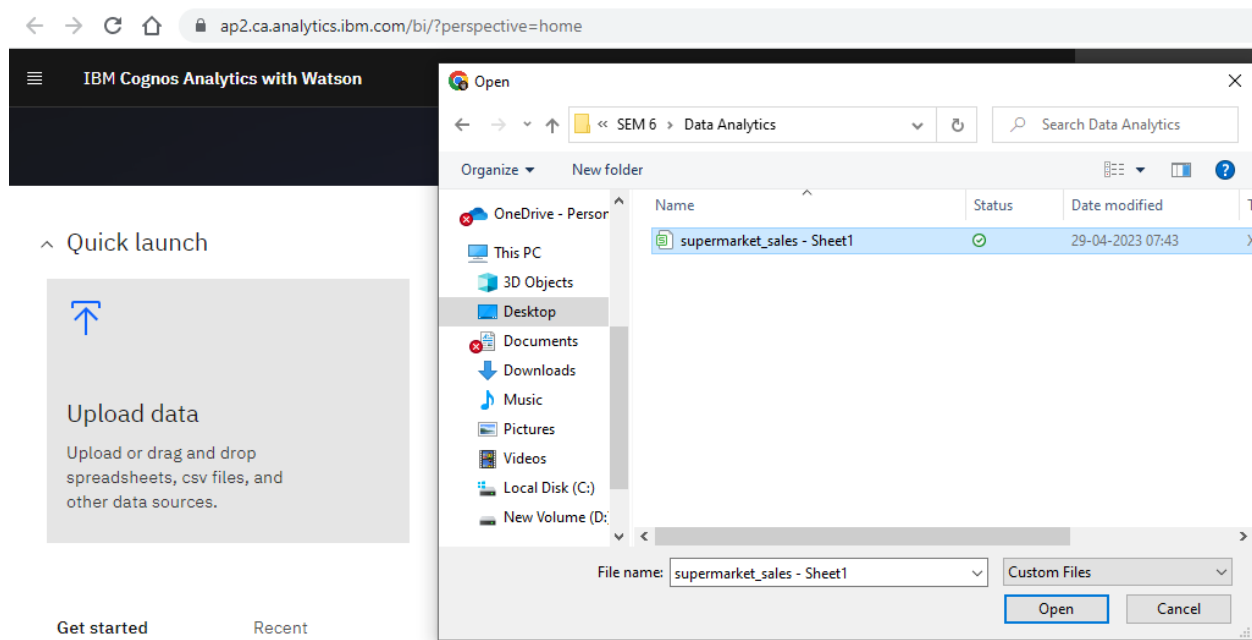


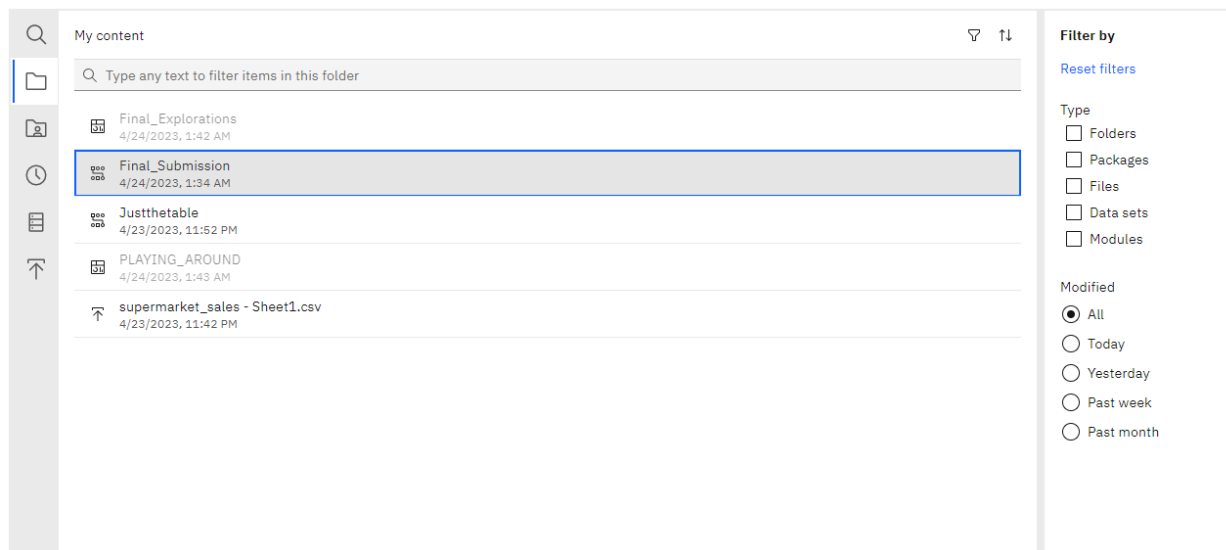
# Naan Mudhalvan – IBM Data Analytics Assignment

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**2020506042**

## Uploading the Data



## Select sources



## Removing unwanted Data

The screenshot shows the IBM Cognos Analytics interface. On the left, the 'Data module' pane lists fields: Row Id, Invoice ID, Branch, City, Customer type, Gender, Product line, Unit price, Quantity, Tax 5%, Total, and Date. The 'Invoice ID' field is selected. A context menu is open over the 'Invoice ID' column in the data grid, showing options like 'Filter...', 'Create data group...', 'Create navigation path...', 'Search for members...', 'Refresh members', 'Split...', 'Hide from users', 'Remove', 'Refresh properties...', 'Format data...', 'Clean...', 'Rename', 'Cut', 'Copy', and 'Properties'. The data grid displays 10 rows of data with columns: Row Id, Invoice ID, Branch, City, Customer type, and Gender.

Row Id	Invoice ID	Branch	City	Customer type	Gender
1	750-67-8428	A	Yangon	Member	Female
2	226-31-3081	C	Naypyitaw	Normal	Female
3	631-41-3108	A	Yangon	Normal	Male
4	123-19-1176	A	Yangon	Member	Male
5	373-73-7910	A	Yangon	Normal	Male
6	699-14-3026	C	Naypyitaw	Normal	Male
7	355-53-5943	A	Yangon	Member	Female
8	315-22-5665	C	Naypyitaw	Normal	Female
9	665-32-9167	A	Yangon	Member	Female
10	692-92-5582	B	Mandalay	Member	Female

The screenshot shows the IBM Cognos Analytics interface. On the left, the 'Data module' pane lists fields: Row Id, City, Customer type, Gender, Product line, Unit price, Quantity, Tax 5%, Total, Date, Payment, cogs, gross margin percentage, gross income, and Rating. The 'City' field is selected. The data grid displays 11 rows of data with columns: Row Id, City, Customer type, Gender, Product line, and Unit price.

Row Id	City	Customer type	Gender	Product line	Unit price
1	Yangon	Member	Female	Health and beauty	74.69
2	Naypyitaw	Normal	Female	Electronic accessories	15.28
3	Yangon	Normal	Male	Home and lifestyle	46.33
4	Yangon	Member	Male	Health and beauty	58.22
5	Yangon	Normal	Male	Sports and travel	86.31
6	Naypyitaw	Normal	Male	Electronic accessories	85.39
7	Yangon	Member	Female	Electronic accessories	68.84
8	Naypyitaw	Normal	Female	Home and lifestyle	73.56
9	Yangon	Member	Female	Health and beauty	36.26
10	Mandalay	Member	Female	Food and beverages	54.84
11	Mandalay	Member	Female	Fashion accessories	14.48

## Cleaning the Data

## Clean - City



### Whitespace

☒ Trim leading and trailing whitespace

### Convert case to

☐ UPPERCASE ☐ lowercase ☒ Do not change

### Return a substring of characters

Start

Length

Preview

This is a preview

### NULL values

☒ Replace this value with NULL

Empty string

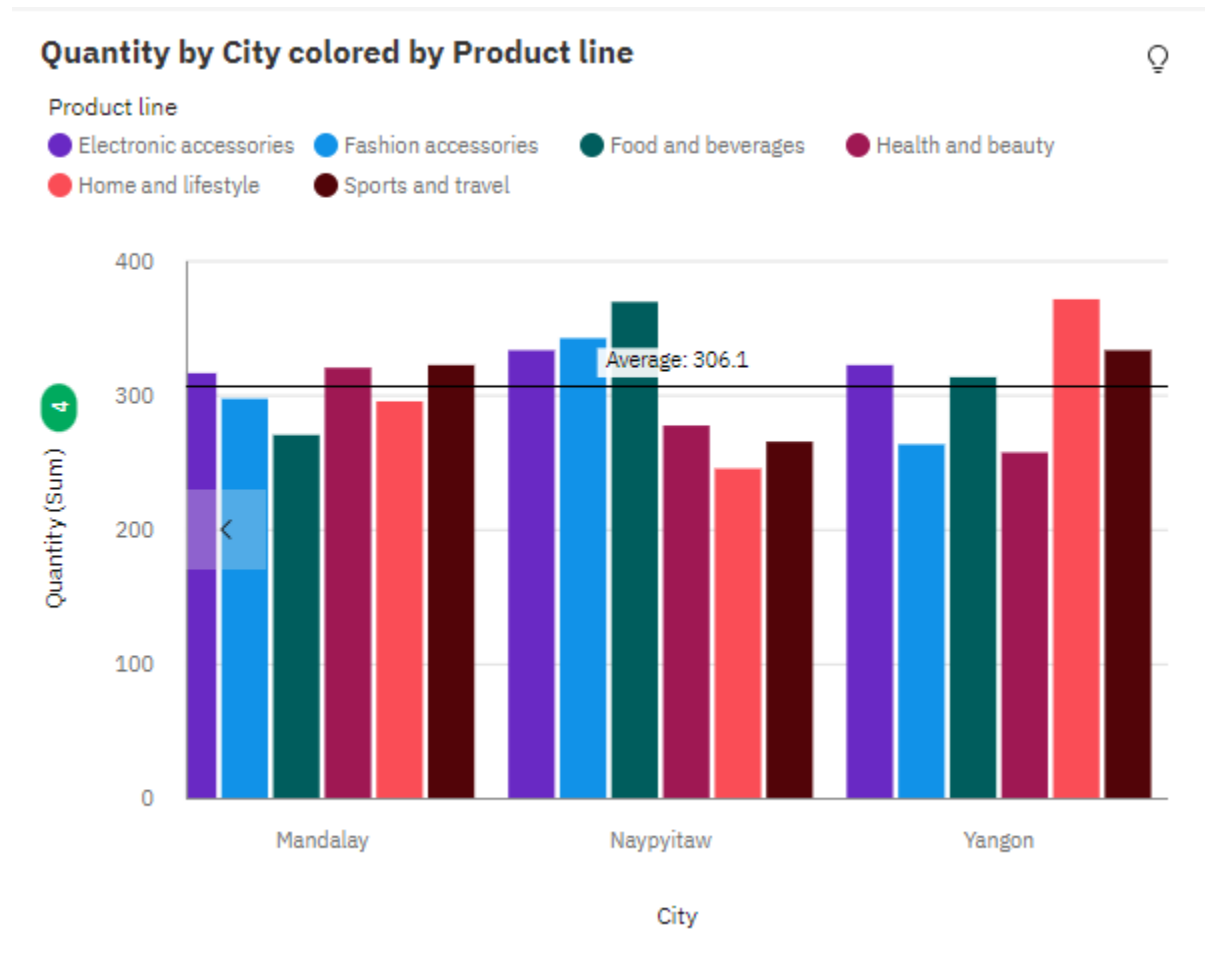
☐ Replace NULL values with

Empty string

Cancel

Clean

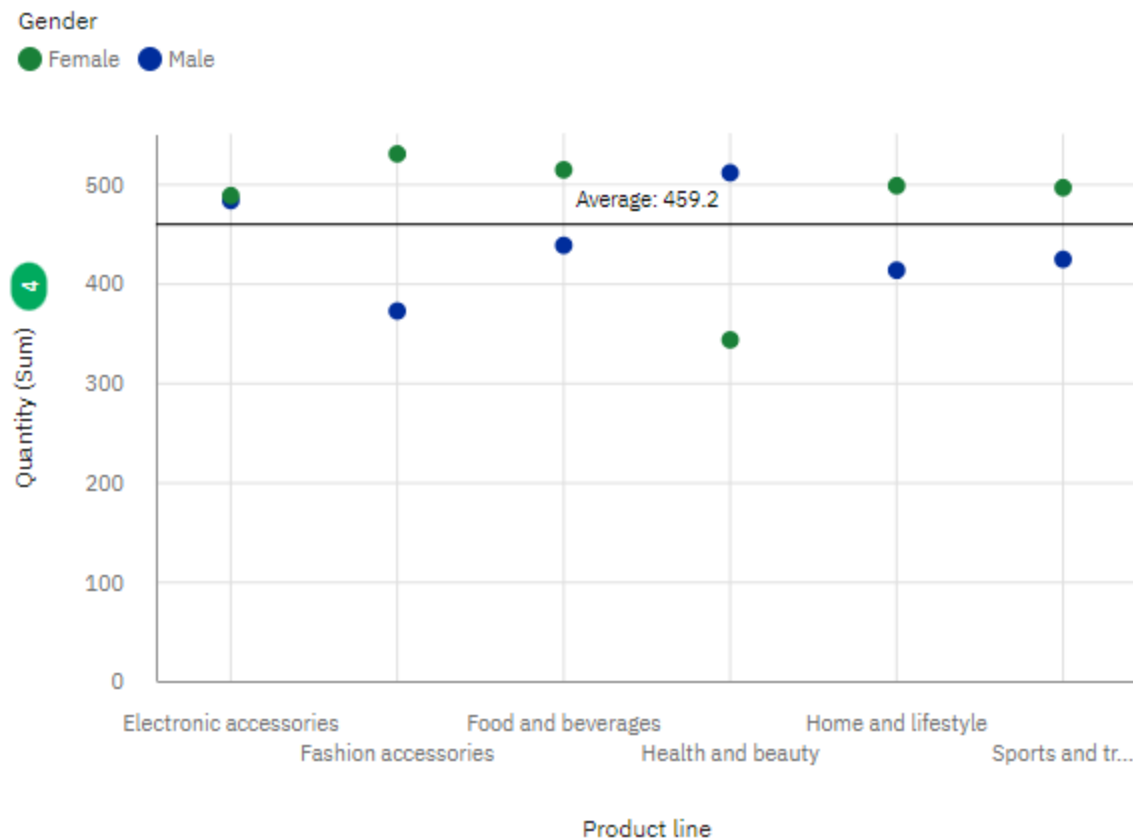
## Exploratory Data Analysis



### Insights Drawn:

1. Food and Beverages in Naypyitaw are being sold in large numbers, which differs from the other 2 cities.
2. The Home and Lifestyle product line is doing well in Yangon but not in other cities.
3. The Health and Beauty line is not doing well anywhere (just above average in Mandalay), improvements are needed, and there is a case for dropping the line altogether

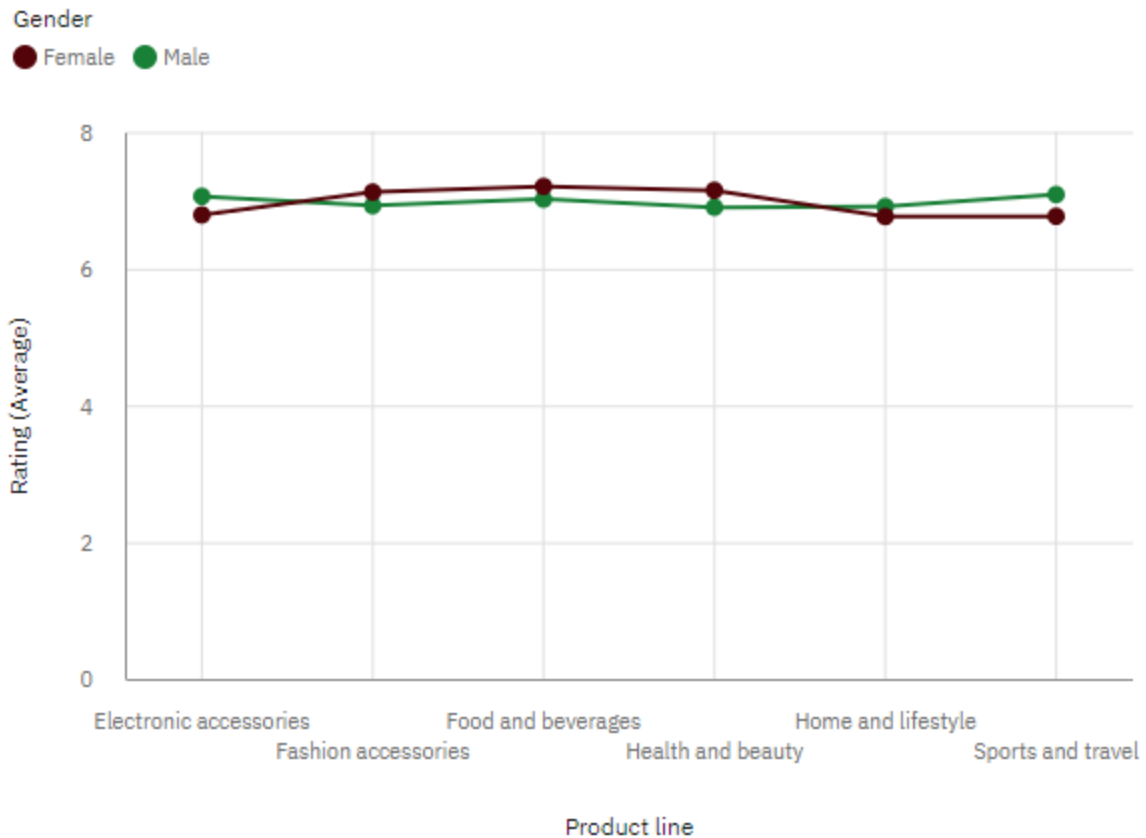
## Quantity by Product line colored by Gender



### Insights

1. Electronic Accessories is the only product line that appeals to both men and women
2. 5 out of the 6 brands seem to be tailormade for women, so in order to bring in more male customers, they should try diversifying their products.
3. Their beauty products see a massive drop off in sales when selling to women which is in stark difference wrt their other product lines.

### Rating by Product line colored by Gender



#### Insights

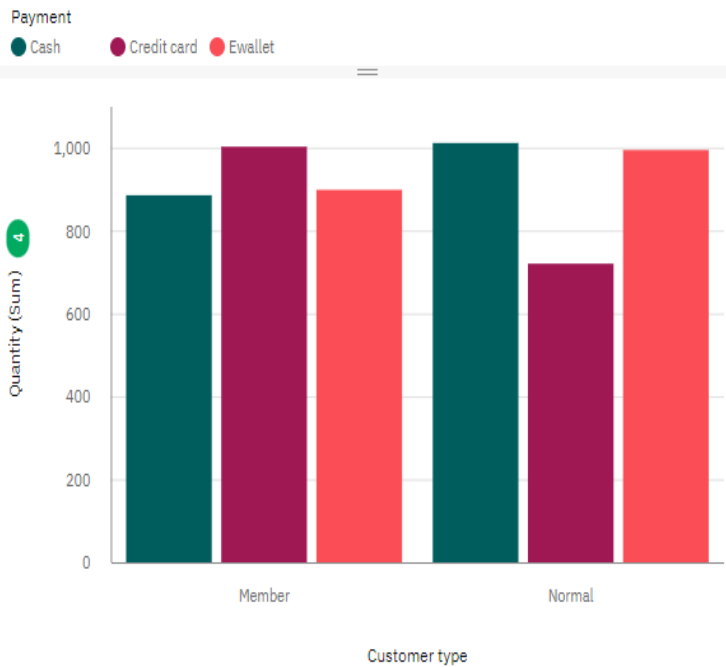
1. There doesn't seem to be a huge discrepancy in the ratings given for each product line. Despite a lot of products not being bought by men, they still tend to rate these at the same level as women.
2. Sports and Travel line has a decent difference between the ratings.

## Total and Quantity for City regions 9



NayPyiTaw has made the most sales in terms of price. Yangon has sold the most goods but hasn't made as much revenue. So it is selling a lot of cheap goods.

Quantity by Customer type colored by Payment



## Details

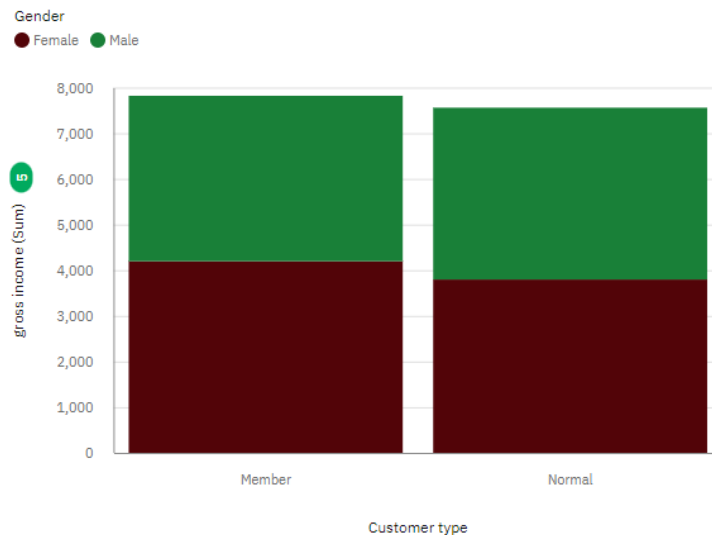
Across all **customer types** and **payments**, the sum of **Quantity** is over 5500.

The summed values of **Quantity** range from 720 to over a thousand.

For **Quantity**, the most significant values of **Payment** are Cash and Ewallet, whose respective **Quantity** values add up to nearly four thousand, or 68.7 % of the total.

For **Quantity**, the most significant value of **Customer type** is Member, whose respective **Quantity** values add up to nearly three thousand, or 50.5 % of the total.

gross income by Customer type colored by Gender



## Details

Across all **customer types** and **genders**, the sum of **gross income** is over fifteen thousand.

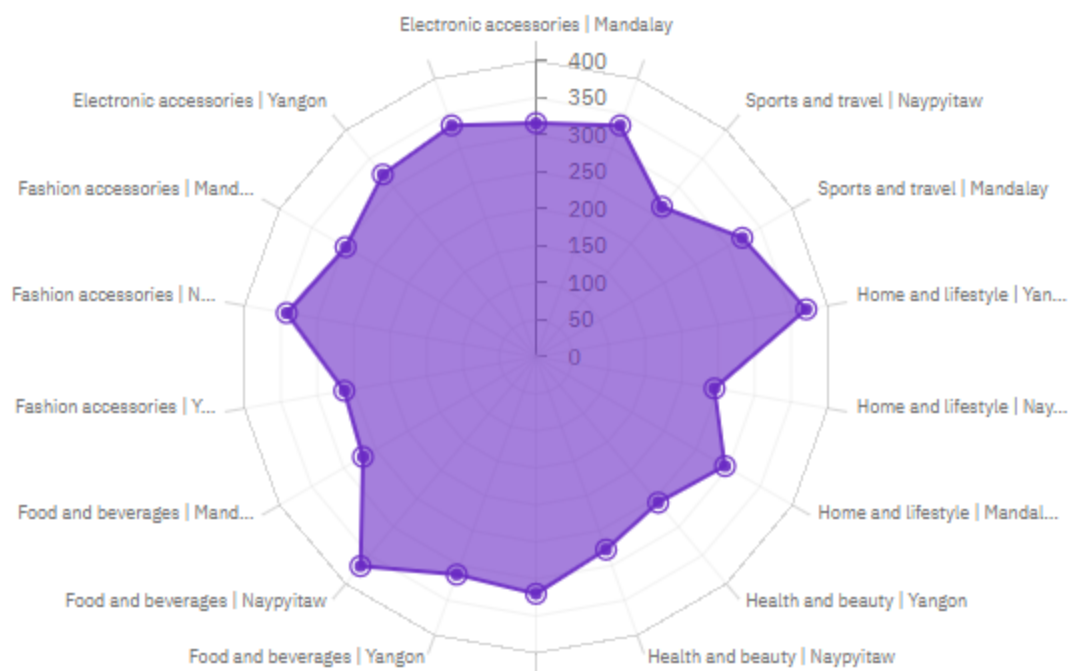
The summed values of **gross income** range from over 3500 to over four thousand.

For **gross income**, the most significant value of **Gender** is Female, whose respective **gross income** values add up to nearly eight thousand, or 52 % of the total.

For **gross income**, the most significant value of **Customer type** is Member, whose respective **gross income** values add up to nearly eight thousand, or 50.8 % of the total.



Quantity by Product line and City

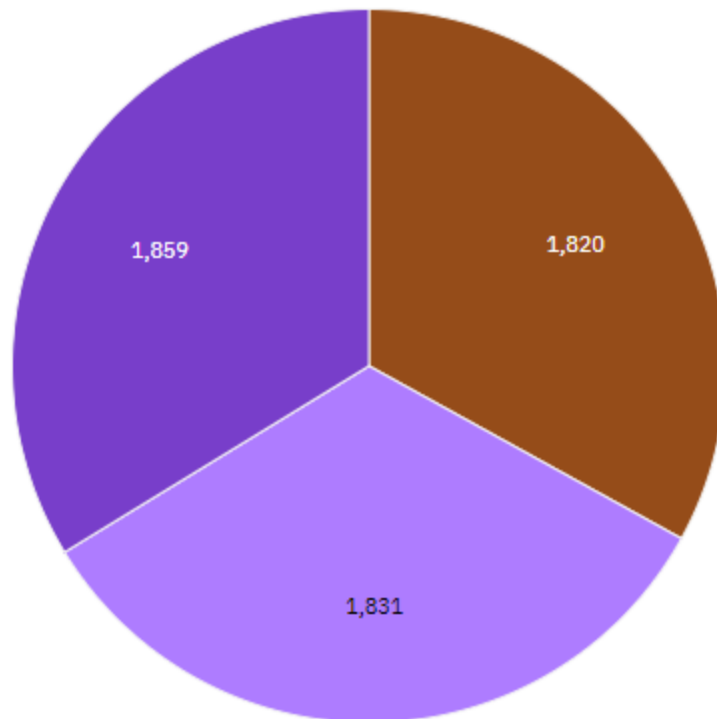


## Quantity by City 4



City

Mandalay Naypyitaw Yangon



All 3 cities sell comparable amount of goods

### City colored by Rating sized by Total 5

Total (Sum)



Rating (Average)



Naypyitaw

Mandalay

Yangon

Mandalay sells the most goods when compared to the other 2 cities, but the customers aren't satisfied.