Lending Club Case Study

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Problem Statement

Our company is pioneer in lending space, offering a variety of loans to urban customers. The company's loan approval process is pivotal, requiring a balance between approving profitable loans and minimizing risk from defaults.

- Credit losses occurs when borrowers defaults on their loans. This is termed as 'Charged-Off'
- To improve 'Profit' and reduce 'Risk', the company must:
    - Approve loans for applicants likely to repay
    - Avoid approving high-risk applicants to reduce the risk of financial loss from defaults

Problem Statement (Cont.)

In ordered to assist our company in reducing credit losses by accurately identifying applicants who pose a high risk of defaulting on their loans, we did the following.

- **Exploratory Data Analysis (EDA):** With this analytical approach, we aimed to uncover the underlying patterns and indicators that can predict loan default risks.
- **Understand Driver Variables:** By pinpointing the key factors that lead to loan defaults, we can make informed decisions to optimize the loan portfolio and enhance risk assessment strategies.

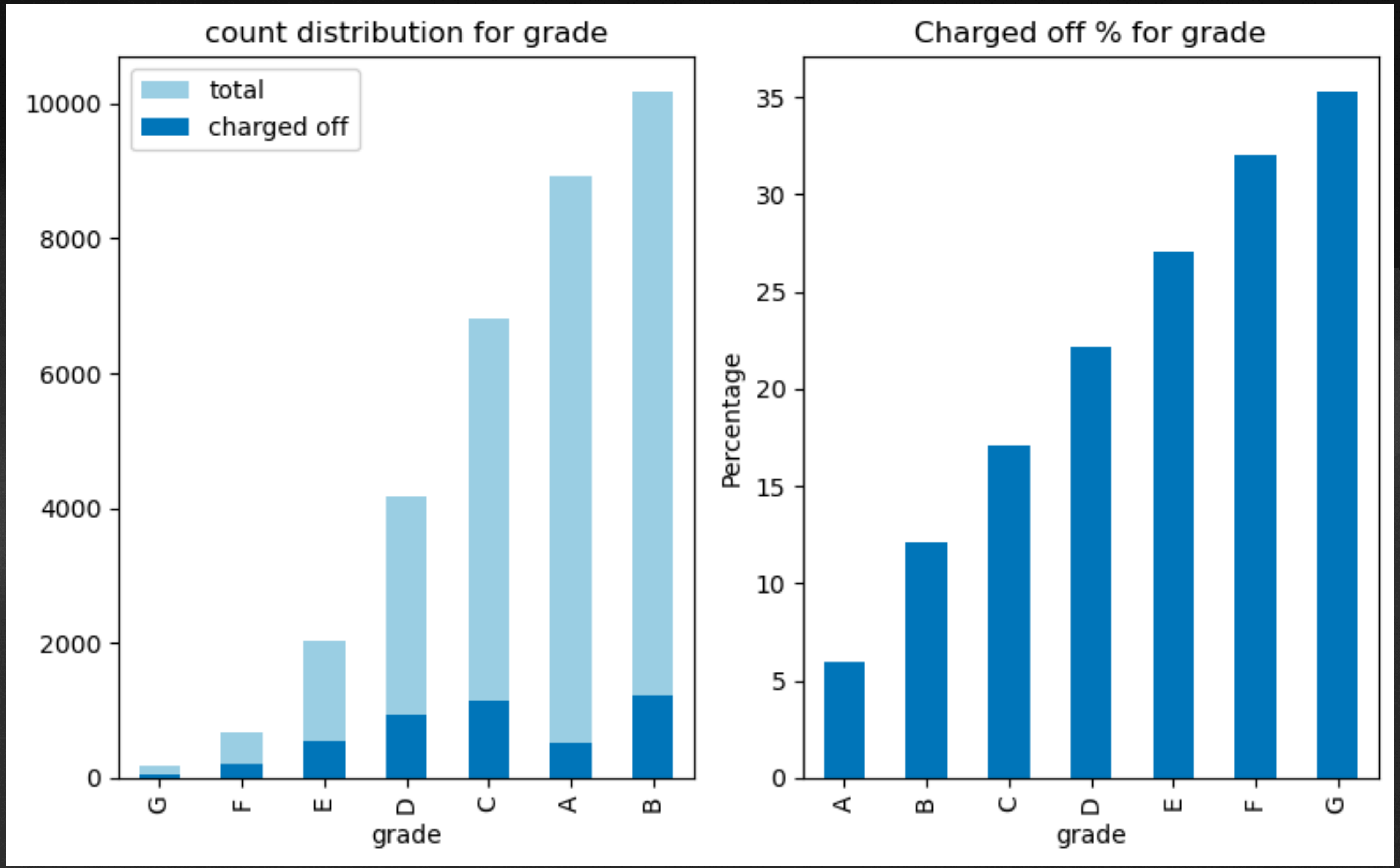
Data Summary

Our company provided us with a detailed historical data about borrowers' credit histories.

- Dataset Size: The dataset includes over 39,717 records and 111 columns, providing ample information for our analysis.
- Purpose: The dataset helps us identify relationships and assess factors that influence a borrower's ability to fulfill their loan agreement.
- Data Preparation: We selected specific variables that directly or indirectly indicate a borrower's potential to default, ensuring a focused and relevant analysis.

Insights and Recommendations (1)

Grade of loan is a great predictor of defaulting. As grade of loan increases, percentage of defaulters go higher.



<u>Recommendations</u>

1. Do not issue loans for users with Grades D, E, F, and G

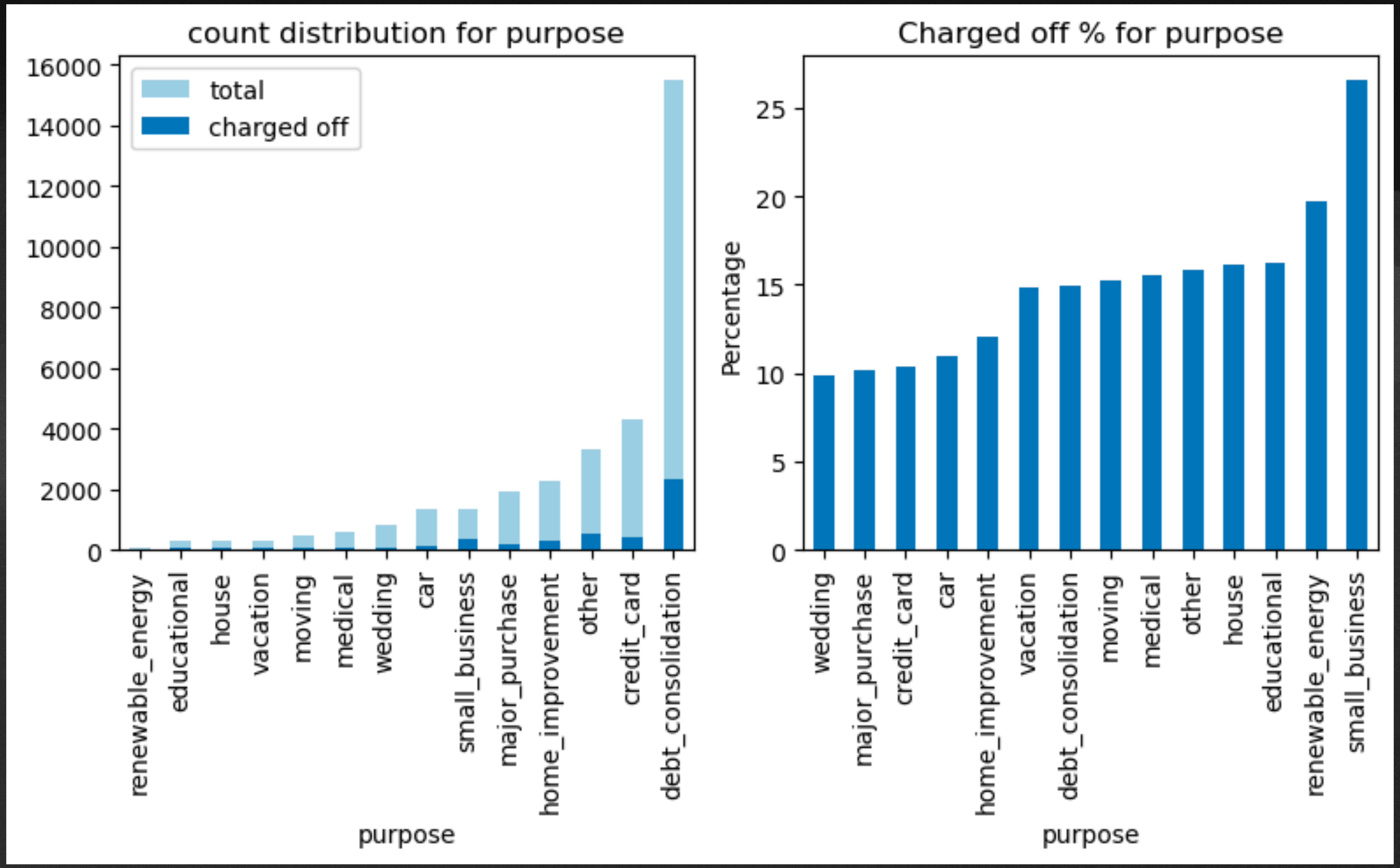
2. Implement Stricter risk assessment criteria for users with Grades B, C, and D

Insights and Recommendations (2)

Compared to other purpose given by the applicants, loans for ‘Small business’ are having very high default rate. 1 in 4 loans are defaulted.

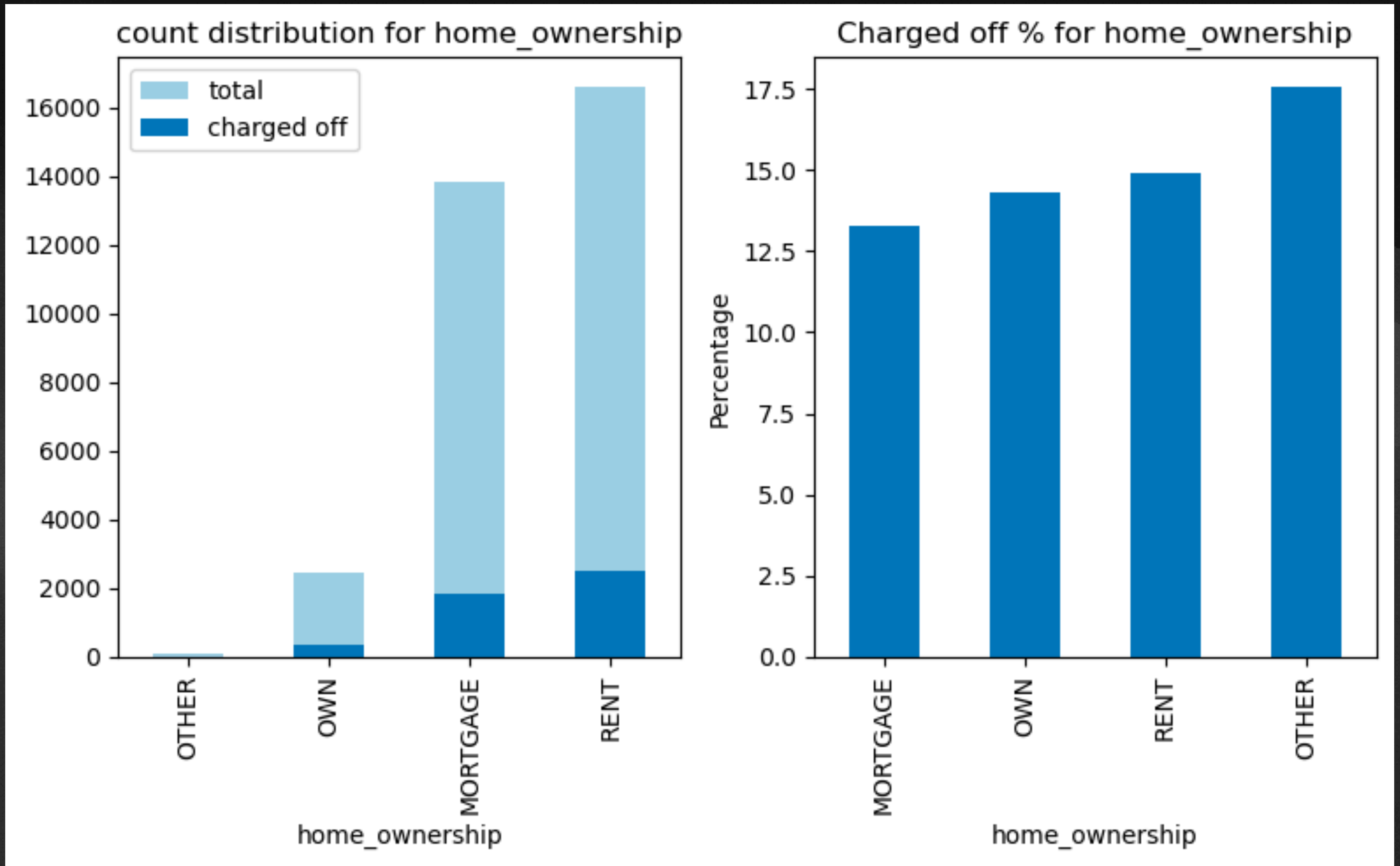
<ins>**Recommendations**</ins>

- Avoid giving loan to small businesses



Insights and Recommendations (3)

Applicants who are renting and those with mortgages provide similar levels of business, but mortgage holders have a lower default rate.

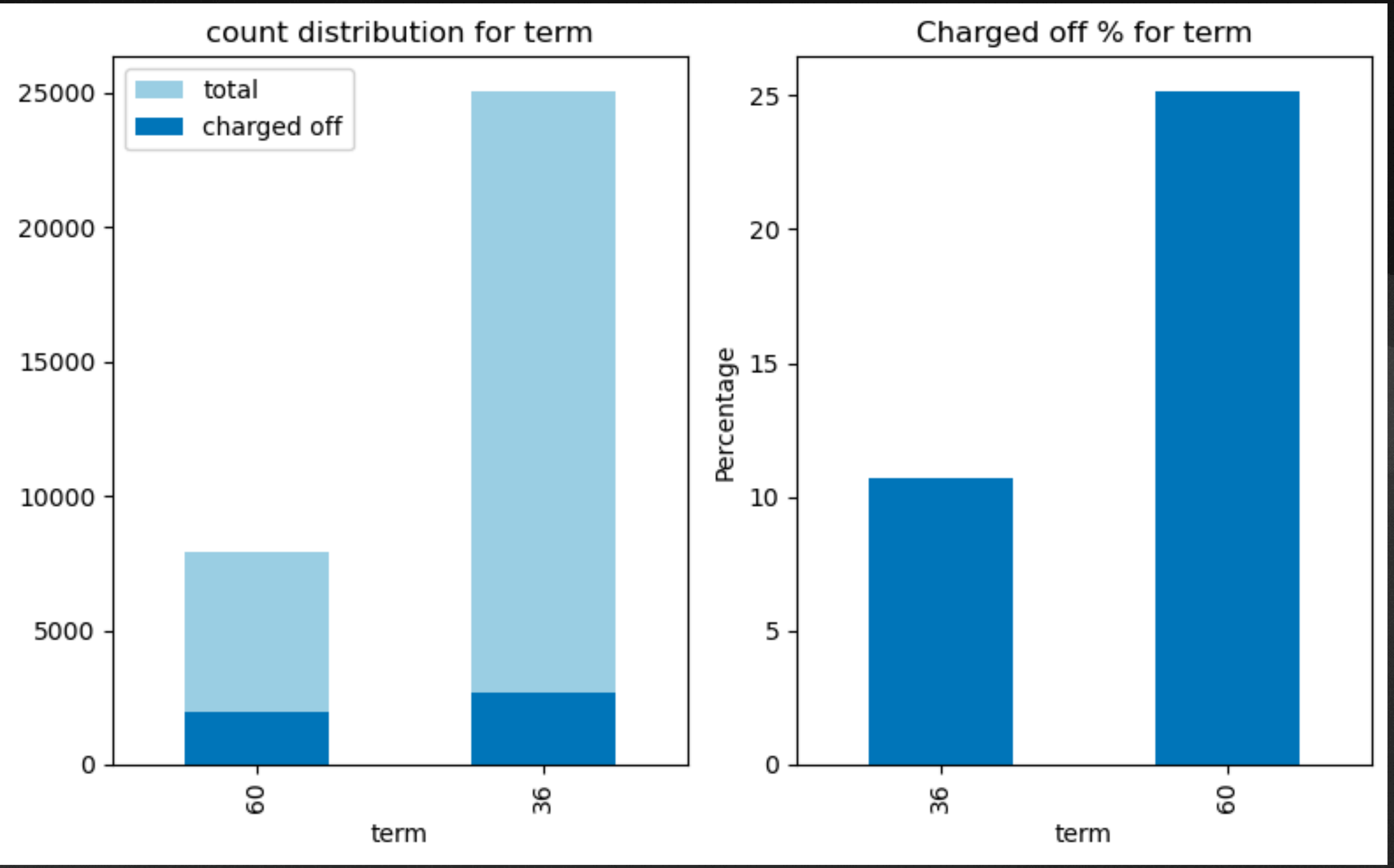


Recommendations

- Mortgage seems profitable. Hence, we can give loans for lesser interest to attract more applicants.

Insights and Recommendations (4)

There are nearly three times more loan takers for the 36-month term, with a 15% lower default rate compared to the 60-month term.

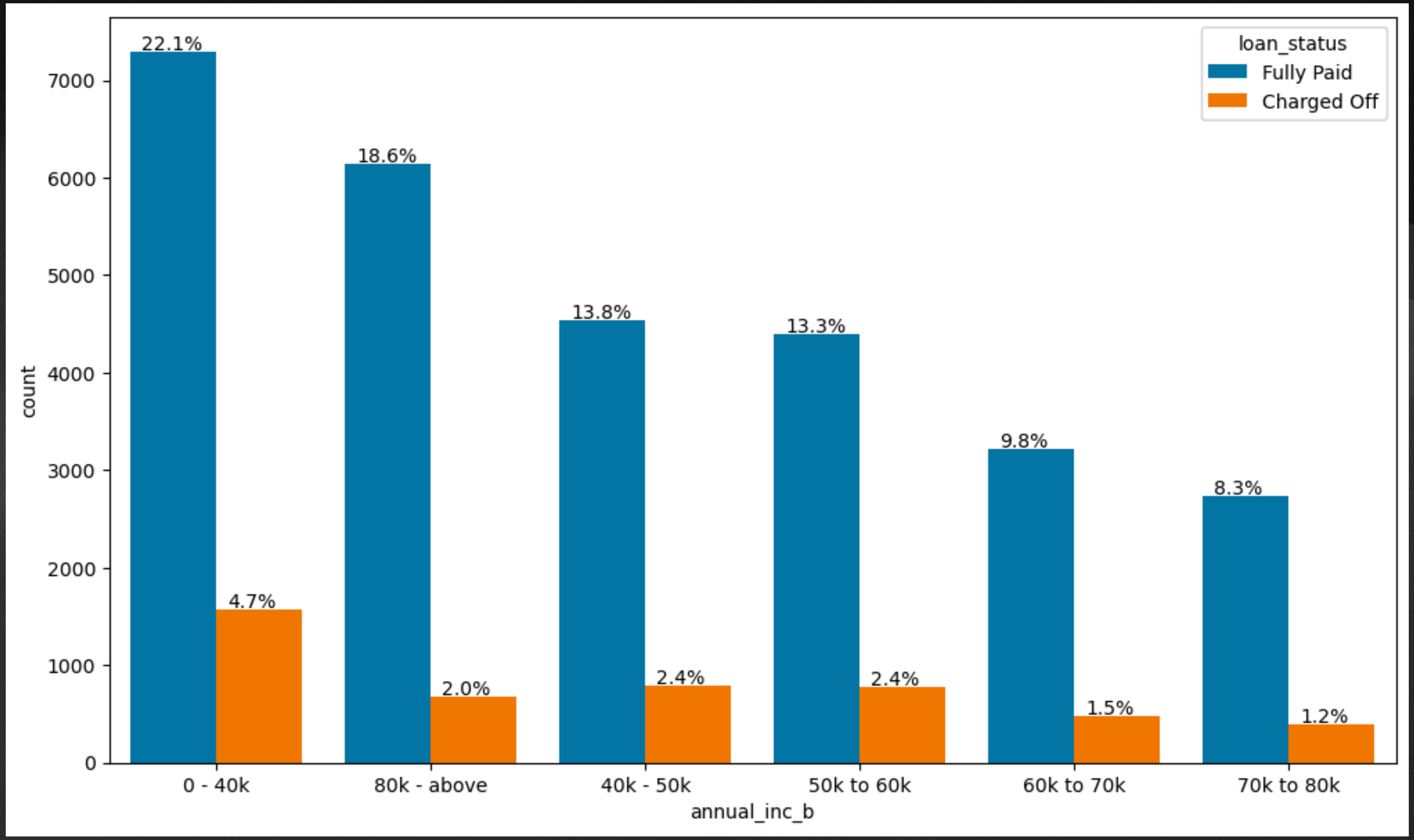


Recommendations

1. Giving out loan for a term of 36 months seems far more profitable
2. Evaluate the risk of 60-month loans and consider limiting the maximum term or adjusting interest rates

Insights and Recommendations (5)

The default rate tends to decrease as the income bracket increases. Annual income range of 0-40K has the highest default rate of 17.5%



<u>Recommendations</u>

1. Prioritize applicants with higher annual incomes for loan approval

2. Income range of 0-40K have the highest risk, hence consider adjusting interest rates for those applicants

Thank You