

TheAnalyticsTeam

# Sprocket Central Pty Ltd

Data analytics approach

[Division Name] - [Engagement Manager], [Senior Consultant], [Junior Consultant]

# Agenda

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

# Introduction

## **RFM score model helps segmenting customers and better target at valuable groups**

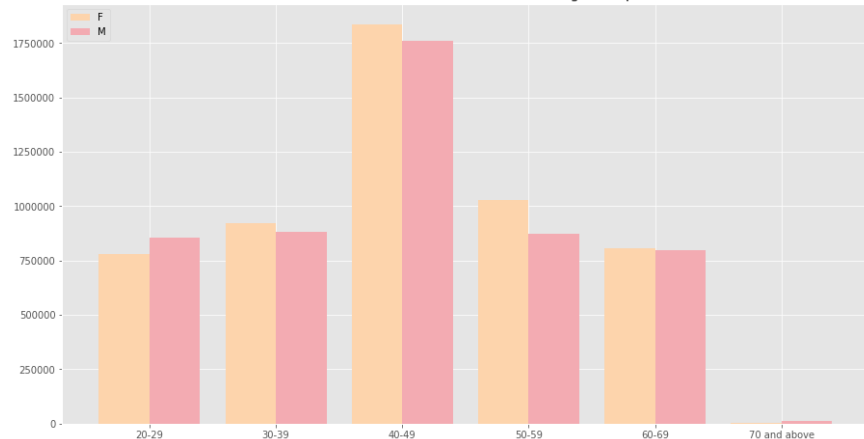
In this project, based on the transaction and customer demographic data Sprocket LTD provides, we explore which gender, age groups and industries will bring more profit to the company. After connecting transaction data and customer demographic data, we assign every customer with proper RFM score, based on which build an RFM model to segment customers. With tier 1 and tier 2 valuable customer groups, we can analyze the demographic information of these customers, thus we can choose the right customers to target and lower the cost of reaching customers but still make profits.

# Data Exploration: Dimension 1 – Gender and Age Group

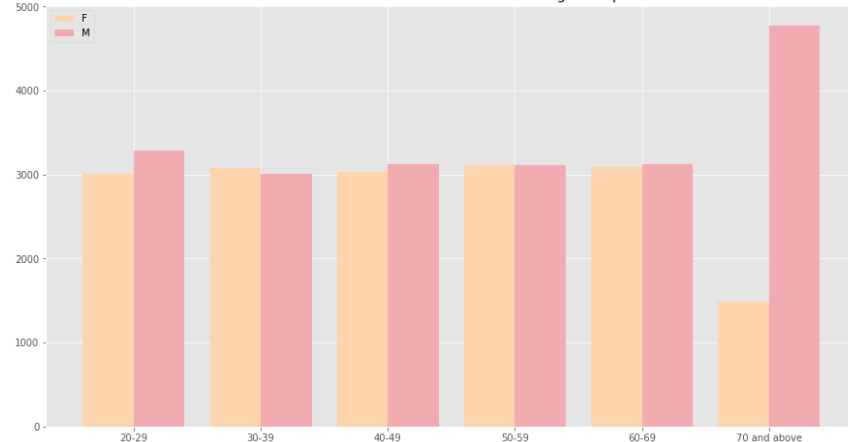
**Customers of 40-49 make the highest profit in total, male customers make more profit than female in average.**

Sprocket LTD has most customers in the age group of 40-49, including 609 females and 563 males, resulting in the highest profit among all age groups. In average, customers of all age groups except 70 and above make similar profits.

Profit for Male and Female of Different Age Groups



Profit for Male and Female of Different Age Groups

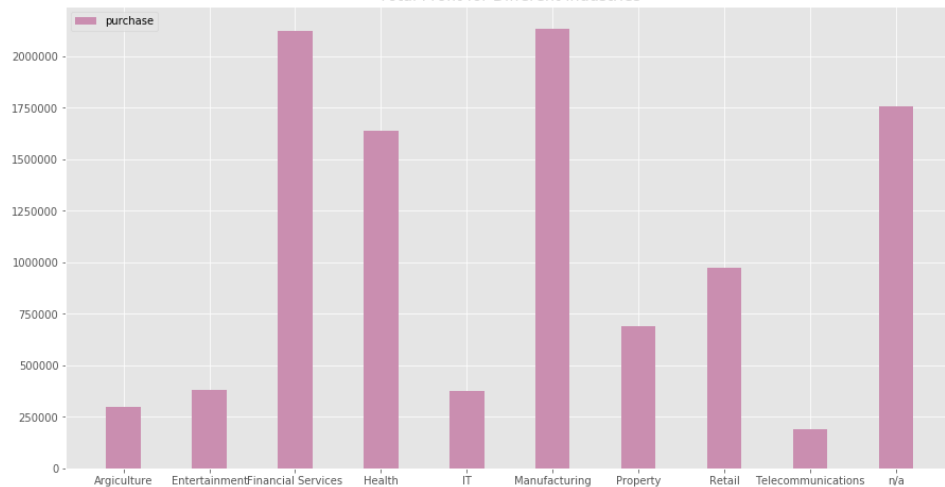


## Data Exploration: Dimension 2 – Industry

**Customers of financial service and manufacturing make the highest profit in total, all industries make similar profit in average.**

Sprocket LTD has most customers in financial service (680) and manufacturing (700), followed by health (526). In average, customers of all industry groups make similar profits.

Total Profit for Different Industries



Average Profit for Different Industries

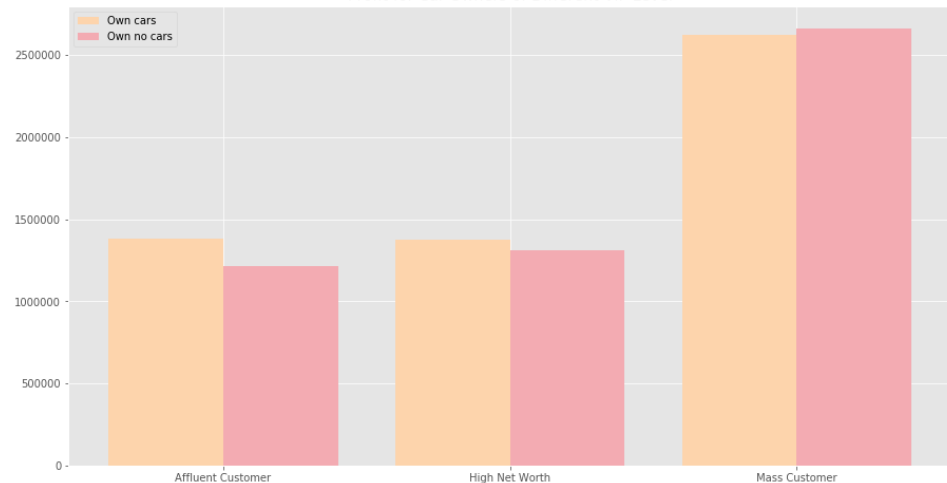


## Data Exploration: Dimension 3 – VIP level and car owning

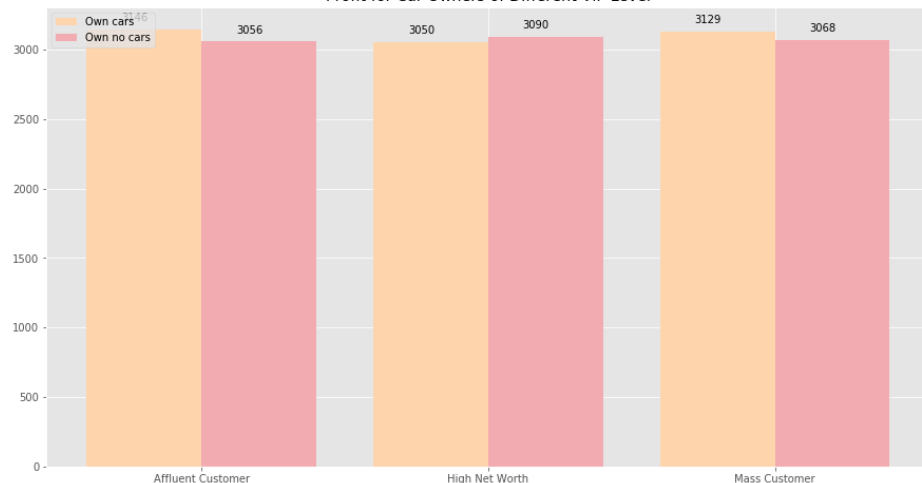
**Whether owning cars or not doesn't influence customers' interest in getting bikes. The classification of customer value is not accurate.**

In average, customers in all value groups, regardless of owning cars or not, make very similar to each other. Sprocket LTD doesn't have to target specifically at people without cars. Over 50% customers are classified as *Mass Customer* thus make the profit of this group highest among all. In average, *Mass Customer* differentiates little with another two groups.

Profit for Car Owners of Different VIP Level



Profit for Car Owners of Different VIP Level



# Model Development – RFM Model

## Constructing 4-quantile RFM model

Recency – how many days have passed since the customer made the last purchase

Frequency – how many purchases the customer has made in total in 10 years (considering bikes are durables, the time duration could be expanded)

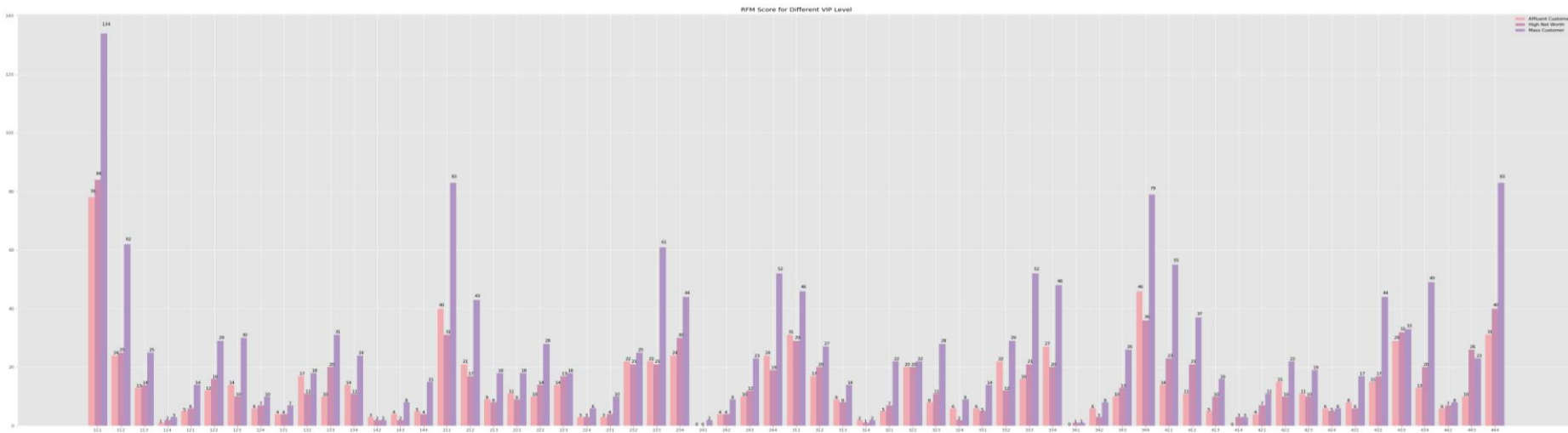
Monetary – how much profit has been made by the customer in total in 10 years

After calculating all the recency, frequency, monetary value for customers, sort all values of the three dimensions from the highest to the lowest respectively, assign 1-4 based on the rank of the value (e.g. customers with top 25% of monetary spent at Sprocket LTD will be assigned 1 for monetary score). Combine the R score, F score and M score to get RFM score for every customers. Segment all the customers into 64 groups based on their RFM score.

# Model Development – RFM Model

## 4-quantile RFM score groups to select those with low *Affluent Customer* ratio of content

The purple bar represents *Mass Customer*, rose – *High Net Worth* and pink – *Affluent Customer*. The groups containing more than 60 members in total and over 50% *Mass Customer* or over 30% *High Net Worth* (equally: less than 20% *Affluent Customer*) customers are considered valuable profitable





# Interpretation

## Tier 1 valuable RFM group – with less than 20% *Affluent Customers*

133, 333, 411, 412, 432, 434

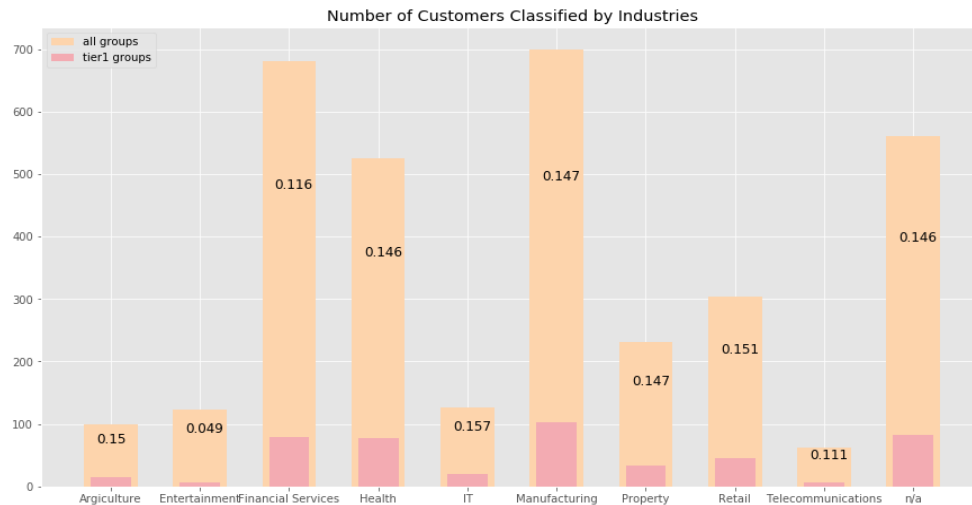
average year: 44.9

female rate: 0.529

male rate: 0.471

The most customers in tier 1 valuable groups are in age 40-49.  
More proportion of customers in tier 1 are from health and manufacturing industries comparing to financial services entertainment.

Age group	Number of customers	Ratio to all tier groups	Ratio to all age groups
10-29	66	14.07%	12.69%
30-39	87	18.55%	14.64%
40-49	163	34.75%	13.96%
50-59	87	18.55%	14.24%
60-69	66	14.07%	12.77%
> 70	0	0	0



# Interpretation

## Tier 2 valuable RFM group – with more than 50% *Mass Customers* or more than 30% *High Net Worth* customers

232, 234, 312, 322, 433

112, 211, 212, 233, 244, 334, 444

average year: 44.45

female rate: 0.519

male rate: 0.481

The most customers in tier 2 valuable groups are in age 40-49, which is similar to the situation in tier 1. Comparing to the distribution of industries in all groups, more proportion of agriculture, retail and property customers are in tier 2.

Age group	Number of customers	Ratio to all tier groups	Ratio to all age groups
10-29	180	15.25%	34.62%
30-39	225	19.07%	37.88%
40-49	404	34.23%	34.59%
50-59	194	16.44%	31.75%
60-69	176	14.92%	34.04%
> 70	1	0.0008%	20%

