TheAnalyticsTeam

# Sprocket Central Pty Ltd

## Data analytics approach

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# Agenda

1. Introduction
2. Data Exploration
3. Model Development
4. Interpretation

# Introduction

**Place headline insight or information here. This should be the most important point for this slide.**

- 1000 potential customers do not have prior transaction history
- Generate useful customer insights
- Optimize resource allocation for targeted marketing.
- Focus on high value customers

Generate useful customer insights
- Optimize resource allocation for targeted marketing.
- Focus on high value customers

## Data Cleaning and Quality Assessment

**Data Quality Assessment Standards:**

- Accuracy: Correct Values

- Completeness: Data Fields with Values

- Consistency: Value Free From Contradiction

- Currency: Values Up to Date

- Relevancy: Items with Value Meta-data

- Validity: Data Containing Allowable Values

- Uniqueness: Duplicated Records

# Customer Age Distributions

- Most customers age around 40 to 49 years old

- The least popular groups are 10 to 19 and 70 years old and above

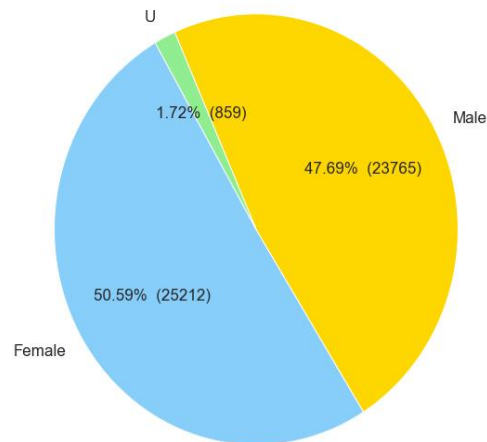- Popular shoppers tend to be between 20 to 69 years old



New Customer Age Groups



Old Customer Age Groups
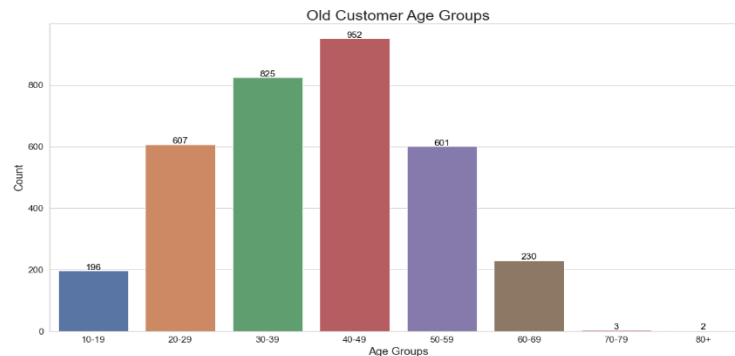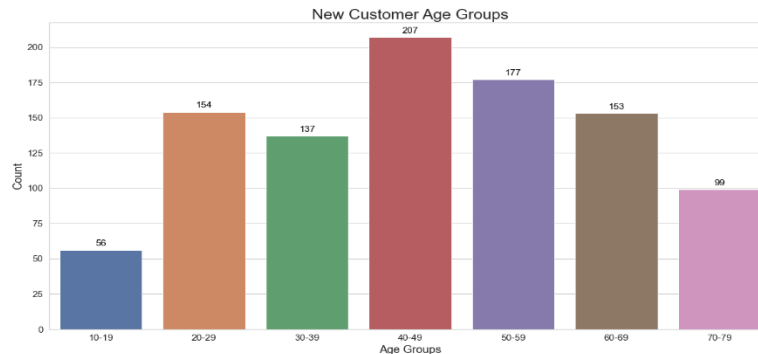
## Purchases in the Past 3 Years By Gender

- Customer gender demographic evenly spread between male and females

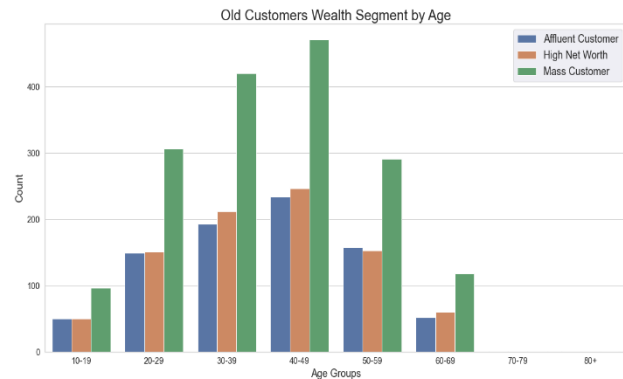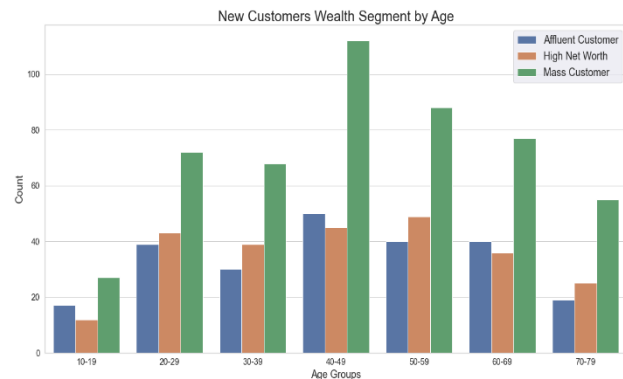- Females make up majority of the bike purchases in the past three years

New Customer Total Bike Related Purchases For The Past 3 Years By Gender

# Wealth Segmentation By Age

- Most customers are labelled as Mass Customer

- More customers labelled as High Net Worth than Affluent by a small margin



New Customers Wealth Segment by Age

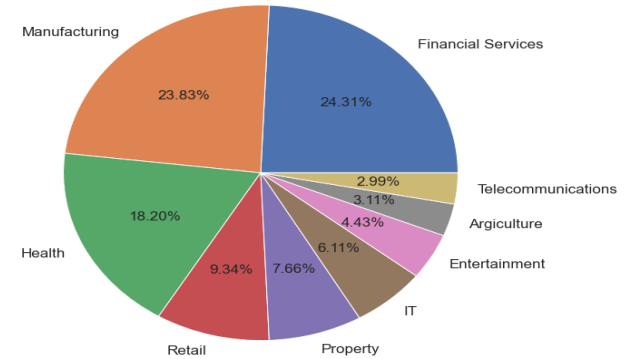

Old Customers Wealth Segment by Age
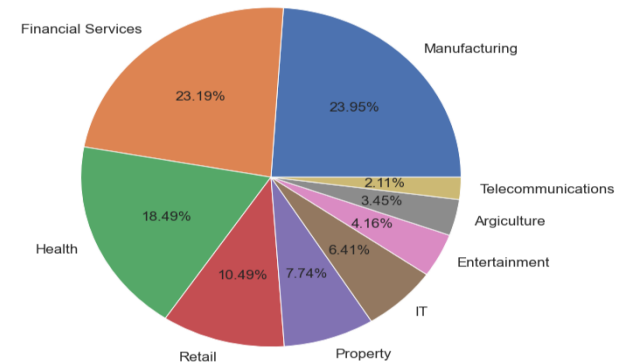
# Data Exploration

## Job Industry Distribution

- Top three job industries that customers work in are financial services, manufacturing, and health respectively

- Least popular job industries are telecommunications, agriculture, entertainment, and IT



New Customer Job Industry Category Distribution



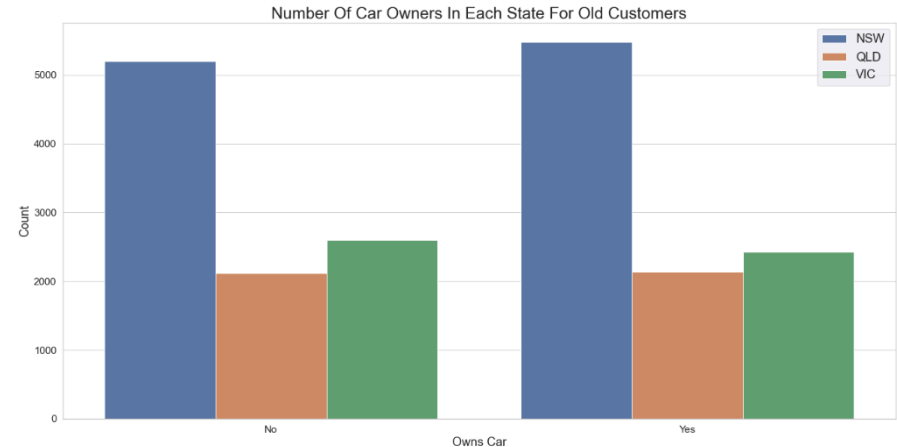Old Customer Job Industry Category Distribution

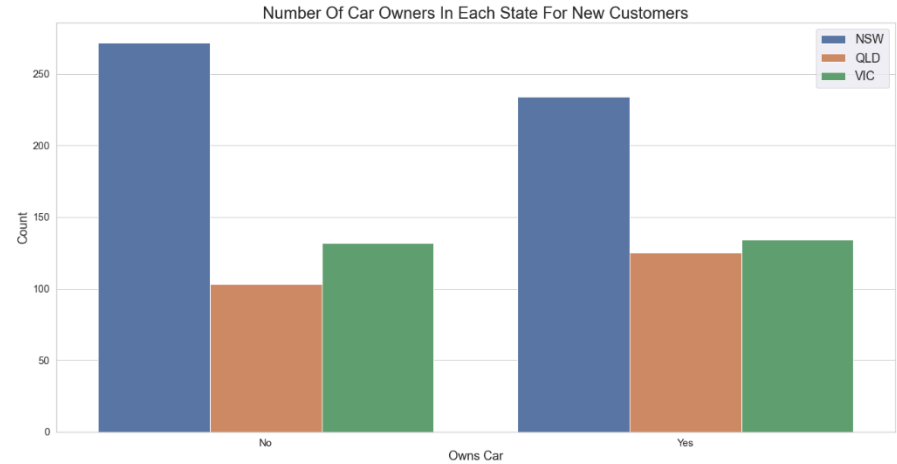# Car Ownership By State

- Most customers from New South Wales (NSW) don't own a vehicle

- Could allocate more resources on the NSW region



Number Of Car Owners In Each State For New Customers



Number Of Car Owners In Each State For Old Customers

## Recency, Frequency, Monetary (RFM) Analysis

- RFM measures customers' behavior
- Frequency and Monetary affects customer lifetime value
- Recency affects customer retention
- Classified into four groups by their RFM score from highest to lowest respectively: Platinum, Gold, Silver, and Bronze

| customer_title | title_description | count |
|---|---|---|
| Platinum | bought more often and spent the most | 792 |
| Gold | bought relatively often and spent large amount... | 878 |
| Silver | average purchase frequency and average spendin... | 813 |
| Bronze | very low recency, frequency and money spent | 1010 |

## Recency vs Monetary

- Platinum customers bought more recently and spent the most money
- Negative correlation between recency and monetary
- The less recent the last purchase is, the less profitable the customer
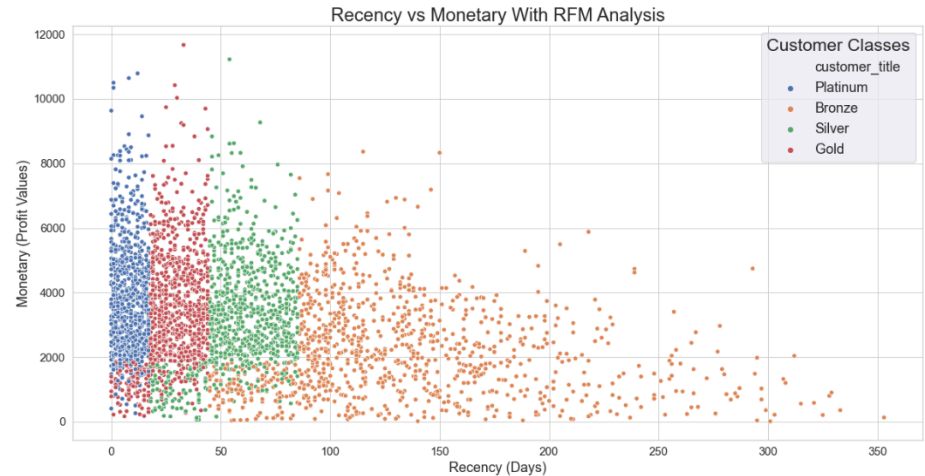
# Recency vs Frequency

- Platinum customers bought more recently and frequently than other groups
- Negative correlation between recency and frequency
- The less recent the last purchase is, the less frequent the customer buys



Recency vs Frequency RFM Analysis
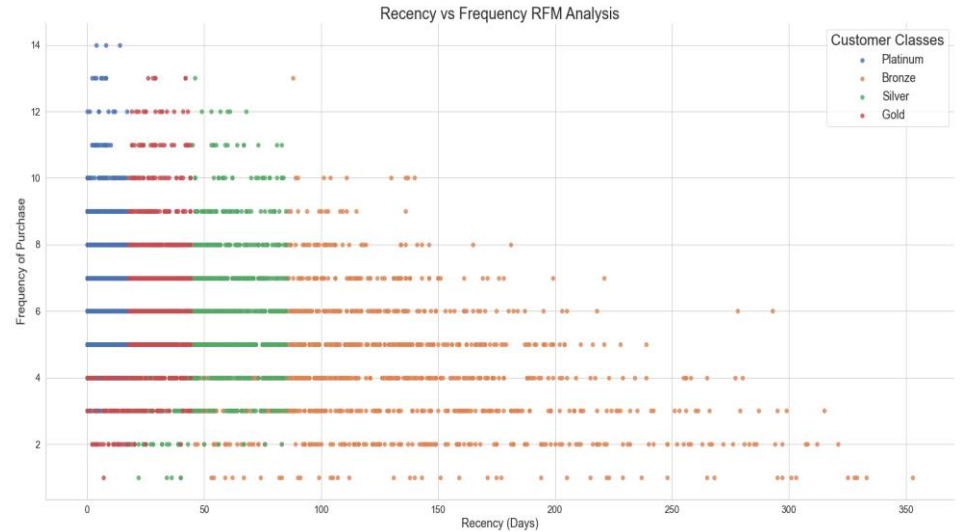
# Frequency vs Monetary

- Positive correlation between recency and monetary
- Business should expect higher monetary gains, the more frequently the customer buys



Frequency vs Monetary RFM Analysis
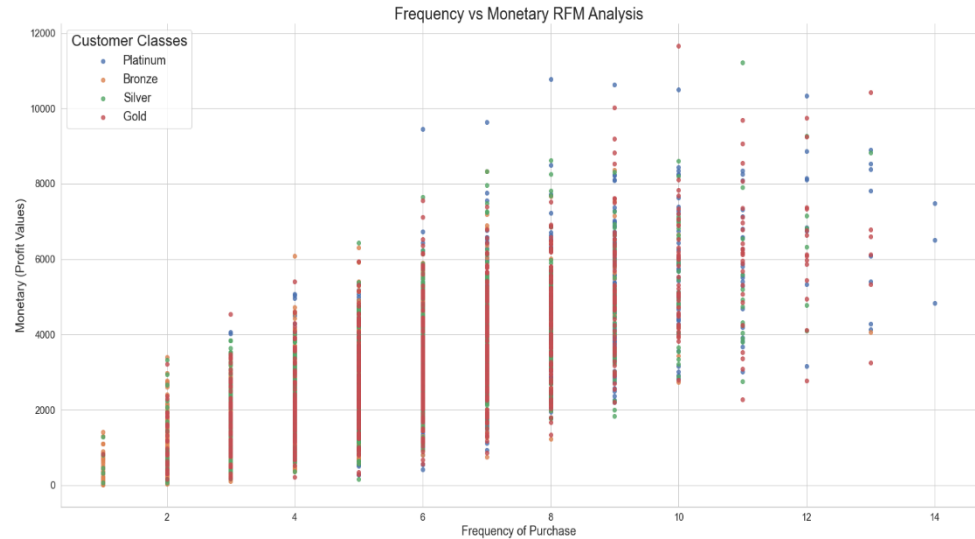
## Target Market

- Sprocket should filter out the customers based on RFM score as they tend to be the most valuable customers for the business
- Most of the customers work in financial services, manufacturing, and health sectors
- Most of the customers are aged between 40-49 years old
- Target New South Wales (NSW) as most customers do not own a vehicle and will more likely to purchase bikes

| customer_id | RFM_score | customer_title | customer_age_group |
|---|---|---|---|
| 1460 | 444.0 | Platinum | 40-49 |
| 725 | 444.0 | Platinum | 50-59 |
| 2130 | 444.0 | Platinum | 20-29 |
| 2992 | 444.0 | Platinum | 40-49 |
| 753 | 444.0 | Platinum | 40-49 |
| ... | ... | ... | ... |
| 139 | 344.0 | Gold | 50-59 |
| 760 | 344.0 | Gold | 30-39 |
| 2986 | 344.0 | Gold | 30-39 |
| 2985 | 344.0 | Gold | 30-39 |
| 765 | 344.0 | Gold | 30-39 |

1000 rows × 3 columns

# Appendix