

Bank Loan Data Analysis - Project Overview

Introduction

Bank loans play a crucial role for individuals and businesses in addressing financial needs. However, borrowers must meet certain obligations to secure a loan. This project aims to analyse bank loan data to provide insights into lending activities, customer behaviour, and financial risk management.

Data Collection Sources

Banks gather loan-related data from various sources, including:

1. **Loan Application** – Individuals and businesses submit comprehensive forms (online or paper-based) containing financial details.
2. **Credit Reports** – Banks obtain credit reports from credit bureaus to evaluate borrowers' creditworthiness, including CIBIL scores, existing loans, and payment behaviour.
3. **Internal Records** – Banks maintain internal databases with records of loan disbursements, repayments, and status changes.
4. **Online Portals** – Many banks offer online platforms for loan applications, with data stored digitally.

Reason of Loan Data Analysis

Analysing bank loan data helps in:

1. **Risk Assessment** – Evaluating creditworthiness, predicting default probabilities, and determining interest rates.
2. **Decision Making** – Supporting loan approvals through data-driven analysis.
3. **Portfolio Management** – Monitoring repayment behaviour and loan status.
4. **Fraud Detection** – Identifying unusual patterns and fraudulent activities.
5. **Customer Retention** – Offering tailored services to retain customers.
6. **Market Research** – Understanding market trends, competition, and customer demands.
7. **Customer Behaviour Insights** – Identifying preferences and potential product offerings.

Objective

To effectively monitor the bank's lending activities, the report aims to provide comprehensive insights into loan-related activities, helping in decision-making and strategic planning.

Key Performance Indicators (KPIs)

1. **Good Loan vs. Bad Loan** – Analysing repayment behaviour to classify loans.
2. **Regional Analysis** – Breakdown of loan distribution by state.
3. **Monthly Analysis by Issue Date** – Evaluating total applications, funded amounts, and repayments.
4. **Long-Term Analysis** – Understanding loan distributions over different tenures.
5. **Loan Purpose Breakdown** – Identifying the reasons for borrowing.
6. **Home Ownership Analysis** – Examining loan trends based on home ownership status.
7. **Loan Status Breakdown** – Classifying loans as paid off, pending, or charged off.
8. **Annual Income vs. Loan Amount** – Analysing loan amounts relative to borrowers' income levels.

Reports Overview

The project includes two reports:

- **Report 1:**
 - Total Loan Applications
 - Total Funded Amount
 - Total Amount Received
 - Average Interest Rate
 - Average Debt-to-Income (DTI) Ratio
 - Good vs. Bad Loan Classification
- **Report 2:**
 - Remaining KPIs (e.g., regional analysis, loan purpose, loan status, etc.)

Key Definitions

- **Debt-to-Income (DTI) Ratio** – The percentage of income used for loan repayment.
- **Good Loan vs. Bad Loan Classification:**
 - **Good Loan:** Borrowers who repay on time or have fully paid off their loans.
 - **Bad Loan:** Borrowers who have failed to repay or defaulted.

Conclusion

This analysis provides a structured approach to understanding bank lending activities. It enables better decision-making, fraud detection, and customer insights, supporting strategic financial planning.