Business Summary Report: Predictive Insights for Collections Strategy

# 1. Summary of Predictive Insights

Our predictive model, developed using Geldium’s delinquency dataset, highlights several patterns that help identify customers most at risk of default. These insights combine financial ratios, behavioral history, and demographic factors to provide a clearer picture of risk.

**Top 3 Risk Factors**

* **Credit Utilization** – Delinquent customers, on average, use a higher share of their available credit (0.507) than non-delinquent customers (0.489). Over-reliance on credit is a strong signal of potential delinquency.
* **Debt-to-Income Ratio (DTI)** – Higher ratios among delinquent customers (0.306 vs. 0.297) suggest financial stress and difficulty managing repayment obligations.
* **Payment Behavior & History** – Customers with frequent late or missed payments over the past six months are significantly more likely to become delinquent.

**Unexpected Patterns**  
Interestingly, some delinquent customers reported **higher incomes and credit scores** compared to non-delinquent peers. This anomaly indicates that delinquency is not solely linked to low financial standing, but also to **behavioral or short-term financial shocks**.

**High-Risk Segments Identified**

* Younger customers (<30 years) with high utilization and multiple missed payments.
* Customers whose DTI continues to rise despite stable or above-average income.
* Customers in certain locations or with specific card types where late payments cluster.

# 2. Recommendation Framework

**Restated Insight**  
Customers with **high credit utilization (>50%)** are significantly more likely to become delinquent.

**Proposed Recommendation (SMART)**

* **Specific:** Launch a **6-week pilot SMS and email outreach program** targeting customers with utilization >0.5.
* **Measurable:** Aim to reduce **30+ day delinquency by at least 10%** within this pilot group.
* **Actionable:** Use Geldium’s existing CRM and communication channels to deliver reminders and personalized repayment plan offers.
* **Relevant:** Addresses one of the strongest predictors of delinquency while aligning with the company’s goal of reducing risk exposure.
* **Time-bound:** Run the pilot for 6 weeks, followed by a review of delinquency outcomes and return on investment.

**Justification and Business Rationale**  
This intervention is **low-cost, scalable, and customer-friendly**. By sending proactive reminders and repayment plan options, Geldium can reduce delinquency without penalizing customers. The approach supports both **risk reduction and customer retention**, strengthening long-term relationships while improving recovery rates.

# 3. Ethical and Responsible AI Considerations

**Fairness and Bias Risks**

* **Income Bias:** Higher-income customers also appear at risk. If left unchecked, the model could unfairly emphasize low-income groups.  
  *Mitigation:* Regular fairness testing across income bands, with balanced training data.
* **Location Bias:** Regional payment patterns may cause over-targeting in certain areas.  
  *Mitigation:* Monitor performance by geography and adjust outreach to ensure fair treatment.

**Explainability**  
The model’s predictions are translated into **plain-language rules** for the Collections team. For example:  
*“Customers with utilization over 50% and two or more late payments are about three times more likely to become delinquent.”*  
This ensures transparency and supports staff confidence in using the model.

**Responsible Decision-Making**  
The model is designed to **support, not replace, human judgment**. Recommendations focus on **proactive and supportive measures** (reminders, repayment restructuring, financial counseling) rather than punitive actions like reducing credit limits. Regular monitoring will ensure fairness, accountability, and compliance with regulatory standards.

✅ **Final Note**  
This report translates predictive insights into actionable next steps for Geldium’s Collections team. By focusing on high-risk segments, targeted outreach, and responsible AI practices, Geldium can improve recovery rates, reduce risk, and maintain customer trust