# Business Summary Report: Predictive Insights for Collections Strategy

## 1. Summary of Predictive Insights

Based on our predictive modeling analysis using logistic regression, the following key insights were identified from the dataset:

* Top 3 Risk Factors:
* - High Credit Utilization (above 80%)
* - 2 or more Missed Payments
* - Debt-to-Income Ratio (DTI) above 0.5

Young customers (under 30) who exhibit two or more missed payments and high credit utilization rates are significantly more likely to become delinquent. These patterns suggest that proactive engagement with this customer group may help mitigate financial risk and reduce delinquency rates.

## 2. Recommendation Framework

Restated Insight:

Customers under 30 with 2+ missed payments and credit utilization above 80% are over 3x more likely to become delinquent.

Proposed Recommendation:

Specific: Launch an SMS outreach campaign for young high-risk customers flagged by the model.

Measurable: Target a 10–12% reduction in 30-day delinquency among contacted customers.

Actionable: Use existing customer communication channels (SMS/email) to deliver payment reminders and support.

Relevant: Directly aligns with Geldium’s goals of improving collections efficiency and lowering default rates.

Time-bound: Roll out a 6-week pilot program, with weekly monitoring and mid-point adjustment.

Justification and Business Rationale:

This recommendation is based on data-backed insights and can be executed with minimal cost using current communication tools. It allows for targeted, proactive intervention and helps build trust with at-risk customers while achieving business goals. This solution is scalable, easy to monitor, and strongly aligned with Geldium’s commitment to responsible collections practices.

## 3. Ethical and Responsible AI Considerations

While the model performs well, there are ethical factors that must be addressed:

* - Fairness Risk 1: The model may over-flag younger, low-income customers due to their financial instability history.
* - Fairness Risk 2: Over-reliance on credit utilization may penalize customers without access to financial coaching.
* Mitigation Strategies:
* - Regularly audit prediction patterns across demographic groups to ensure fairness.
* - Supplement model-driven decisions with human review in borderline cases.

Explainability: Logistic regression was selected due to its interpretability. Each prediction can be traced to known input features like income, utilization, and payment history.

Responsible Use: All outreach actions will be reviewed for tone, consent, and compliance. Recommendations are grounded in transparency and respect for customer experience.