

Business Summary Report: Predictive Insights for Collections Strategy

1. Summary of Predictive Insights

Based on the exploratory data analysis (EDA) and predictive modeling, the following insights were identified as key drivers of delinquency risk in Geldium’s customer base:

- Customers with **high credit utilization (>50%)** show a significantly increased likelihood of becoming delinquent.
- Customers with **3 or more missed payments in the last 6 months** are at especially high risk.
- Some anomalies exist where **high-income customers have low credit scores**, suggesting either data quality issues or financial instability.

Key Insight	Customer Segment	Influencing Variables	Potential Impact
High delinquency risk linked to 3+ missed payments in last 6 months	Customers under 30 with repeated missed payments	Missed_Payments, Credit_Utilization, Income	Enables targeted outreach campaigns to reduce delinquency rate
High credit utilization (>50%) predicts delinquency	Customers across all age groups with heavy card usage	Credit_Utilization, Debt_to_Income_Ratio	Identifies financially stressed customers who may require repayment assistance
Unusual cases: High income but low credit score	Small subset of high-income earners	Income, Credit_Score	May indicate reporting errors or deeper financial instability; requires further investigation

2. Recommendation Framework

Restated Insight

Customers under 30 with **3+ missed payments** in the past 6 months are significantly more likely to become delinquent.

Proposed Recommendation

Launch a **6-week SMS outreach pilot program** targeting customers under 30 with repeated missed payments, aiming to reduce **30-day delinquency by 10%**.

- **Specific:** Focus on customers under 30 with at least 3 missed payments.
- **Measurable:** Goal to reduce delinquency by **10% within 6 weeks**.
- **Actionable:** Use automated SMS reminders and flexible repayment plan offers.
- **Relevant:** Directly addresses high-risk segment identified by the model.
- **Time-bound:** Campaign duration of 6 weeks with evaluation at the end.

Justification and Business Rationale

This recommendation is feasible, cost-effective, and aligned with Geldium's goal of reducing delinquency rates. Targeted outreach minimizes unnecessary intervention for low-risk customers while improving repayment likelihood among a vulnerable segment.

3. Ethical and Responsible AI Considerations

When applying AI-driven predictive insights in financial services, ethical and responsible practices must be prioritized:

- **Fairness & Bias:** The model should be reviewed for potential bias, ensuring no unfair treatment of specific groups (e.g., by age, employment type, or location). Segmentation should focus on behavioral risk indicators (missed payments, utilization) rather than demographic proxies.
- **Transparency & Explainability:** Logistic regression provides interpretable outputs, making it easier to explain to stakeholders why customers are flagged as high-risk.
- **Responsible Decision-Making:** Recommendations are framed to support financial well-being by offering reminders and flexible repayment options instead of punitive actions.
- **Other Ethical Principles:** Adherence to **data privacy, accountability, and clear communication** ensures the model is used responsibly and builds customer trust.

