Lending Club Case Study

Submitted By-

ARUN PERI (arunperi91@gmail.com) and

MAYANK (michalrook@gmail.com)

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Lending Club Case Study

Background

- Lending club is the largest peer-to-peer marketplace connecting borrowers with lenders. Borrowers apply through an online platform where they are assigned an internal score.

- Lenders decide -
  - 1) Whether to lend
  - 2) The terms of the loan such as interest rate, monthly instalment, tenure etc.

- Some popular products are credit card loans, debt consolidation loans, house loans, car loans, etc.

Business Objective

- To identify variables which are strong indicators of default and potentially use the insights for its portfolio and risk assessment.

Data Understanding

Types of variables:

- Customer (applicant) demographic

- Loan related information & characteristics

- Customer behaviour (if the loan is granted)

Customer's Demographics
Employement Length
Employement title
Annual Income
Zip Code
Description

Loan Information & Characteristics
Loan Amount
Funded Amount
Funded Amount Investment
Interest Rate
Loan Status
Laon Grade

Customer Behaviour variables
Delinquency year -2
earliest credit line
Revolving balance
Recoveries
Application type
Loan purpose

Total Defaulter analysis

- The Total number of defaulter are 14.6 %
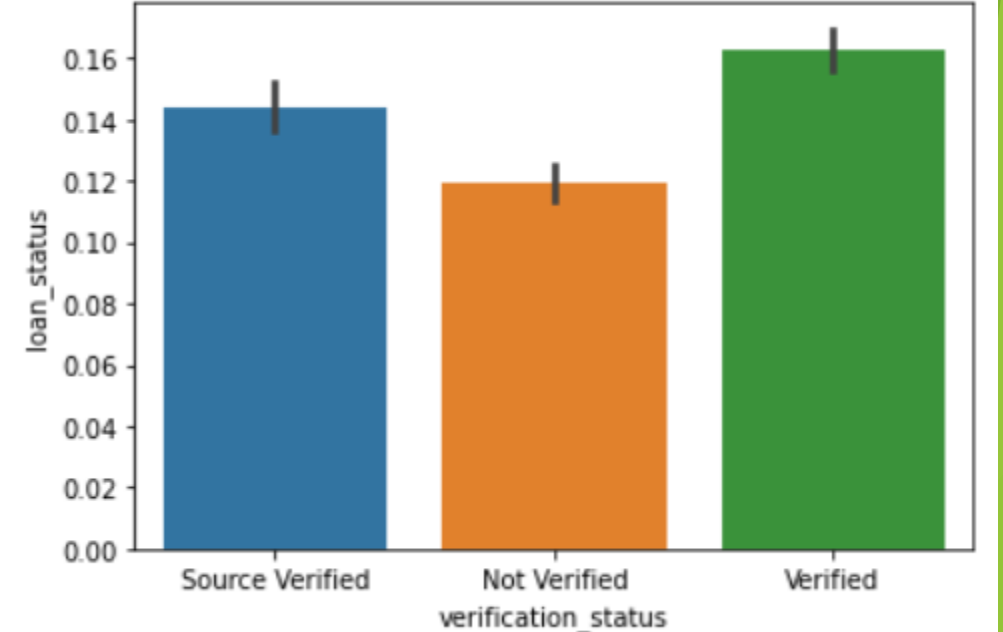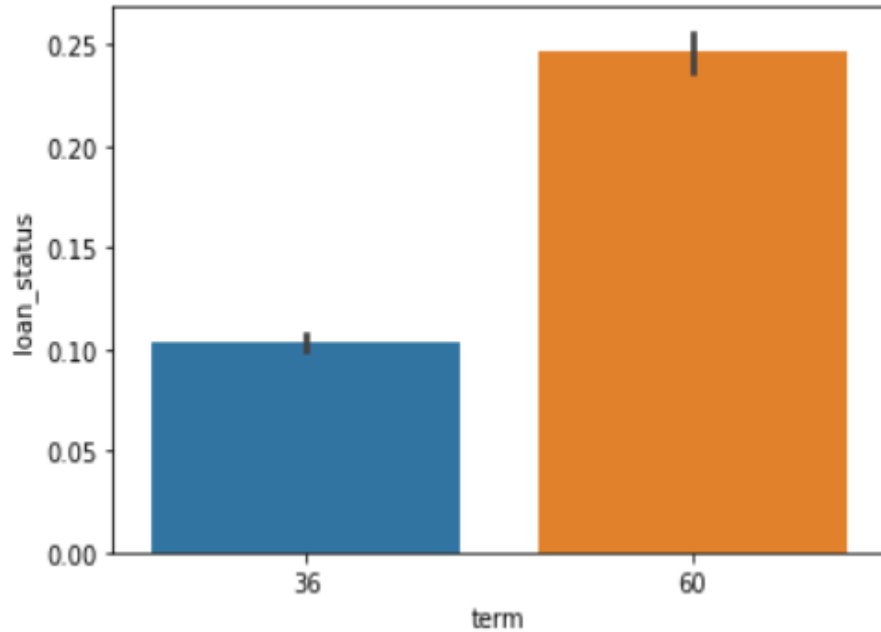- Now we will identify how these defaulters are varying with different parameters
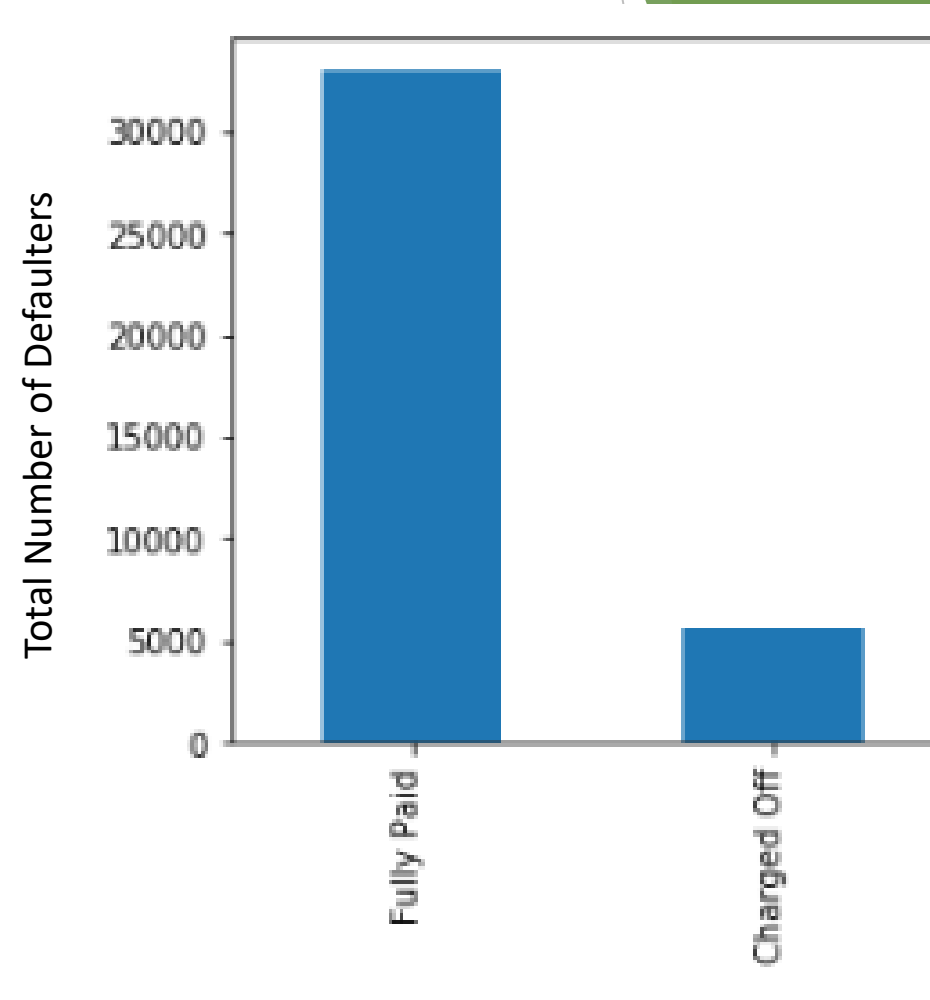
Univariate Grade and Sub Grade analysis
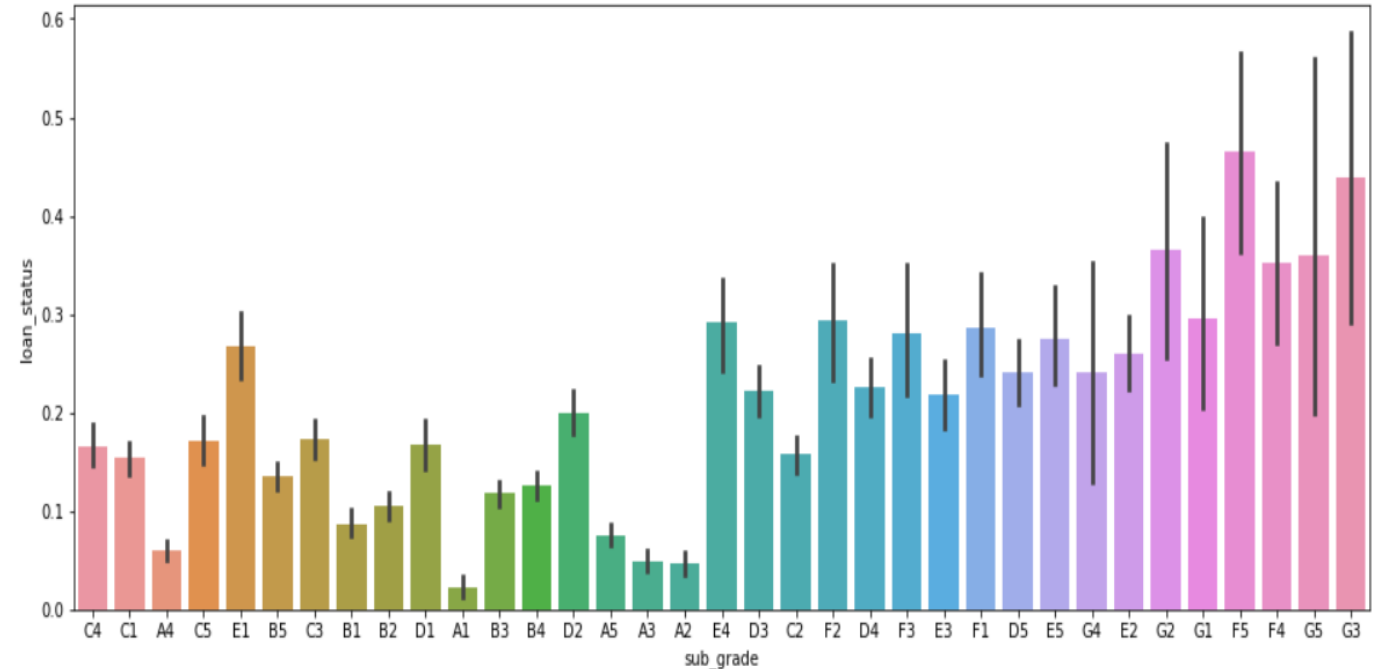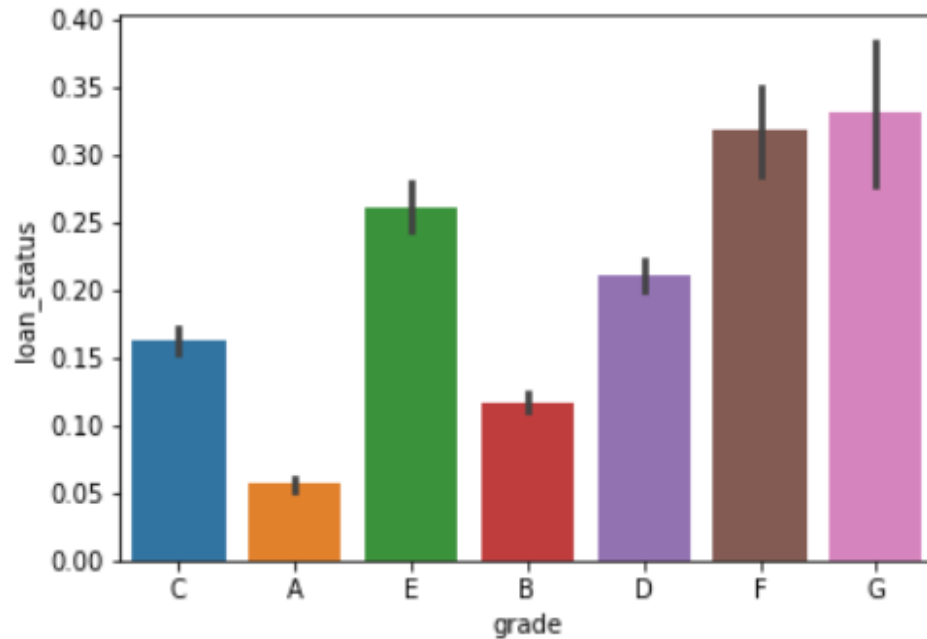
- As the grade increases, the chances for getting a loan defaulted increases.
- As the subgrade is derived from grade, the above property stays true for subgrade as well.

Univariate Term and Verification status analysis

- As the number of loans taken is more in 60 month term, the default rate is higher.
- Not verified customers are the ones who are more defaulter as compared to the verified customer
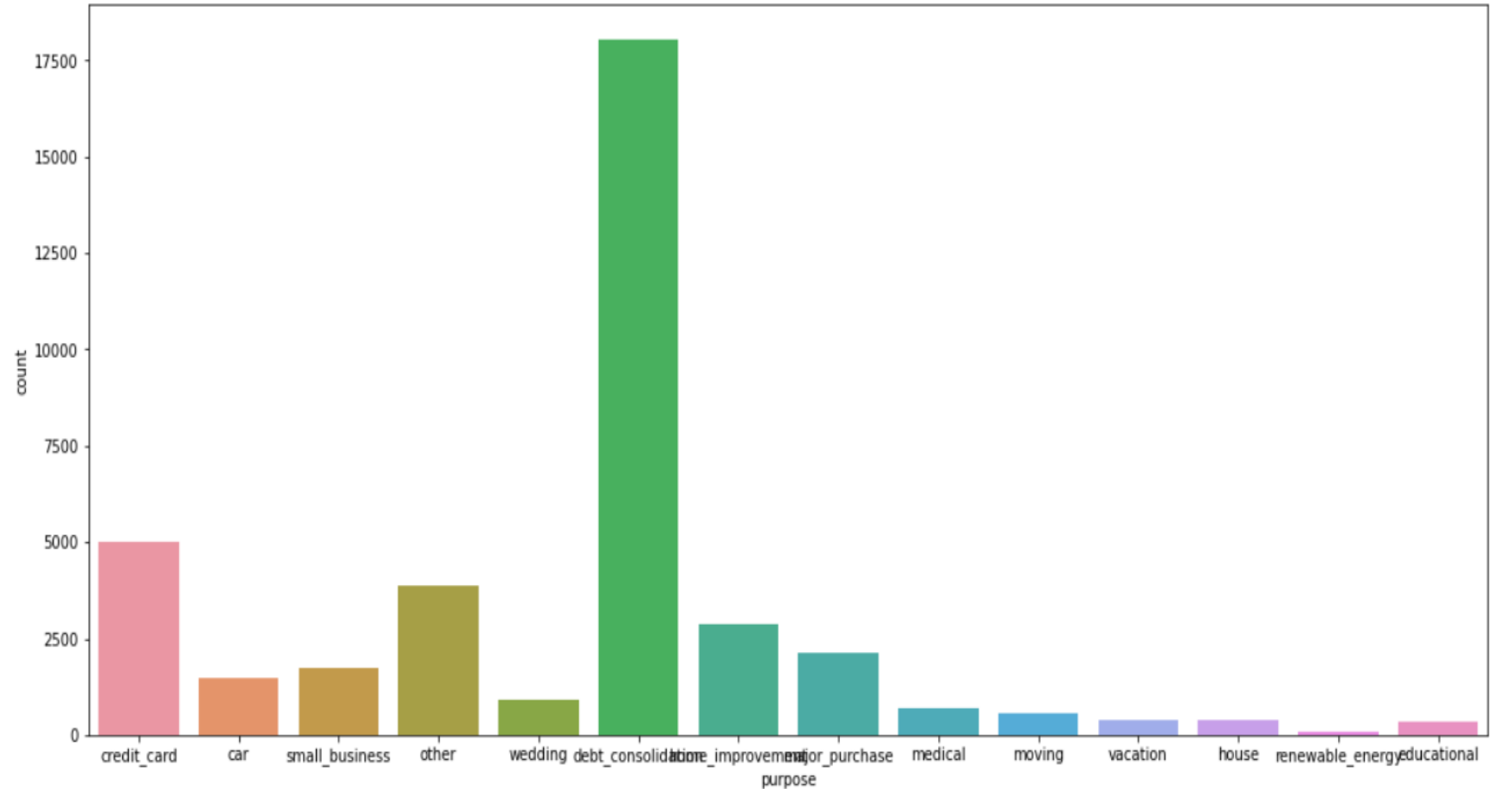
Time analysis

- There was a decreasing trend in defaulter rate from the year 2007 to 2010 and then there is a sudden increase in the year 2011.
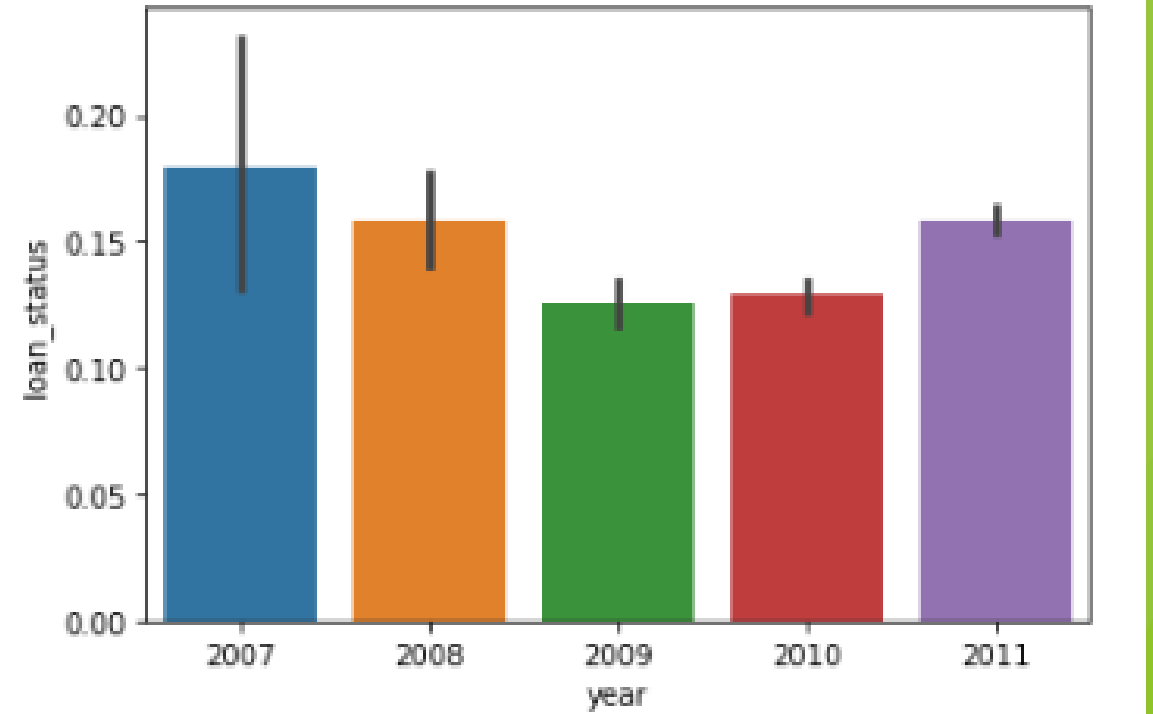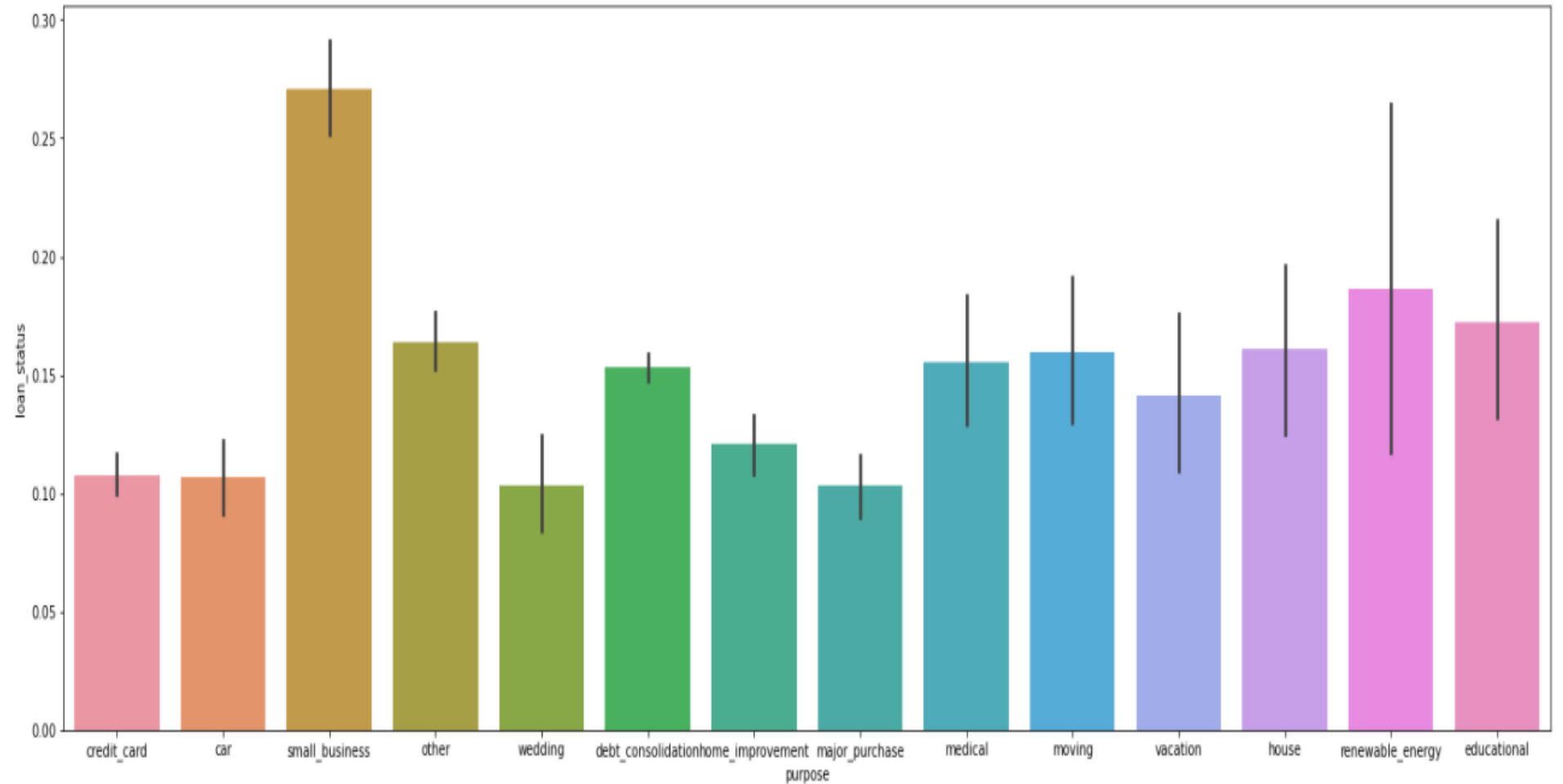
Loan purpose Analysis count wise

- Debt consolidation has maximum number of counts
- Top 5 Purpose were selected which are Debt consolidation, Credit cards, Home improvement, major purchase loan and Small business
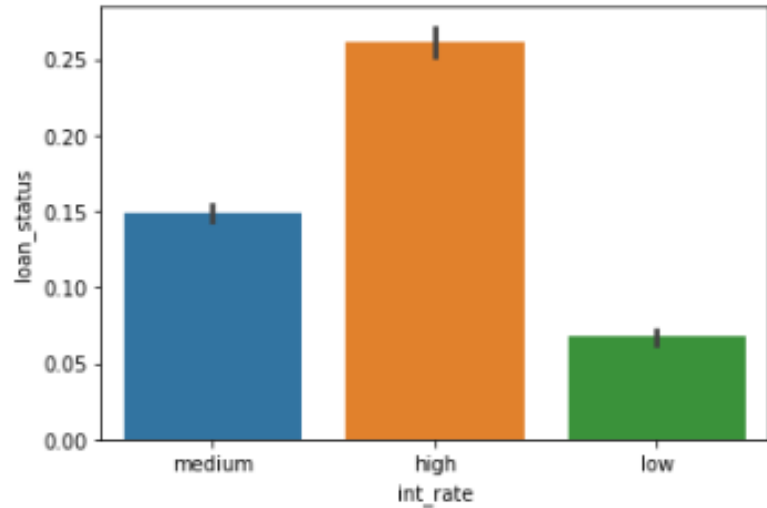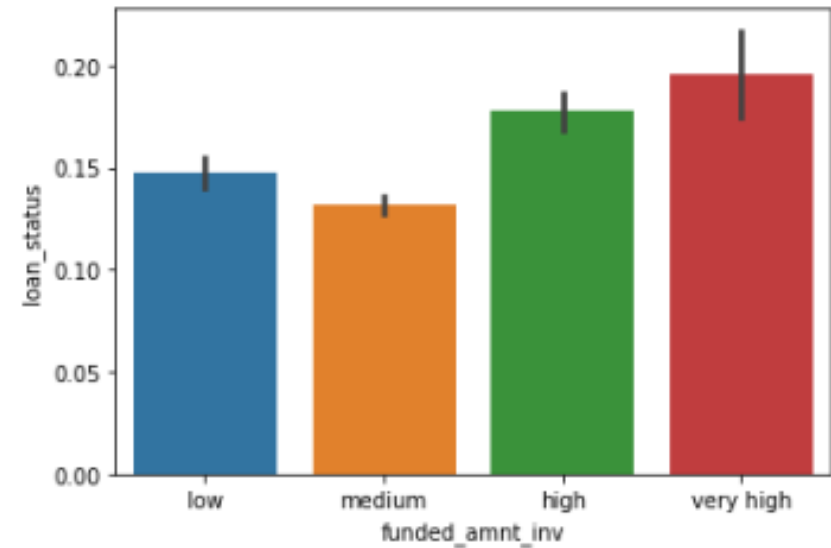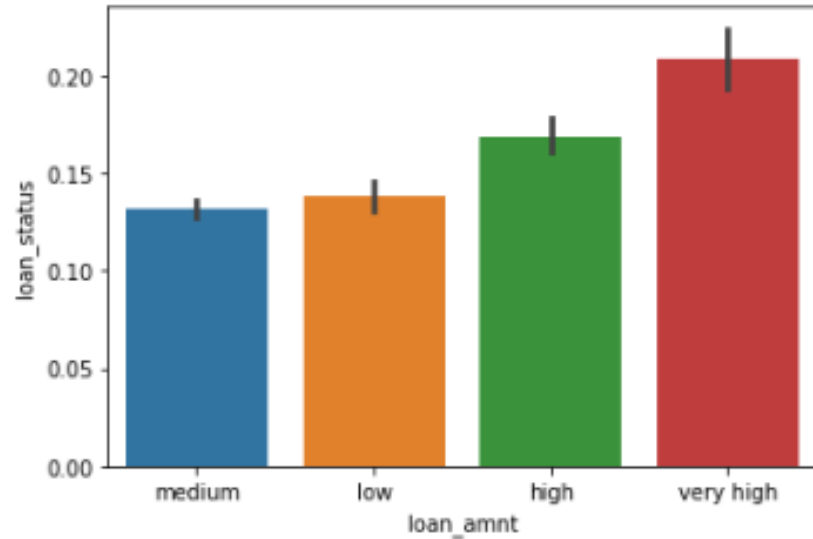
Loan purpose analysis default rate wise

- Maximum defaulters are observed in small business

# Chart showing loan amount, funded amount and interest rate After binning

- As the interest rate increases, the chances of getting a loan defaulted increases.

- As the Loan amount increases, the chances of getting a loan defaulted increases.

- As the funded amount investment increases, the chances of getting a loan defaulted increases.

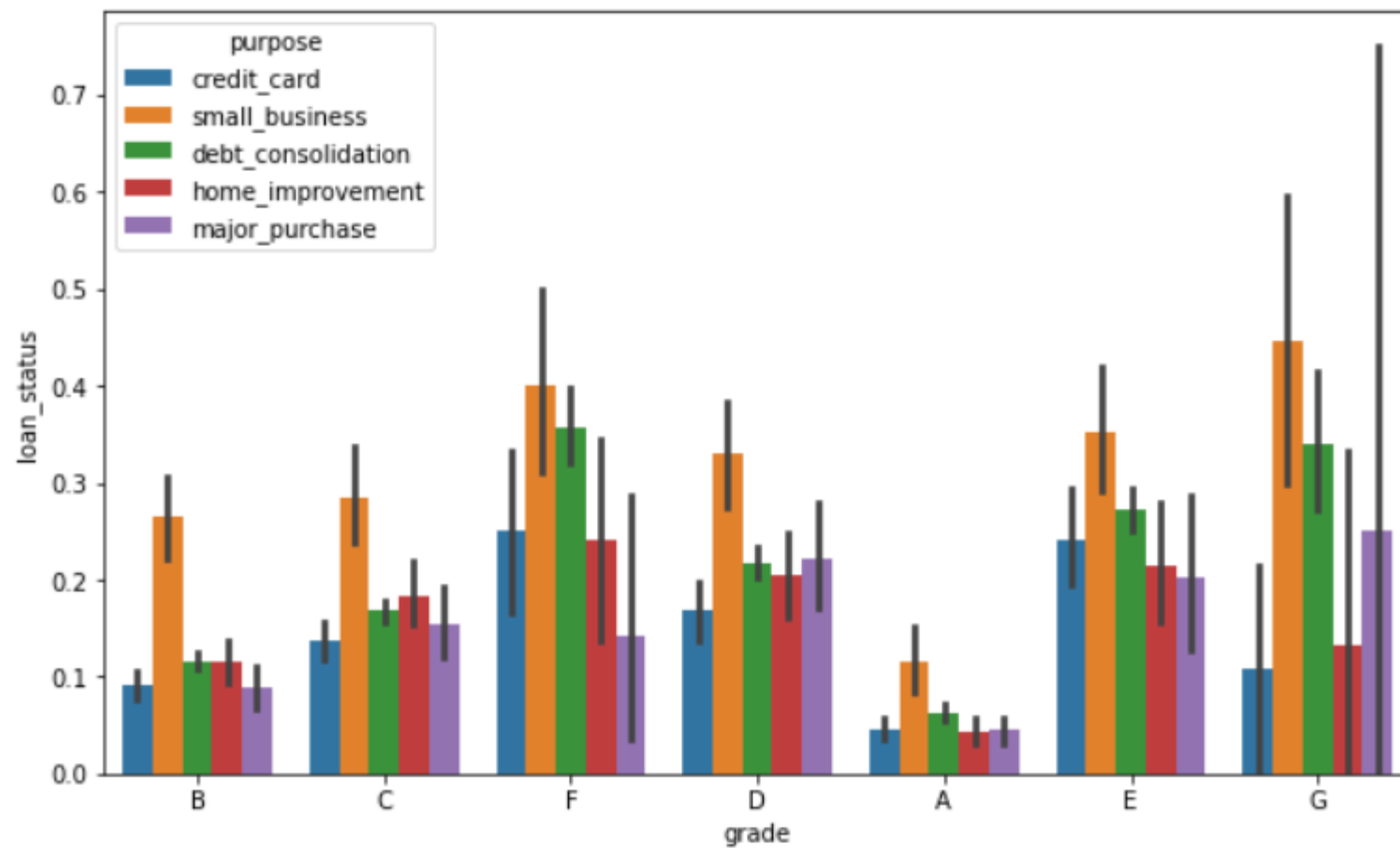# Chart showing loan amount, funded amount and interest rate
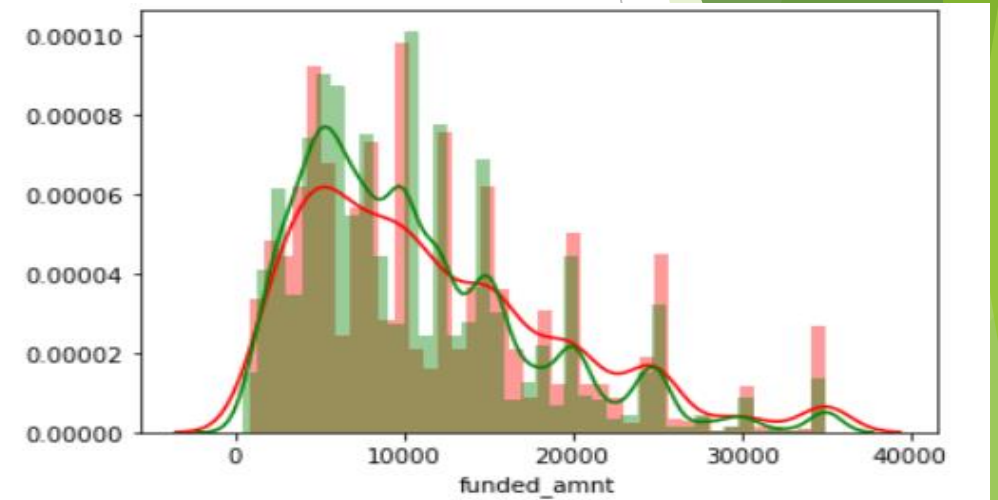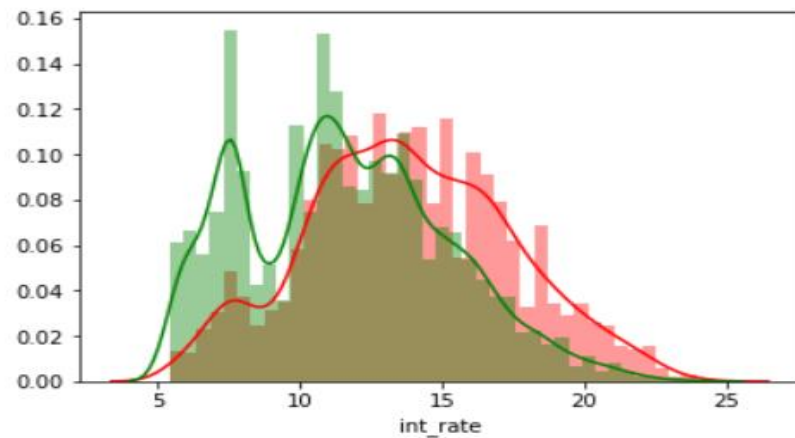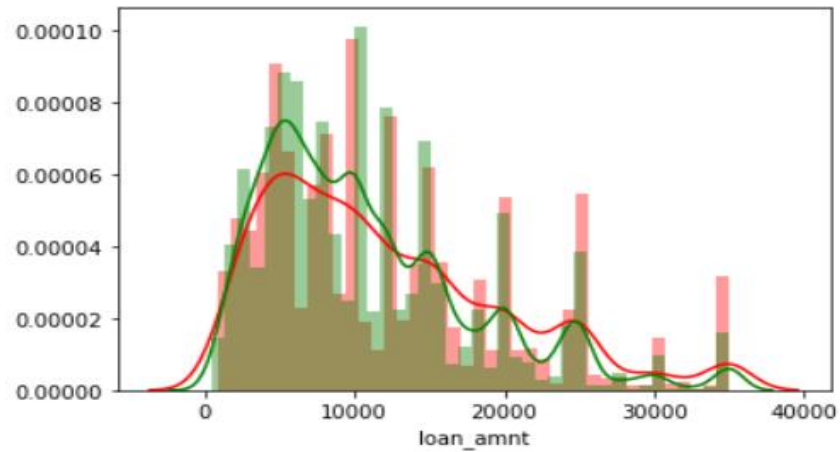
Term distribution in top 5 loan purpose

- Lending club has given out more 60 month term than 36 month term loan plan.
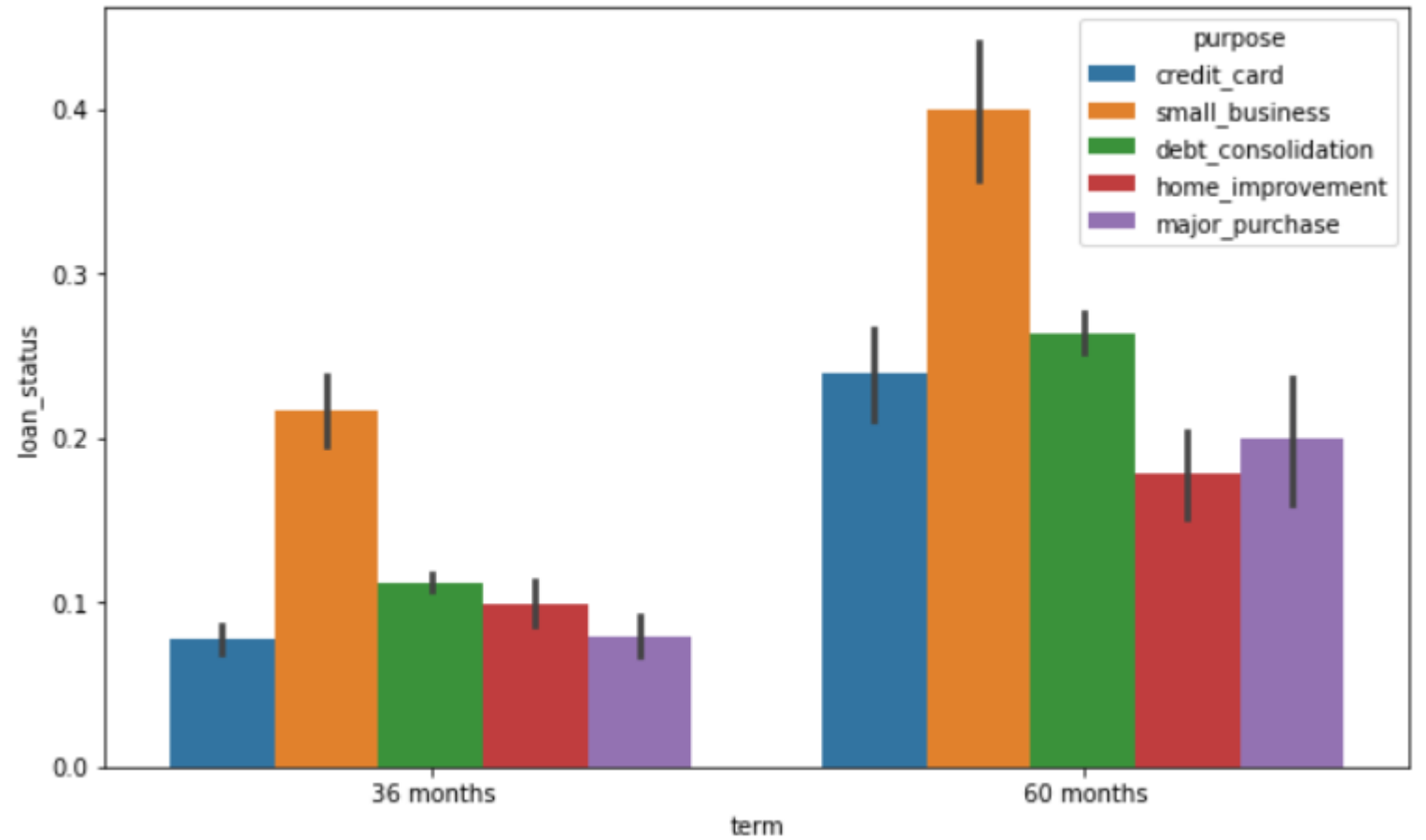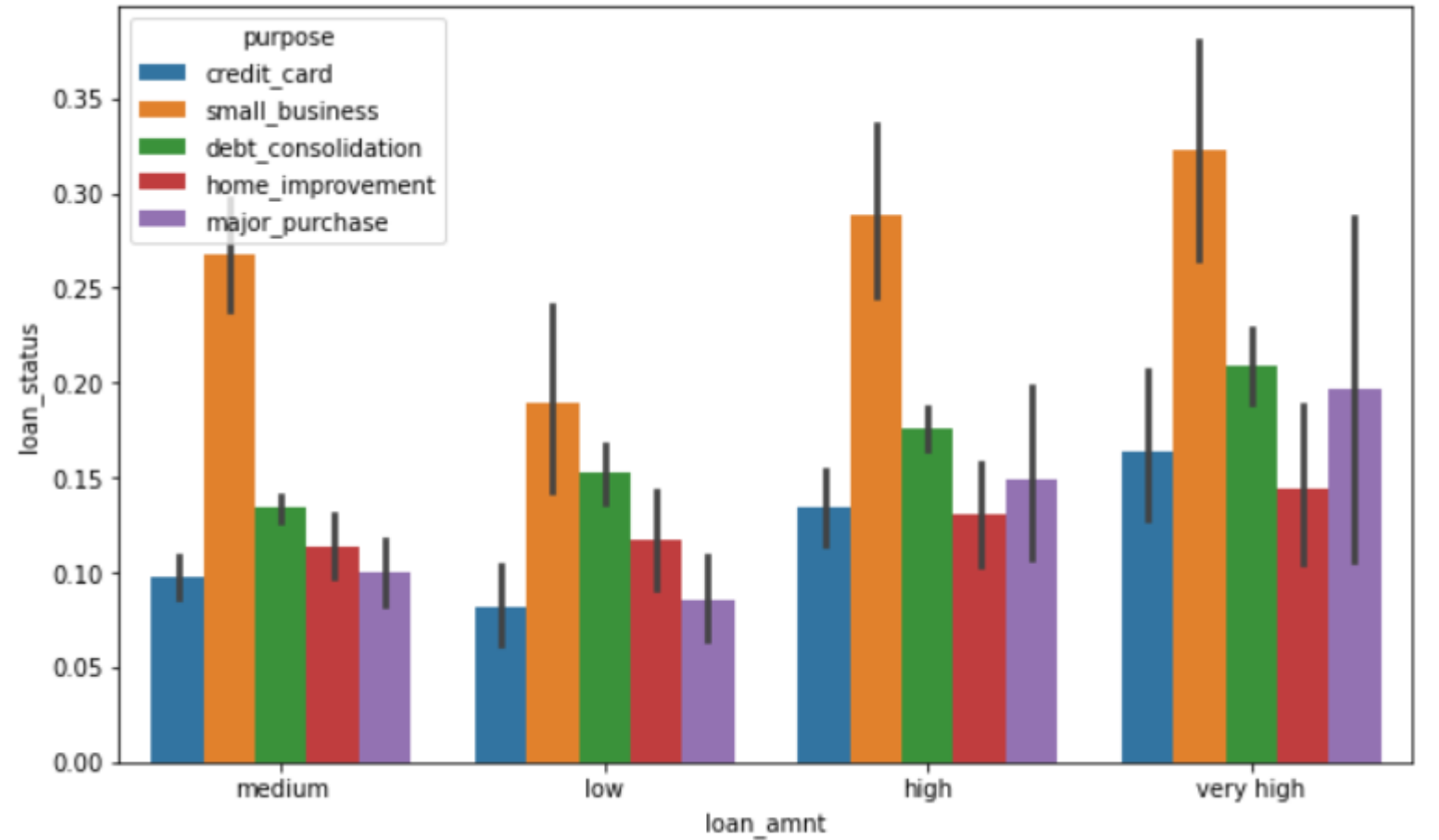
Grade distribution in top 5 purpose

- We can say that grade is an important factor on deciding default factor based on the bivariate analysis done aside.
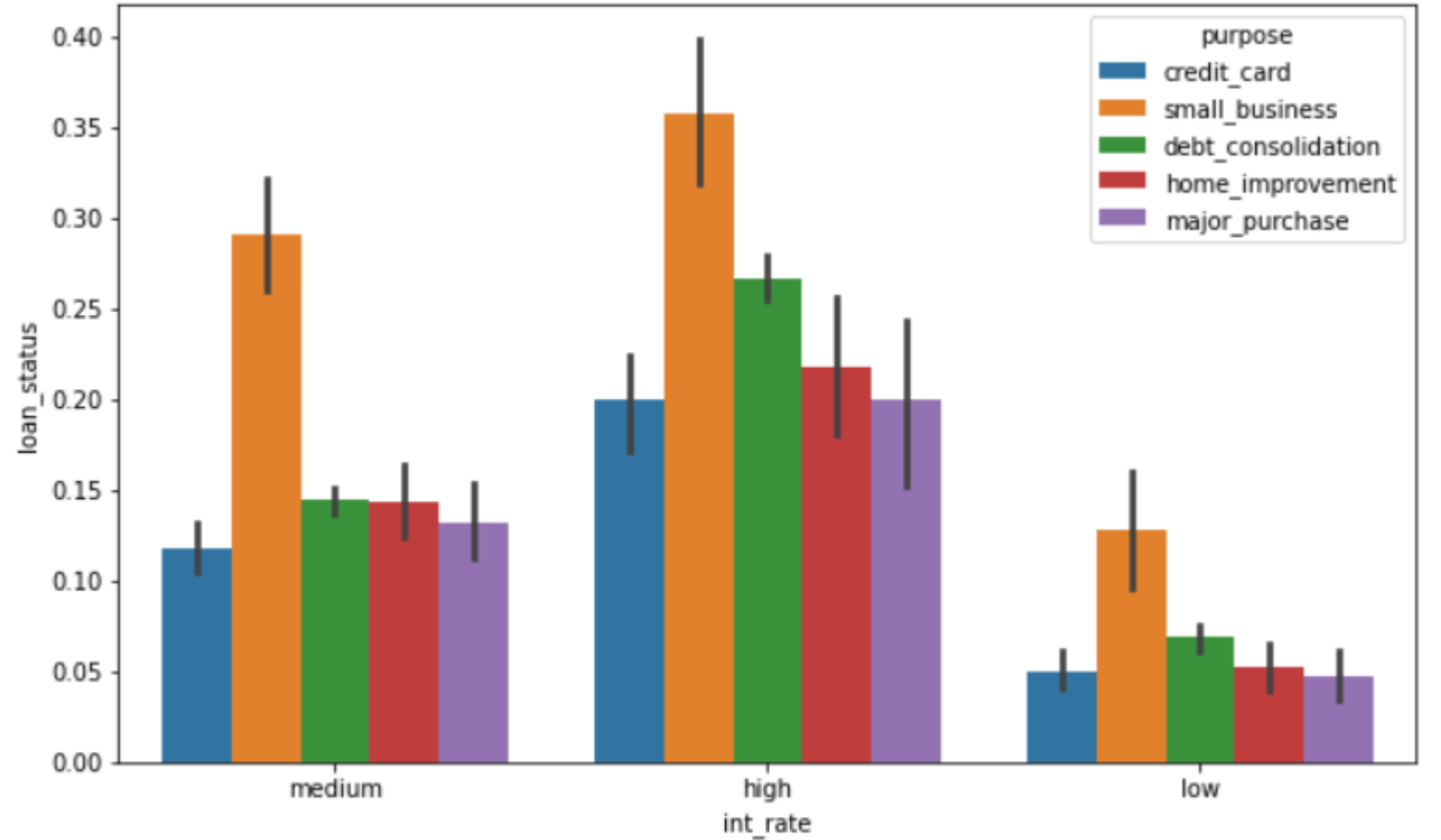
Loan Amount in Top 5 Purpose

- We can say that loan amount is an important factor on deciding default factor based on the bivariate analysis done aside.
- As the loan amount increases the chance of getting the loan defaulted increases.
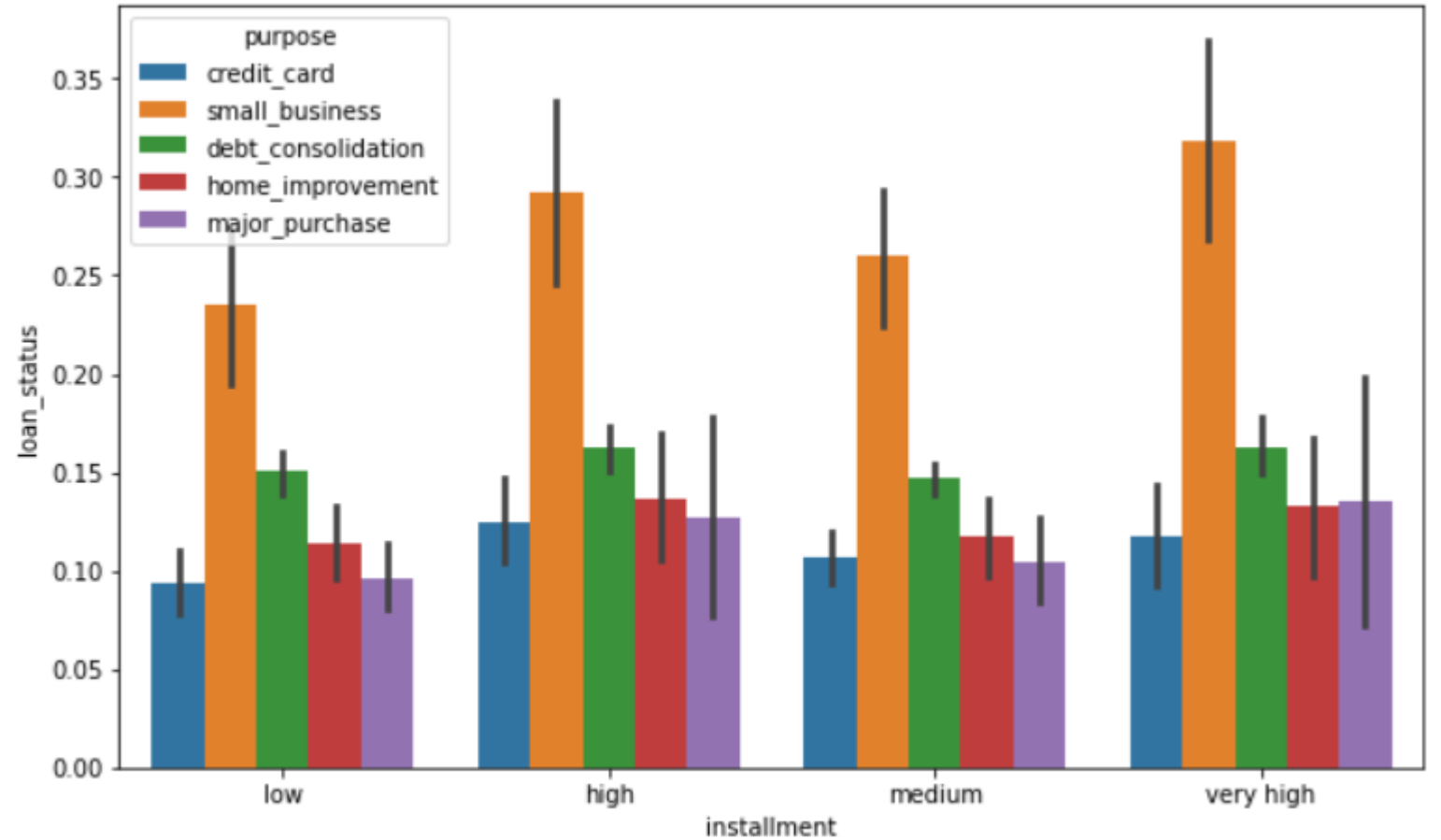
Interest Rate in Top 5 Purpose

- We can say that interest rate is an important factor on deciding default factor based on the bivariate analysis done aside.
- As the interest rate increases the chance of getting the loan defaulted increases.

Instalments in Top 5 Purpose

- We can say that installment is an important factor on deciding default factor based on the bivariate analysis done aside.
- As the installment increases the chance of getting the loan defaulted increases.
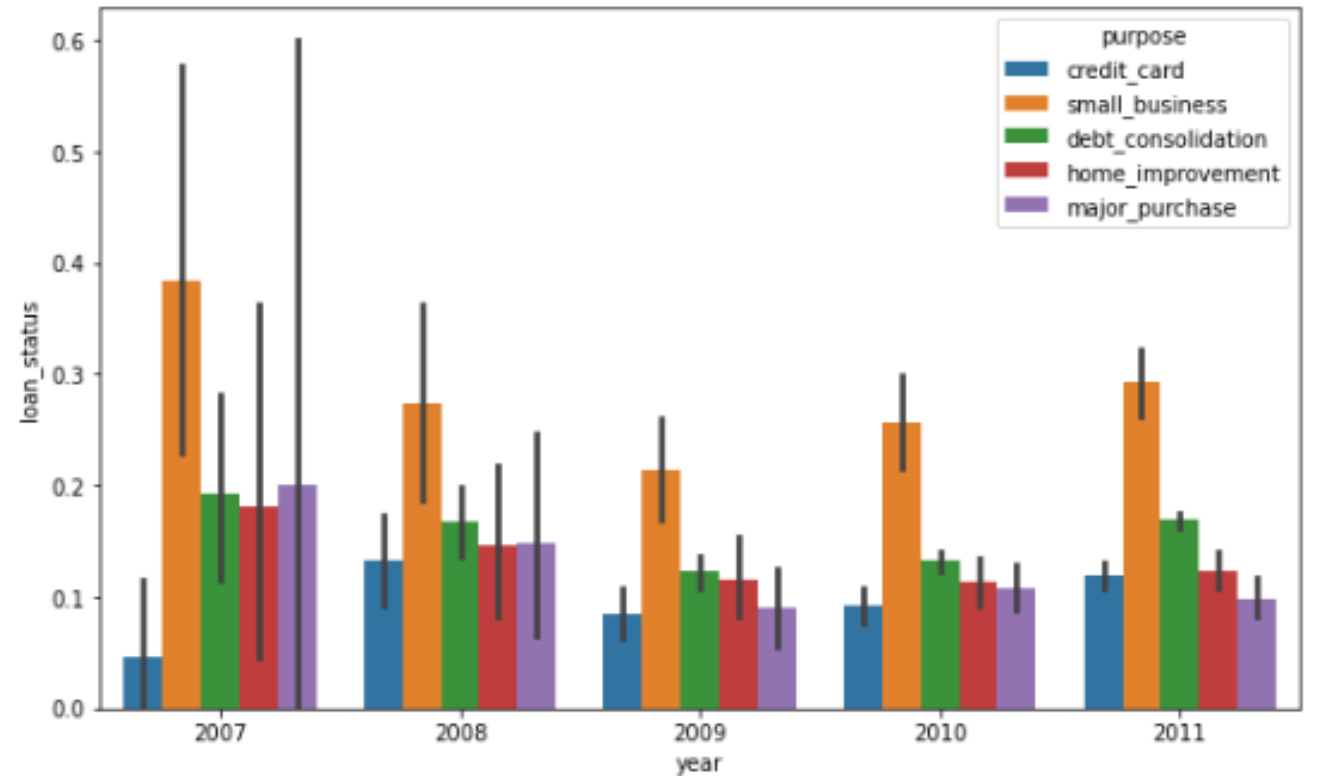
Annual Income in Top 5 Purpose

- We can say that annual income is an important factor on deciding default factor based on the bivariate analysis done aside.
- As the annual income decreases the chance of getting the loan defaulted increases.
- Even with the very high income people who are taking small business loan is more that other purpose in low income group except small business
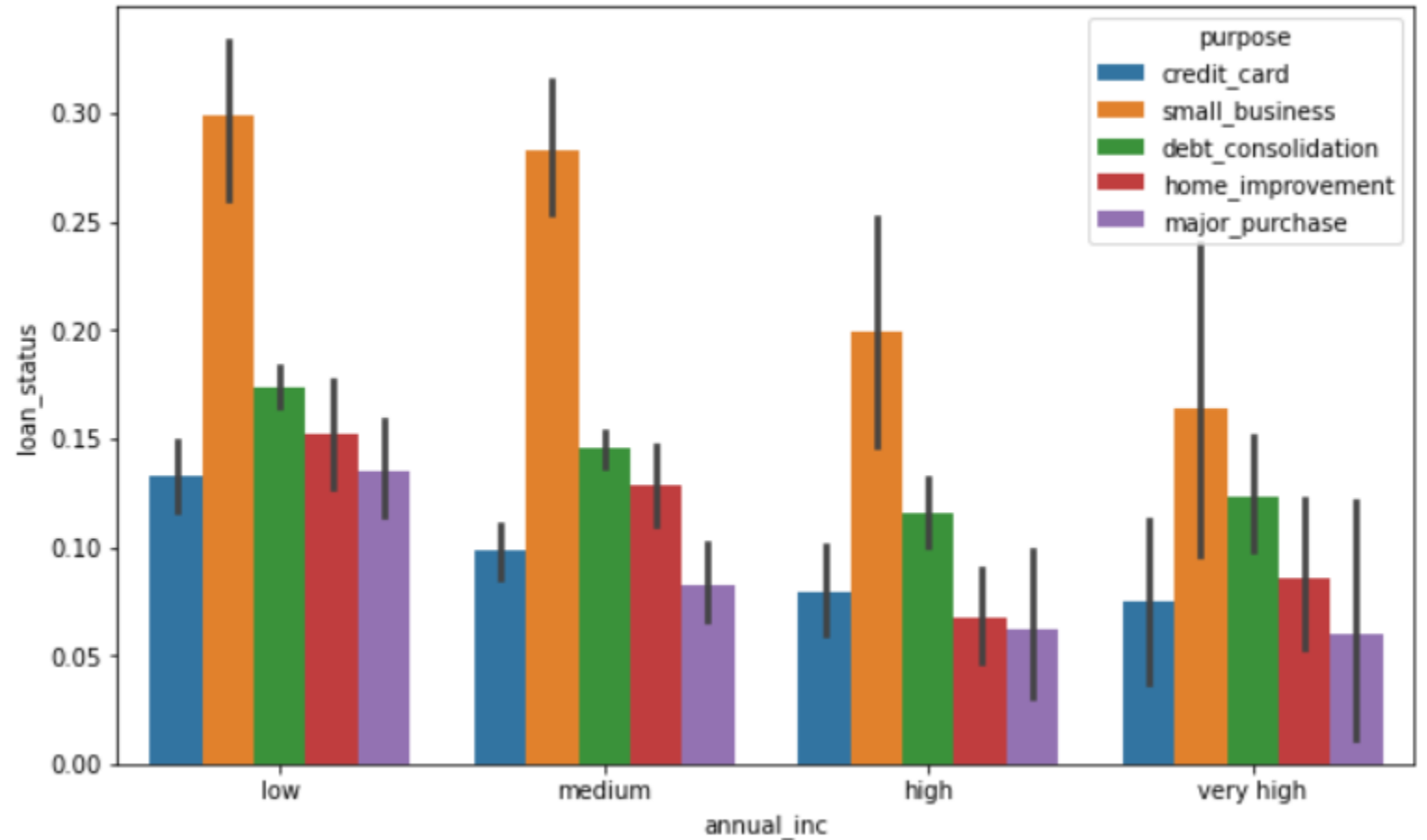
Defaulter Rate in Top 5 Purpose in the years from 2007 to 2011

- Credit card loan were very less in 2007 and then it suddenly got increase in 2008.
- From 2008 to 2011 the defaulter rate remain constant for credit card loan

Recommendation

Strong variables that can be used for predicting a loan getting defaulted are as listed:

- Grade
- Purpose
- Interest rate
- Annual Income
- Instalment
- Year
- Term

Thank You