Analyzing Delinquency Metrices

By:

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Overview:

This project aims to model the prepayment risk associated with Mortgage-Backed Securities (MBS). By analysing historical loan data and various financial indicators, we seek to predict the likelihood of loan prepayment and understand the factors influencing this risk.

Data Preparation:

- Dataset containing variables such as CS, MIP, Units, OCLTV, DTI, OrigUPB, LTV, OrigInterestRate, OrigLoanTerm, EverDelinquent, MonthsDelinquent, MonthsInRepayment, IsFirstTime, CreditRange, LTV_range, and Repay_range.
- Using Power Bi, I have deleted all duplicated rows, null and missing values.
- Changed data type according to type of data.
- Labelling has been done on columns like CreditScore, LTV, DTI, MonthsInRepayment.

KPIs:

1. Average Months Delinquent using Card:
Type: Average KPI
Analysis:
- ✓ Average month delinquent is 1.83.

2. Delinquency Rate KPI using Card:
Type: Percentage KPI
Definition: Percentage of loans that are delinquent over a specific period
Calculation: (Number of Delinquent Loans / Total Number of Loans) * 100
Analysis:
- ✓ Delinquency rate is 19.52% for users whose delinquent value is 1.

3. Trends of Delinquent rate over a period of time using Line Graph:
Analysis:
- ✓ In year 1999 ,delinquency rate starts with 19.56% then it reduced to 8.53% in 2000.
- ✓ From year 2000 to 2002 it keeps on reducing but after it takes a upward movement.
- ✓ From 2002 onwards it keeps on increasing.

4. Distribution of Month Delinquent using Histogram:
Analysis:
- ✓ Highest number of loans identified where delinquency month just get started.
- ✓ For the first month loans get reduced with a huge a amount.
- ✓ With passing of each month, users have repaid their loans.

5. Percentage of loans ever delinquent by credit range:

Analysis:
- ✓ Users with poor credit score have highest delinquency rate value which means they are overdue with their payment.
- ✓ Users with excellent credit score have very less delinquency rate which is 9.02%.