

# Credit Card Customer Analysis

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EVAN GLAS

CREDIT CARD CUSTOMERS DATASET

# Data Overview

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~ 10,000 Data Points

## 21 Categories

- Relevant Categorical Variables
  - Gender
  - Attrition Status
  - Credit Card Category
- Relevant Quantitative Variables
  - Credit Limit
  - Average Utilization Ratio
  - Number of Dependents

## Foci of Analysis

### Attrition

- *How can we limit customer attrition?*

### Card Category

- *Who chooses each kind of card?*

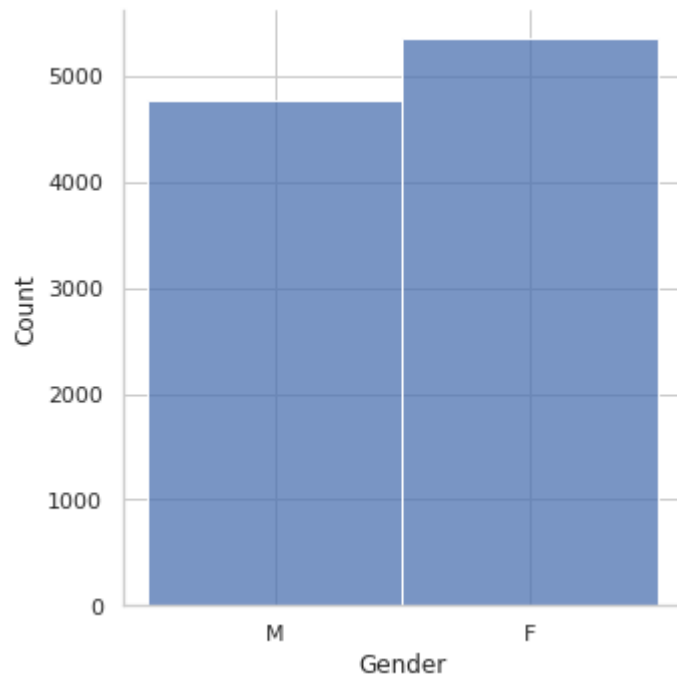
### Credit Limit

- *Can we predict a customer's credit limit?*

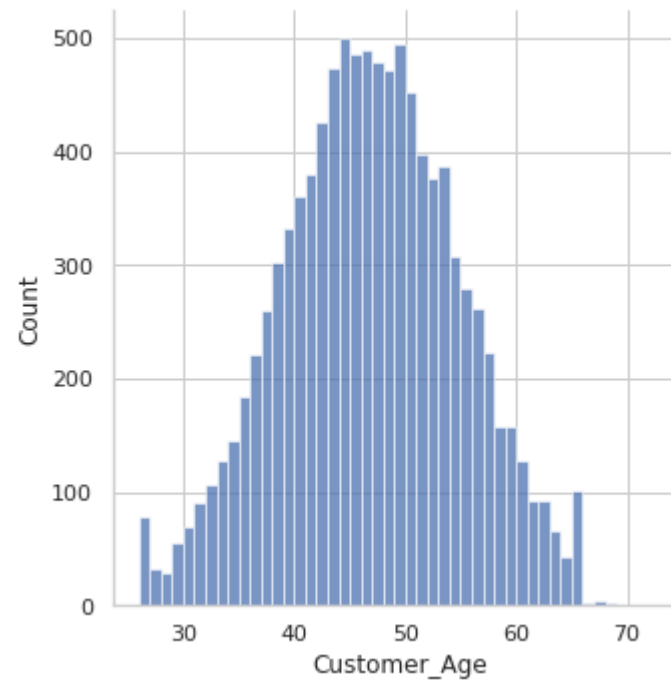
# Data Exploration (I)

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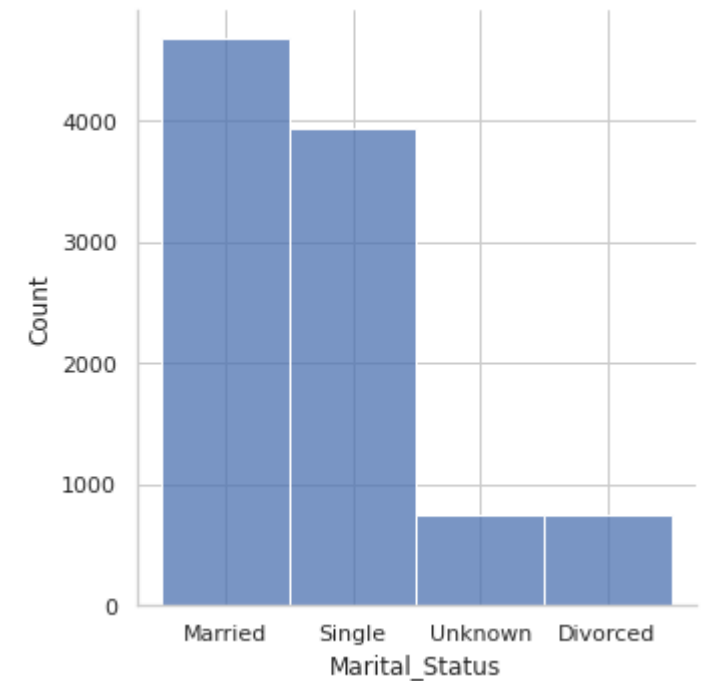
Gender



Age

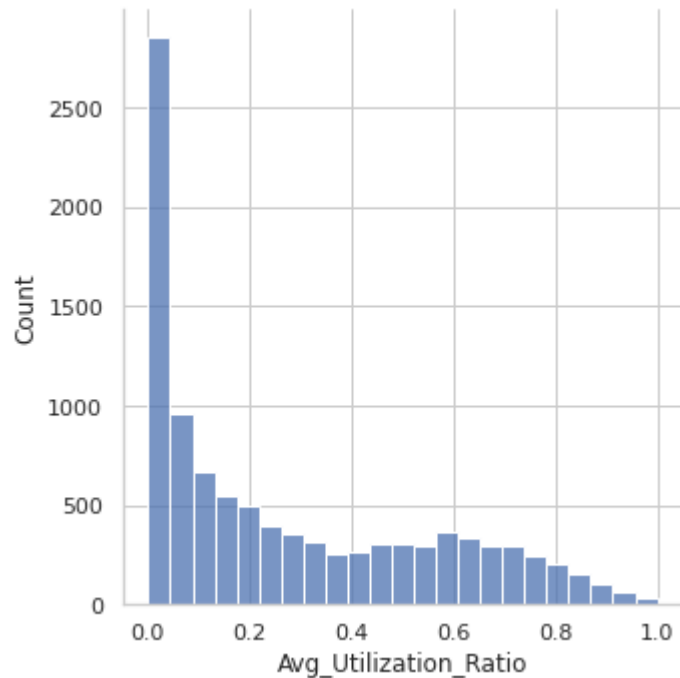


Marital Status

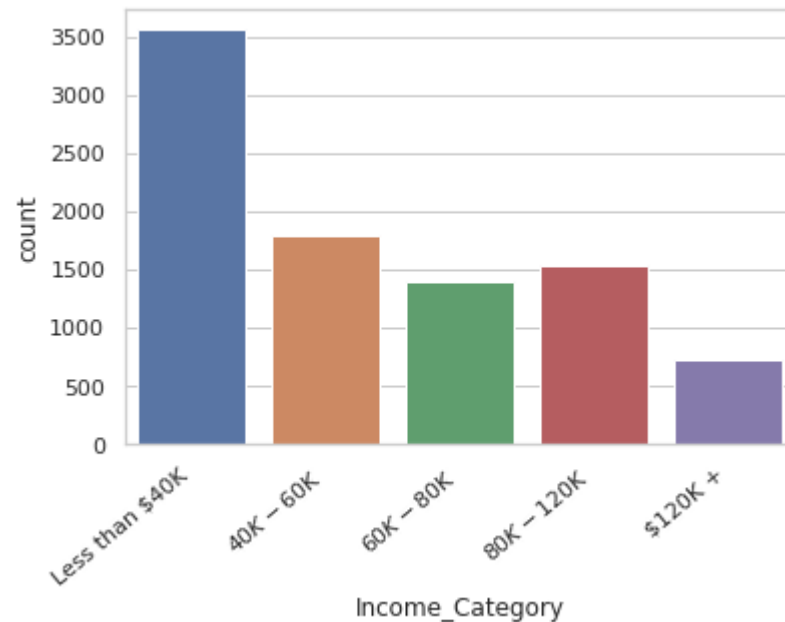


# Data Exploration (II)

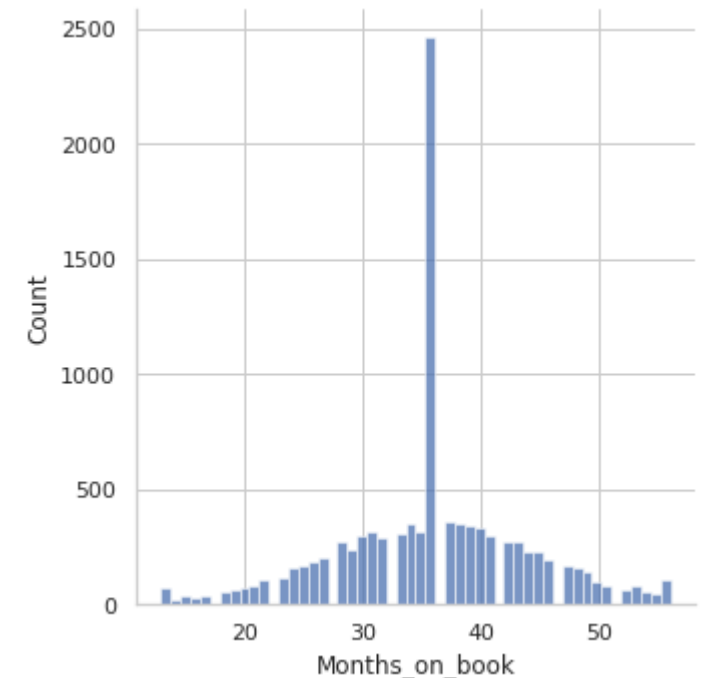
Average Utilization Ratio



Income



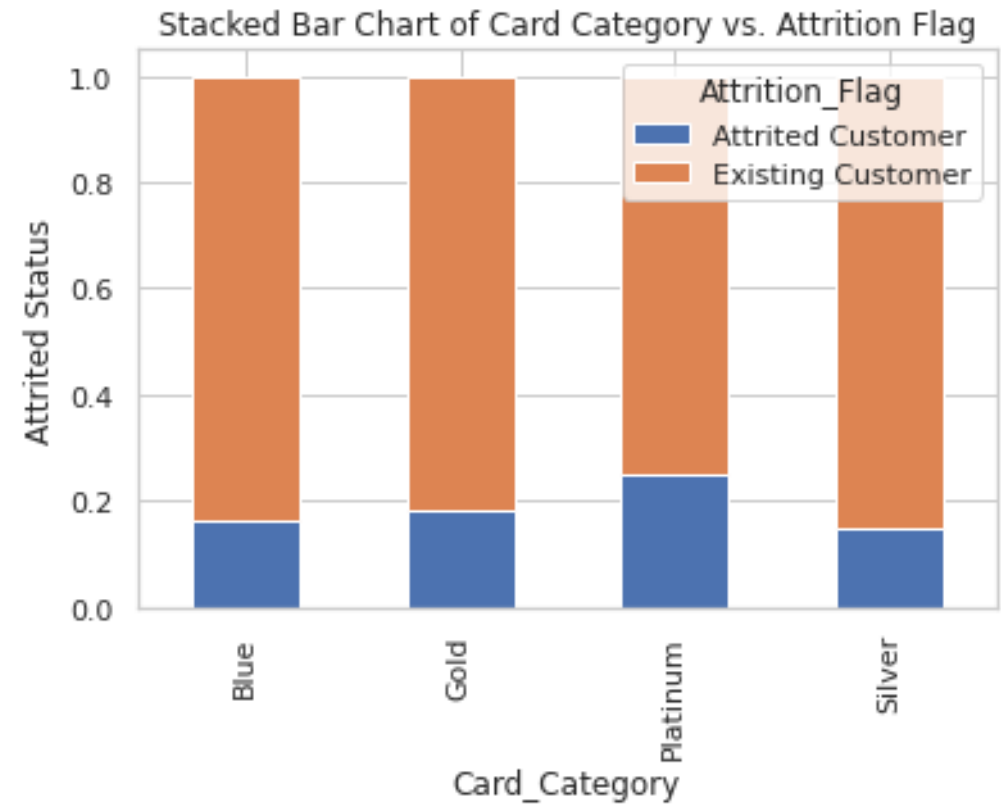
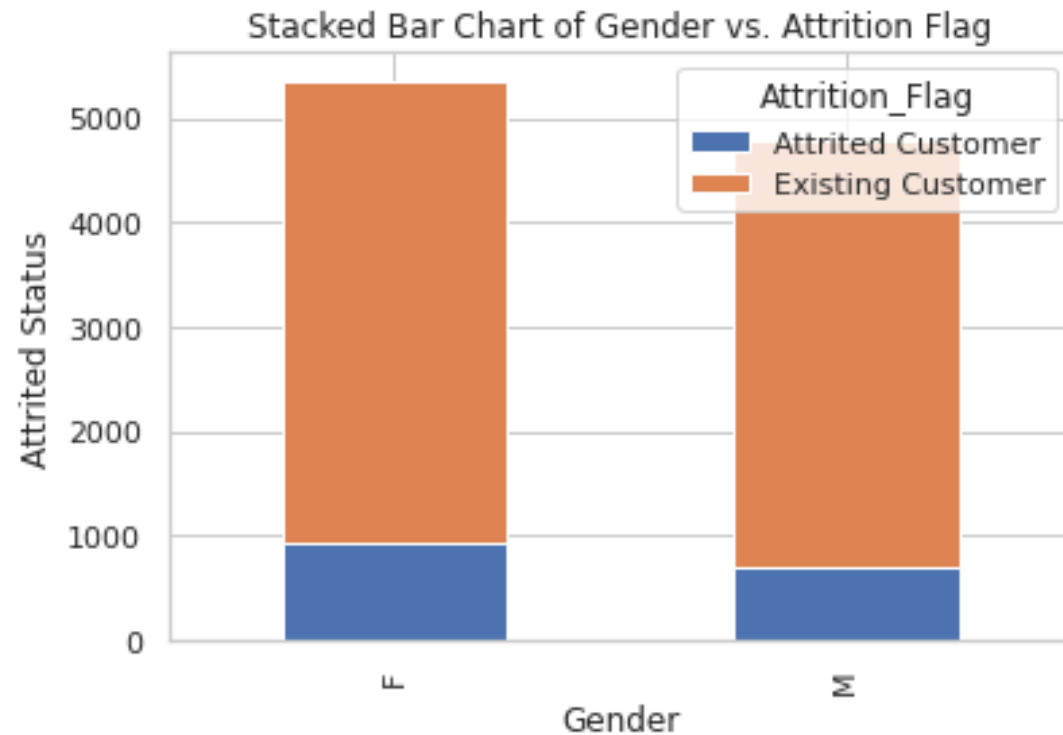
Months on Book



# Customer Attrition Analysis

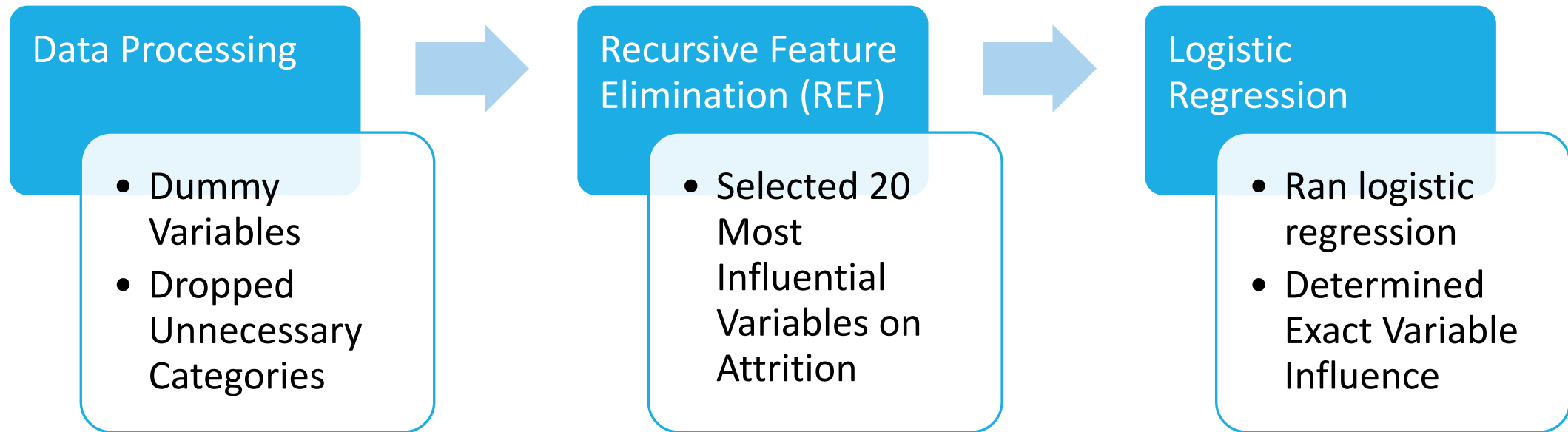
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# Exploratory Analysis



# Methods

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# Results

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## High Negative Influence (**Less Attrition**):

- Change in Total Transaction Count (Q4 to Q1)
- Average Utilization Ratio
- Male

## High Positive Influence (**More Attrition**):

- Number of Months Inactive
- Number of Contacts
- Lower Utilization Ratio

# Reducing Attrition

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Offer Incentives to Inactive Customers (Frequency and Amount)



Offer Further Customer Support, Information targeted at Customers with More Contacts



Offer Temporary Card Promotions to at-risk Customers

# Credit Category Analysis

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# Methods

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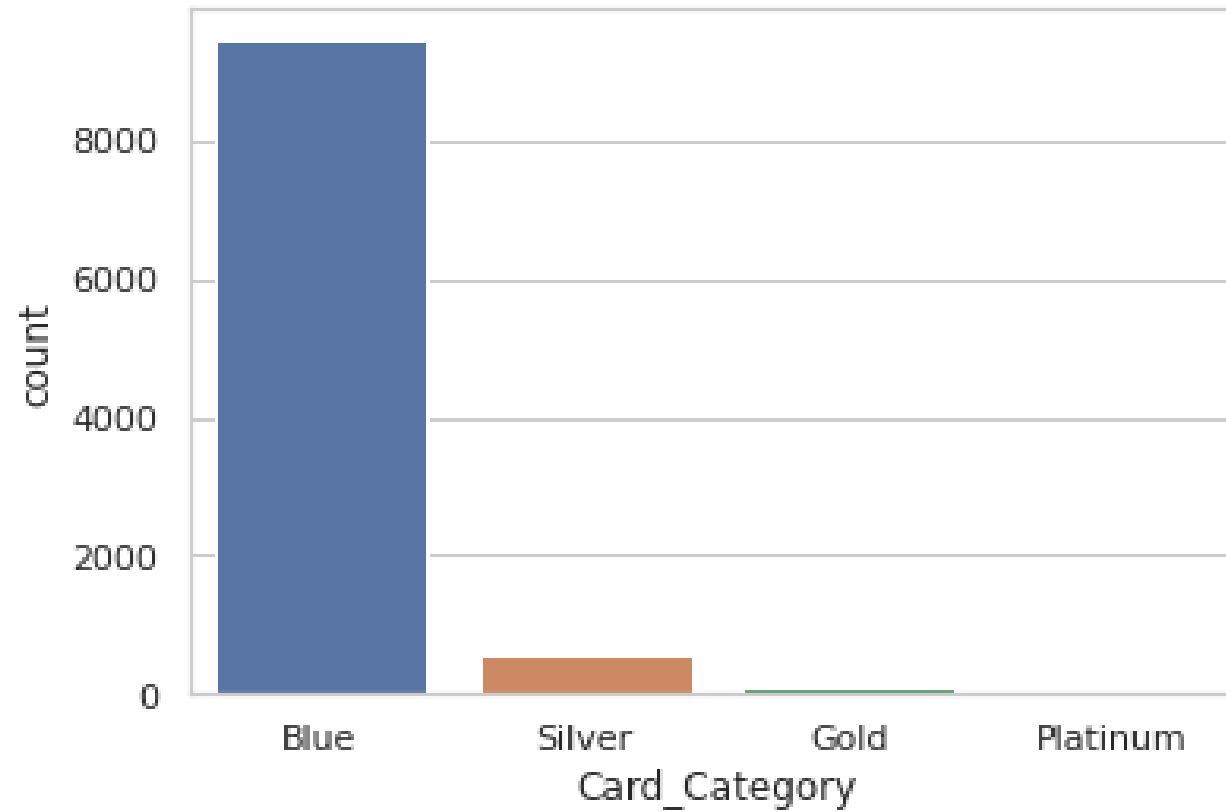
Customer  
Attrition  
Methods



Synthetic  
Minority  
Sampling  
Technique  
(SMOTE)

# Card Category Distribution

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# Results (Silver + Gold)

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## High Positive Correlation (More Silver Customers):

- Existing Customers
- Married
- Lower-Income (0 - \$80,000)
- Dependent Count

## High Negative Correlation (Fewer Silver Customers):

- Attrited Customers
- Female
- High Income (> \$80,000)
- Average Utilization Ratio



Hold on to customers longer



Increase marketing aimed at high-income/highly educated individuals



Advertise to customers with a high average utilization ratio

## Selling High Tier Cards

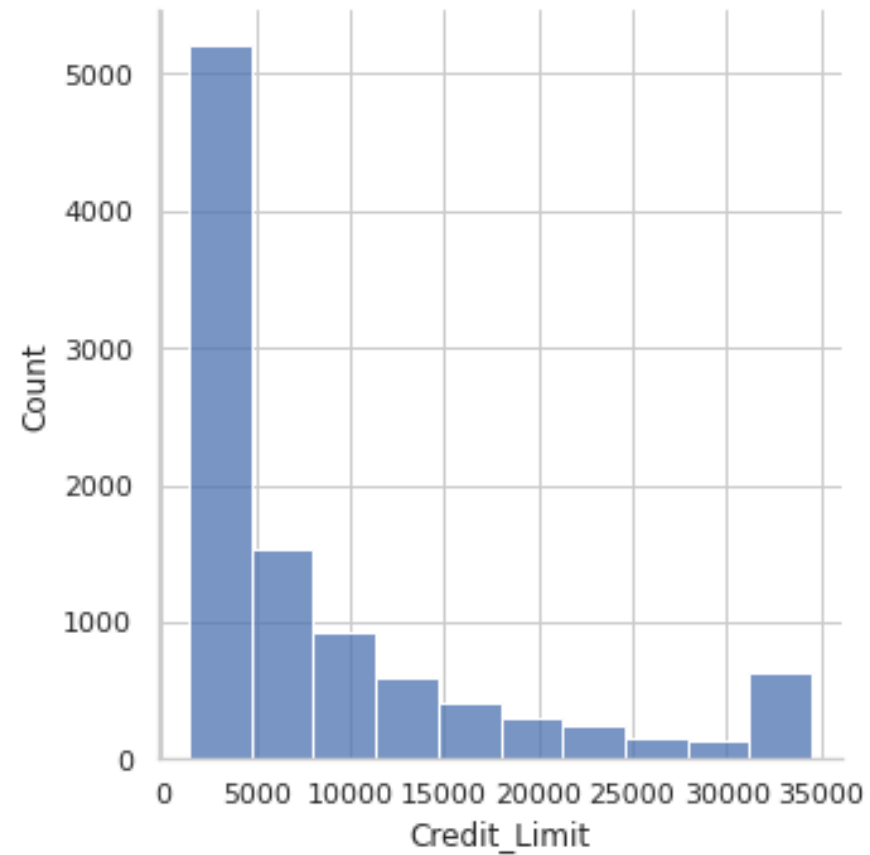
# Credit Limit Analysis

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# Distribution of Customer Credit Limits

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# Methods

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## Ordinary Least Squares Regression

- Logistic Regression Unfit for Numerical Dependent Variable
- Otherwise Similar to Previous Regressions

# Results

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## High Positive Correlation (More Silver Customers):

- High Income (> \$60,000)
- Existing Customers
- Highly Educated Customers
- Higher Tier Card Holders

## High Negative Correlation (Fewer Silver Customers):

- Attrited Customers
- Average Utilization Ratio
- Blue Tier Card Holders
- Lower Income (< \$60,000)

# Can We Predict Credit Limit?

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YES, TO AN EXTENT



OLS REGRESSION RETURNS R-SQUARED VALUE OF 0.611



HIGHER ACCURACY ACHIEVABLE  
THROUGH NN, OTHER ML  
METHODS

# Contact Information

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[EVAN.GLAS@DUKE.EDU](mailto:EVAN.GLAS@DUKE.EDU)

(908) 303-3669