Loan Application Risk Assessment Report

Application ID: APP-20250213-2824

Date: October 26, 2023

Executive Summary

This report assesses the risk associated with loan application APP-20250213-2824 submitted by Mark Mann. The predictive model assigns a **Critical** risk category with a probability of 86.12%. This necessitates a thorough review of the application and careful consideration of mitigating strategies before loan approval.

Applicant Profile

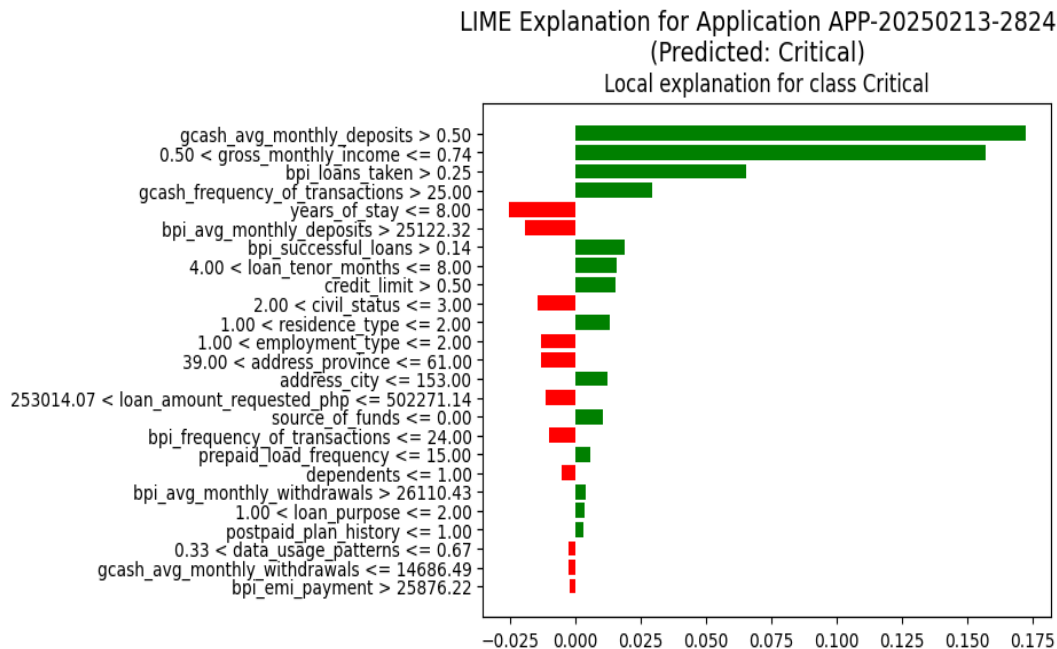| Feature	Value
Application Date	May 28, 2025
First Name	Mark
Last Name	Mann
Contact Number	9043321819
Email Address	rhodespatricia@example.org
Civil Status	Widowed
Dependents	0
Address City	Anthony Ville
Address Province	Oriental Mindoro
Years of Stay	0
Residence Type	Owned
Employment Type	Self-Employed
Credit Limit (PHP)	38,118.00
Gross Monthly Income (PHP)	124,383.56
Source of Funds	Business Income
Prepaid Load Frequency	14.0
Postpaid Plan History	Premium Plan
Data Usage Patterns	Medium
GCash Avg Monthly Deposits (PHP)	22,764.22
GCash Avg Monthly Withdrawals (PHP)	4,789.78
GCash Frequency of Transactions	27.0
Loan Purpose	Home Renovation
Loan Amount Requested (PHP)	281,481.98
Loan Tenor (Months)	6

Financial Behavior Analysis

Mark Mann's financial behavior exhibits mixed signals. While his gross monthly income is substantial (PHP 124,383.56), the lack of BPI bank data prevents a complete assessment of his credit history and repayment capacity. His reliance on GCash suggests a preference for cash transactions, which could indicate a lack of formal financial management. The high loan amount requested (PHP 281,481.98) relative to his credit limit warrants careful scrutiny. The significant difference between GCash deposits and withdrawals also needs further investigation. The purpose of the loan is for home renovation, which could be considered a reasonable use of

funds. However, the absence of BPI data raises significant concerns regarding the applicant's creditworthiness.

Key Feature Impacts & Visualizations

LIME Analysis

LIME Explanation

LIME Explanation for Application APP-20250213-2824
(Predicted: Critical)
Local explanation for class Critical

The LIME explanation ([]) attempts to locally explain the model's prediction by assigning weights to individual features. However, the provided LIME output is not well formatted. A properly formatted LIME chart would clearly show which features positively or negatively contributed to the "Critical" risk prediction. Without a clear visualization, detailed interpretation is impossible. The raw data given shows that GCash average monthly deposits are the most positively influential feature.

SHAP Analysis

SHAP Explanation

SHAP Explanation for Application APP-20250213-2824
(Predicted: Critical)
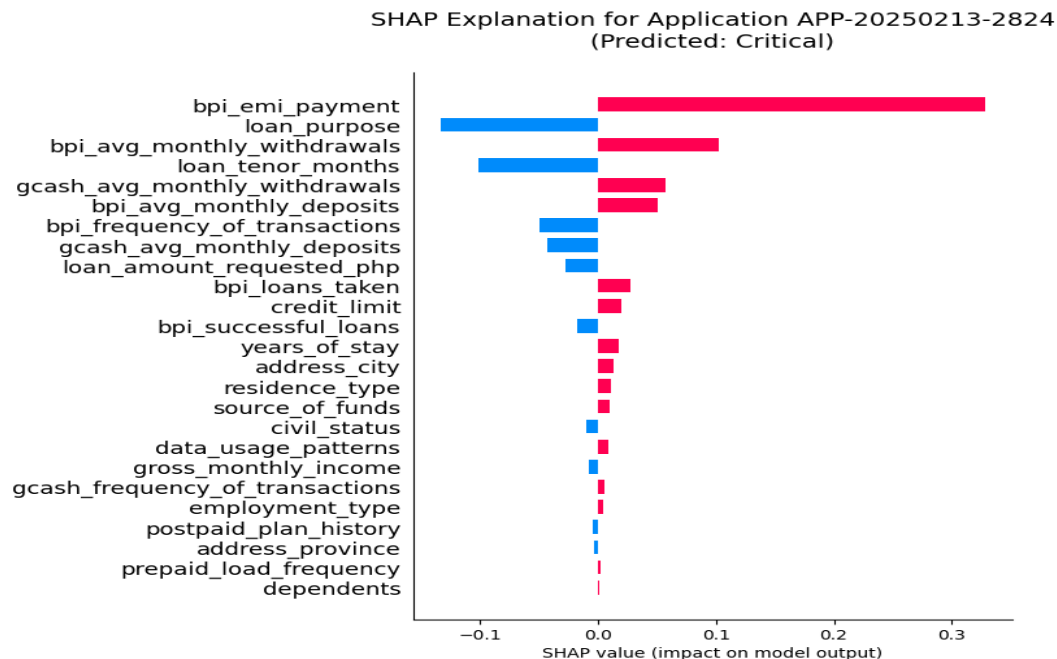
The SHAP explanation ([]) provides a global interpretation of the model's prediction. A proper SHAP summary plot would show the feature importance ranking and the direction (positive or negative) of their impact. A detailed interpretation requires the visualization. The absence of the visualization prevents a comprehensive analysis of the impact of individual features. A force plot would be helpful to visualize individual feature effects on the critical risk prediction for this applicant.

Aggregated 5C Contributions

LIME Aggregated Plot
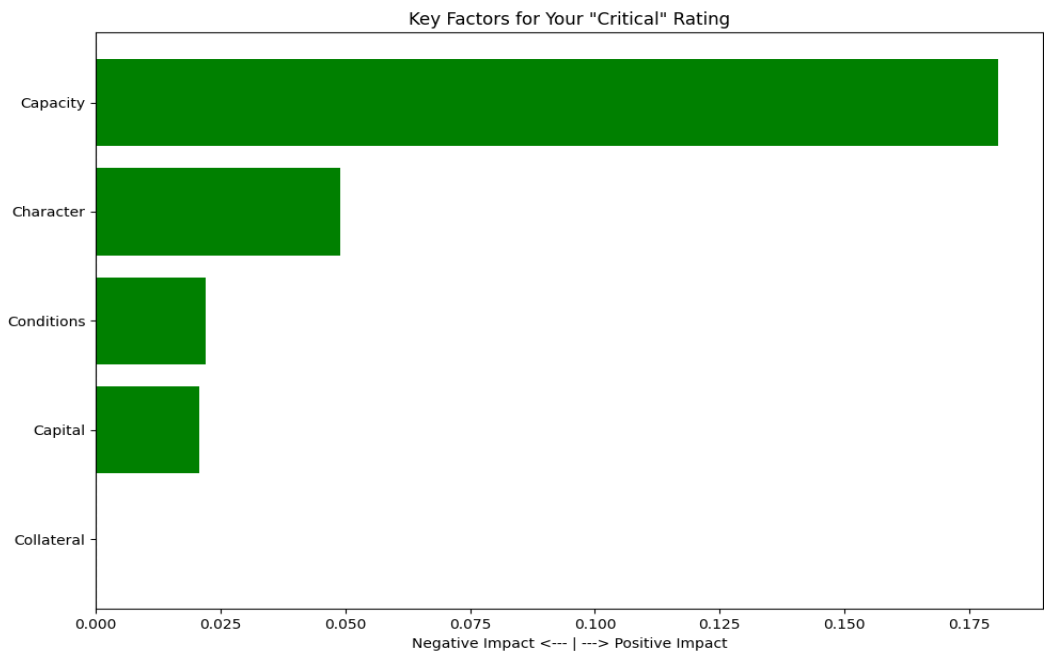
The aggregated 5C analysis based on LIME ([]) shows that Capacity contributes most significantly to the risk assessment, followed by Character. Collateral is indicated as having no contribution, suggesting the absence of secured assets used as collateral for this loan. Conditions and Capital have minimal influence.

Risk Assessment and Recommendations

Risk Factors Summary:

• **High Predicted Risk:** The model assigns a very high probability (86.12%) of the loan being classified as "Critical" risk.
• **Missing BPI Data:** The lack of information from BPI significantly limits the assessment of the applicant's credit history and repayment capacity.
• **High Loan Amount:** The requested loan amount (PHP 281,481.98) is substantial and presents considerable risk.
• **GCash Reliance:** The heavy reliance on GCash transactions suggests a potential lack of formal financial management.

Recommendations:

1. **Request Complete BPI Data:** Obtain detailed BPI transaction history (deposits, withdrawals, loan history) to assess repayment capacity and creditworthiness more accurately.
2. **Income Verification:** Verify the applicant's claimed gross monthly income (PHP 124,383.56) through official documentation, such as income tax returns or business registration.
3. **Debt-to-Income Ratio Analysis:** Calculate the applicant's debt-to-income ratio using the verified income and any existing debts to assess his ability to handle additional debt.
4. **Reduce Loan Amount or Tenor:** Consider reducing the loan amount or increasing the loan tenor to lower the monthly repayment burden and reduce risk.
5. **Alternative Loan Products:** Explore alternative loan products with lower risk profiles, perhaps with a smaller initial loan amount, to establish a positive payment history before considering larger loans.

Overall Assessment:

Based on the currently available data and the high predicted risk, approving this loan application is strongly discouraged. Further investigation, particularly obtaining complete BPI data and verifying income, is crucial before making a decision. Without this information, the risk of default is unacceptably high.