**Business Summary Report: Predictive Insights for Collections Strategy**

# **1. Summary of Predictive Insights**

Our predictive model identifies high-risk customer segments and key predictors of delinquency to help the collections team act proactively. Key insights include:

• Payment History is Critical: Customers with prior missed payments are significantly more likely to become delinquent. Past behavior is the strongest predictor of future risk.

• High Debt Burden Increases Risk: Customers with a high debt-to-income (DTI) ratio and credit utilization above 75% are much more likely to default. These customers may be overextended and struggle to meet obligations.

• Behavioral Patterns Matter: Multiple recent credit inquiries indicate potential financial distress, signaling an increased likelihood of missed payments.

**Key Insights Summary Table:**

| **Key Insight** | **Customer Segment** | **Influencing Variables** | **Potential Impact** |
| --- | --- | --- | --- |
| High risk due to missed payments | Customers with 1+ missed payments in the past year | Missed Payments | Collections team can prioritize these customers for proactive outreach and support |
| High credit utilization signals delinquency | Customers with credit utilization >75% | Credit Utilization, DTI Ratio | Targeted financial counseling or repayment plans can reduce default risk |
| Recent multiple credit inquiries | Customers with 2+ inquiries in last 3 months | Credit Inquiries | Early engagement can prevent over-indebtedness and reduce future delinquency |

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# **2. Recommendation Framework**

Restated Insight:

High credit utilization is a strong predictor of delinquency. Customers using more than 75% of their available credit represent a high-risk segment.

Proposed Recommendation:

Proactively engage high-risk customers by offering personalized financial support and credit management options.

SMART Approach:

• Specific: Provide targeted financial education and credit restructuring options for customers with credit utilization above 75%.

• Measurable: Achieve a 5% reduction in delinquency rates for this segment by the end of Q3 2025.

• Actionable: Use model risk scores to prioritize outreach to the top 10% of high-risk customers, offering repayment plans or financial counseling.

• Relevant: Directly addresses a key risk factor identified by the predictive model and aligns with Geldium’s proactive risk management goals.

• Time-bound: Implement over the next year, with measurable outcomes by the end of Q3 2025.

Justification and Business Rationale:

This approach shifts the collections team from reactive to proactive. By intervening before defaults occur, Geldium reduces potential financial losses and strengthens customer relationships. Customers receive support when needed, improving trust and long-term engagement.

# **3. Ethical and Responsible AI Considerations**

Potential for Bias and Unfair Treatment:

Historical biases in training data (e.g., certain zip codes or demographics historically receiving less favorable terms) could cause the model to flag individuals unfairly. Regular audits across demographic subgroups will ensure fair treatment.

Explainability:

Random Forest models are complex, making direct interpretation challenging. Using explainable AI (XAI) tools such as SHAP provides human-readable explanations. For example: 'Your risk score is high primarily due to a high debt-to-income ratio and two missed payments in the past year.' This builds trust and transparency with customers.

Responsible Financial Decision-Making:

The recommendations support customers rather than penalizing them. Early interventions and tailored financial guidance help customers regain stability, which is both ethically sound and aligned with Geldium’s long-term business objectives.

Other Ethical Principles:

Transparency, accountability, and data privacy are maintained throughout model use and communications with customers.