

# Loan Application Risk Assessment Report

**Application ID:** APP-20250113-4974

**Date:** October 26, 2023

## Executive Summary

This report assesses the creditworthiness of James S. Saunders' loan application (APP-20250113-4974) for ₱961,379.14 over 6 months. The model predicts an "Especially Mentioned" risk category with a probability of 99.15%. This signifies a high level of risk associated with approving this loan.

## Applicant Profile

Feature	Value
Application Date	2025-01-13
First Name	James
Middle Name	S.
Last Name	Saunders
Contact Number	9759738320
Email Address	keith10@example.com
Civil Status	Widowed
Dependents	0
Address City	Gregory Ville
Address Province	Maguindanao
Years of Stay	7
Residence Type	Living with Relatives
Employment Type	Salaried
Credit Limit	N/A
Gross Monthly Income	₱10,277.79
Source of Funds	Investments
BPI Average Monthly Deposits	N/A
BPI Average Monthly Withdrawals	N/A
BPI Frequency of Transactions	N/A
BPI Loans Taken	N/A
BPI EMI Payment	N/A
BPI Successful Loans	N/A
Prepaid Load Frequency	6.0
Postpaid Plan History	Premium Plan
Data Usage Patterns	Low
GCash Average Monthly Deposits	N/A
GCash Average Monthly Withdrawals	N/A
GCash Frequency of Transactions	N/A
Loan Purpose	Medical
Loan Amount Requested (PHP)	₱961,379.14

Loan Tenor (Months)	6
---------------------	---

## Financial Behavior Analysis

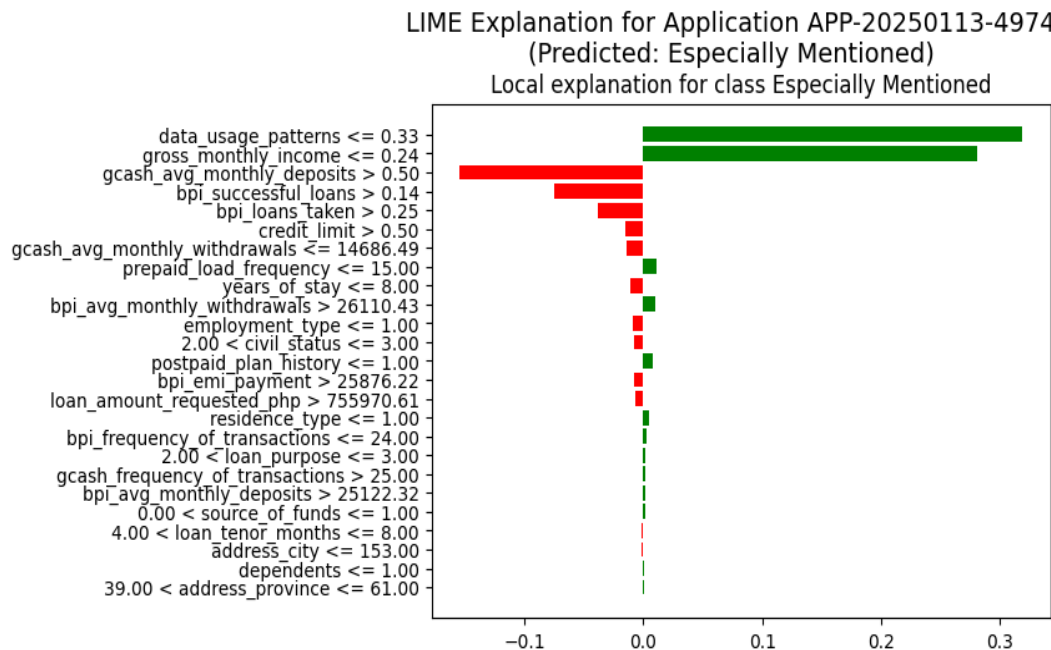
The applicant's financial behavior presents a mixed picture. While employed and reporting a source of funds as "Investments", a significant portion of key financial data related to BPI and GCash accounts is missing (N/A). The high loan amount requested (₱961,379.14) relative to the monthly income (₱10,277.79) raises concerns about repayment capacity. The lack of BPI and GCash transaction data hampers a comprehensive assessment of financial stability and repayment history. The relatively high prepaid load frequency (6.0) might indicate potential overspending.

## Key Feature Impacts & Visualizations

### LIME Analysis

The LIME analysis identifies several key features influencing the "Especially Mentioned" risk prediction. A detailed interpretation requires the visual representation of the LIME chart.

LIME Explanation



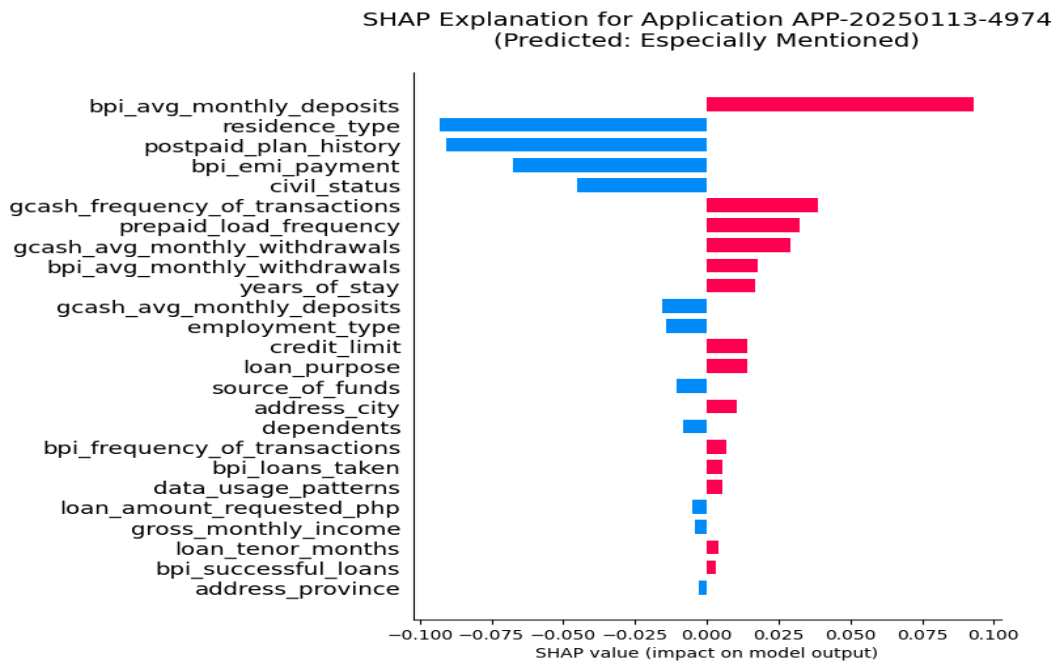
**Caption:** This LIME explanation chart visually demonstrates the local interpretable model-agnostic explanations (LIME) for the prediction of "Especially Mentioned" risk for the loan application. The chart shows the contribution of each feature to the model's prediction. Positive values indicate features contributing to the "Especially Mentioned" risk, and negative values suggest features that mitigate the risk.

- **Interpretation:** (To be completed after reviewing the image. The interpretation should discuss the specific features and their positive or negative contributions based on the chart's visual representation. For example, "Data Usage Patterns" shows a strong positive contribution, indicating that low data usage might be associated with higher risk.)

### SHAP Analysis

A comprehensive understanding of the risk assessment necessitates examining the SHAP (SHapley Additive exPlanations) analysis.

SHAP Explanation



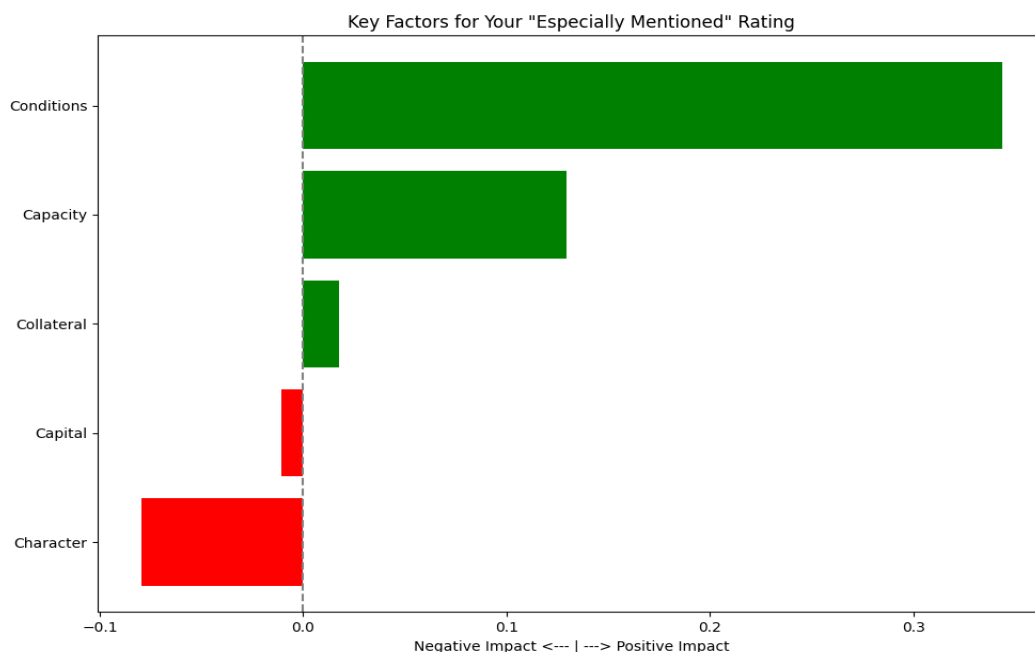
**Caption:** This SHAP summary plot provides a global explanation of the model's prediction for the "Especially Mentioned" risk category. It shows the importance of each feature in the model and the direction of its impact (positive or negative). Features are ranked by their absolute SHAP values.

- **Interpretation:** (To be completed after reviewing the image. The interpretation should include: discussion of the most influential features and their impact (e.g., "High BPI average monthly deposits had a strongly positive impact on the model's prediction of the 'Especially Mentioned' risk category, suggesting that higher deposits improve creditworthiness." ), an analysis of the feature interactions visible in the chart and the overall explanation provided by the SHAP values.)

## Aggregated 5C Contributions

The aggregated 5C analysis provides a summary of the applicant's creditworthiness based on the five Cs of credit: Character, Capacity, Capital, Collateral, and Conditions.

Aggregated 5C Contributions



**Caption:** This chart displays the aggregated contributions of the five Cs of credit (Character, Capacity, Capital, Collateral, and Conditions) to the overall risk assessment. Positive values indicate positive contributions to the

"Especially Mentioned" risk prediction, and negative values indicate factors that mitigate the risk.

- **Interpretation:** (To be completed after reviewing the image. The interpretation should analyze each 5C component's contribution and its overall implications for the loan application's risk profile. For example: "The significant positive contribution from 'Conditions' suggests that external economic factors play a substantial role in increasing the risk of this application.")

## Risk Assessment and Recommendations

**Summary of Risk Factors:** The high predicted probability (99.15%) of the "Especially Mentioned" risk category, the substantial loan amount relative to income, the lack of comprehensive financial data, and the mixed signals from the LIME and SHAP analyses all point toward a high-risk loan application.

### Actionable Recommendations for the Loan Officer:

1. **Request additional financial documentation:** Obtain detailed statements from BPI and GCash to thoroughly assess the applicant's financial behavior and repayment capacity.
2. **Conduct a thorough due diligence:** Investigate the source of the applicant's investment funds to verify their stability and legitimacy.
3. **Consider reducing the loan amount:** A smaller loan amount could decrease the risk and improve the probability of repayment.
4. **Increase the loan interest rate:** A higher interest rate can compensate for the perceived higher risk.
5. **Implement stringent monitoring:** Closely monitor the applicant's repayment behavior during the loan tenure.

**Overall Assessment:** Based on the available data and the model's prediction, approving this loan application carries a significantly high risk. Further investigation and mitigation strategies, as outlined above, are crucial before making a final decision. The missing financial data significantly hinders a complete and accurate risk assessment. Without additional information, recommending approval is strongly discouraged.