

BUY NOW PAY LATER PROJECT

GROUP 35 -
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PROJECT OVERVIEW AND BUSINESS GOALS

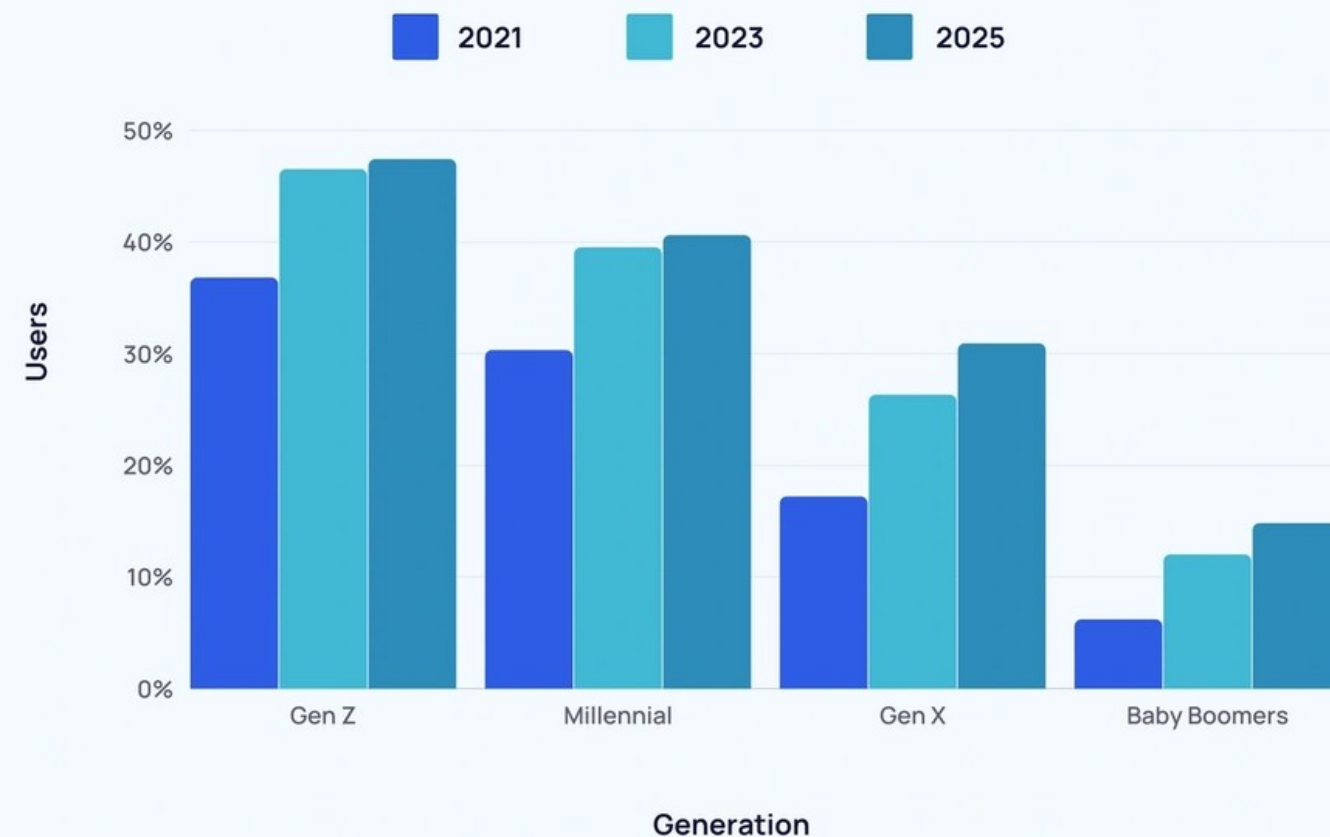
Identifying the top merchants to partner up with to boost our potential revenue over the long term.

Building a ranking system to select the top merchants.



WHY ARE WE DOING THIS?

Almost half of Gen Z are expected to use BNPL by 2025



(Lexop, 2023)

Future of Money

Australia hits buy-now-pay-later sector with consumer credit law

By Byron Kaye and Renju Jose

May 22, 2023 1:53 PM GMT+10 · Updated 4 months ago



Aa



(Kaye & Jose, 2023)

Australia Buy Now Pay Later Market Report 2023: BNPL Payments are Expected to Grow by 20.5% to Reach \$14.241 Billion in 2023 - Forecasts to 2028

(Markets, 2023)



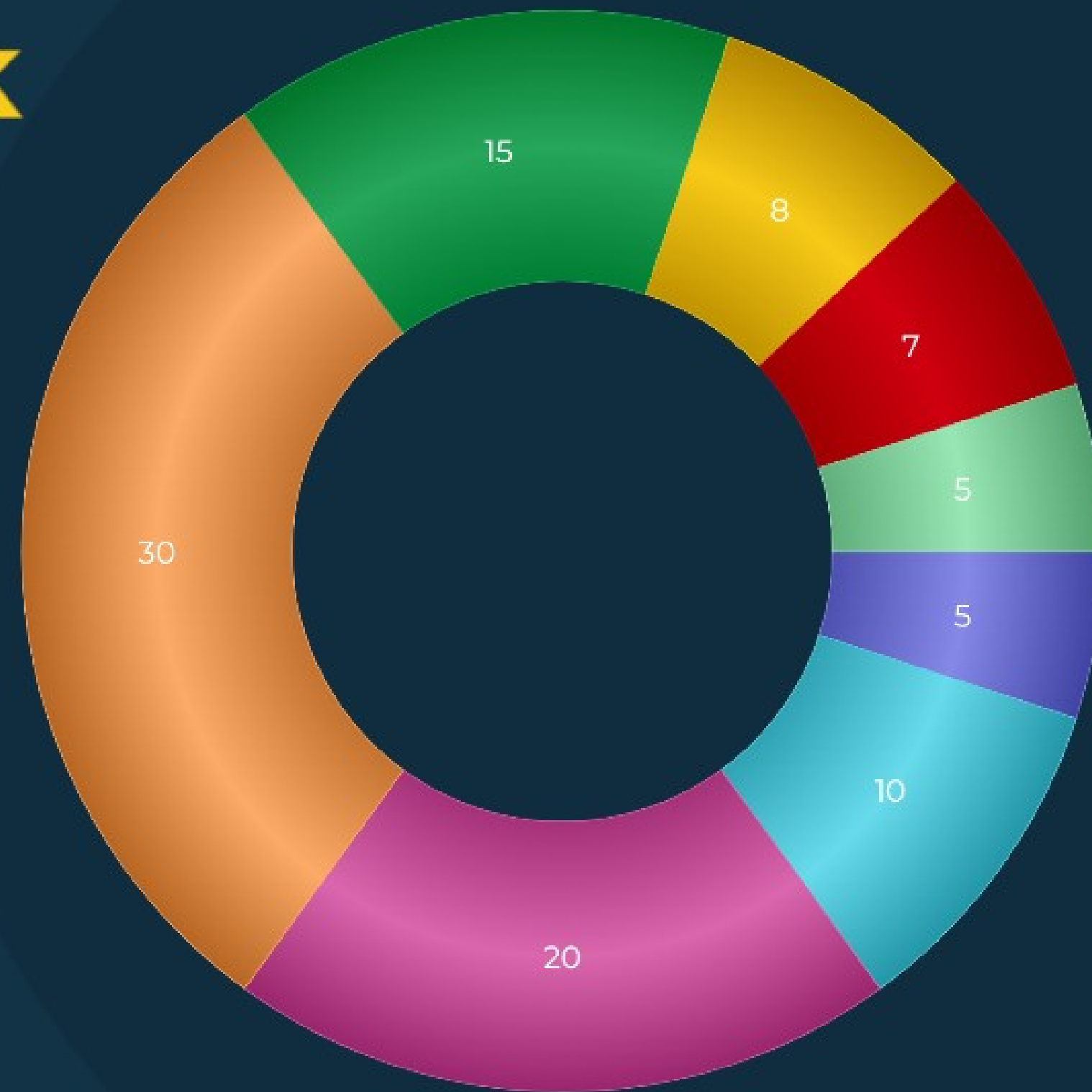


Project Timeline



Hours of Work

~100 Hours



Communication Methods



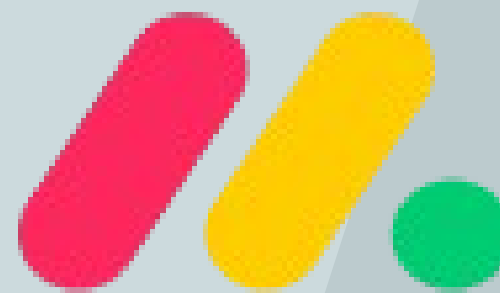
Discord



Weekly
Meetings

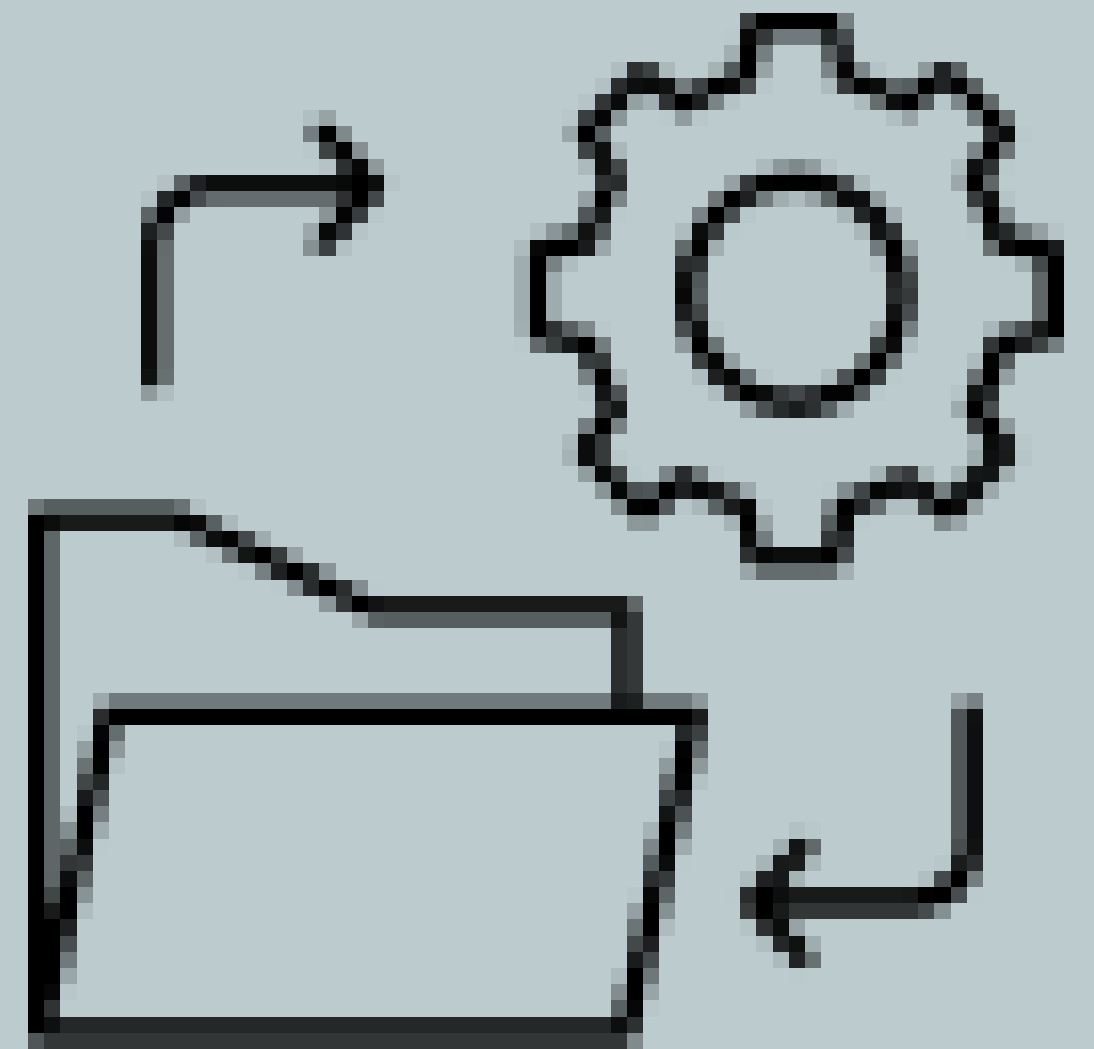


Messenger



Monday.com

Data Retrieval and Preprocessing



Security and Privacy

- Used a private GitHub repository
- Only used our own local devices
- No API Keys or Webscraping was used
- All external datasets were free to use



DATASETS ANALYSIS

Dataset	Records
SA2 Postcode Data	35,040
Merchant Data	4026
Consumer Data	34864,499999
Transactions Data	11304935

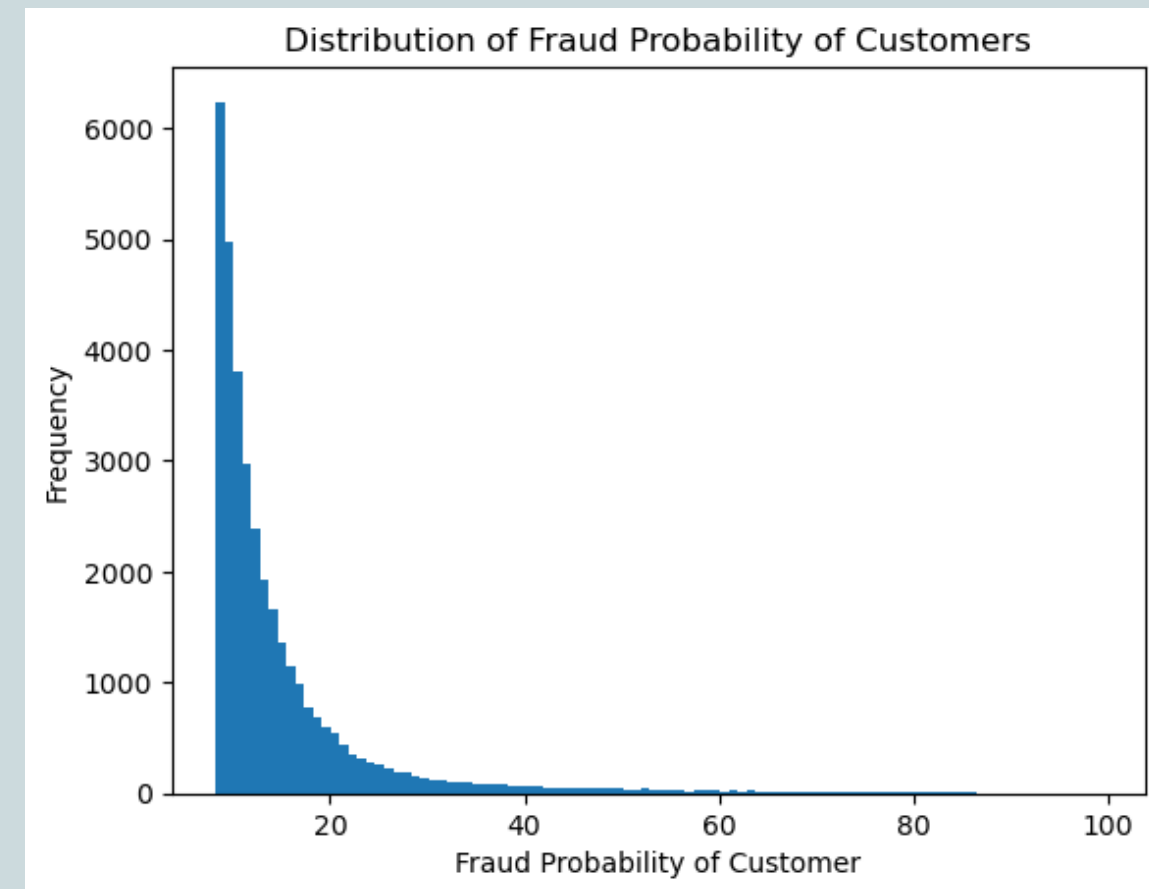
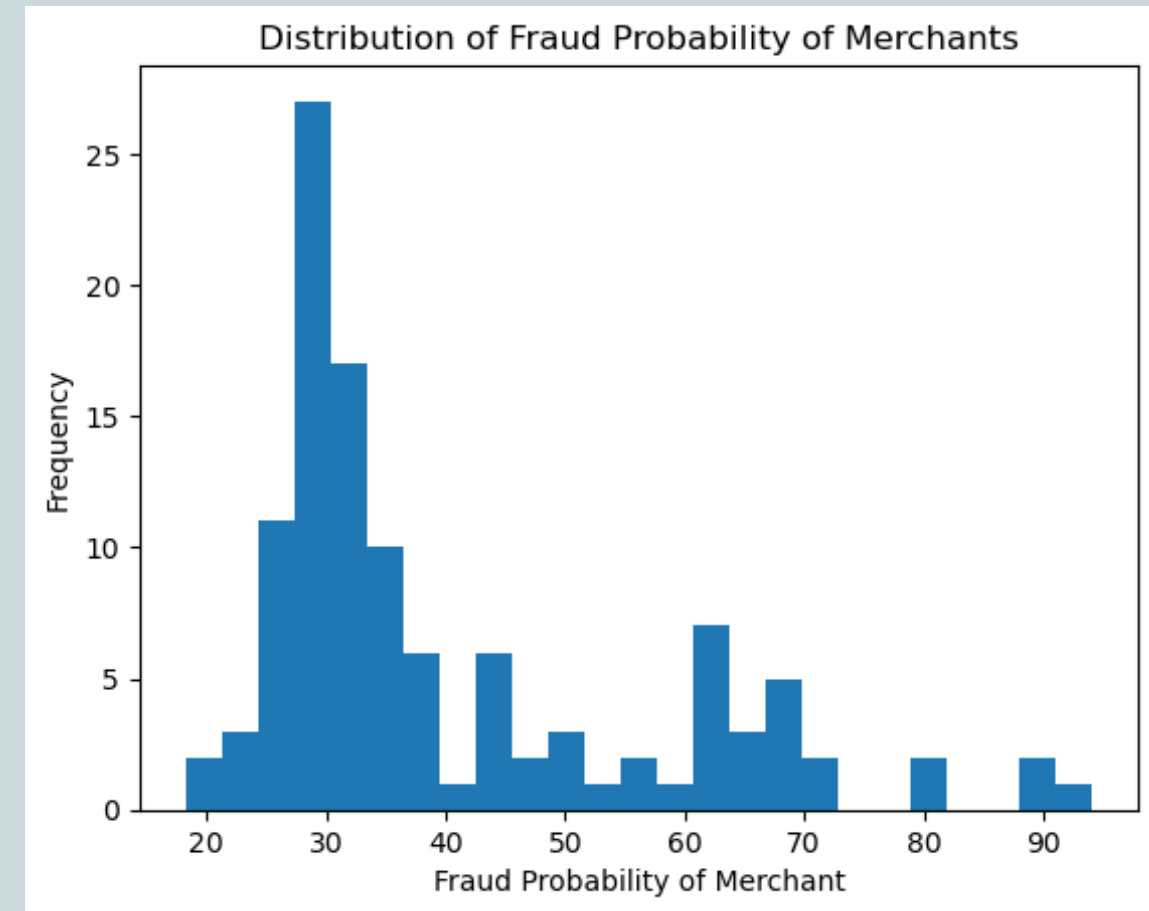
Assumptions



- Transactions above 2000 are not eligible for BNPL services (Treasury, 2022)
- SA2 Missing Postcode data

Initial Analysis

- The wide distribution of Consumer and Merchant fraud indicates that these features could be useful in selecting merchants
- In later steps we averaged the consumer fraud for all merchants.



ETL



Clean data and
remove invalid
records



Join Consumer and
Merchant Data
with transactions



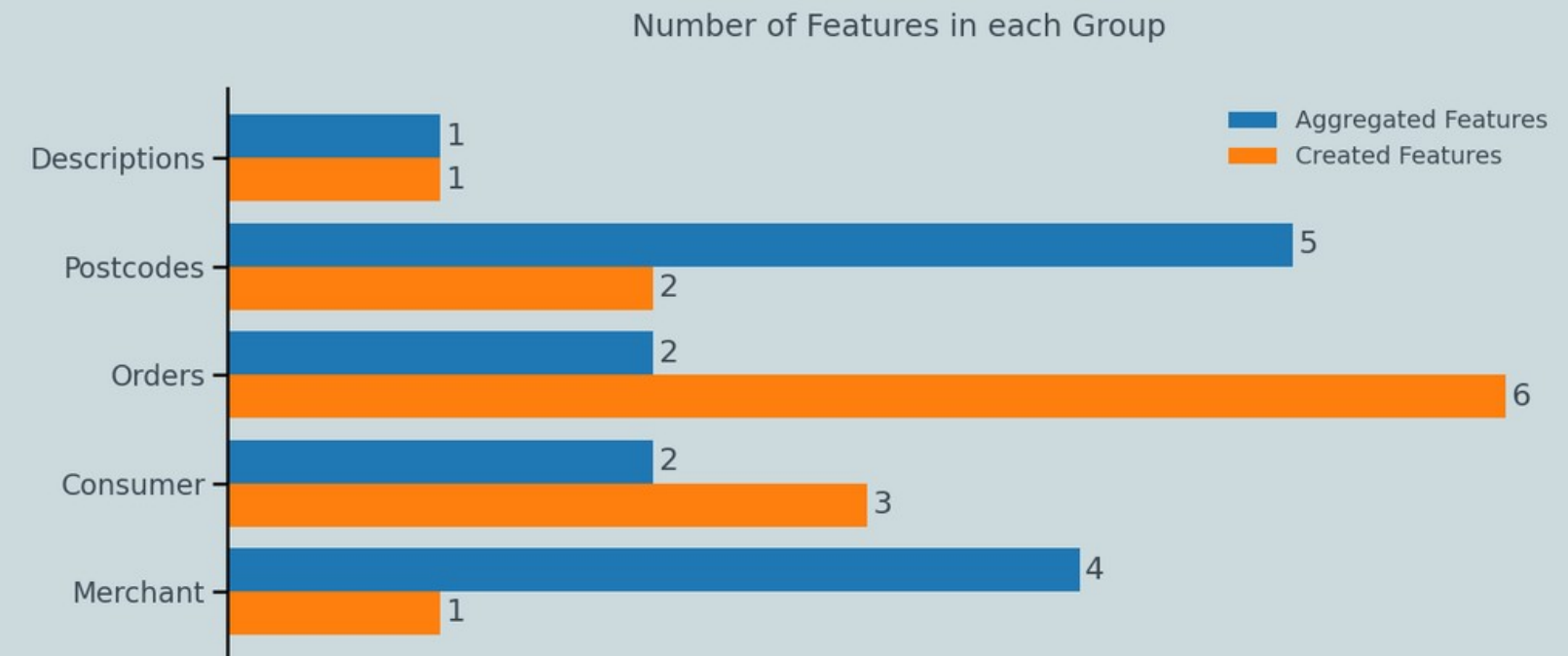
Join consumer
data with census
data on postcode

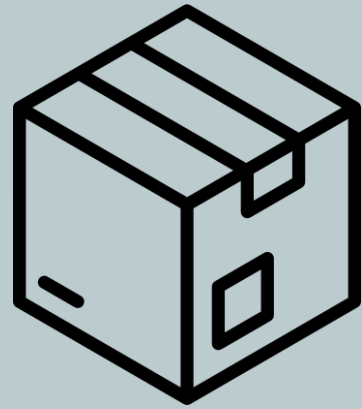


Join all the data
together

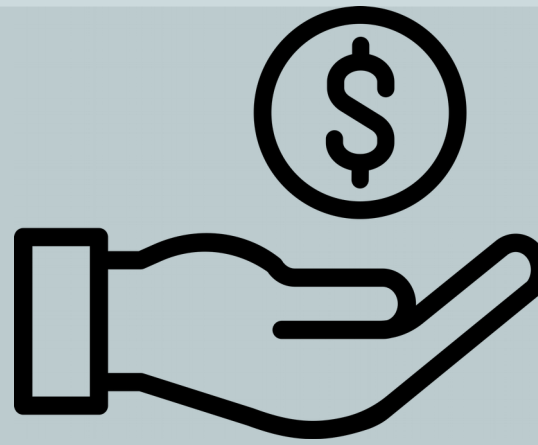
Aggregation and Feature Engineering

- Aggregated 14 Features
- Feature Engineered 13 Features
- One feature was created by Machine Learning

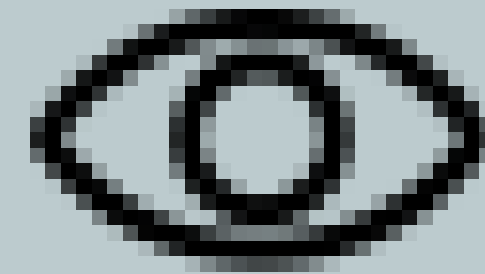




Average Cost of an
Order



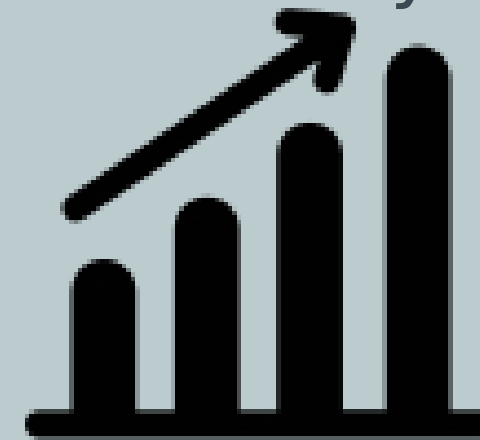
Maximum Earnings



Predicted Number of Customers in 3
years



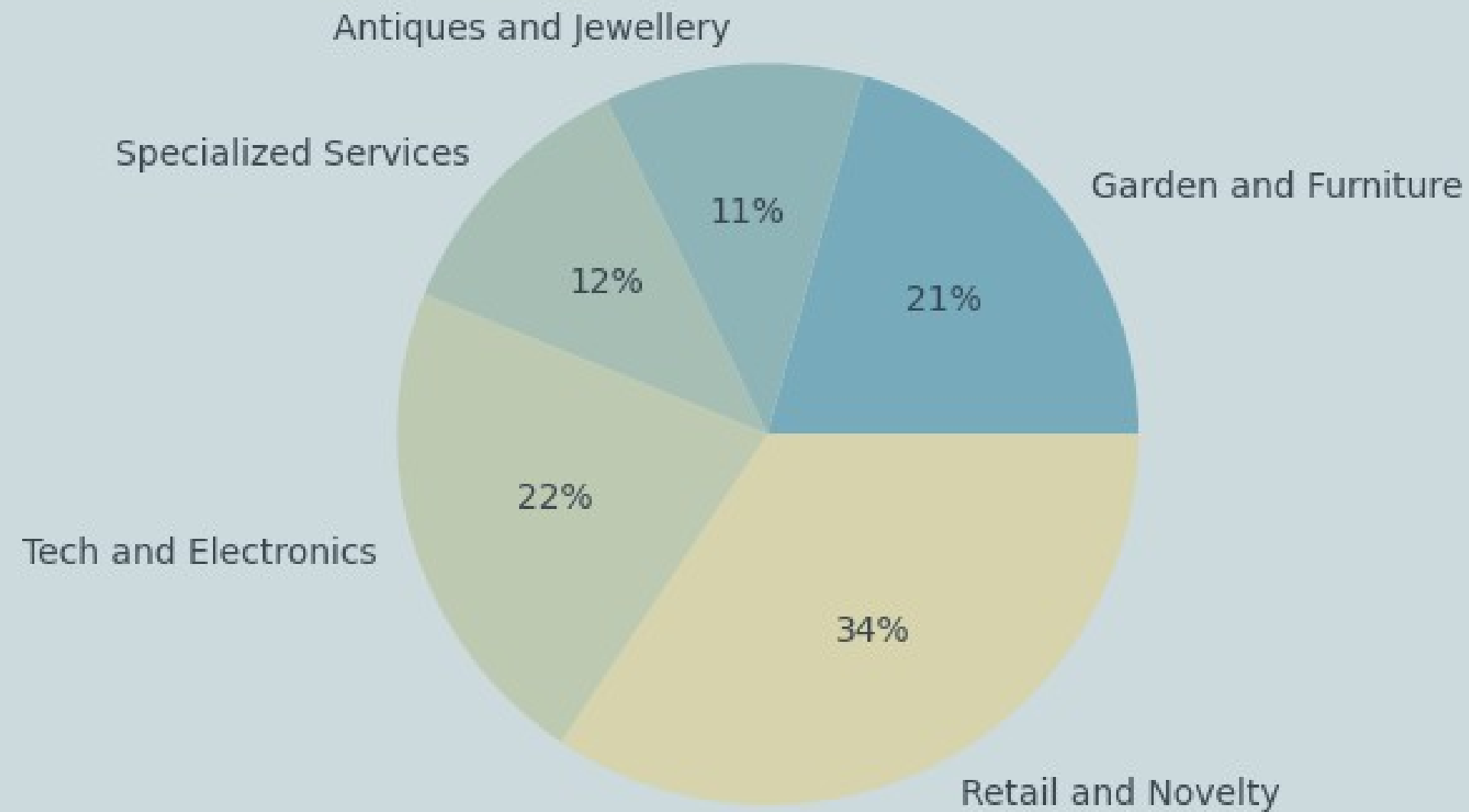
Average amount a customer
spends



Average Growth of Consumers per
Month

SEGMENTS

Number of Merchants in Each Segement

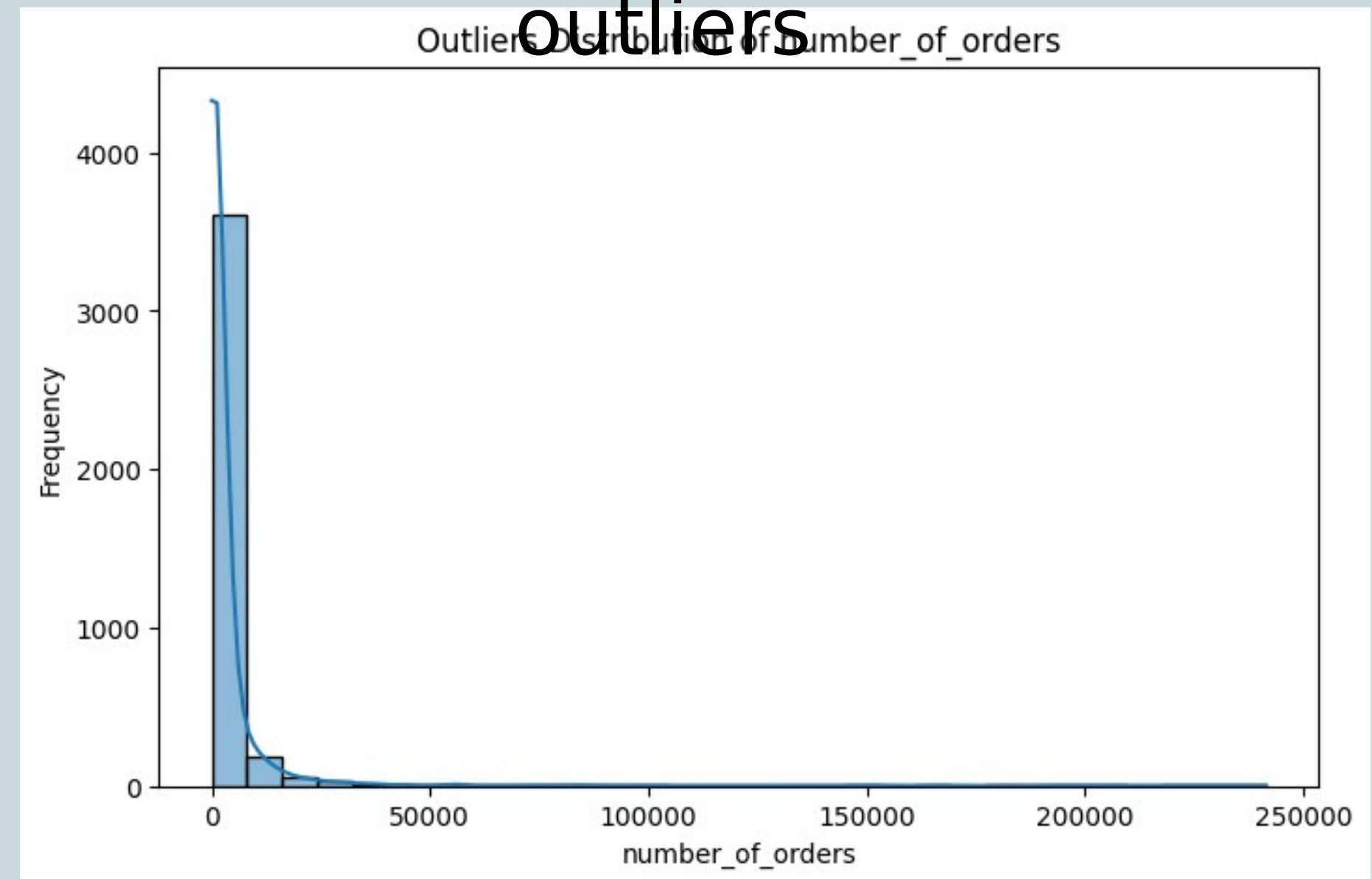


Outlier Removal

- Merchants with extremely low unique consumers were removed
- We saw improvements in distributions once these outliers were removed.



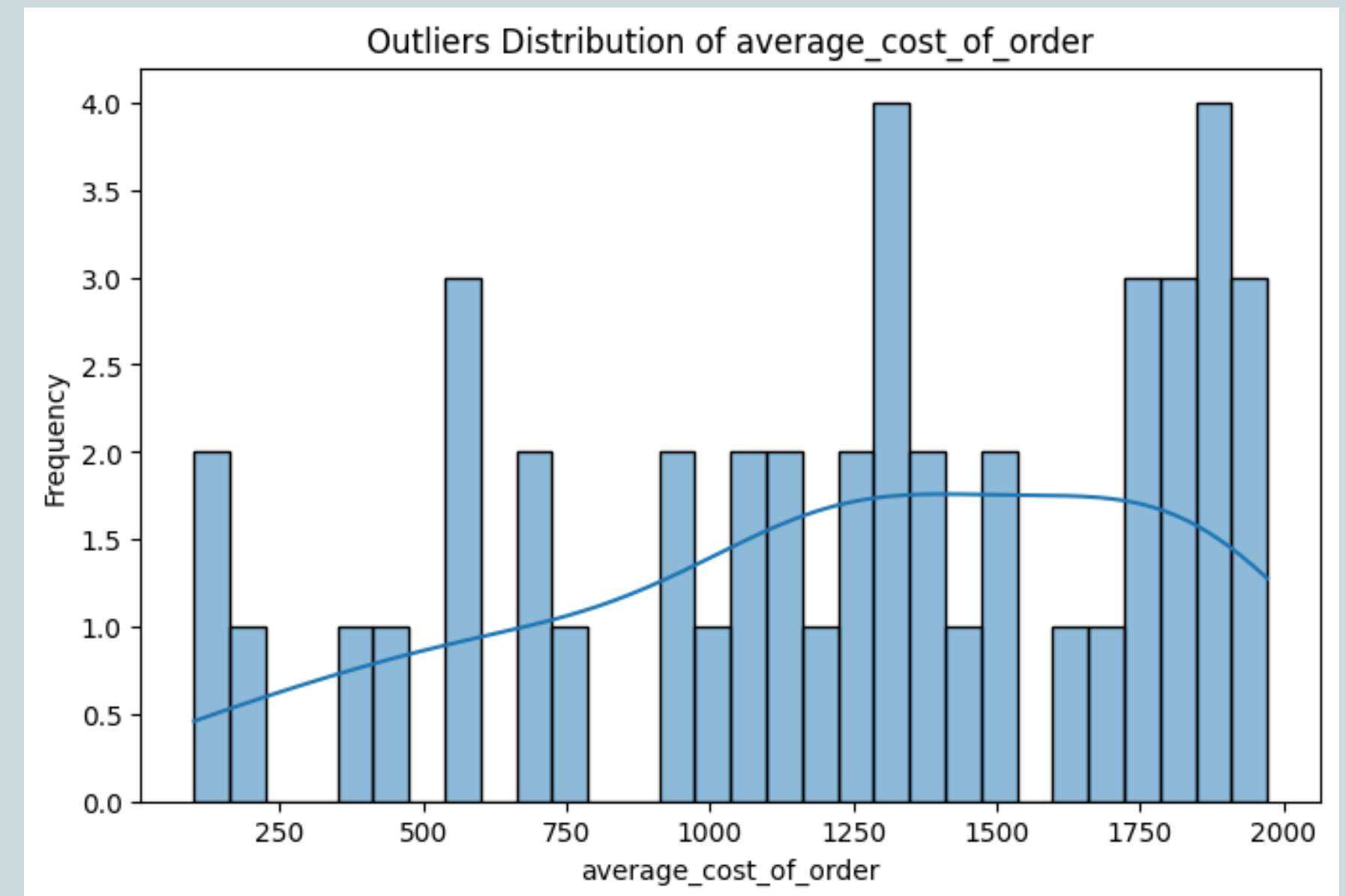
Before removing
outliers



Outlier Analysis



- High average cost of order leads to lower unique consumers/orders
- Relatively low consumer and merchant fraud



Ranking System Design

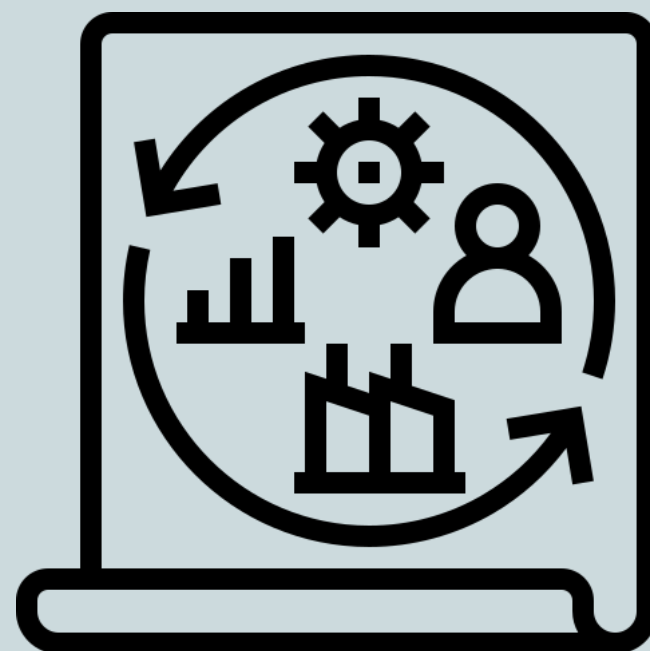


FEATURE IMPORTANCE

We ordered our features based on importance and used this to determine weights for each of the features



Finally we used these weights to calculate a weighted sum for each merchant



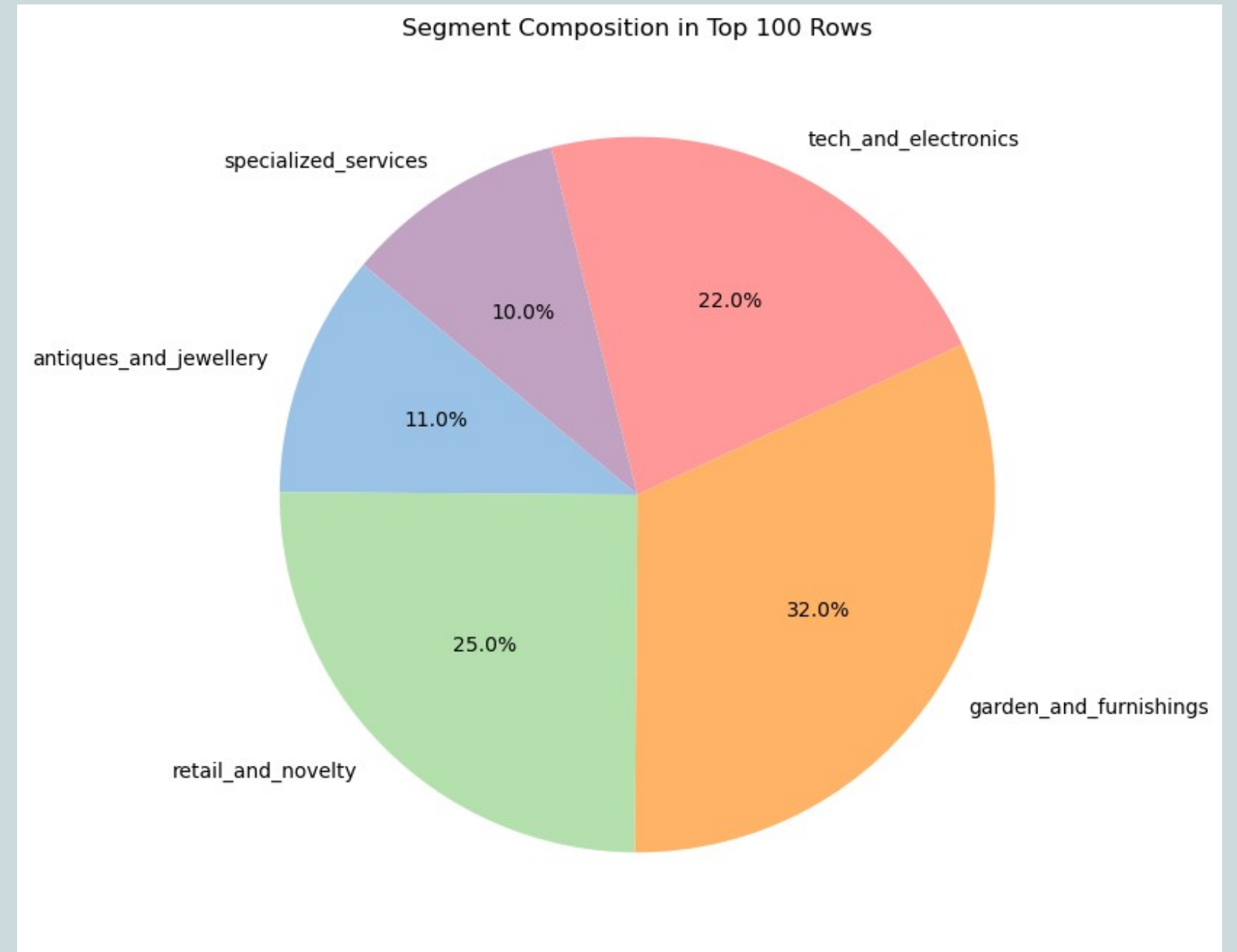
Unwanted features such as fraud probabilities were given negative weights



Ranking System Insights



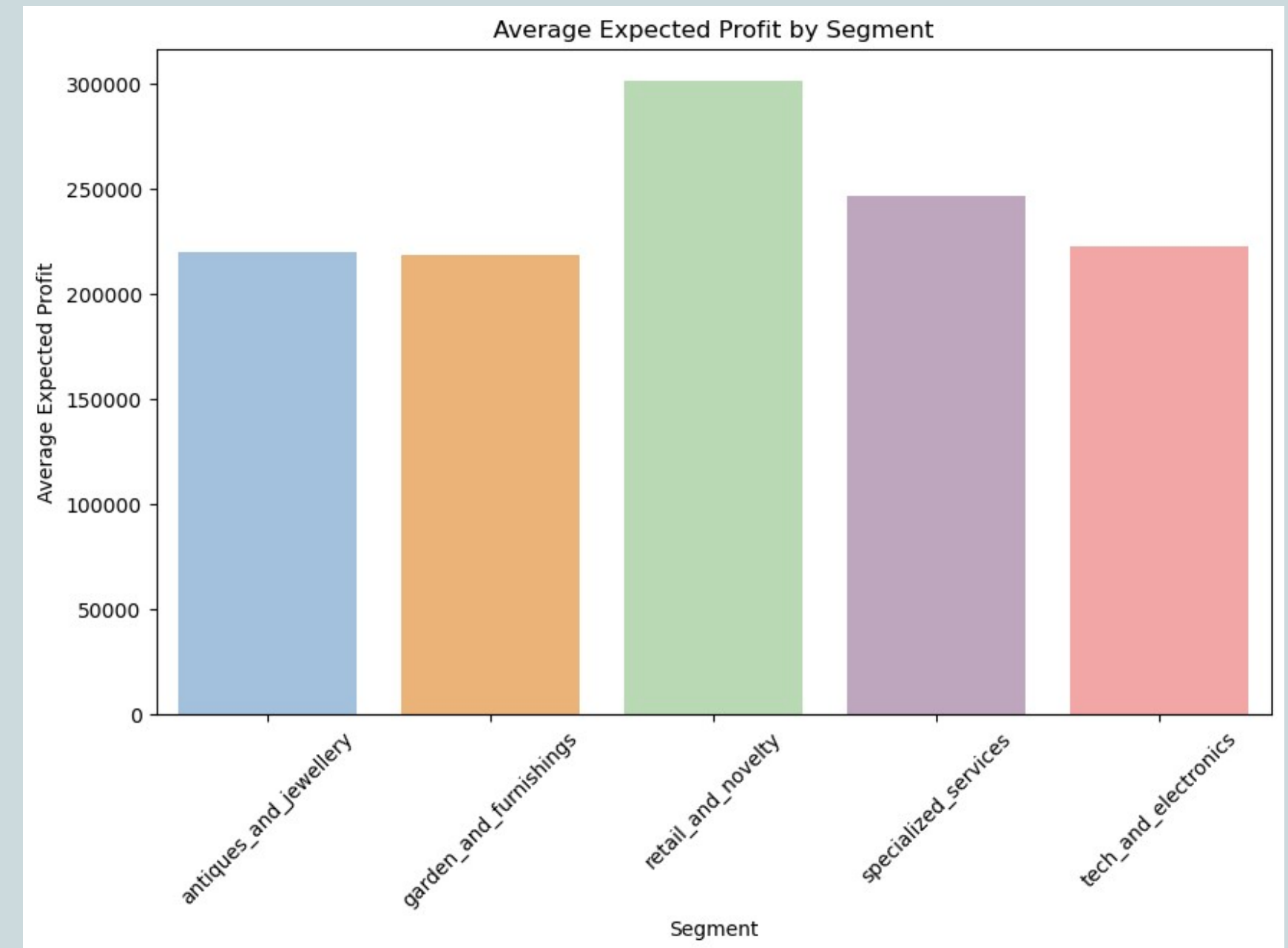
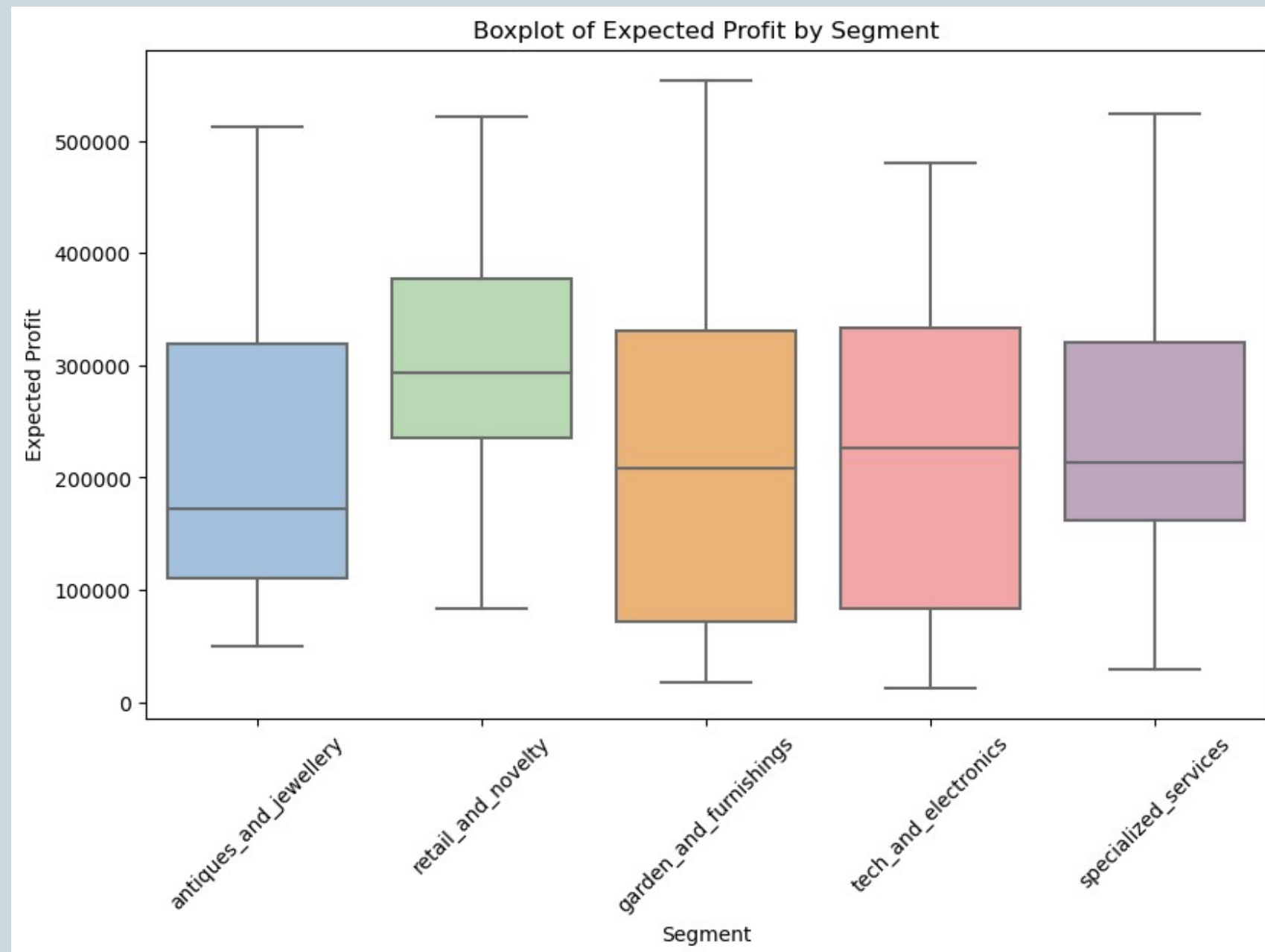
Top 100 Merchant Segments



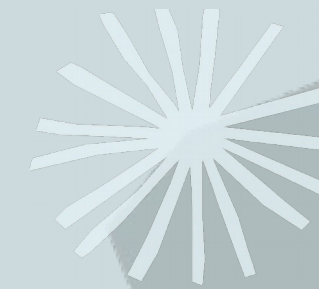
Expected

We found the expected profit by multiplying the merchant's take rate by the total sum of the transactions that came from a specific merchant

Profits



Recommendations



Top Performer

Leo in Consulting

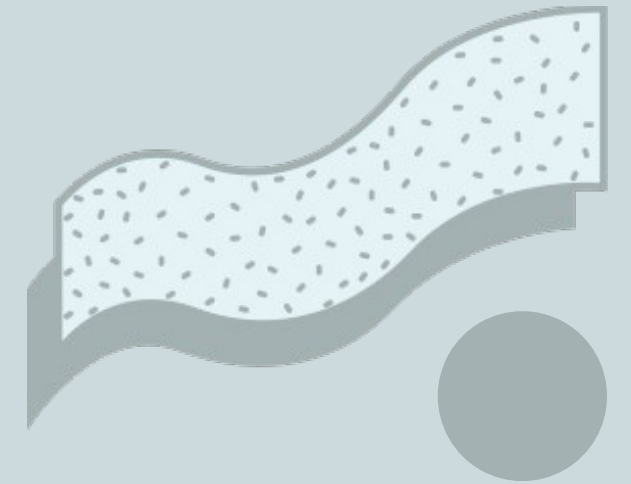


High Predicted Profits

Predicted Growth

Low Fraud

Merchant Onboarding



The top 100 would have been profitable (minimum \$10,000)

Minimal fraud risk (less than 3% average)

All companies are expected to maintain current customer base (predicted change -3% to 7%)

Business Benefits of Ranking System

1

Revenue Generation
Through Enhanced Merchant
Selection

2

Data-Driven
Marketing
Opportunities

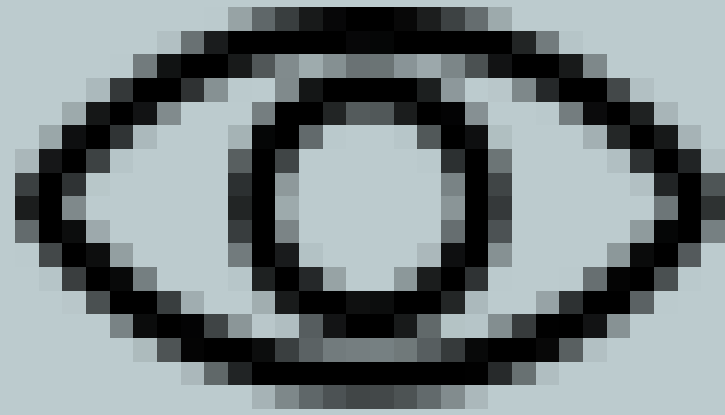
3

Increased Customer
Trust and Loyalty

Future Improvements and Conclusions



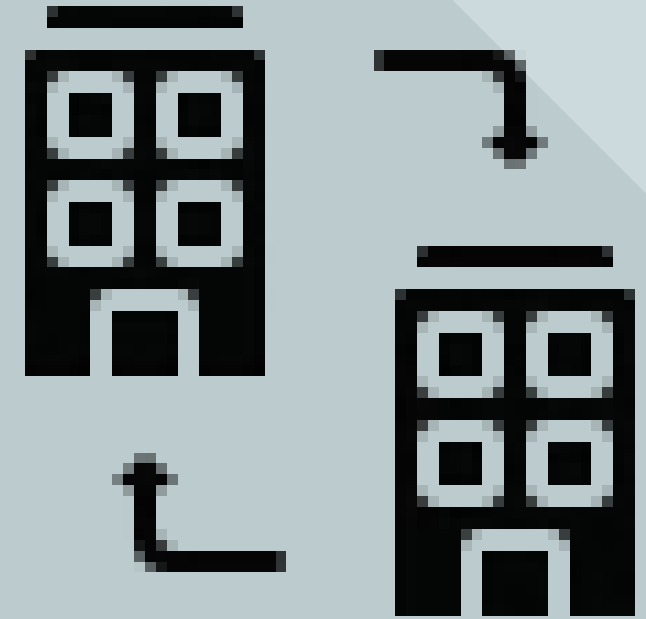
Going Forward



Developing More Modeled
Features



Creating Better Weights For
Ranking



Incorporating More
Merchants

References

Kaye, B., & Jose, R. (2023, May 22). Australia hits buy-now-pay-later sector with Consumer Credit Law. Reuters.
<https://www.reuters.com/technology/australia-regulate-buy-now-pay-later-sector-2023-05-21/>

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