Business Summary Report: Predictive Insights for Collections Strategy

# 1. Summary of Predictive Insights

Our predictive analysis using decision tree modeling highlighted the following key risk segments and patterns:

**Top 3 Risk Factors:**

* **Missed Payments**: Customers with 2 or more missed payments showed the highest correlation with delinquency.
* **High Credit Utilization**: Customers using more than 80% of their credit limit are more likely to become delinquent.
* **Low Credit Score**: Scores below 600 significantly increase the likelihood of delinquency.

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| Key Insight | Customer Segment | Influencing Variables | Potential Impact |
| |  | | --- | | High delinquency risk for customers with 2+ missed payments |  |  | | --- | |  | | Young adults (age < 30) with revolving credit cards | Missed Payments,  Credit Utilization  Income | Prioritize this group for early outreach and repayment assistance |

# 2. Recommendation Framework

**Restated Insight:**  
Customers under 30 with 2 or more missed payments and high credit utilization are 3x more likely to become delinquent.

**Proposed Recommendation:**  
Pilot a proactive outreach program targeting these high-risk customers with personalized support options.

* **Specific:** Launch a targeted support program focused on young customers (under 30) with 2+ missed payments and high utilization.
* **Measurable:** Aim to reduce delinquency rate in this group by 15% over a 6-week period.
* **Actionable:** Use model predictions to generate a list of customers and automate outreach using SMS/email channels.
* **Relevant:** Addresses the highest-risk segment as identified by our predictive model.
* **Time-bound:** Campaign should run from July 15 to August 30, followed by impact analysis in September.

**Justification and Business Rationale:**  
This targeted strategy allows Geldium to efficiently allocate resources by focusing on the most vulnerable segment. Early intervention can improve repayment behavior, reduce losses, and build trust with younger customers who may become long-term clients. The plan is cost-effective, leverages existing communication channels, and aligns with Geldium’s customer-first mission.

# 3. Ethical and Responsible AI Considerations

* **Fairness Risks:**  
  The model could unintentionally disadvantage groups underrepresented in the data (e.g., rural or lower-income customers). We recommend fairness audits using demographic parity and disparate impact analysis.
* **Explainability:**  
  Decision tree models were chosen for their interpretability. Stakeholders can clearly see how variables like missed payments and credit utilization contribute to delinquency predictions, supporting transparency.
* **Responsible Use:**  
  Interventions based on model predictions are supportive, not punitive. By offering financial education and repayment flexibility, we maintain customer dignity while reducing risk.
* **Additional Principles:**
  + **Transparency**: Model logic and decision factors are clearly documented.
  + **Accountability**: Recommendations include ongoing evaluation to ensure fair impact.
  + **Privacy**: Only relevant, consented customer data is used in modeling and outreach.