

Assignment 1: Data Visualisations

DA3304 – APPLIED PROGRAMMING FOR DATA
ANALYTICS

LEVEL 5 DIPLOMA IN DATA ANALYTICS

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Introduction

- Data visualization refers to the graphical representation of data (tableau, 2022).
- It is the portrayal of data in the most simplified way possible which in the form of shapes and lines.
- This report intends to analyze a dataset regarding supermarket sales called 'Supermarket_Sales.csv'

supermarket_salestest.csv

Invoice ID	Branch	City	Customer type	Gender	Product line	Unit price	Quantity	Tax 5%	Total	Date	Time	Payment	cogs	gross margin percentage	gross income	Rating
750-67-8428	A	Yangon	Member	Female	Health and beauty	74.69	7	26.1415	548.9715	1/5/2019	13:08	Ewallet	522.83	4.761904762	26.1415	9.1
226-31-3081	C	Naypyitaw	Normal	Female	Electronic accessories	15.28	5	3.82	80.22	3/8/2019	10:29	Cash	76.4	4.761904762	3.82	9.6
631-41-3108	A	Yangon	Normal	Male	Home and lifestyle	46.33	7	16.2155	340.5255	3/3/2019	13:23	Credit card	324.31	4.761904762	16.2155	7.4
123-19-1176	A	Yangon	Member	Male	Health and beauty	58.22	8	23.288	489.048	1/27/2019	20:33	Ewallet	465.76	4.761904762	23.288	8.4
373-73-7910	A	Yangon	Normal	Male	Sports and travel	86.31	7	30.2085	634.3785	2/8/2019	10:37	Ewallet	604.17	4.761904762	30.2085	5.3
699-14-3026	C	Naypyitaw	Normal	Male	Electronic accessories	85.39	7	29.8865	627.6165	3/25/2019	18:30	Ewallet	597.73	4.761904762	29.8865	4.1
355-53-5943	A	Yangon	Member	Female	Electronic accessories	68.84	6	20.652	433.692	2/25/2019	14:36	Ewallet	413.04	4.761904762	20.652	5.8
315-22-5665	C	Naypyitaw	Normal	Female	Home and lifestyle	73.56	10	36.78	772.38	2/24/2019	11:38	Ewallet	735.6	4.761904762	36.78	8
665-32-9167	A	Yangon	Member	Female	Health and beauty	36.26	2	3.626	76.146	1/10/2019	17:15	Credit card	72.52	4.761904762	3.626	7.2
692-92-5582	B	Mandalay	Member	Female	Food and beverages	54.84	3	8.226	172.746	2/20/2019	13:27	Credit card	164.52	4.761904762	8.226	5.9
351-62-0822	B	Mandalay	Member	Female	Fashion accessories	14.48	4	2.896	60.816	2/6/2019	18:07	Ewallet	57.92	4.761904762	2.896	4.5
529-56-3974	B	Mandalay	Member	Male	Electronic accessories	25.51	4	5.102	107.142	3/9/2019	17:03	Cash	102.04	4.761904762	5.102	6.8
365-64-0515	A	Yangon	Normal	Female	Electronic accessories	46.95	5	11.7375	246.4875	2/12/2019	10:25	Ewallet	234.75	4.761904762	11.7375	7.1
252-56-2699	A	Yangon	Normal	Male	Food and beverages	43.19	10	21.595	453.495	2/7/2019	16:48	Ewallet	431.9	4.761904762	21.595	8.2
829-34-3910	A	Yangon	Normal	Female	Health and beauty	71.38	10	35.69	749.49	3/29/2019	19:21	Cash	713.8	4.761904762	35.69	5.7
299-46-1805	B	Mandalay	Member	Female	Sports and travel	93.72	6	28.116	590.436	1/15/2019	16:19	Cash	562.32	4.761904762	28.116	4.5
656-95-9349	A	Yangon	Member	Female	Health and beauty	68.93	7	24.1255	506.6355	3/11/2019	11:03	Credit card	482.51	4.761904762	24.1255	4.6
765-26-6951	A	Yangon	Normal	Male	Sports and travel	72.61	6	21.783	457.443	1/1/2019	10:39	Credit card	435.66	4.761904762	21.783	6.9
329-62-1586	A	Yangon	Normal	Male	Food and beverages	54.67	3	8.2005	172.2105	1/21/2019	18:00	Credit card	164.01	4.761904762	8.2005	8.6
319-50-3348	B	Mandalay	Normal	Female	Home and lifestyle	40.3	2	4.03	84.63	3/11/2019	15:30	Ewallet	80.6	4.761904762	4.03	4.4
300-71-4605	C	Naypyitaw	Member	Male	Electronic accessories	86.04	5	21.51	451.71	2/25/2019	11:24	Ewallet	430.2	4.761904762	21.51	4.8

Business Understanding

- It contains sales data collected from 3 different supermarkets in Myanmar.
- Supermarkets fall under the Retail Industry which concerns with the selling of goods to consumers for their own consumption.

Business Goals

Business Benefits

- it provides a method to record sale transactions that have occurred for analyzation.
- can be used to identify which products are popular in each supermarket as well as the characteristics of its purchasers.
- can then be used to make targeted advertisings or promotions to increase sales.
- provides an overview of the status of each supermarket
- the general shopping experience among customers can be gauged to determine whether the supermarket is performing well or not.

Business Understanding

Business Objectives

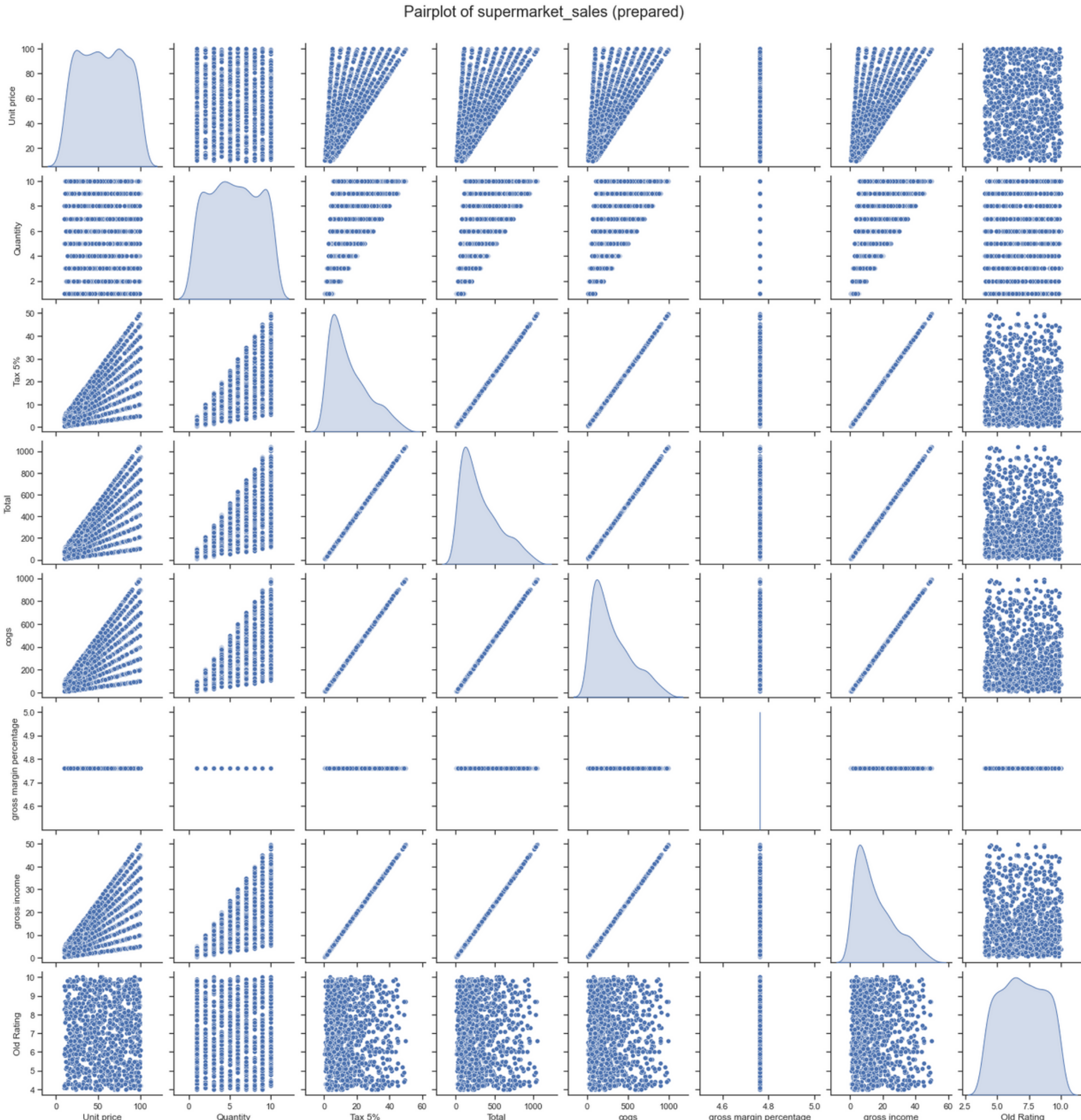
- Supermarkets obtain profits by buying goods in bulk from suppliers and selling them at a higher price to consumers
- the objective is to sell as many goods as possible while keeping each product at a reasonable price to encourage purchasing
- A small portion of the customer's payment of goods is taken as tax by the supermarkets as another source of income.

Product line	Product line:_Electronic accessories	Product line:_Fashion accessories	Product line:_Food and beverages	Product line:_Health and beauty	Product line:_Home and lifestyle	Product line:_Sports and travel
Health and beauty	0	0	0	1	0	0
Electronic accessories	1	0	0	0	0	0
Home and lifestyle	0	0	0	0	1	0
Health and beauty	0	0	0	1	0	0
Sports and travel	0	0	0	0	0	1
Electronic accessories	1	0	0	0	0	0
Electronic accessories	1	0	0	0	0	0
Home and lifestyle	0	0	0	0	1	0
Health and beauty	0	0	0	1	0	0

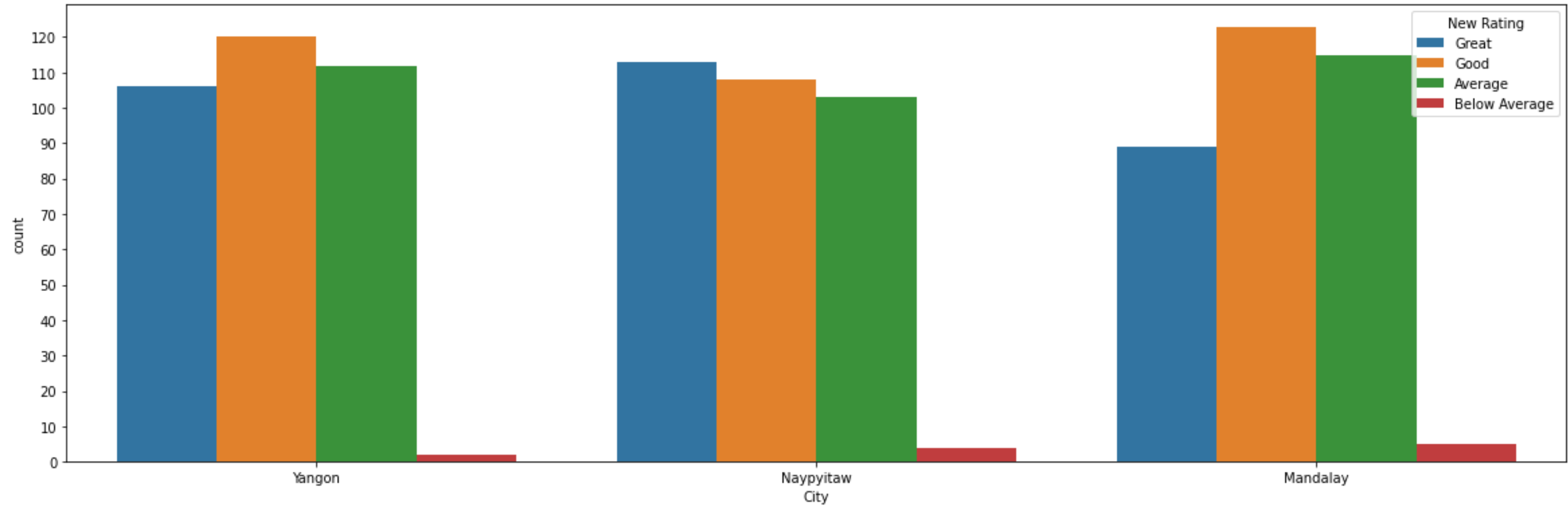
Time	Time Of Day
13:08	Afternoon
10:29	Morning
13:23	Afternoon
20:33	Evening
10:37	Morning
18:30	Afternoon

Old Rating	New Rating
9.1	Great
9.6	Great
7.4	Good
8.4	Great
5.3	Average

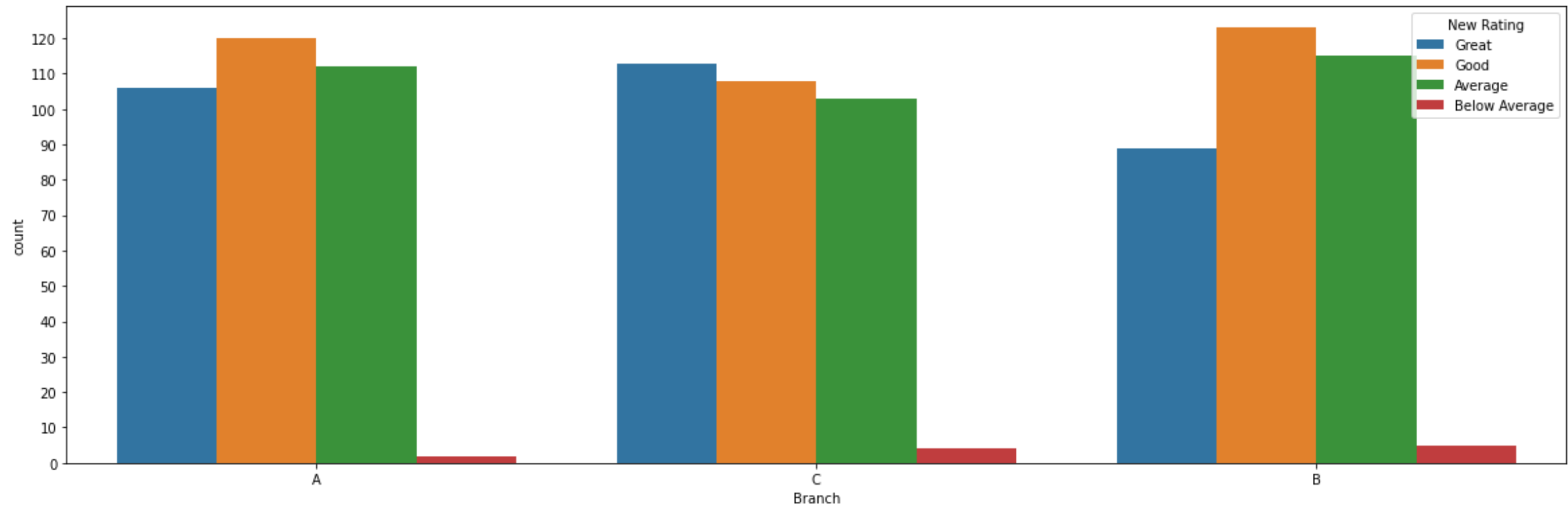
Pairplot



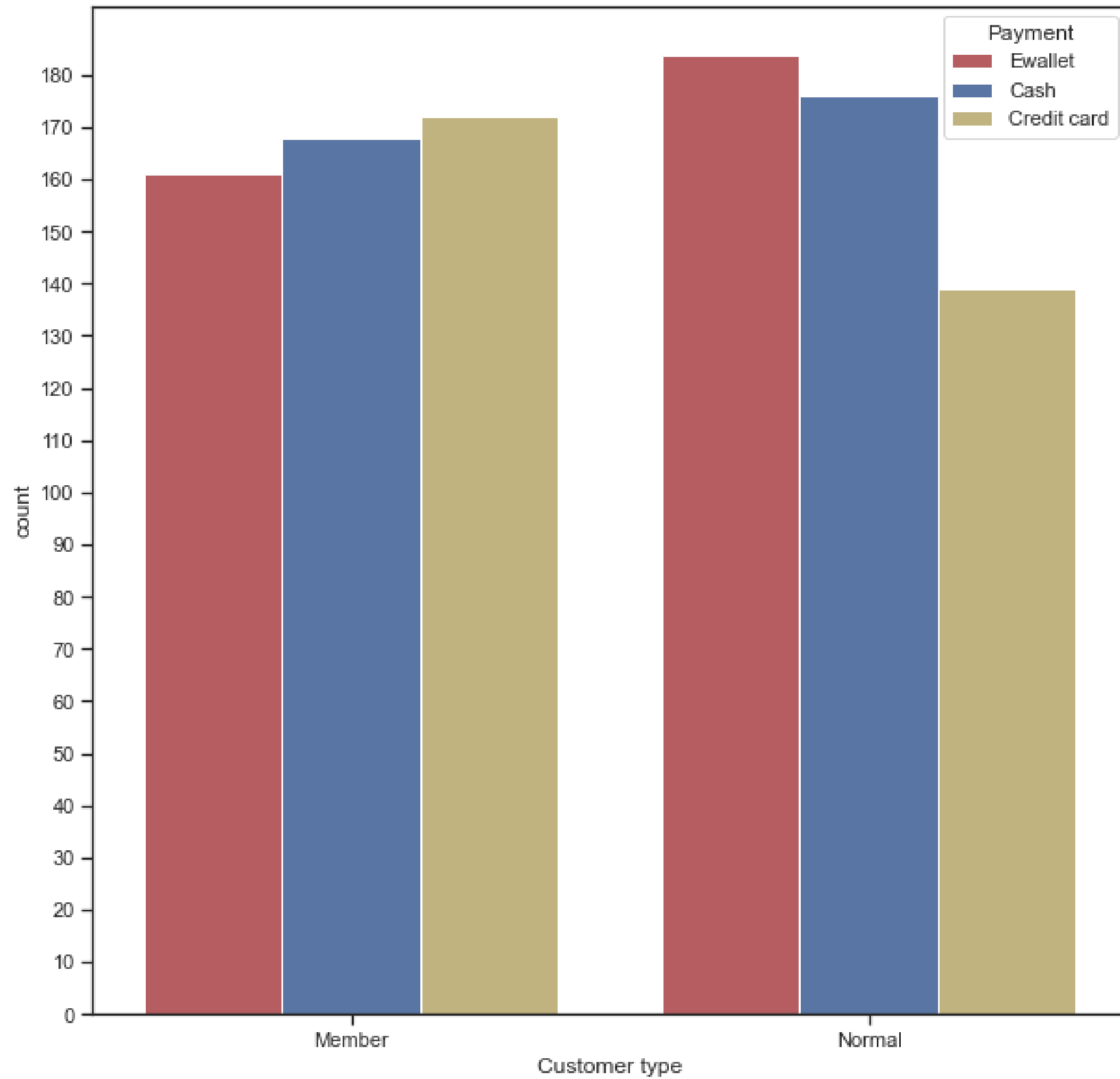
Different ratings across all cities



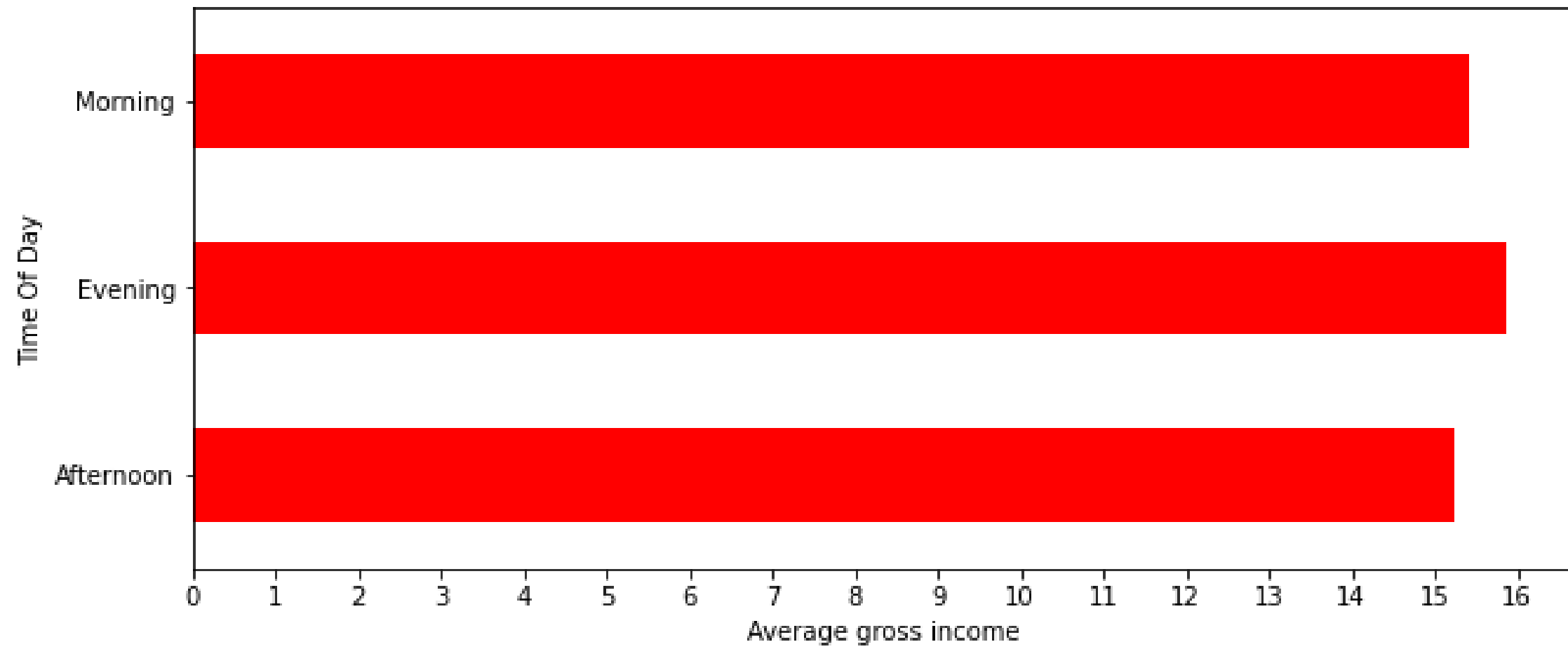
Different ratings across all branches



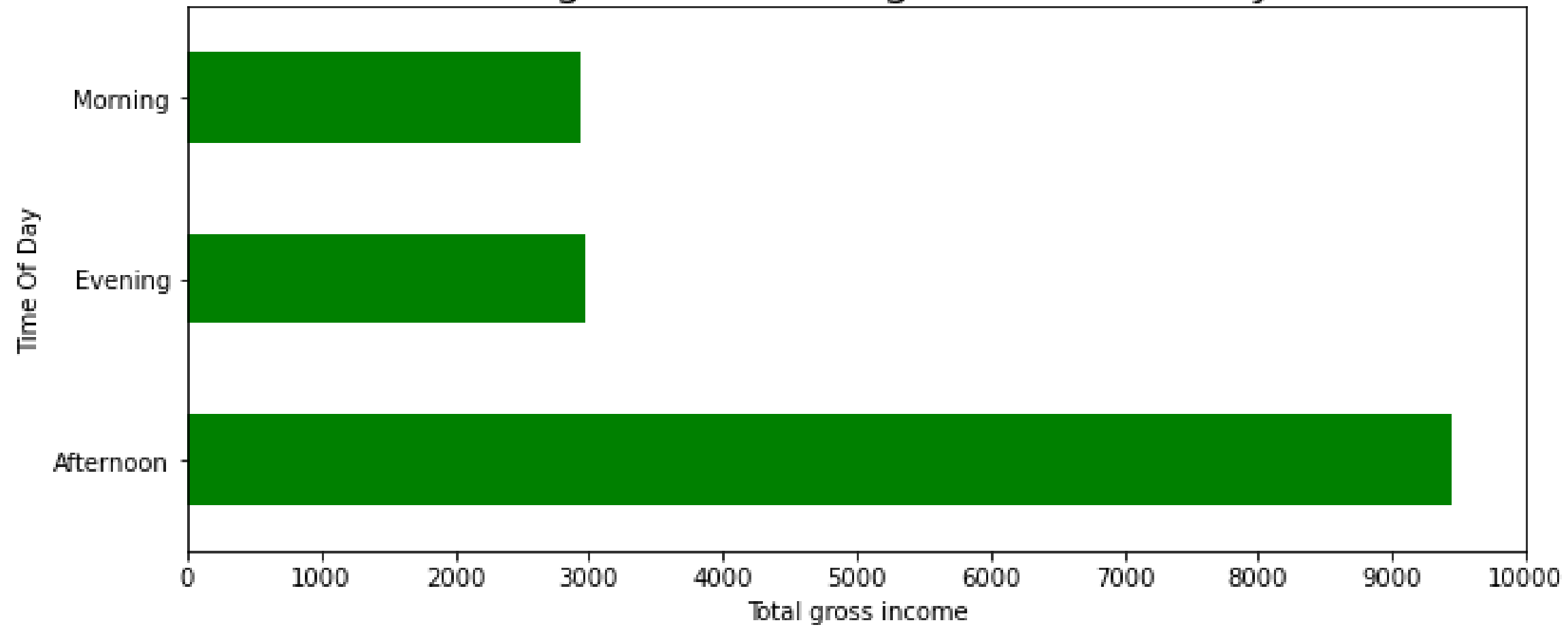
Payment type popularity among customer types



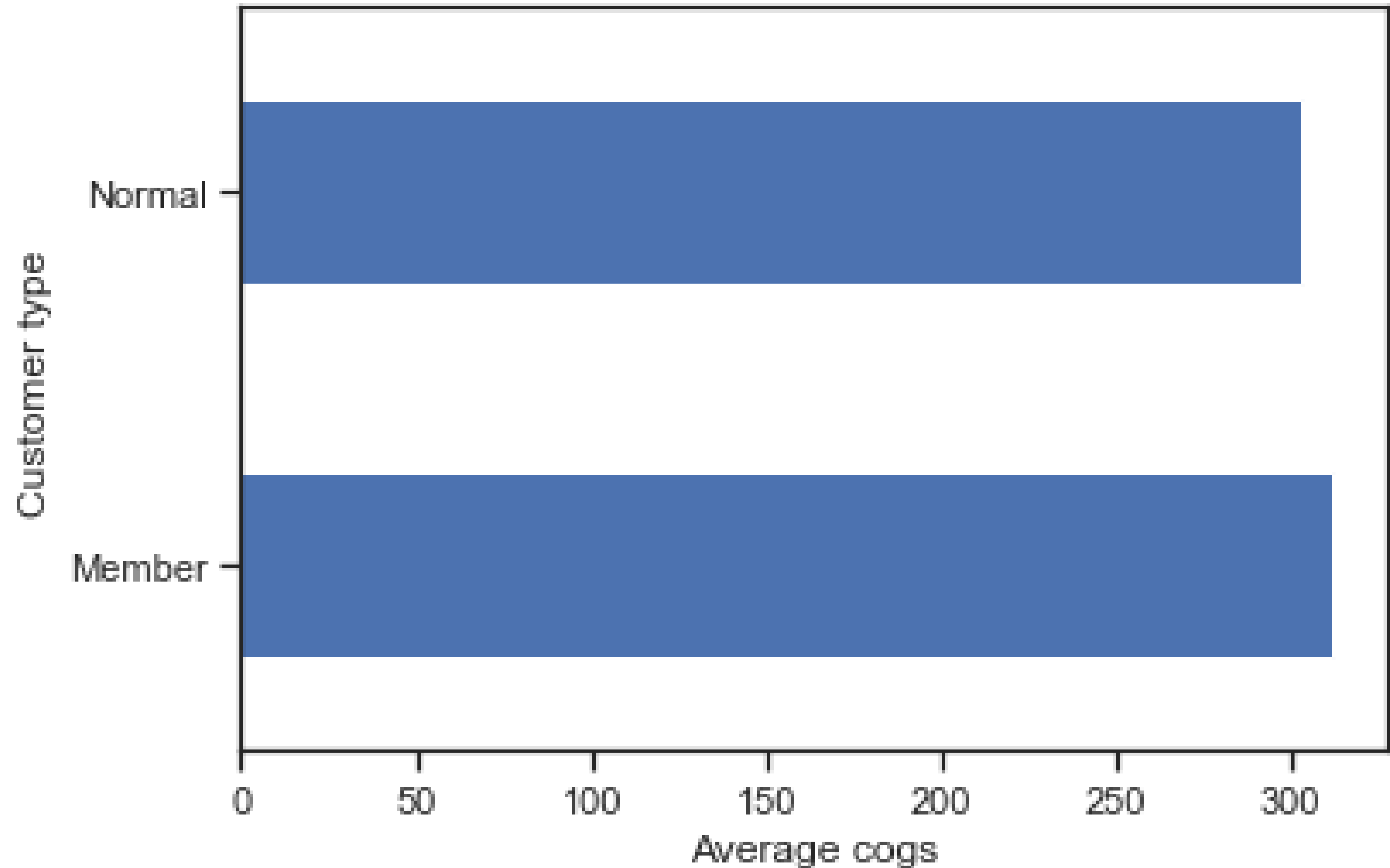
Average gross income against time of day



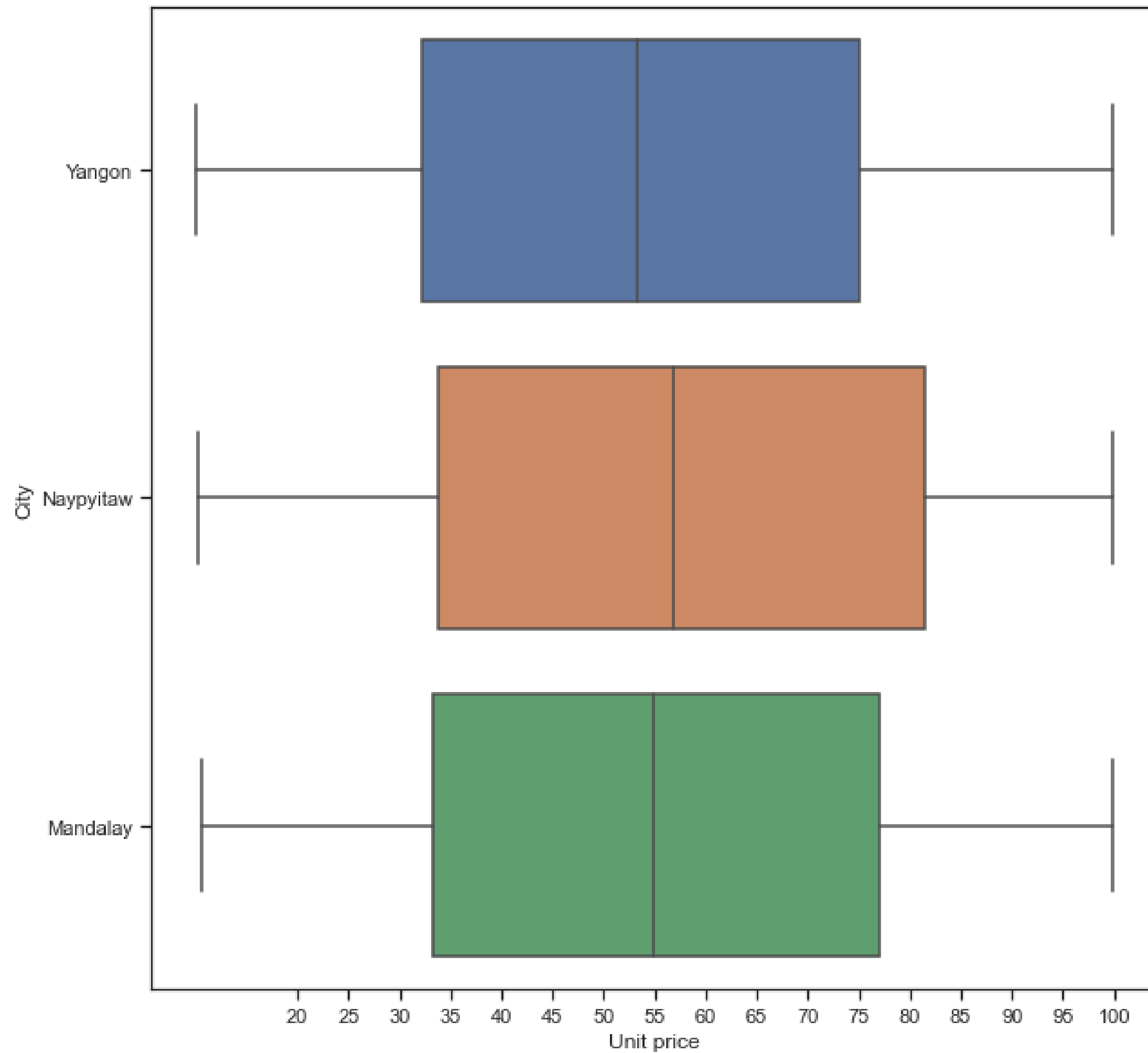
Total gross income against time of day



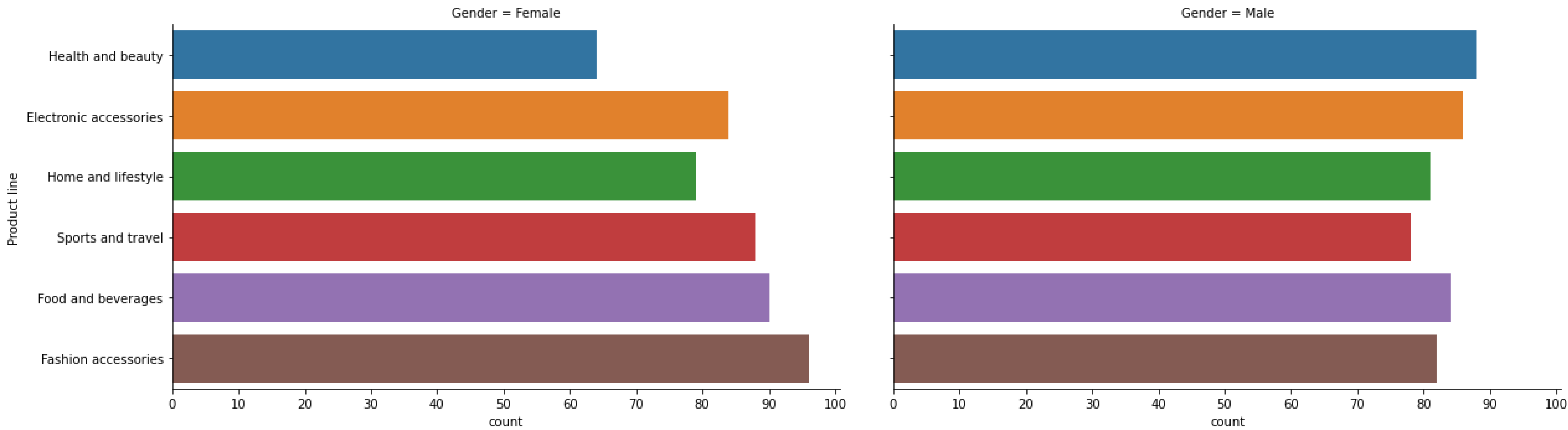
Average cogs against customer type



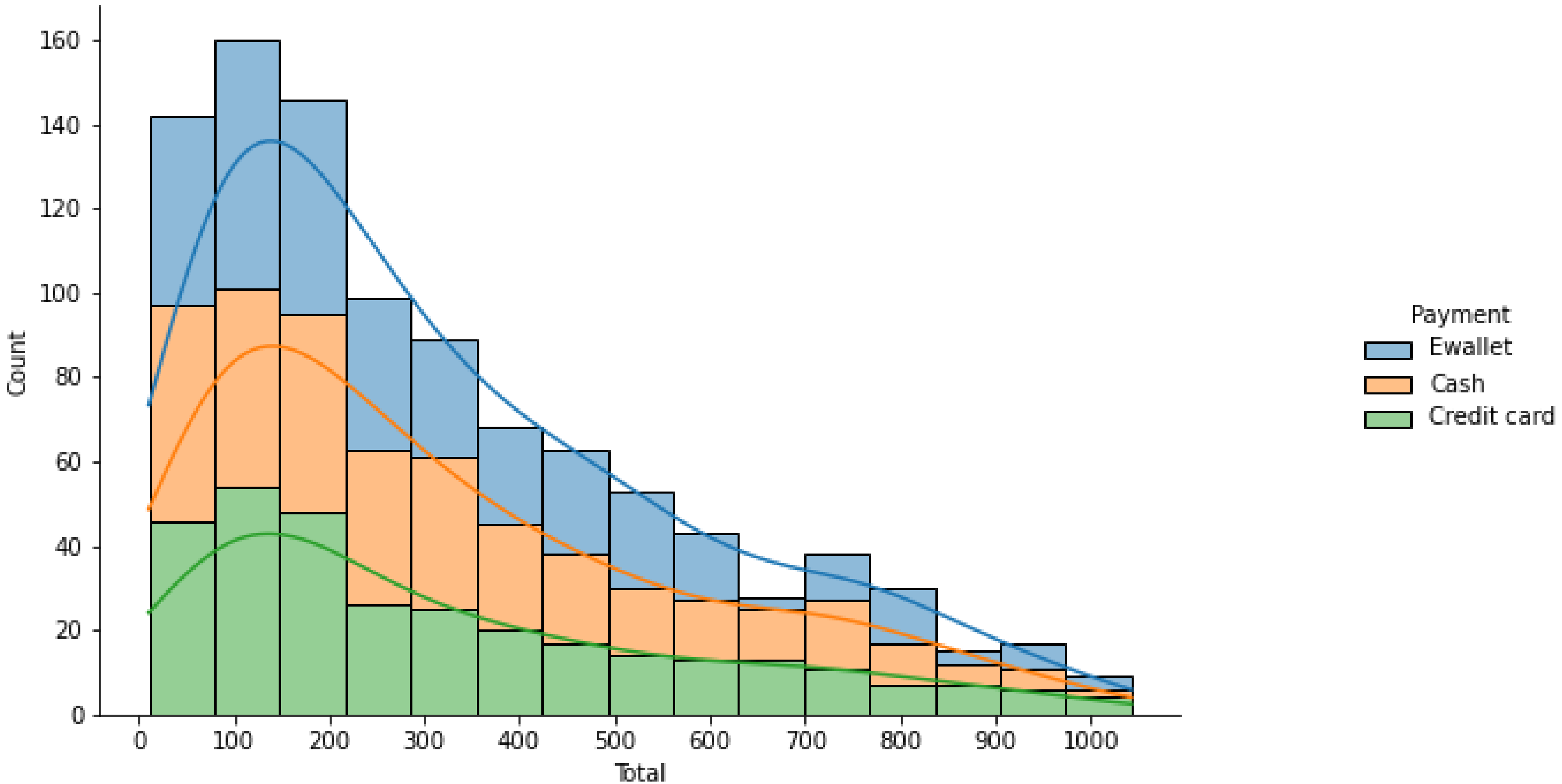
Boxplots of unit prices in each city



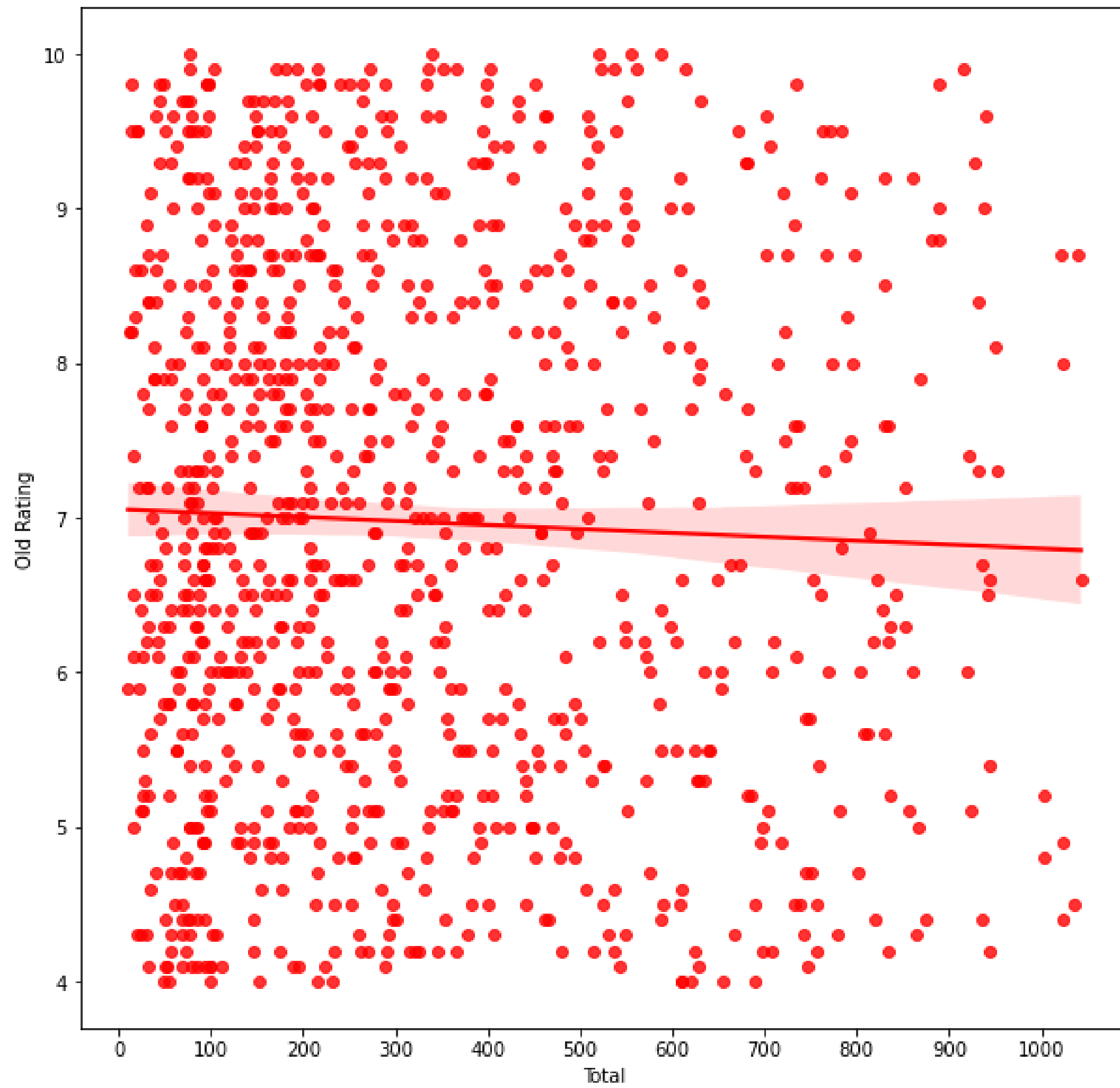
Count of Product line between both genders



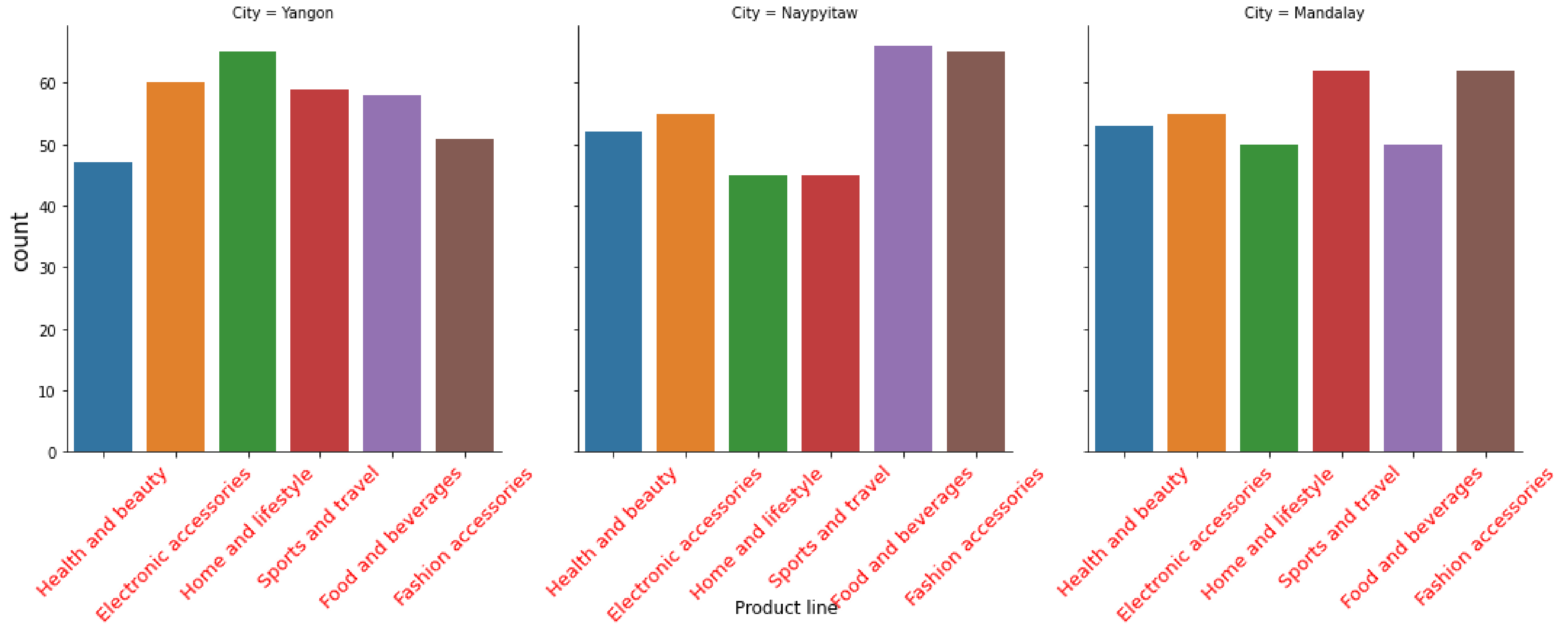
Payment type use in different total values



Change of Total against Old Rating regplot



Count of different product lines in each city



Recommendations

- It is to the industries' best interest to train talents in its use so they can utilize it as a tool for the quick sharing of information.
- All people within the industry should also learn the practice of data cleaning.

Conclusions

- It can ensure prices are kept in check and do not rise up too high.
- It can assist in identifying the target audience of products for targeted marketing maximizing profits.
- Customer feedback can always be analyzed.

Thank you
for your time!

