

Lending Club Case Study

Explanatory Data Analysis

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Problem Statement

Lending loans to 'risky' applicants is the largest source of financial loss (called credit loss). If one is able to identify these risky loan applicants, then such loans can be reduced thereby cutting down the amount of credit loss. We want to understand the **driving factors** which are strong indicators of default.

General Information

Lending Club is a consumer finance company which specialises 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.

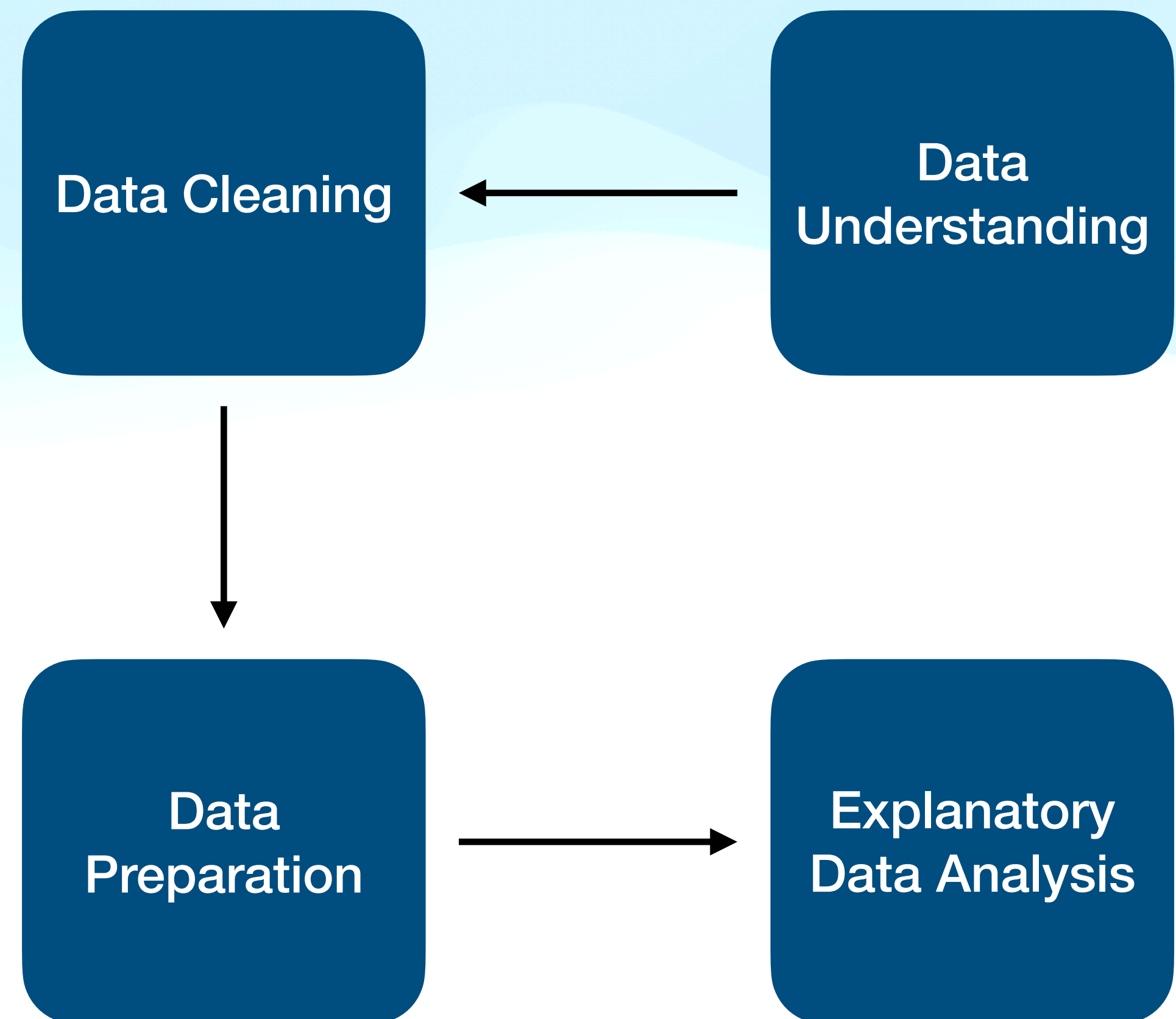
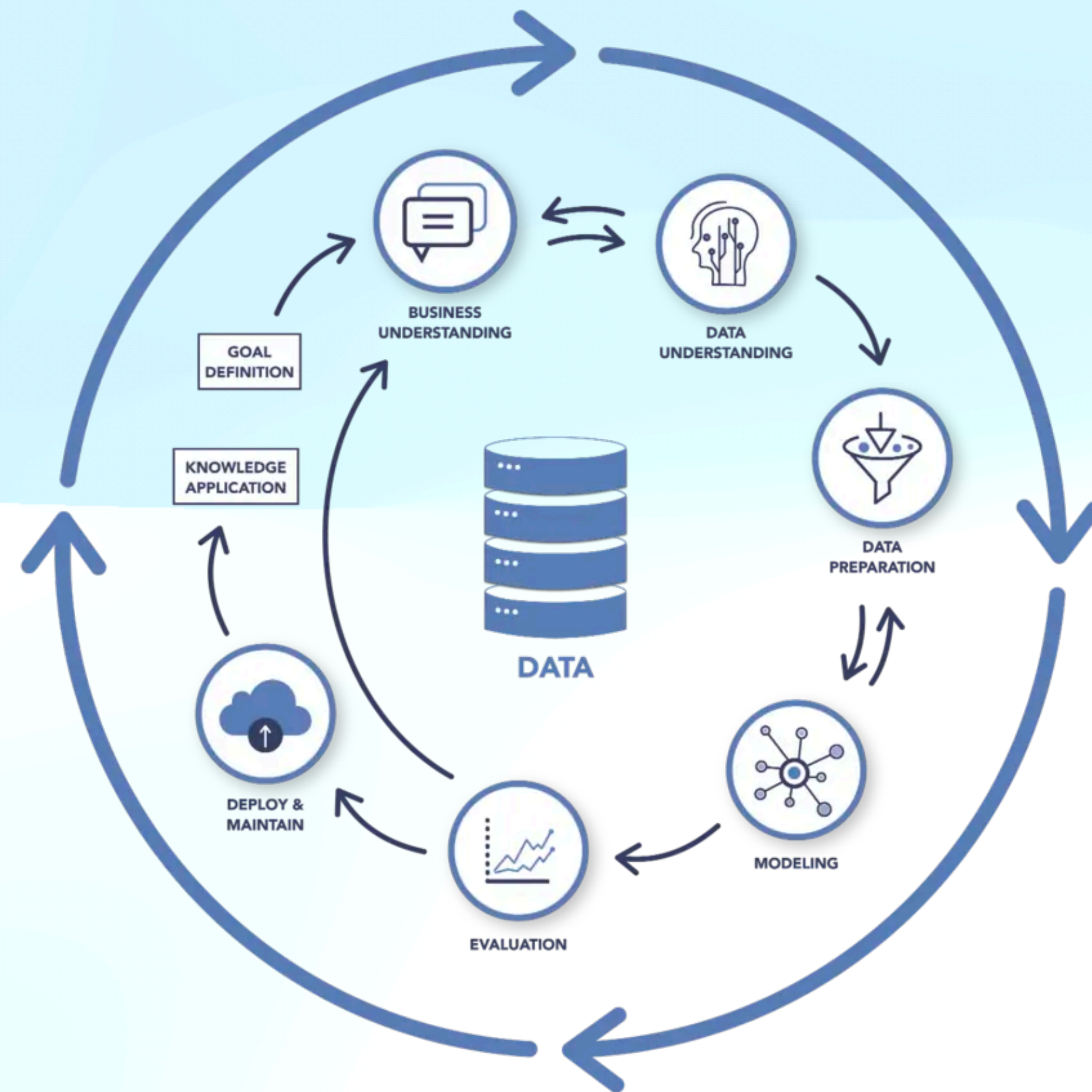
Here we want to understand the **driving factors** which are strong indicators of default.

Case Study Objectives

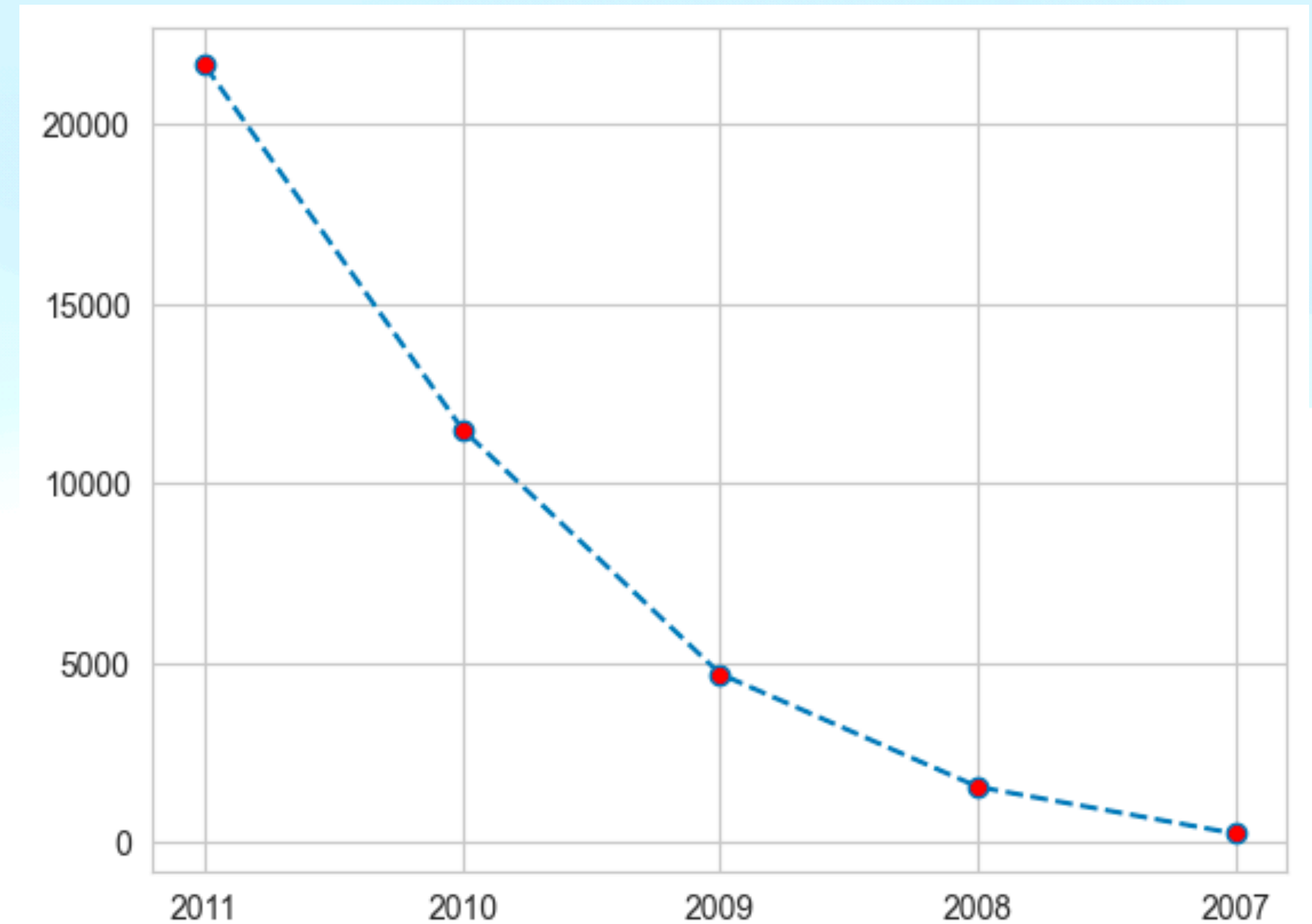
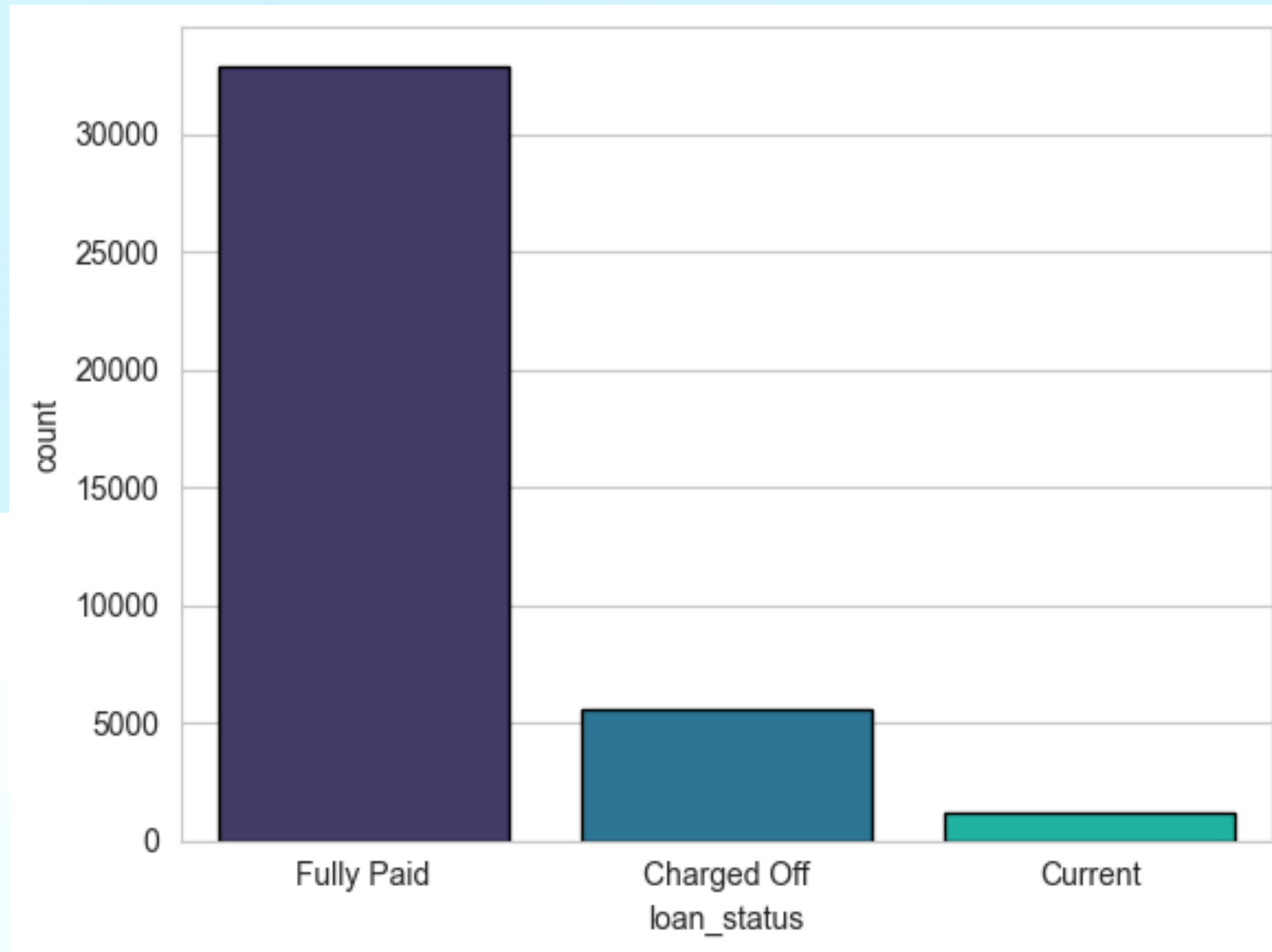
Identifying the Loan Applicants that are likely to get defaulted during the loan repayment.

Understanding the driving factors (or driver variables) behind loan default, i.e. the variables which are strong indicators of default.

Analysis Approach



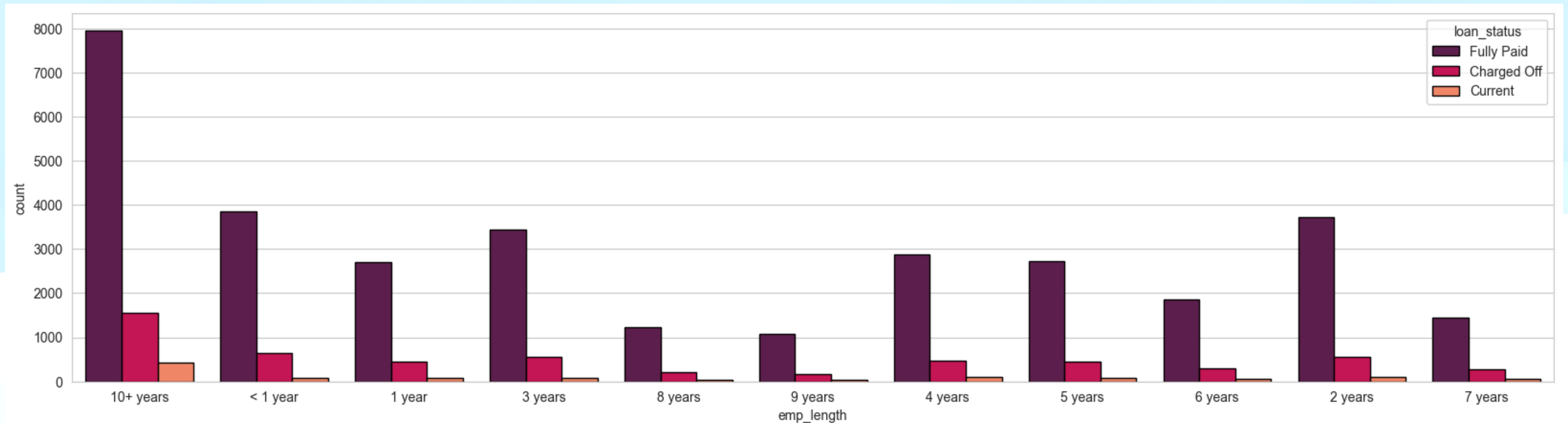
Loan Status Analysis



Observations:

1. Most of loan is given in Year 2011.
2. Most of the loan is Fully Paid.

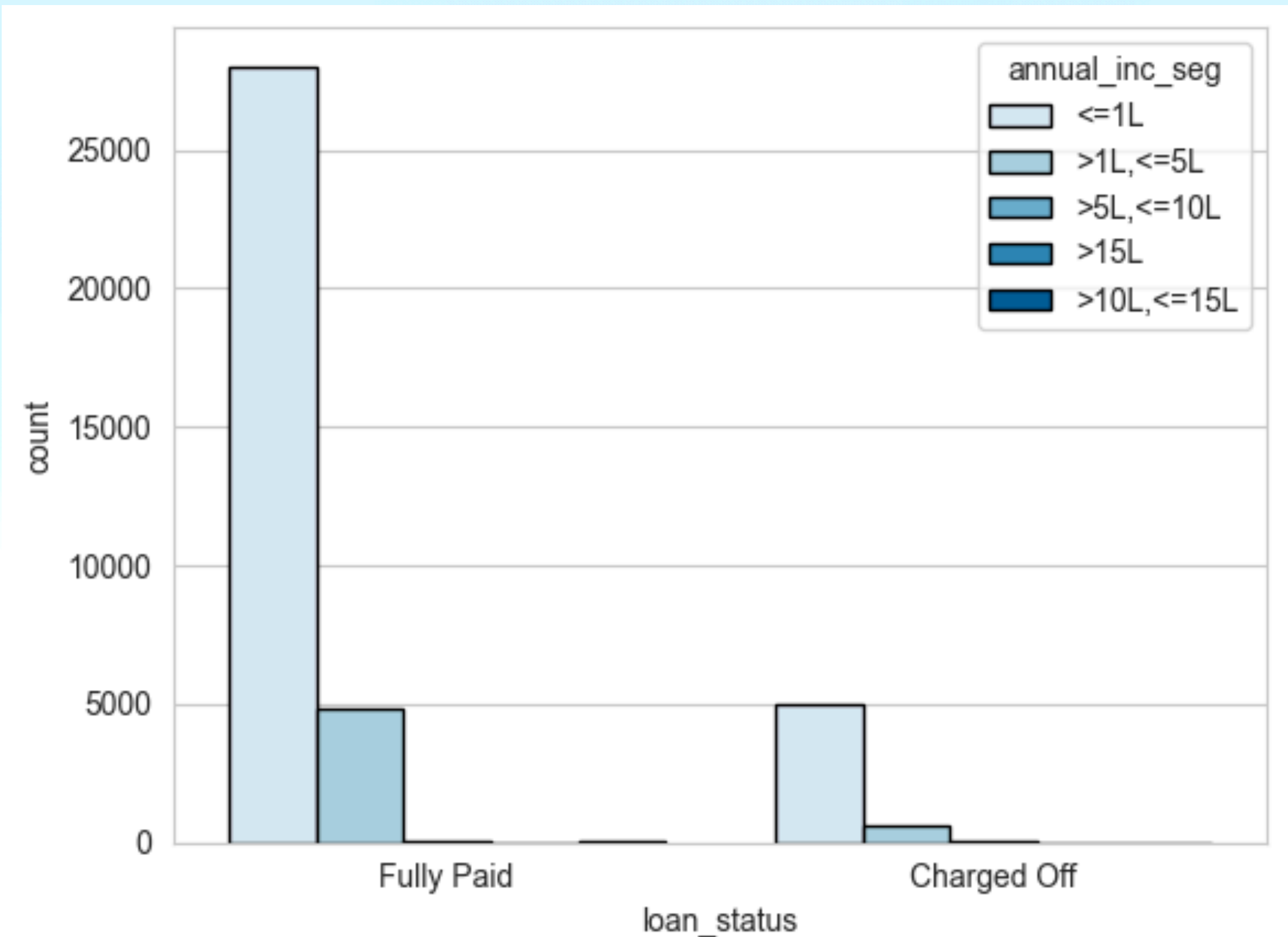
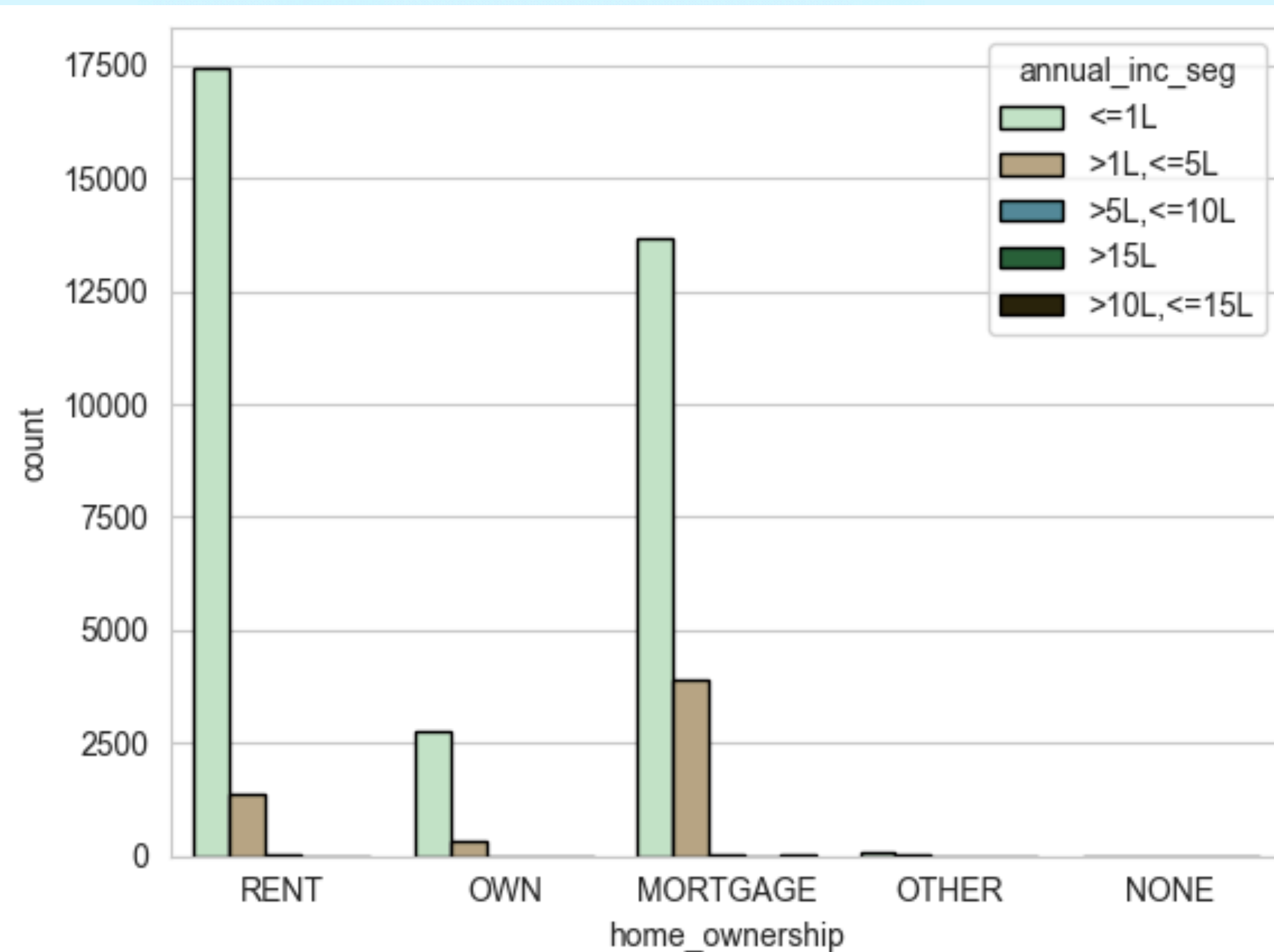
Employee Working Experience Analysis



Observations:

1. Majority of the customers have work experience of more than 10 Years.
2. Customers having work experience of more than 10 Years are likely to Get defaulted.

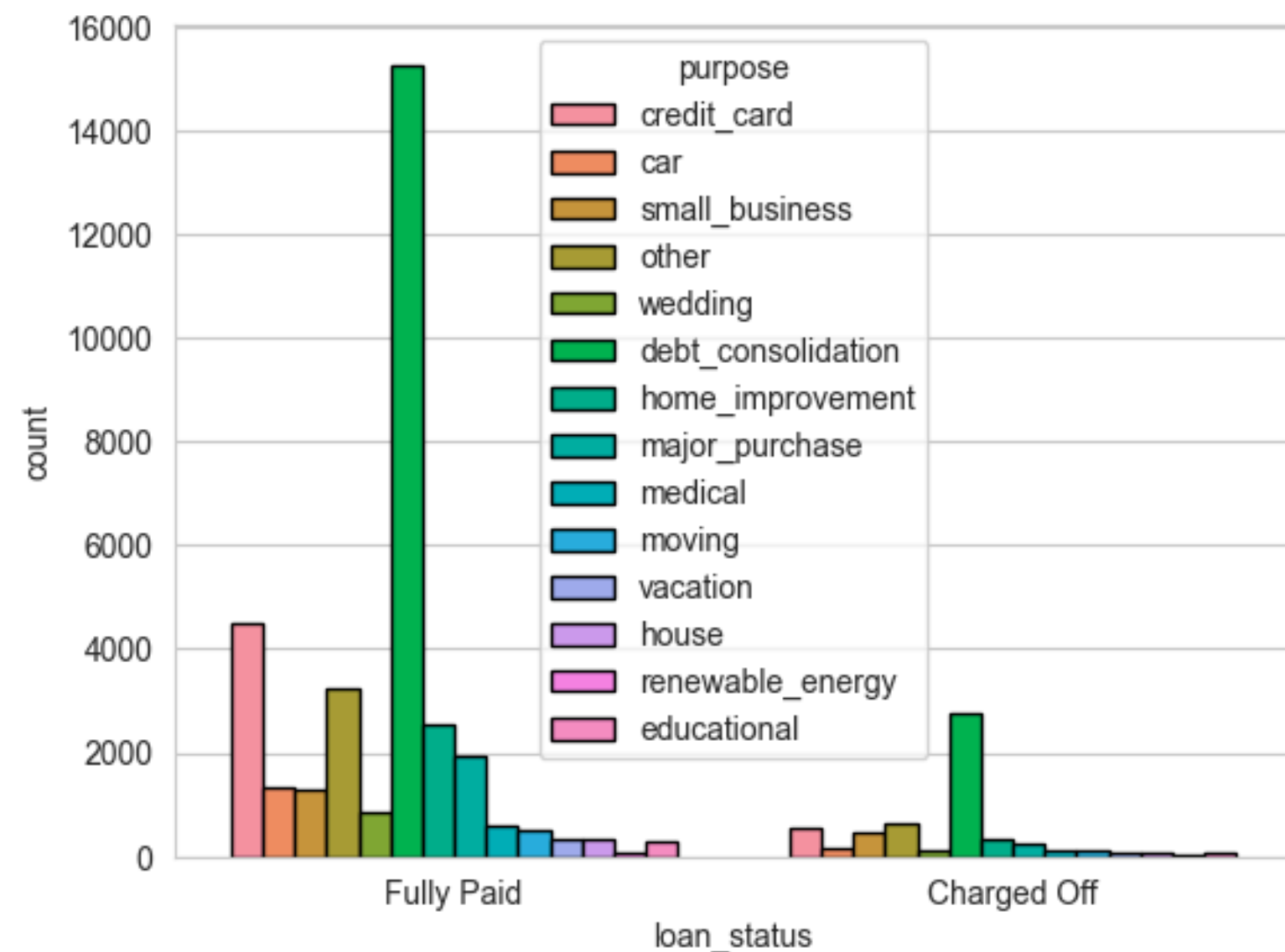
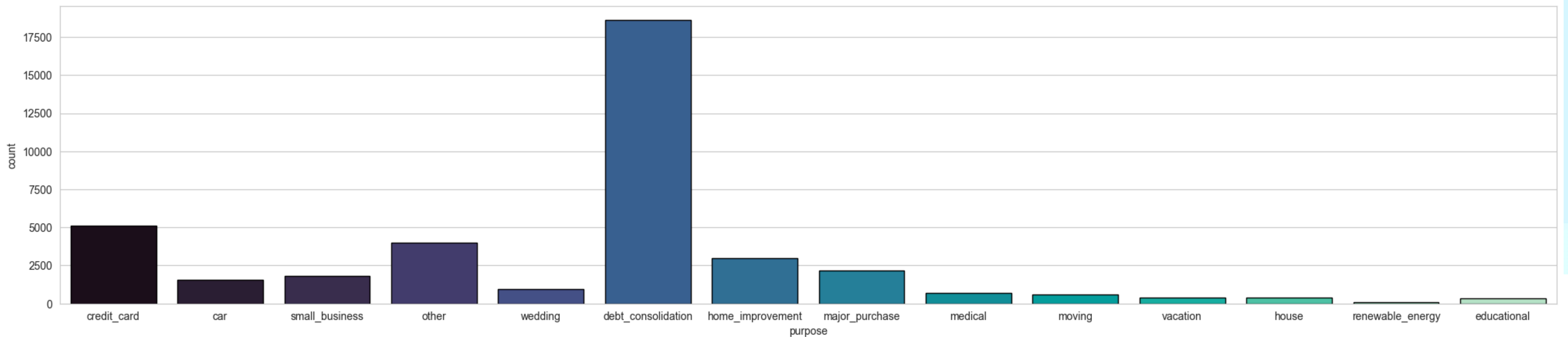
Annual Income Analysis



Observations:

1. There are only 5 customers whose annual income is greater than 15 lakhs and only 2 customers whose annual income is greater than 30 lakhs.
2. 84.4% of customer's annual income is less than 1 lakh.
3. Annual income of maximum people living on Rent and Mortgage is less than 1 Lakh.
4. 85.45% of the total Charged Off customers have annual income less than 1 Lakh. Hence, the customers having annual income is less than 1 Lakh are most likely to get defaulted.

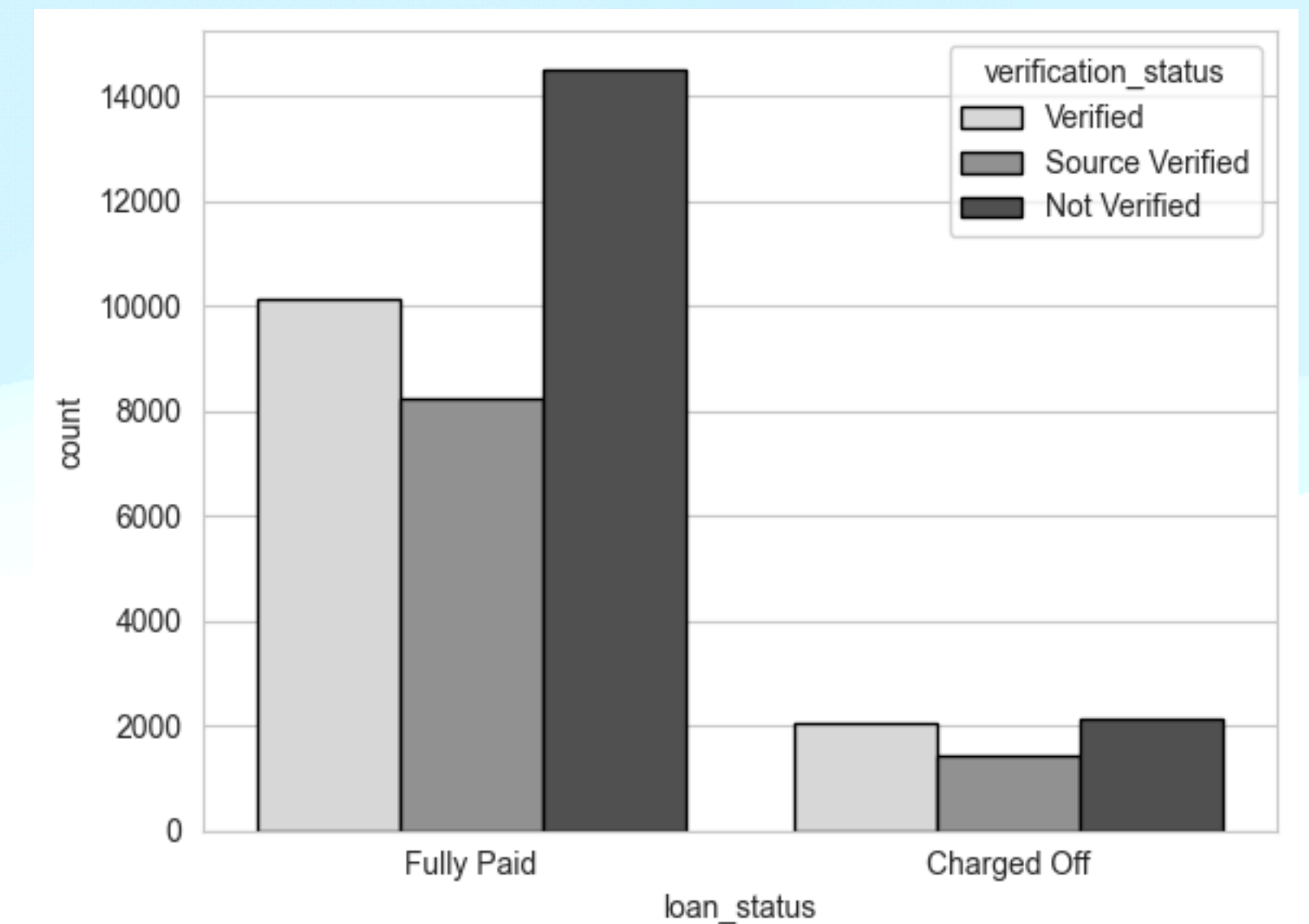
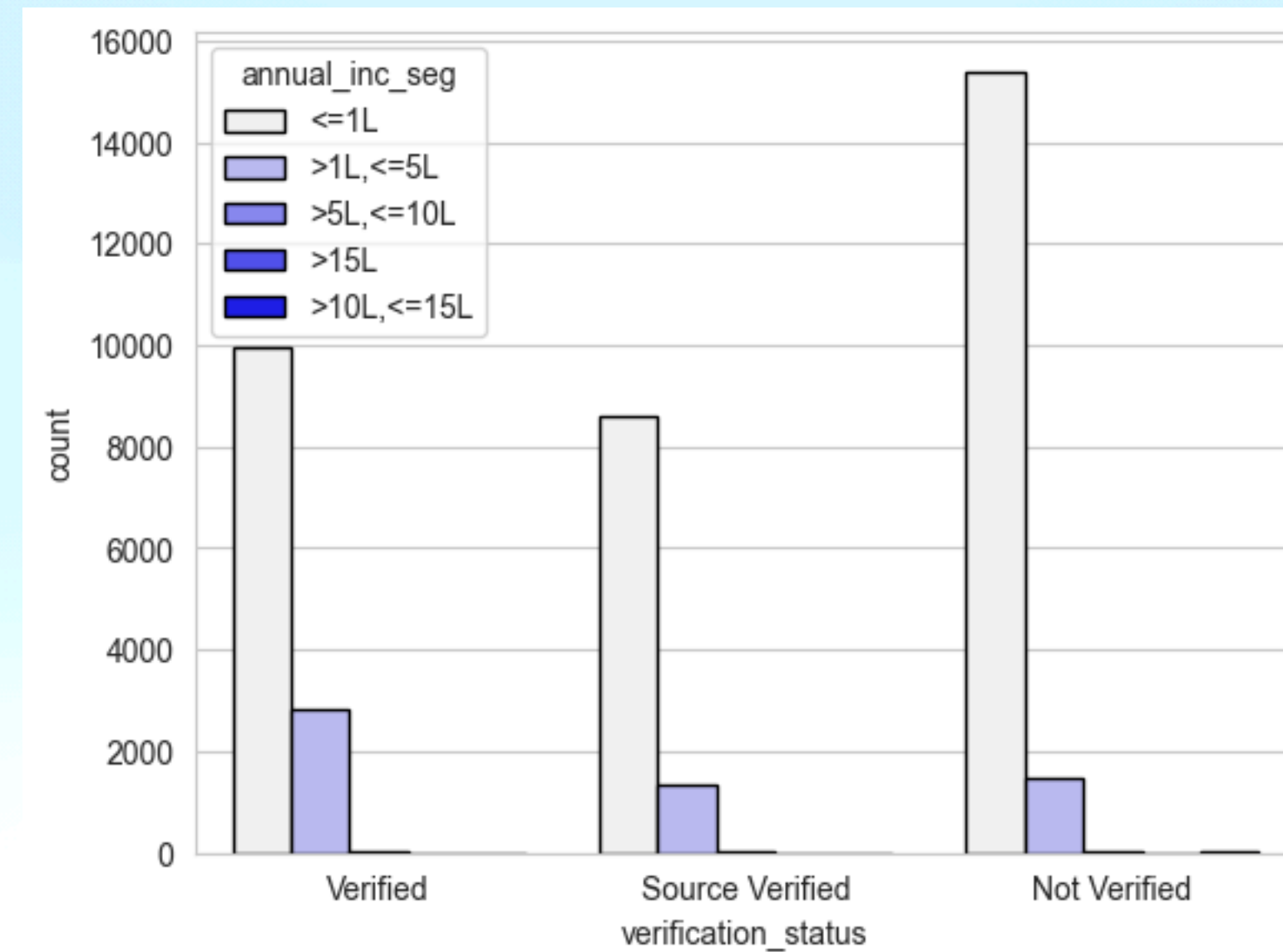
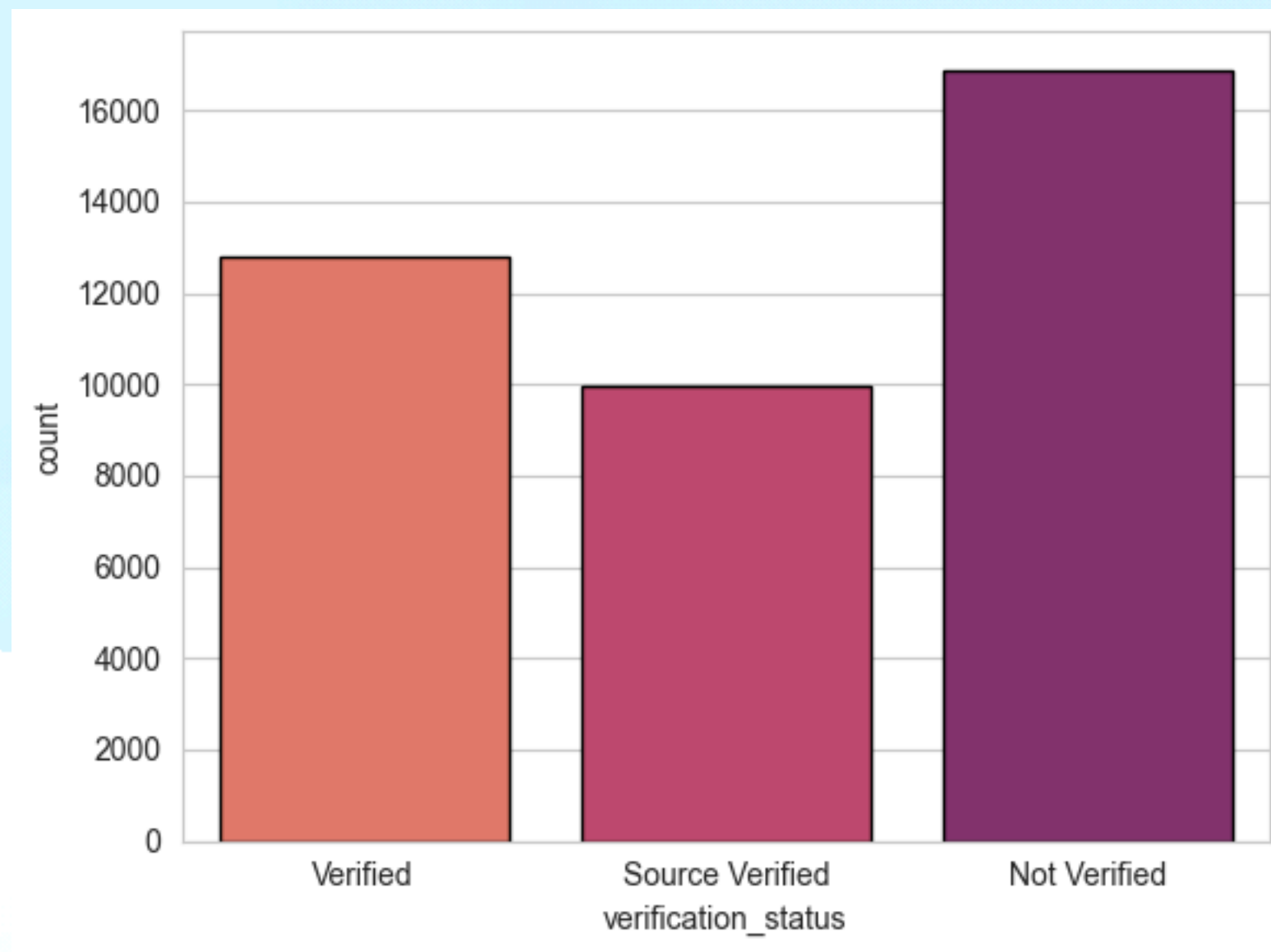
Loan Purpose Analysis



Observations:

1. Majority of customer have stated debt consolidation as the reason to take the loan.
2. 49.22% of the total customers who went Charged Off have stated the purpose for the loan as Debt Consolidation

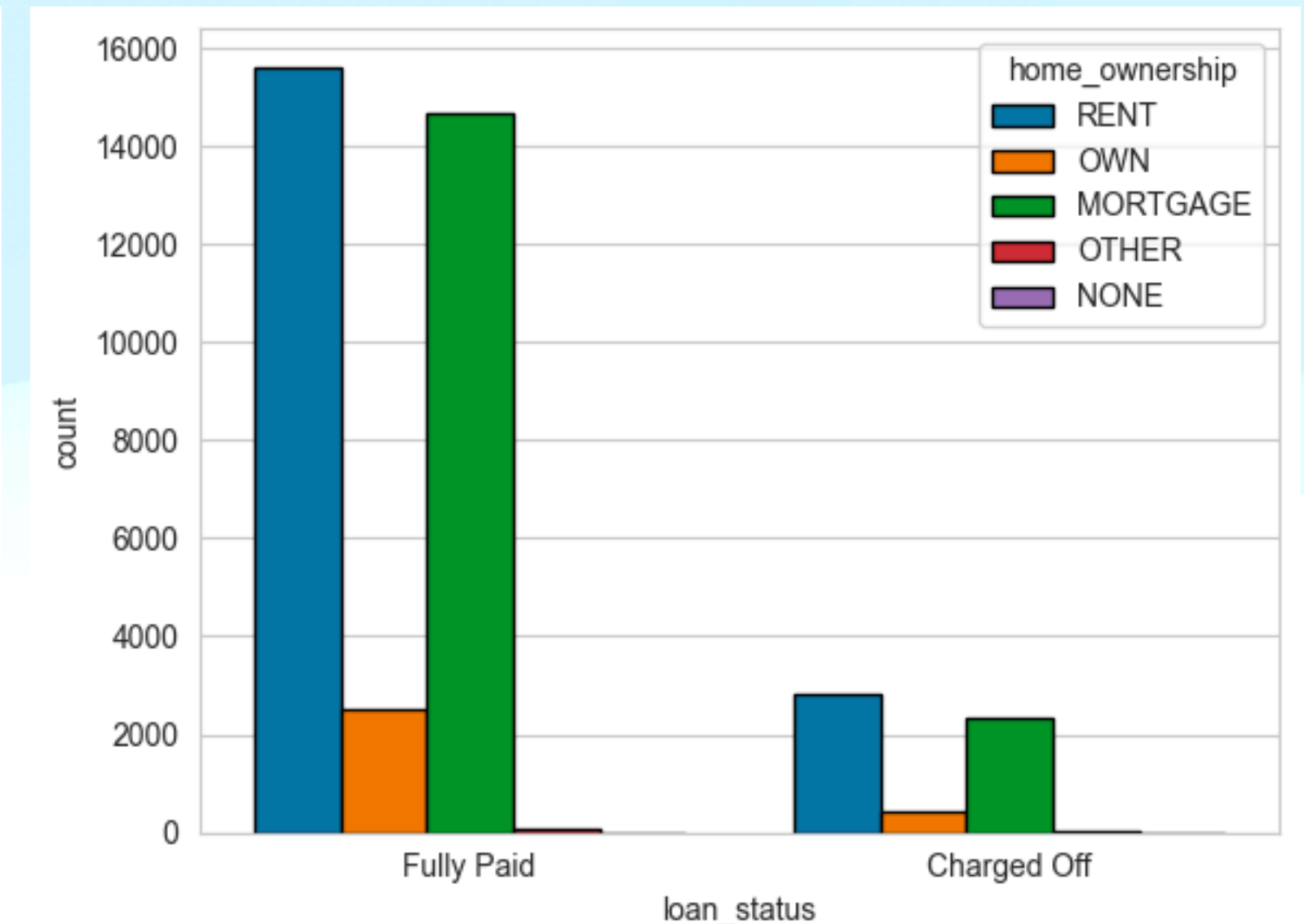
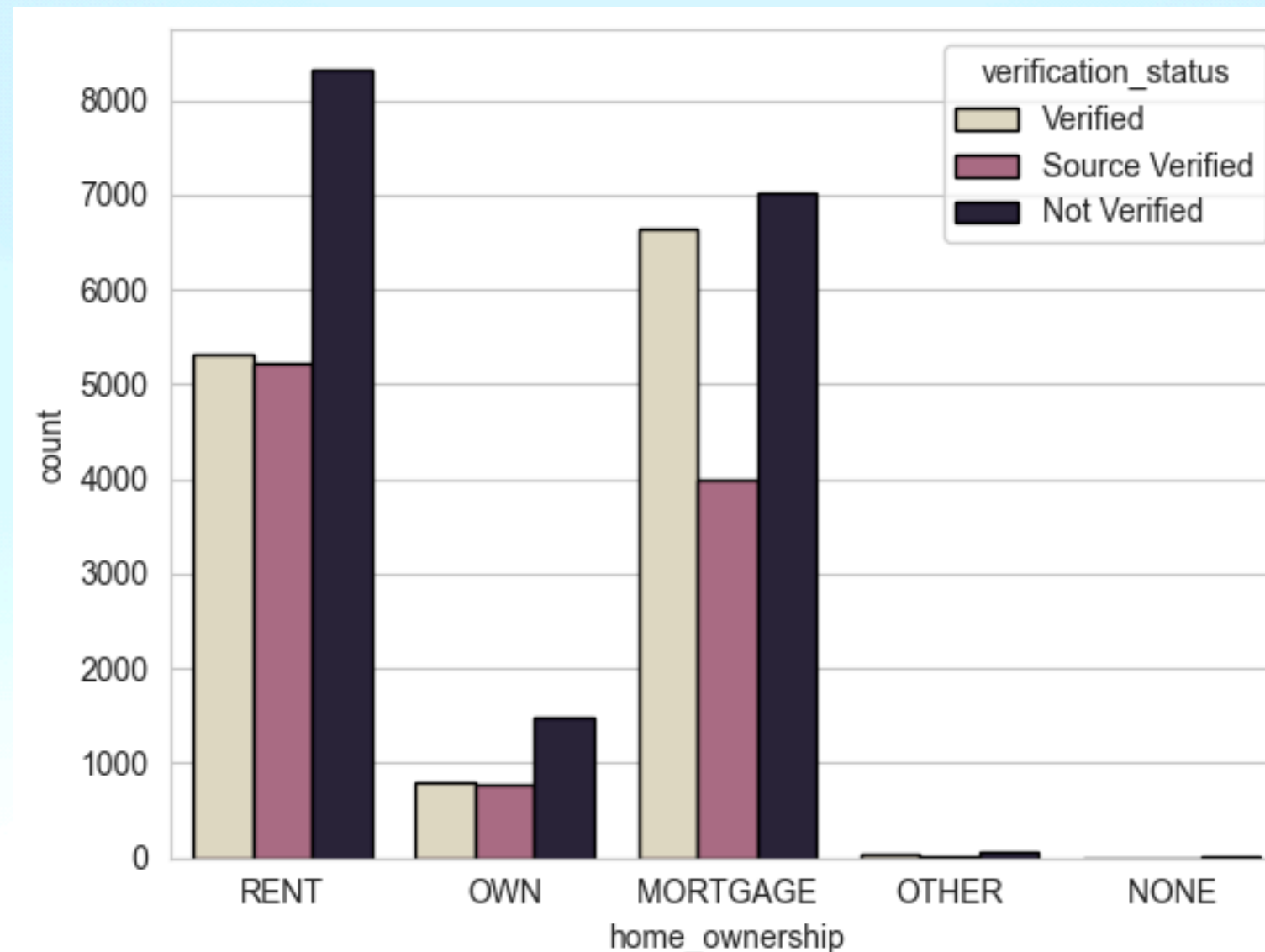
Verification Status Analysis



Observations:

1. 42.6% of the total customers were not verified.
2. 38% of the customers who went Charged Off were not verified.

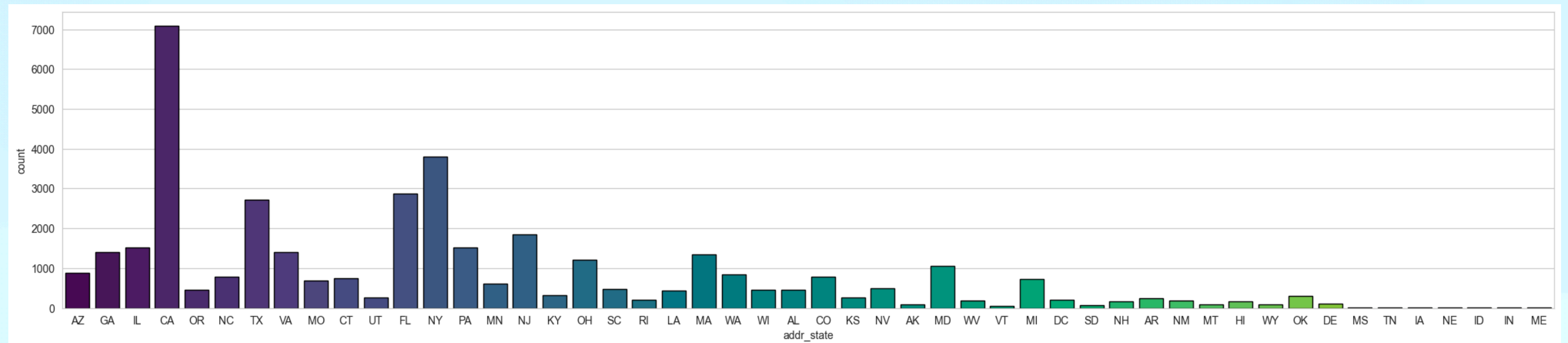
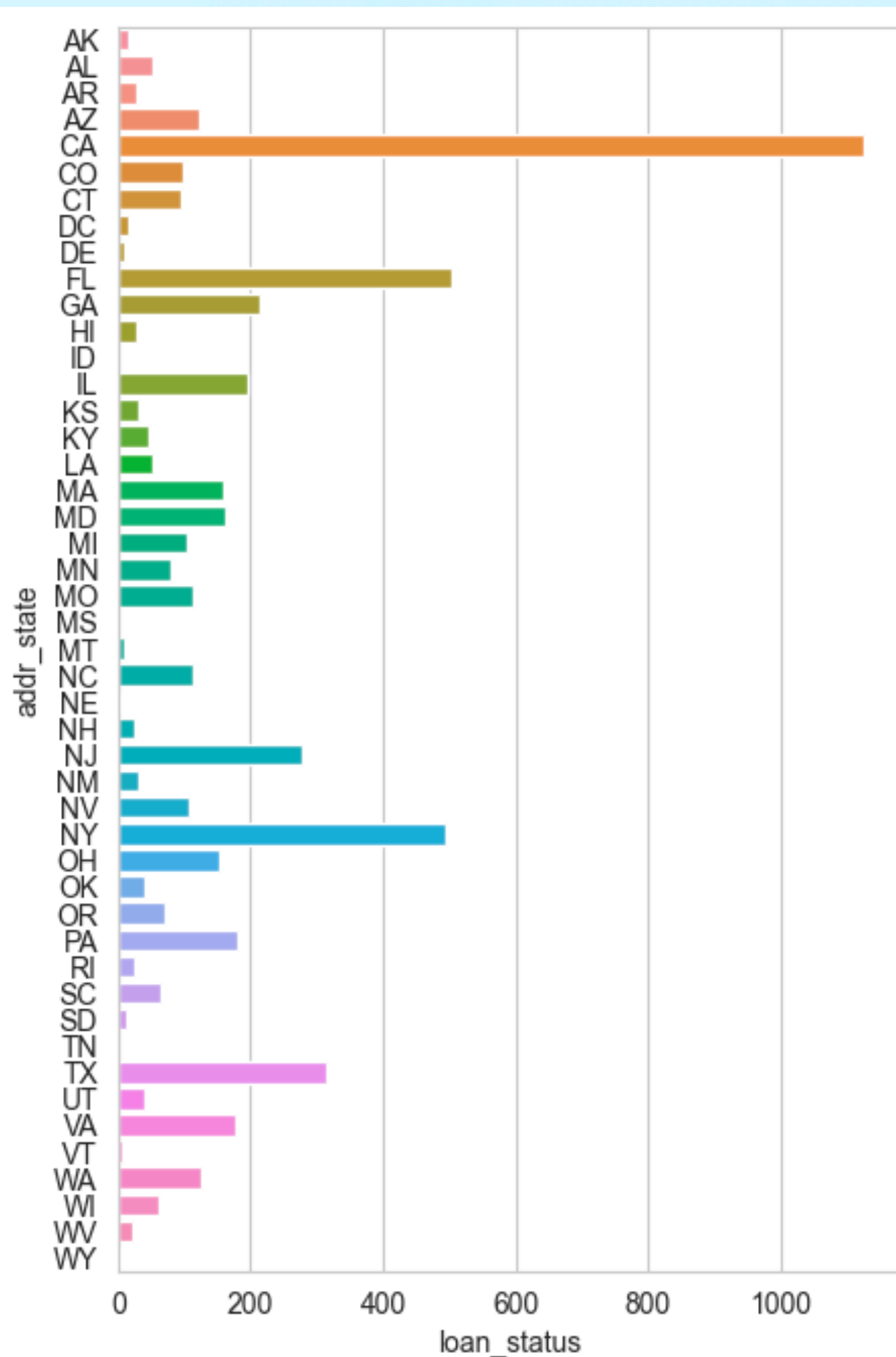
Home Ownership Analysis



Observations:

1. Maximum people who took loan were living in a rented place or in mortgage.
2. Maximum customers living in Rent or Mortgage are not verified.
3. 91.81% of the total customers who went Charged Off were living on Rent and Mortgage. This means the customers living on Rent or having Mortgage are most likely to get defaulted.

Applicant's Address Analysis



Observations:

1. Majority of customers i.e, 17.88% of the total population who took loan are from State CA.
2. 48.36% of the customers who went Charged Off were from 5 States i.e., CA, FL, NY, TX and NJ. Out of which around 20% were from State CA.

Conclusion

- * Customer who have more than 10 years of experience have the highest number of Mortgage.
- * debt_consolidation is almost equal on the base of employment length as purpose for the loan.
- * More than 21600 loans were issued in 2011 hence most of the Charged Off cases were seen in the same Year.
- * 38% of the customers who went Charged Off were not verified. Means if the customers are not verified they could get defaulted.
- * 49.22% of the total customers who went Charged Off have stated the purpose for the loan as Debt Consolidation. Hence, the customers who states purpose as Debt Consolidation are likely to get defaulted.
- * Annual income of maximum people living on Rent and Mortgage is less than 1 Lakh.
- * 85.45% of the total Charged Off customers have annual income less than 1 Lakh. Hence, the customers having annual income is less than 1 Lakh are most likely to get defaulted.
- * 91.81% of the total customers who went Charged Off were living on Rent and Mortgage. This means the customers living on Rent or having Mortgage are most likely to get defaulted.
- * 48.36% of the customers who went Charged Off were from 5 States i.e., CA, FL, NY, TX and NJ. Out of which around 20% were from CA. People applying for loan from State CA are most likely to be defaulted.