National University of Computer and Emerging Sciences

PowerBi Report Documentation

Supermarket Sales

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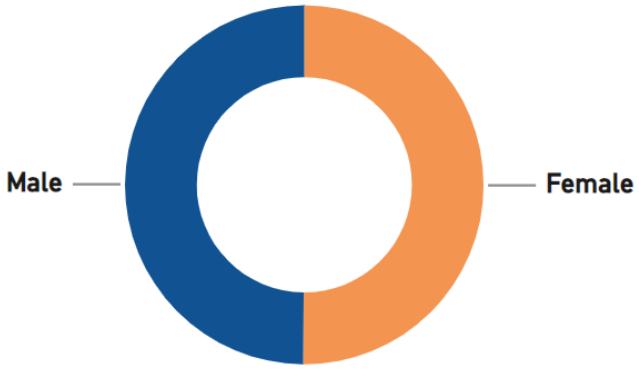
Introduction to the dataset

The Supermarket Sales dataset contains information on the sales of a supermarket chain in different regions. It includes data on the products sold, their prices, and the quantity sold, as well as customer information such as their gender, age, and payment method. This dataset can be used to analyze sales trends, customer behavior, and product performance. With the help of PowerBI, you can visualize and explore the data to gain insights into the supermarket's sales performance and make data-driven decisions.

Following are the graph we used that are best suited for visualization and analysis of the dataset:

1- Gender - Pie chart

This Pie Chart of Gender helps us visualize the types of genders that buy products from the supermarket. It also shows us which gender is more active and frequent as compared to the other.

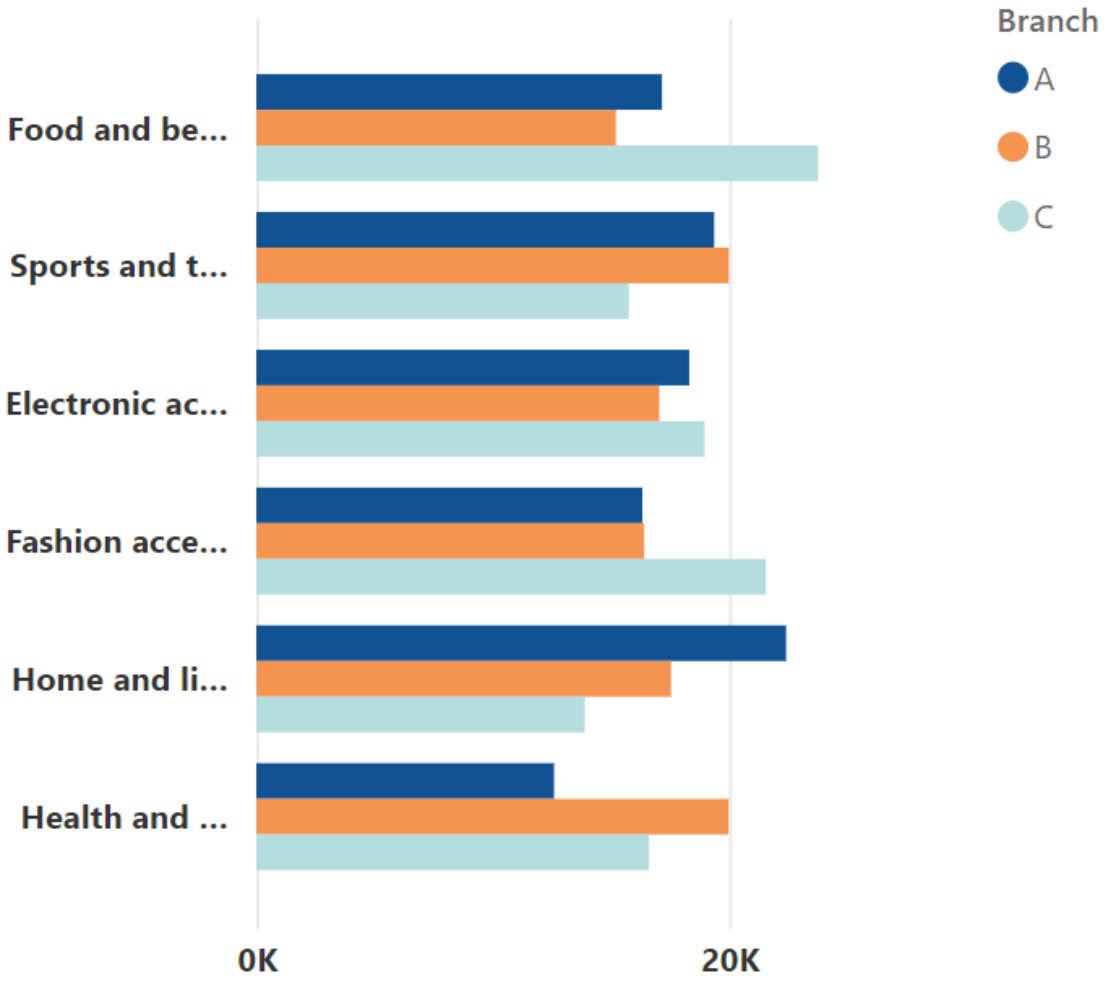


2- Customer Type- Pie Chart

This Pie chart helps us to visualize the type of customer that comes to the supermarket and which ones are frequent. In this case there are almost equal amount of members and normal customers

3- Total sales by Product Line and Branch- Bar Chart

This Bar Chart helps us visualize how many sales per branch have been made of which product. We can easily predict which product will give us the best revenue in which branch. It's easy to visualize.



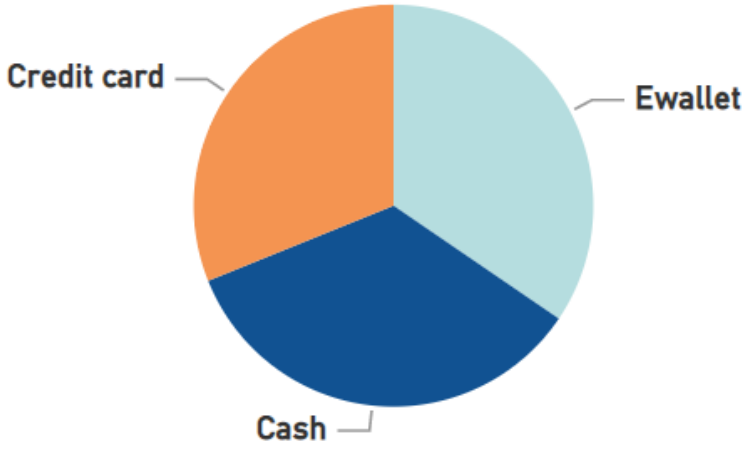
Let's analyze this,

- For Food and beverages, they are being sold more than in branch A and B.
- For Sports and Technology, they are making more revenue in branch B.
- For Electronics, its branch C

- For Fashion accessories, its branch C
- For Home and life style, its branch A
- For health, its branch B that they are making more revenue at.

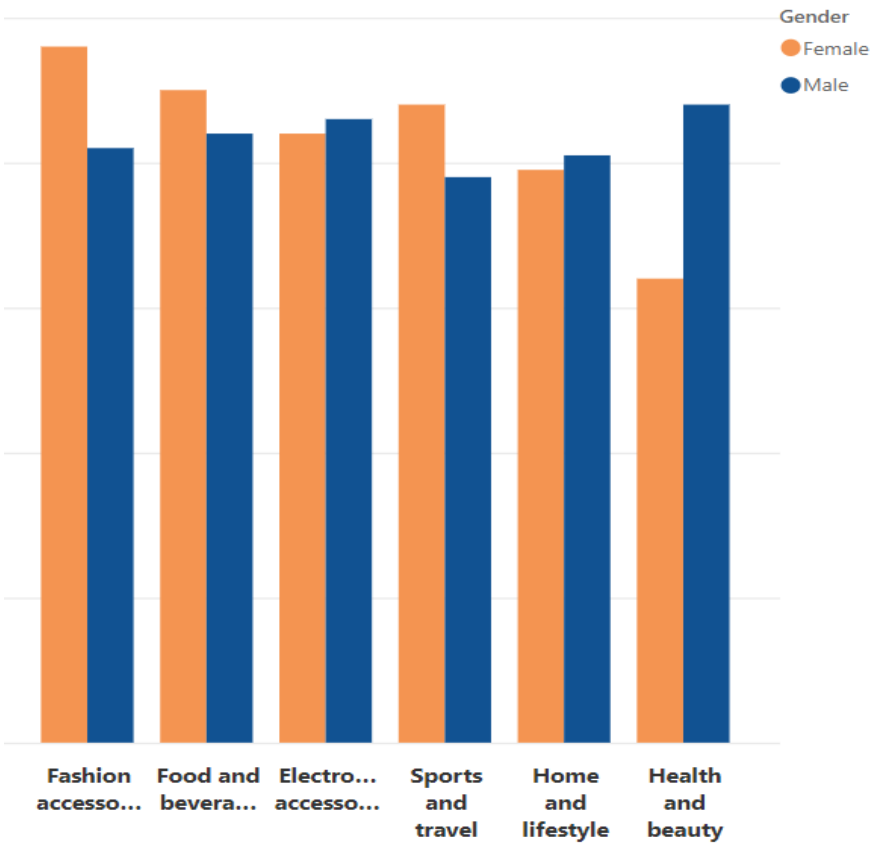
4- Count of Payment by Payment- Pie Cart

This Pie chart helps us to visualize how customers generally use the means to pay for their product. We can predict on the basis of the most used method and make that method available in all branches or by launching deals with that company just to gain more customers. In this case there were 3 categories and the most used was Ewallet.



5- Product line by Gender- Column chart

This chart made it easy for us to visualize which gender is preferring which product line and on basis of that we can predict and make moves eg which product line needs more attention to avail new sales through which gender

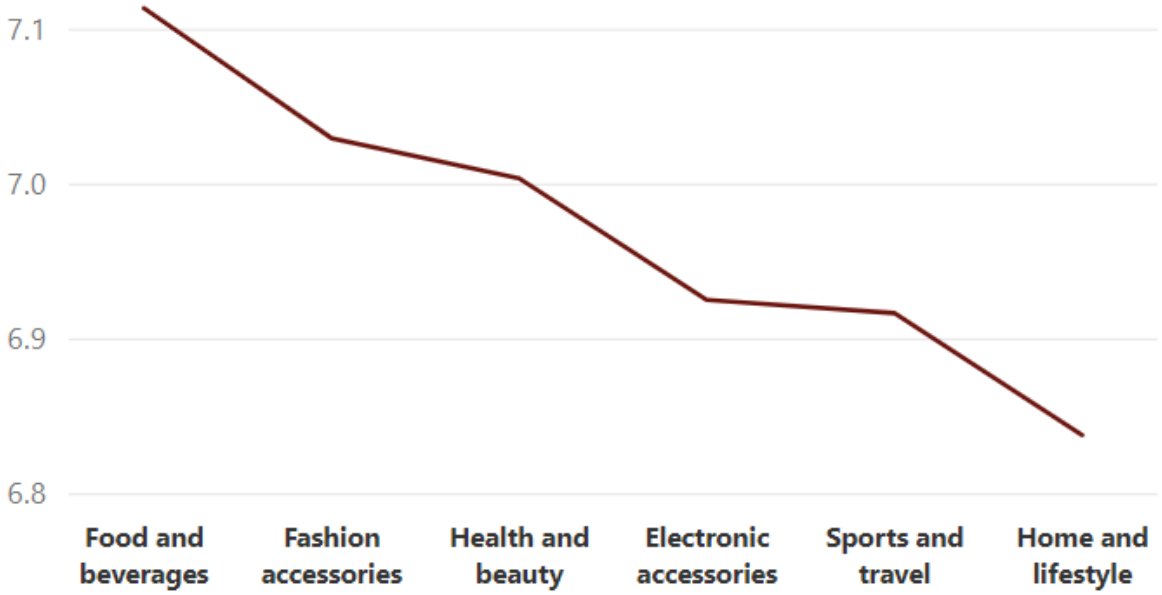


Let's analyze this,

- Fashion, food, Sports, are more commonly sold in Females than Males.
- Electronics, and Home and lifestyle are more common in Males.

6- Average of Rating by Product Line- Line Chart

This shows us the average rating of each product in the product line. By visualizing this data, you can quickly identify which product lines are performing well and which ones are not meeting customer expectations.And through this necessary moves can be made for the future.

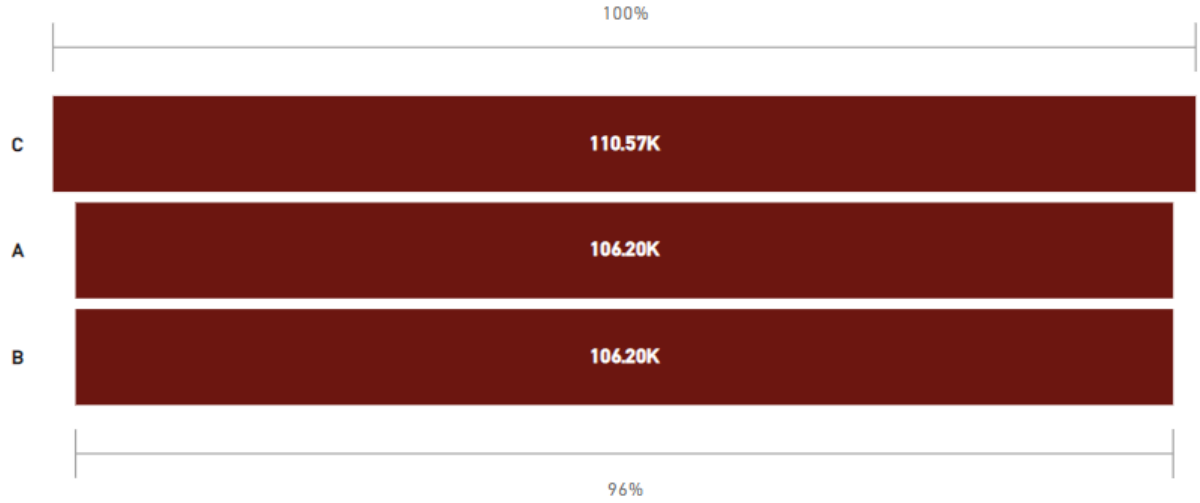


Let's Analyze this;

- Food and beverages products seems to get more high ratings means they are going well comparatively.
- Home and Lifestyle products are getting less ratings, they need more attention.

7- Total sales in branches - Funnel Chart

Visualizing the total sales in branches through a funnel chart provides valuable insights into the performance of different branches in terms of sales. By visualizing this data, you can quickly identify which branches are performing well and which ones may need improvement.

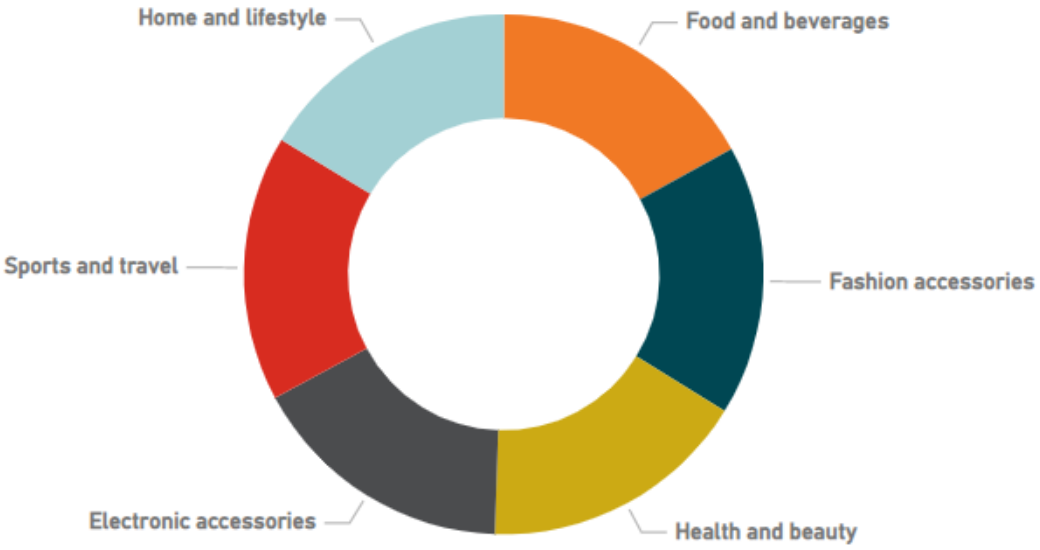


Lets Analyze this:

- So branch C is making more sales overall than branch A and B , B is doing lesser than both.

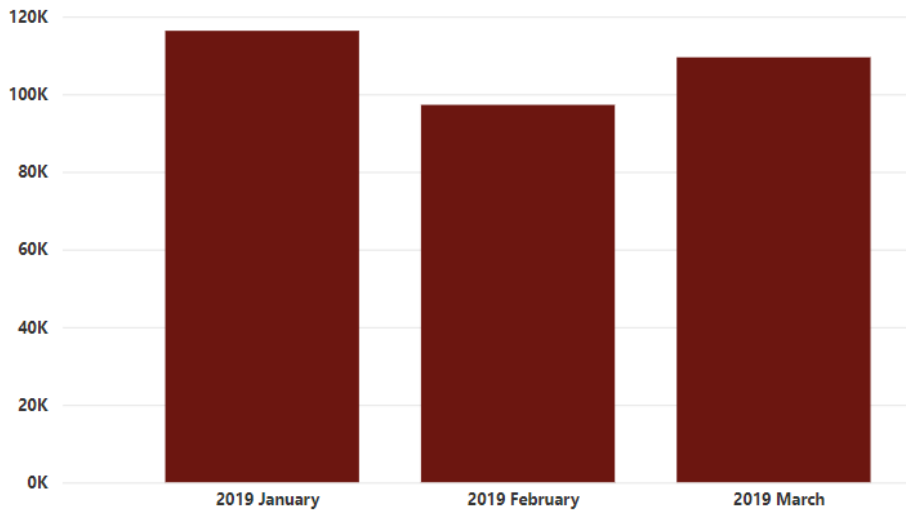
6- Rating by Product Line- Pie chart

This visualization provides valuable insights into the distribution of customer satisfaction across different product lines. By visualizing the average rating for each product line as a slice of a pie chart, you can easily compare the ratings for different product lines and identify which ones are performing well and which ones may need improvement.



7- Total Sales by Date- Column chart

Visualizing the total sales by date through a column chart can provide valuable insights into the trend of sales over time.By visualizing the total sales by date as a column chart, you can easily compare the sales for different dates and identify any trends or patterns in the data. The column chart can also help you identify any significant changes in sales over time.
Helps us predict on which specifics dates our sales rise and drops.



Lets Analyze this:

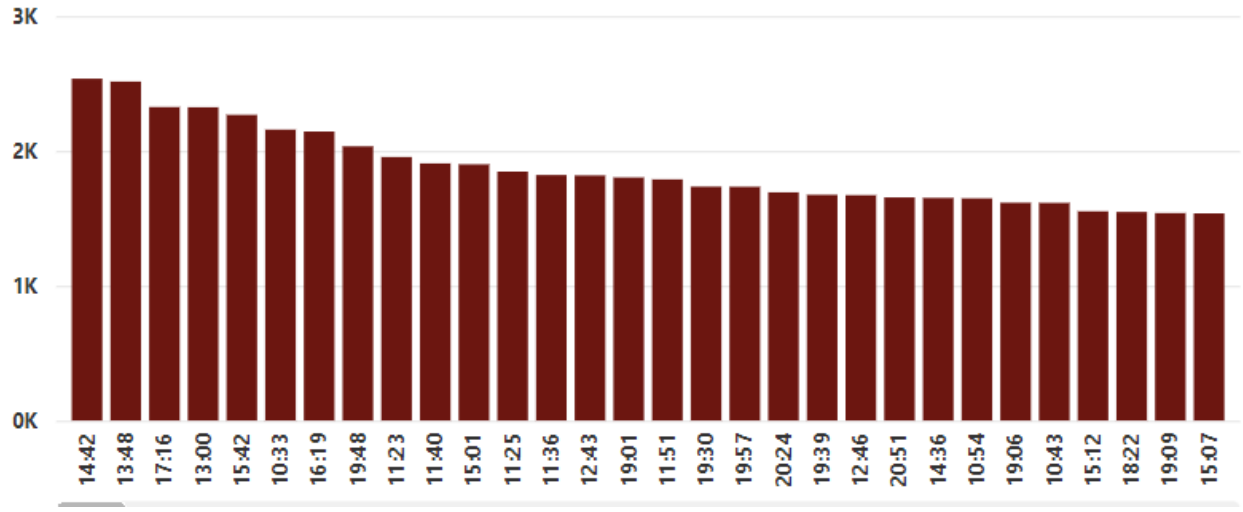
- Sales were at maximum in January 2019.
- Sales were the lowest in February.

8- Sum of Quantity by Product line and Branch- Tree Map

By visualizing the sum of quantity by product line and branch as a tree map, you can easily compare the sales for different branches and product lines and identify any patterns or outliers in the data. The tree map can also help you identify which branches and product lines are generating the most sales.

9- Total Sales by Time- Colomn Chart

By visualizing the total sales by time as a stacked column chart, you can easily compare the sales for different time periods and identify any trends or patterns in the data. The stacked column chart can also help you identify which categories are contributing the most to the overall sales. So by this you can predict on what time your sales are the most high.

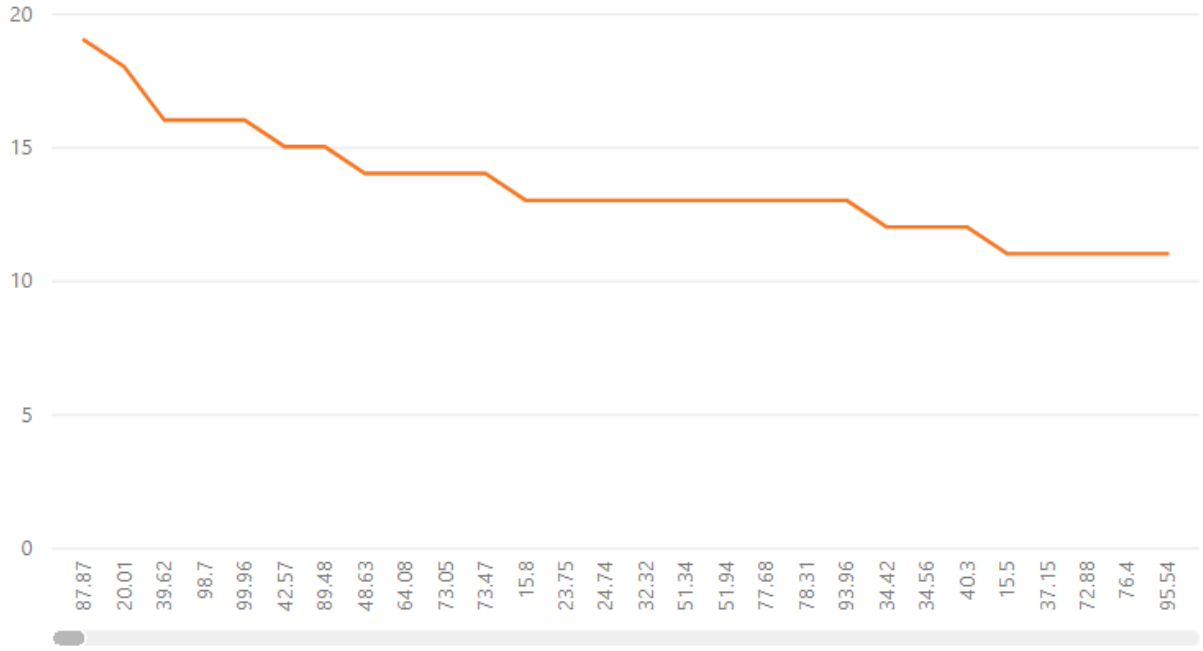


Lets analyze this:

- Sales were at max at 14:42 usually the time people get off of work. So sales are max during free hours than during work hours.

10- Sum of the Quantity by Unit Price- Line chart

A line chart of the sum of quantity by unit price can help us to predict the sales volume of a product at a given price point. By analyzing the trend of the line chart, we can make informed predictions about how changing the unit price of a product will affect the quantity sold.



Let's Analyze this:

- There is a negative correlation between unit price and quantity sold, meaning that increasing the unit price of a product is likely to decrease the quantity sold

RECOMMENDATIONS

here are some recommendations for the business:

- Focus on the Food and Beverages product line as it generates the most sales compared to other product lines.
- Consider expanding the product range in the Food and Beverages category, particularly in high-demand items such as fresh produce and snacks.
- Allocate more resources to Branch A, as it has higher sales than the other two branches. This could include increasing inventory, improving store layout and design, or increasing marketing efforts in the local area.

- Analyze the sales data for each individual product to identify which items are most popular and profitable. Consider promoting these items more prominently in the store or developing targeted marketing campaigns to increase their sales further.

- Use the sum of quantity by unit price analysis to set optimal pricing strategies for each product. Consider adjusting prices based on demand, seasonal trends, and competition.

- Increase focus on product lines such as Home and Lifestyle, which have lower ratings and need more attention. Improvements can be made in terms of product quality, pricing, and marketing to increase customer satisfaction.

- Branch B has shown potential in selling Sports and Technology products. Therefore, there can be a focus on increasing the stock and promotion of these product lines in Branch B to drive sales.

- E-wallet was the most commonly used payment method by customers. Therefore, it can be made available in all branches and deals can be launched to incentivize customers to use this method more frequently.

- The sales trend analysis suggests that sales were highest in January 2019 and lowest in February. Based on this, seasonal trends can be identified, and promotions and discounts can be offered during the slow months to increase sales.

- The analysis of gender preferences for product lines can help in tailoring marketing and promotional strategies to increase sales among specific genders.

- The line chart of the sum of quantity by unit price can help in predicting sales volume for a product at a given price point. Using this information, pricing strategies can be developed to increase sales and revenue

CONCLUSION

In conclusion, the Supermarket Sales dataset provides valuable insights into the sales trends, customer behavior, and product performance of a supermarket chain. By visualizing the data through Power BI, we can easily identify which products, branches, and customer segments are performing well and which ones may need improvement. We can also predict future sales trends and make data-driven decisions to optimize revenue and customer satisfaction. The graphs and charts used in this report, including pie charts, bar charts, column charts, and tree maps, provide effective ways to visualize the data and gain insights. Overall, Power BI is a powerful tool for data analysis and visualization that can help businesses make informed decisions based on their data.