# Geldium Delinquency Risk Report – AI-Powered Insights & Recommendations

## 1. Summary of Predictive Insights

Based on our EDA and predictive model, we identified key customer segments and risk drivers that significantly contribute to 30+ day credit card delinquency.

High-Risk Customer Segment:

• Customers under 30 with credit utilization > 70% and two or more missed payments.  
• Customers not enrolled in auto-pay and with inconsistent income patterns.  
• Customers with debt-to-income ratios above 0.6.

Top 3 Risk Factors:

1. High credit utilization ratio (above 70%)  
2. History of missed payments (2+ in past 12 months)  
3. Low or volatile income (as indicated by DTI > 0.6)

## 2. Recommendation Framework

📌 SMART Recommendation:

Launch a 6-week SMS and email campaign targeting high-risk customers identified by the model, offering personalized payment plan options and educational resources on credit management. Aim to reduce 30+ day delinquency by 12% within the campaign period.

Rationale:

This initiative is specific (targets high-risk customers), measurable (12% reduction goal), actionable (leverages existing outreach channels), relevant (supports Collections’ delinquency reduction goal), and time-bound (6-week duration). It aligns with Geldium’s mission to improve financial well-being while enhancing operational efficiency.

## 3. Ethical & Responsible AI Considerations

Fairness Risks & Mitigation:

• Risk 1: Age bias – Younger customers may be overrepresented as high risk due to lower credit history. Mitigation: Ensure model uses age-neutral indicators like repayment consistency.  
• Risk 2: Income-based bias – Volatile income may disproportionately affect certain socioeconomic groups. Mitigation: Regularly audit model fairness using demographic parity and equal opportunity metrics.

Explainability Approach:

Model predictions will be supported with plain-language summaries explaining key contributing features (e.g., "Your credit utilization is above 70%, which has historically increased risk"). Logistic regression was selected for its transparency and regulatory compliance.

Responsible Use:

Our strategy prioritizes supportive actions (education, payment plans) over punitive measures, fostering customer trust and long-term engagement.