Business Objective

Objective:
The primary business objective of this Power BI project is to enhance Paisa Bazaar's fraud detection and risk management capabilities by leveraging data analytics to identify high-risk customers, reduce fraudulent activities, and improve financial accountability. Specifically, the project aims to achieve the following measurable goals by December 2025:

1. **Reduce Fraud** : Identify and mitigate fraudulent customer behavior by analyzing patterns in credit inquiries, credit utilization, and payment delays.
2. **Minimize Defaults** : Detect customers at high risk of default by monitoring financial stability metrics such as credit utilization ratio, outstanding debt, and debt-to-income ratio, enabling proactive interventions.
3. **Improve Payment** Enhance customer payment behavior by targeting high-risk segments with delayed payments, ensuring timely EMI and minimum payment adherence through actionable insights.

The dashboard will empower the risk management team with visual analytics to monitor customer behavior, prioritize interventions for high-risk segments, and track progress toward these goals over time, using the dataset spanning January to August 2025.

Problem Statement:

Paisa Bazaar, a leading financial services platform in India, is facing significant challenges in managing customer fraud, loan defaults, and payment non-compliance, which are impacting its financial stability and operational efficiency. The company has identified a need to analyze customer data to address these issues effectively, as fraudulent activities, loan defaults, and delayed payments are leading to substantial financial losses and reputational risks. Without a robust analytical tool to identify high-risk customers and monitor their financial behavior, the risk management team struggles to take timely and targeted actions to mitigate these risks.

To address this, Paisa Bazaar has developed a Power BI dashboard using a dataset named df, containing 12,500 customer records with attributes such as Num_Credit_Inquiries (0 to 9), Credit_Utilization_Ratio (22.89% to 42.77%), Credit_Mix (Bad, Standard, Good), Debt_to_Income_Ratio (1.3% to 27.84%), Outstanding_Debt (max 3129.31 INR), Total_EMI_per_month (max 263.92 INR), Num_of_Delayed_Payment (0 to 25), Payment_Behaviour, Payment_of_Min_Amount (Yes, No, NM) etc.

1. Risk Identification and Fraud Prevention

Our risk management team struggles to identify customers who pose a high risk to our business or are likely to engage in fraudulent activities, making it difficult to prioritize fraud prevention efforts and reduce fraud incidents. We need insights to address the following challenges:

- **Lack of Visibility into High-Risk Customer Segments**: We are unable to determine which customer groups—such as those in specific age brackets or with certain credit profiles—are most likely to exhibit high-risk behavior or fraudulent tendencies. Without this understanding, we cannot focus our fraud prevention resources on the most vulnerable segments, leading to inefficiencies in our risk management processes.
- **Inability to Monitor Overall Credit Usage Trends**: We lack a clear view of how credit usage trends across our customer base, which prevents us from identifying if excessive credit usage is a leading indicator of potential fraud or financial distress. This gap hinders our ability to take preemptive action to mitigate risks.
- **Difficulty in Prioritizing High-Risk Customers for Immediate Action**: We do not have a prioritized list of the riskiest customers based on their likelihood of causing financial or fraudulent issues. This makes it challenging for our team to quickly investigate and intervene with the most critical cases, delaying our response to potential threats.

2. Payment Behavior Analysis for Improved Compliance

We are facing significant issues with customers missing or delaying payments, particularly those at high risk of non-compliance, which is impacting our cash flow and increasing the risk of defaults. We need insights to address the following payment-related challenges:

- **Understanding the Impact of Payment Burdens on Delays**: We need to identify whether customers with heavy payment obligations, such as high monthly repayments, are more likely to delay their payments, and how this risk varies across different levels of payment discipline. This will help us pinpoint customers who need support to manage their payment burdens.
- **Tracking Payment Delay Trends Over Time Across Spending Behaviors**: We lack visibility into how payment delays evolve over time (e.g., from January to August 2025) for customers with different spending habits, such as those who frequently make small purchases versus those who make larger, less frequent ones. Understanding these trends will allow us to identify patterns and intervene before delays become chronic.
- **Identifying Professions Prone to Payment Delays Among High-Risk Customers**: We are unable to determine if certain professions, such as teachers or engineers, are more likely to struggle with timely payments, especially among customers already at high risk of non-compliance. This insight is critical for tailoring our outreach and support strategies to specific professional groups.

- **Assessing the Role of Credit History in Payment Behavior**: We need to understand whether the length of a customer's credit history influences their payment habits, particularly for high-risk customers. For example, are customers with newer credit histories more likely to miss payments compared to those with established histories? This will help us design targeted interventions for newer customers.
- **Focusing on Customers with Frequent Payment Delays**: We want to focus on customers who have a high frequency of payment delays, such as those with more than 15 missed payments, to understand their risk levels and prioritize them for compliance interventions. This will ensure we address the most severe cases of non-compliance.
- **Identifying Non-Compliance with Minimum Payment Obligations**: We need to identify customers who fail to pay even the minimum amounts due on their credit obligations, as this indicates a serious lack of payment discipline and increases the risk of default. Understanding the risk levels of these customers will help us target them for immediate support.
- **Ensuring Ease of Analysis with a Reset Mechanism**: Our team requires a way to easily reset all filters and interactions applied during analysis, allowing us to start fresh and explore different customer segments without manual adjustments. This will improve the usability of the solution and enhance our efficiency.

3. Financial Stability Assessment and Fraud Detection

We are struggling to identify customers who are financially strained and at risk of defaulting on their loans, as well as those who may be engaging in fraudulent activities, which is leading to increased financial losses. We need insights to address the following challenges:

- **Identifying Financially Strained Customers at Risk of Default**: We lack visibility into which customers are using an excessive amount of their available credit and carrying high debt levels, especially those with poor credit quality. This combination often signals a high likelihood of default, and we need to identify these customers to take preventive action.
- **Understanding Financial Strain Across Customer Segments**: We need to understand how financial stress indicators, such as high credit usage and debt levels, vary across different customer segments, such as by age group. For example, are younger customers more likely to exhibit unhealthy financial habits compared to older ones? This will help us target specific segments for financial counseling.
- **Tracking Credit-Seeking Behavior and Its Link to Fraud or Risk**: We are unable to track how often customers are seeking additional credit over time, particularly those requesting credit limit increases, and whether this behavior is associated with higher fraud or risk levels. For instance, are customers who frequently seek more credit more likely to be involved in fraudulent activities? This insight is critical for identifying potential fraud early.

- **Monitoring Key Financial Health Metrics**: We need key metrics to assess overall financial health, including: which professions are carrying the highest debt burdens, which age groups are most associated with fraud cases, the percentage of customers using too much of their available credit (e.g., above 40%), and how many of those with excessive credit usage also have poor credit quality. These metrics will help us monitor risk trends and prioritize interventions.

Dashboard Components and Features:

1. **Slicers for Interactive Filtering**:
   The dashboard includes slicers to enable dynamic filtering across all pages, ensuring the risk management team can drill down into specific customer segments. The slicers are:
   - Occupation: Allows filtering by customer profession (e.g., Teacher, Engineer).
   - Credit_Score: Filters by credit score categories (Poor, Standard, Good).
   - Credit_Mix: Filters by credit quality (Bad, Standard, Good).
   - Month: Filters data by month (January to August).
     These slicers apply to all visuals, enabling the team to analyze specific subsets of customers (e.g., Teachers with Poor credit scores in March).

2. **Top 500 Risky Customers Table**:
   A dedicated table displays the top 500 riskiest customers based on Risk_Score. The table Incluids:
   - **Columns**: Customer_ID,Fraud_Flag, Credit_Utilization_Ratio, Outstanding_Debt, Num_of_Delayed_Payment, Credit_Mix, and Payment_Delay_Risk.
   - **Purpose**: Allows the team to focus on the most critical cases for fraud investigation and default prevention (e.g., customers with high risk scores, poor credit mix, and frequent payment delays).