

LENDING CLUB CASE STUDY

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AGENDA

- ❑ PROBLEM STATEMENT
- ❑ DECISION RISKS
- ❑ ANALYSIS APPROACH
- ❑ DATA HANDLING
- ❑ DATA ANALYSIS
- ❑ CONCLUSIONS.

PROBLEM STATEMENT

- 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.
- THE DATA GIVEN IS GIVEN FOR PAST LOANS APPLICANTS WHOSE LOAN WAS APPROVED AND WHETHER THEY "DEFAULTED" OR NOT. 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.

DECISION MAKING RISKS

TWO TYPES OF RISKS ARE ASSOCIATED WITH BANK DECISIONS.

- ❑ 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

Starting Approach

Data understanding

- Data sourcing
- Exploring the data in file

Data cleaning

- Data quality issues
- Dropping unnecessary columns

Data manipulation

- Formatting datatype
- Calculating derived columns
- Outliers detection and removals

Data Analysis

- Univariate Bivariate analysis
- Segmented analysis

Conclusions

Outcomes of Univariate Analysis

- ❑ Most of the loans has been offered at interest from 12% to 15%
- ❑ 14.17% of total Loans are Charged Off
- ❑ When the Loan Amount Increases then the Total Payment is decreased
- ❑ There are quite considerable number of Loans which are Not Verified which requires Further analysis
- ❑ dti ratio is acceptable , where the Debt to Income is not making big impact
- ❑ Employess with more exprience is taking more loans
- ❑ home_ownership with RENT and MORTGAGE were taking more loans
- ❑ More loans were being taken for Debit Consolidation
- ❑ All the loans taken with either tenure of 36 or 60 months
- ❑ Tops Grades were taking more loans (A, B C)

Conclusions

Outcomes of Segmented Univariate Analysis

- ❑ There is an increase in Number of loans each year from Q1 to Q4

Outcomes of Bi Variate Analysis

- ❑ When Loan Amount/interest rate/debt to income ration/employment Lenth increases then there is risk of getting defaulters
- ❑ Members with low Debt to Income Ratio and high annual income have less tendency to get charged off
- ❑ Members with house ownership status as "Others" tend to default the rate by 18%.
- ❑ Whereas Members in category of Mortgage and own house has less tendendency to be defaulters compared to other categories.