Lending Club Case Study

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Business Objectives

We are working for a **consumer finance company** which specializes in lending various types of loans to urban customers.

When the company receives a loan application, the company has to make a decision for loan approval based on the applicant's profile.

Two **types of risks** are associated with the bank's decision:
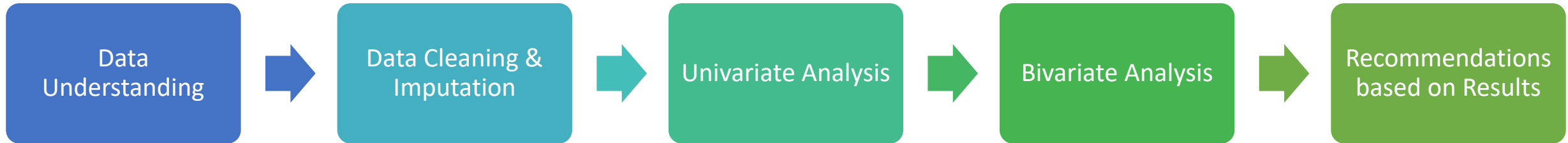
- If the applicant is **likely to repay the loan**, then not approving the loan results in a **loss of business** to the company

- 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

The data given to us contains information about past loan applicants and whether they 'defaulted' or not.

Our Objective is to identify patterns which indicate if a person is likely to default, which may be used for taking actions such as denying the loan, reducing the amount of loan, lending (to risky applicants) at a higher interest rate, etc.
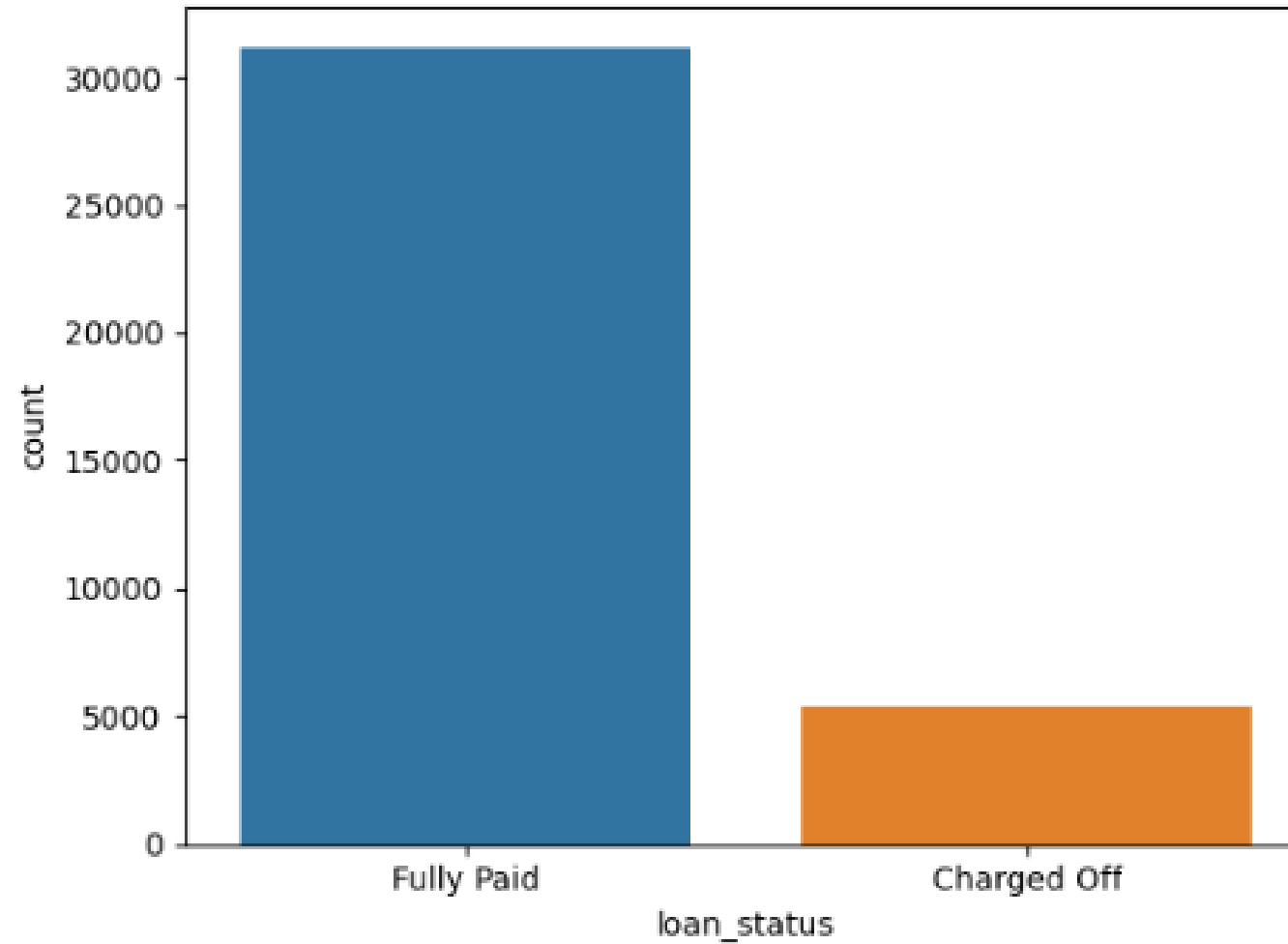
Business Objectives

Problem solving methodology

Data Understanding → Data Cleaning & Imputation → Univariate Analysis → Bivariate Analysis → Recommendations based on Results
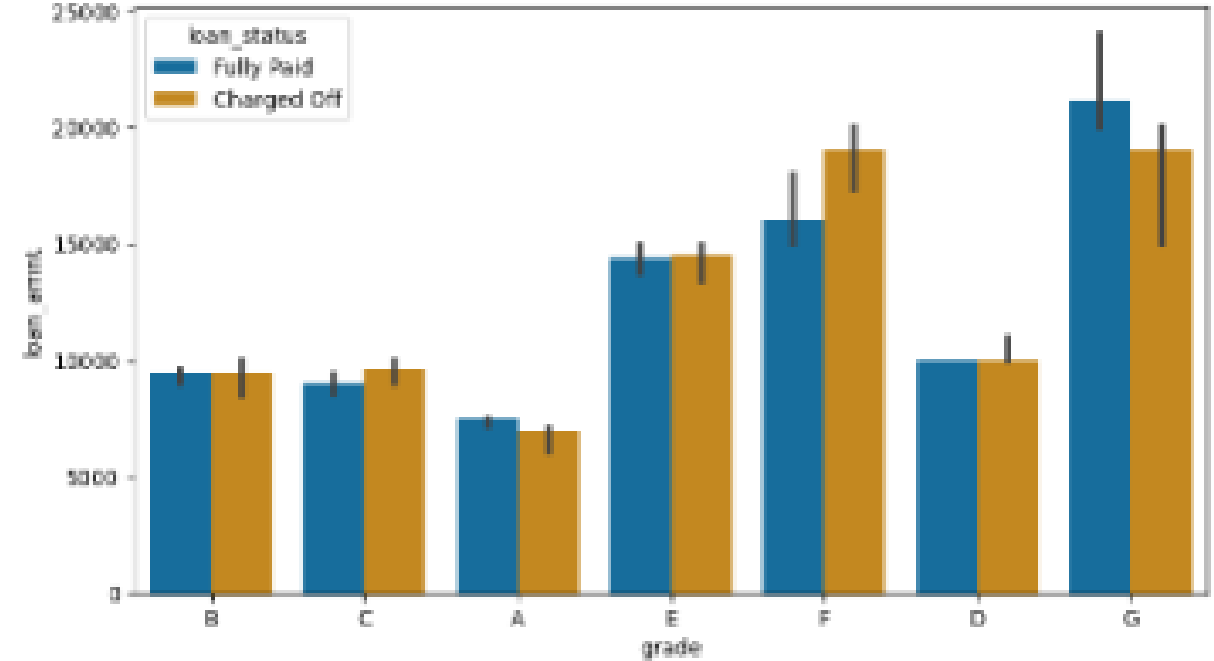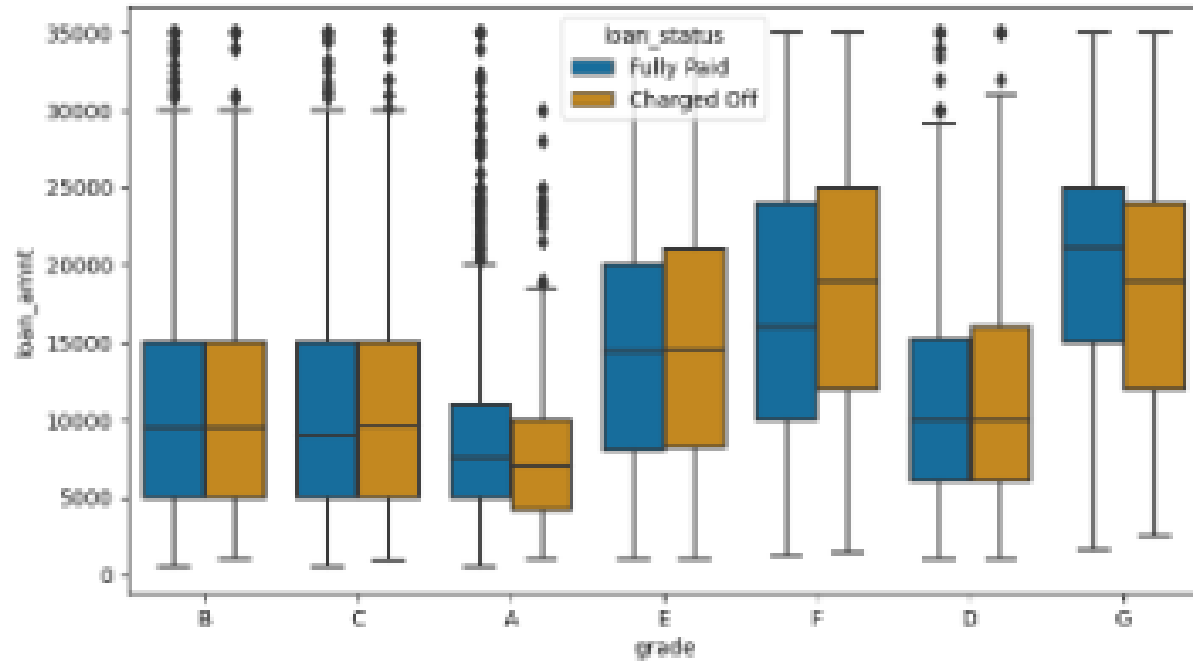
Business Objectives

Analysis

Out of all the loans issued by company there are roughly 5000 cases of default
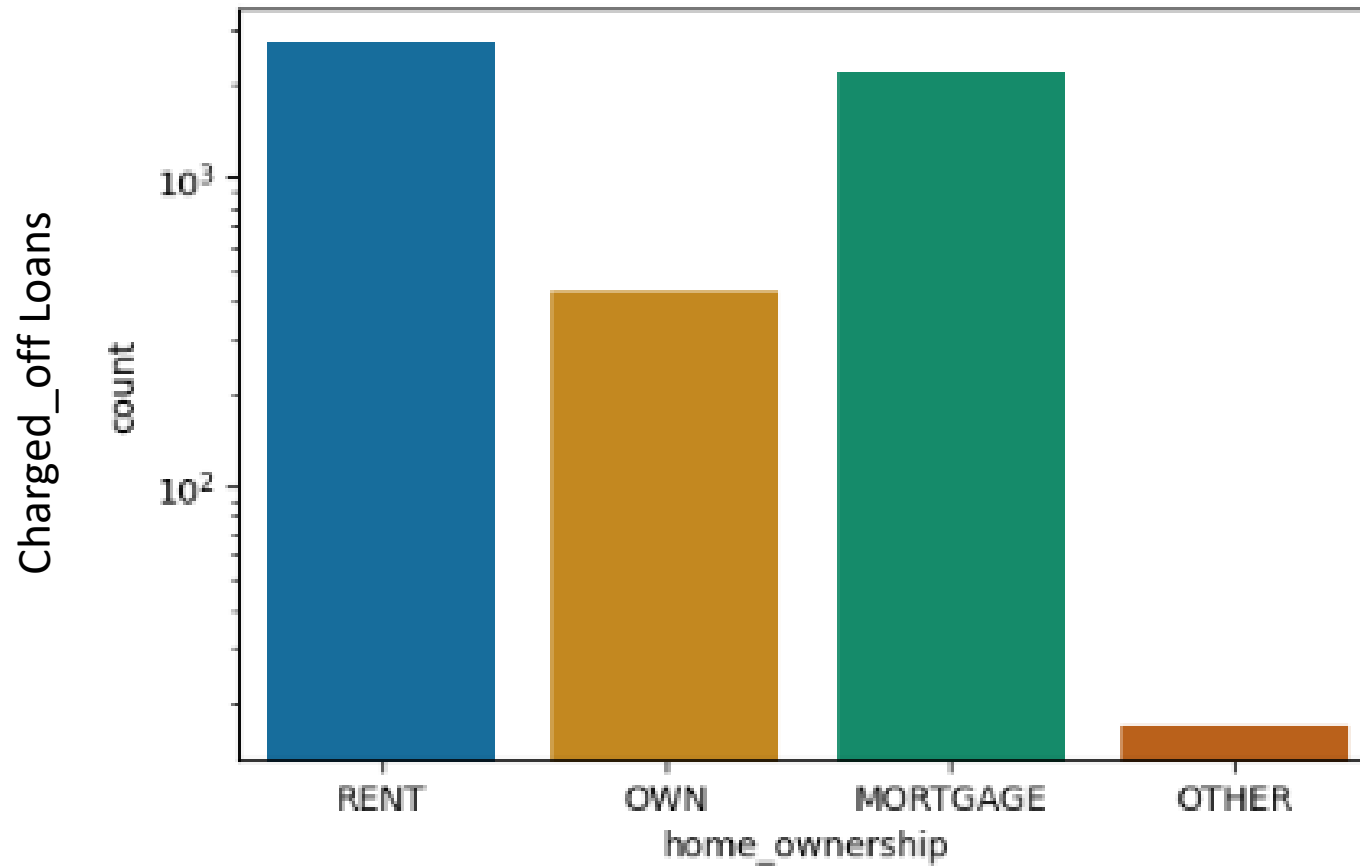
Business Objectives

Analysis

Term vs loan amount

Persons marked in lower grades if taken higher amount of loans; they are more prone to default the loan.
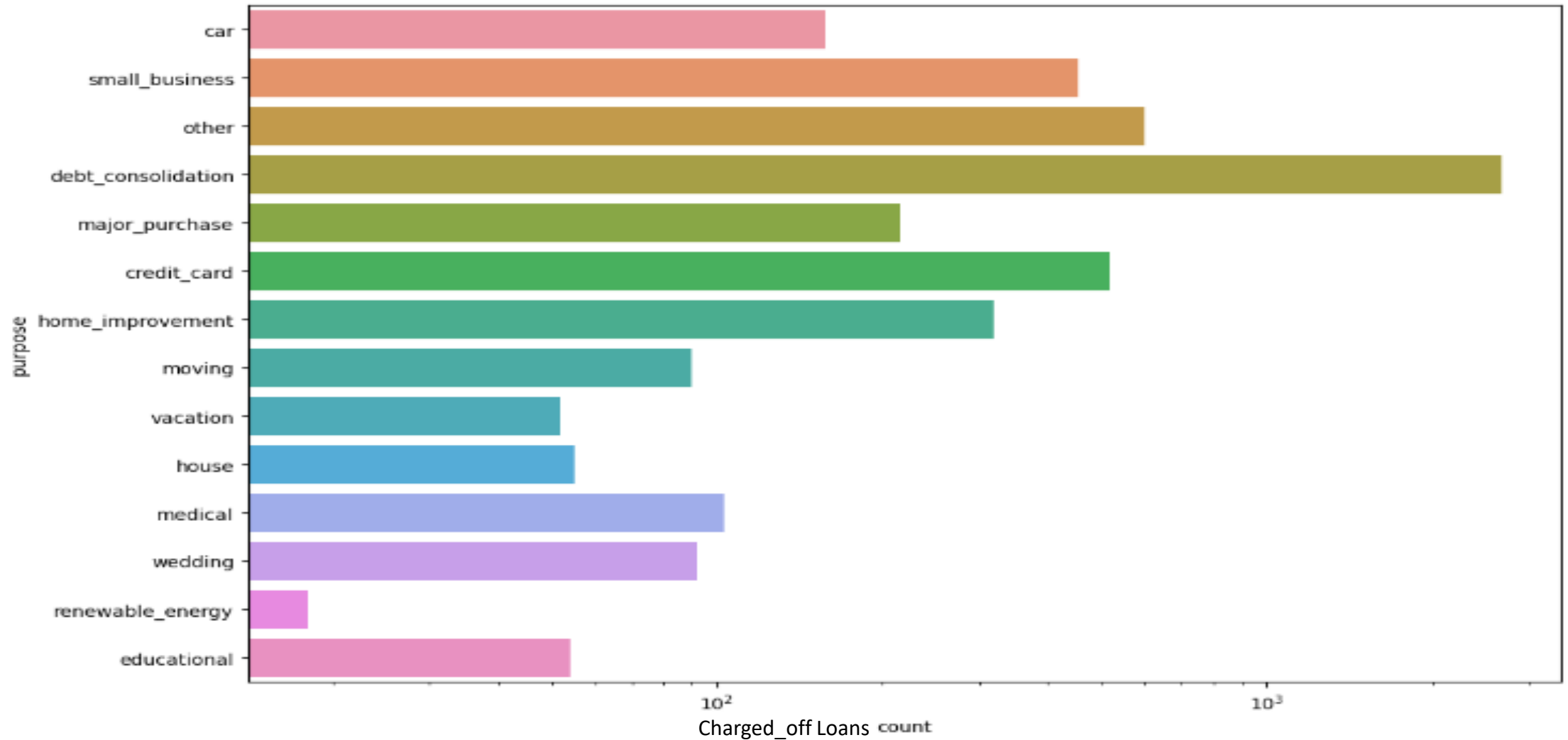
Business Objectives

Analysis

Persons with Home Owner hip type "RENT" & "MORTGAGE" are more likely to default a Loan
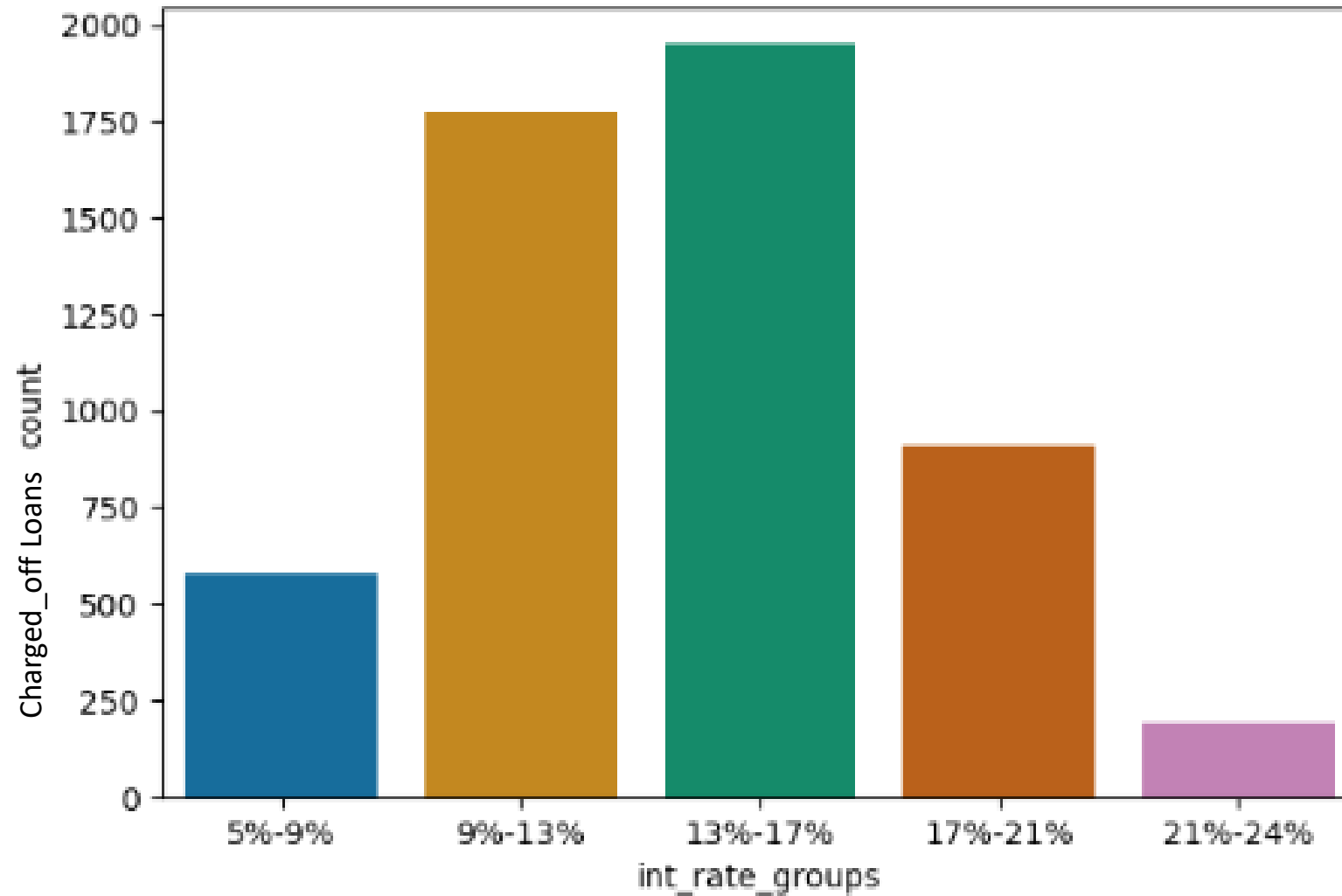
Business Objectives

Analysis

Persons who take loan for debt consolidation are more likely to default a Loan
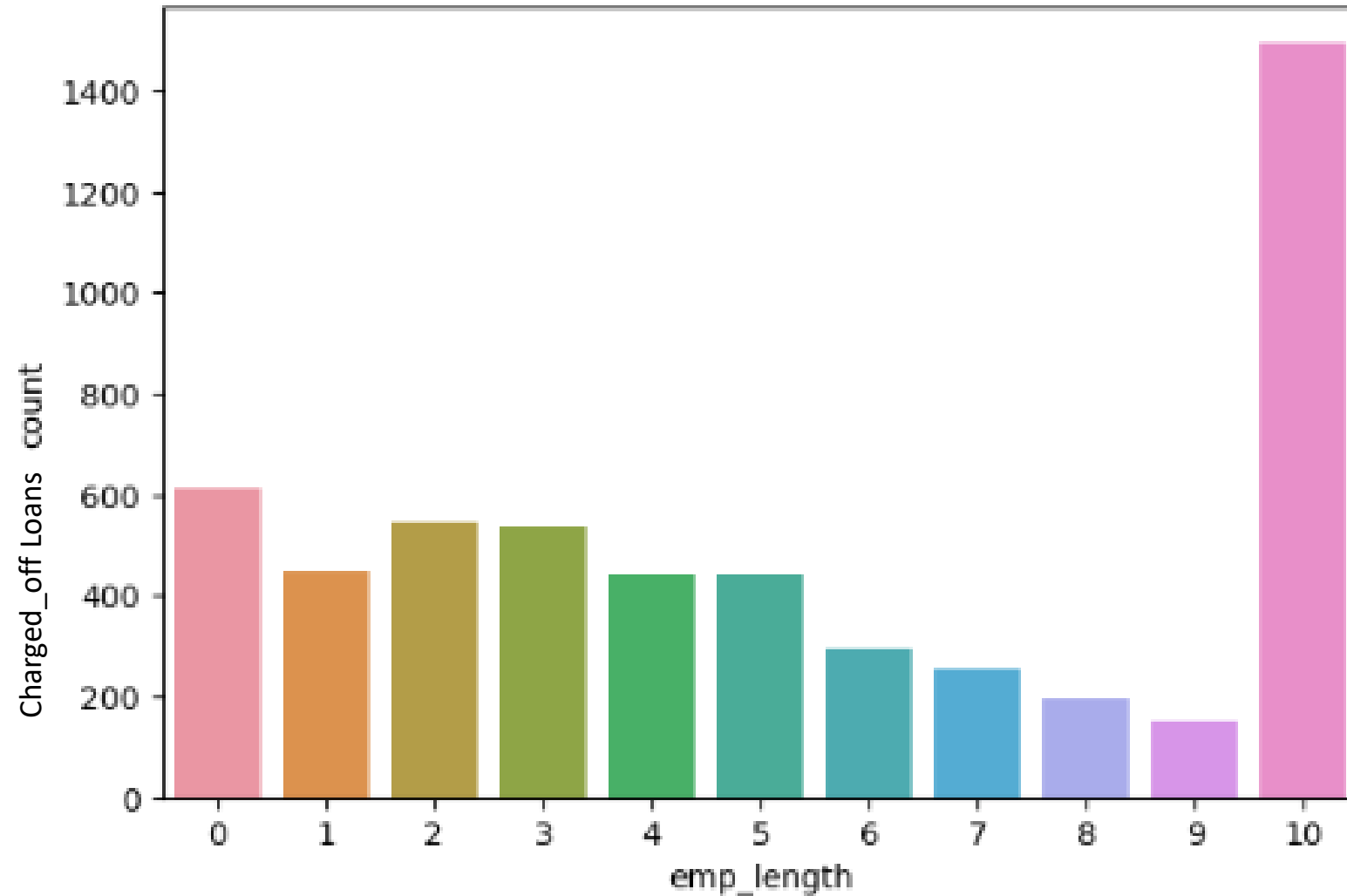
Business Objectives

Analysis

Persons who take loan in the interest rate bucket "13% - 17%" are more likely to default a Loan
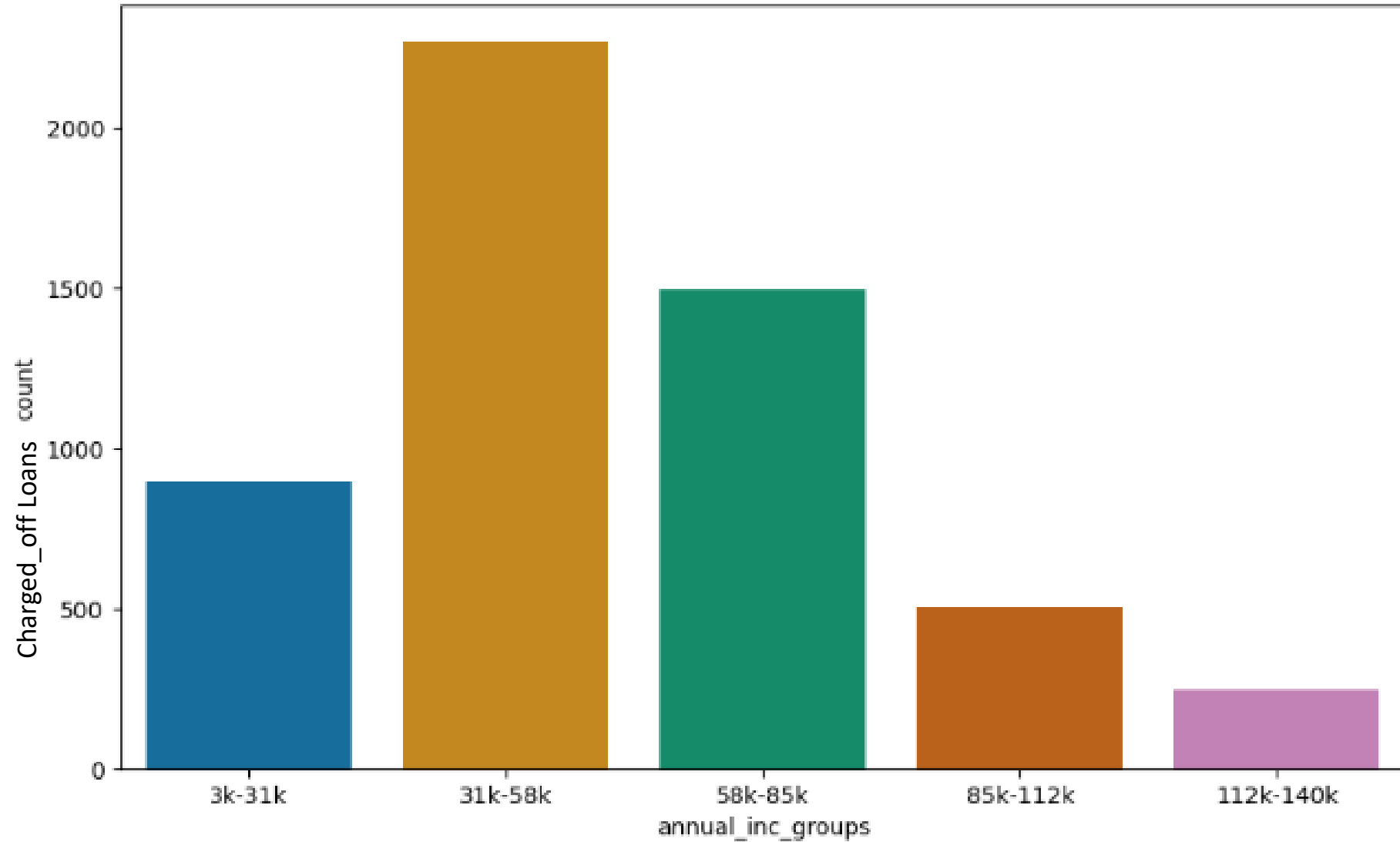
Business Objectives

Analysis

Persons with employment length above 10 years are more likely to default a Loan
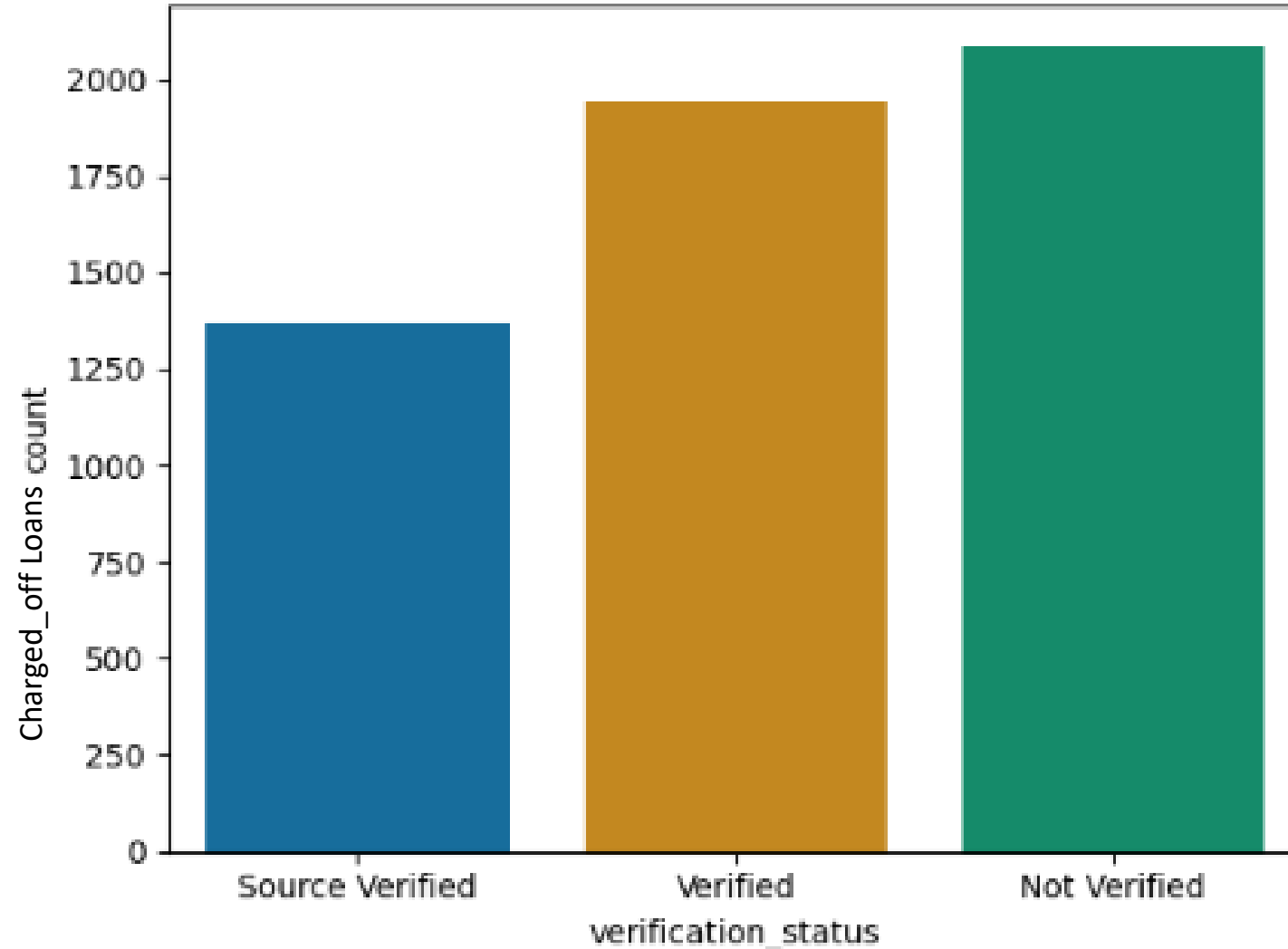
Business Objectives

Analysis

Persons with annual Income between 31k – 58k are more likely to default a Loan

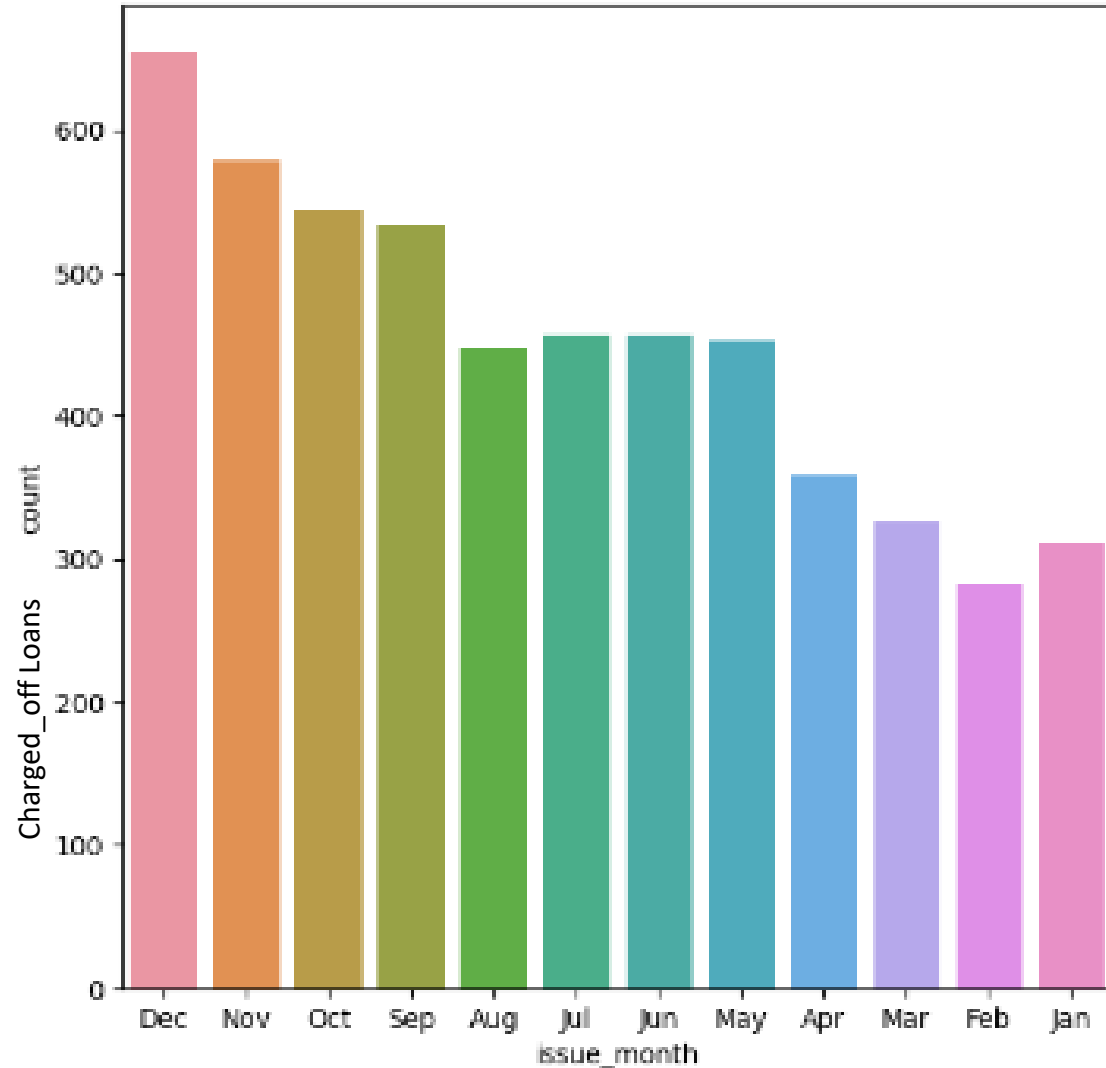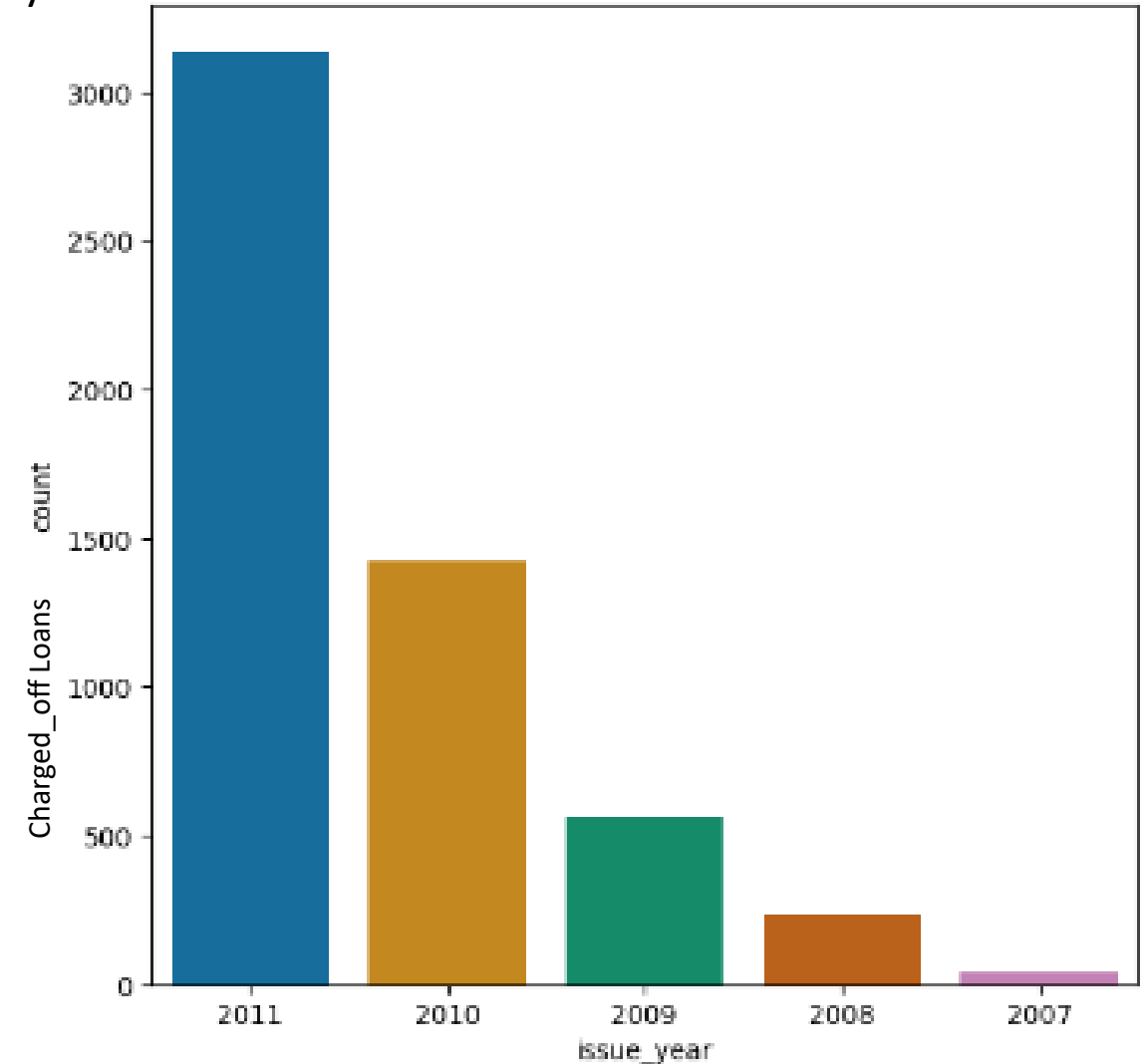# Business Objectives

Analysis

Persons who are not verified are more likely to default a Loan
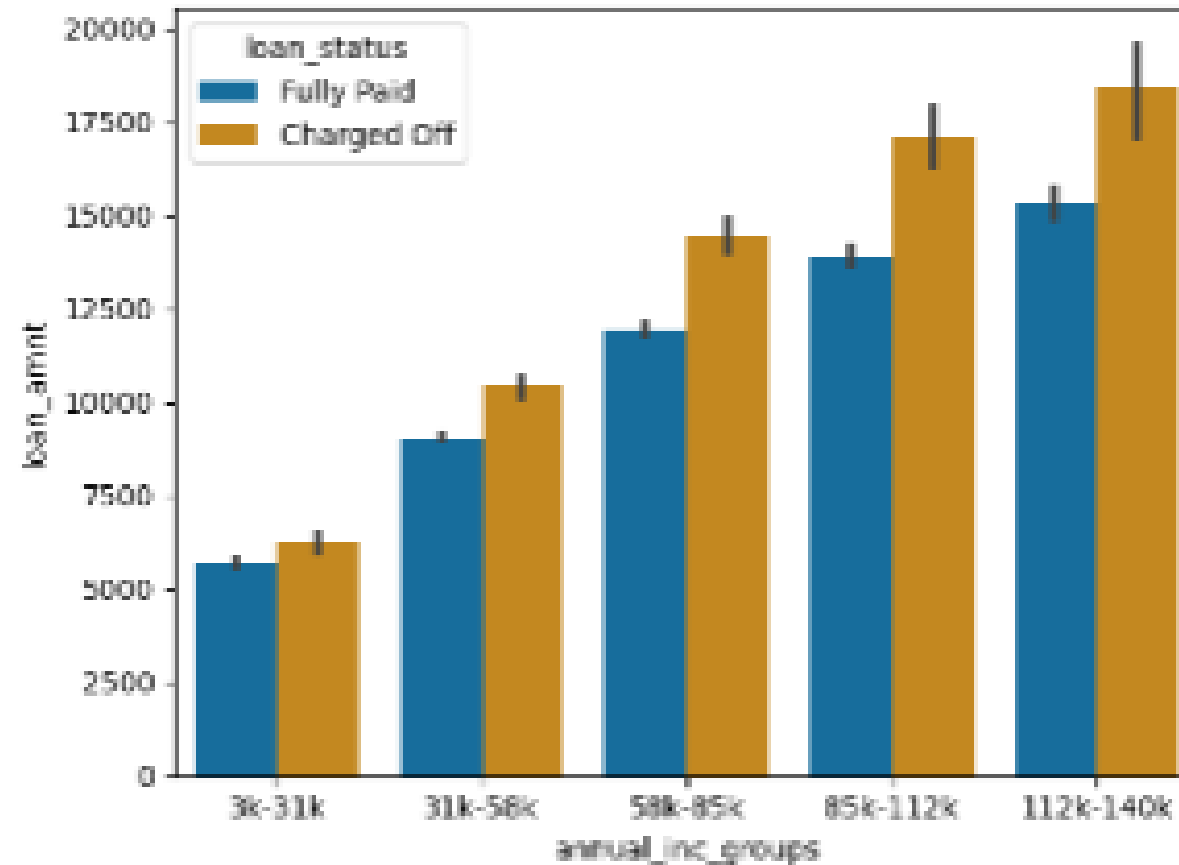
Business Objectives

Analysis

Loan granted in late months of a calendar year like Sep, Oct, Nov, Dec are more risky

Loan granted in year 2011 were defaulted most
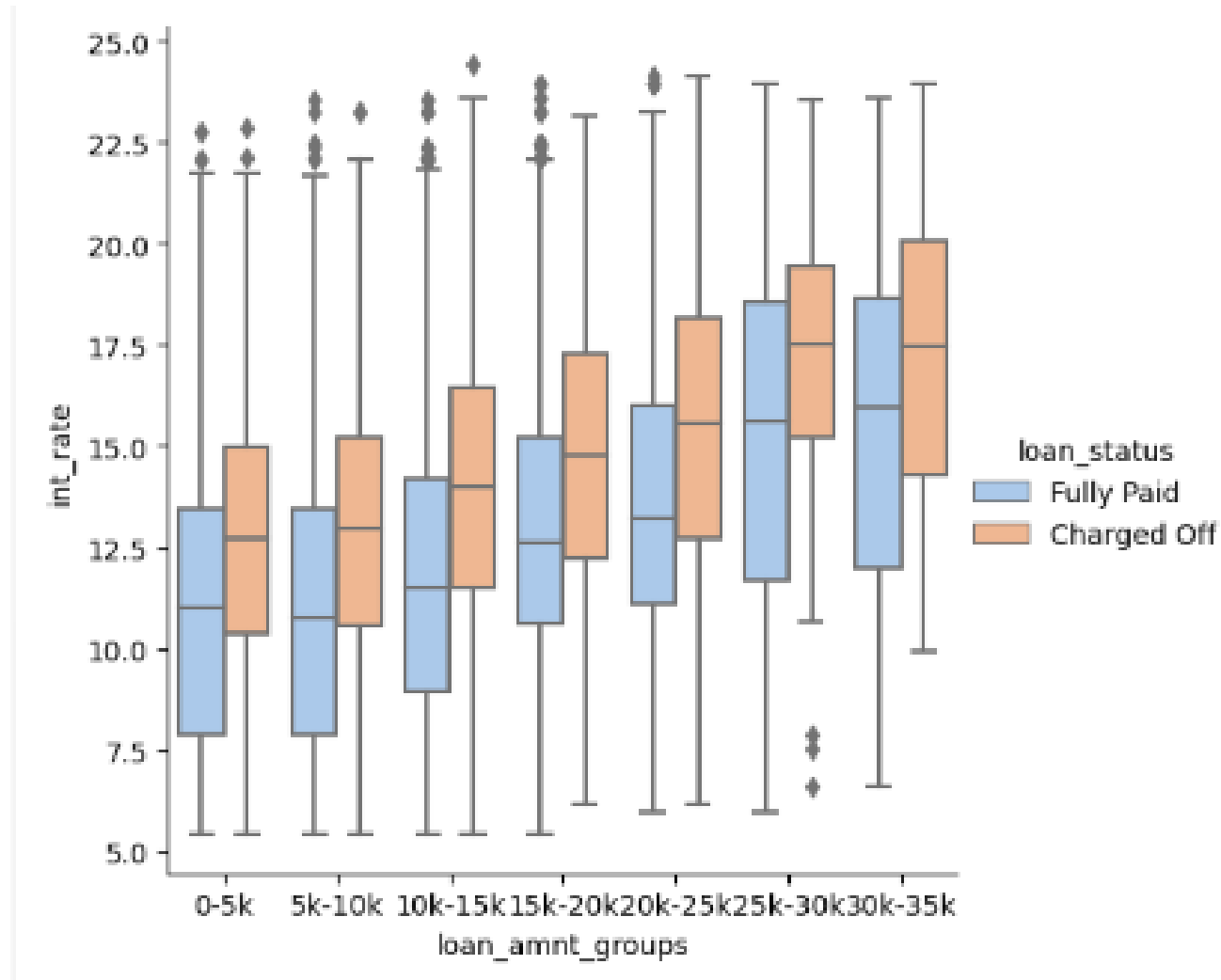
Business Objectives

Analysis

Loan defaulter were high in high income groups also

Business Objectives

Analysis

The interest rate for charged off loans is pretty high than that of fully paid loans in all the loan_amount groups.

Business Objectives

Recommendations

- Out of all the loans issued by company there are roughly 5000 cases of default
- Persons marked in lower grades if taken higher amount of loans; they are more prone to default the loan.
- Persons with Home Owner hip type "RENT" & "MORTGAGE" are more likely to default a Loan
- Persons who take loan for debt consolidation are more likely to default a Loan
- Persons who take loan in the interest rate bucket "13% - 17%" are more likely to default a Loan
- Persons with employment length above 10 years are more likely to default a Loan
- Persons with annual Income between 31k – 58k are more likely to default a Loan
- Persons who are not verified are more likely to default a Loan
- Loan granted in late months of a calendar year like Sep, Oct, Nov, Dec are more risky
- Loan defaulter were high in high income groups also
- The interest rate for charged off loans is pretty high than that of fully paid loans in all the loan_amount groups.

Thank you