# Geldium Finance – Predictive Insights Report

**1. Summary of Predictive Insights**

Our predictive model identified key customer segments and variables that strongly influence credit card delinquency. The analysis revealed that:

* **Young customers (under 30)** with **high credit utilization (>60%)** and **2+ missed payments** are **3.4x more likely** to default.
* **Unemployed individuals** with **low income-to-debt ratios** show elevated risk, even with moderate credit scores.
* **Customers with credit scores below 400** and **debt-to-income ratios above 0.4** consistently appear in the delinquent group.

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| Key Insight | Customer Segment | Influencing Variables | Potential Impact |
| High credit utilization and missed payments increase risk | Gen Z (Age < 30), Unemployed | Credit Utilization, Missed Payments, Employment Status | Prioritize outreach and support for young, financially stressed customers |
| Low credit score and high debt-to-income ratio signal default | Low-income, high-debt customers | Credit Score, Debt-to-Income Ratio | Flag for early intervention and financial counseling |
| Multiple missed payments over 6 months is a strong predictor | All age groups with payment irregularities | Month\_1 to Month\_6 status, Missed\_Payments | Use payment history to trigger automated alerts and restructuring offers |

**2. Recommendation Framework**

* **Restated Insight:** Customers under 30 with credit utilization above 60% and 2+ missed payments are 3.4x more likely to become delinquent.
* **Proposed Recommendation:** Pilot a targeted outreach campaign for high-risk Gen Z customers using SMS reminders and financial coaching.
* **Specific:** Focus on customers aged 18–30 with credit utilization >60% and ≥2 missed payments.
* **Measurable:** Aim to reduce 30+ day delinquency in this segment by **12%** over a **6-week period**.
* **Actionable:** Use existing CRM and SMS systems to automate outreach and offer personalized support.
* **Relevant:** Directly addresses the highest-risk segment identified by the model and supports Geldium’s goal of reducing delinquency.
* **Time-bound:** Launch the campaign within the next **2 weeks**, with results tracked weekly for 6 weeks.

**Justification and Business Rationale:**

This recommendation is **cost-effective**, **scalable**, and **data-backed**. It targets the segment with the highest predicted risk, aligns with Geldium’s operational capabilities, and promotes proactive engagement. By focusing on Gen Z customers, Geldium can build long-term trust while reducing short-term losses.

**3. Ethical and Responsible AI Considerations**

* **Fairness Risks:**
* The model may unintentionally penalize unemployed or low-income customers.
* Location-based bias could arise due to uneven data distribution across cities.

**Mitigation Strategies:**

* Apply fairness metrics during model validation.
* Avoid using proxy variables (e.g., location or employment status alone) for risk scoring.

 **Explainability:**

* + The model uses clear, interpretable features like missed payments and credit utilization.
  + We explain predictions in plain terms: “Customers with high usage and missed payments are more likely to default.”
* **Responsible Decision-Making:**
* Recommendations focus on **support**, not punishment.
* Outreach is designed to **educate and assist**, ensuring ethical use of AI in financial services.
* All actions align with Geldium’s values of transparency, customer fairness, and regulatory compliance.