avoid financial loss.

Steps Performed

1. Data understanding
2. Data cleaning (cleaning missing values, removing redundant columns etc.)
3. Data Analysis (univariate, bivariate analysis)
4. Recommendations

Data Understanding

There are broadly three types of variables –

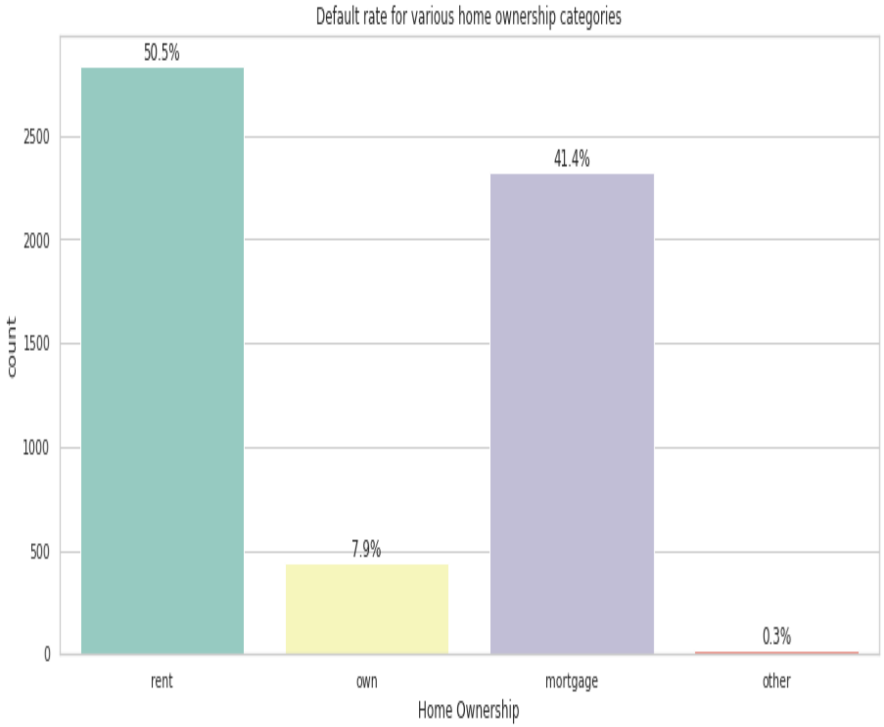
1. those which are related to the applicant (demographic variables such as age, occupation, employment details etc.),
2. Loan characteristics (amount of loan, interest rate, purpose of loan etc.) and
3. Customer behavior variables (those which are generated after the loan is approved such as delinquent 2 years, revolving balance, next payment date etc.).

- Now, the customer behavior variables are not available at the time of loan application, and thus they cannot be used as predictors for credit approval.

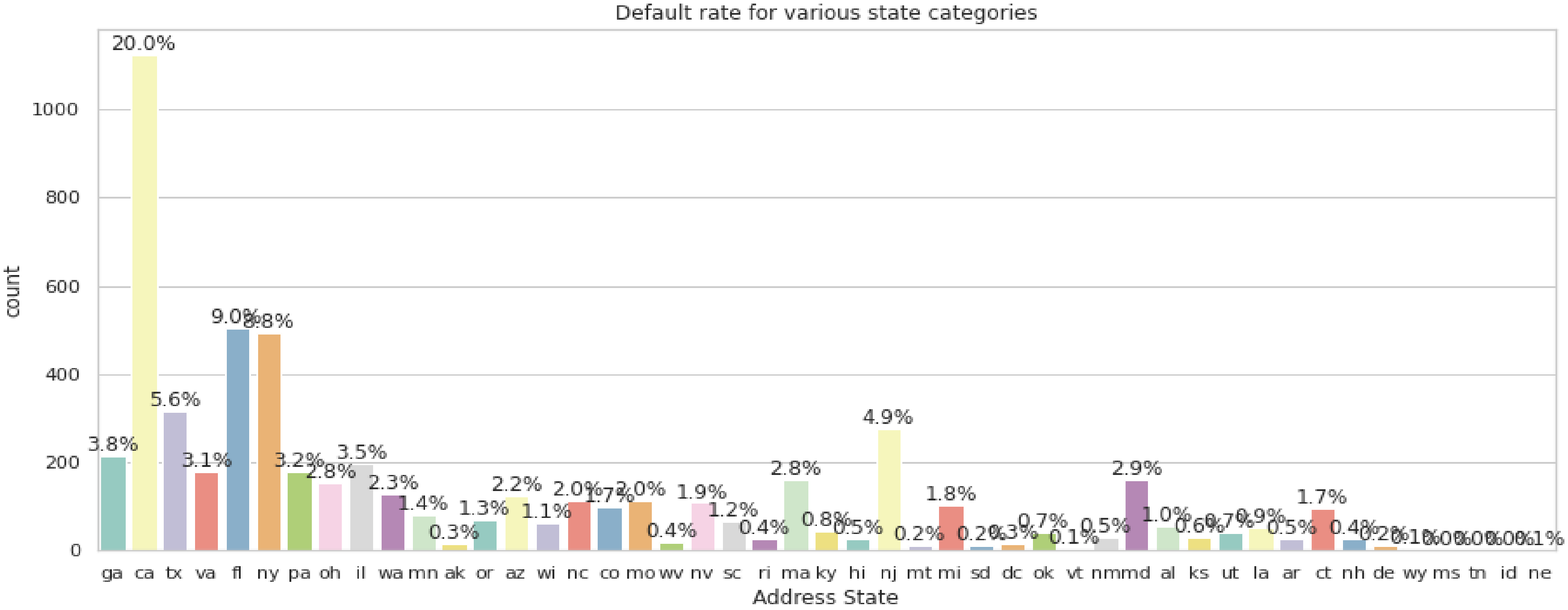
- The ones marked 'current' are neither fully paid not defaulted, and thus they cannot be used for the analysis.

Univariate Analysis For Unordered Categorical Variables

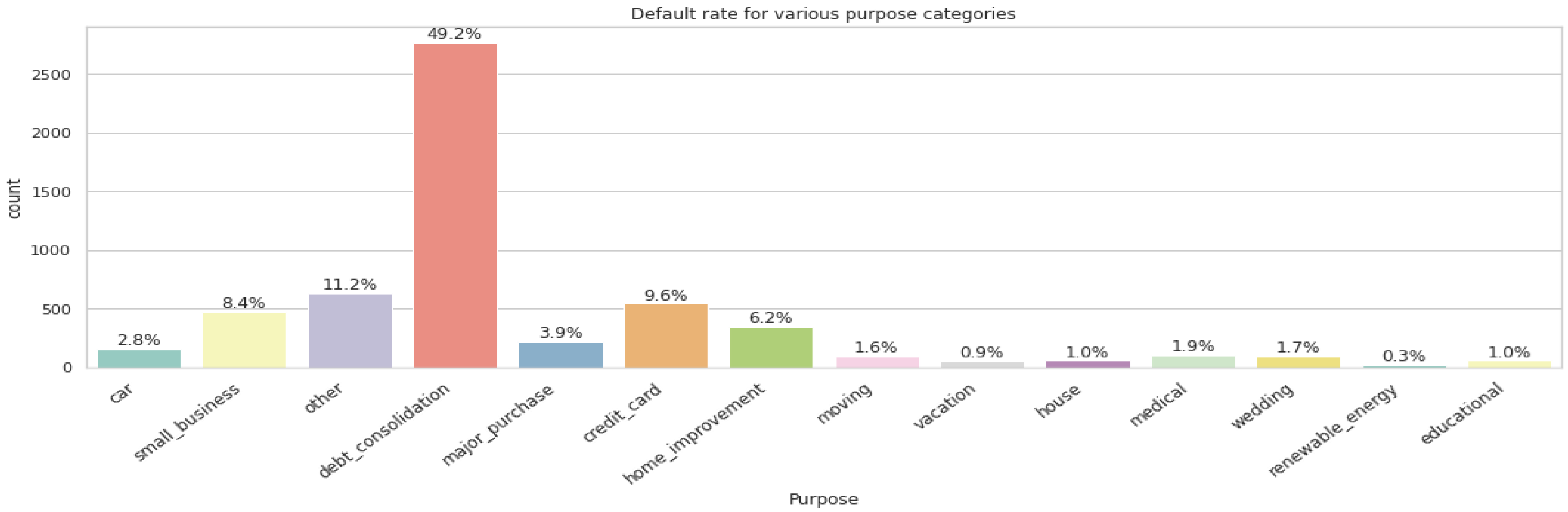
92% of the people who have defaulted the loan are living on **rent or mortgage.**



California state has highest loan defaulters.

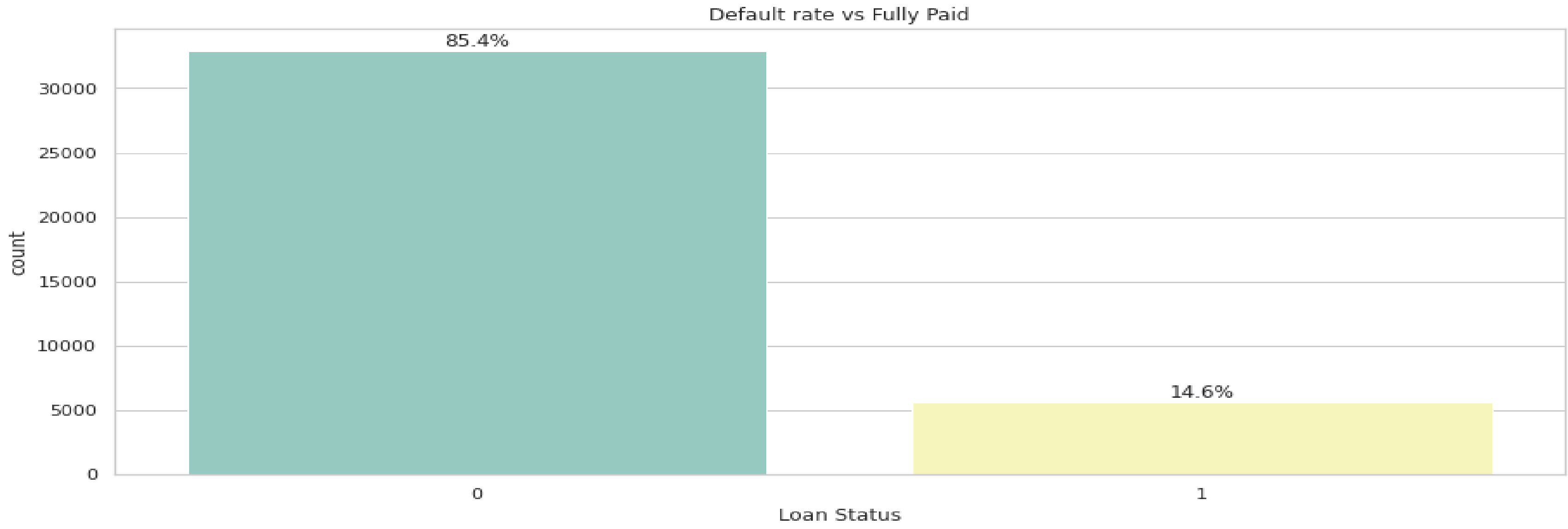


Around 49% of the defaulted loan is taken for **debt consolidation**.

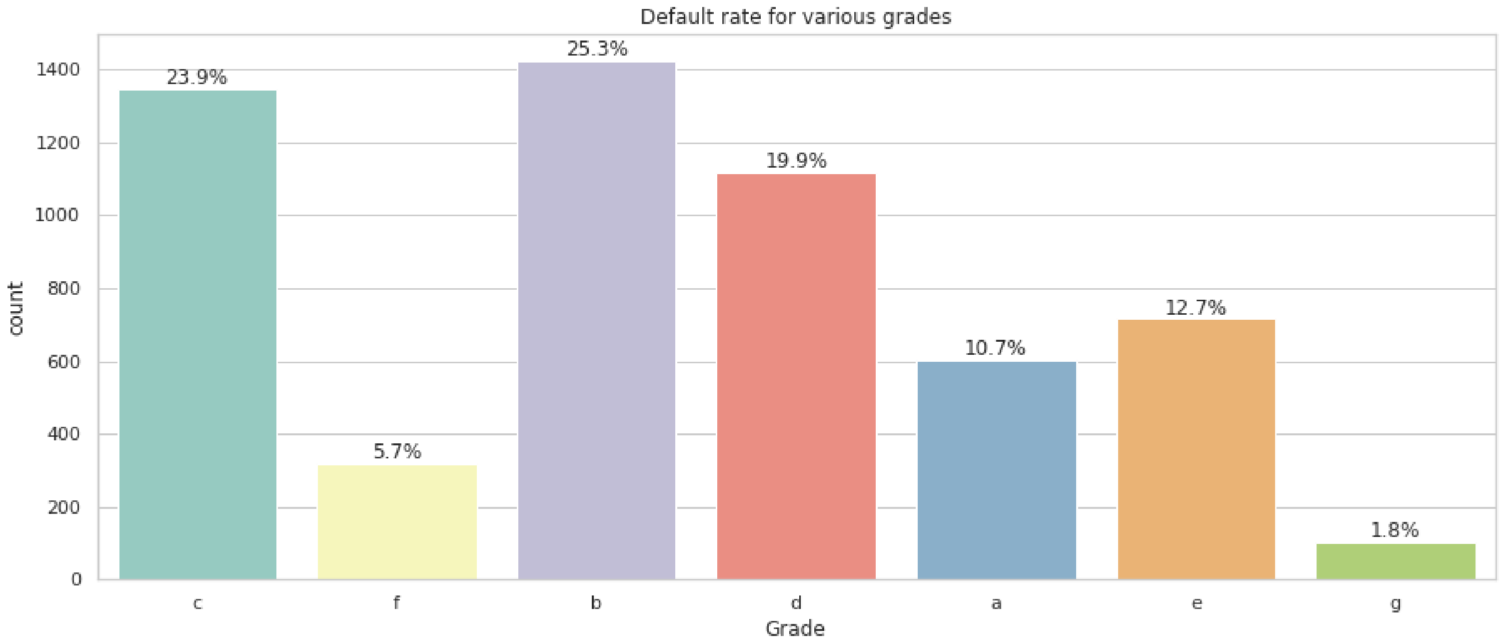


Univariate Analysis: Ordered Categorical Variables

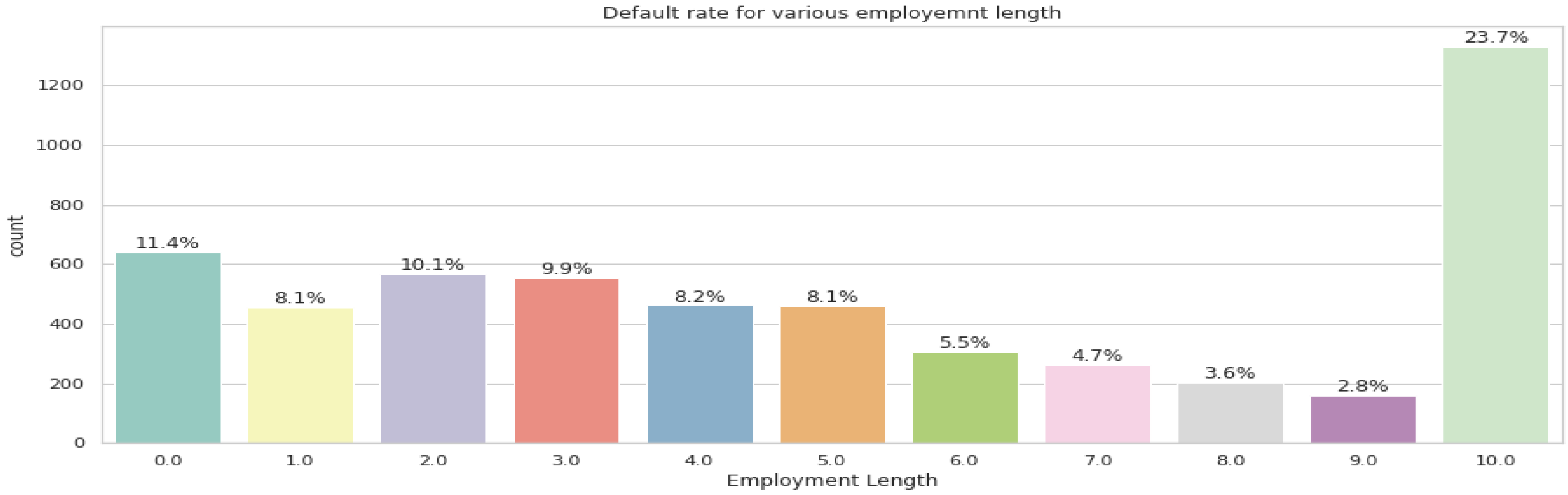
Overall default rate is **14.6%.**



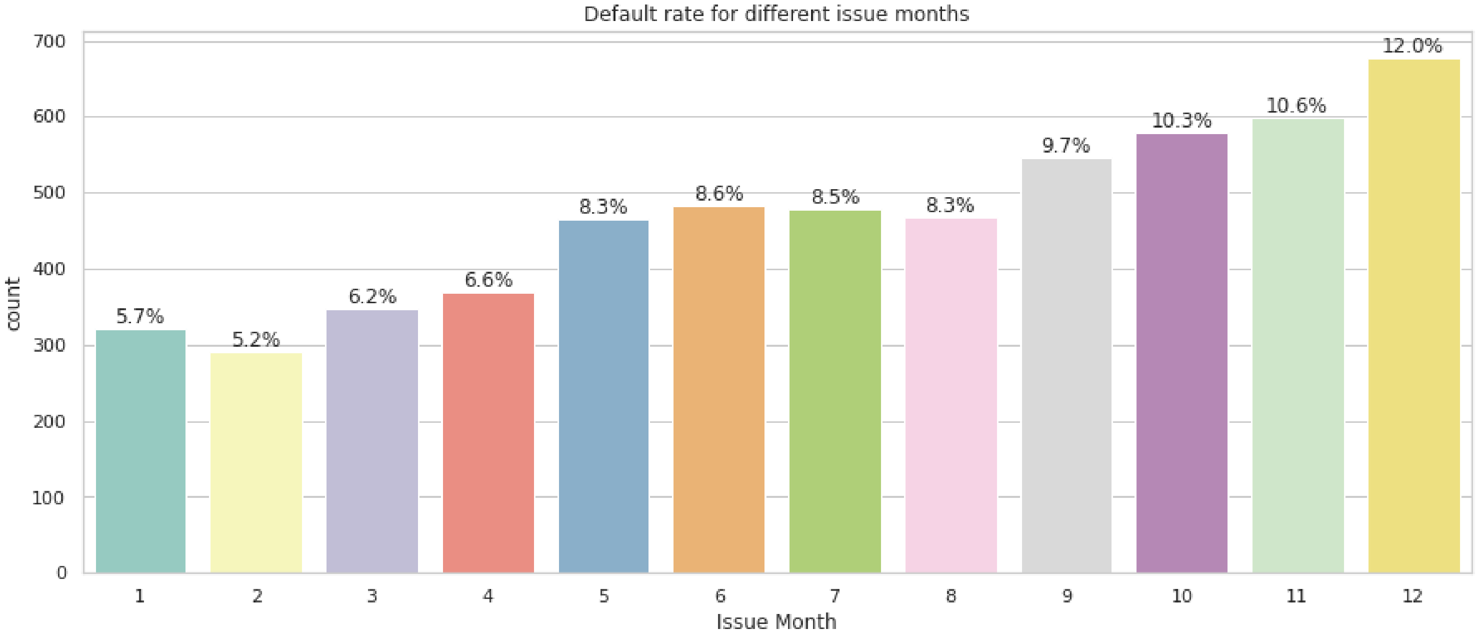
Almost half of the defaulted loans are from **grade b and c**



Almost a quarter of loan default have been done by employee having **10+ years** of experience followed by employee having **less than one year** of experience..

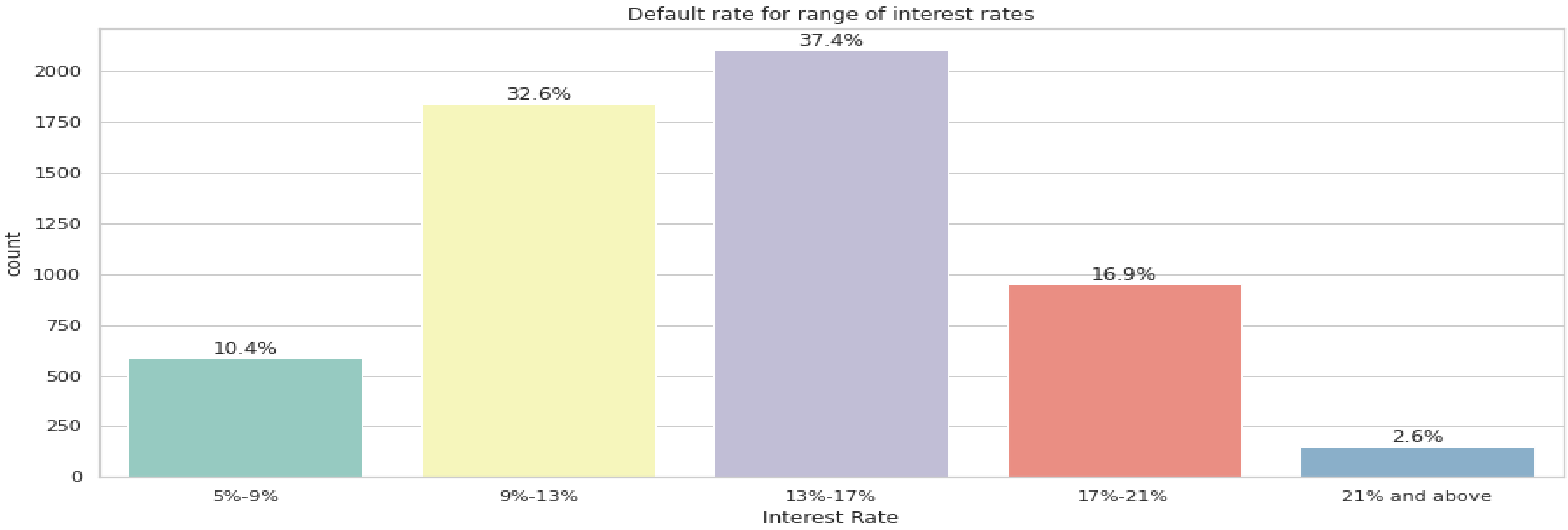


Loans approved in later part of the year i.e. **October-December are defaulting more.**

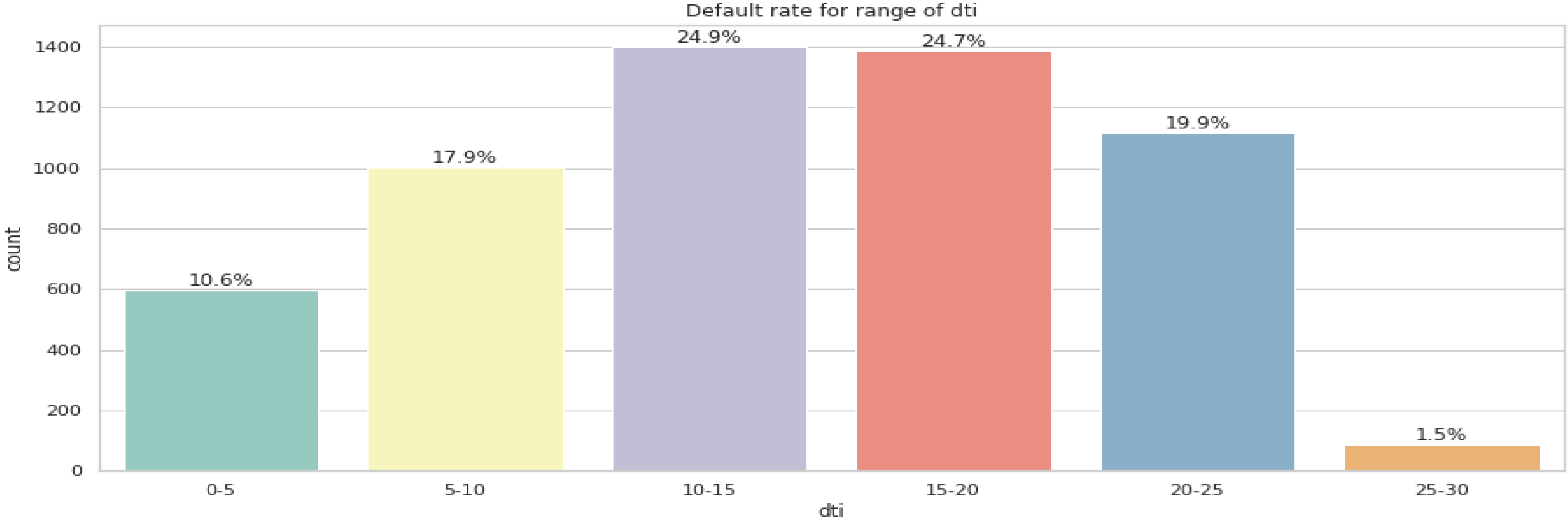


Univariate Analysis: Quantitative Variables

37% of defaulted loans belong to **13-17%** interest rate.

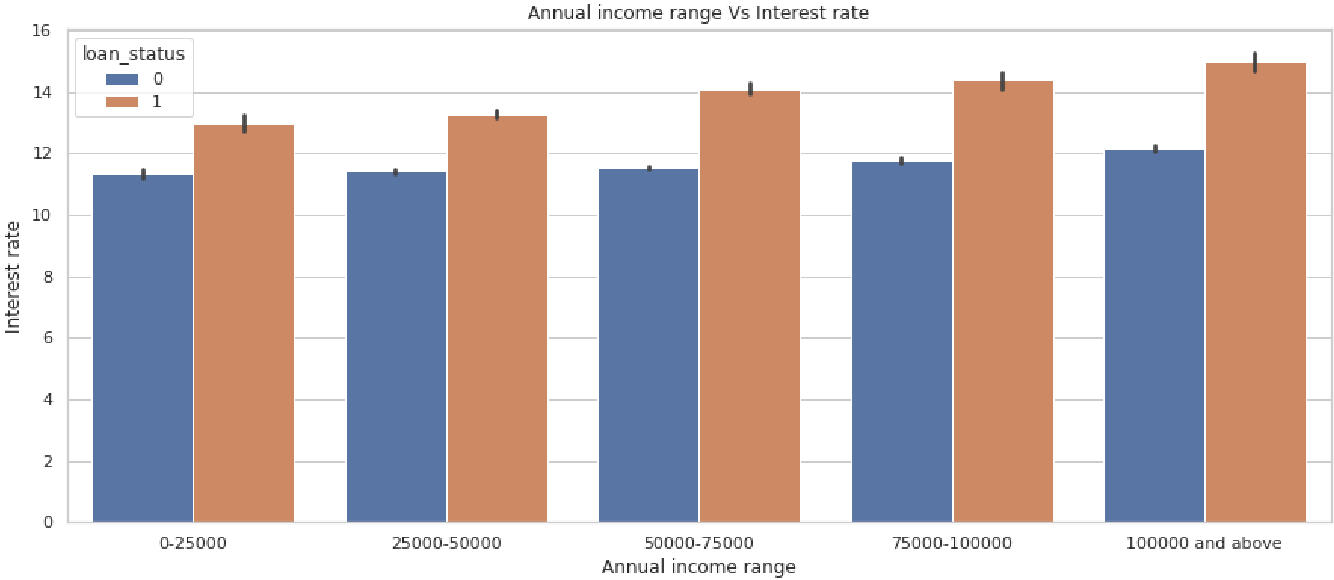


Half of the defaulted loans have **dti between 10-20.**

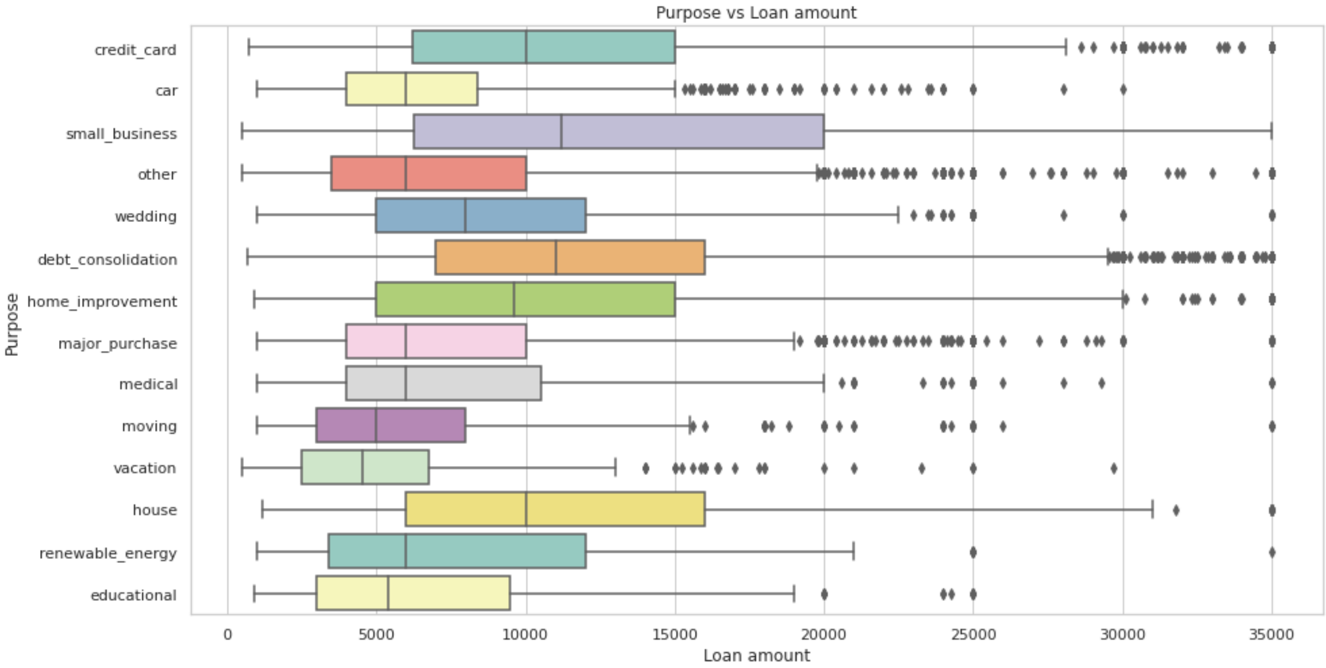


Bivariate Analysis: Categorical

The interest rate is **gradually increasing** for annual incomes.



The highest loan amount compared to others is given for **small business purpose.**



Recommendations

1. People living on rent or mortgage are likely to default more, hence proper verification and scrutiny should be done for these applicants.

2. Applications stating the purpose of loan as debt consolidation, small business or credit card have high chances of default, hence proper scrutiny should be done for these applications.

3. Loans with smaller installments which less than 500 have high chances of default, hence the installment of loans could be kept high and proper scrutiny should be done for these applications accordingly.

4. Applications having mid level annual income are likely to default more, these loans should be handled with care.

5. Loans should be approved only after income source verification rather than just verification or no verification to reduced the loan defaulting.

6. Application having dti between 10-20 are likely to default more and should be considered as risky applications.

7. Applications requesting loan amount of less than 15k are likely to default more and are risky applications.

8. Applicants having 10+ years of experience or less than 1 years of experience are risky applicants.

9. Applications assigned to b & c grades based on last credit are risky applications with more chance of default.

10. Higher the loan term it is better as they have defaulted less according to dataset. Hence riskier loan should be given longer term in case there is a potential to approve the applicant.

11. Loans approved in later part of the year i.e. October-December are more likely to default and hence proper scrutiny should be done.

12. California state applications should be considered risky given they have defaulted more in the past.

Thank You