**Project Summary Report – Banking Sector Analysis**

**Objective**

The purpose of this project was to analyze **customer behavior, transactions, and loan performance** using Power BI. The dashboard provides actionable insights to management for improving customer engagement, loan monitoring, and revenue planning.

**Data Overview**

* **Total Customers:** 250
* **Key Fields:** Customer demographics (Age, Gender), Account Type, Balance, Transactions, Loan Status
* **Data Processing:**
  + Removed duplicates & missing values
  + Created new features (Age Groups, Net Transaction Impact, Standardized Account Types)
  + Built relationships & a Calendar table for time intelligence

**Key Findings**

1. **Customer Demographics**
   * Majority of customers are aged **36–50** and **50+**.
   * Gender distribution is fairly balanced across segments.
2. **Financial Performance**
   * **Total Loan Balance:** 3.63M
   * **Net Balance Growth:** –120.88K (negative, indicating higher withdrawals than deposits).
   * **Average balances** show higher stability in Fixed Deposit and Current Accounts.
3. **Loan Insights**
   * **Loan Default Rate:** 10.40% (higher than desired; industry benchmark <5%).
   * Most loans are still **active**, but defaults are a critical risk segment.
4. **Transaction Trends**
   * Transaction volumes peak around **May and October**.
   * Clear seasonality pattern useful for planning campaigns.
5. **Customer Profitability & Ranking**
   * Top customers (e.g., CUST1100, CUST1015, CUST1022) contribute significantly to total transactions.
   * Conditional formatting highlights top 3 as gold, silver, bronze.
6. **What-If Analysis (Interest Rate Simulation)**
   * A simulated revenue of **181.46K** at current interest rate.
   * Management can adjust the slider to test how revenue changes with different interest rates.

**Recommendations**

1. **Loan Risk Management**
   * Focus on reducing **default rate** by offering flexible repayment options and monitoring high-risk customers.
2. **Customer Retention**
   * Customers with **balances < 5000** should be targeted with savings plans to improve stickiness.
3. **Revenue Growth**
   * Promote Fixed Deposits and Current Accounts, as they show consistent higher balances.
4. **Seasonal Campaigns**
   * Leverage transaction peaks in **May and October** with promotional offers and credit campaigns.
5. **High-Value Customers**
   * Build exclusive programs for top 10 customers, as they drive a large portion of transactions.

**Conclusion**

This project successfully demonstrates how **Power BI** can be leveraged to analyze customer behavior, transactions, and loan performance in the banking sector. The dashboard provides a **360° view** of customers by combining demographic, financial, and loan-related data into one interactive platform.

Key takeaways:

* The **loan default rate (10.40%)** signals a major risk area that requires closer monitoring and proactive measures.
* Transaction analysis reveals **seasonal peaks** (May & October), enabling the bank to plan targeted campaigns.
* A small group of **high-value customers** contributes disproportionately to transaction volumes, highlighting the importance of customer segmentation and personalized engagement.
* The **What-If interest rate simulation** equips management with a dynamic tool to forecast revenue under different market scenarios.

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