LEADING CLUB CASE STUDY

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Business Understanding

- Consumer finance company is the largest online loan marketplace, facilitating personal loans, business loans, and financing of medical procedures to urban customers.
- Borrowers can easily access lower interest rate loans through a fast online interface.
- Objective is identifying patterns which indicate if a person is likely to default or not, which may be used for taking actions such as denying the loan, reducing the amount of loan, lending (to risky applicants) at a higher interest rate, etc.

Solution Approach

Data Cleaning- Null value treatment, removing unnecessary variables, correcting data types, and outlier removal.

Data Exploration- Understanding data with the help of data dictionary.

Univariate Analysis- Analyzing one variable at a time to understand its properties and behavior within a dataset.

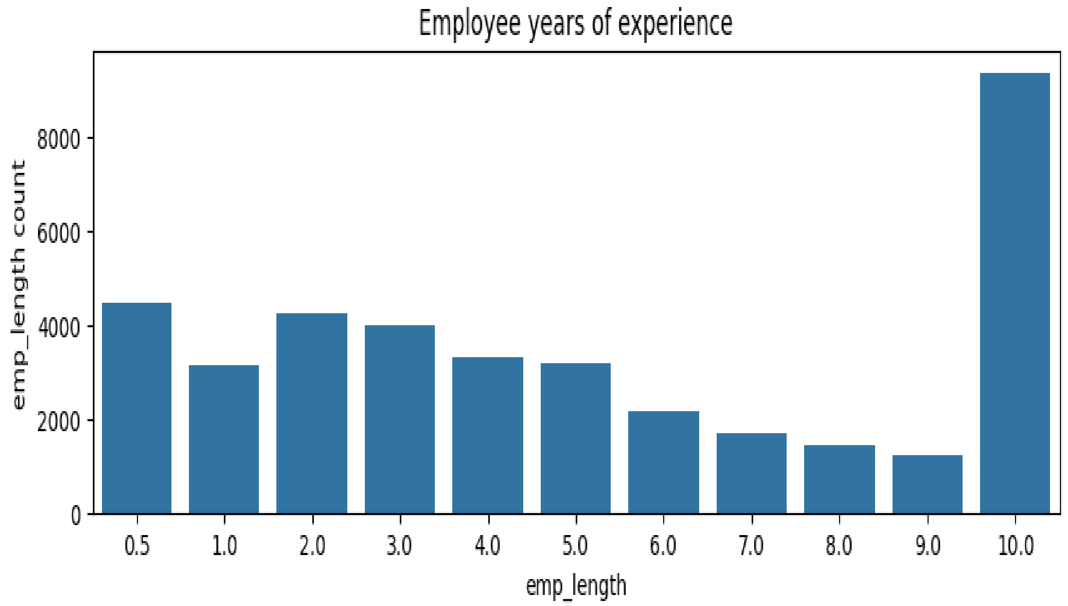
Bivariate Analysis- Analyzing the relationship between two variables to understand their correlation or association within a dataset.

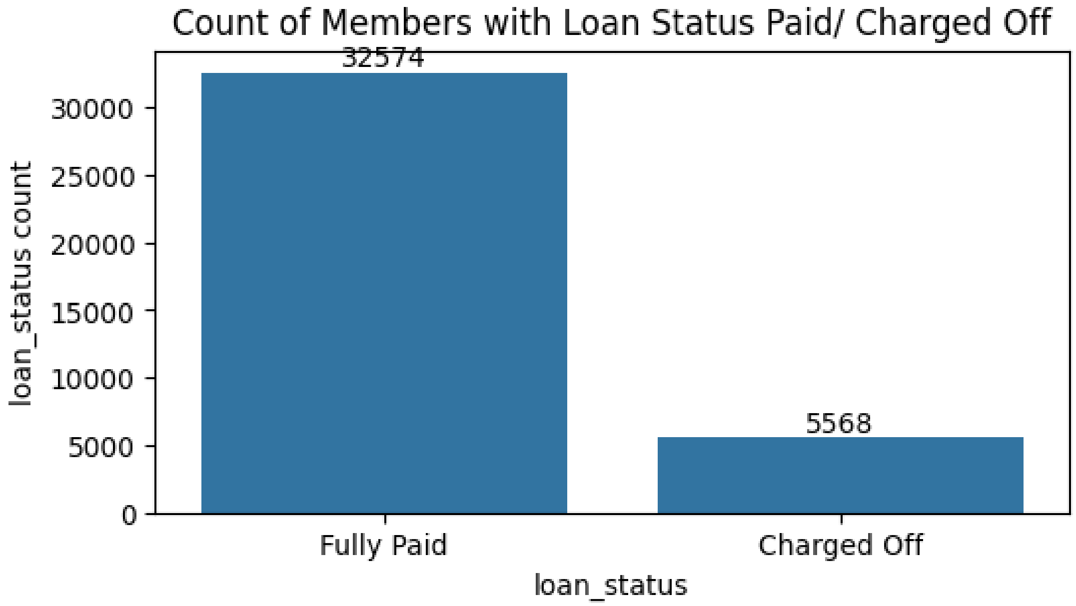
Observations & Recommendations- Analyze the plots and suggest ways to mitigate business losses.

EXPLORATORY DATA ANALYSIS

Mahima Trama

Univariate Analysis

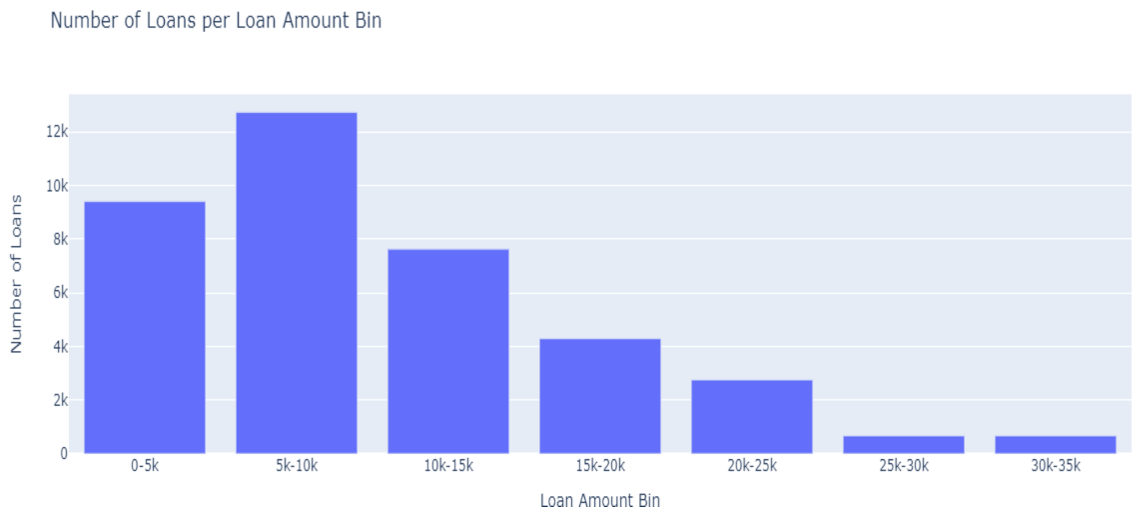


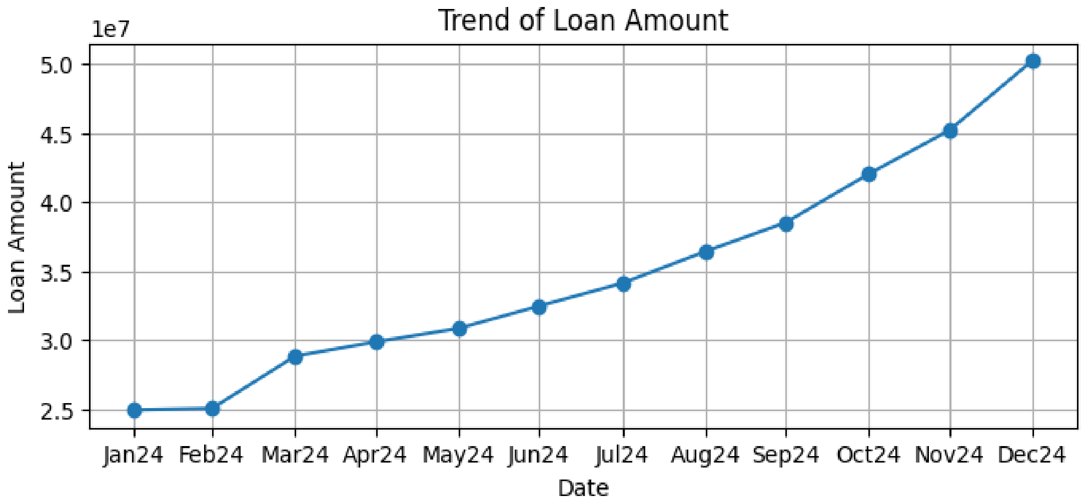


Around 1/4th of loans are taken by people with more then 10 years of experience

85.40 percent of people have fully paid the loan whereas approx. 14.60 percent of people defaulted.

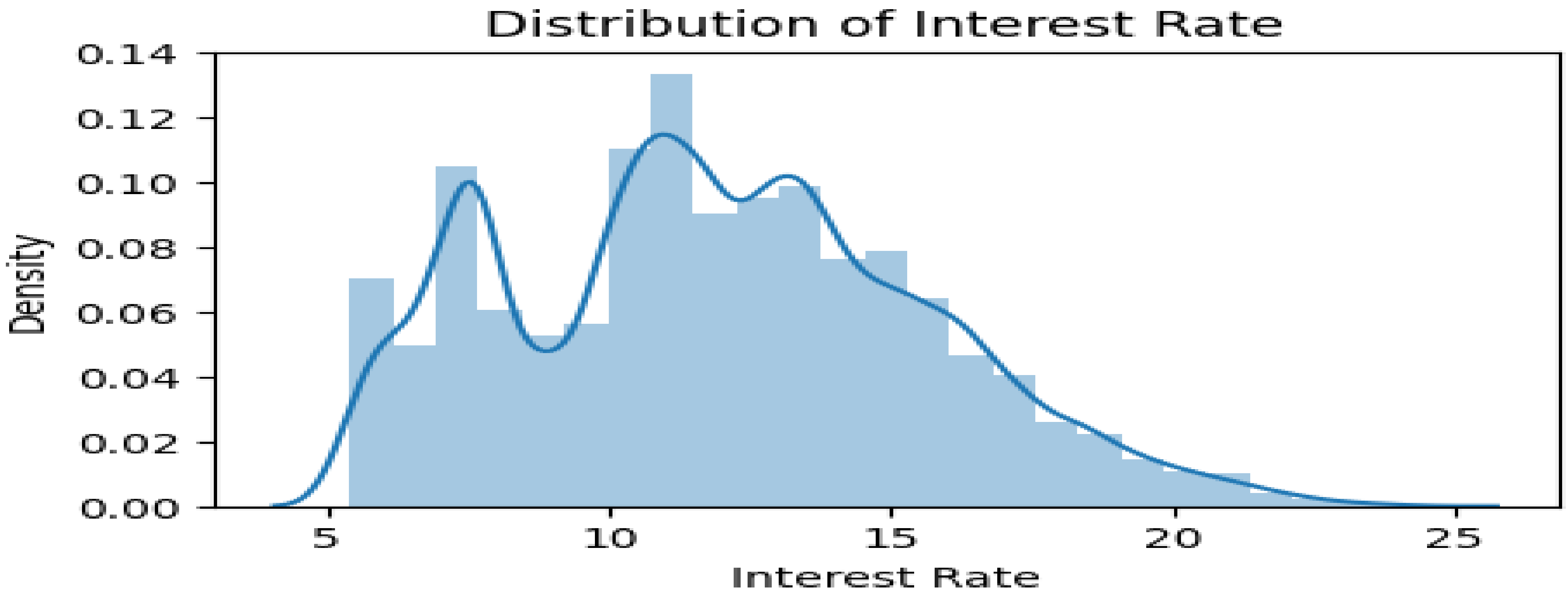
Distribution of Loan Takers Across Income Groups





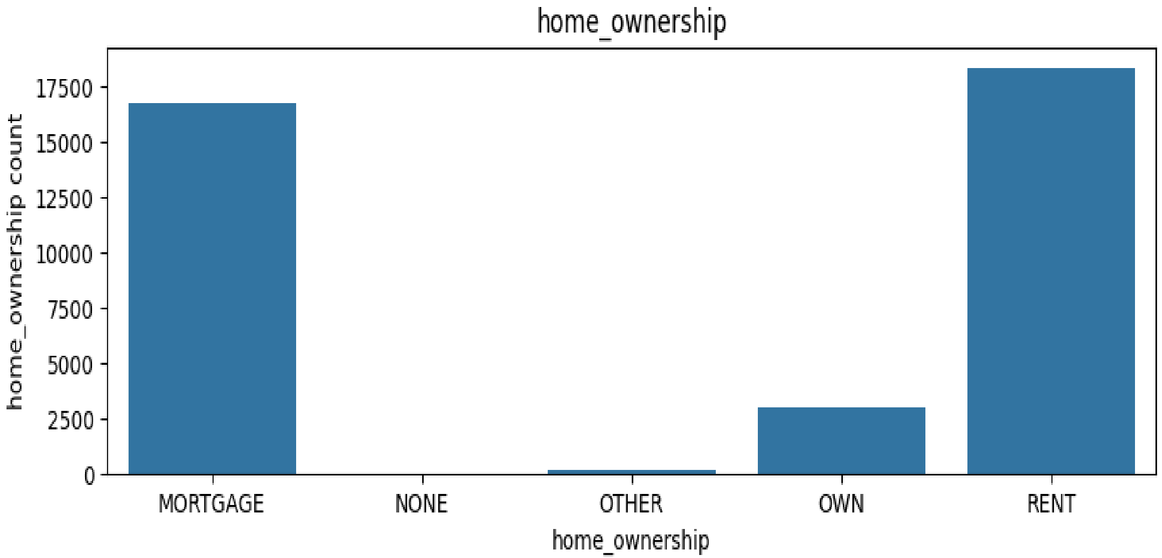
- Higher amount of loan has taken in the amount bracket of 5k-10k.
- Majority of the loans taken in the month of December
- Around 1/3rd of loans are taken between 5k to 10k

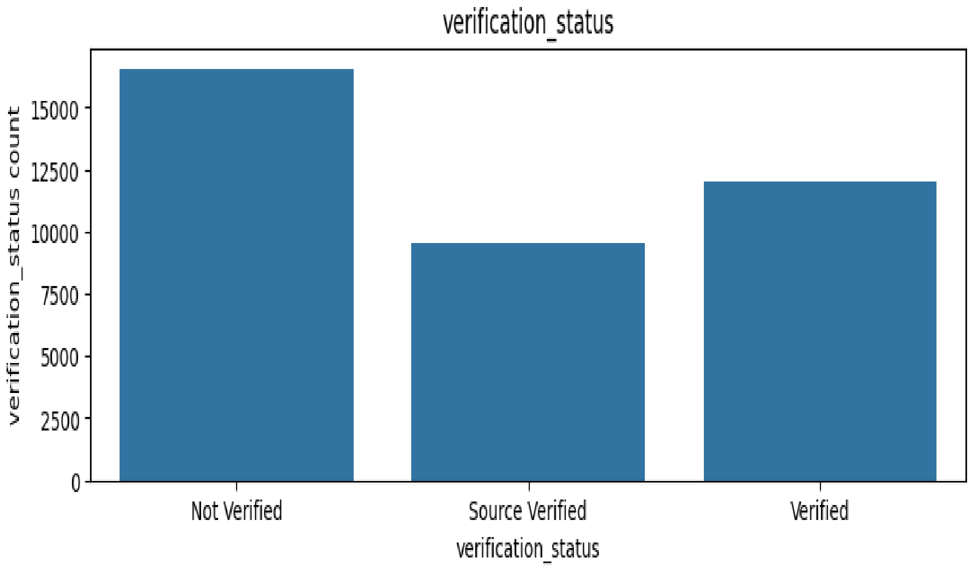
Skewness of interest rate



- Majority of loans are taken between 10-15%, with decreasing flow after 15%.

Distribution of Home ownership and verification status

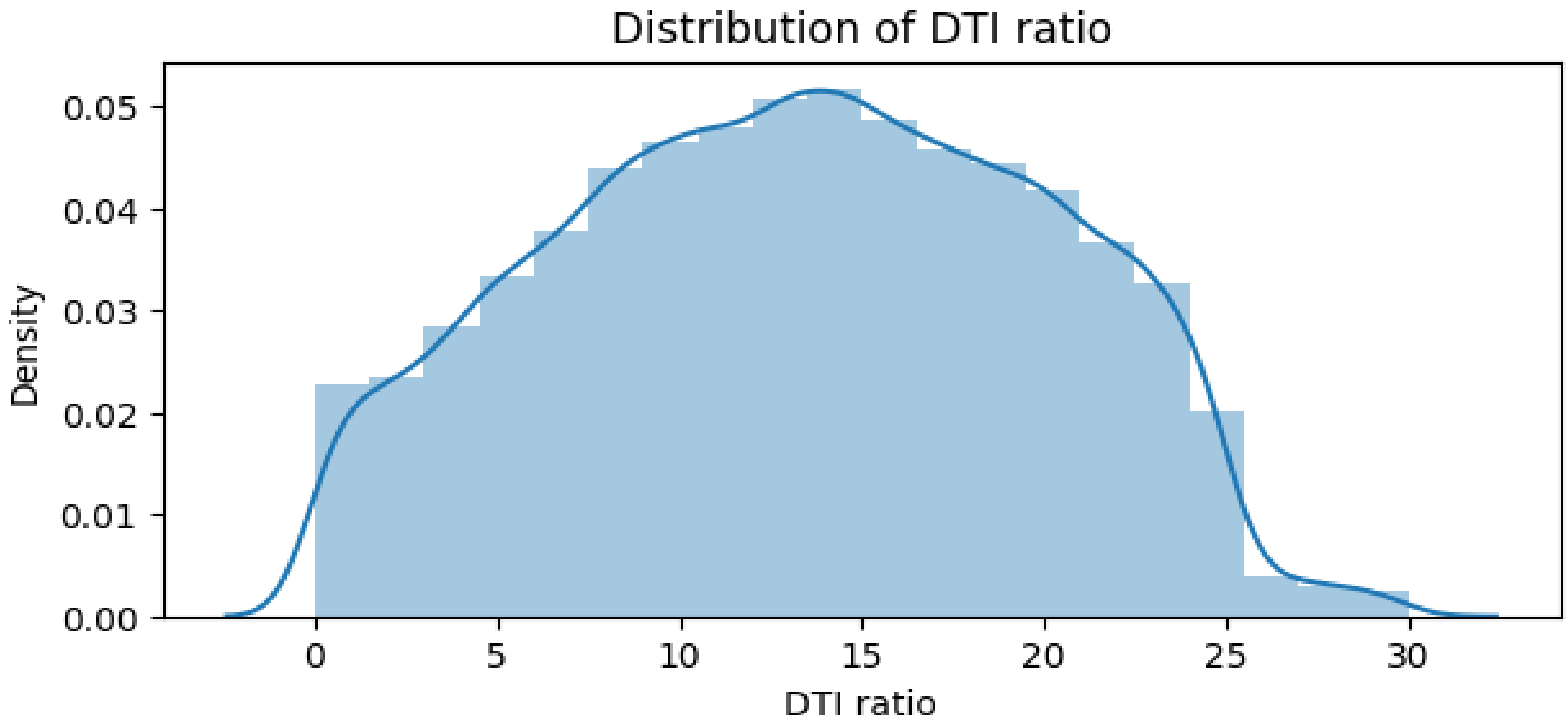




- Just 7% of loan recipients are homeowners.
- Over 90% of loan recipients reside in mortgaged or rented accommodations.

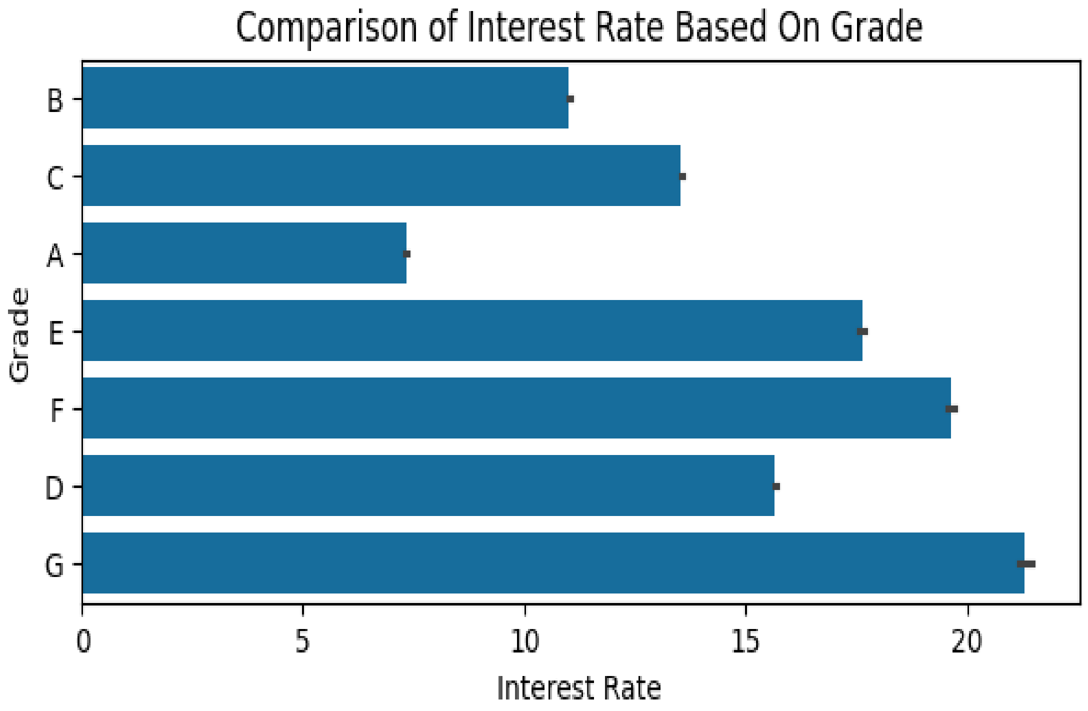
- Over 50% of individuals have undergone either verification or source verification, with 43% people not verified

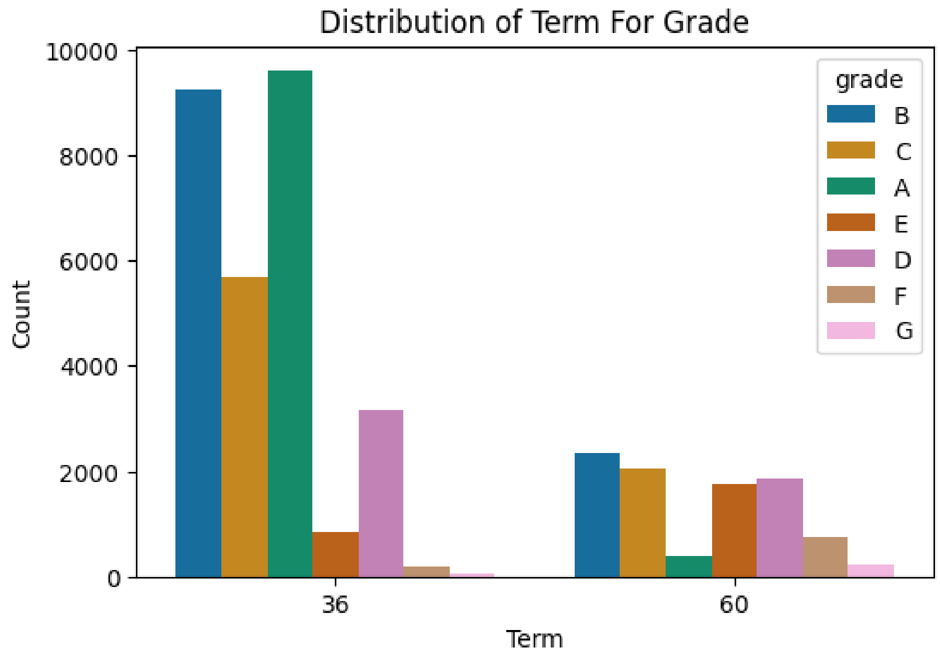
Normal distribution seen for DTI ratio



- Borrowers have very large debt compared to the income registered, concentrated in the 10-15 DTI ratio.

Interest rate and Term among different grades

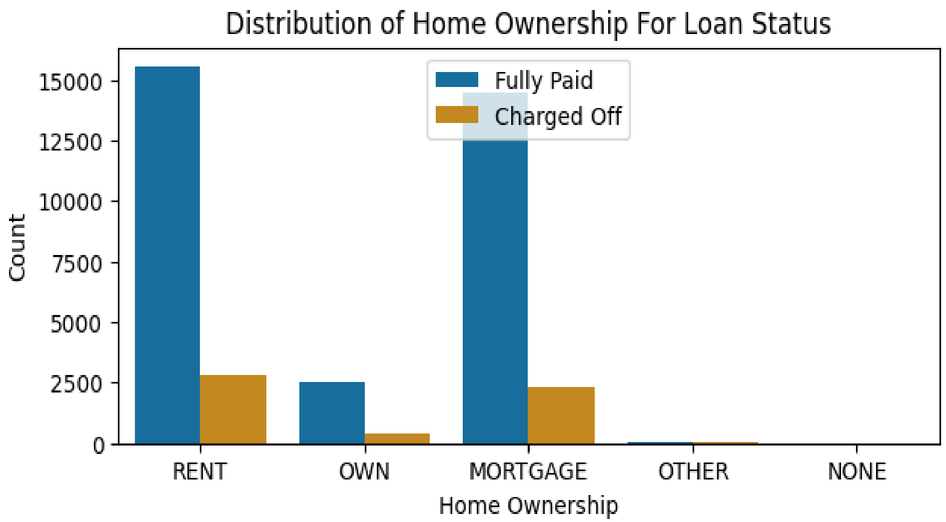




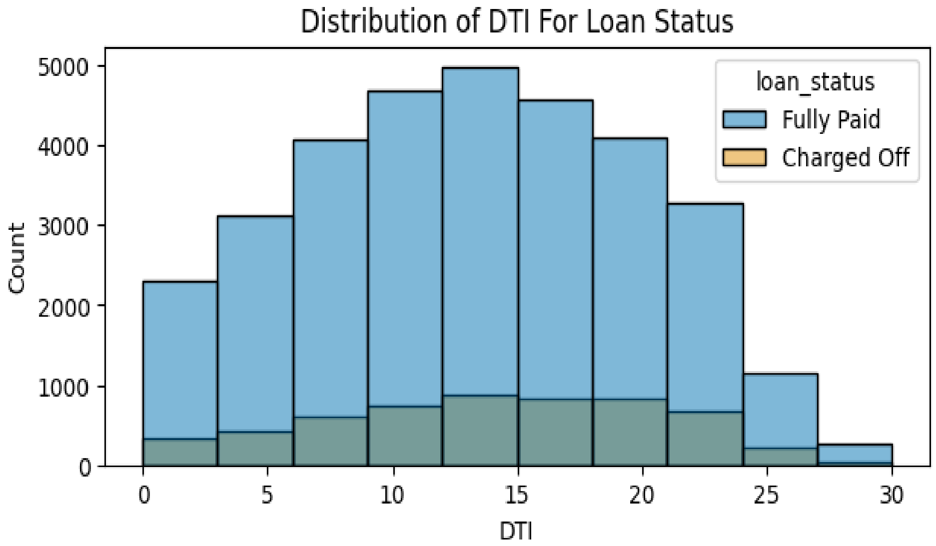
- Borrowers with lower grades (higher risk) are typically charged higher interest rates

- Majority of loans are taken by grade A and B are for 36 months

Distribution of Home ownership and DTI for defaulters and Non defaulters

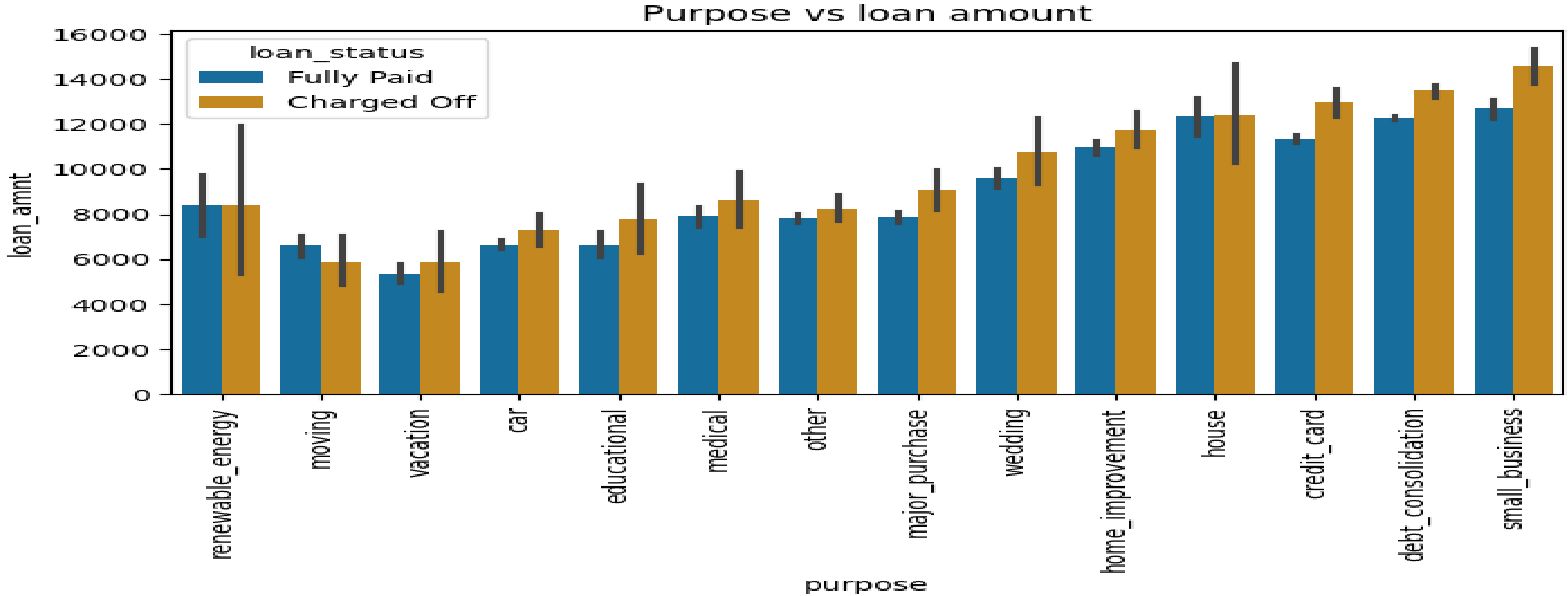


- People who own their property are less likely to default



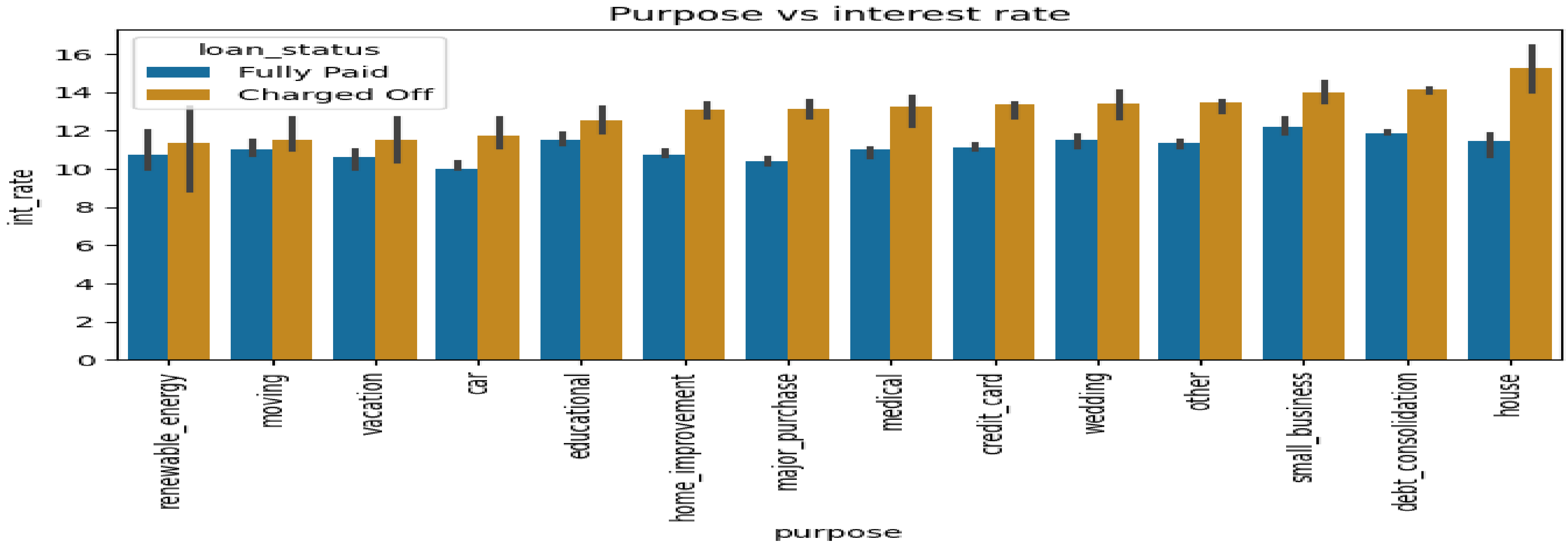
- DTI ratio in the 10-15 range shows higher chances of defaults.
- Higher DTI ratio leads to a greater risk of default

Distribution of Loan Amount among different purposes



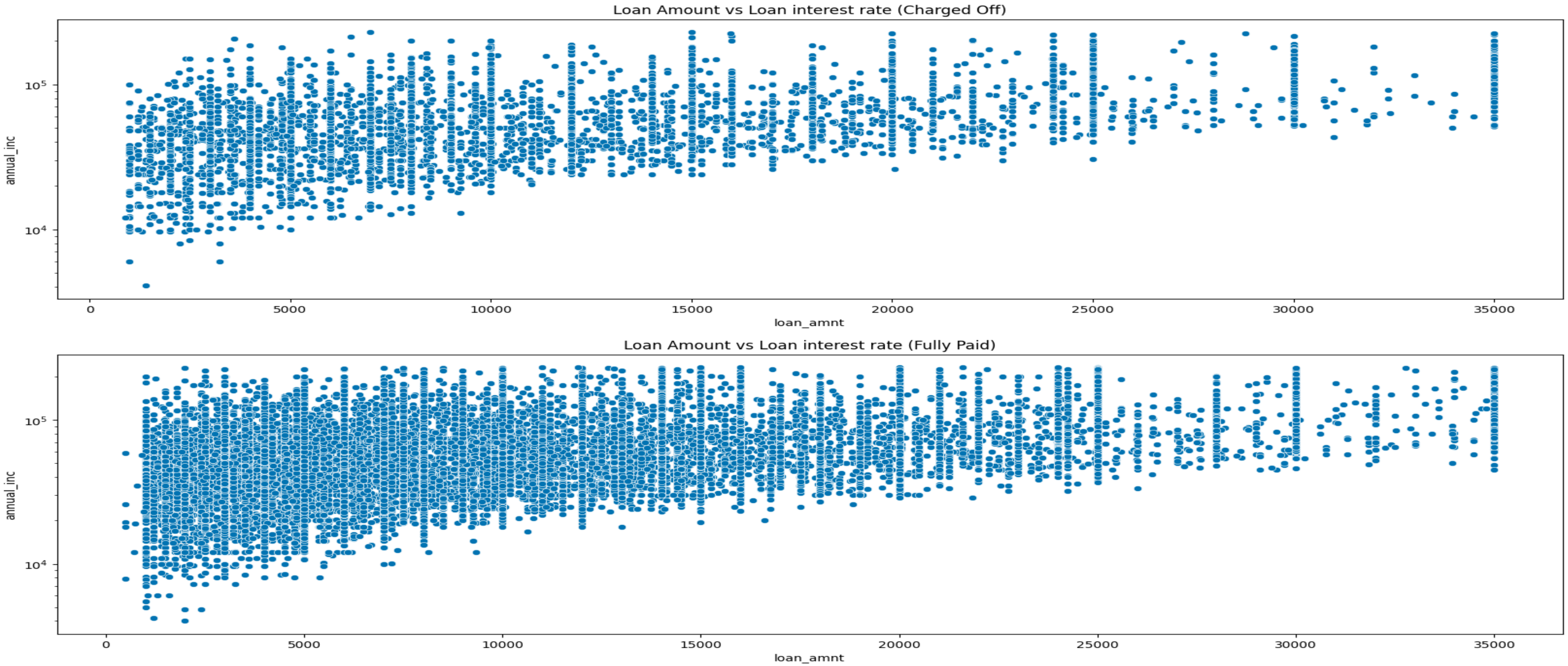
- Small businesses face a higher risk of defaulting on loans with larger amounts.

Distribution of Interest rates taken for different purposes



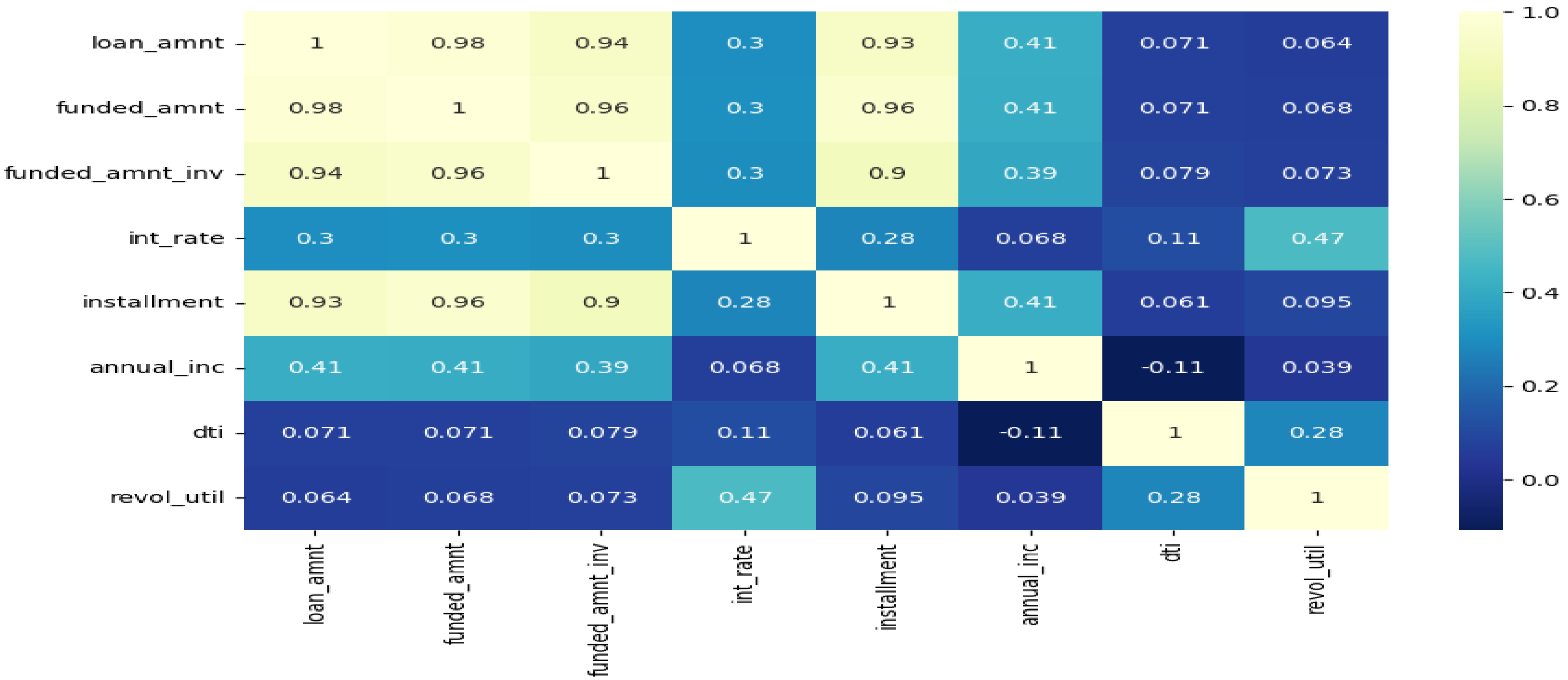
- High-interest home loans often result in defaults, a trend similarly observed in small business and debt consolidation loans.

Relation of Loan Amount and Interest rate for defaulters and non defaulters



- Fully paid and Charged Off loans show comparable patterns in relation to annual income, with a linear model having a significantly low slope.

Correlation Plot



- Weak relationship between loan amount, funded amount and funded amount by investor with interest rate.
- Slightly stronger relationship between loan amount, funded amount and funded amount by investor with DTI