

# **Lending Club Case Study**

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# Problem Statement

- Lending loans to 'risky' applicants is the largest source of financial loss (called credit loss). The credit loss is the amount of money lost by the lender when the borrower refuses to pay or runs away with the money owed.
- The main objective is to be able to identify these risky loan applicants, then such loans can be reduced thereby cutting down the amount of credit loss. Identification of such applicants using EDA is the aim of this case study.
- Perform an analysis to understand the driving factors (or driver variables) behind loan default, i.e. the variables which are strong indicators of default. The company can utilise this knowledge for its portfolio and risk assessment.



# Approach

- **Step 1: Data Cleaning**

- The first step to find out the datatypes of the columns and the shape of the dataset.
- The second step is to find the percentage of null values in the dataset.
- Once we have the percentage details of null values, we will be removing those rows and columns from the dataset.
- Dimensionality reduction : To delete the columns that are not needed for our analysis.

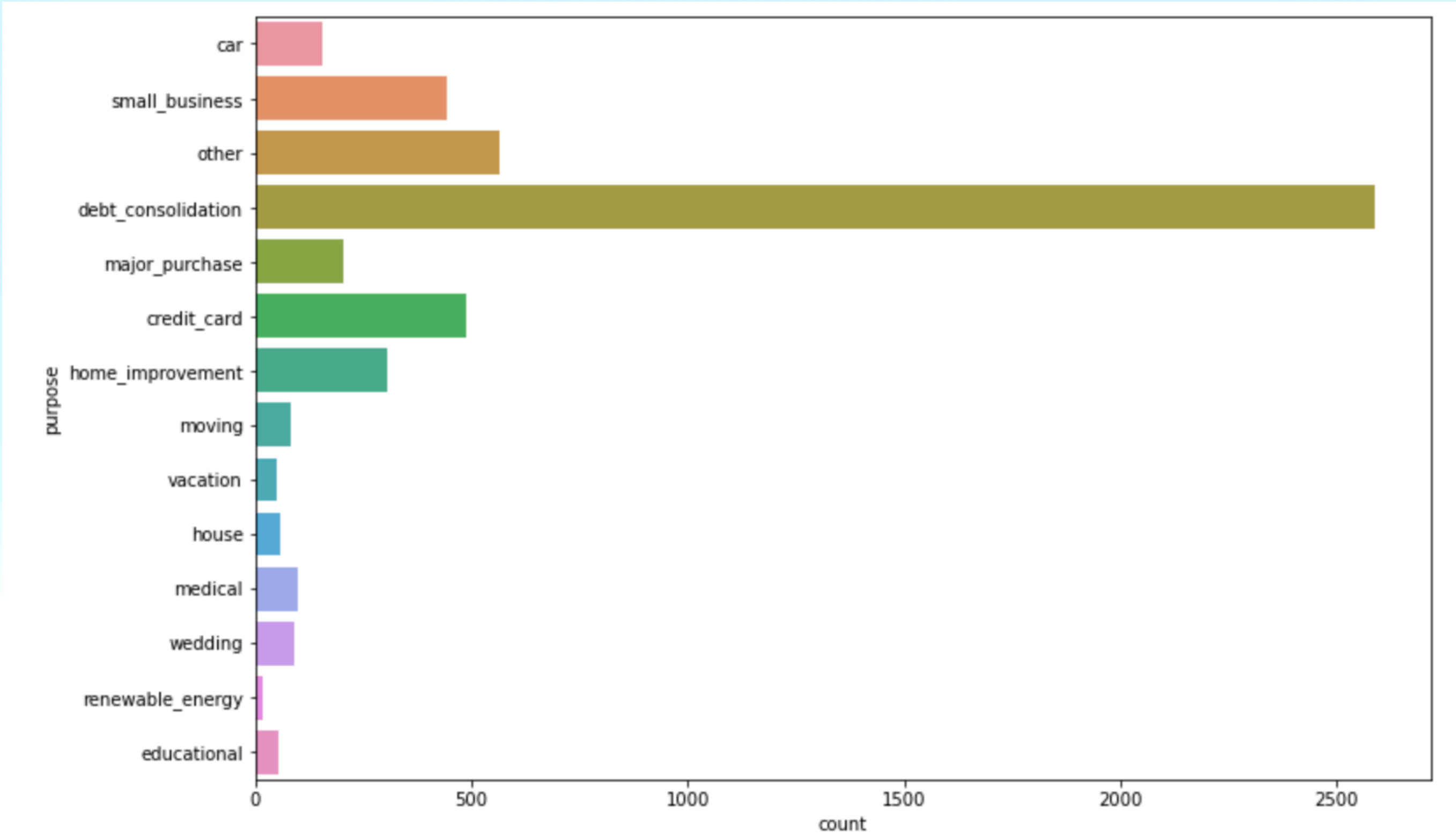
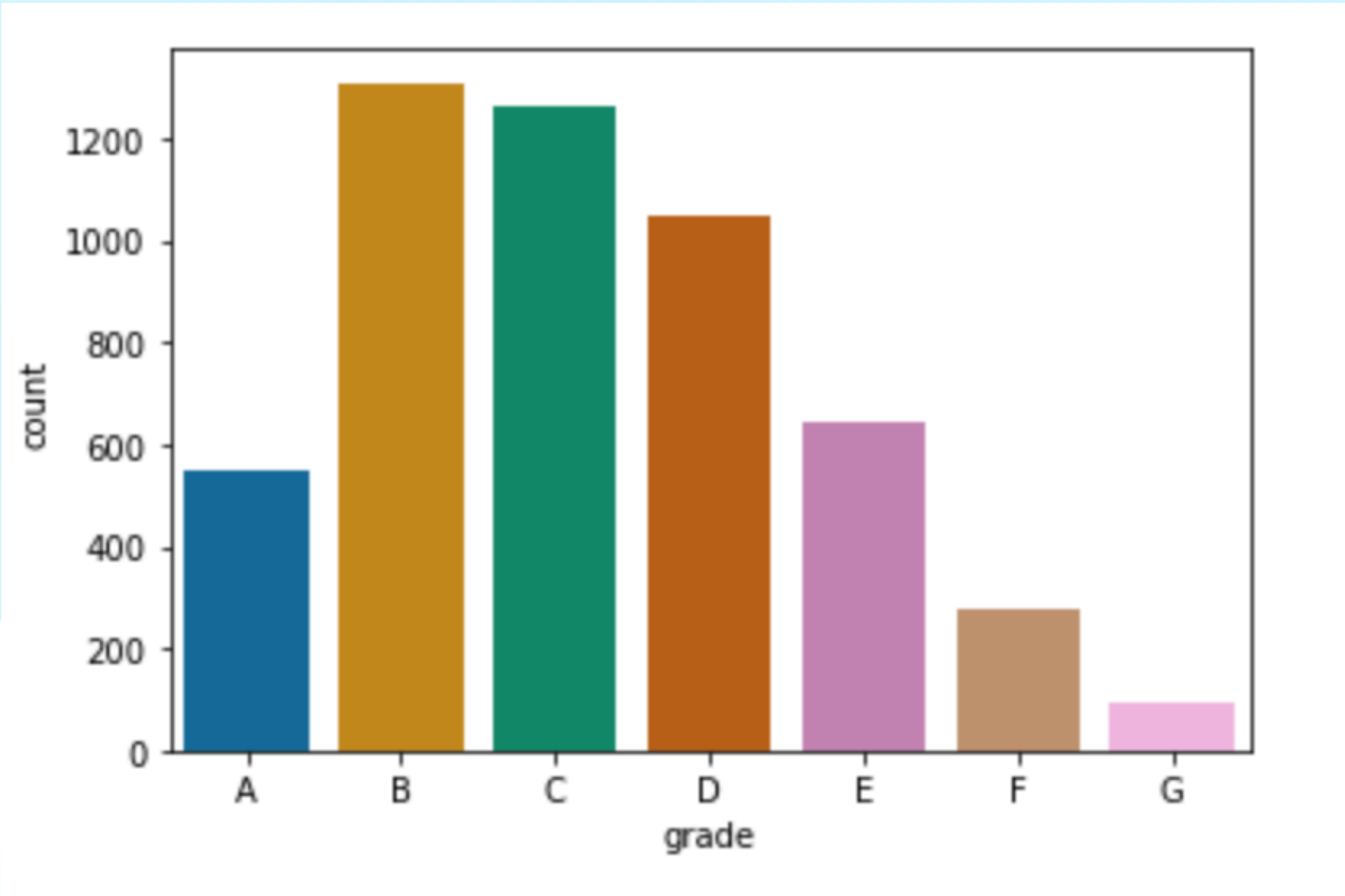
- **Step 2: Univariate Analysis**

- In this analysis, we analyse all the features with the target variable and plot a graph to understand the relation between the variables.

- **Step 3: Bivariate/Multivariate Analysis**

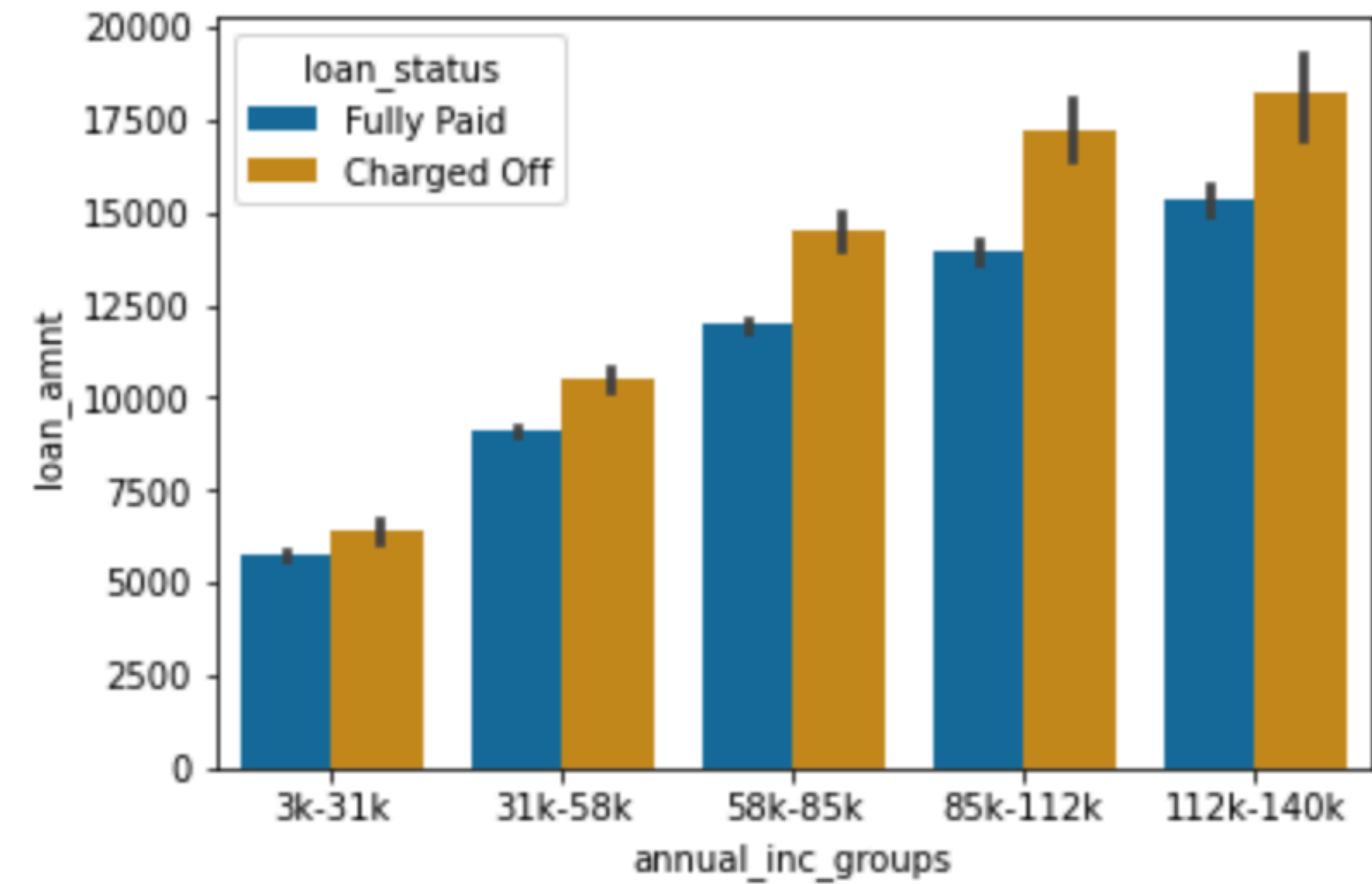
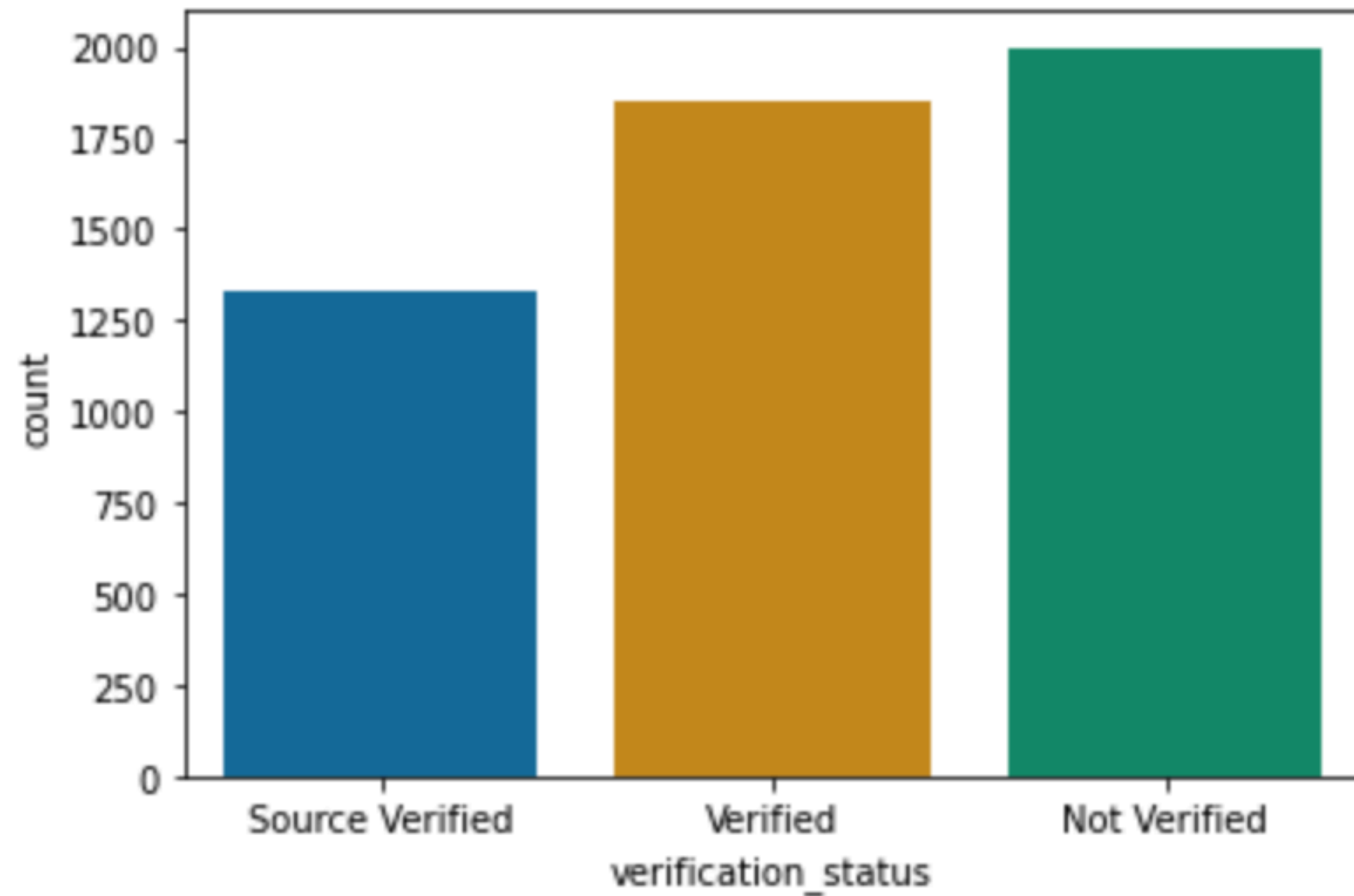
- In this analysis, we we analyse multiple variables with the target variables to understand the correlation between categories and variables.

# Important Results





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Across all the age groups, the loan amount is higher for the defaulters.

# Results

There is more chance of applicants defaulting when :

- Applicants having house\_ownership as 'RENT'.
- Applicants who use the loan to clear debts
- Applicants who receive interest rate of 15% - 17%
- Funded amount by investor is between the range of 5000-10000
- Applicants are likely to default if the loan amount is between 5K to 10K
- Dti is between 12 to 18
- When the applicants loan status is not verified.
- When the reason for loan is debt-clearance, the applicant is likely to default.
- The applicants are likely to default when the grade is B
- There is one observation that applicants are more likely to defaulted in the later part of the year as per the month year analysis.
- Applicants taking loan for 'home improvement' category and have income of 60000 to 70000
- Applicants who have taken a loan in the range 30000 - 35000 and are charged interest rate of 15% to 17.5%
- When grade is F and loan amount is between 15000 to 18000
- When employment length is greater than 10 years the loan amount is 13000 to 15000
- When the loan is verified, the laon amount is higher than the other verification status.





**Thank You**