## Business Summary Report:

## Predictive Insights for Collections Strategy

### 1. Summary of Predictive Insights

Based on the Exploratory Data Analysis (EDA) and predictive modeling conducted in Task 2, the following insights were identified as key drivers of delinquency risk:

Top 3 Risk Factors Associated with Delinquency

* **Credit Card Type – Business Card Holders :**Customers with business credit cards have the highest delinquency rate at 21.30% , indicating a significantly higher likelihood of delinquency compared to other card types.
* **Location – Los Angeles :**  
  Customers located in Los Angeles show a delinquency rate of 19.63% , suggesting regional economic or demographic factors may be contributing to financial instability.
* **Employment Status – Unemployed :**As expected, unemployed customers have a high delinquency rate of 19.35% , highlighting the strong link between job status and repayment capability.

These segments are critical for the collections team to prioritize due to their elevated risk levels.

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| **Key Insight** | **Customer Segment** | **Influencing Variables** | **Potential Impact** |
| Business card holders are more likely to default | Customers with 'Business' credit cards | Credit\_Card\_Type | Targeted early intervention can reduce delinquency in this group |
| Geographic location influences delinquency risk | Customers in Los Angeles | Location | Regional outreach programs may help mitigate risk |
| Unemployment increases delinquency risk | Unemployed individuals | Employment  Status | Proactive engagement with unemployed customers can improve recovery rates |

### 2. Recommendation Framework

**Restated Insight:**

Customers holding business credit cards have the highest delinquency rate (21.30% ), indicating a need for targeted support and monitoring.

### Proposed Recommendation (SMART):

1. **Specific:**

Launch a targeted communication campaign focused on business cardholders who show early signs of delinquency (e.g., missed payments or high credit utilization).

1. **Measurable:**

Aim to reduce delinquency among business cardholders by 10% within 6 months through proactive outreach and payment plan offers.

1. **Actionable:**

Use SMS/email alerts to remind customers of upcoming payments and offer customized hardship options (e.g., payment deferral or reduced interest plans).

1. **Relevant:**

This aligns with Geldium’s goal to minimize financial losses and improve customer retention by addressing risk before it escalates.

1. **Time-bound:**

Implement the campaign within one month and evaluate its impact after six months using delinquency tracking metrics.

### Justification and Business Rationale:

Targeting business cardholders allows Geldium to focus resources on the segment with the highest observed delinquency rate. Early interventions can prevent full-blown defaults, improving both customer experience and portfolio performance. This approach is cost-effective and scalable.

### Ethical and Responsible AI Considerations

#### Fairness Risks and Mitigation Strategies:

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| **Risk** | **Mitigation Strategy** |
| Bias in targeting business cardholders: There's a risk that small business owners might be unfairly flagged due to industry-specific challenges. | Regularly review performance across subgroups (e.g., by income level or business size) and adjust thresholds to ensure equitable treatment. |
| Geographic bias against Los Angeles residents: Economic conditions in LA could skew predictions if not contextualized. | Monitor outcomes for regional differences and include socioeconomic indicators in future models to avoid overgeneralization. |

#### Model Explainability for Non-Technical Stakeholders:

The model identifies patterns in historical customer behavior—such as missed payments, employment status, and location—to estimate the likelihood of future delinquency. These patterns help us target support where it's most needed , without relying on guesswork.

#### Promoting Responsible AI Use:

We are committed to ensuring that our model supports fair and transparent decision-making. By regularly auditing for bias, explaining predictions clearly, and giving affected customers opportunities to seek clarification or assistance, we uphold ethical standards while improving business outcomes.

End of Report  
Prepared for: Head of Collections, Geldium  
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