Risk Analytics in Lending Club Case Study

Presented by

VENEESH B
KANCHAN B

INTRODUCTION

A very important area of risk analytics of banking and financial services is identifying risky applicants. This case study aims to provide us an idea of implementing EDA to figure out the solution for this problem. we will also develop a basic understanding of risk analytics in banking and financial services.

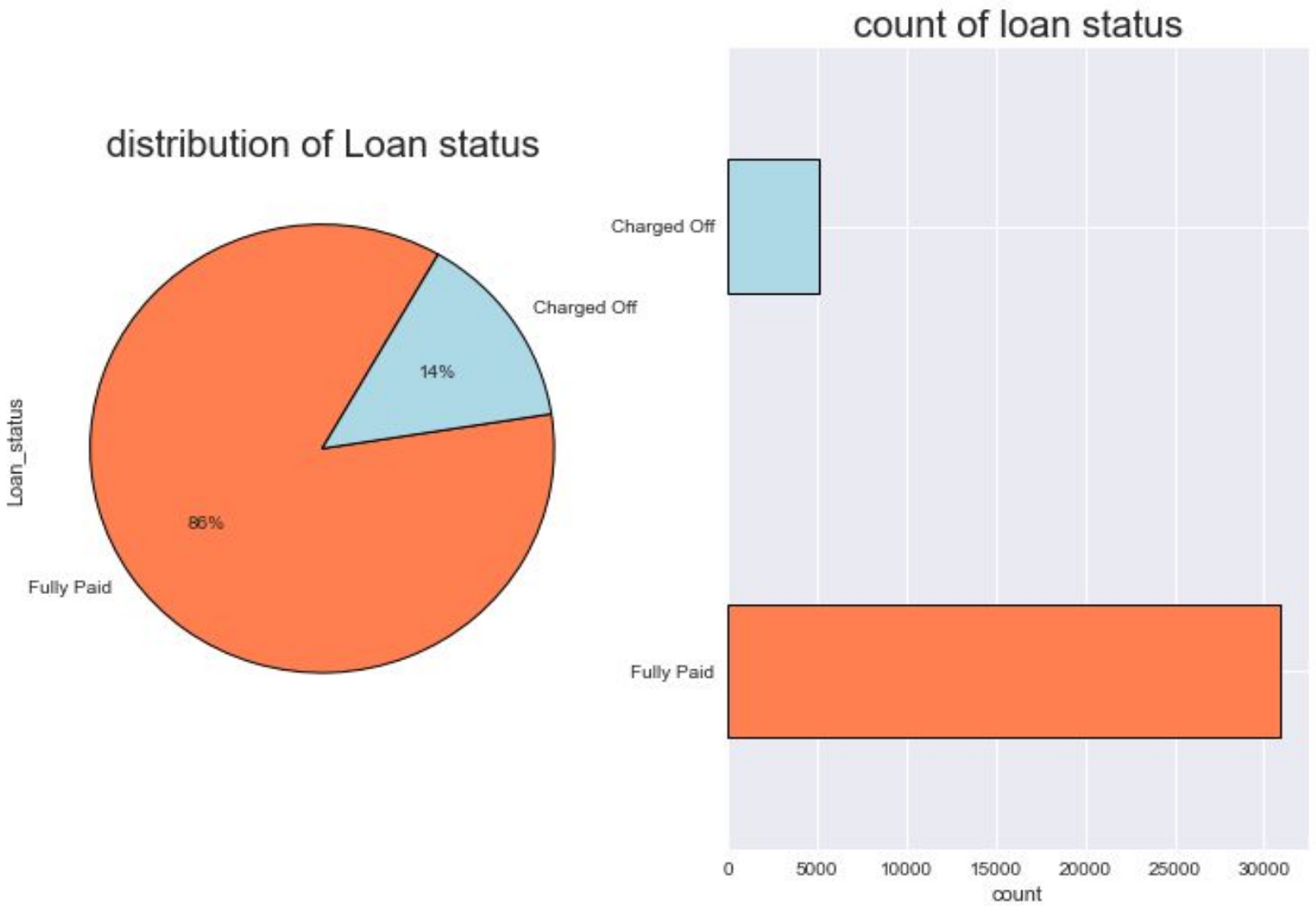
BUSINESS OBJECTIVES

- In order to avoid the credit loss, it is necessary to identify patterns which indicates if a person is likely to default, so that the lenders can take decisions like rejecting the loan, reducing the amount of loan, lending loan with high interest rate, etc. This will ensure that customers who is likely to repay the loan are not rejected.
- The company wants to identify the driving factors beyond loan defaults. If they understood the driving factor, they can able to take effective decisions.

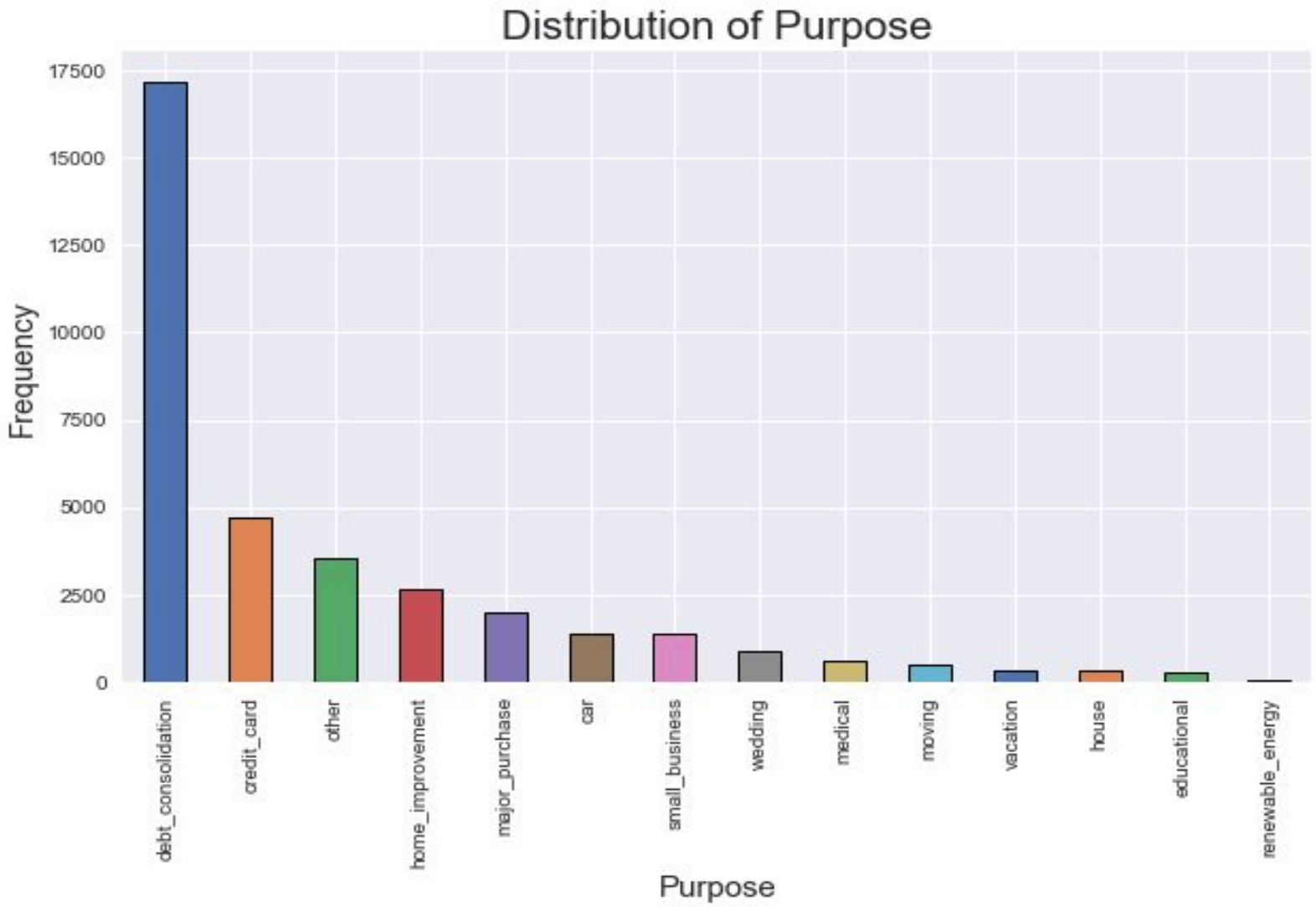
Steps

1. Business Understanding
2. Business Objectives
3. Data Understanding and Sourcing
4. Data Binding, cleaning and visualization
5. Check for Univariate , Bivariate and multivariate analysis
6. Data analysis by univariate , bivariate and multivariate analysis
7. Recommendation and Risks

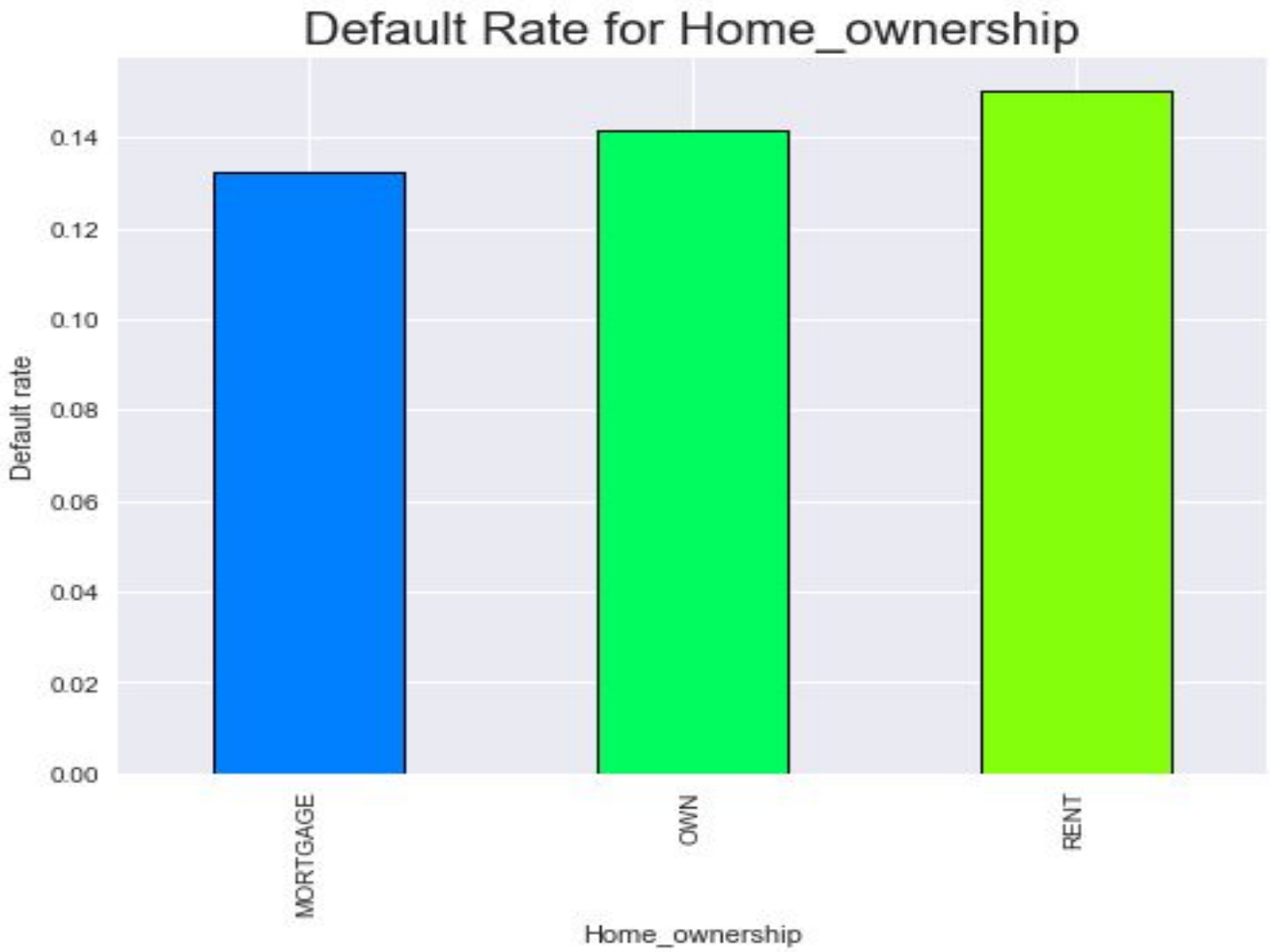
- Approximately 14% of people facing difficulties in repaying the loan.



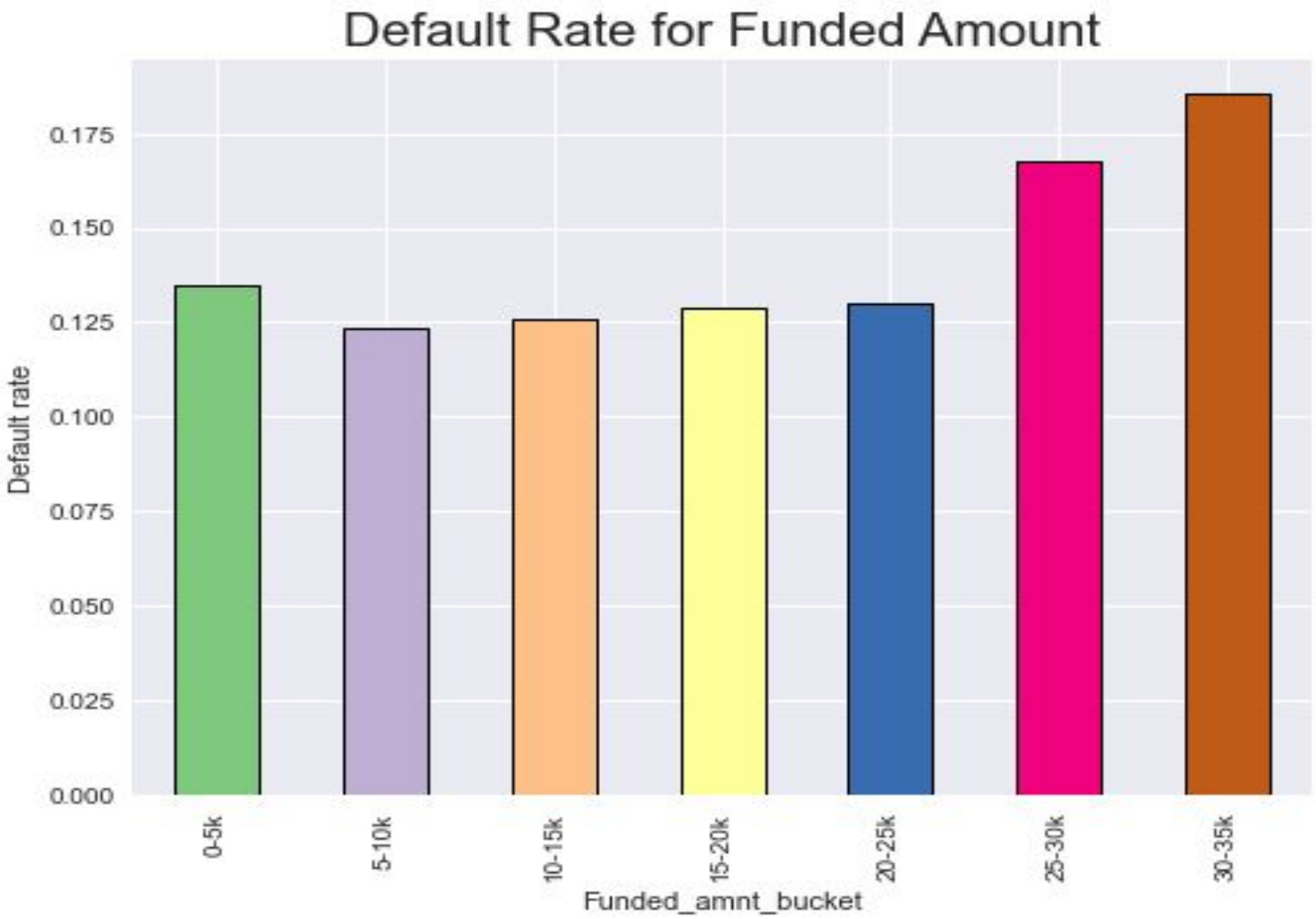
- Most of the customers are applying loan for dept consolidation followed by credit card payments.



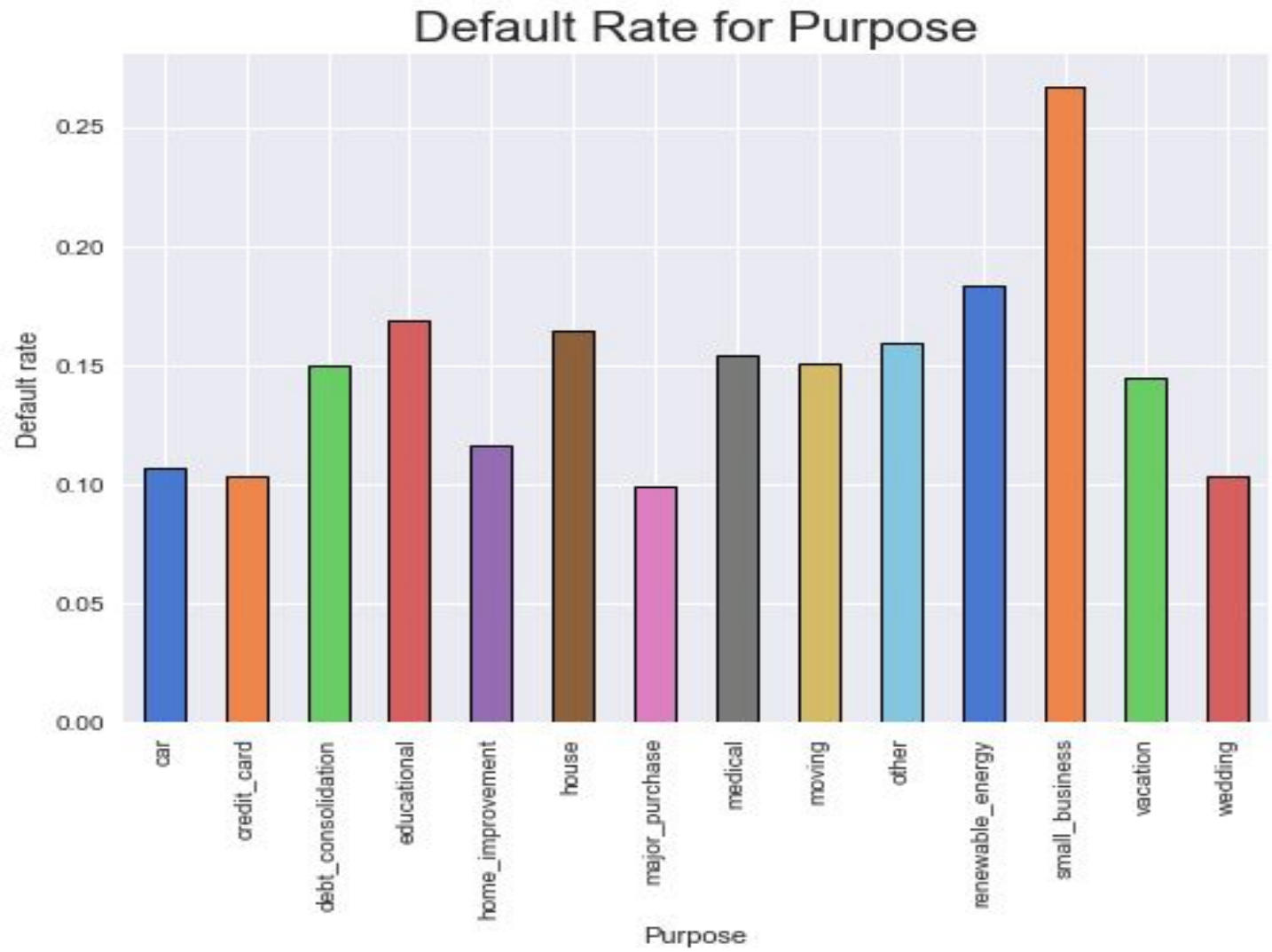
- The customers who are living in rent are more likely to default with default rate of around 15%.



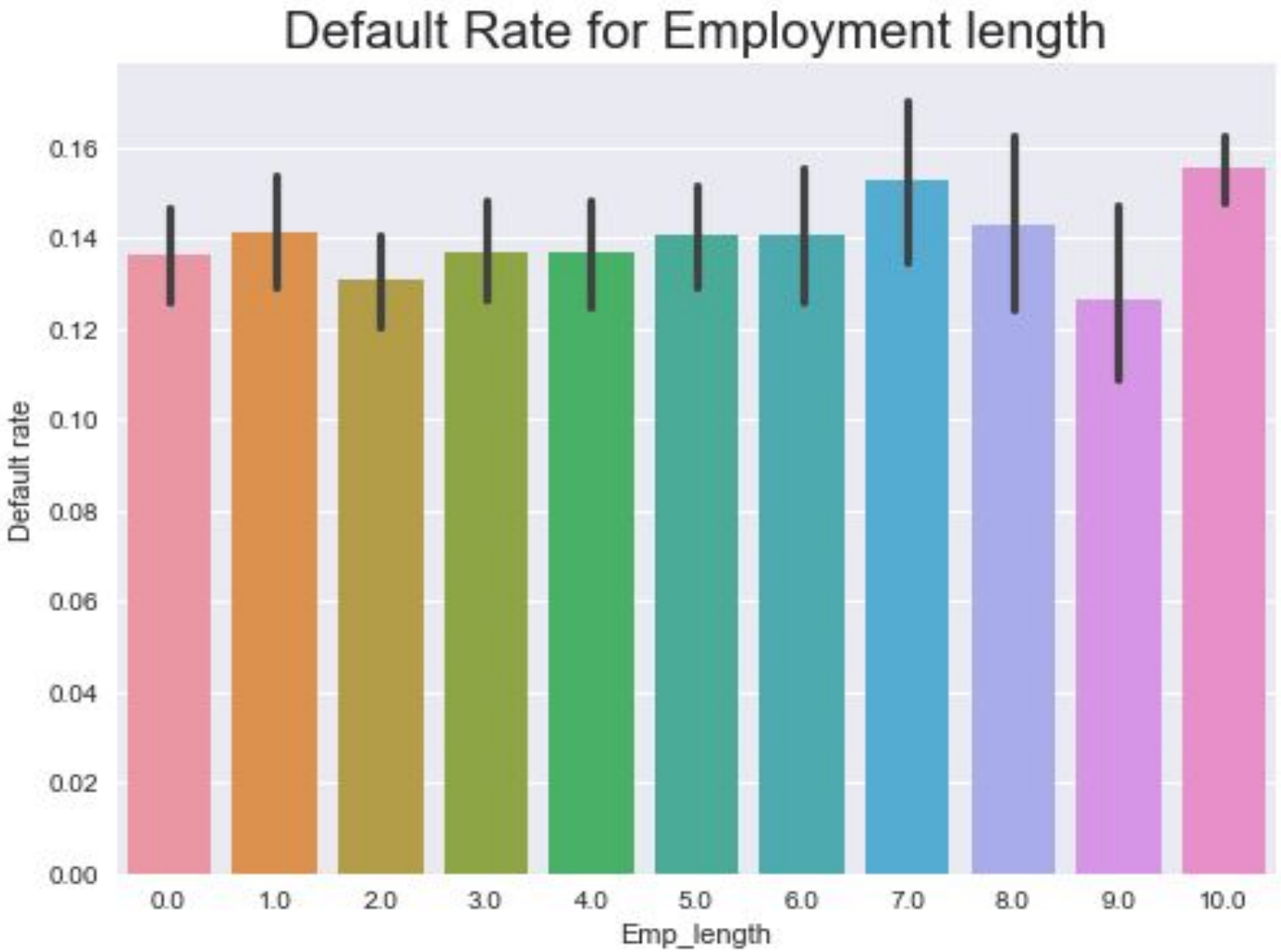
- The default rate is more for the category 30 to 35k of around 19% (approx. 0.19 in graph), followed by the next below category 25 to 30k of around 17%.
- Higher the funded amount greater the change to get default.



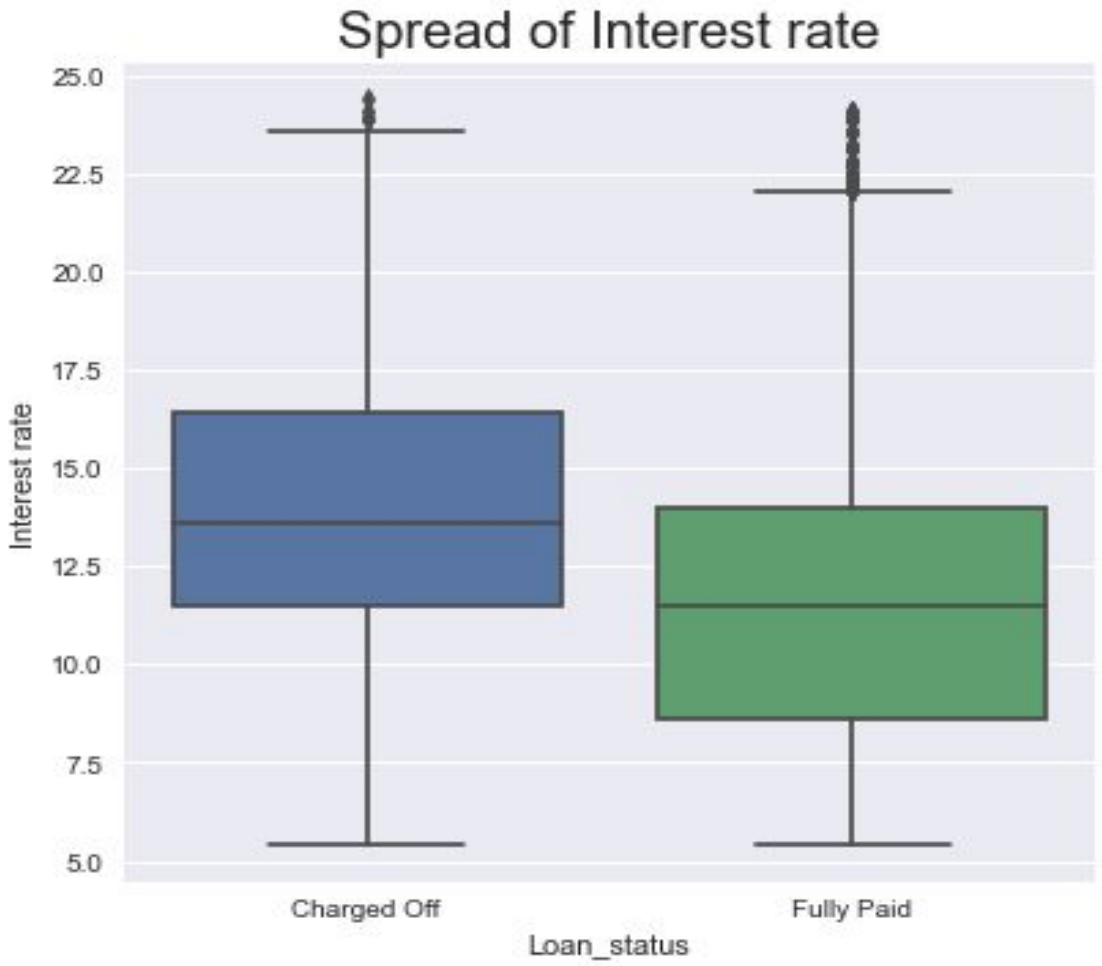
- The customer who are applying loan for small business are more likely to default wit default rate of around 26%.



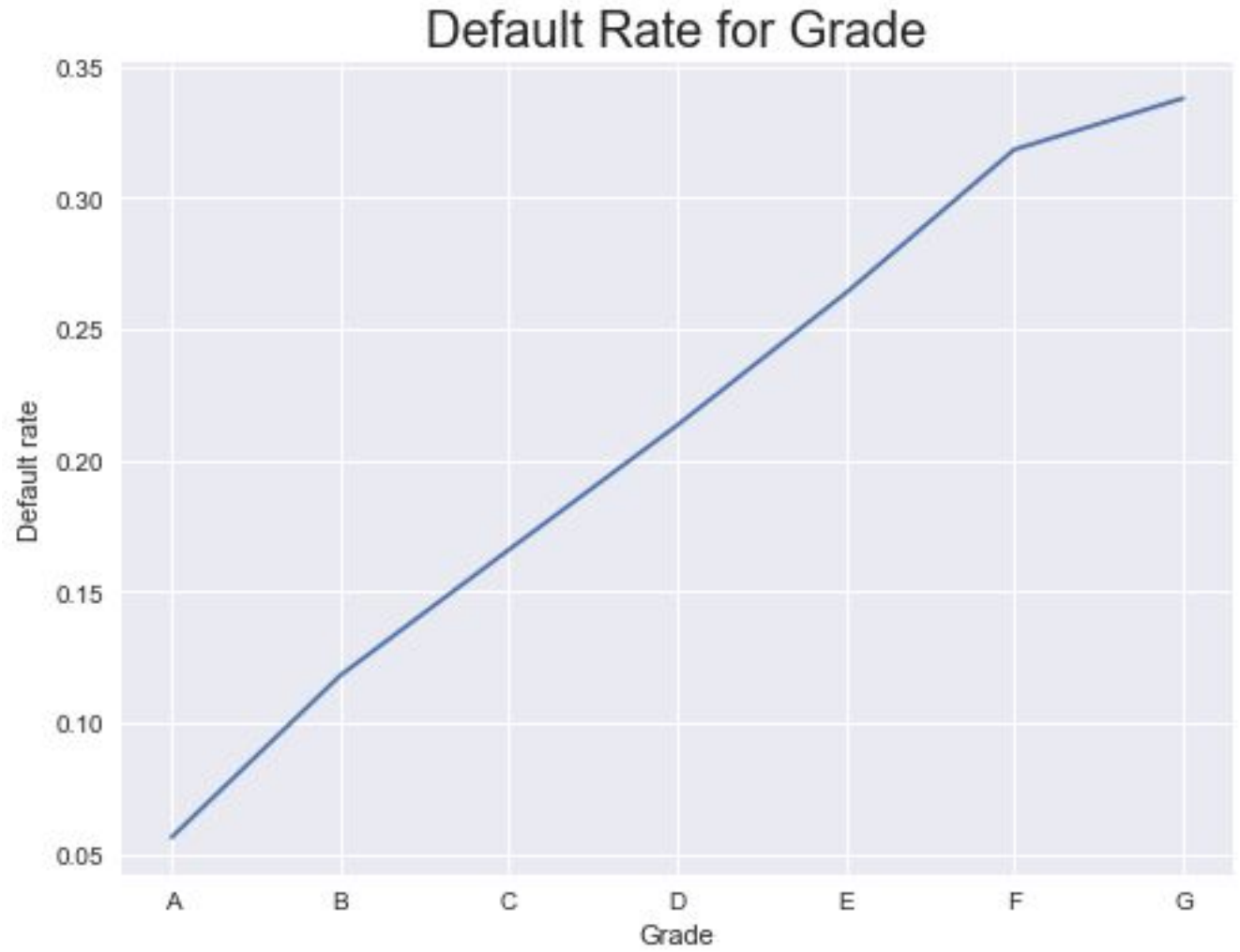
- Customer having more than 10 years of work experience will more likely to default with default rate of 15%.



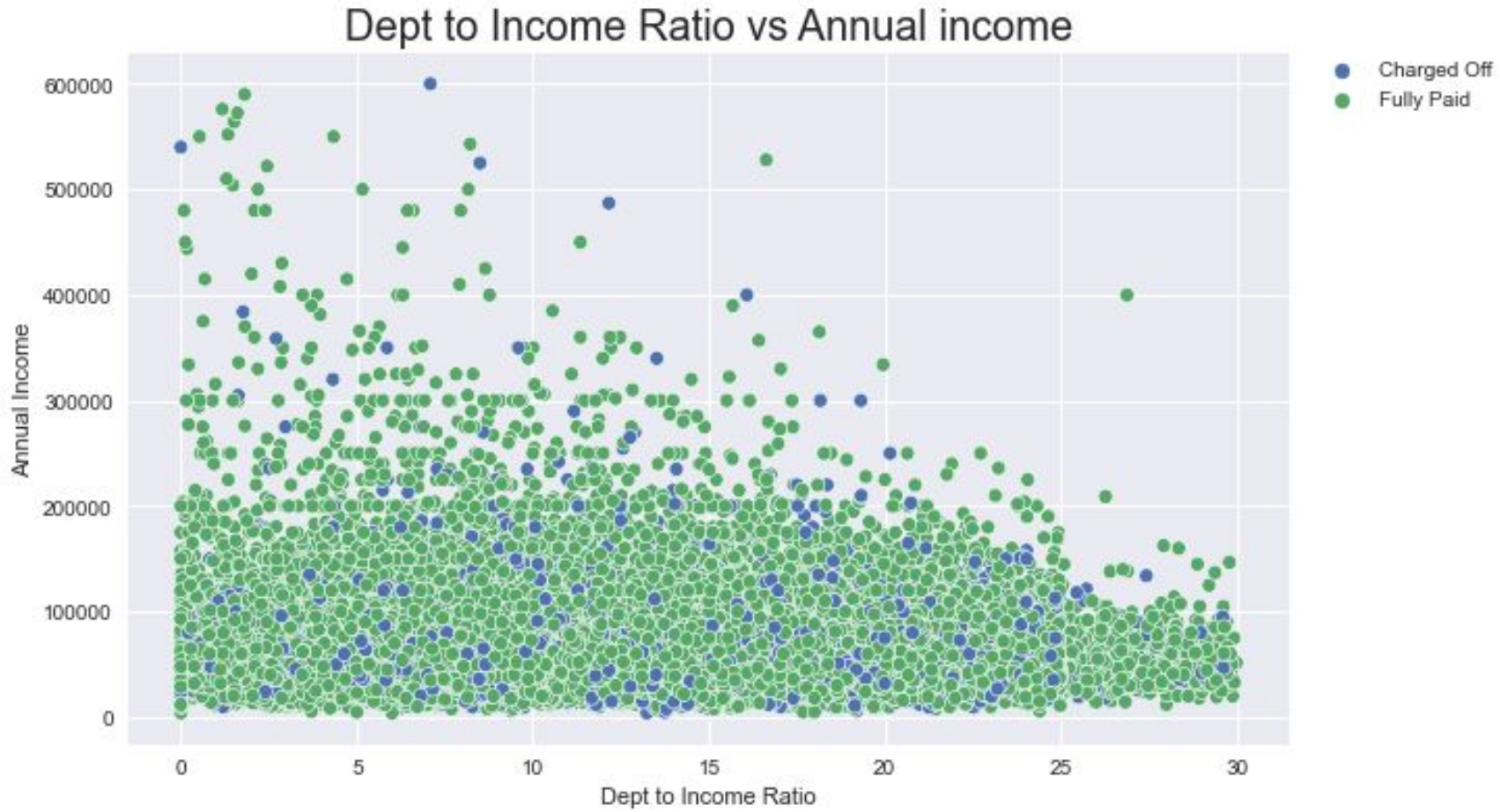
- we can see that 75% of fully paid peoples are with interest rate less than approximately 14%. and 50% of charged off peoples are above 13% interest rate.



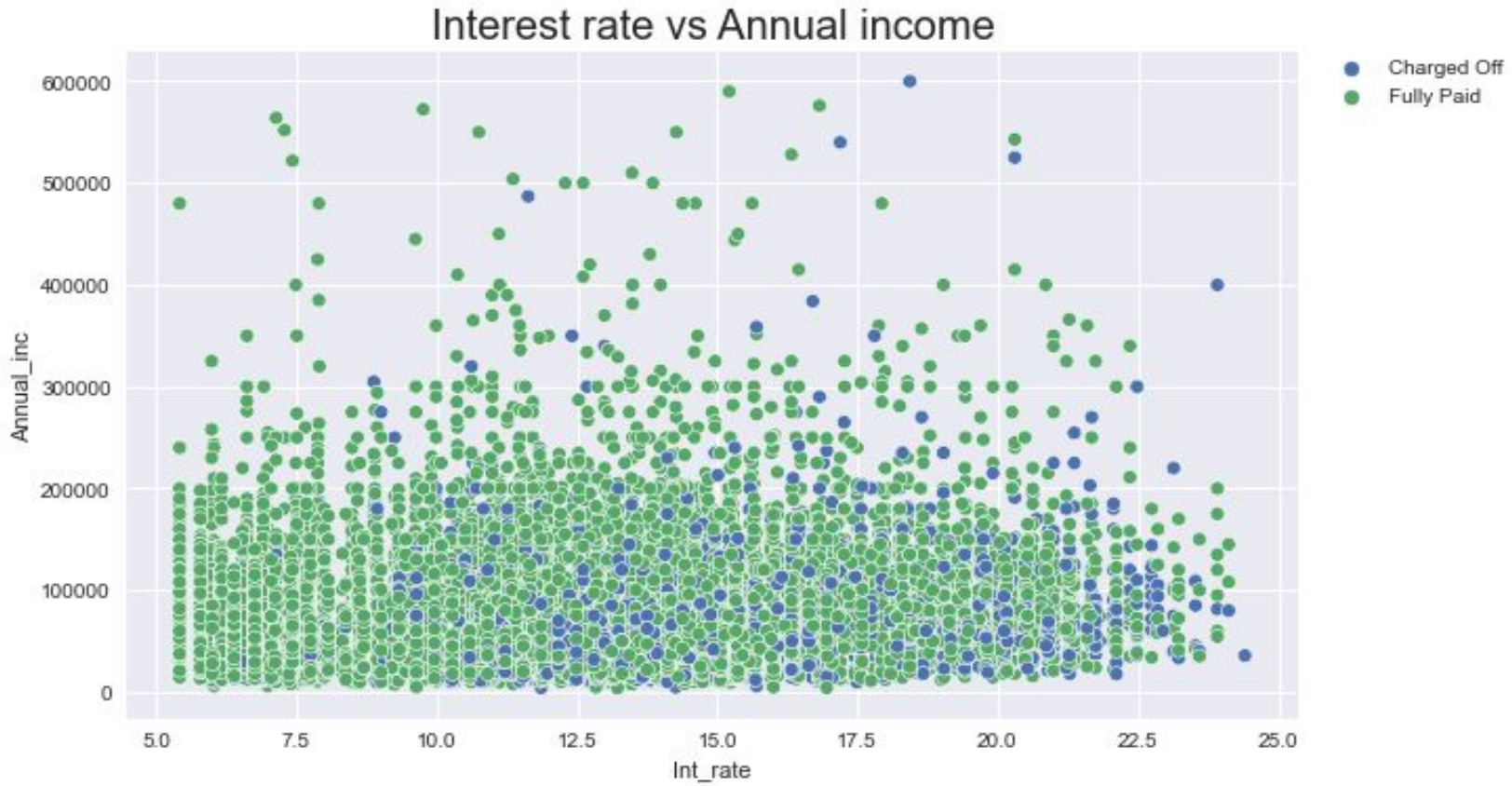
- The default rate increases from grade A to G, thus lower grade customers are more likely to default



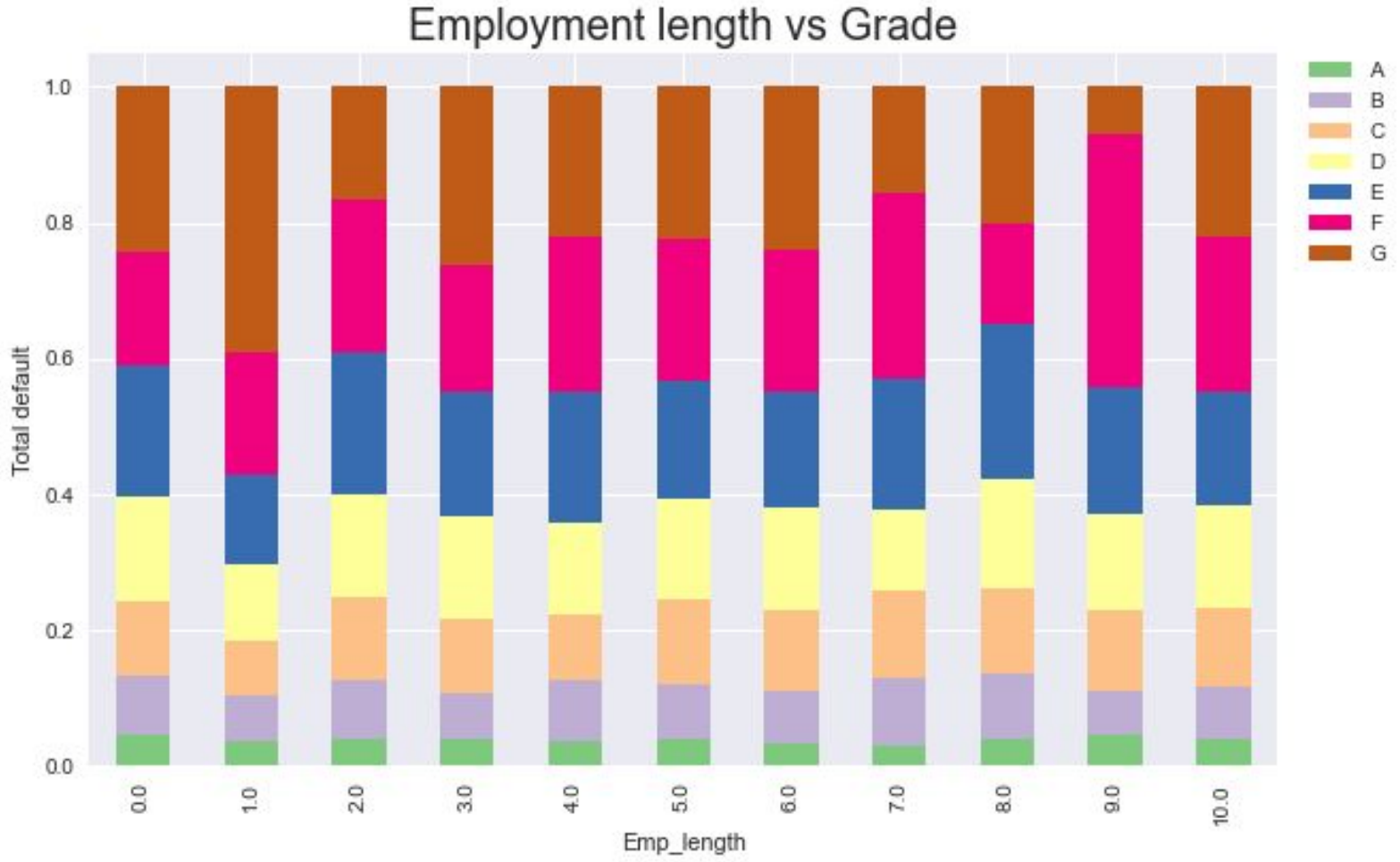
- When we compare Dept to income ratio and annual income, we can see that if dept to income ratio decreases the dots mostly become green, meaning the customer will more likely repay the loan.
- If the annual income increase, dept to income ratio decreases, which is obvious.



- When we compare interest rate with annual income, we can see that if annual income increase, the dot mostly become green, meaning people with higher income default less.
- As the interest rate increases the dot mostly becomes blue, meaning people with higher interest rate more likely to default.
- The people with large loan and with lesser interest will less likely to default.



- In the graph, single bar represents overall default percentage for corresponding employment length, and colors represents the default due to a particular grade.
- People with one year of experience and belongs to lowest grade(G grade - Brown) is more likely to get default.



Recommendations

- Clients who are working as a state agent.
- Client with high income category.
- Client with higher education.
- Any client whose previous loans was approved.
- widow who has unused previous loan status.
- old people of any income group..
- Refreshed client who has unused loan status previously.

Risky group

- Lower secondary educated clients are the most in number to be defaulted when their previous loan were cancelled or refused.
- clients whose cibil score is not upto the mark.
- Male clients with civil marriage.
- Previously refused loan status group.