Business Summary Report: Predictive Insights for Collections Strategy

**1. Summary of Predictive Insights**

* High-Risk Customer Segments include those with high missed payment counts, low credit scores, and credit utilization above 70%. These customers are significantly more likely to become delinquent within the next repayment cycle.
* Key Predictors of Delinquency are:

1. Missed\_Payments: Strongest indicator — even 1–2 missed payments increases risk.
2. Credit\_Utilization: Customers using over 75% of their credit limit have sharply higher risk.
3. Low Income + High Debt-to-Income Ratio: Indicates financial stress, especially in customers with unstable or no employment.

* Actionable Pattern for Collections Team: Focus outreach on customers with recently missed payments, high utilization, and inconsistent repayment history, especially among younger customers with low income. These customers may be at the early stages of delinquency and can be guided with proactive support.

**2. Recommendation Framework**

* Restated Insight: Customers with high credit utilization (>75%) and a recent missed payment are significantly more likely to become delinquent in the near future. These customers show early signs of financial stress.
* Proposed Recommendation: Implement a "Pre-Delinquency Outreach Program" targeting high-utilization customers who have missed at least one recent payment, offering them personalized reminders, credit counseling, or temporary payment relief.
* Specific: Identify and engage customers with credit utilization >75% and ≥1 missed payment in the last 2 months.
* Measurable: Track reduction in delinquency rate within this group — target at least a 15% drop in delinquency among the contacted customers over 3 months.
* Actionable: Use the model to generate weekly reports and flag at-risk customers. Assign customer service reps or automate SMS/email nudges to intervene early.
* Relevant: Early intervention aligns directly with Geldium’s goal of reducing NPA (non-performing assets) and improving recovery rates with minimal cost.
* Time-bound: Launch a 3-month pilot program starting next quarter. Review impact monthly and decide on permanent implementation by quarter-end.
* Justification and Business Rationale:

1. Proactively managing high-risk customers before delinquency occurs can save recovery costs, protect brand reputation, and retain customers.
2. This program is low-cost, leverages existing communication channels, and is based on clear, data-driven risk signals from the model.
3. It strengthens Geldium’s customer-first image while improving portfolio health and reducing defaults.

**3. Ethical and Responsible AI Considerations**

Relevant ethical considerations, such as:

* Potential for bias or unfair treatment:

1. Our model identifies high-risk customers based on data-driven factors like missed payments, credit utilization, income, and employment status. However, these variables can unintentionally disadvantage certain groups:
2. Younger individuals or low-income earners may be overrepresented in high-risk categories due to limited financial history or job instability.
3. Unemployed but temporarily between jobs individuals might be flagged unfairly despite being financially capable in the short term.
4. Women or rural customers, if underrepresented in the dataset, may have skewed predictions.

To address this, we conducted subgroup testing and recommend regular fairness audits to ensure no customer segment is unfairly penalized.

* Explainability:

1. We used a decision-tree-based model which is:
2. Highly interpretable: We can show what variables led to a delinquency prediction.
3. Customer-friendly: Staff can explain decisions in simple terms like: "Your high credit usage and a recent missed payment suggest risk."

This enhances trust and encourages cooperation from customers.

* The recommendation framework aims to:

1. Support customers before they become delinquent
2. Offer assistance instead of penalties
3. Encourage positive financial behavior (e.g., reminders, planning tools)
4. This aligns with responsible lending and customer care.

* Other ethical principles considered

1. Transperancy- The model logic and decision criteria are open and shared with key stakeholders.
2. Data Privacy- Customer data is stored and processed securely, following regulatory guidelines.
3. Accountability- All predictions are reviewed by human teams before major decisions are made.
4. Non-Discrimination- No sensitive variables (gender, caste, religion) are used directly in the model.