

LENDING CLUB CASE STUDY

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PROBLEM STATEMENT:

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.

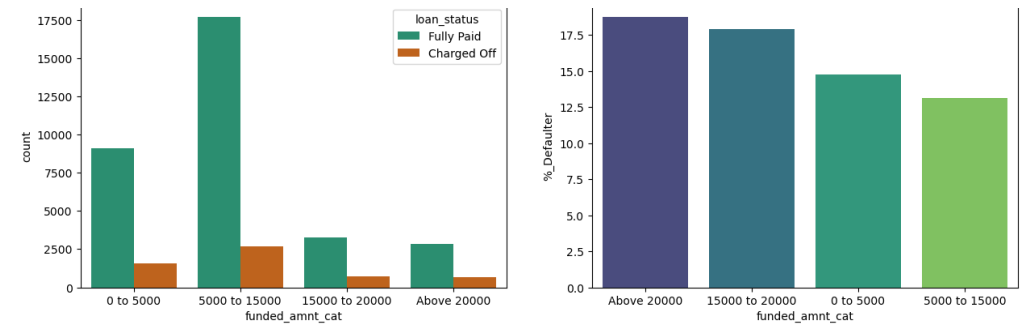
THE AIM IS TO IDENTIFY PATTERNS WHICH INDICATE IF A PERSON IS LIKELY TO DEFAULT, WHICH MAY BE USED FOR TAKING ACTIONS SUCH AS DENYING THE LOAN, REDUCING THE AMOUNT OF LOAN, LENDING (TO RISKY APPLICANTS) AT A HIGHER INTEREST RATE, ETC.

DATA ANALYSIS



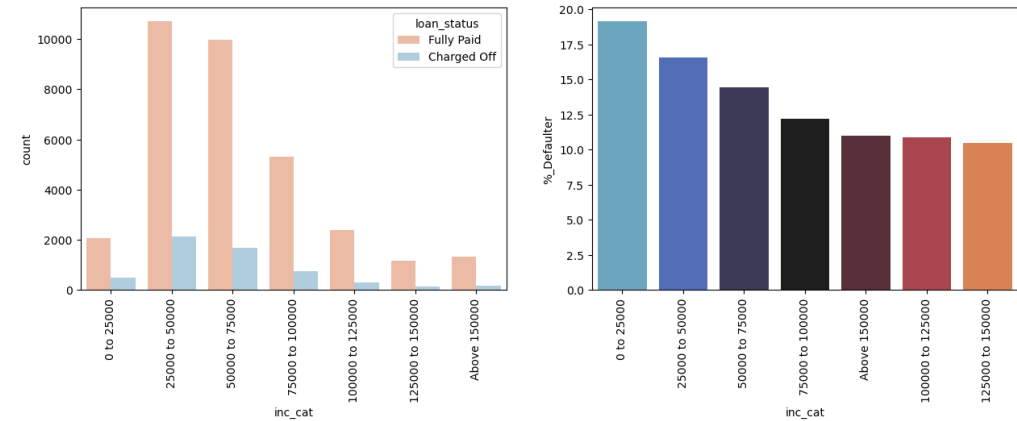
FUNDED AMOUNT INVESTED

- *An applicant is more likely to take a loan within 10000 to 15000 and it has the least default rate.*
- *Higher loan amount has a higher rate of default.*



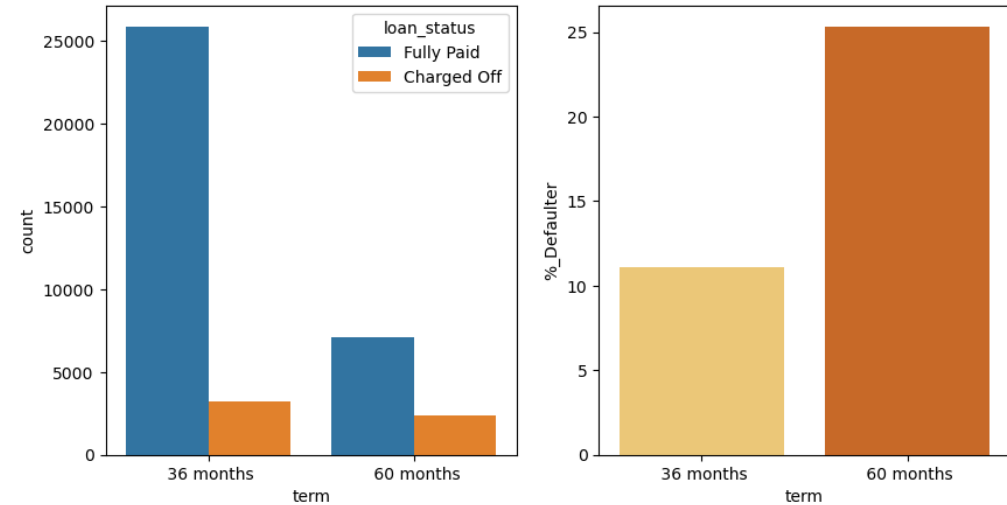
ANNUAL INCOME

- Applicants within an income group of 25000 to 75000 are most likely to take a loan.
- Applicants in the higher income groups are less likely to default.



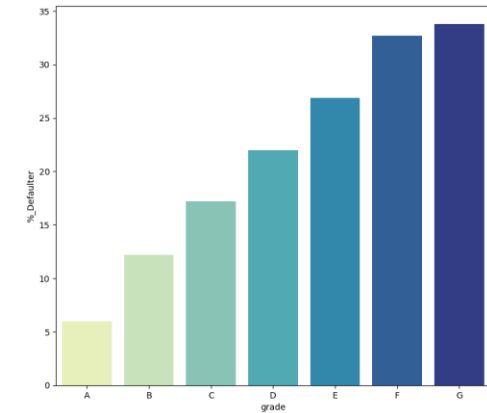
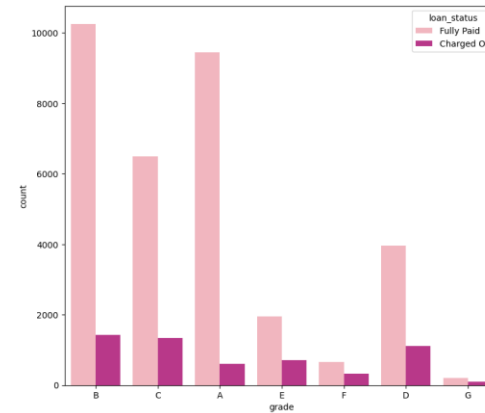
LOAN TERM

- *Most of the Applicants have taken a 36-month term for their loan.*
- *An applicant is less likely to default if they are on a 36-month term.*



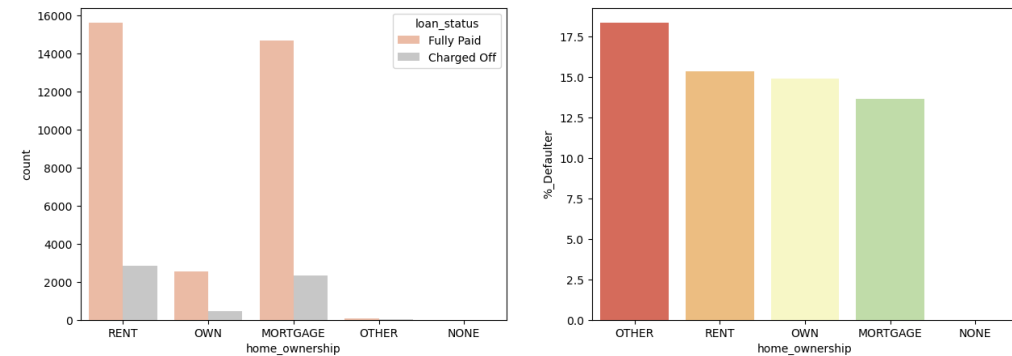
GRADE

- *Most of the Applicants with Grades A, B, C have taken the most loans.*
- *An applicants with Grades E, F, G are most likely to default on their loans.*



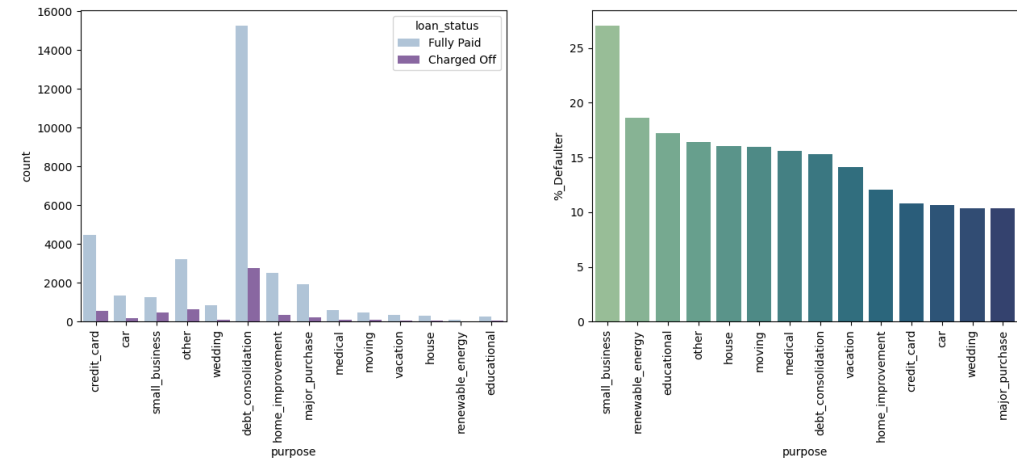
HOME OWNERSHIP

- *Maximum loans have been taken by Applicants who are are paying Rent or Mortgages.*
- *Applicants who are paying Rent or Mortgages are also highly likely to default.*
- *Applicants who Own their own house are less likely to take a loan.*



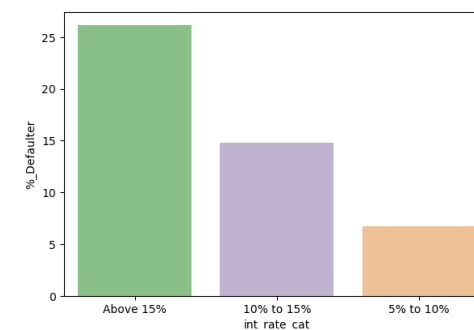
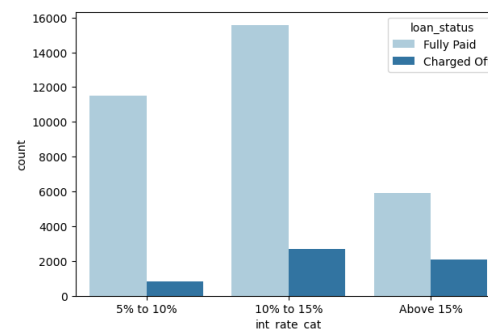
LOAN PURPOSE

- *Most applicants have taken loans for Debt Consolidation and Credit Card with a default rate ranging from 10% to 15%.*
- *Applicants who have taken loans for Small Business have the highest default rate making them risky investments.*
- *Applicants who have taken loans for a Major Purchase, Wedding, Car have the lowest default rate.*



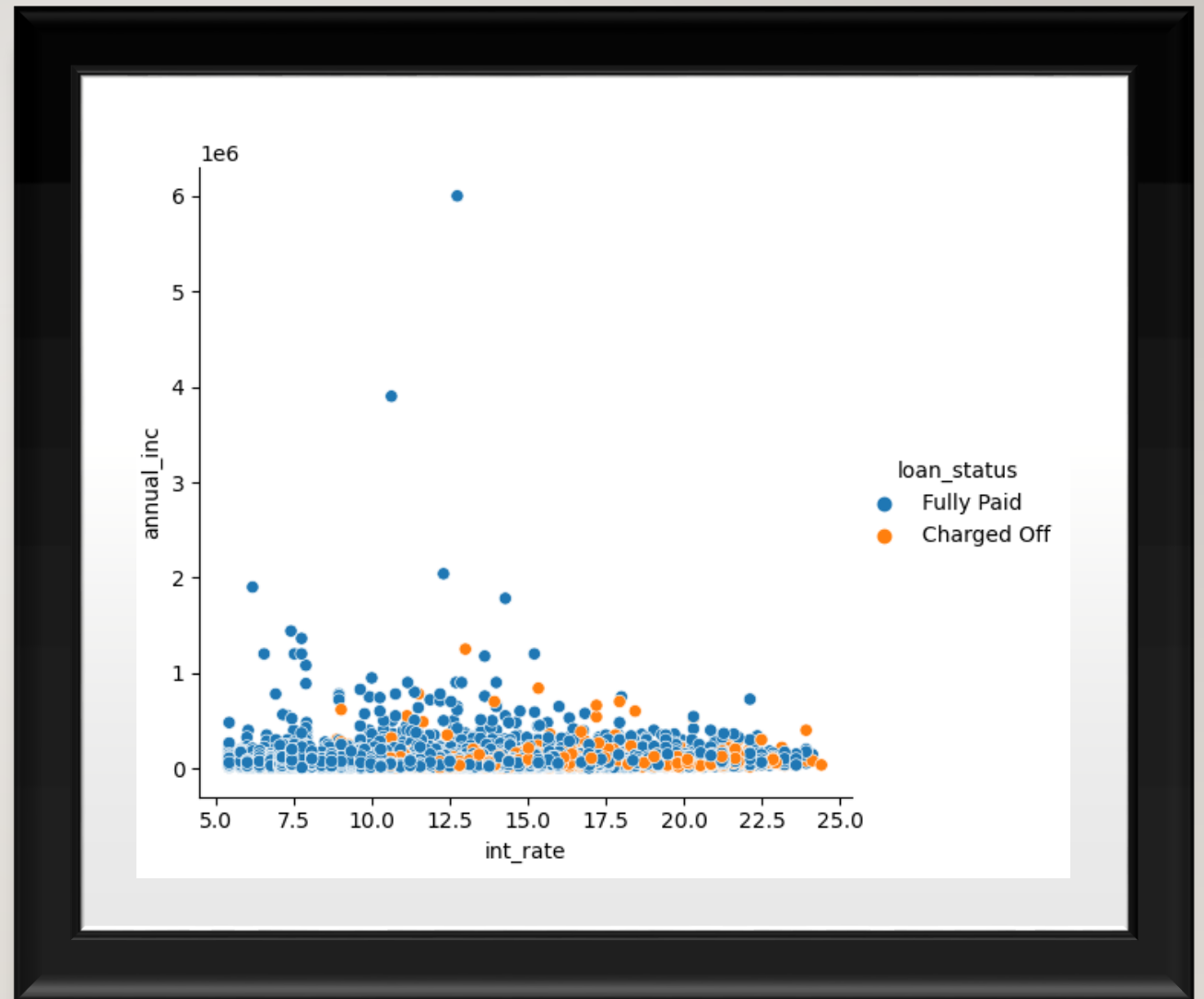
INTEREST RATE

- Loans given out with an Interest Rate of 5% to 10% as the least likely to Default, with a default rate below 10%.
- Loans given out with an Interest Rate of 10% to 15% has a default rate of 15%.
- Loans with more than 15% Rate of interest are most likely to default.
- Higher interest rates leads to a higher default rate.



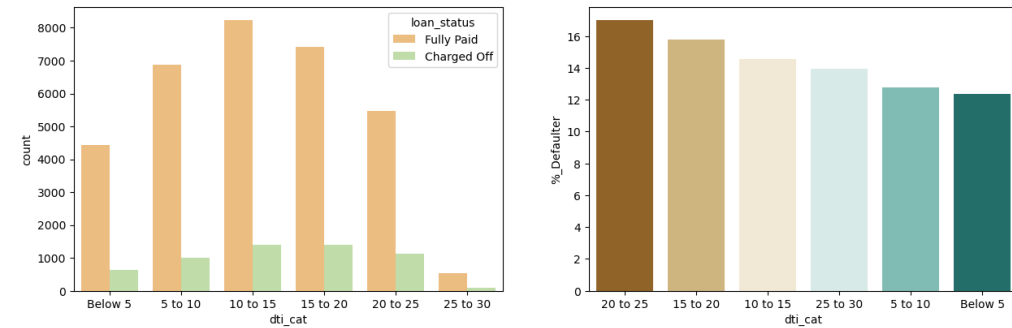
ANNUAL INCREMENT TO INTEREST COMPARISON

- Here We can summarize that Low interest rate regardless of annual increment is safe. But if the interest rate increases With no increase of annual income, then default rate is high.
- We Already know lower interest rate means less defaults, but if annual income is good then we can charge Higher rate of interest and it is less likely to default.



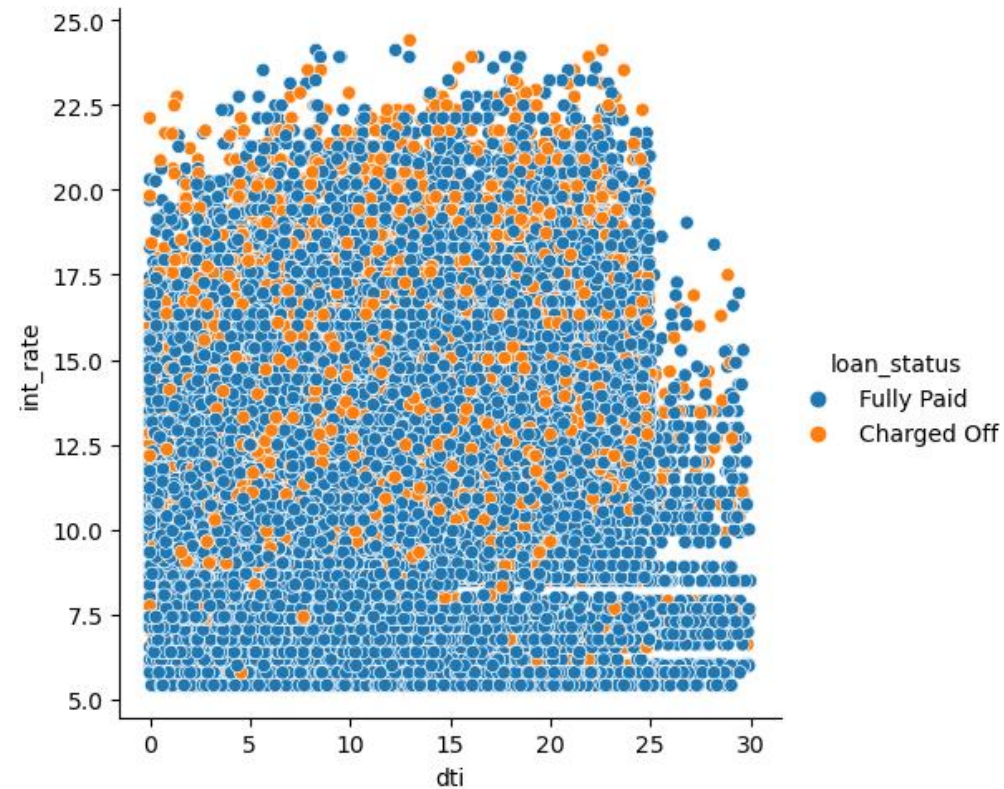
DEBT TO INCOME RATIO

- A lower Debt to Income (DTI) ratio results in a lower default rate.
- An Applicant with a DTI of 10 to 15 is most likely to take a loan.



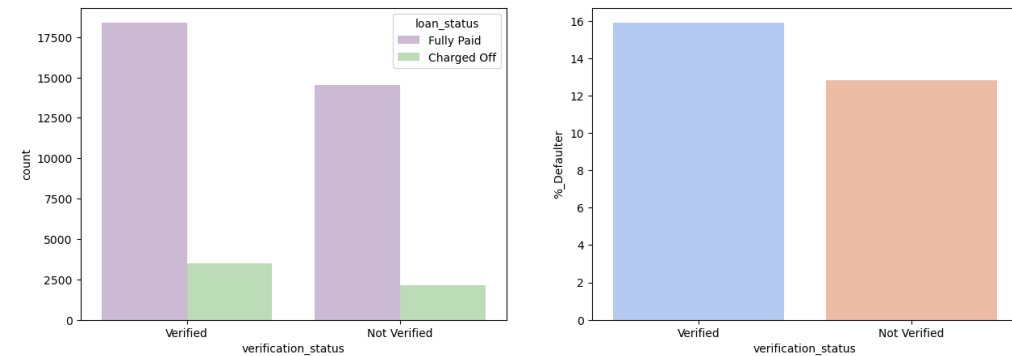
DEBT TO INCOME RATIO TO INTEREST RATE

HERE WE CAN SUMMARIZE
THAT LOW INTEREST RATE
REGARDLESS OF DEBT-TO-
INCOME RATIO IS SAFE.



INCOME VERIFICATION

- Applicants with a Verified income source have been given higher number of loans. Although from the bar plot we can see that under verified sources have a higher default rate.
- Verifying income sources does not guarantee Less default rate that would potentially question the verification process undertaken.



INSIGHTS AND RECOMMENDATIONS

- An Applicant is less likely to default on a 36-month term than on a 60-month term. Lending Club can target applicants who are willing to take a shorter-term loan.
- Lending Club should target applicants with a grade of A, B or C who have a lower default rate.
- Lending Club should not target applicants who have an employment experience of less than 1 year since they are highly likely to default.
- Lending Club should target applicants with 2 to 5 years of experience, and they are most likely to take loans.
- Applicants with 6 to 9 years are less likely to take loans but they also have a lower default rate as well. Lending Club should try to target these candidates.
- Applicants with 10+ years of employment experience are most likely to take a loan, but this group also has the highest number of defaulters. Further investigation is required in terms of targeting this group of applicants.
- Lending Club should target applicants who own their own home since they are less likely to default.
- Applicants with a purpose of debt consolidation are good targets for Lending Club.
- Small business applicants are highly likely to default.
- A loan amount of 10000 to 15000 is what the Lending Club should aim to roll out. As the funding amount increases beyond this range the rate of default also increases.
- Applicants with lower interest rates are less likely to default. Lower the interest rate the safer the investment.
- Applicants with higher income are less likely to default. Best targets for Lending club would be applicants with 25000 to 75000.
- Applicants with lower income and higher interest rate is definitely likely to default.
- Lending Club should target Applicants with lower debt to income Ratio. Applicants with low Debt to Income ratio are less likely to default.