DATA ANALYSIS
Report

"A Comprehensive Exploration of Loan Defaulters: Unraveling Patterns, Predictors, and Recommendations"

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INTRODUCTION

Welcome to our data analysis report ,focused on understanding and uncovering patterns for loan defaulters. In this presentation, we will delve into the intricacies of financial data to extract meaningful insights that can guide decision-making and risk management strategies

DATA COLLECTION & OVERVIEW

2007 — 2008 — 2009 — 2010 — 2011

These data has been collected from 2007 to 2011 across 48 different states ,having total 35420 unique entries comprising of thousands of people who are employed in different fields.

These financial data is spanning across 111 valid Columns ,covering almost each and every financial aspect of individuals.

Problem Statement

Two types of risks are associated with the bank's decision:

- If the applicant is likely to repay the loan, then not approving the loan results in a loss of business to the company
- If the applicant is not likely to repay the loan, i.e. he/she is likely to default, then approving the loan may lead to a financial loss for the company

Aim of Analysis

The primary objective of this analysis is to identify key factors contributing to loan defaults, providing stakeholders and investors with a nuanced understanding of the dynamics at play. By leveraging advanced analytical techniques, we aim to offer actionable insights to mitigate risks and optimize lending practices.

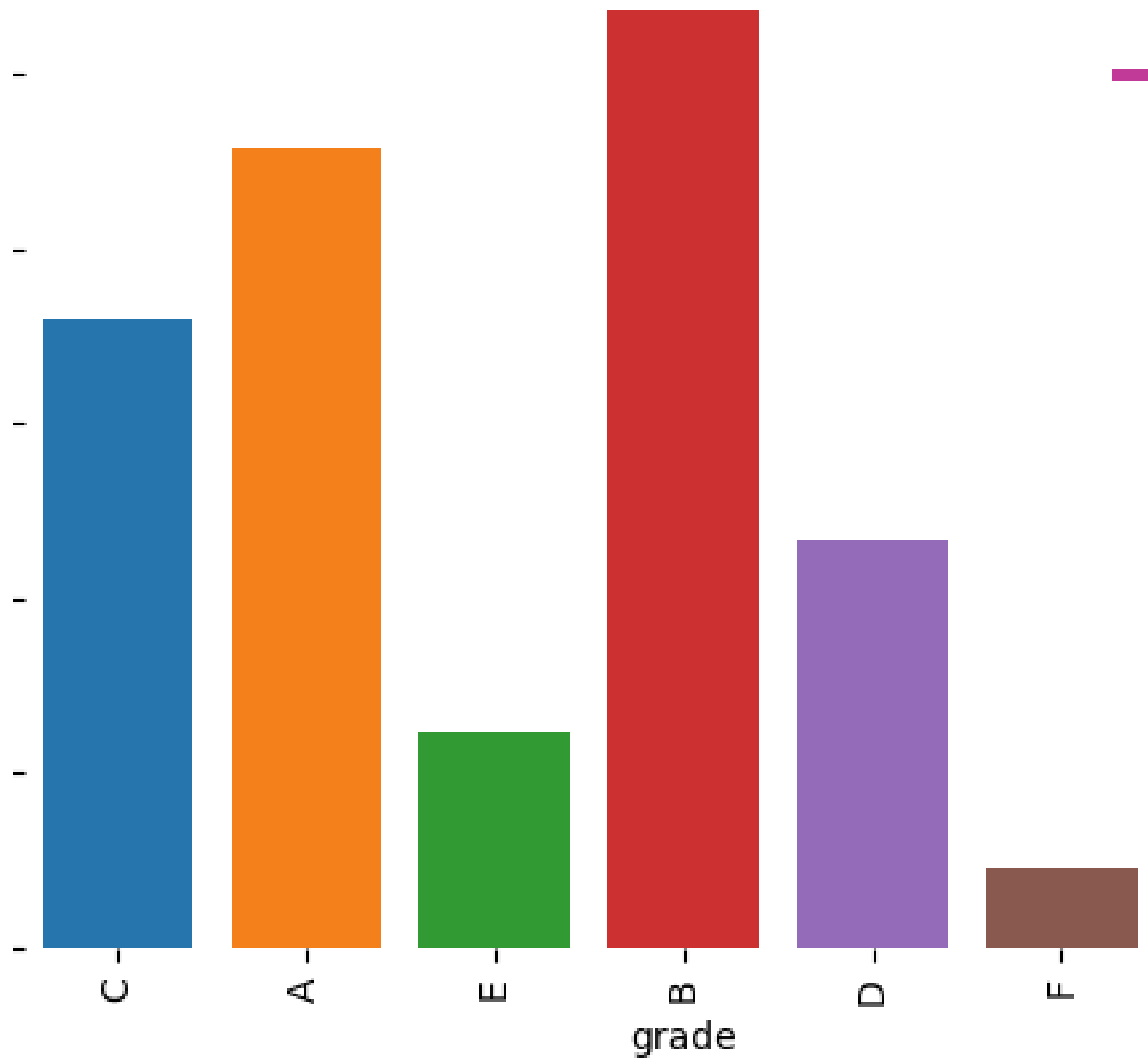
Technology USED

01 **Numpy**
Version: 1.24.3

02 **seaborn**
Version: 0.12.2

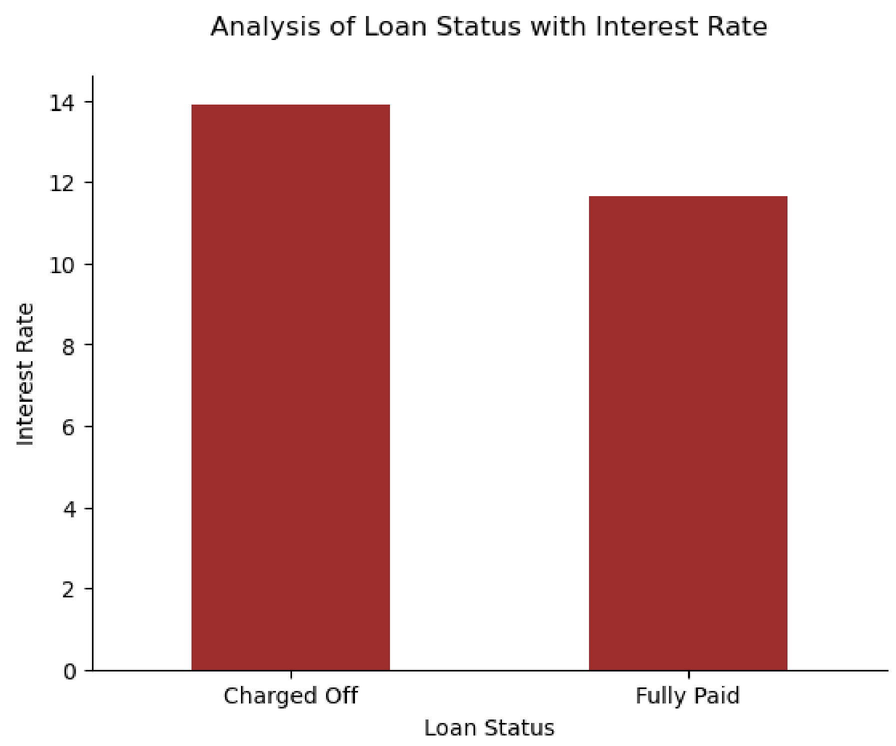
03 **pandas**
Version: 2.0.3

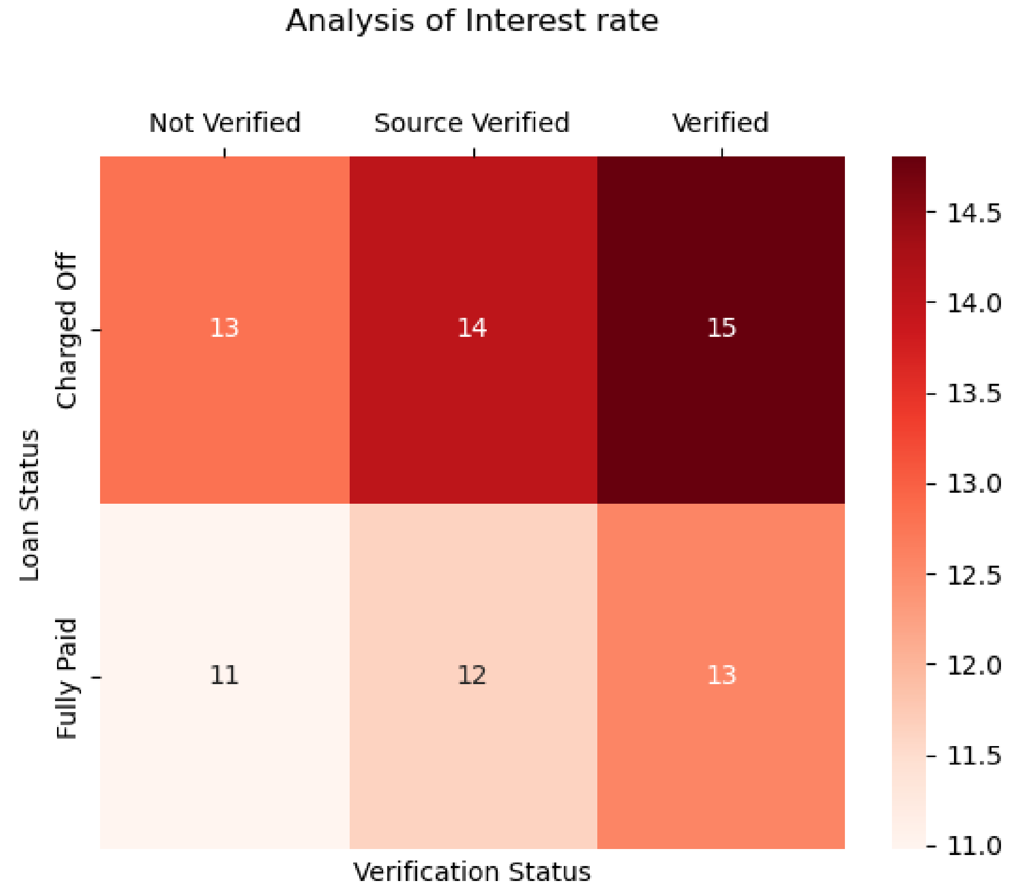
04 **matplotlib**
Version: 3.7.1



KEY FINDINGS & INSIGHTS

"Descriptive analysis and visualization of various aspects related to all given financial parameters are analyzed in detail, aiming to unravel underlying patterns of loan defaulters."

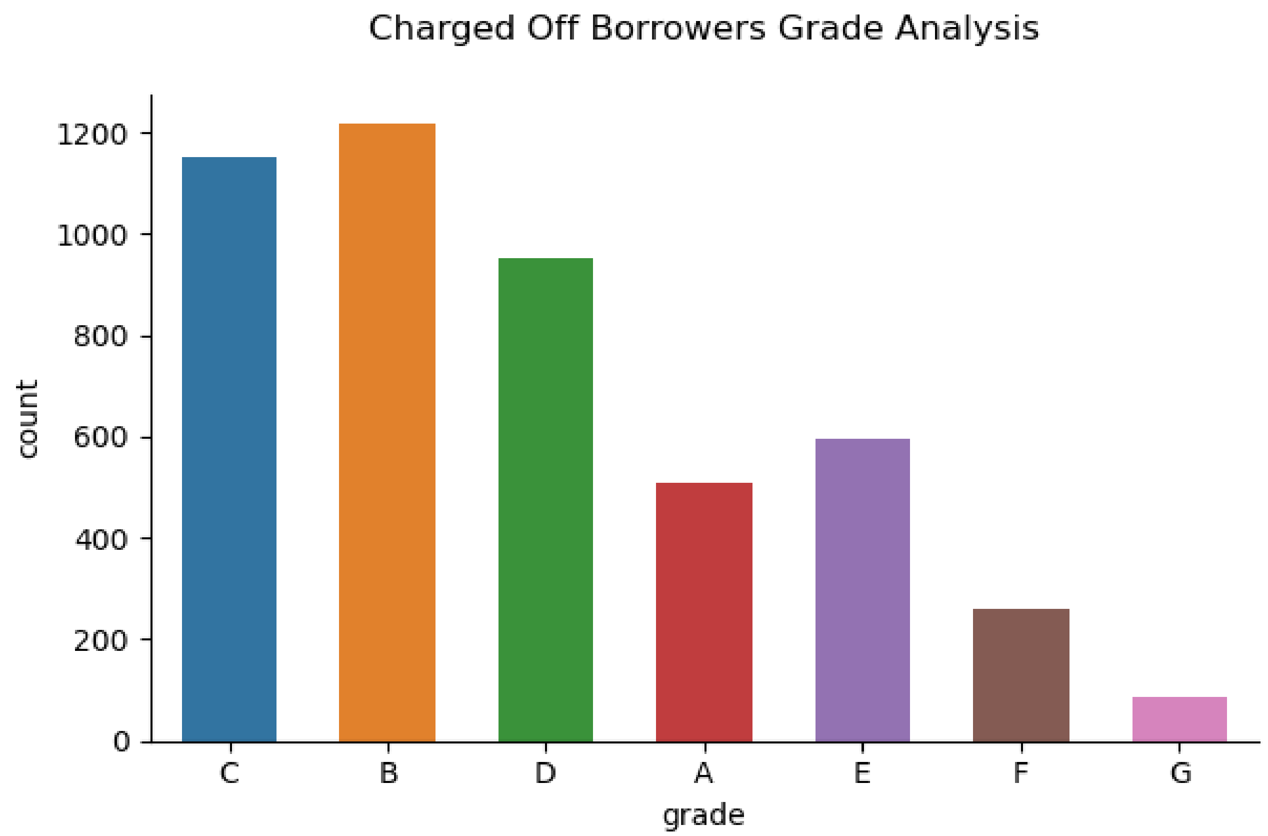


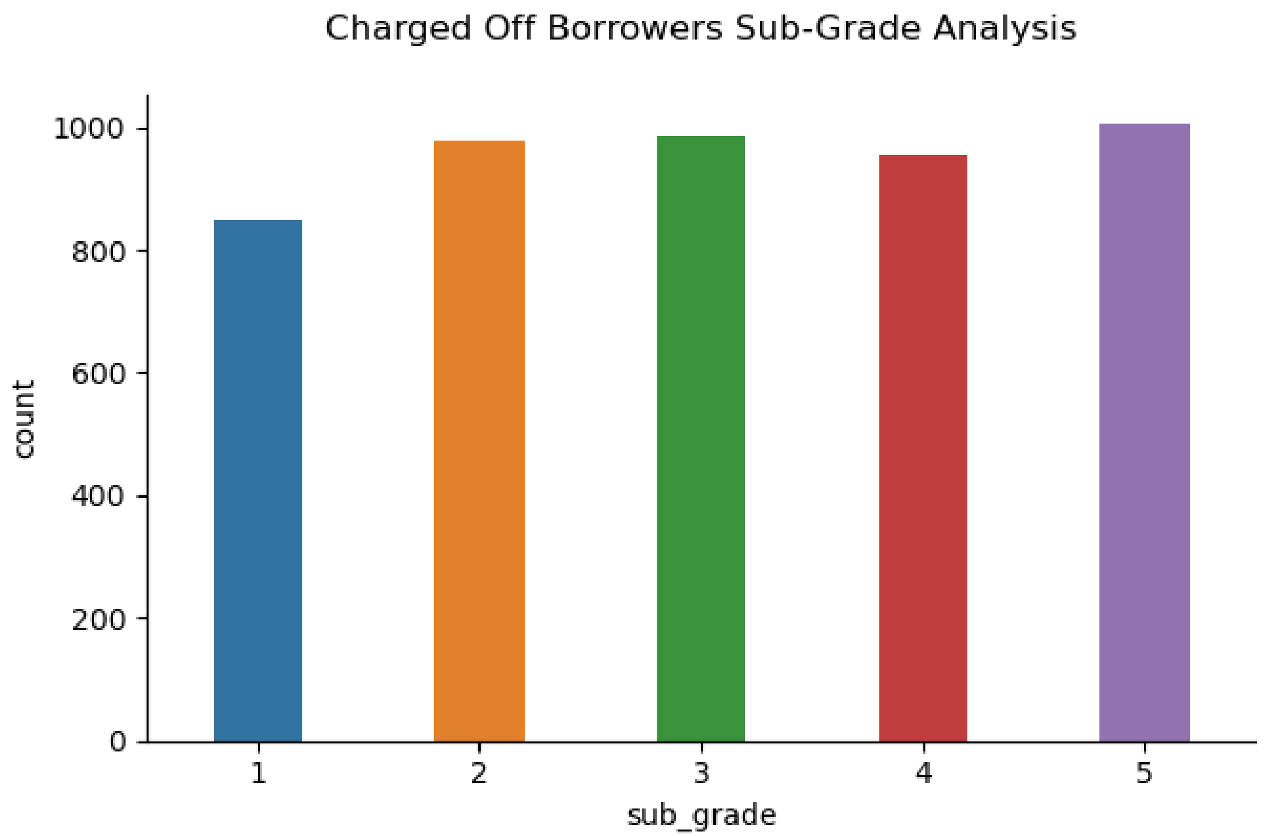


ANALYSIS OF INTEREST RATE

Charged Off borrowers are paying High Interest rate than fully paid, due to increased interest rate on outstanding loan amount or late fees because of failing in paying installment or emi,irrespective of their verification of their income source either they are verified or not.

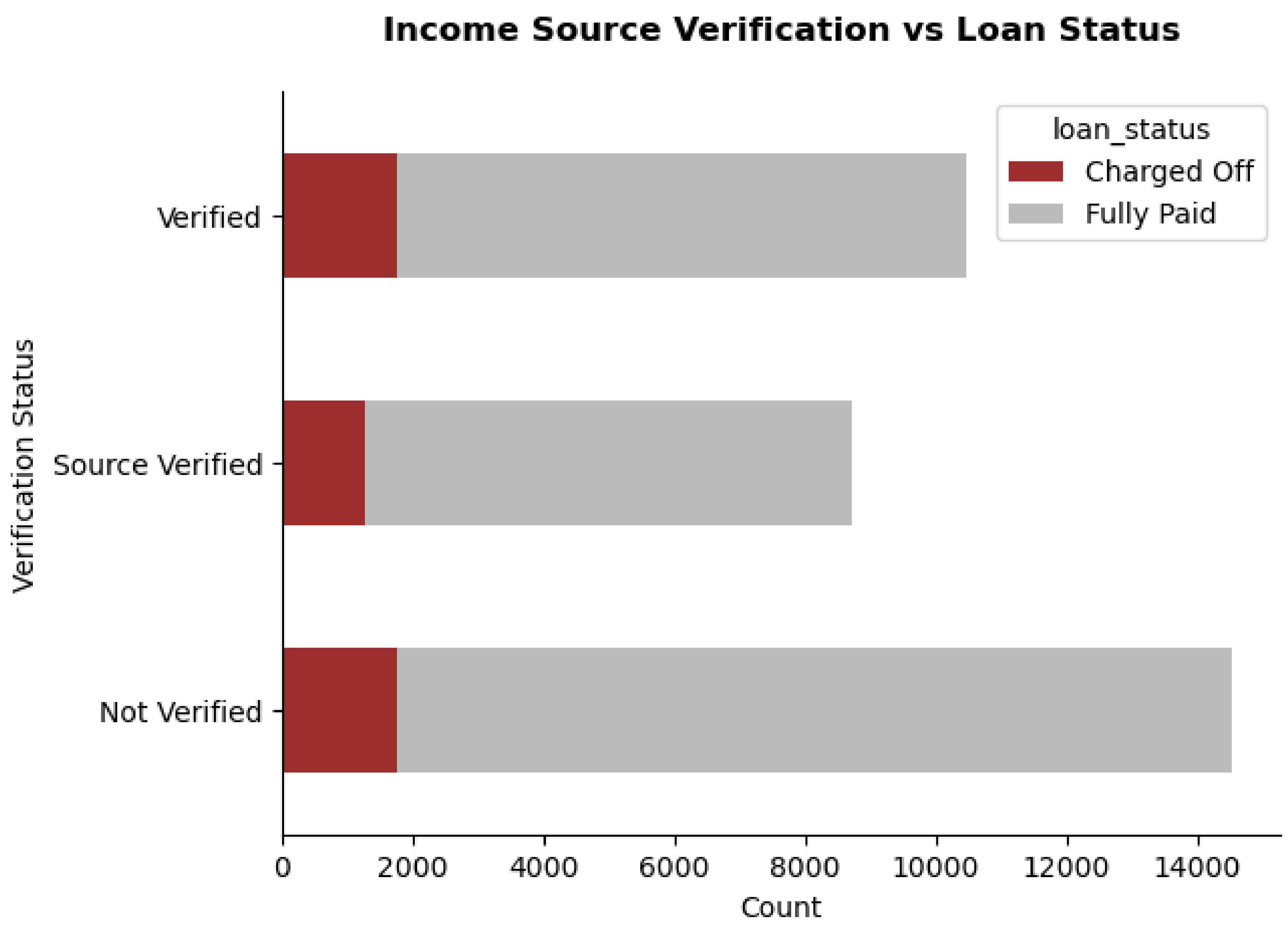
ANALYSIS OF GRADE





Charged Off borrowers having grade B & C with Sub grade 2 to 5 ,are more likely to default on Loan .

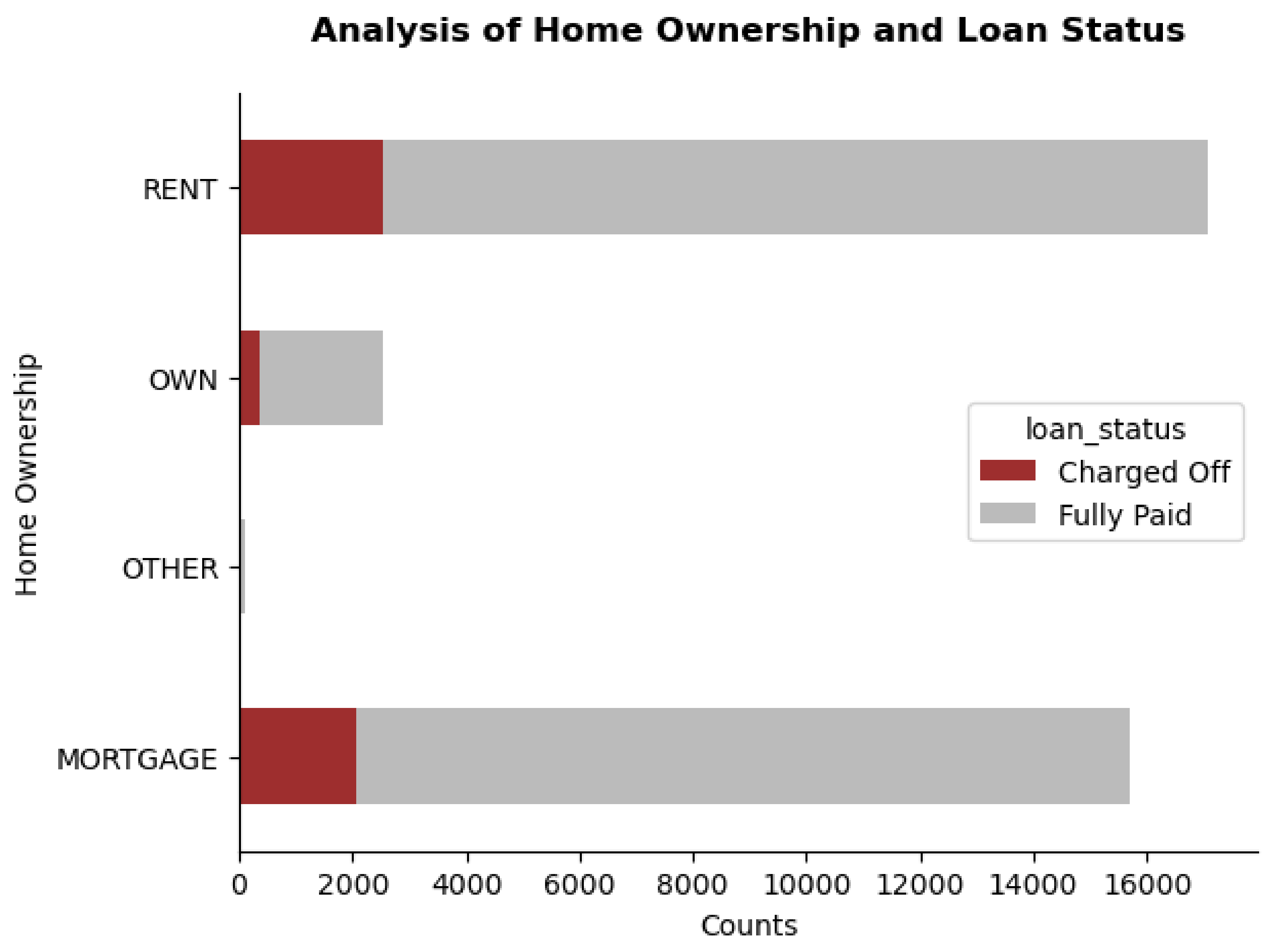
INCOME VERIFICATION ANALYSIS



It is visible from graph that there is almost no difference between number of charged off borrowers whether their income source is verified or not verified

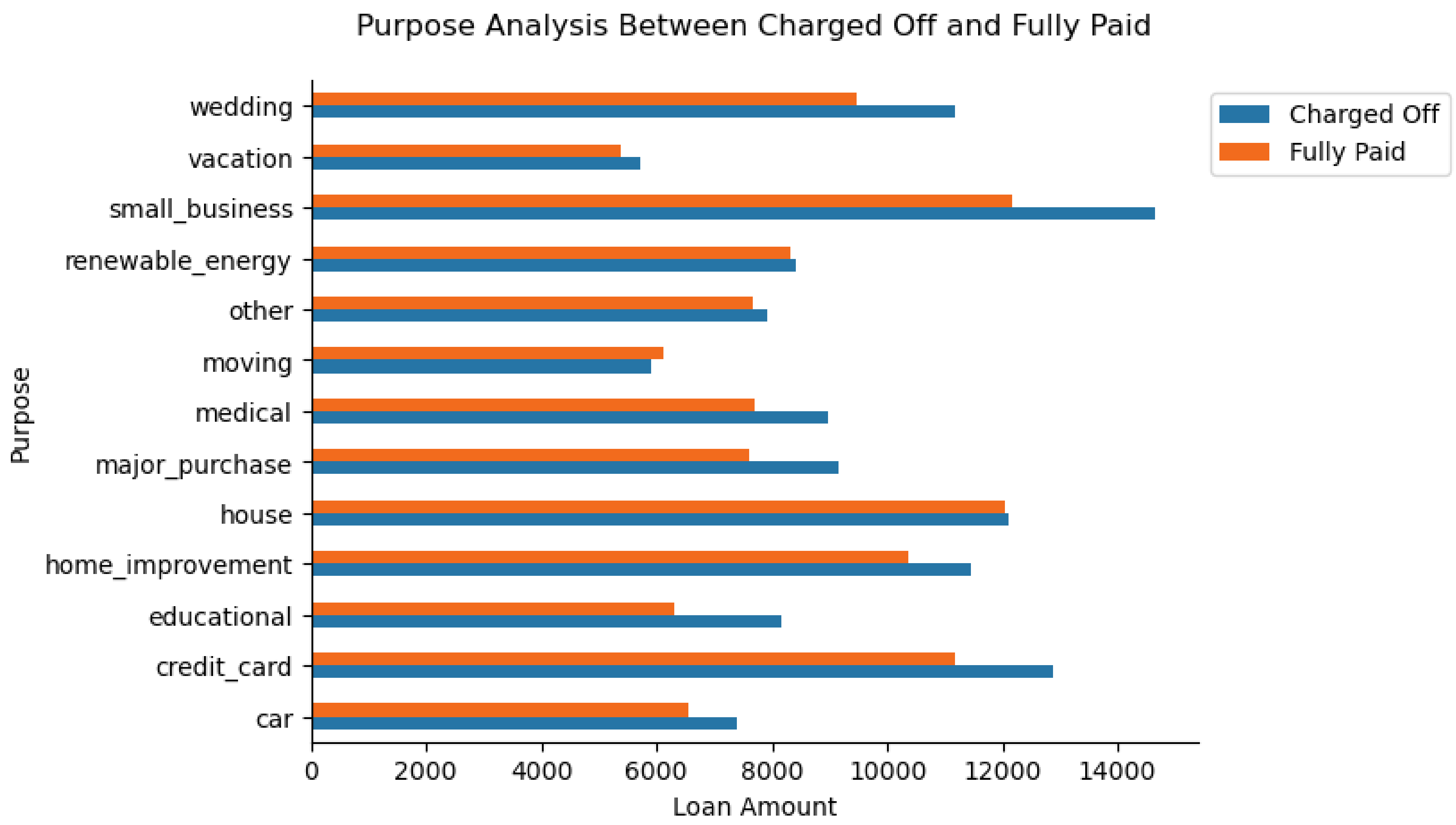
The income verification process needs to be addressed with serious consideration; it should be more robust than the previous one.

ANALYSIS ON HOME OWNERSHIP



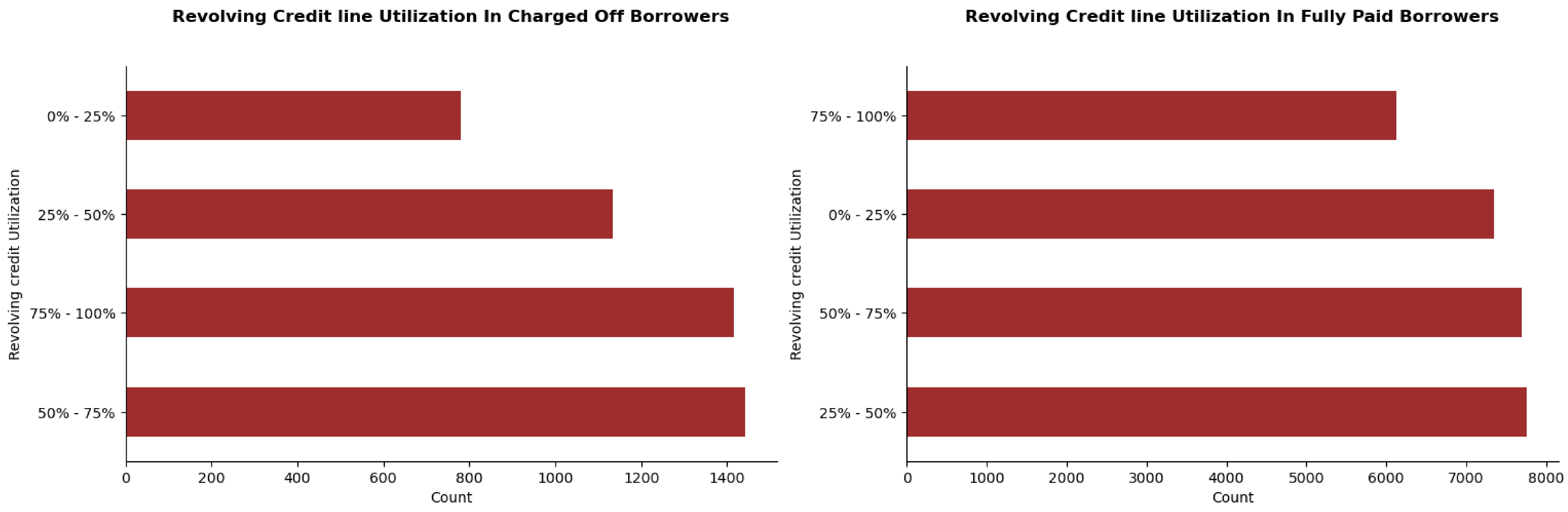
It is visible from graph that there is significant difference between number of charged off borrowers who have their rented or mortgage house rather than they own their house

ANALYSIS OF PURPOSE MENTIONED



Apart from debt consolidation these are the major purpose for which loan is requested .Large number of Charged Off borrowers has taken loan for Small Business and credit card debt cosolidation.

REVOLVING CREDIT LINE UTILIZATION ANALYSIS



Highest utilization of revolving credit line in percentage in case of charged off borrowers is 50-75% slab whereas it is 25 -50% slab in fully paid borrowers.

CONCLUSION

- Charged Off borrowers are paying High Interest rate than fully paid, due to increased interest rate on outstanding loan amount or late fees because of failing in paying installment or emi,irrespective of their verification of their income source either they are verified or not.
- Highest utilization of revolving credit line in percentage in case of charged off borrowers is 50-75% slab whereas it is 25 -50% slab in fully paid borrowers.
- It is visible from graph that there is significant difference between number of charged off borrowers who have their rented or mortgage house rather than they own their house.
- Apart from debt consolidation, Large number of Charged Off borrowers has taken loan for Small Business and credit card debt cosolidation.
- Charged Off borrowers having grade B & C with Sub grade 2 to 5 ,are more likely to default on Loan .

RECOMMENDATIONS

- The Lender should use verified income sources as a key factor in determining interest rates, and loan amount ensuring that borrowers with stable income are offered more favorable terms.

- Periodically review and adjust credit limits based on borrowers' financial stability and credit behavior. This may involve reducing credit limits for charged-off borrowers to encourage responsible revolving credit utilization .

- Implement more comprehensive risk models that take into account income stability, employment history, and other relevant financial indicators such as home ownerships.

- Borrowers are defaulting more on loans on small business and Credit card debt consolidation ,Consider collateral-based loans that are secured by assets. This can provide lenders with additional security, potentially leading to lower interest rates for borrowers. However, borrowers should carefully consider the risks associated with using collateral .

RECOMMENDATIONS

- Improve the accuracy of risk assessment models to better evaluate the creditworthiness of borrowers with grade B and C, and subgrades 2 to 5.Review and refine underwriting criteria to ensure that borrowers with higher risk profiles are subjected to more stringent eligibility requirements.