Financial Risk Analysis & Loan Default Dashboard

Power BI Project Report

Project Overview

This project presents an interactive Financial Risk Analysis Dashboard built in Power BI to analyze and visualize various aspects of loan default risk, applicant demographics, and financial profiles.

The dashboard answers key business questions related to loan default trends, risk segmentation, and customer profiling - helping financial institutions make data-driven decisions.

Business Questions Answered

- How do default rates vary across employment types and years?
- What is the trend of YOY loan amount change and YOY default change?
- How does credit score, income bracket, and marital status impact loan distribution?
- What is the relationship between loan purpose and default rates?
- How do demographics (age groups, education) correlate with loan behavior?

Features & DAX Highlights

- 3 interactive report pages:
  - Loan Default & Overview
  - Applicant Demographics & Financial Profile
  - Financial Risk Metrics
- Custom DAX Measures (3 measure tables)
- Custom calculated columns: Age Groups, Credit Score Bins, Income Bracket, Year
- Trend analysis visuals (YOY Loan Amount Change, YOY Default Loans Change, Default Rates)
- Demographic segmentation visuals (Loan Amount by Purpose, Loan by Age Groups, Education, Marital Status)

DAX Measures Used

Measures Table1:

- Average Income by Employment type
- Average Loan by Age Group
- Default Rate by Employment type
- Default Rate by Year
- Loan Amount by purpose

Measures Table2:

- Average Loan Amt (High Credit)
- Loans by Education type
- Median by credit score bins
- Total Loan (Credit Bins)
- Total Loan (Middle Age Adults)

Measures Table3:

- YOY Default Loans change
- YOY Loan Amount Change
- YTD Loan Amount

Calculated Columns Created

- Age Groups
- Credit Score Bins
- Income Bracket
- Year

Tools & Technologies Used

- Power BI Desktop (.pbix)

- DAX (Data Analysis Expressions)

- Power Query (M language)

- Data Modeling (Star schema)

- Raw Data Source: Loan Default Dataset

Key Learnings

- Designed an end-to-end financial risk dashboard

- Created advanced DAX measures for YOY & risk trends

- Applied segmentation techniques using calculated columns

- Improved skills in Power Query transformations

- Gained experience in presenting insights for financial decision-making

How to Use

1. Clone or download this repo

2. Open .pbix file in Power BI Desktop

3. Explore report pages and DAX formulas

4. Customize with your own dataset

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