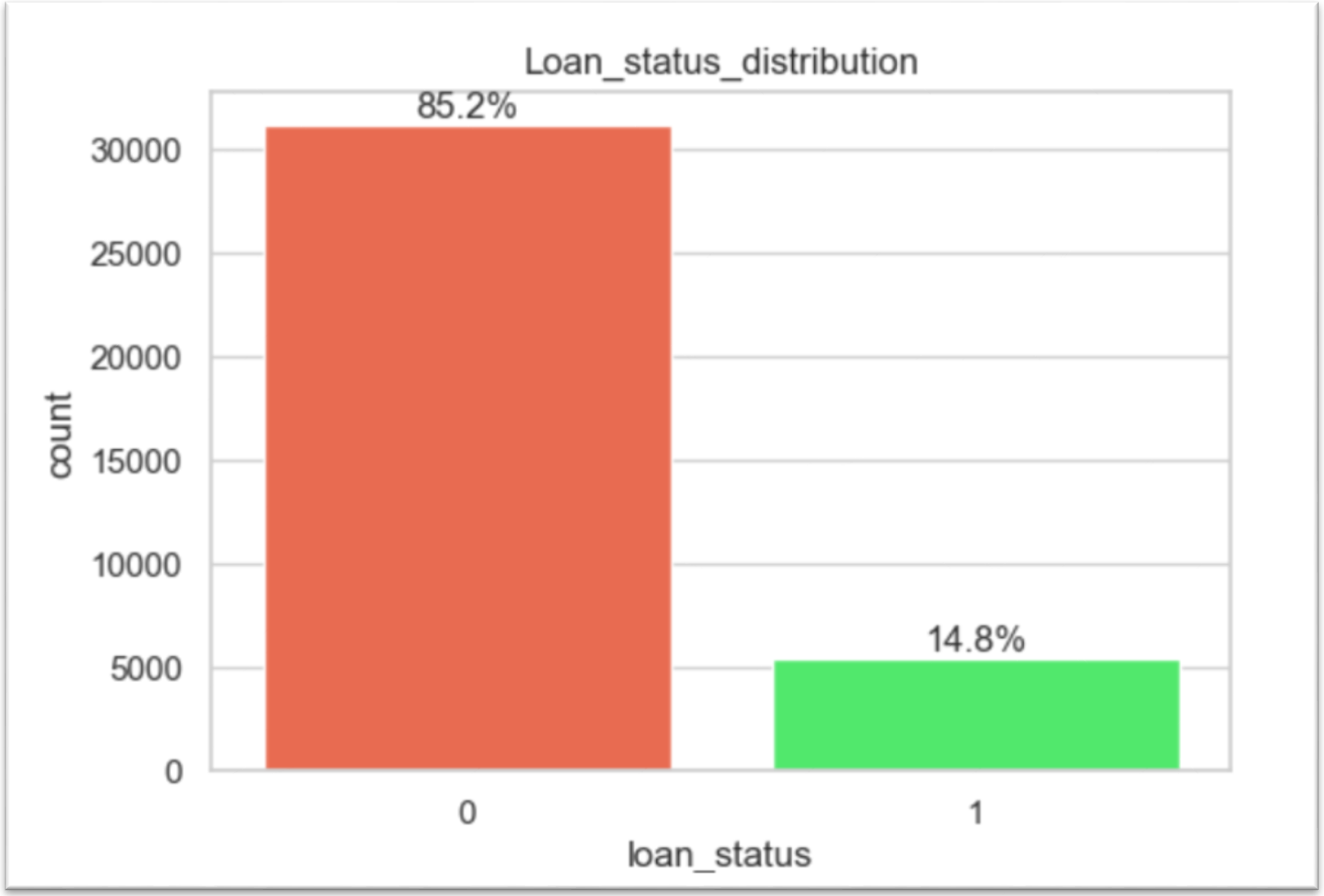
Lending Club Case Study:

Overview

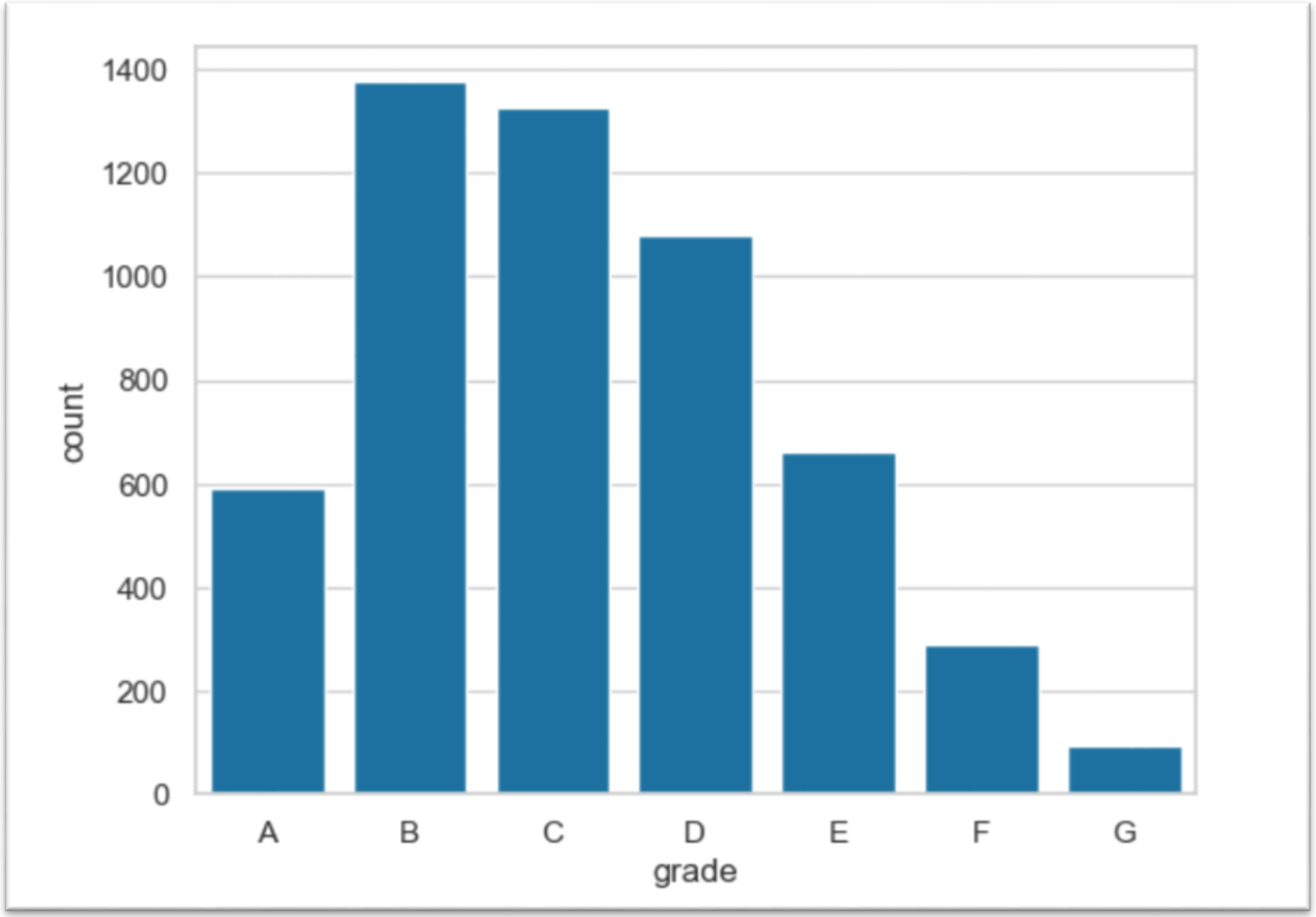
If one is able to identify these risky loan applicants, then such loans can be reduced thereby cutting down the amount of credit loss. Identification of such applicant using EDA is the aim of this case study.

1. Data understanding
2. Dat cleaning (cleaning missing values, removing redundant columns etc.)
3. Data Analysis
4. Recommendations.

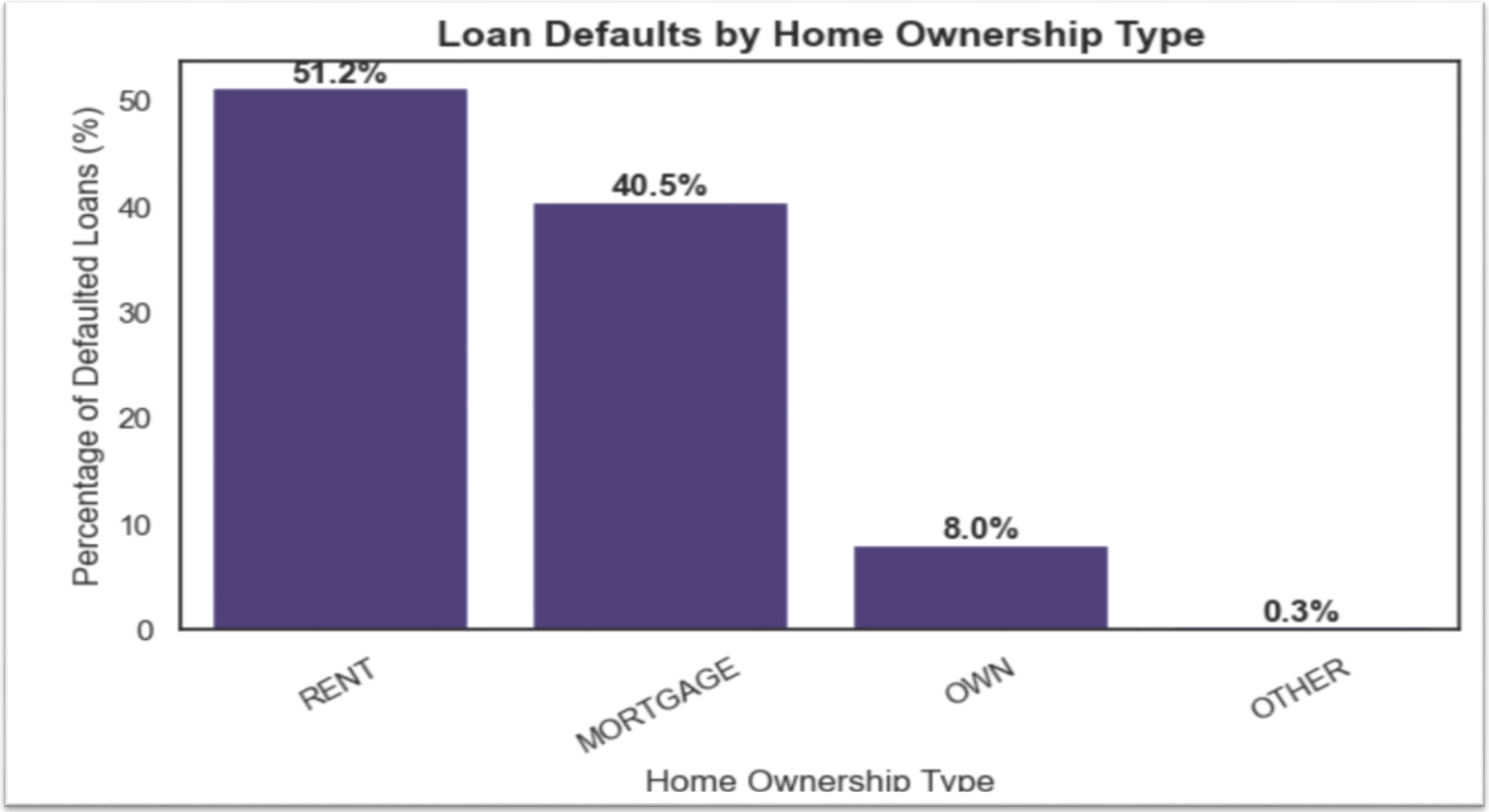
Loan status distribution
0 = Fully Paid
1 = Charged off



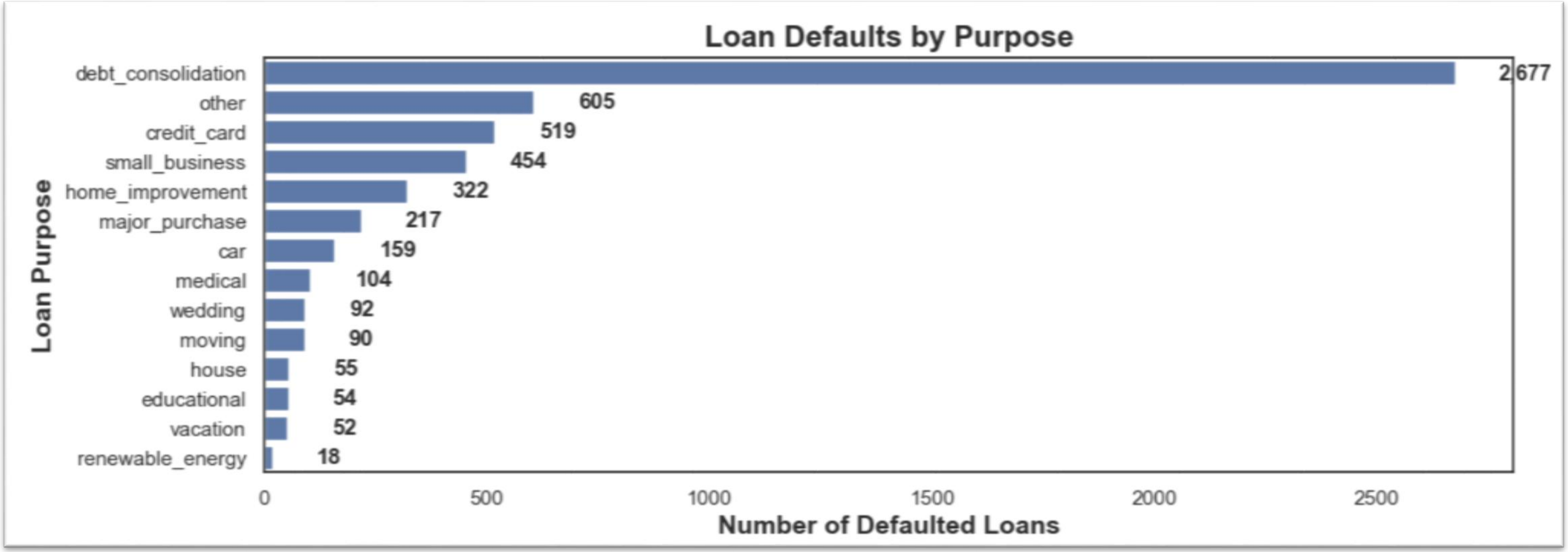
Grade B,C and D is more on defaulted loans



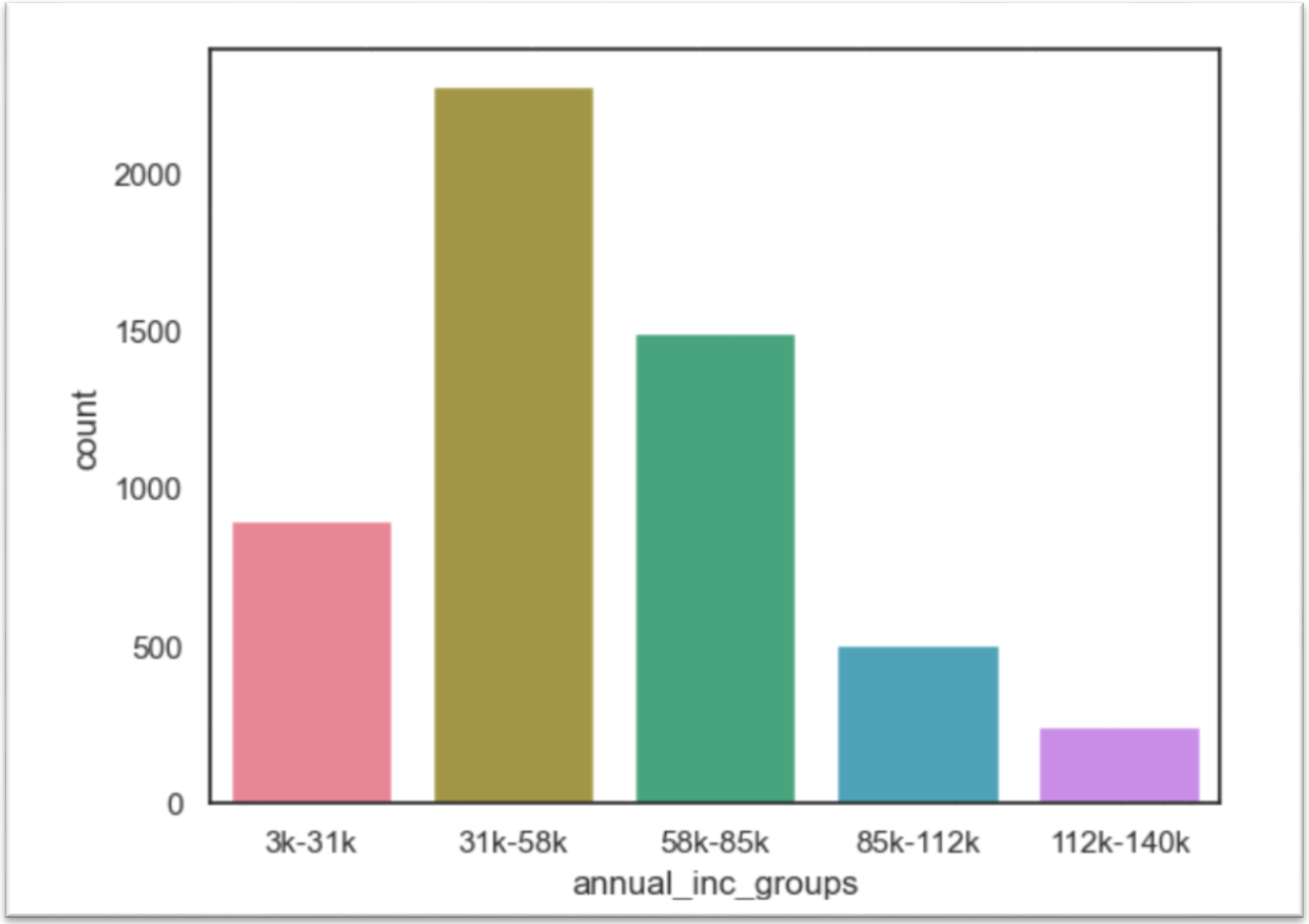
Home Ownership = Rent are maximum on defaulted loans



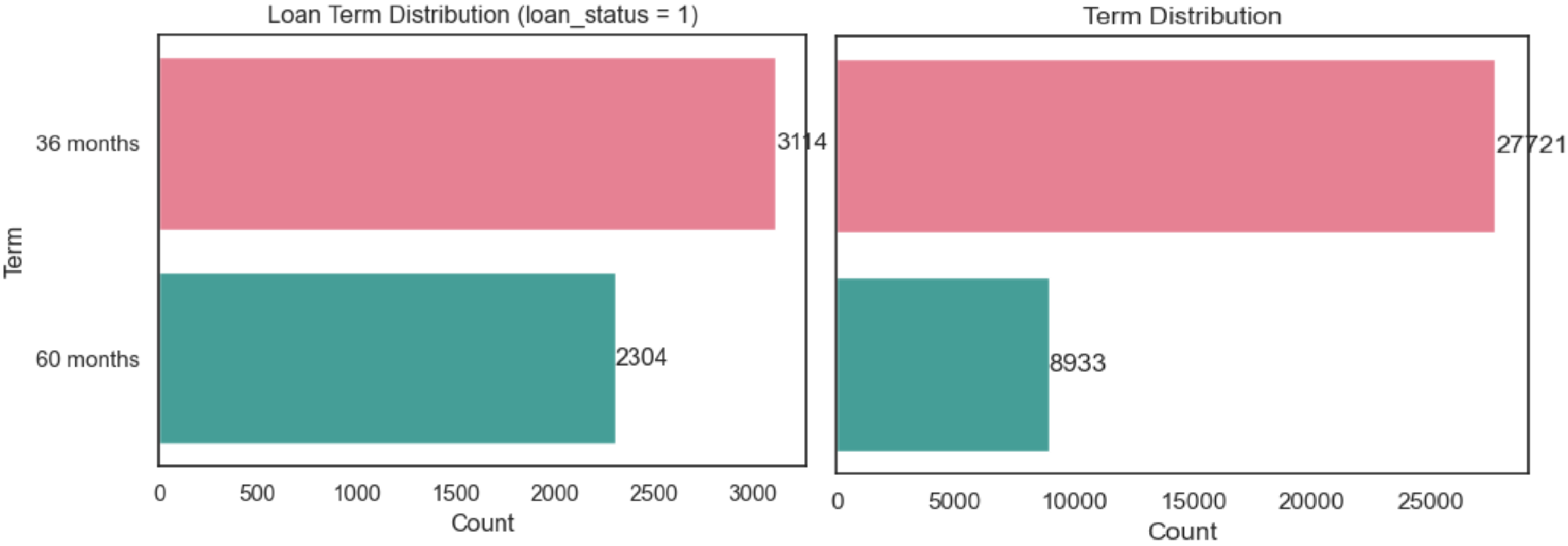
No. of defaulted loans is maximum for debt_consolidation



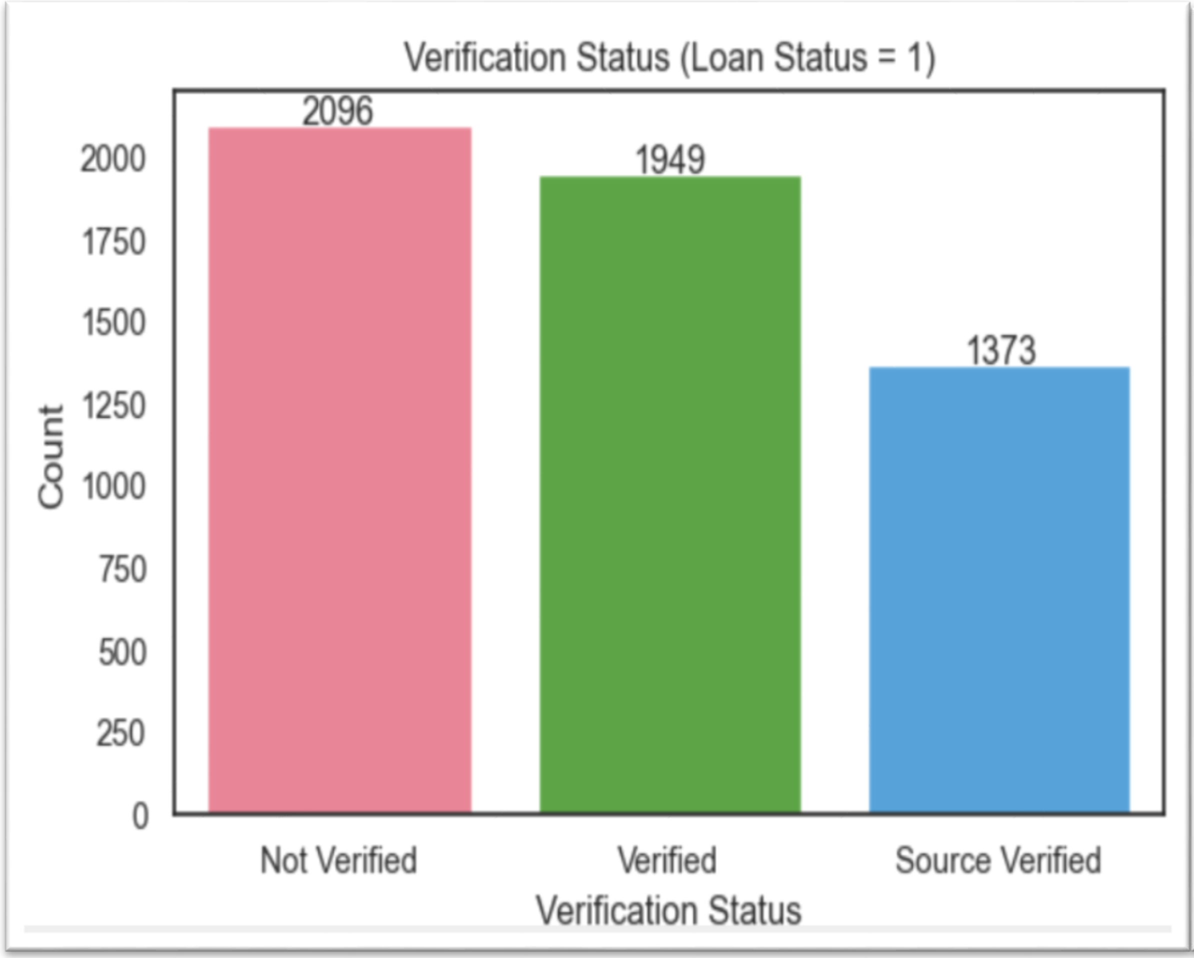
Annual Income Group 31k-58k is riskier to give loan

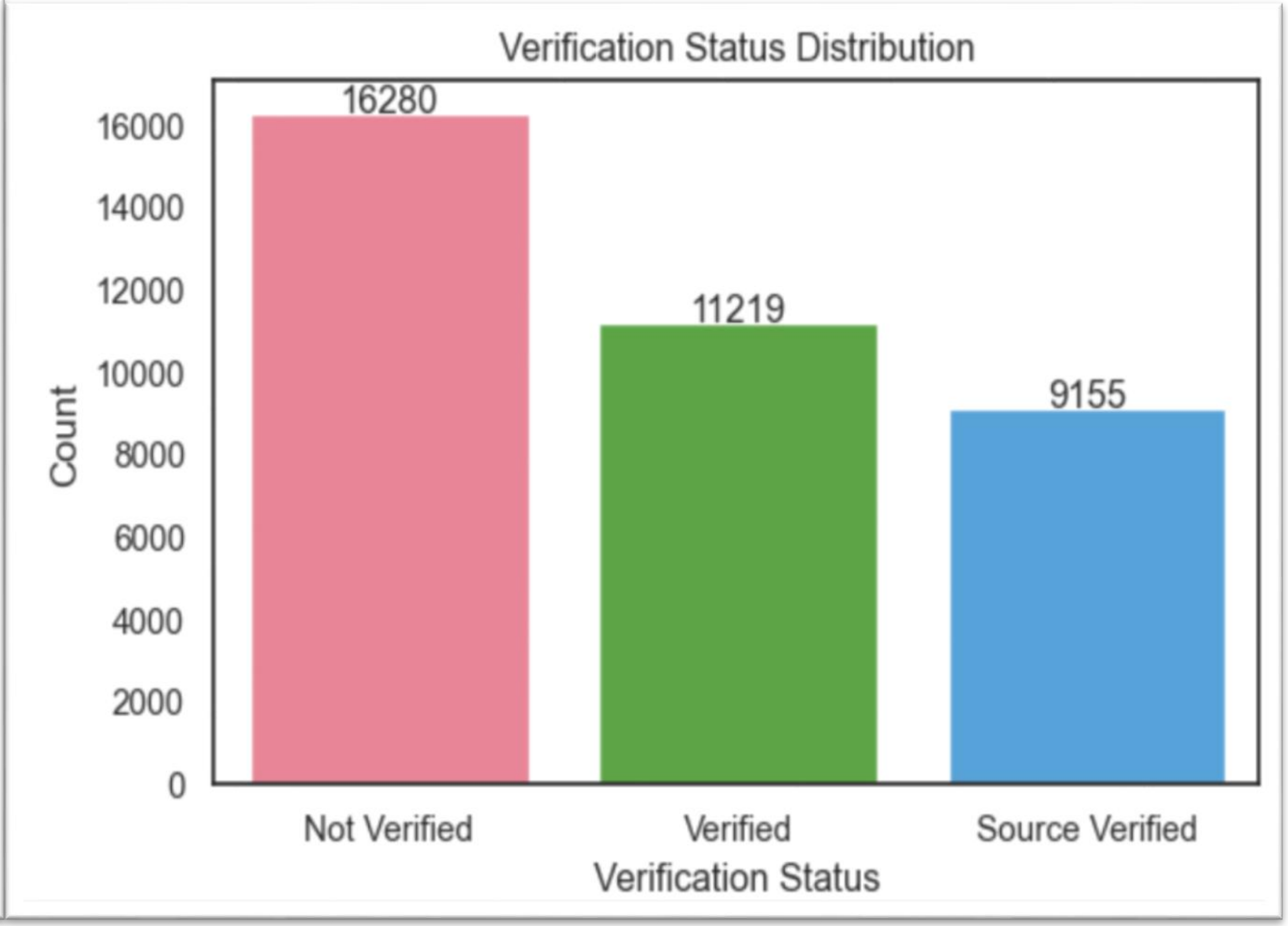


Term for 60 months is riskier than 36 months

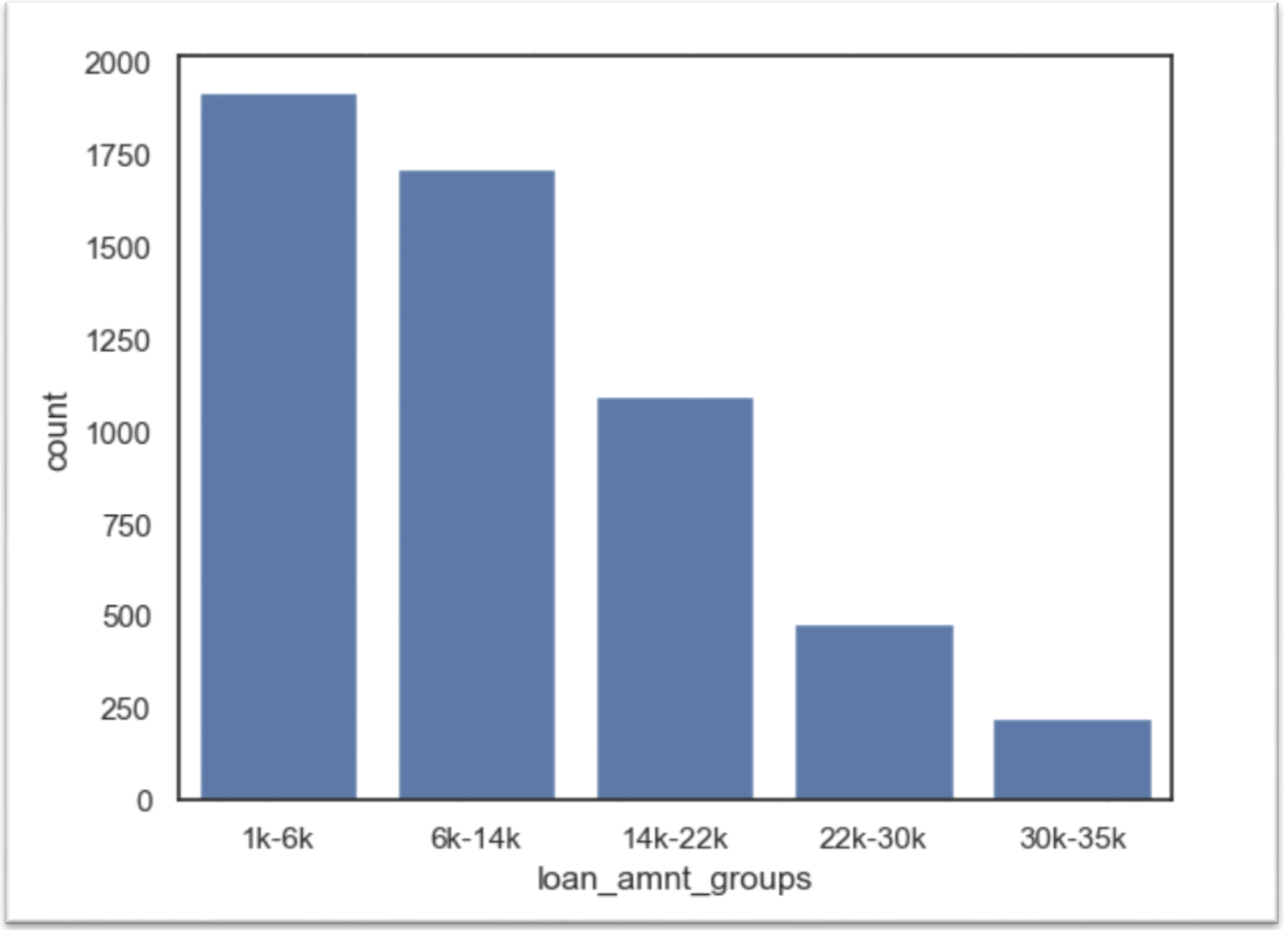


For charged off, Not verified count is maximum for defaulted on loans. But ratio of charged off by loan status having both charged off and fully paid its 0.13, 0.17, 0.15.

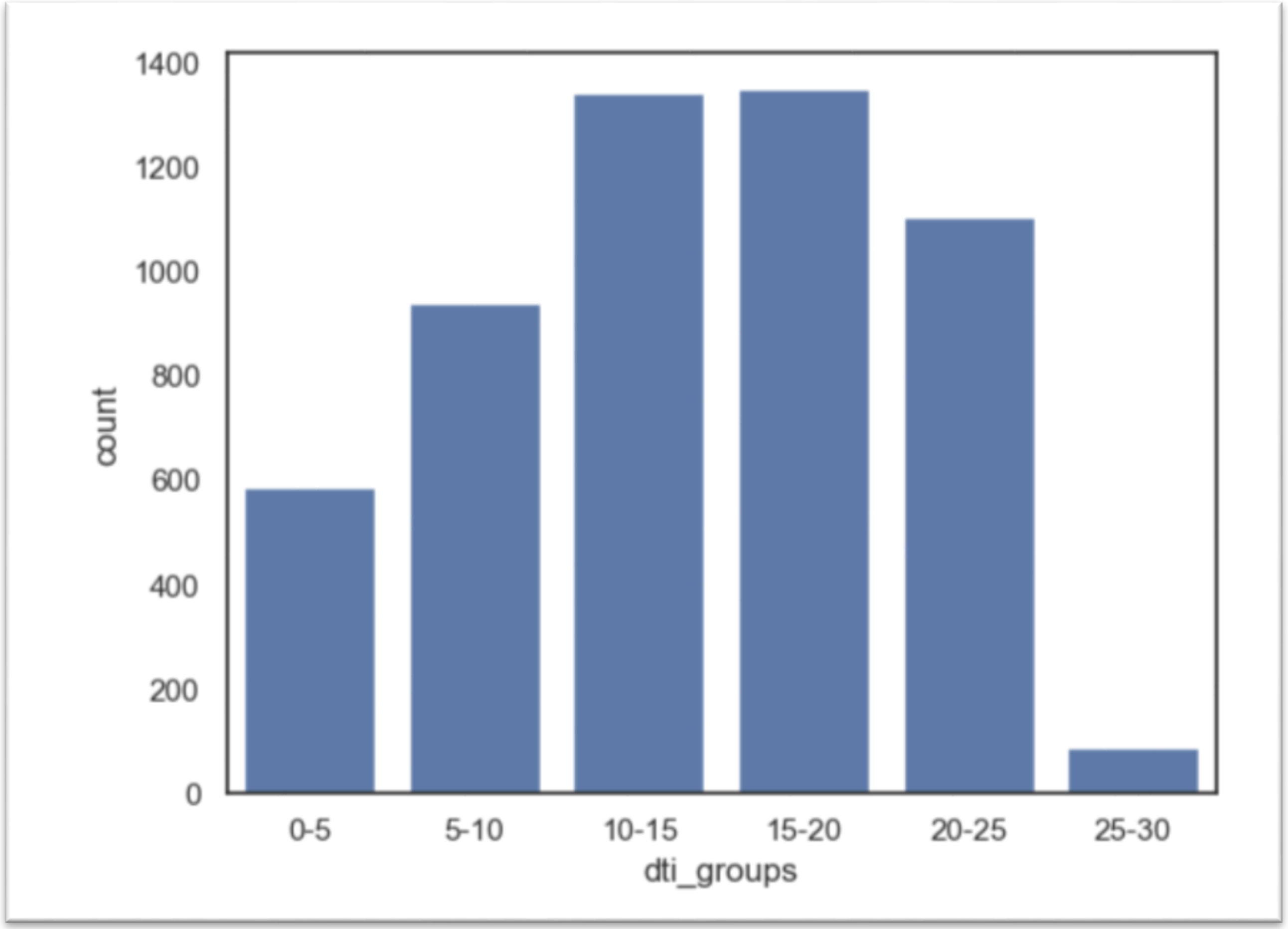




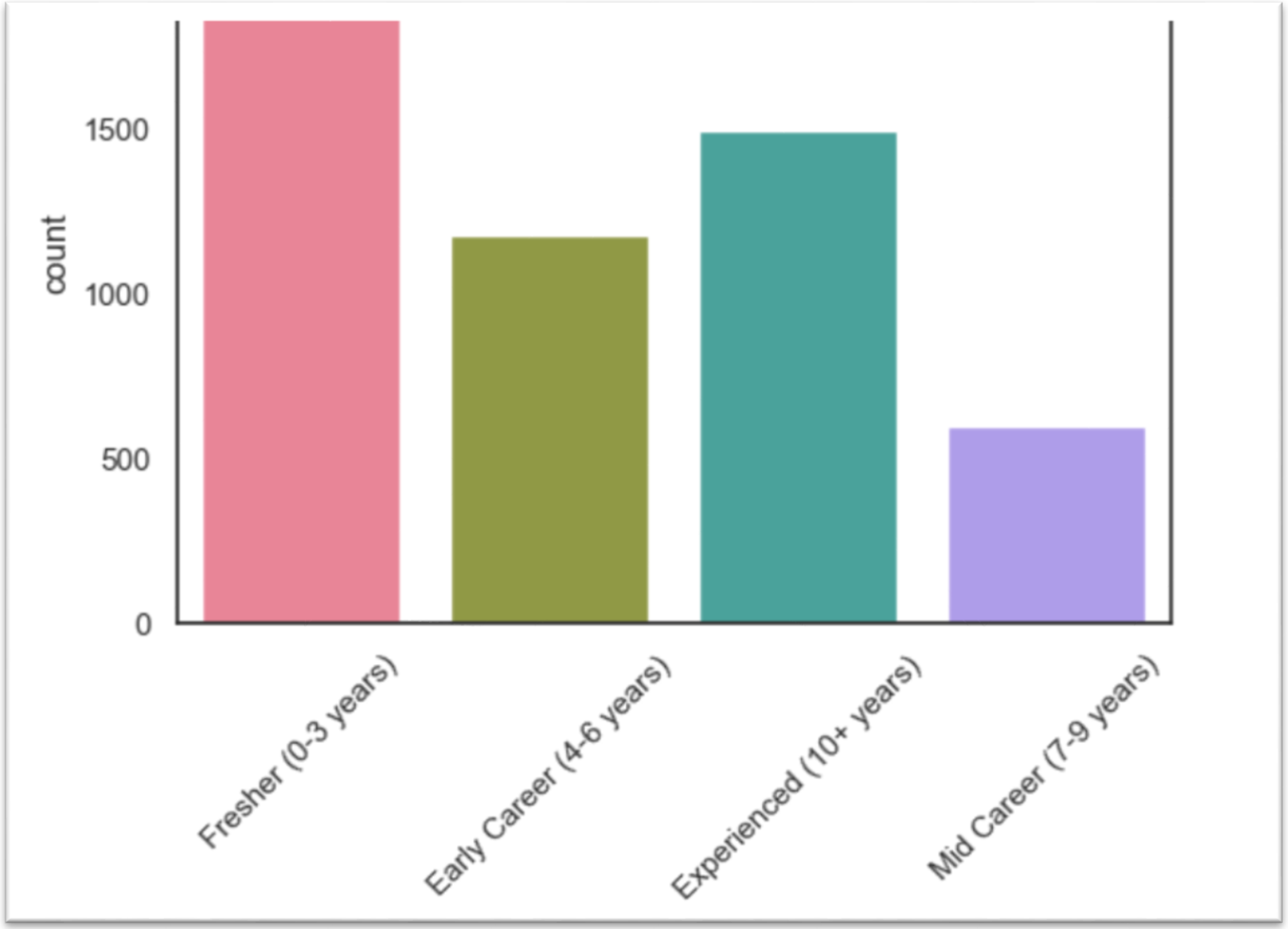
Loans up to 14k are riskier for default



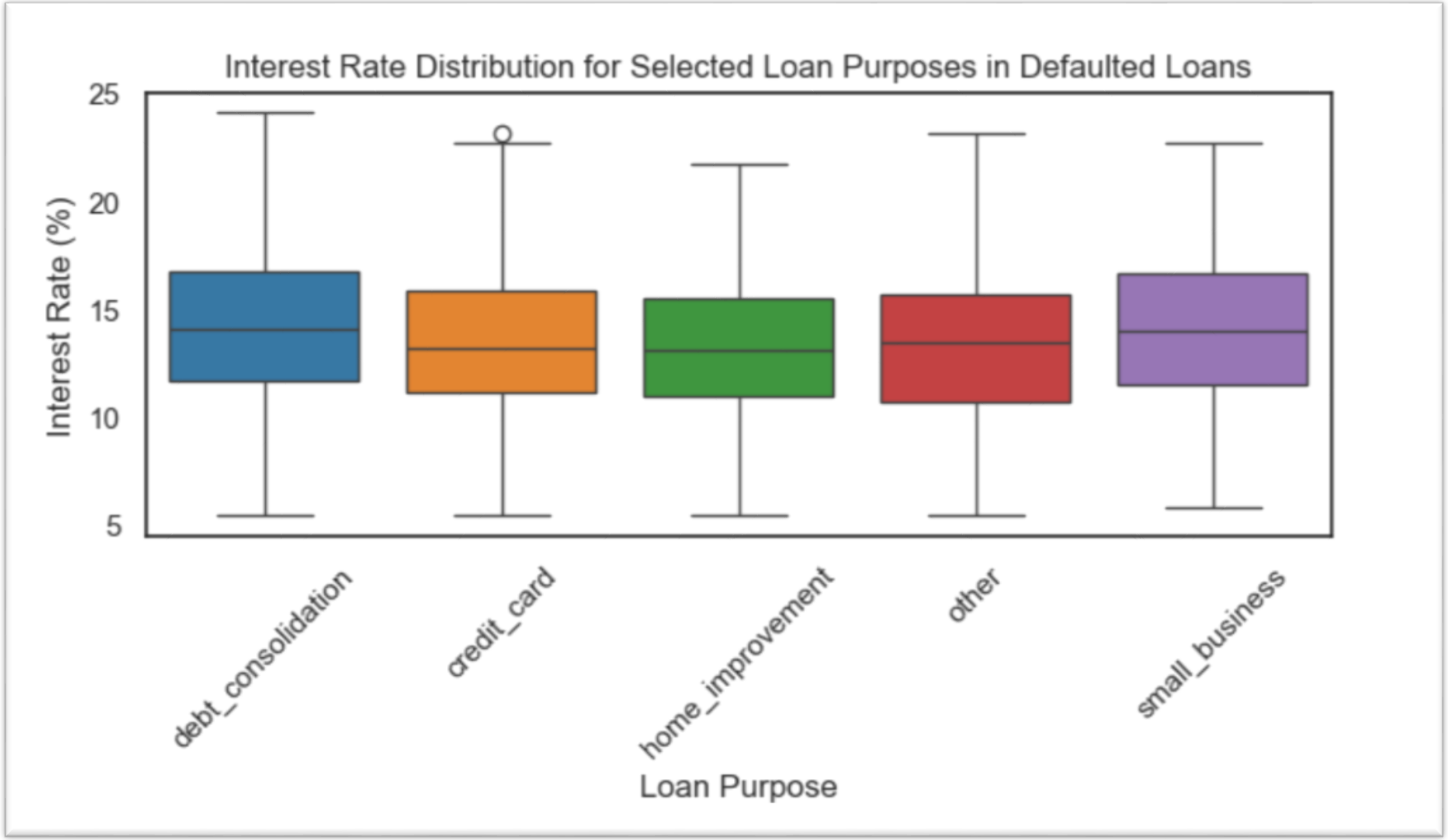
DTI(Debt to Income ratio) 10 to 20 are riskier for default



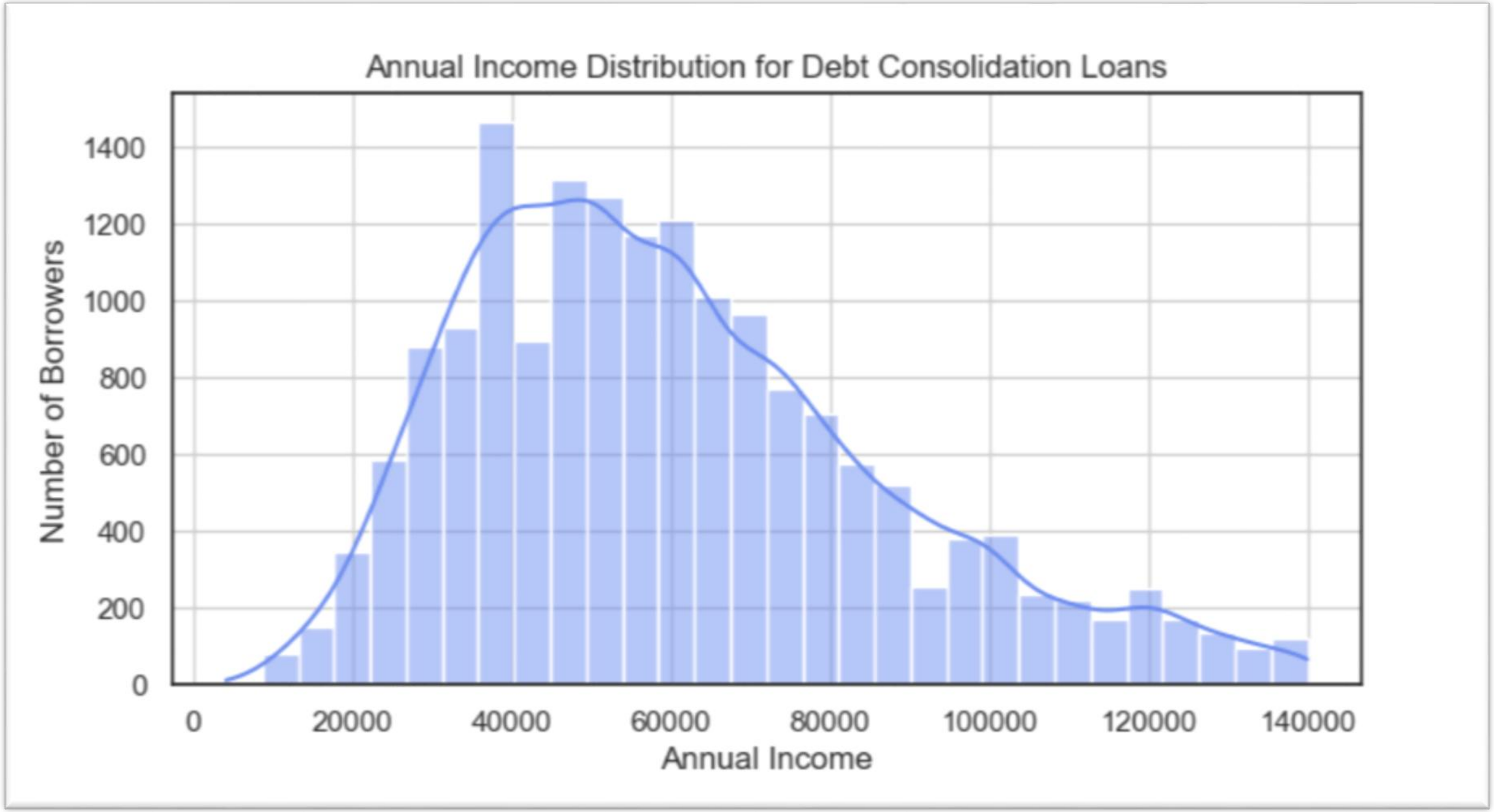
Employment Length Group for freshers are riskier for default



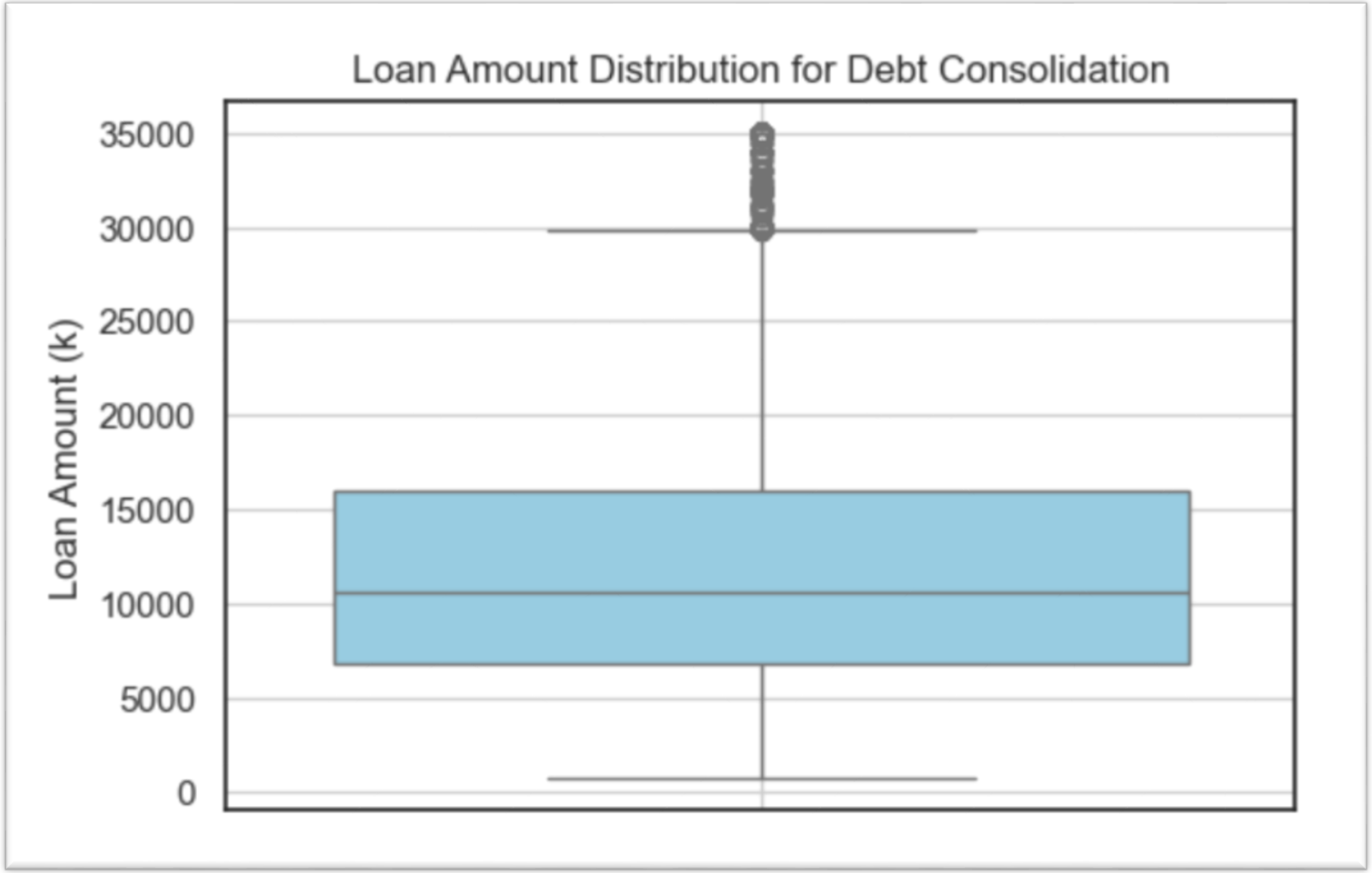
Purpose for interest rate between 11%-17% is more on defaulted loans



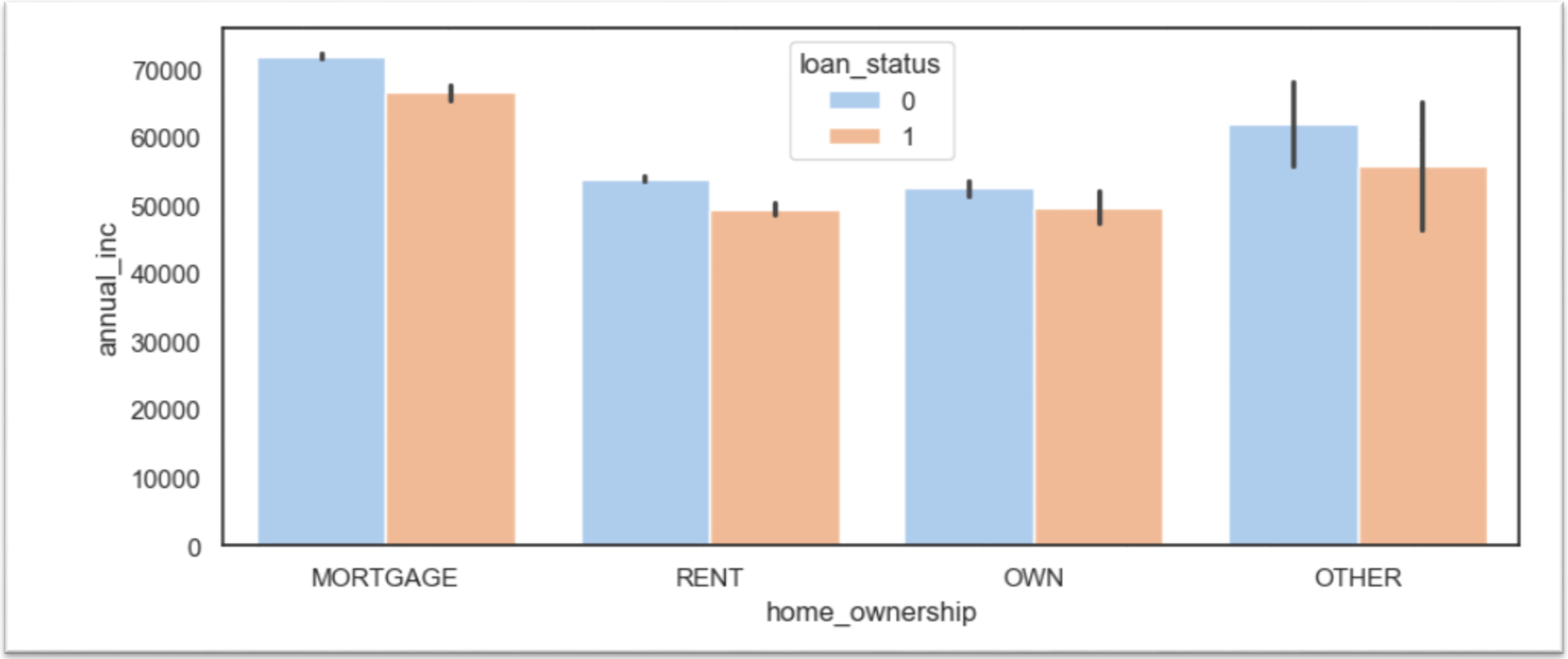
Debt consolidation having term annual income group 31k-58k ia riskier to give loan



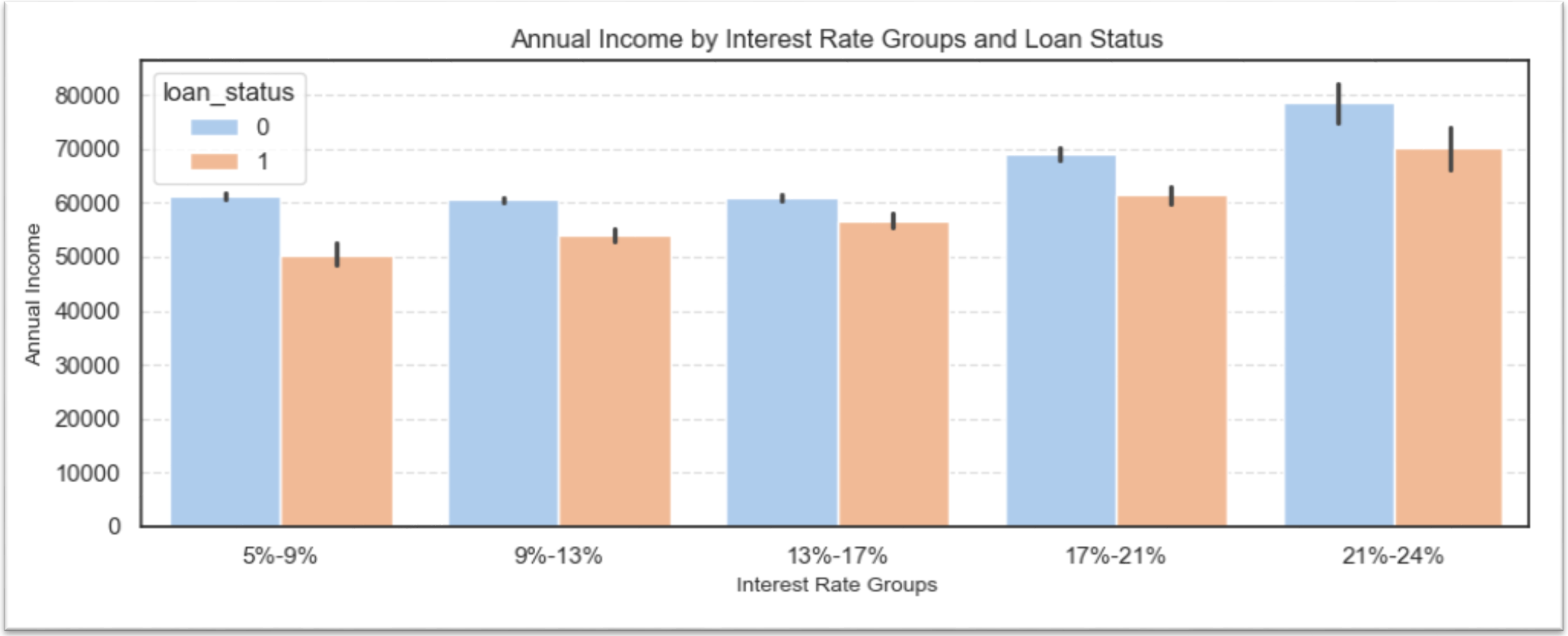
Debt consolidation having loan amount between 8k to 16k is riskier



Applicants(Charged off) whose home ownership is MORTGAGE and have income of 60-70k. It should be more than 70k.
Applicants(Charged off) whose home ownership is OTHER and have income of 50-55k.It should be more than 60k.
Applicants(Charged off) whose home ownership is OWN and have average annual income of 48k.It should be more than 55k.
Applicants(Charged off) whose home ownership is RENT and have average annual income of 46k. It should be more than 55k.



☞ For loans with interest rates between 21% and 24%, it's safer if the average annual income is between 75k and 78k.
☞ In the 17% to 21% interest rate range, keeping the average income around 70k helps lower the risk.
☞ For interest rate groups like 5%-9%, 9%-13%, and 13%-17%, it's best if the average yearly income is above 60k to stay on the safer side.



Observations:

- No. of defaulted loans is maximum for debt consolidation
- Annual income group 31k-58k is riskier to give loan
- Term for 60 months is riskier than 36 months
- Verification status that is not verified is riskier
- loans up to 14k are riskier for default
- DTI 10 to 20 are riskier for default
- Emp length group for freshers are riskier for default
- Purpose for interest rate between 11%-17% is more on defaulted loans
- Debt consolidation having term of 36 months is more on defaulted loans
- Debt consolidation having term annual income group 31k-58k is riskier to give loan
- Debt consolidation having loan amnt between 8k to 16k is riskier
- Grade B,C and D is more on defaulted loans

Observations:

- Applicants(Charged off) whose home ownership is MORTGAGE and have income of 60-70k. It should be more than 70k.
- Applicants(Charged off) whose home ownership is OTHER and have income of 50-55k.It should be more than 60k.
- Applicants(Charged off) whose home ownership is OWN and have average annual income of 48k.It should be more than 55k.
- Applicants(Charged off) whose home ownership is RENT and have average annual income of 46k. It should be more than 55k.
- For loans with interest rates between 21% and 24%, it’s safer if the average annual income is between 75k and 78k.
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