TheAnalyticsTeam

Sprocket Central Pty Ltd

Data analytics approach

Data Analytics Department, Junior Consultant

Agenda

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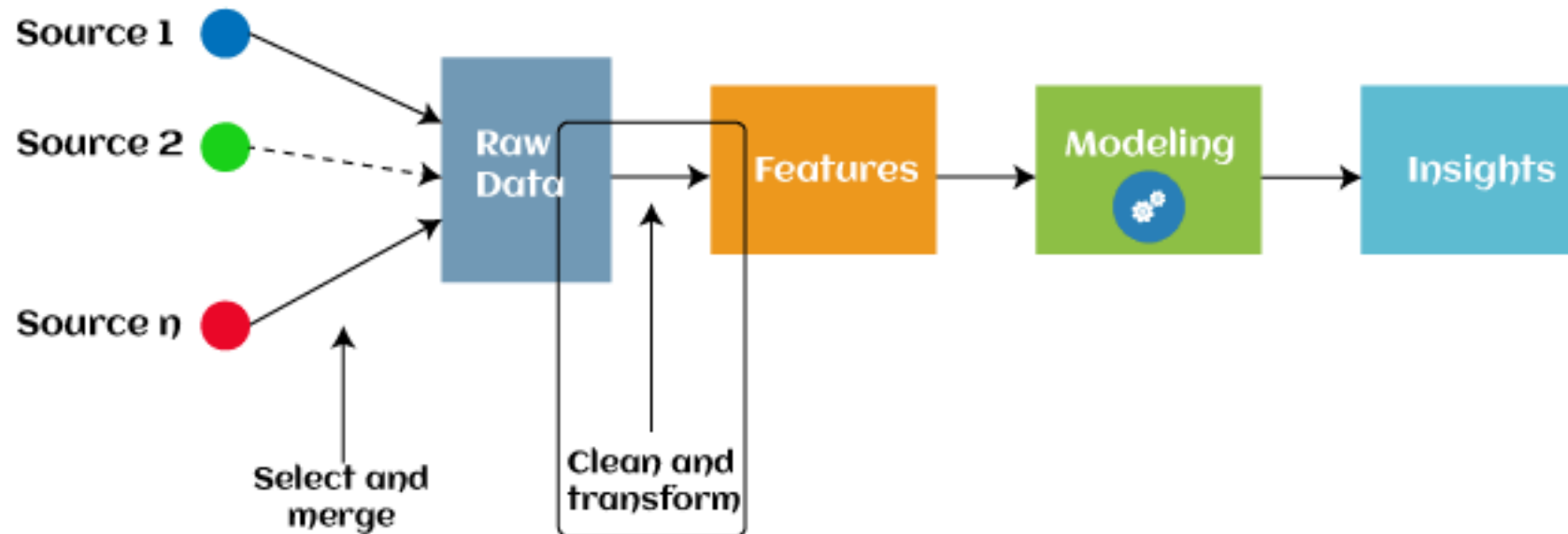2. Data Exploration
3. Model Development
4. Interpretation

Introduction

Showcasing the customer's trends and behaviour of purchasing bikes and accessible cycling accessories of "Sprocket Central Pty Ltd" to boost business.

- Identifying high profitable customers based on,
  - Transaction frequency
  - Demographics
  - Profit made
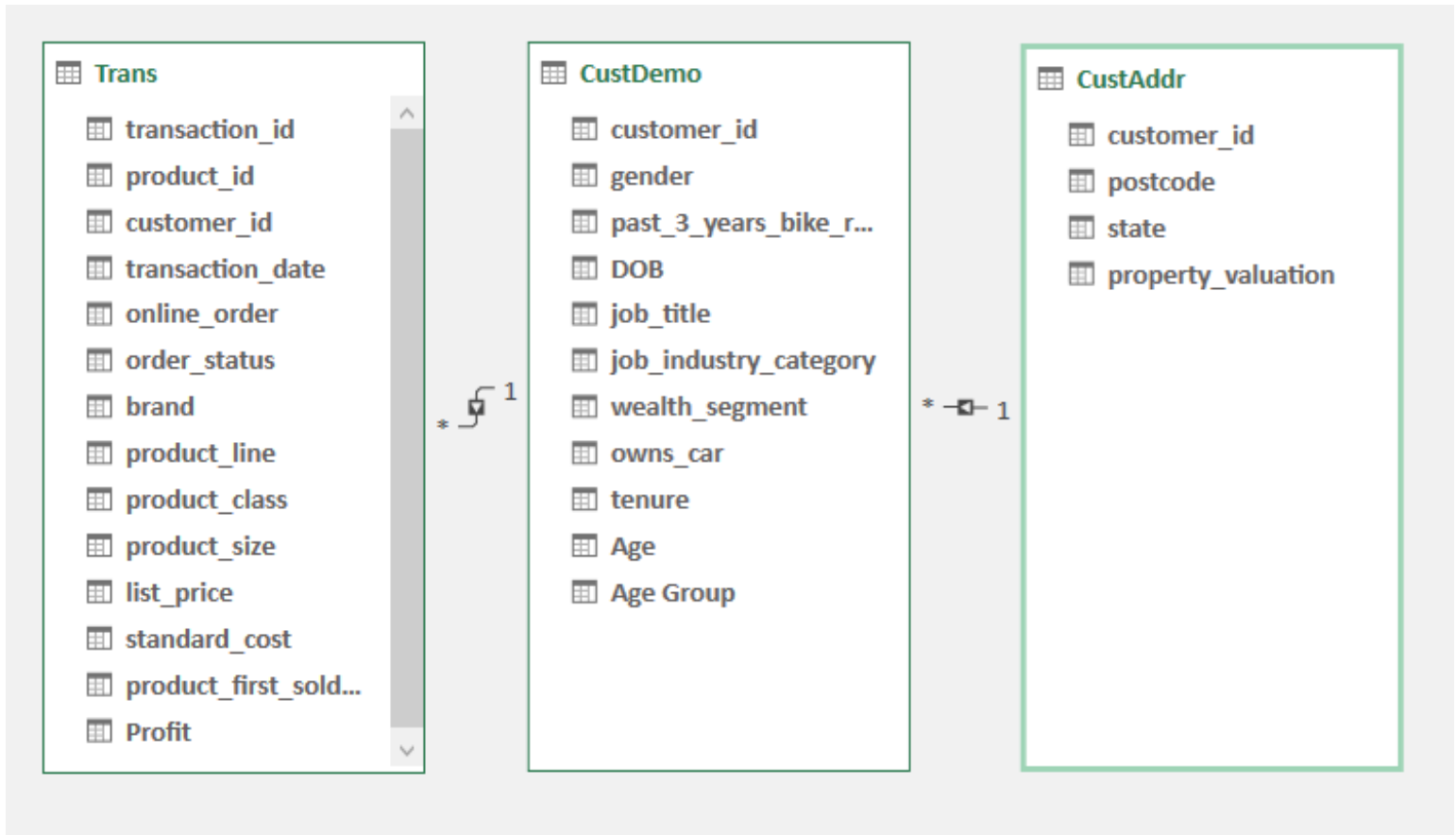
Approach for Data Analysis

Understanding the Datasets

Table Names:	Transactions	CustomerDemographic	CustomerAddress
No. of Fields:	13 columns	13 columns	6 columns
No. of Entries:	20000 entries	4000 entries	3999 entries
Attributes:	• transaction_id, • product_id, • customer_id, • transaction_date, • online_order, • order_status, • brand, • product_line, • product_class, • product_size, • list_price, • standard_cost, • product_first_sold_date	• customer_id, • first_name, • last_name, • gender, • past_3_years_bike_related_purchases • DOB, • job_title, • job_industry_category, • wealth_segment, • deceased_indicator, • default, • owns_car, • tenure	• customer_id, • address, • postcode, • state, • country, • property_valuation

Feature Extraction

Demographics • Gender • DOB • Job_industry_category	**Geographics** • State • Postcode • Country
Behavioral • Transaction date • past_3_years_bike_related_purchases • List_price • Standard_price • tenure	**Psychographic** • Wealth_Segment • property_valuation • Owns_car

Relationship between Datasets

Trans
- transaction_id
- product_id
- customer_id
- transaction_date
- online_order
- order_status
- brand
- product_line
- product_class
- product_size
- list_price
- standard_cost
- product_first_sold...
- Profit

CustDemo
- customer_id
- gender
- past_3_years_bike_r...
- DOB
- job_title
- job_industry_category
- wealth_segment
- owns_car
- tenure
- Age
- Age Group

CustAddr
- customer_id
- postcode
- state
- property_valuation

Analyzing, Cleaning and Transforming Datasets

- Fetched Unique rows by Removing Duplicated data series.

- Deleted Unwanted columns

- Dealing with inconsistent values for the same attribute

- Converting fields into appropriate data types.

- Handled Missing Data
  - Dropping Data
  - Assigning a new Category to missing Categorial Data

- Imputed Missing Values

- Adding Supporting data fields such as "Age" and "Profit".

Customer Segmentation Model

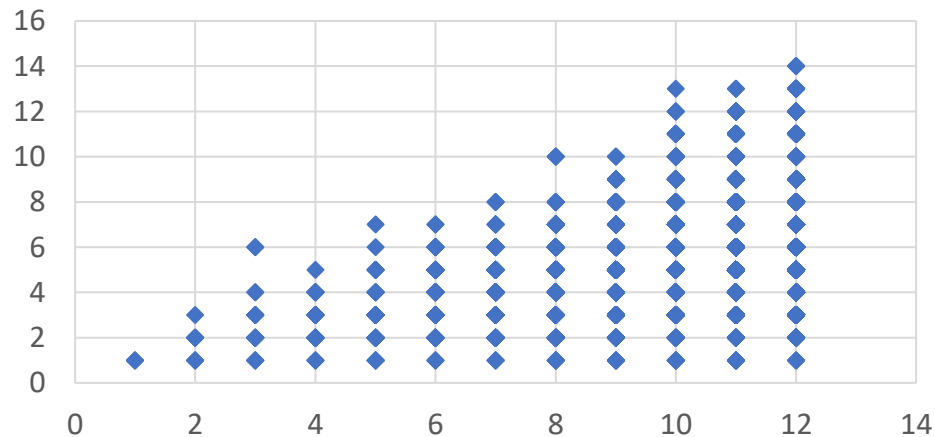## Recency, Frequency and Monetary Model

- **Recency:**
  The total time elapsed since a customer's last transaction or interaction with an organization's product.

- **Frequency:**
  The frequency of interaction of a customer with the brand during a particular time.

- **Monetary:**
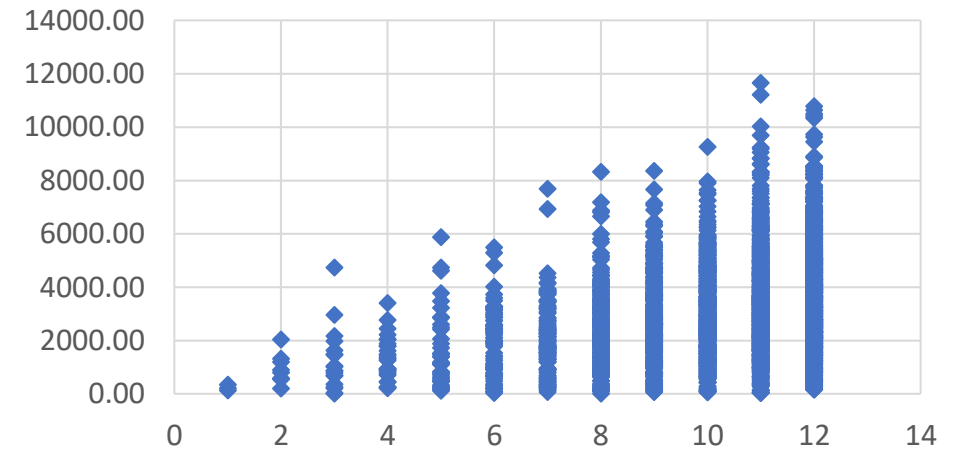 The total amount of money spent by the customer during a particular period.
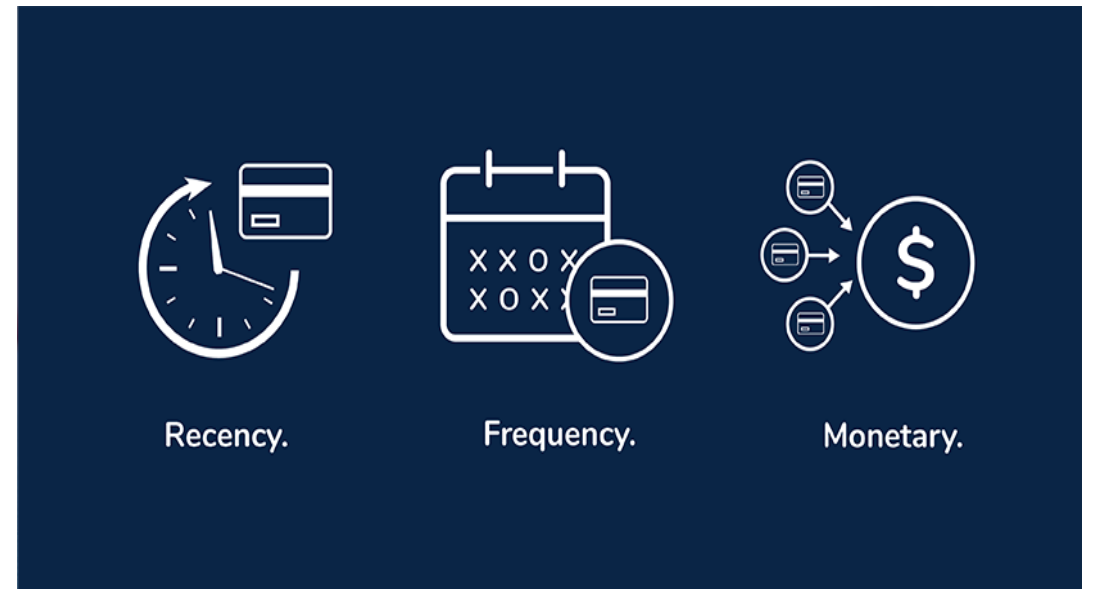
Interpretation

- As recency and frequency increases,
  - Monetary profit also increases.
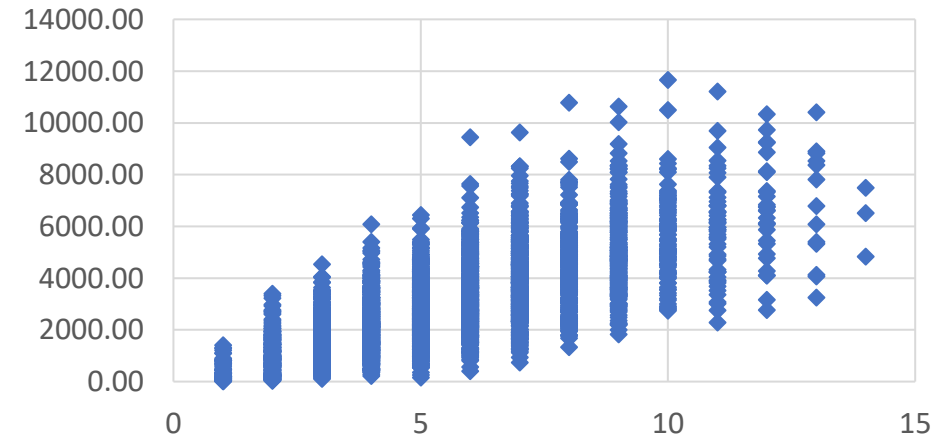- As recency increases,
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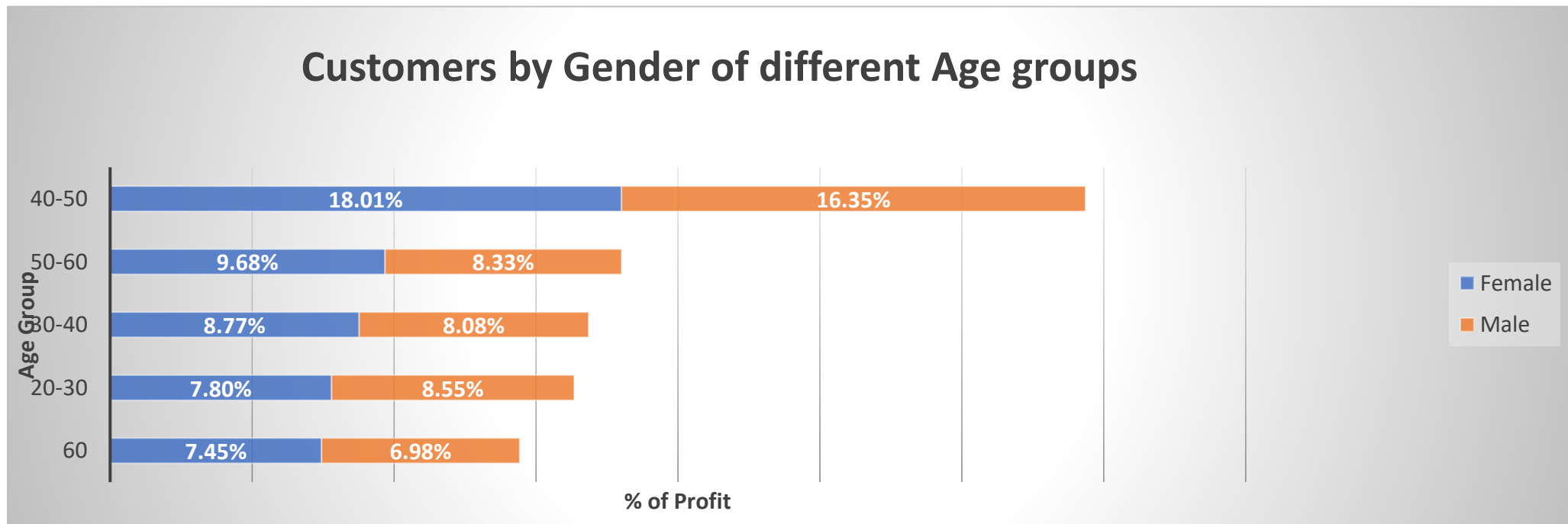

RECENCY VS MONETARY

RECENCY VS FREQUENCY

FREQUENCY VS MONETARY

Data Interpretation – Gender of different age groups

Before Customer Segmentation
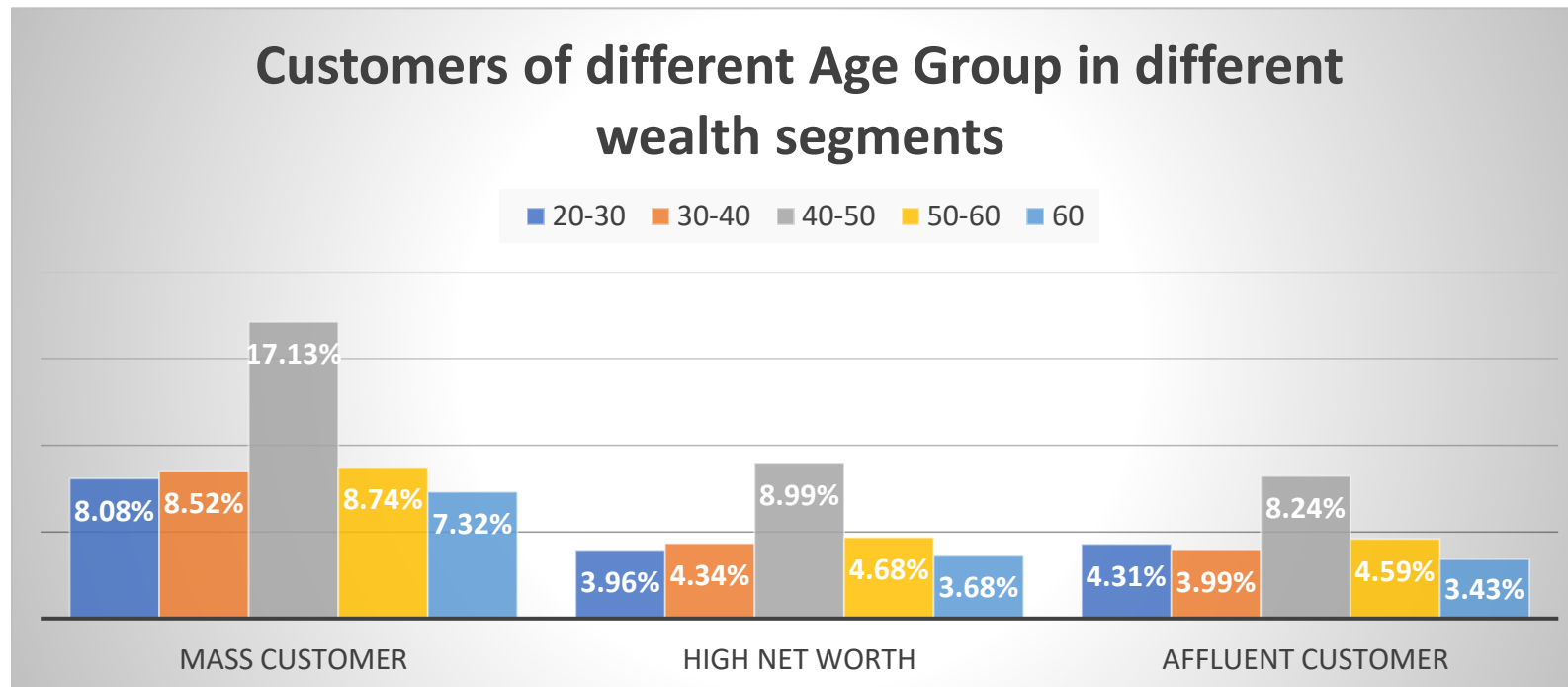
- Total counts of **female customers** as compared to male customers.
- Majority customers falls under the **age group** of **40-50 years** old.

Customers by Gender of different Age groups

Age Group	Female	Male
40-50	18.01%	16.35%
50-60	9.68%	8.33%
30-40	8.77%	8.08%
20-30	7.80%	8.55%
60	7.45%	6.98%

% of Profit
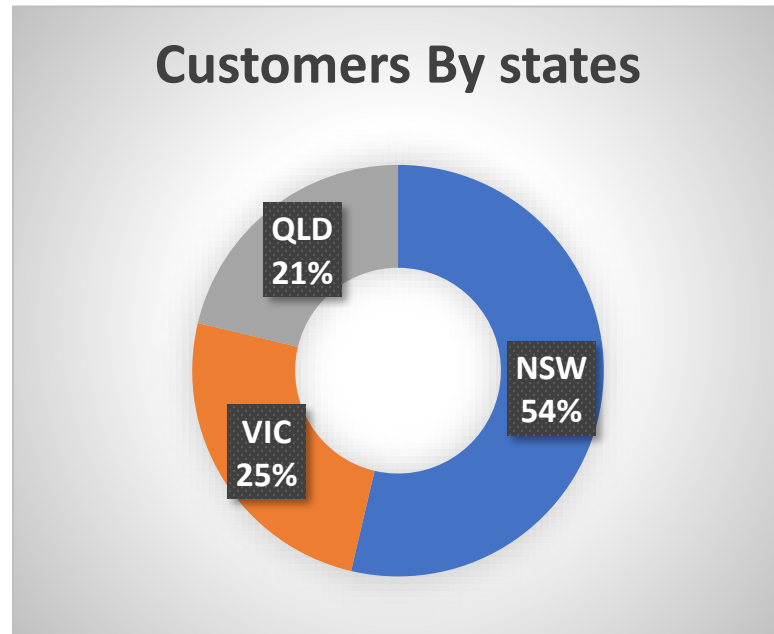
Data Interpretation – Wealth Segments

Before Customer Segmentation

- Majority number of Customers fall under **Mass Customers** category with maximum customers in the age group of **40-50 years**.

Customers of different Age Group in different wealth segments

■ 20-30 ■ 30-40 ■ 40-50 ■ 50-60 ■ 60

MASS CUSTOMER
- 8.08%
- 8.52%
- 17.13%
- 8.74%
- 7.32%

HIGH NET WORTH
- 3.96%
- 4.34%
- 8.99%
- 4.68%
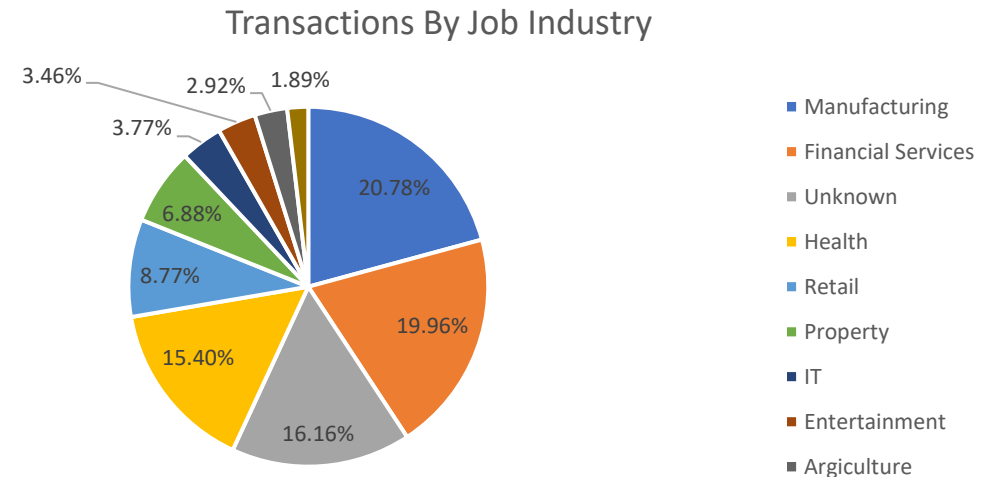- 3.68%

AFFLUENT CUSTOMER
- 4.31%
- 3.99%
- 8.24%
- 4.59%
- 3.43%

Data Interpretation – State and Industry

Before Customer Segmentation

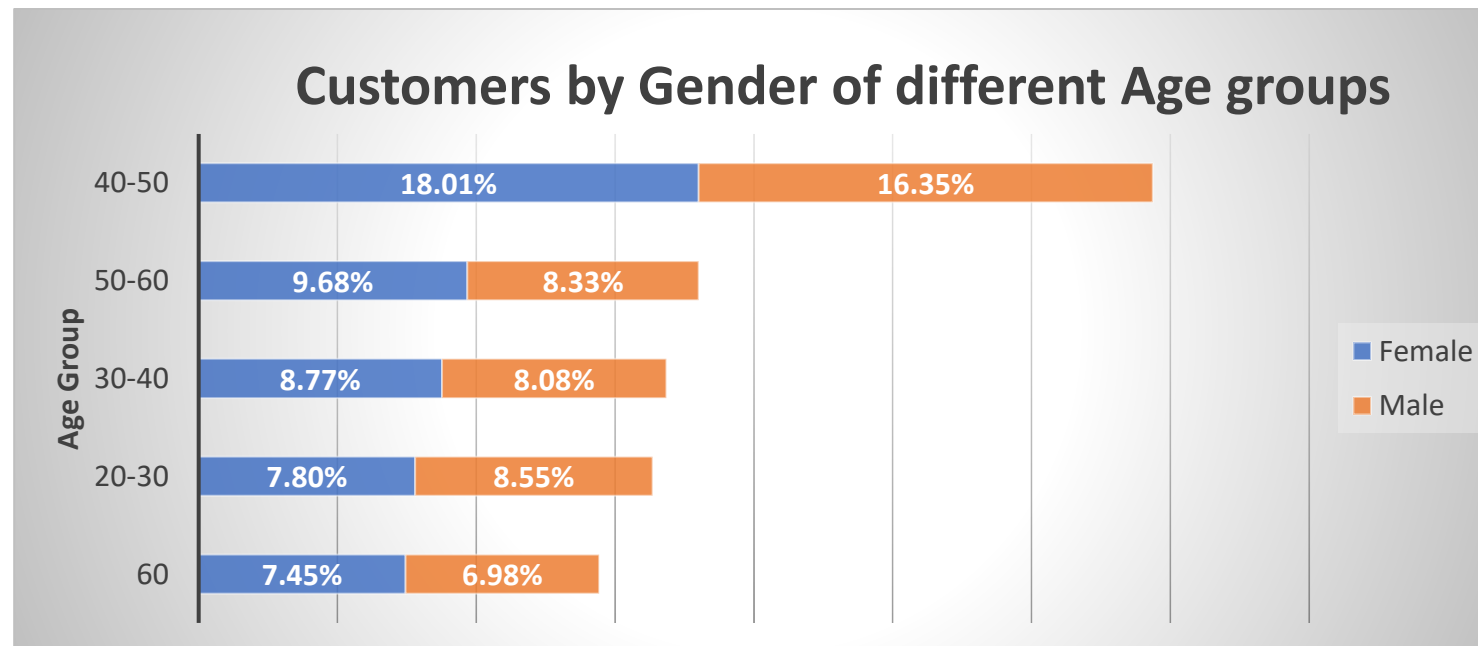- **NSW** has the highest number of customer base.

Customers By states

- **Manufacturing, Financial services, Health and Retail industry** customers holds most of the customers.

Transactions By Job Industry

Legend
Manufacturing
Financial Services
Unknown
Health
Retail
Property
IT
Entertainment
Argiculture

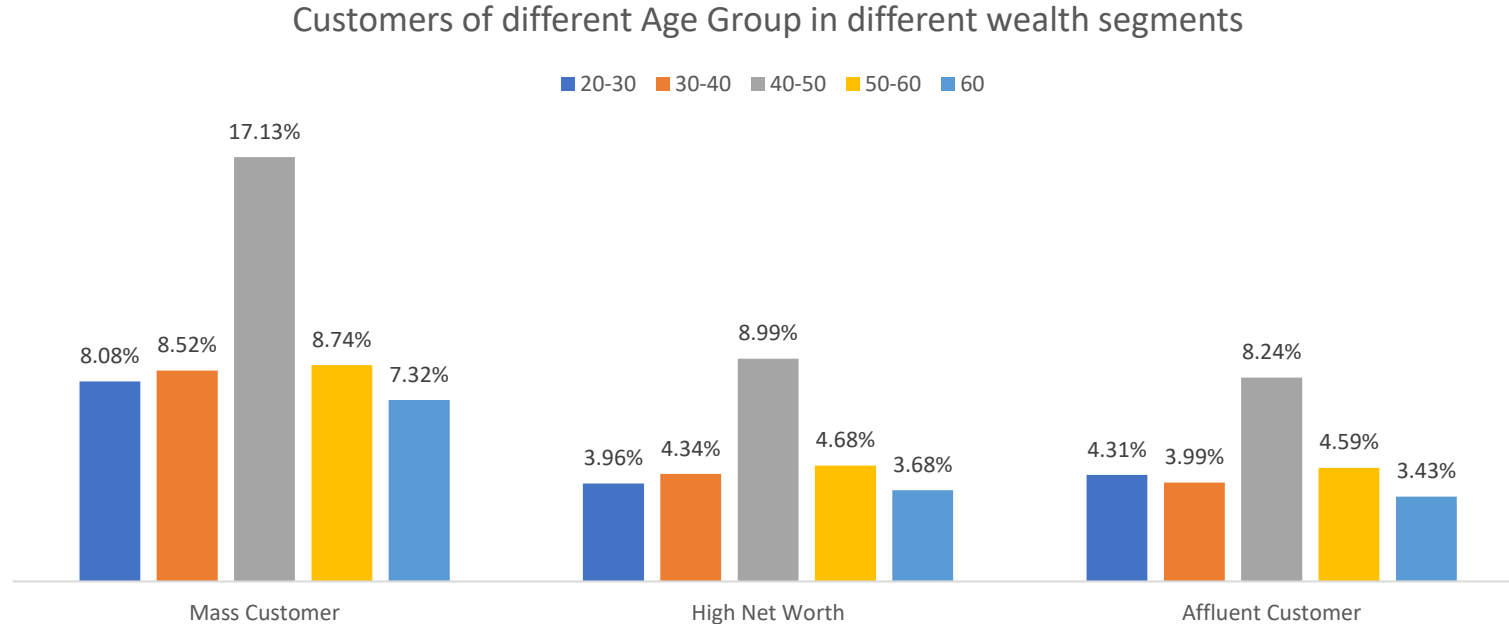# Data Interpretation – Gender of different age groups

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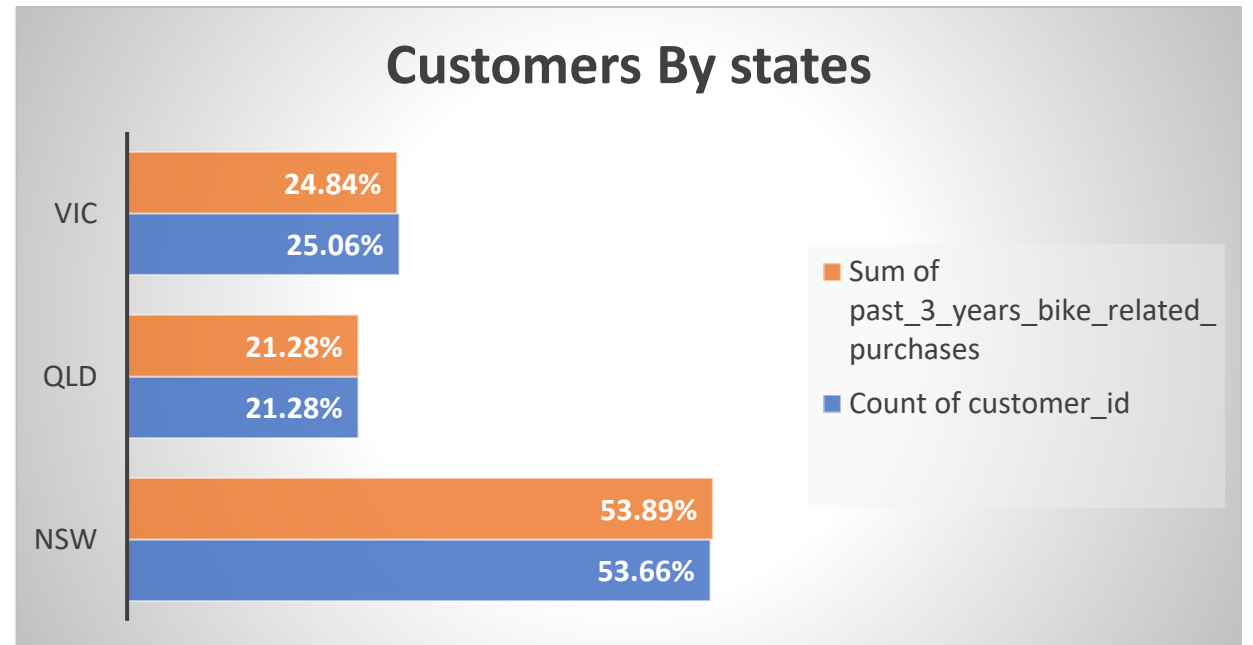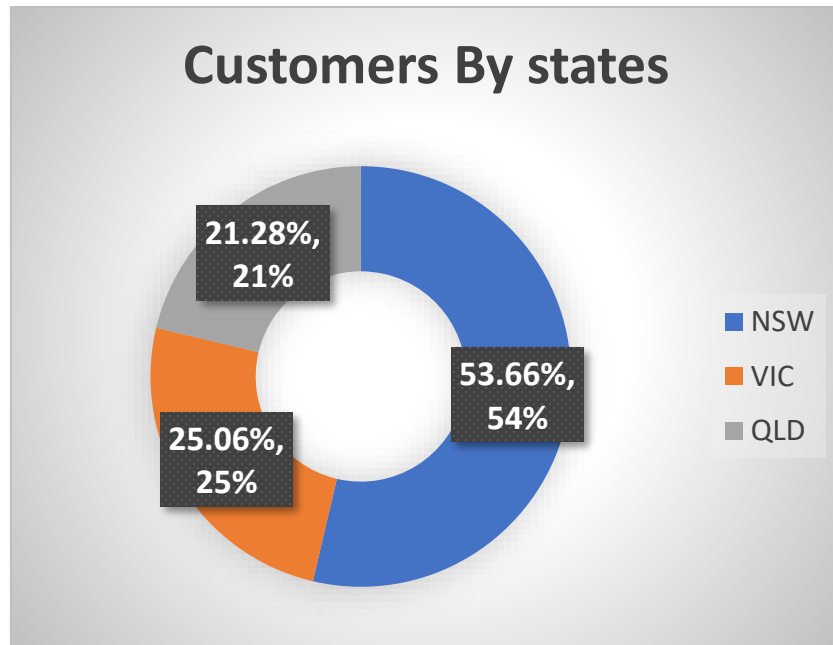| Age Group	Female	Male
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Data Interpretation – Wealth Segments

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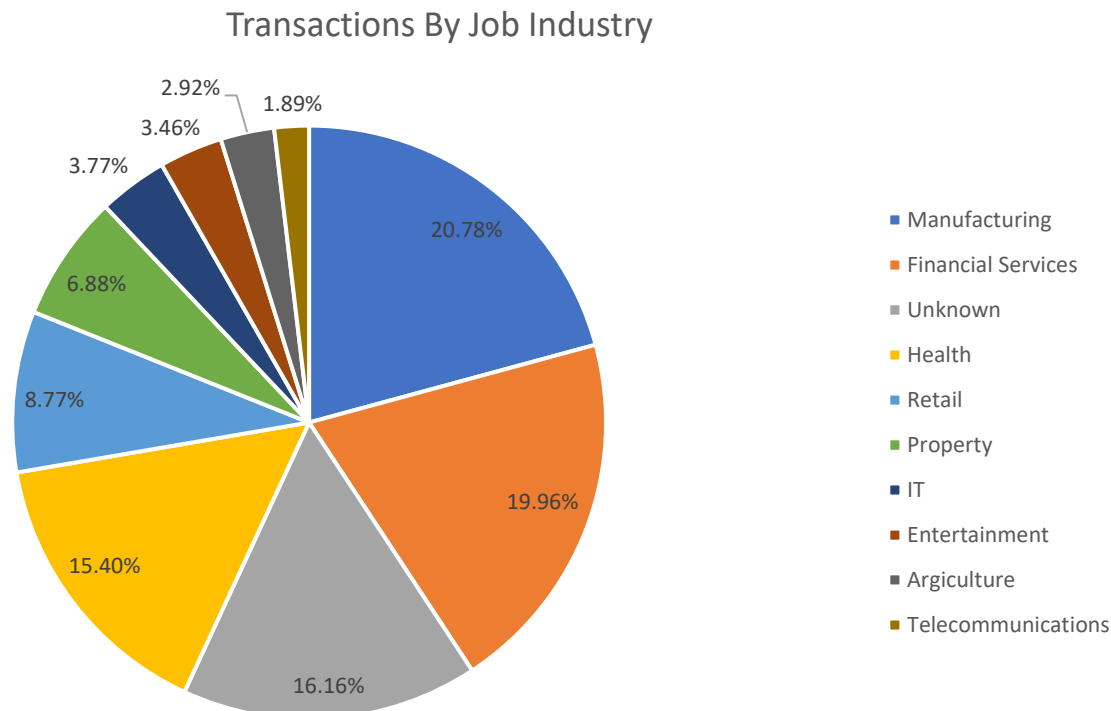- 3.43%

Data Interpretation – State

After Customer Segmentation

- **NSW** has the highest number of customer base.

- No difference in the number of customers and their purchases in past 3 years.

Customers By states

- NSW 53.66%, 54%
- VIC 25.06%, 25%
- QLD 21.28%, 21%

Customers By states

State	Count of customer_id	Sum of past_3_years_bike_related_purchases
VIC	25.06%	24.84%
QLD	21.28%	21.28%
NSW	53.66%	53.89%

Data Interpretation –Industry

- **Manufacturing, Financial services, Health and Retail industry** customers holds most of the customers.

Transactions By Job Industry

Thank you!