# Business Summary Report: Predictive Insights for Collections Strategy

## 1. Summary of Predictive Insights

Based on the analysis of Geldium’s dataset and predictive modeling using logistic regression, the following insights emerged:

- Customers with high credit utilization rates (above 80%) show a significantly higher risk of delinquency.

- A history of missed payments in the past six months, particularly repeated missed payments in Month\_3 and Month\_4, is a strong predictor of delinquency.

- Customers with a debt-to-income ratio above 50% and a credit score below 600 represent a particularly high-risk segment.

Top 3 Risk Factors:

• High Credit Utilization (>80%)

• Multiple Missed Payments (Month\_3, Month\_4)

• Low Credit Score (<600) with High Debt-to-Income Ratio

Key Insight Summary Table

|  |  |  |  |
| --- | --- | --- | --- |
| Key Insight | Customer Segment | Influencing Variables | Potential Impact |
| High credit utilization increases risk | Customers using >80% of available credit | Credit\_Utilization, Debt\_to\_Income\_Ratio | Flag for review or early intervention |

## 2. Recommendation Framework

Restated Insight:

High credit utilization is a strong predictor of customer delinquency.

Proposed Recommendation:

Launch an early warning program targeting customers with credit utilization above 80%.

Specific: Identify and flag all customers with >80% credit utilization for proactive outreach.

Measurable: Track reduction in delinquency rate within flagged group over a 3-month period.

Actionable: Engage flagged customers through financial wellness emails or optional credit counseling.

Relevant: Supports Geldium’s goal to reduce delinquency while improving customer financial health.

Time-bound: Implement and measure within the next 90 days.

Justification and Business Rationale:

Targeting high utilization customers allows the Collections team to intervene before accounts become delinquent. This aligns with the company’s goals of risk reduction, customer retention, and responsible financial management.

## 3. Ethical and Responsible AI Considerations

Fairness Risks and Mitigation:

• Risk: Customers with lower income may be disproportionately flagged due to inherently higher credit utilization.

• Mitigation: Apply fairness-aware techniques (e.g., reweighting) and monitor outcomes across income levels to ensure no group is unfairly penalized.

Explainability:

The logistic regression model used provides interpretable outputs, making it easy to explain decisions to stakeholders in non-technical terms (e.g., 'High credit usage increases risk').

Responsible AI Principles:

This model supports responsible AI by being transparent, auditable, and aligned with ethical practices. Customer privacy is respected by only using consented data and the model is regularly reviewed for bias.