# Risk Analytics in consumer loan lending

## INTRODUCTION

●The company is the largest online loan marketplace, facilitating personal loans, business loans, and financing of medical procedures. Borrowers can easily access lower interest rate loans through a fast online interface.

● The company wants to understand the driving factors (or driver variables) behind loan default, i.e. the variables which are strong indicators of default. The company can utilize this knowledge for its portfolio and risk assessment.

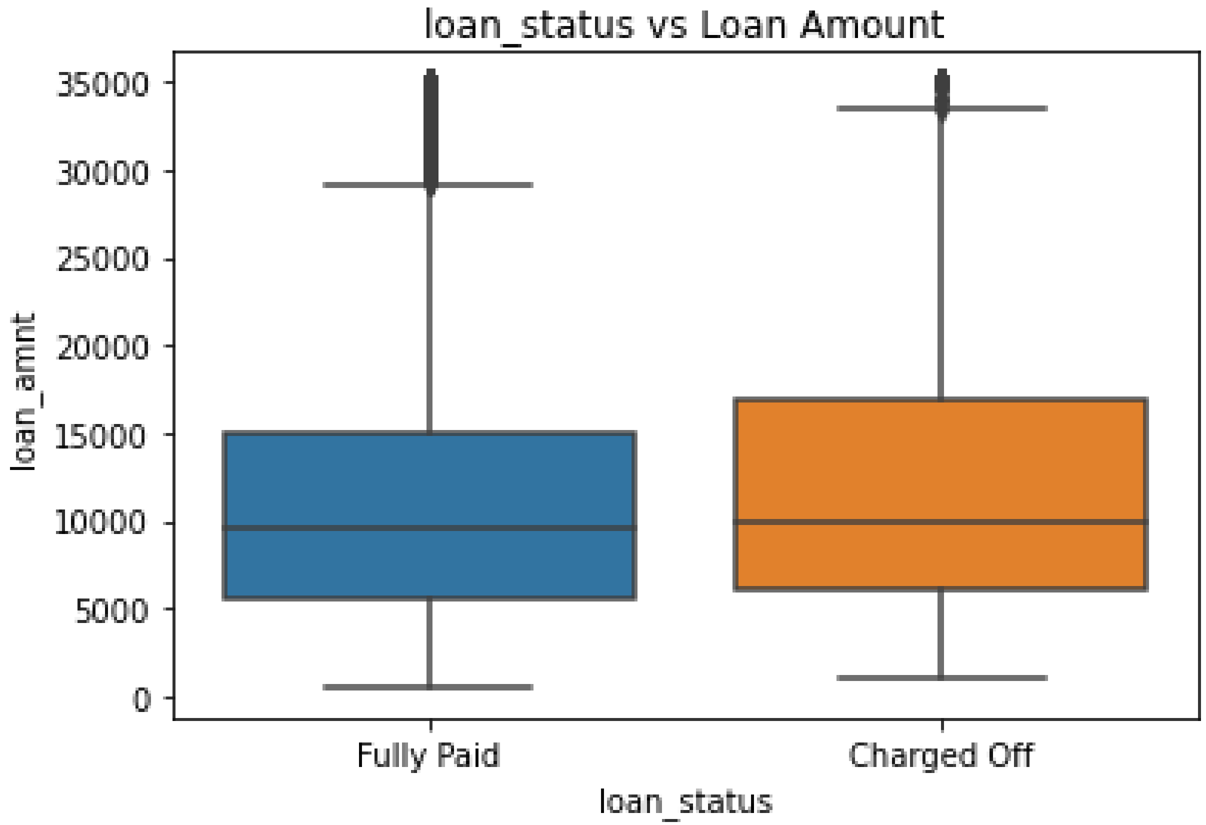
● Aim is to identify these risky loan applicants, then such loans can be reduced thereby cutting down the amount of credit loss. Identification of such applicants’ using EDA is the aim of this casestudy.

## Analysis Approach

- Data Understanding- with the help of data dictionary, get the knowledge of all the columns. Get the specific domain knowledge. After loading the dataset understand the dataset with the help of statistics.
- Data Cleaning-Drop the unwanted columns. Removing column contains null values. Drop the column with unique values. Convert value to proper int, float & proper date representation.
- Univariate Analysis- Analyzing each variables/columns & plotting the distributions. Derive new variables from the existing one.
- Segmented univariate Analysis-Analyze variables against segments of other variables.
- Bivariate Analysis- Analyze the two variables and check the behavior of them.
- Conclusions-Analyzing all the variable & publishing the observations.

**Analysis**-

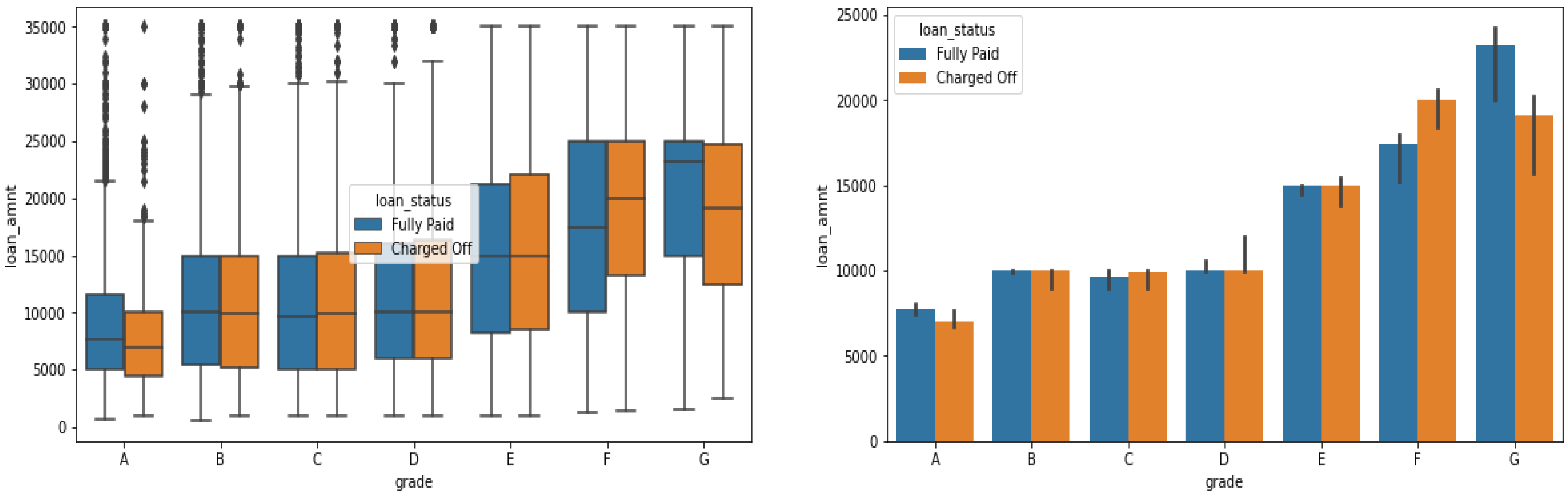
The Charged Off loans have higher amounts than Fully Paid ones.



**Analysis**-

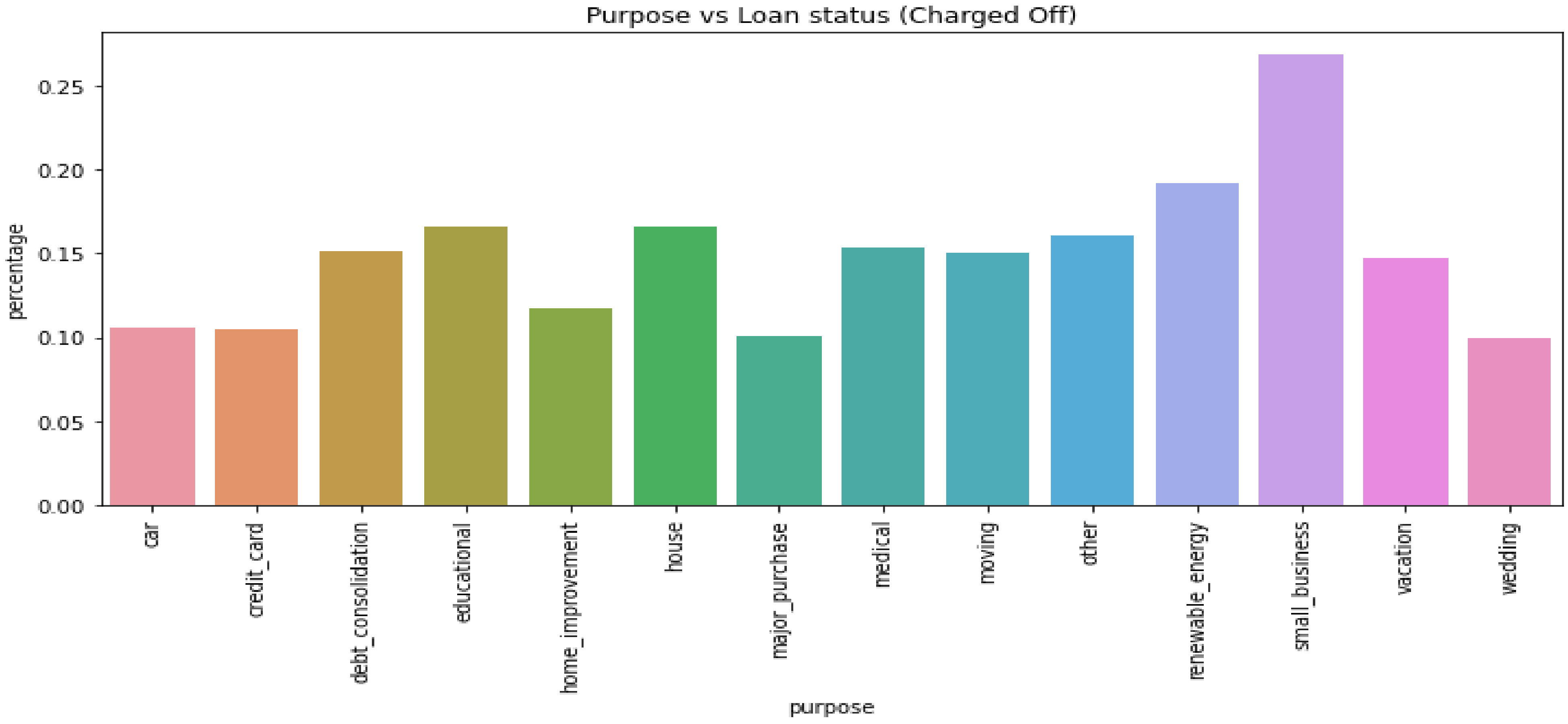
The lower grade people has taken higher amount of loans and also they are more prone to default the loan.

Term vs loan amount



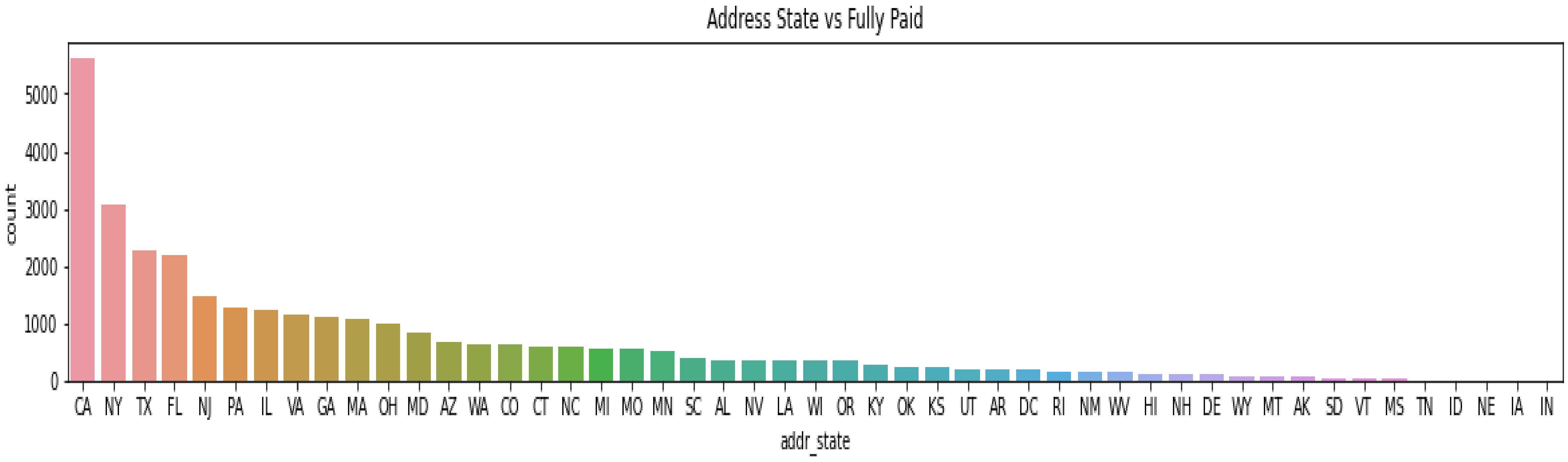
**Analysis**-

Charged-off are higher for small business comparatively.



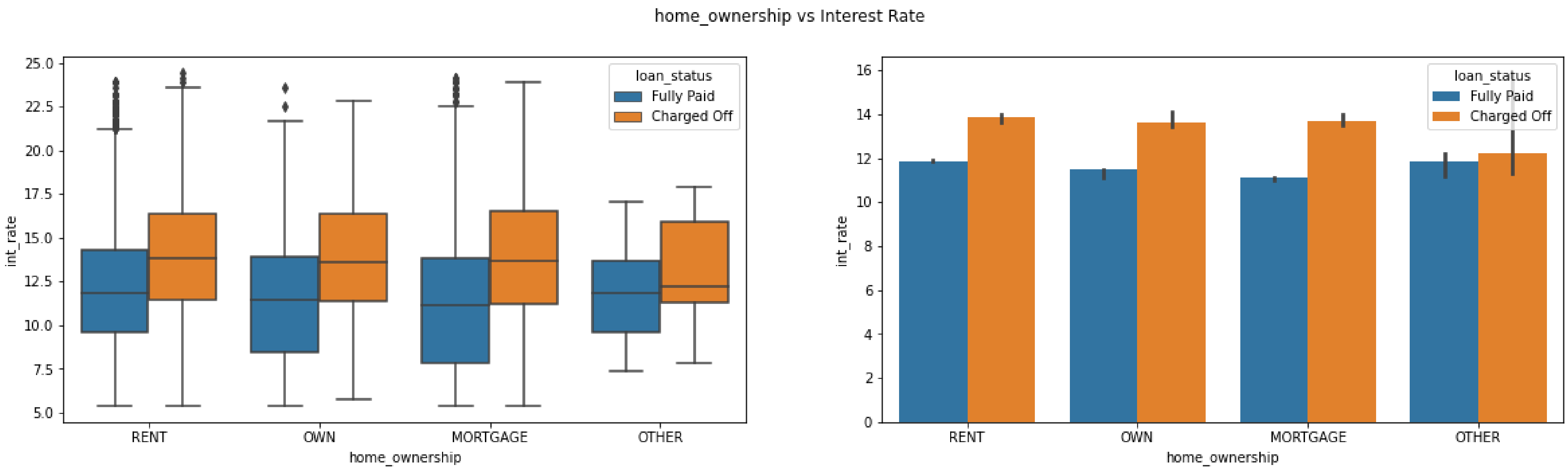
**Analysis**-

More number of borrowers defaulted in CA ,NY,FL and NY states.



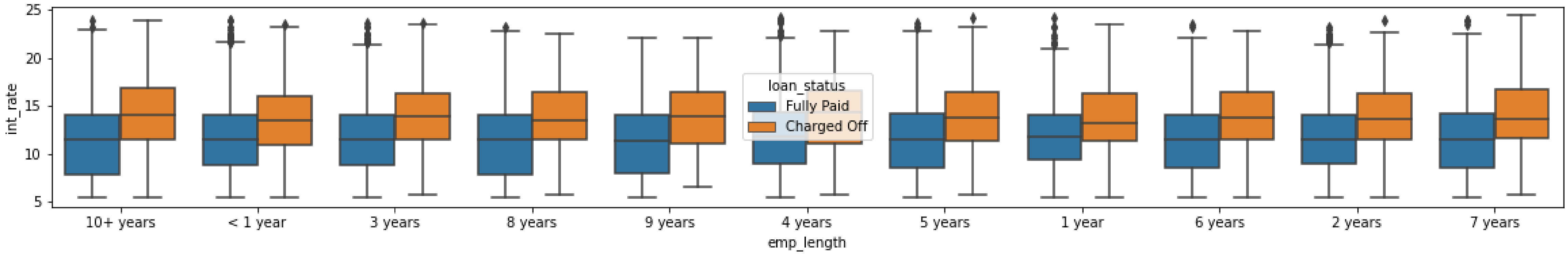
**Analysis**-

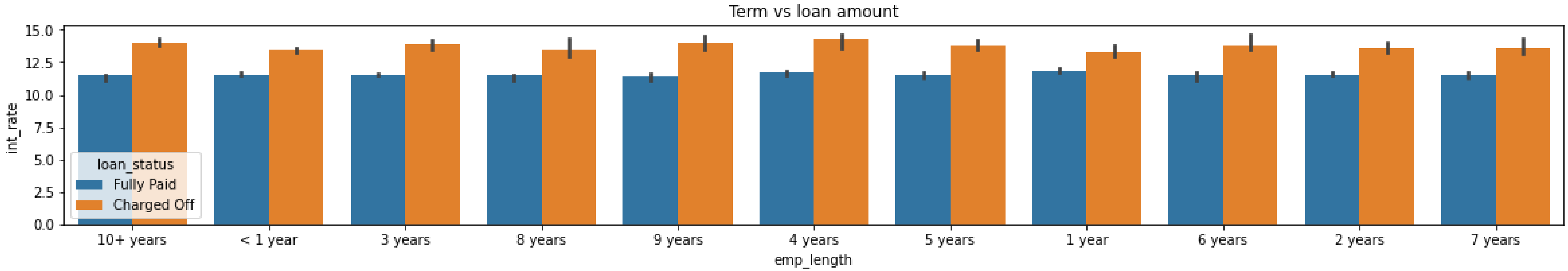
Irrespective of Home owner ship, when the interest rate is high the default rate also high.



# **Analysis**-

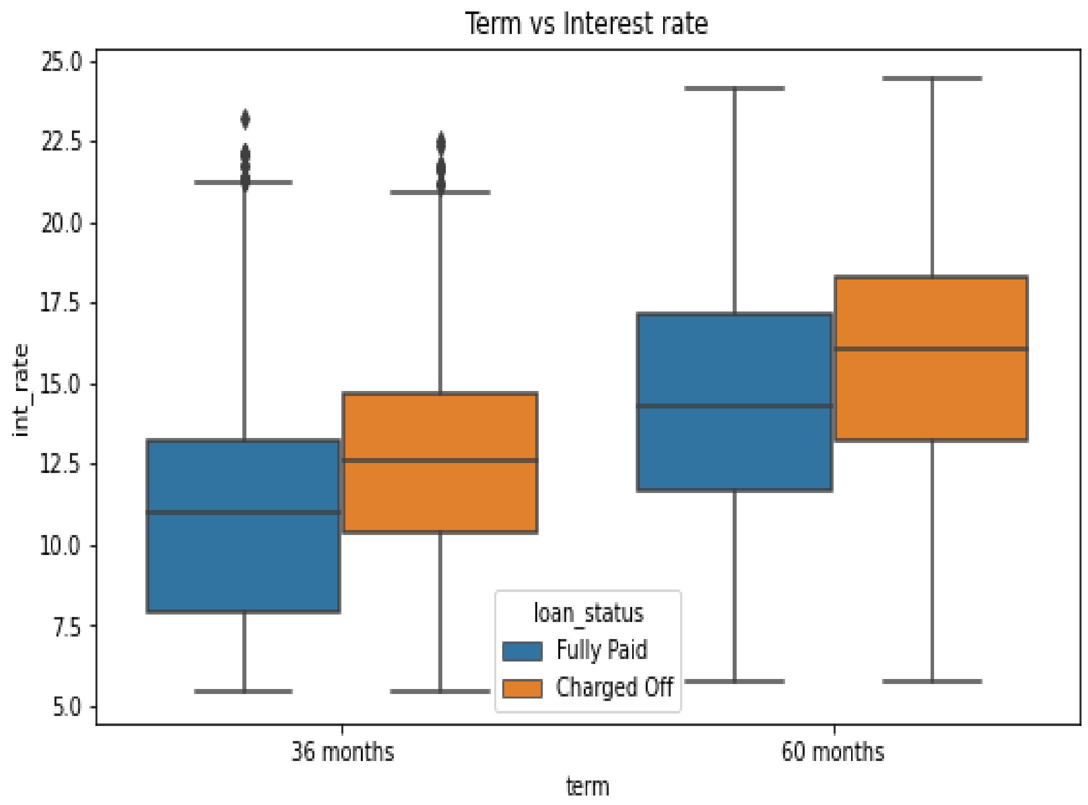
Irrespective of employment length loans with more interest rates got defaulted more.

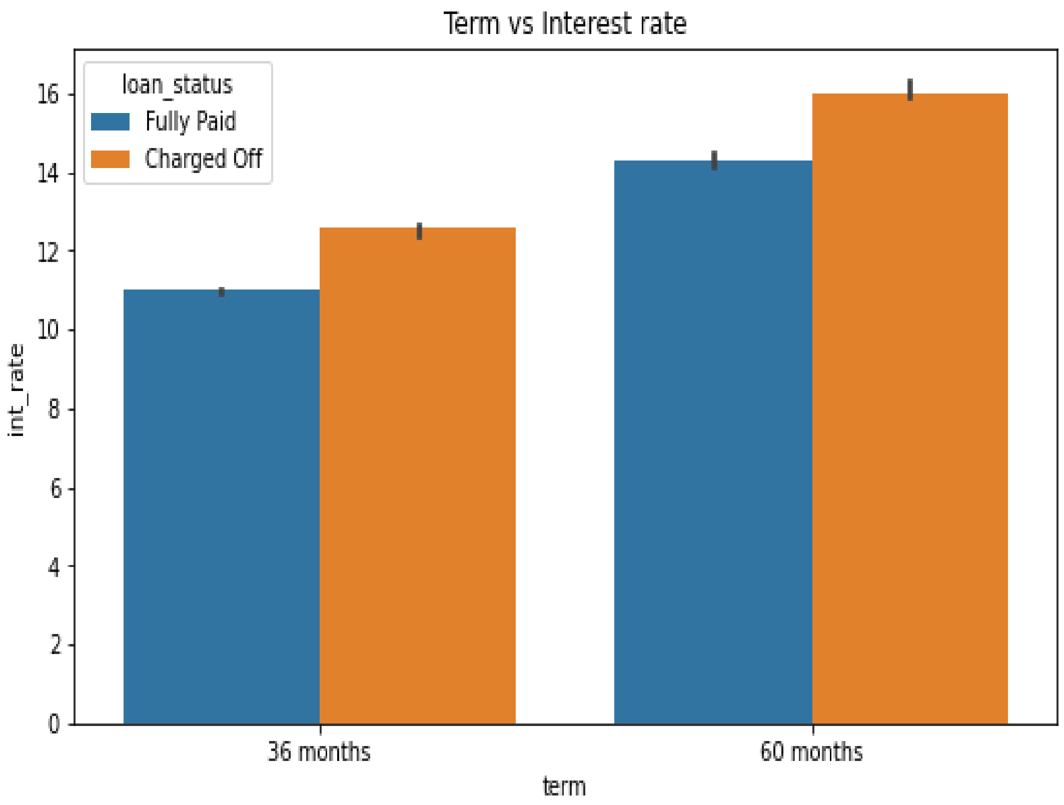


**Analysis**-

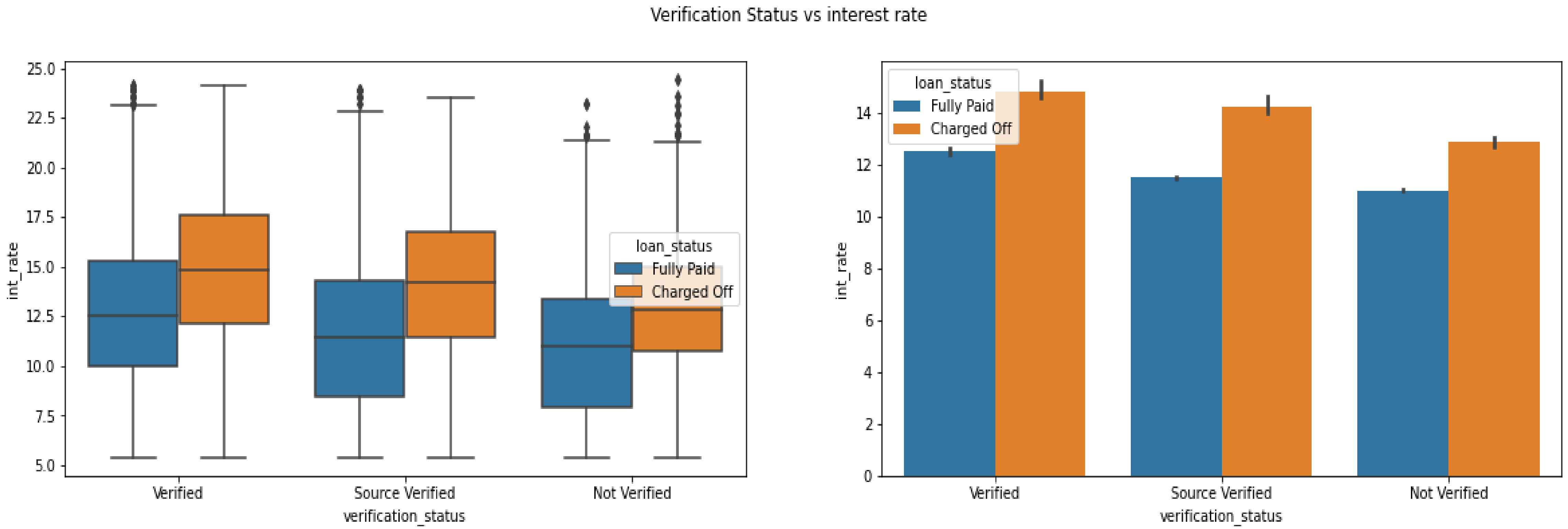
For higher interest rates the default rate is higher in both 36 and 60 months tenure.



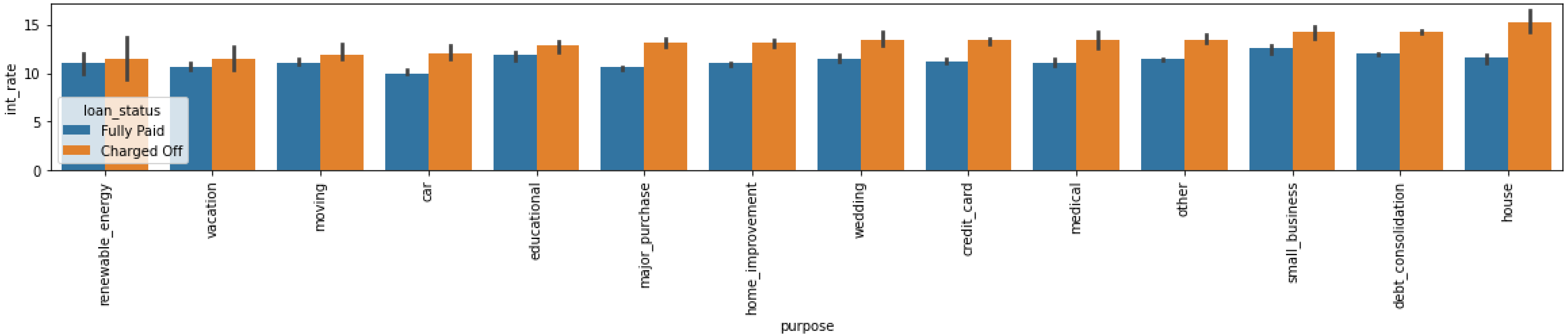
**Analysis**-

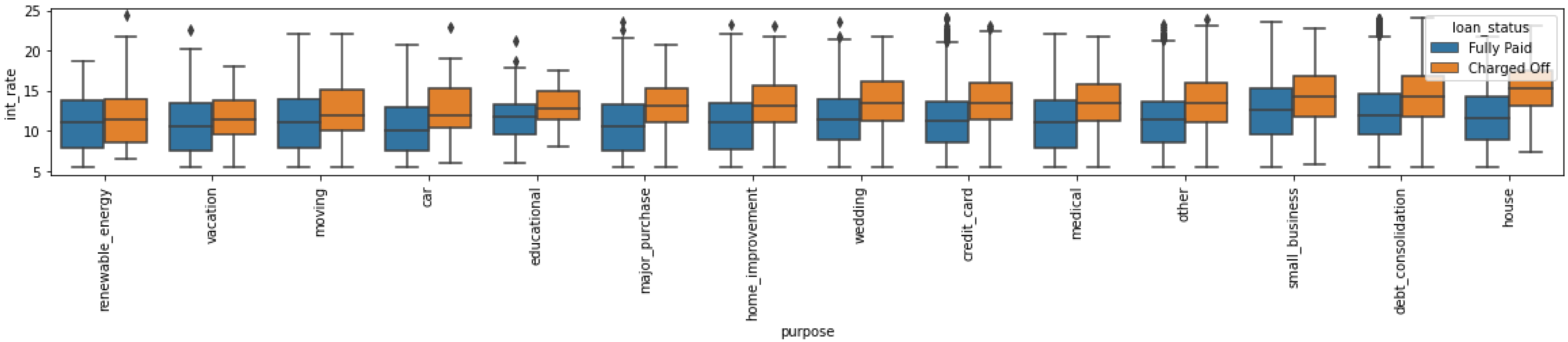
Irrespective of verification status higher interest rates are incurring default of loan.



**Analysis**-

Home loans with high interest rates are mostly defaulted. Even small business and debt consolidation has similar observation.



## Conclusions

- Home loans with high interest rates are mostly defaulted.
- Small Business has more defaults when the loan amount is also high.
- Irrespective of verification status higher interest rates are incurring default of loan.
- More number of borrowers defaulted in CA , FL and NY states.
- Irrespective of Home owner ship, when the interest rate is high the default rate also high.
- Irrespective of employment length loans with more interest rates got defaulted more.
- The lower grade people has taken higher amount of loans and also they are more prone to default the loan.
- Interest rates are high for people with high revol utilization.