

The Executive Summary for Company XYZ Q1 Business Data

The following summary report is the result of a data analysis performed on the Quarter 1, 2019 business data of Company XYZ supermarkets in Abuja, Lagos and Port Harcourt. The goal of this data analysis project is to identify insights that can further improve productivity and ensure cost-effective operations.

1) The data and modelling approach

The dataset was well collected as there is no case of missing data. The data for each location were combined to generate a global dataset which was analysed. The data format in each column was checked, the date and time data were converted to standard forms, and the summary statistical attribute of the dataset was computed. Data aggregation with respect to the city was performed, and the sum and average value of the tax, total revenue per sale, cost of goods sold (cogs) and gross income were computed, and these revealed various trends and insights.

2) Key insights from the data analysis

A total of 1000 sales were made across the three branches for the 3-month period, with 342 in Lagos, 332 in Abuja and 328 in Port Harcourt. The highest total single sale is ₦375,354.00, and the minimum is ₦3,844.26. Tax, Total, cogs and gross income have outliers in the data spread. The mean unit price is ₦20,041.97, while the mean of the gross income is ₦5,536.57. The standard deviation of the gross margin percentage is 0, which implies that the values are constant, i.e., at 4.76%. Epay is the most used means of payment with 345 transactions, followed by cash payment with 344 and card payment with 311 transactions. Also, the minimum customer satisfaction rating is 4, and the maximum is 10, with an average value of 6.97. The lowest overall average customer satisfaction rating occurred at Branch B, as shown in Figure 1.

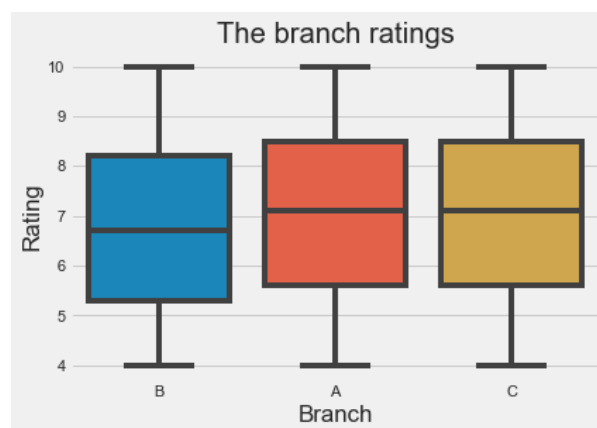


Figure 1. A box plot of customer rating

The total cost of goods sold for Abuja is ₦36,410,630.40 with a gross income of ₦1,820,531.52, and ₦36,411,555.60 for Lagos with a gross income of ₦1,820,577.78, and ₦37,909,270.80 for Port Harcourt with a gross income of ₦1,895,463.54. Regarding the total number of transactions for the three branches, Fashion Accessories is the highest product line while Health and Beauty product line has the lowest, as shown in Figure 2.

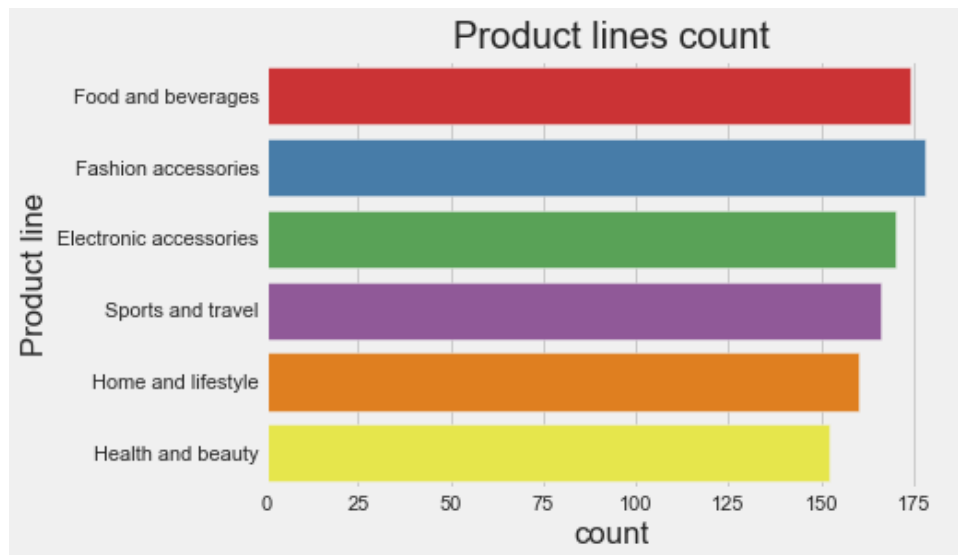


Figure 2. A bar chart of sales per product line

In terms of income, Food and beverages generated the highest gross income of ₦962,483.04, while Health and beauty had the lowest gross income of ₦843,321.24 as shown in Table 1 and Figure 3 using the calculated gross margin (4.762%) per product line and per city.

Table 1. Financial analysis per product line

PRODUCT LINE	TOTAL REVENUE		COGS		GROSS INCOME	
	sum	mean	sum	mean	sum	mean
Food and beverages	20,212,143.84	116,161.75	19,249,660.80	110,630.23	962,483.04	5,531.51
Sports and travel	19,844,217.54	119,543.48	18,899,254.80	113,850.93	944,962.74	5,692.55
Electronic accessories	19,561,511.34	115,067.71	18,630,010.80	109,588.30	931,500.54	5,479.41
Fashion accessories	19,550,122.20	109,832.15	18,619,164.00	104,602.04	930,958.20	5,230.10
Home and lifestyle	19,390,288.68	121,189.30	18,466,941.60	115,418.39	923,347.08	5,770.92
Health and beauty	17,709,746.04	116,511.49	16,866,424.80	110,963.32	843,321.24	5,548.17

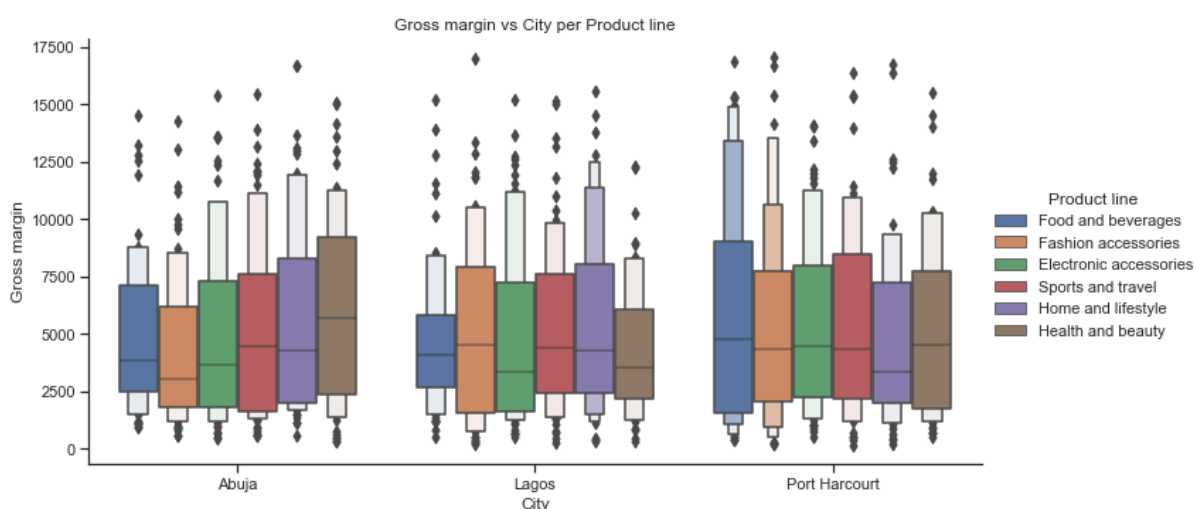


Figure 3. A bar chart of sales per product line

Figure 4 presents a comparison of the total amount per purchase for male and female comparison using the bar categorical plot, which shows a variation around the mean, i.e., it is a measure of

central tendency. On the average for the bar categorical plot women spend significantly more on Food and Beverages, Fashion Accessories, and Home and Lifestyle while men spend more on Health and Beauty. In Figure 5, the spread of the total amount per purchase from the maximum to the minimum for male and female customers is presented using a violin plot.

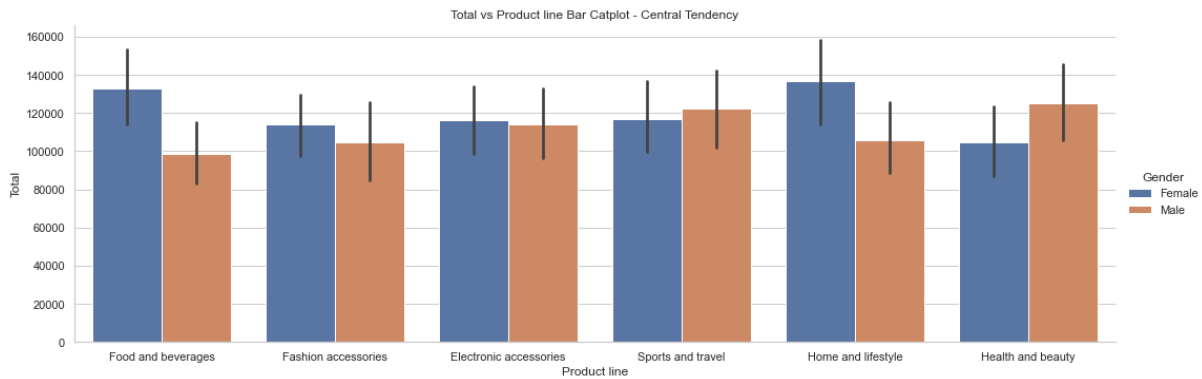


Figure 4. Total vs product line bar categorical plot for male and female customers: A measure of central tendency

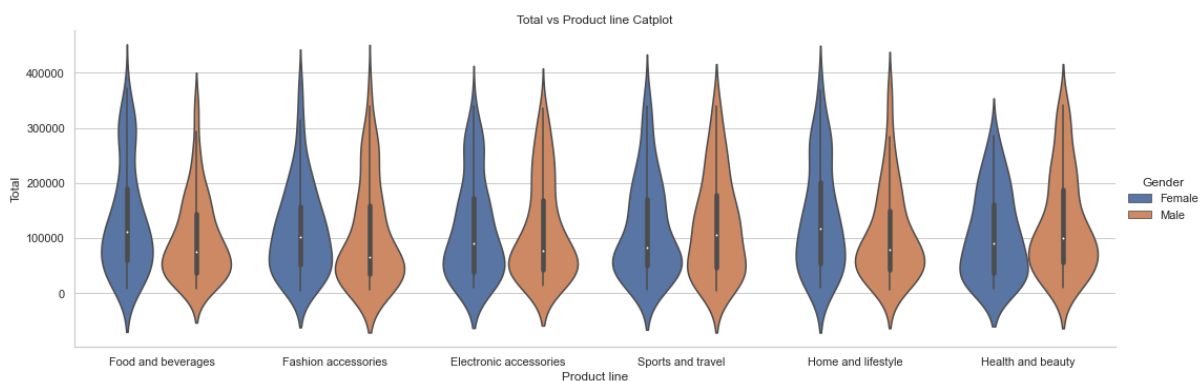


Figure 5. Total vs product line violin categorical plot for male and female customers

3) Conclusions

The city with the highest total gross income is Port Harcourt, with ₦1,895,463.54, while Lagos with 340 sales has the highest number of sales transactions and the highest number of quantities sold of 1859. The data analysis shows that, on average, women spend significantly more on Food and Beverages, Fashion Accessories, and Home and Lifestyle while men spend more on Health and Beauty. This can help in targeting customers with various offer packages. Also, Branch B in Abuja had the lowest customer satisfaction rating, and this may require strategic intervention.

Report written and submitted by:

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