Finance Analysis Project

Introduction

The Finance Analysis Project focuses on assessing and monitoring the bank's lending activities and performance. The goal is to provide valuable insights into key loan-related metrics, helping the bank make data-driven decisions to optimize its loan portfolio and lending strategies. This analysis tracks loan applications, funding, repayments, and borrower profiles, providing a comprehensive view of the bank's financial performance.

Problem Statement

As part of the bank's effort to optimize its lending strategies, it is important to assess loan-related metrics and observe changes over time. Key challenges to address include:

1. **Tracking Loan Applications and Fund Disbursements:** The bank needs to monitor the total number of loan applications and the total amount of loans funded. Month-over-Month (MoM) and Month-to-Date (MTD) performance must be tracked.
2. **Assessing Cash Flow:** The total amount received from borrowers should be tracked to understand the bank's cash flow and loan repayment rates.
3. **Monitoring Interest Rates and Debt-to-Income Ratios:** The average interest rates and debt-to-income ratios of borrowers should be analyzed to gauge the overall health of the lending portfolio.
4. **Understanding Loan Trends by Region:** The bank wants to track how loan metrics vary across different states, identifying regions with high or low lending activities.
5. **Analyzing Loan Terms and Borrower Profiles:** The distribution of loans across different loan terms, employment lengths, and homeownership categories must be analyzed to inform lending decisions.
6. **Purpose of Loans:** The bank needs to understand the primary purposes for which borrowers apply for loans, such as debt consolidation or credit card refinancing.

Key Performance Indicators (KPIs)

1. **Total Loan Applications:** The total number of loan applications received during a specific period, including Month-to-Date (MTD) and Month-over-Month (MoM) tracking.
2. **Total Funded Amount:** The total amount of funds disbursed in loans, including MTD and MoM analysis.
3. **Total Amount Received:** The total amount repaid by borrowers, with a focus on MTD and MoM changes.
4. **Average Interest Rate:** The average interest rate for all loans, analyzed for MTD and MoM fluctuations.
5. **Average Debt-to-Income Ratio (DTI):** The average DTI ratio for borrowers, analyzed over time.

They help track various financial metrics that indicate how well a bank is managing its financial resources and achieving its strategic financial goals.

Visualizations and Reporting

The project leverages various visualizations to help the bank analyze its loan portfolio effectively:

1. **Monthly Trends by Issue Date (Line Chart):**
   - Displays the month-over-month trends in Total Loan Applications, Total Funded Amount, and Total Amount Received.
   - X-Axis: Month (based on 'Issue Date').
   - Y-Axis: Loan metrics.

2. **Regional Analysis by State (Filled Map / Tree Map):**
   - Displays lending metrics categorized by state for geographic comparison.
   - A tree map can also be used if geographic maps are not supported by your Excel Version or if you are facing hardware compatibility issues.
   - Metrics: Total Loan Applications, Total Funded Amount, Total Amount Received.

3. **Loan Term Analysis (Donut Chart):**
   - Shows loan metrics based on loan terms (e.g., 36 months, 60 months).
   - Segments: Loan Terms.

4. **Employee Length Analysis (Bar Chart):**
   - Analyzes loan applications, funded amounts, and received amounts based on borrowers' employment lengths.
   - X-Axis: Employment Length Categories (e.g., 1 year, 5 years).

5. **Loan Purpose Breakdown (Bar Chart):**
   - Breaks down loan metrics based on loan purposes such as debt consolidation and credit card refinancing.
   - X-Axis: Loan Purpose Categories.

6. **Home Ownership Analysis (Tree Map):**
   - Categorizes loan metrics by homeownership status (own, rent, mortgage), offering insights into how homeownership affects lending.
   - Hierarchy: Home Ownership Categories.

Summary Dashboard

The **Summary Dashboard** provides an overview of the most critical financial metrics, enabling users to quickly assess the overall performance of the bank's loan portfolio. It includes real-time tracking of loan applications, funded amounts, repayments, and interest rates, offering high-level insights that guide strategic decisions. Additionally, it integrates Month-to-Date (MTD) and Month-over-Month (MoM) comparisons to highlight trends and anomalies. By consolidating essential data into a single interface, the dashboard helps stakeholders make informed decisions efficiently and align their strategies with current financial realities.

Overview Dashboard

The Overview Dashboard is designed to give a broad snapshot of the bank's loan performance, with a focus on geographic and temporal trends. It tracks loan metrics such as applications, funded amounts, and repayments across different states and time periods, providing insights into the regional and seasonal variations in lending activities.

Details Dashboard

The Details Dashboard provides a more granular view of loan data, offering users detailed insights into borrower profiles, loan terms, and repayment behaviors. This dashboard is designed for deeper analysis and allows users to explore specific loan characteristics, borrower demographics, and the impact of factors such as employment length and homeownership on lending patterns.

Objective

The objective of the Finance Analysis project is to provide the bank with a comprehensive, data-driven understanding of its loan portfolio. By visualizing key metrics and trends, the bank can identify areas of opportunity, optimize its lending strategies, and ensure that its loan portfolio remains healthy and profitable.