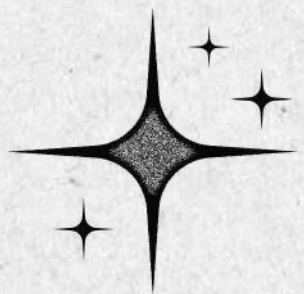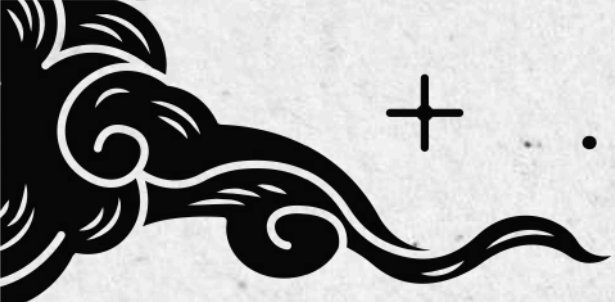# WALMART SALES ANALYSIS

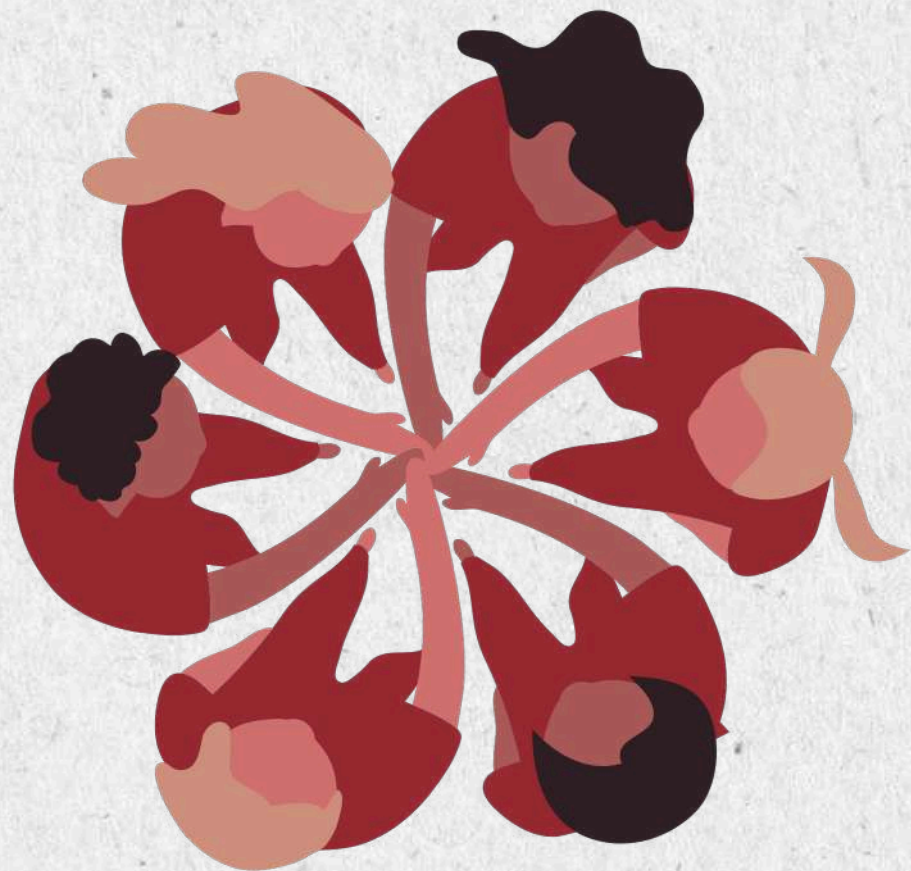Presentation by Dreamers team

CONTENTS

- Meet The Group
- Introduction
- Objective about
- the data
- Project phases

- Data preprocessing and cleaning
- Data analysis data Forecasting
- data visualization
- Recommendations
-

MEET THE TEAM

- ✦ Amna Ahmed
- ✦ Hasnaa Sameh
- ✦ Naglaa Mahmoud
- ✦ Samar Samir
- ✦ Hadeer Ashraf
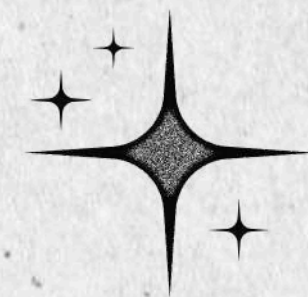
INTRODUCTION

This project aims to analyze Walmart's sales data using a comprehensive dataset with 17 key columns, including details like invoice ID, customer demographics, product lines, and financial metrics. Through this analysis, we will uncover insights to help optimize operations, improve customer satisfaction, and boost profitability. The focus will be on identifying sales trends, key revenue drivers, and actionable recommendations for business improvement.

OBJECTIVES

The primary objective of this project is to analyze Walmart's sales data to identify patterns and trends that can inform strategic decisions. By analyzing this dataset, we aim to

→

1. Analyze customer behavior.
2. Identify top branches and products.
3. Impact of pricing and demographics.
4. Optimize inventory, pricing, and marketing.

ABOUT WELMART DATA

The dataset includes various columns related to Walmart's sales data, such as:

|	
Invoice ID: Unique identifier for each transaction.	**Branch and City: Location details where the sale occurred.**
Customer Type: Indicates if the customer is a Member or Normal.	**Unit Price and Quantity: Cost per unit and number of items sold.**
Product Line: Category of the purchased item (e.g., Health and Beauty, Food and Beverages).	**Date, Time, Payment Method: Details about when and how the payment was made.**
Date, Time, Payment Method: Details about when and how the payment was made.	Additional Info: Time of day, day, and month of the sale.
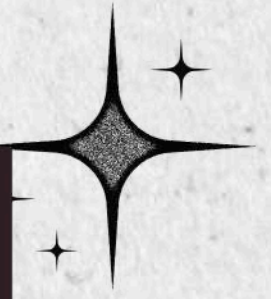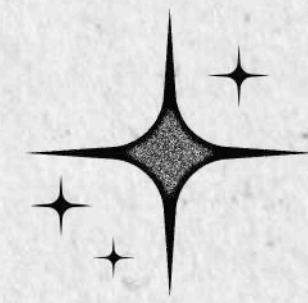
PROJECT PHASES

1 Data preprocessing and cleaning phase

2 data Analysis and Quastions phase

3 Forecasting Questions phase

4 Data visualization

DATA PREPROCESSING AND CLEANING PHASE

Tools used : Excel and SQL

1

Database Creation

A new SQL database was created to store the sales dataset, providing a foundation for easy access and analysis.

2

Column Definition

Column names were carefully defined to ensure clarity and consistency within the dataset.

3

Data Import

The dataset, originally in Excel format, was successfully imported into the SQL database.

4

Data Edits and Updates

Necessary adjustments were made, including the use of the UPDATE function to add new columns, enhancing future analysis capabilities.

DATA ANALYSIS AND QUASTIONS PHASE

1.Sales Performance Analysis:

Overall Sales Performance Analysis: The Yangon branch leads in sales, and member customers contribute a larger portion of total sales compared to regular customers.

2. Product Category Analysis:

The "Health and Beauty" and "Electronic Accessories" categories generate the highest sales, particularly in major cities like Yangon.

3. Sales Performance by Branch:

The Yangon branch performs the best, while the Naypyitaw branch underperforms in sales.

4. Monthly Performance Analysis:

March and January are the top-performing months, while February experiences a slowdown, indicating a need for increased marketing during this period

5. Peak Time Impact on Sales:

Sales peak in the afternoon and evening, with potential to increase sales in the morning by offering promotions or events.
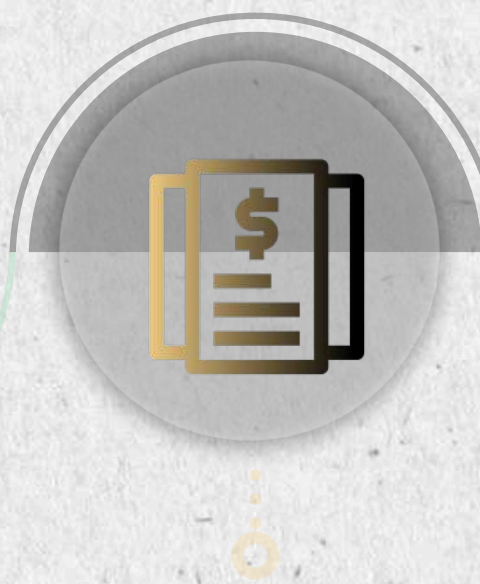
6. Sales by Payment Method:

E-wallets are the most preferred payment method, encouraging larger purchases compared to other methods
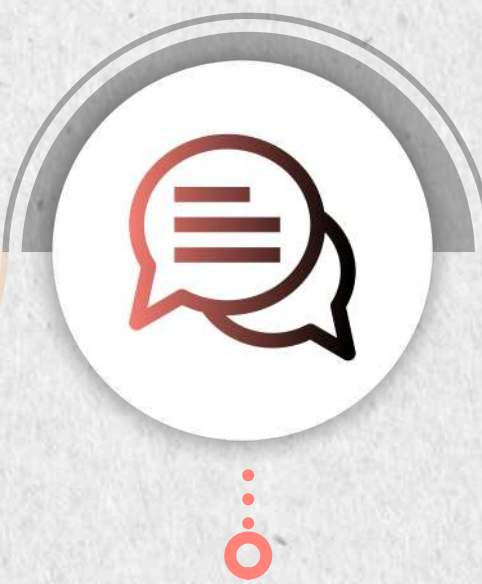
7. Customer Ratings Analysis:

The "Health and Beauty" category receives the highest customer ratings, with evening purchases generally getting better reviews.
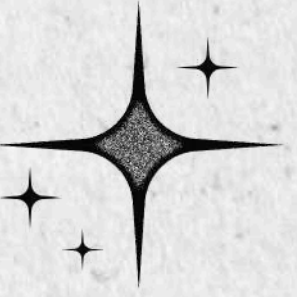
8. Repeat Customer Analysis:

Member customers make repeat purchases more often, showing a strong preference for "Health and Beauty" products.

FORCECASTING PHASE

We analyzed the data using Power BI to forecast three key metrics:
1. Average Total
2. Average Gross Income
3. Average Price Unit over a period of three months.

Objective of the Analysis:

Our goal is to understand the expected financial performance over time in order to improve future decision-making based on trends.
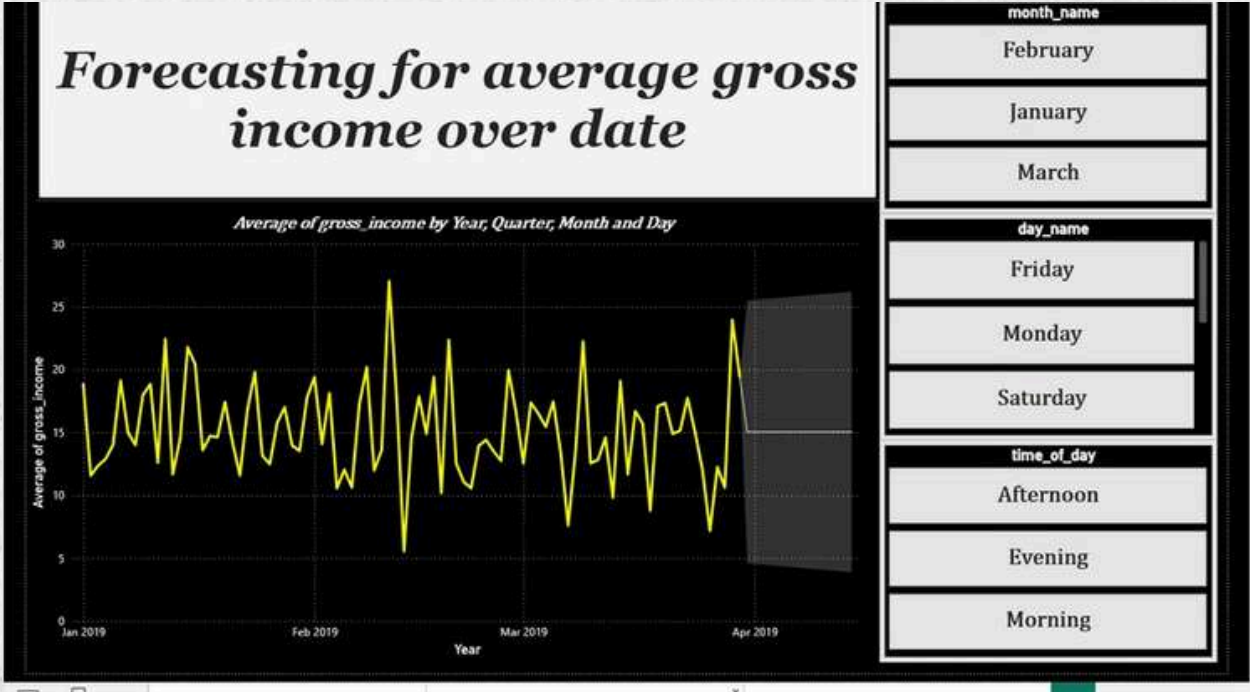
Tools used

We utilized Power BI tools to generate accurate forecasts through time series plots and slicers to break down time periods by days, months, and times of day
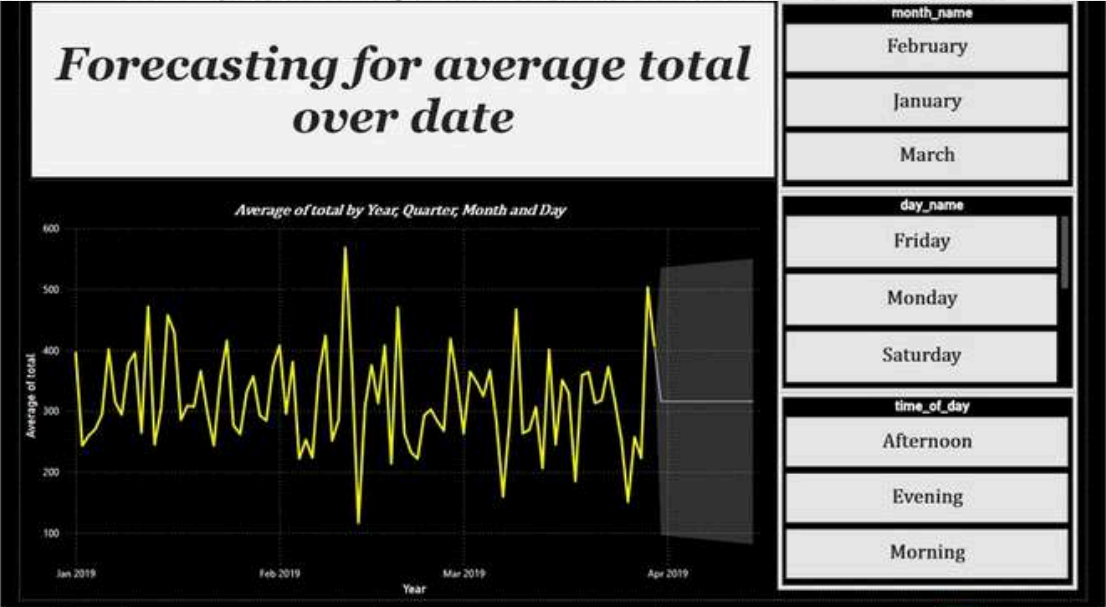
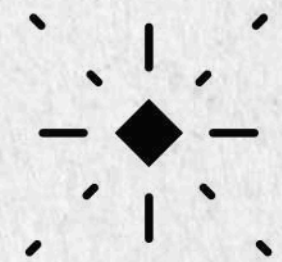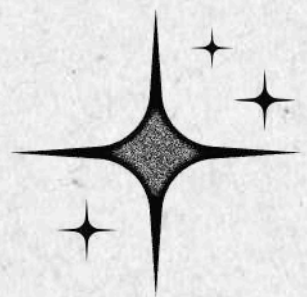# FORCECASTING PHASE
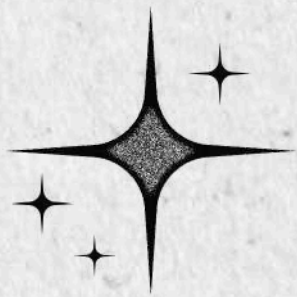
Forecating foor average unit

Forecasting for average total

Forecasting for average gross income

SALES ANALYSIS BY TIME OF DAY

SALES ANALYSIS BY TIME OF DAY

1. Description of the Data:

- This bar chart shows the distribution of Walmart sales based on different times of the day: Morning, Afternoon, and Evening.

- As we can see from the chart, sales during the Evening are the highest, while sales during the Morning are the lowest

Time of day

of Activity count by time_of_day and time_of_day

day ● Evening ● Afternoon ● Morning

Evening: 429.00
Afternoon: 376.00
Morning: 190.00
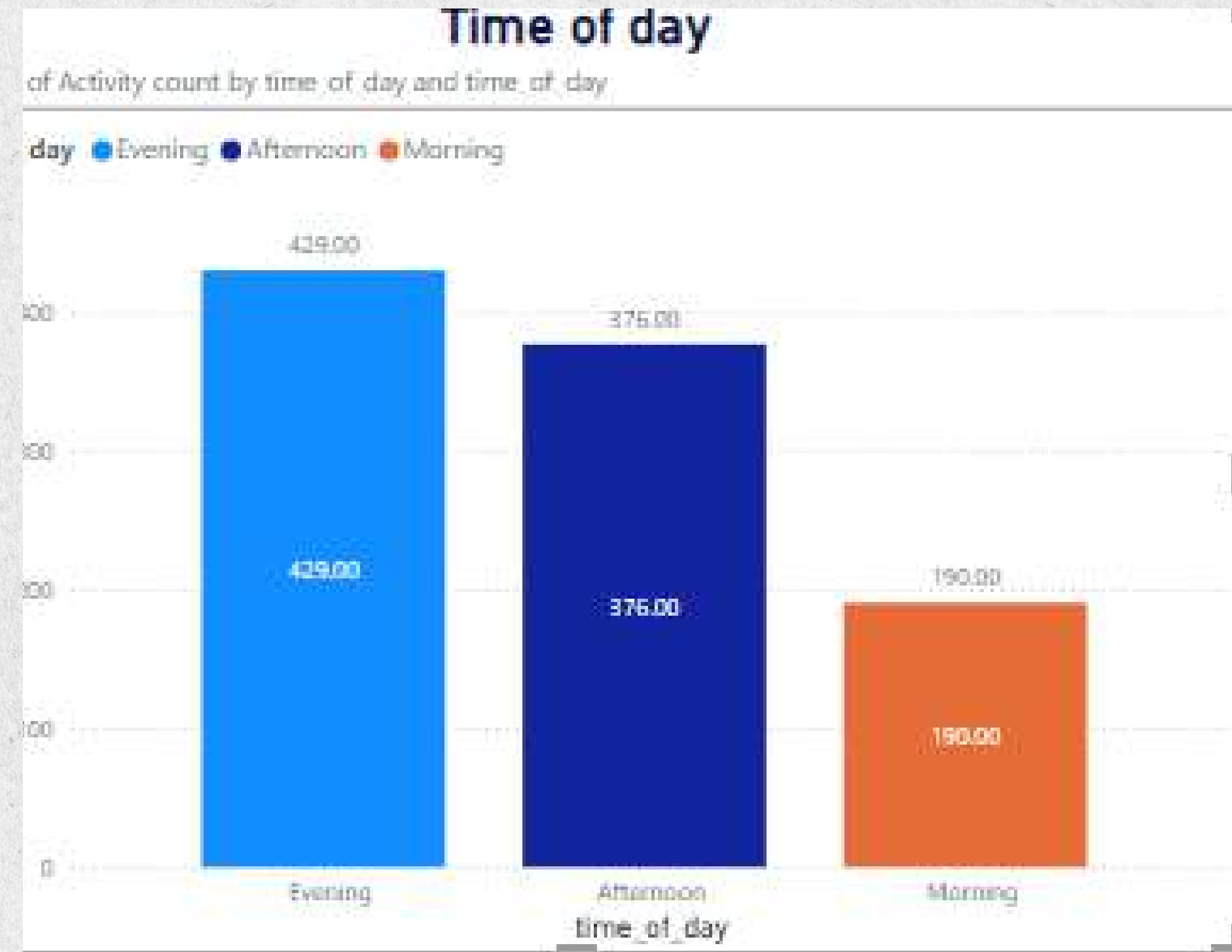
time_of_day

SALES ANALYSIS BY TIME OF DAY

2. Key Insights:

- Evening sales reached approximately $138,370, indicating that the majority of customers prefer to shop during this time.

- Afternoon sales were close to the evening sales, at around $122,797.

- "On the other hand, Morning sales were significantly lower, at about $61,798, suggesting that stores are less busy during the early hours of the day.
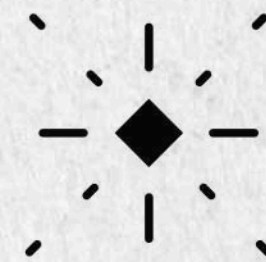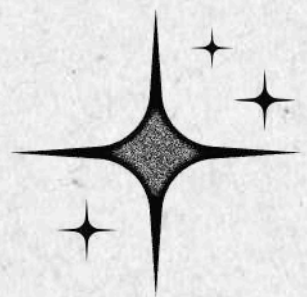

Time of day

Average of Activity count by time_of_day and time_of_day

time_of_day ● Evening ● Afternoon ● Morning

429.00

376.00

190.00

429.00

376.00

190.00

Evening   Afternoon   Morning

time_of_day

Average of Activity count

SALES ANALYSIS BY TIME OF DAY

Conclusion:

- Based on this analysis, the company could focus more marketing or logistical efforts in the evening to maximize sales, and perhaps explore strategies to boost sales during the morning period


Time of day

Average of Activity count by time_of_day and time_of_day

time_of_day ● Evening ● Afternoon ● Morning

SALES ANALYSIS BY DAY OF THE WEEK

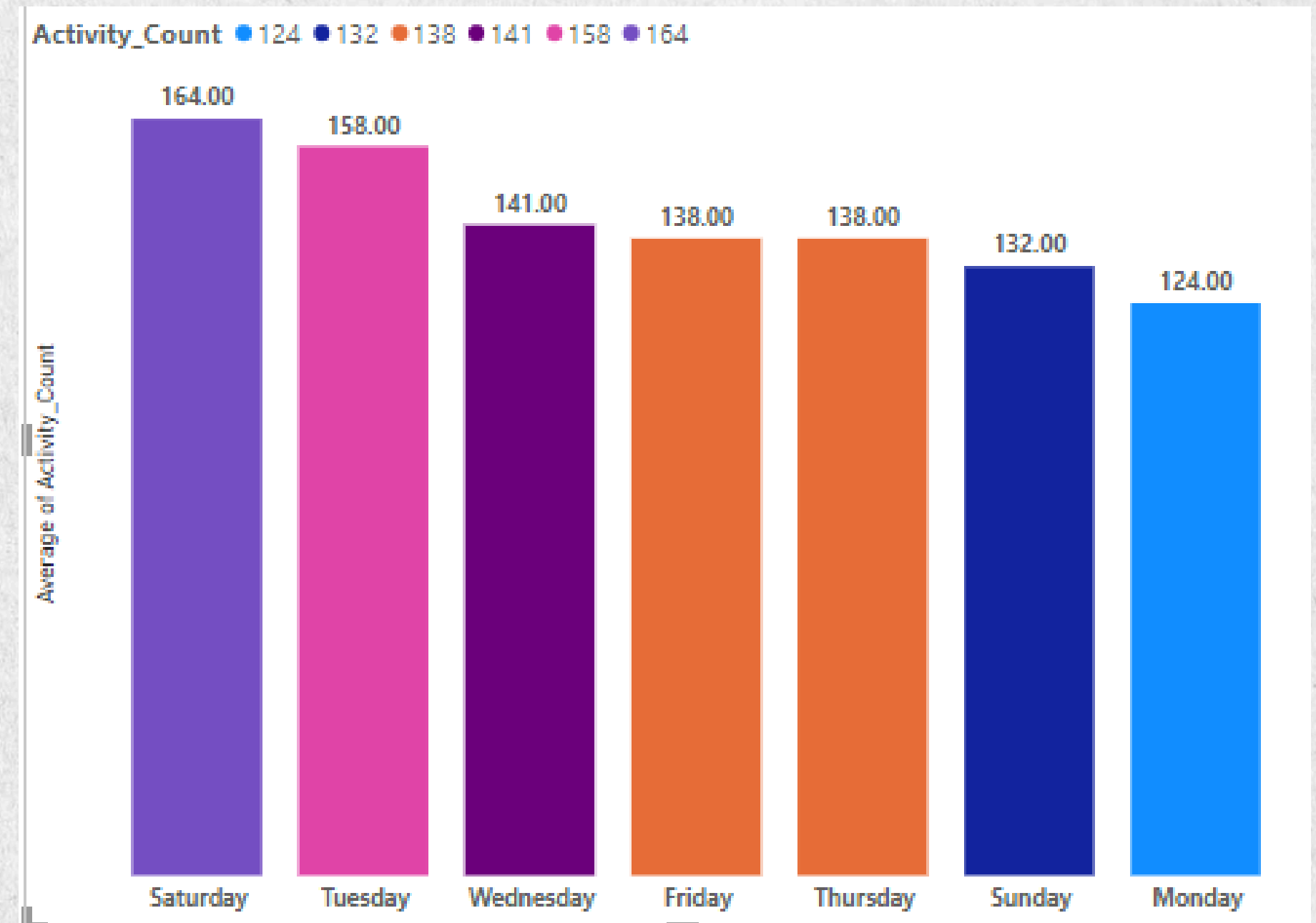# SALES ANALYSIS BY DAY OF THE WEEK

Main Content:

- This bar chart displays the average sales for each day of the week at Walmart.

- The days are arranged from the highest activity count to the lowest activity count, showing the fluctuations in sales throughout the week.
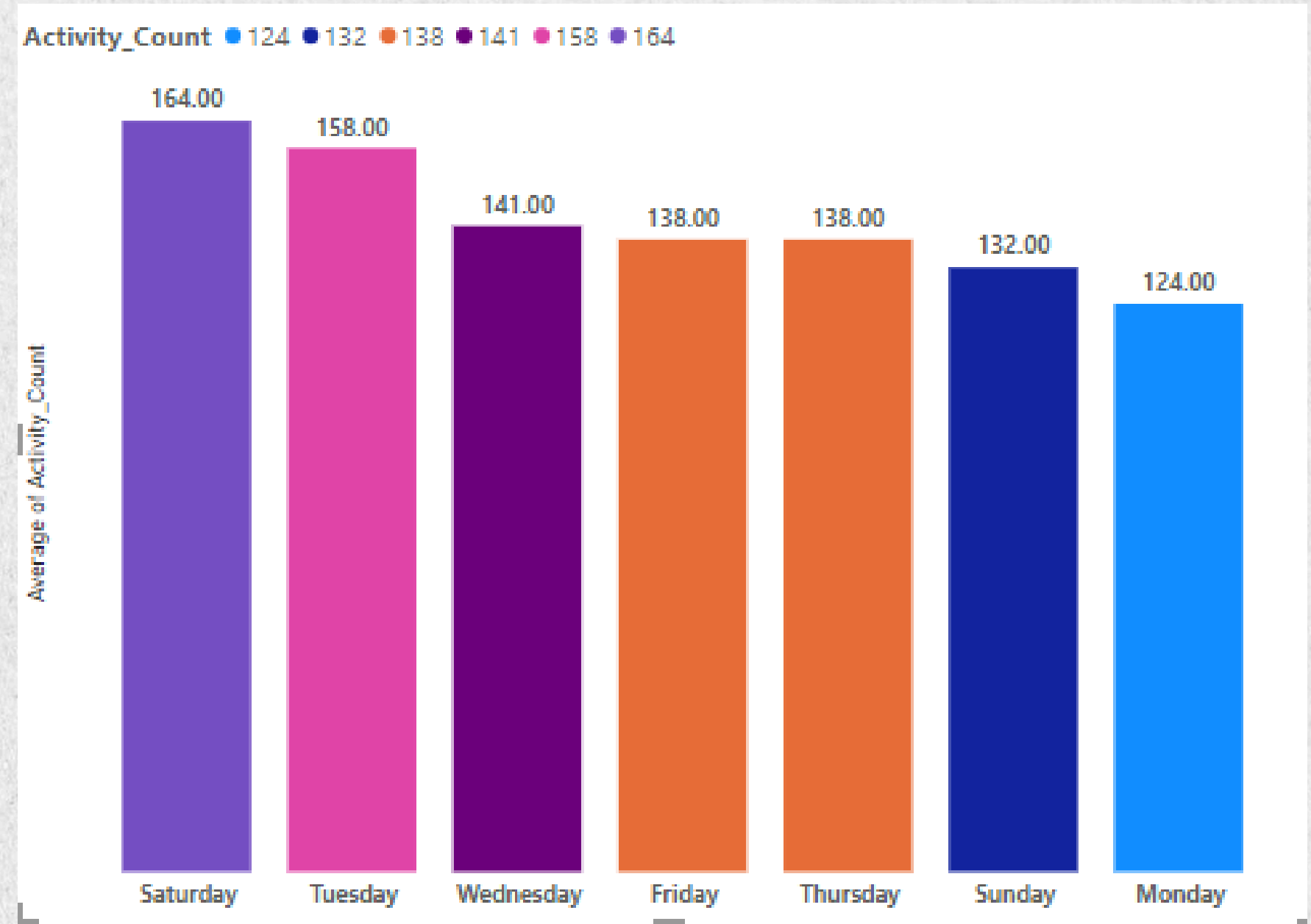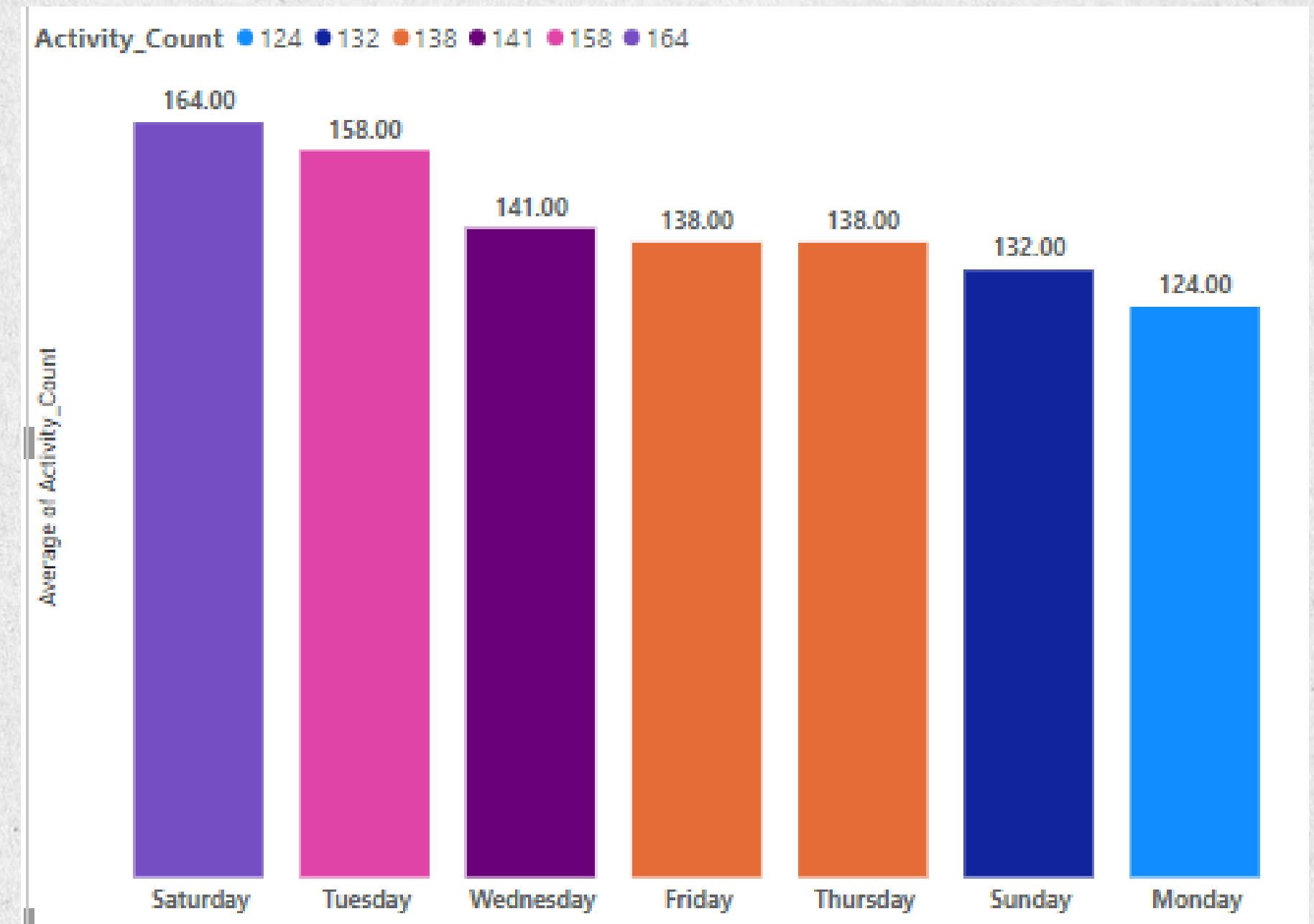
SALES ANALYSIS BY DAY OF THE WEEK

2. Key Insights:

- The chart shows that Saturday has the highest average sales at approximately $56,120, followed by Tuesday with sales around $51,482.

- On the other hand, Monday shows the lowest sales at around $37,899, which suggests that Monday might be a less busy shopping day for customers.

SALES ANALYSIS BY DAY OF THE WEEK

3. Weekly Sales Patterns:

- There seems to be a clear pattern where the weekend days, especially Saturday, tend to have the highest sales, likely due to customers doing their weekly shopping during this time.

- Mid-week days like Tuesday and Wednesday also perform reasonably well, indicating consistent customer traffic on those days.
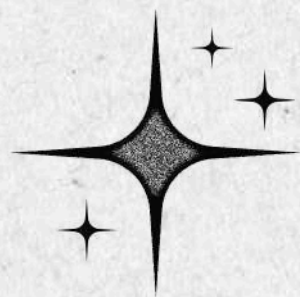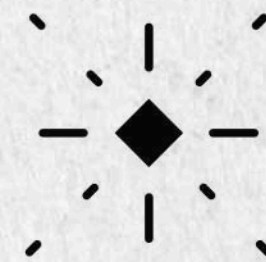
SALES ANALYSIS BY DAY OF THE WEEK

Conclusion:

- Understanding the sales distribution across the week helps in optimizing business operations, like stock management, staffing, and marketing efforts.
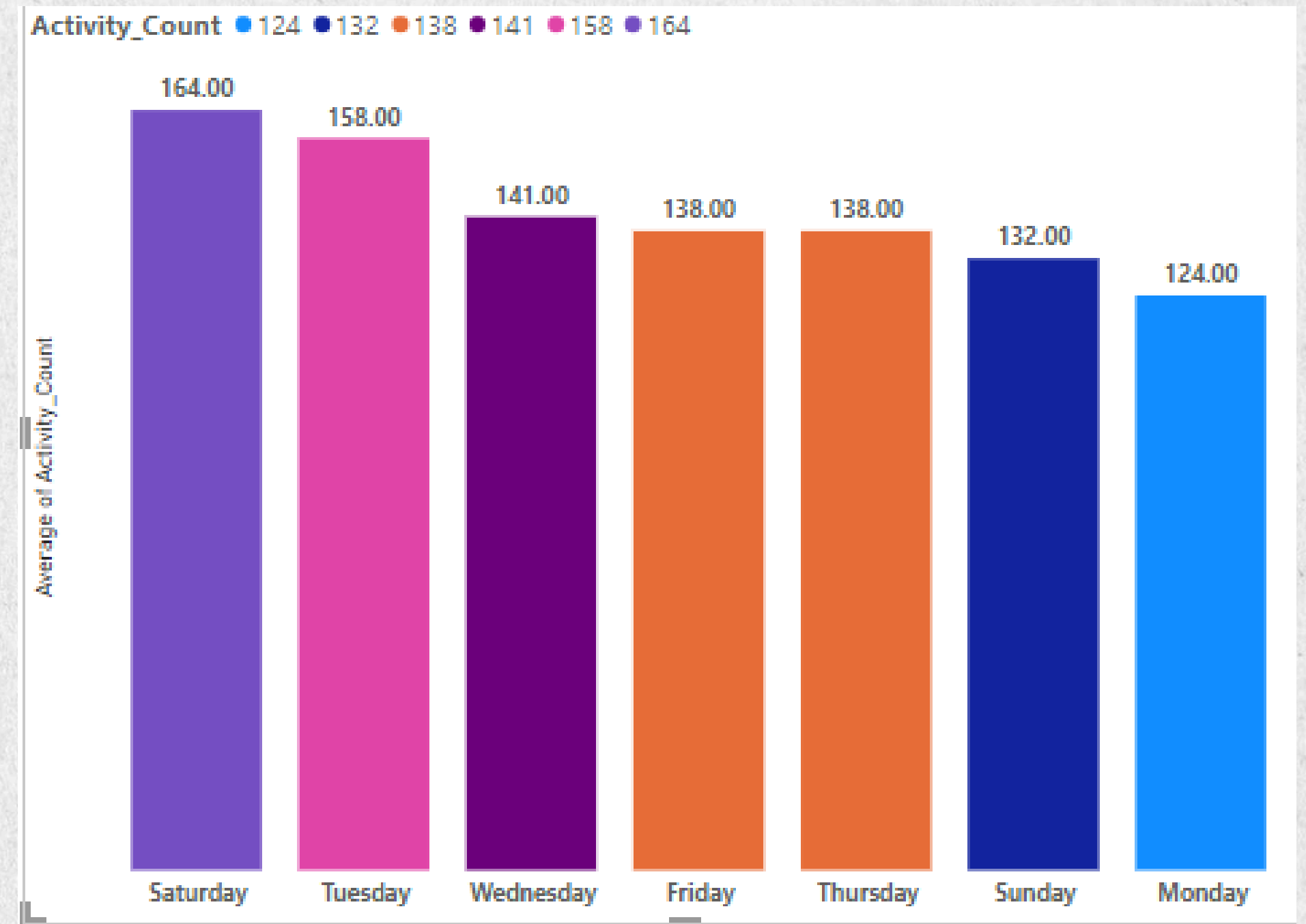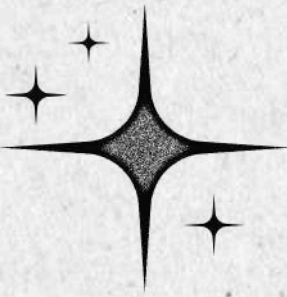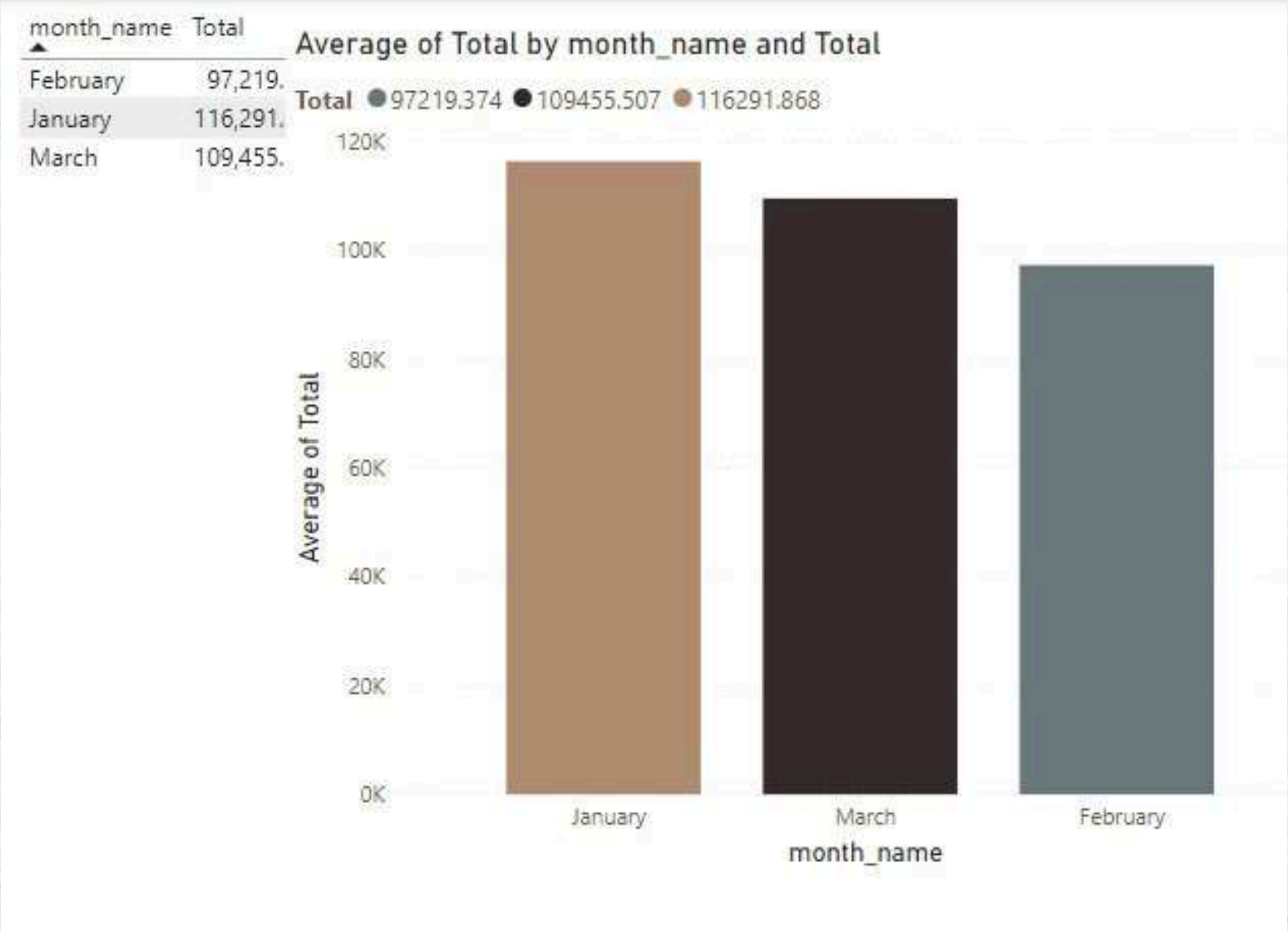
SALES ANALYSIS BY MONTH

SALES ANALYSIS BY MONTH

1.Description of the Data

- This bar chart shows the average sales for Walmart during the first three months of the year: January, February, and March.

- It provides a clear comparison of how sales fluctuated across these months.

SALES ANALYSIS BY MONTH

2. Key Insights:

- January had the highest average sales at around $116,291, which could be due to post-holiday shopping and New Year promotions.

- March followed closely with sales reaching around $109,455, possibly indicating a steady continuation of high sales early in the year.

- February had the lowest sales at $97,219, which might be due to it being a shorter month and falling between major shopping seasons.

SALES ANALYSIS BY MONTH

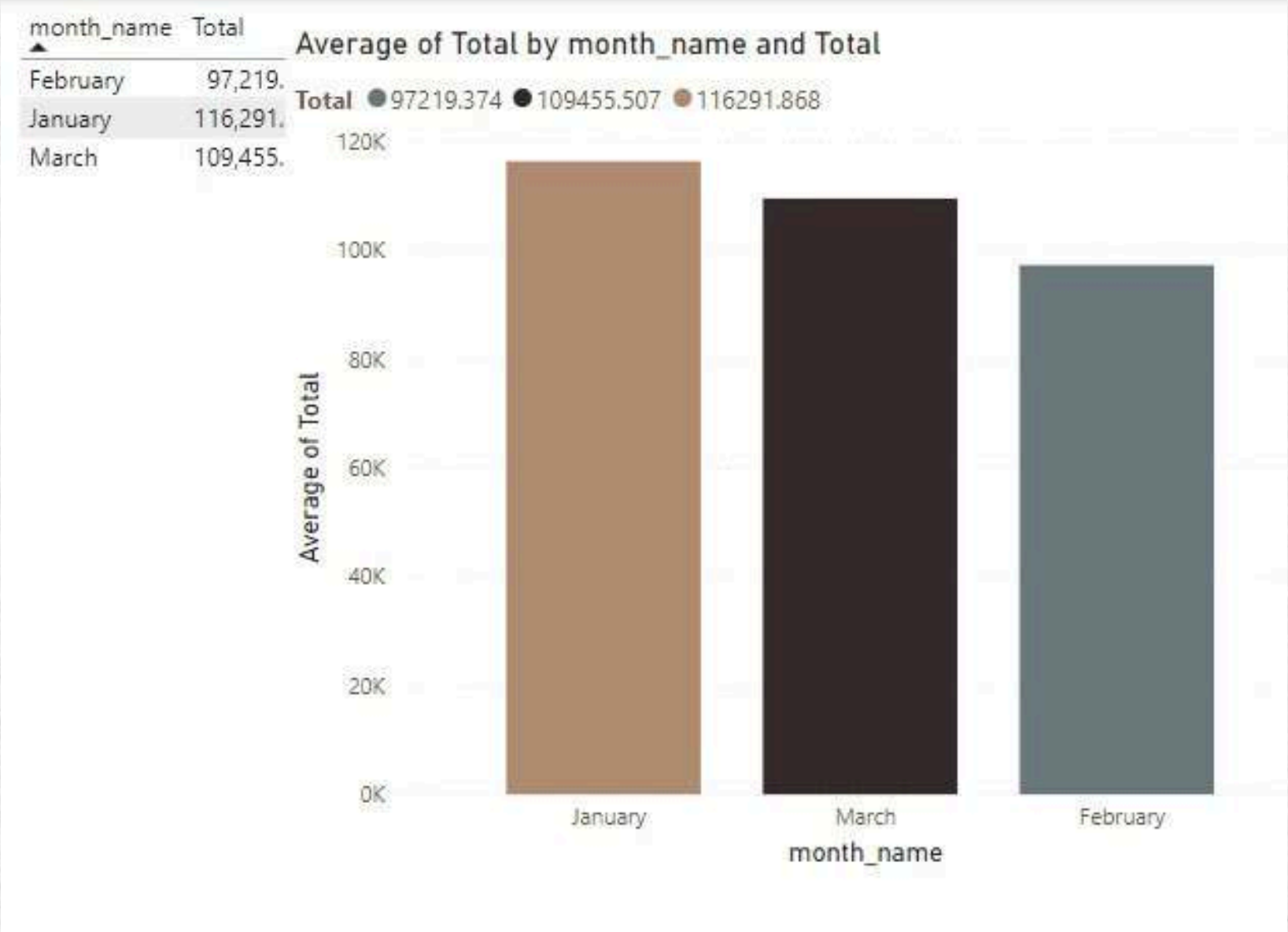## 2. monthly data patterns

- We can see a slight drop in sales from January to February, but sales picked back up in March.

- This pattern could help Walmart plan marketing and stock strategies to sustain or boost sales during these months.

month_name	Total
February	97,219.
January	116,291.
March	109,455.

Average of Total by month_name and Total

Total ● 97219.374 ● 109455.507 ● 116291.868

SALES ANALYSIS BY MONTH

Conclusion:

- By understanding the sales trends across the months, Walmart can optimize its operations and marketing strategies to better manage inventory and maximize sales during key periods.

SALES ANALYSIS BY PRODUCT LINE

SALES ANALYSIS BY PRODUCT LINE

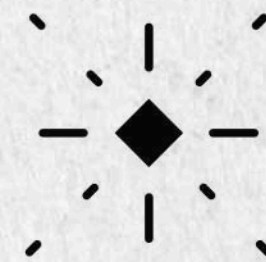## 1. Description of the Data:

- This bar chart provides an overview of the average total sales for different product lines at Walmart, including Food and Beverages, Sports and Travel, Electronic Accessories, Fashion Accessories, Home and Lifestyle, and Health and Beauty.

- The comparison allows us to identify which product lines contribute the most and least to the overall sales.

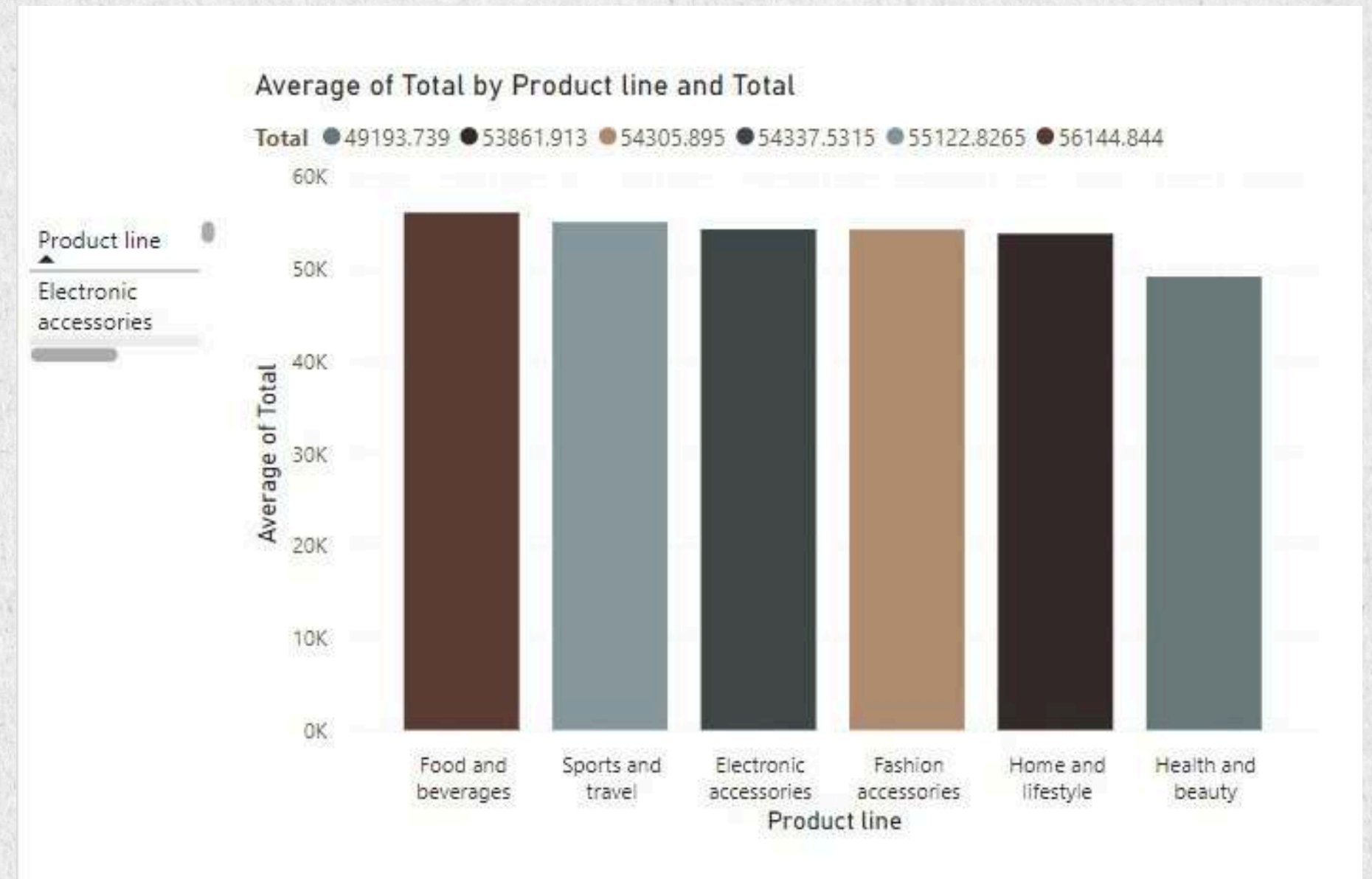# SALES ANALYSIS BY PRODUCT LINE

2. Key Insights:

- Food and beverages products have the highest average sales at around $56,144, followed closely by Sports and travel products at $55,122.

- Health and beauty rank the lowest with an average sales figure of $49,193.

- This indicates that customers are spending more on food and sports-related products compared to other categories like personal care and home-related products.

Average of Total by Product line and Total

Total ● 49193.739 ● 53861.913 ● 54305.895 ● 54337.5315 ● 55122.8265 ● 56144.844

SALES ANALYSIS BY PRODUCT LINE

2. Key Insights:

- The mid-range performers are Fashion Accessories at $54,337, Electronic Accessories at $54,305.

- This shows that these categories maintain consistent and competitive sales, contributing a significant portion to the overall revenue.

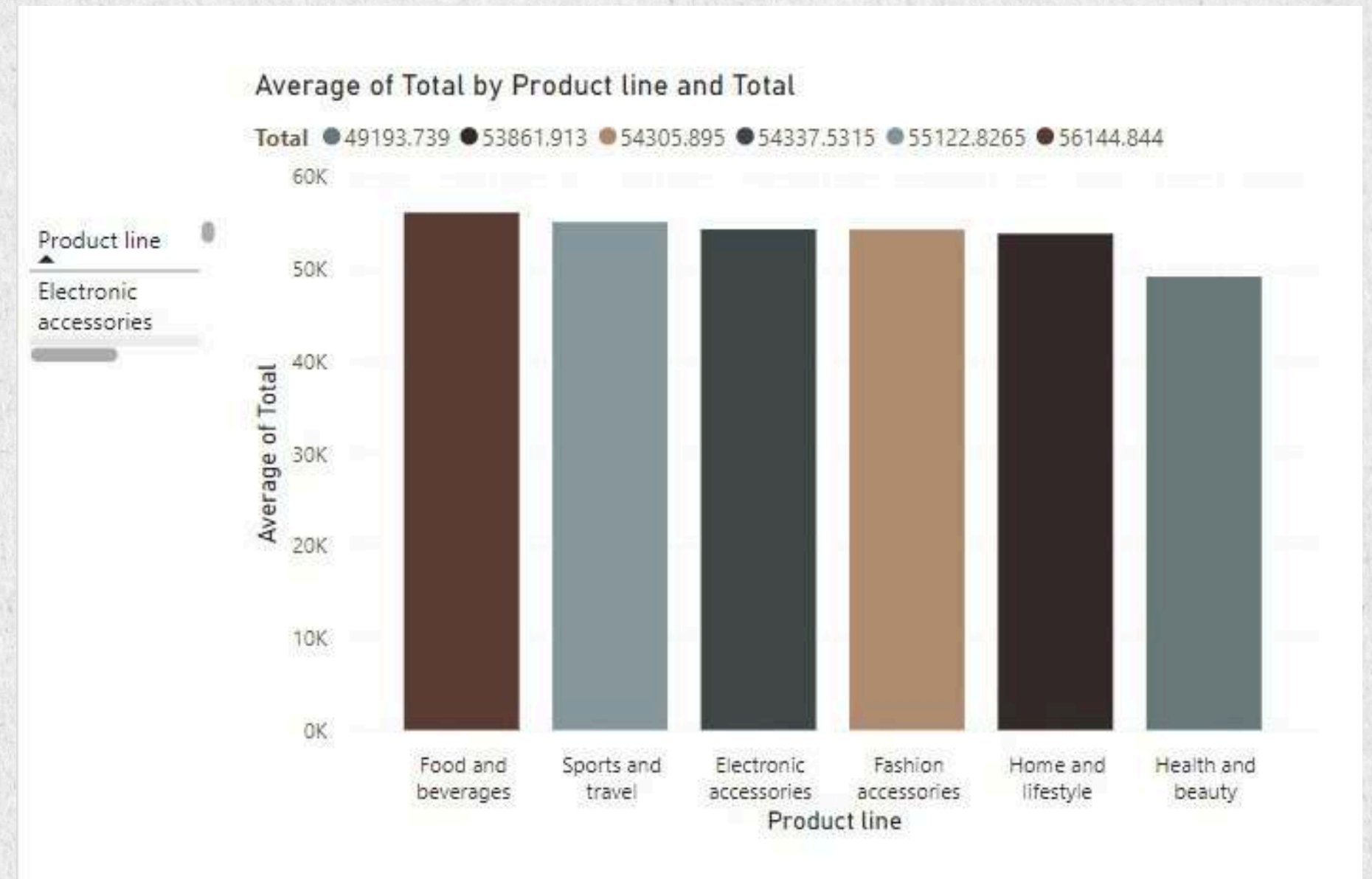Average of Total by Product line and Total

Total ● 49193.739 ● 53861.913 ● 54305.895 ● 54337.5315 ● 55122.8265 ● 56144.844
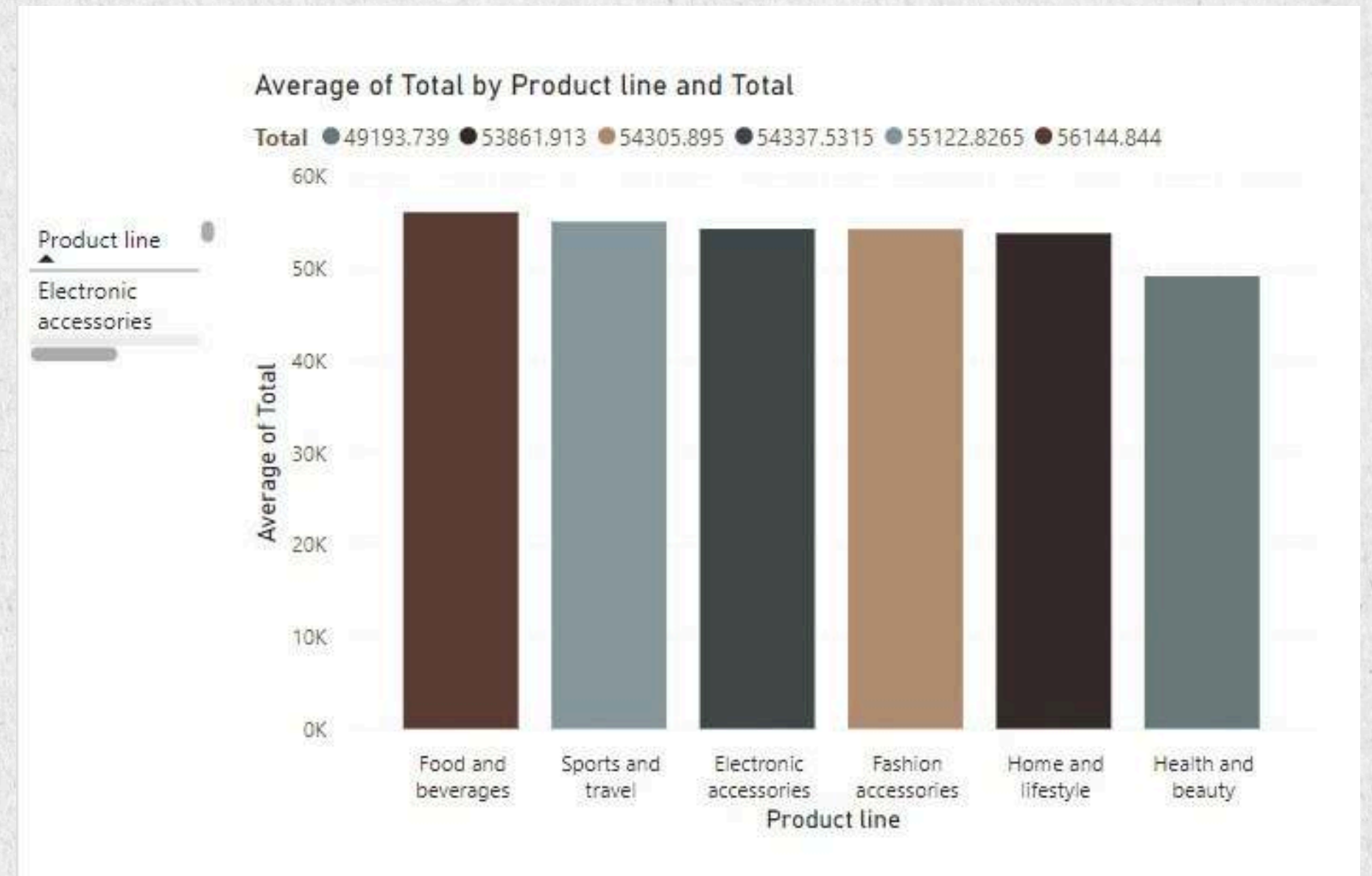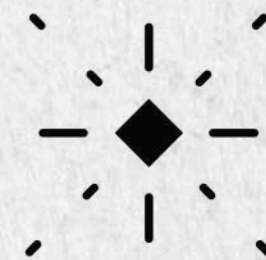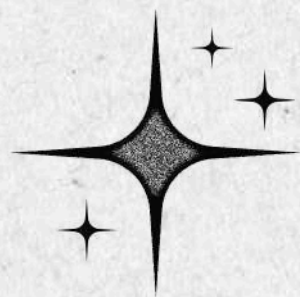
SALES ANALYSIS BY PRODUCT LINE

Conclusion:

- By analyzing product line performance, Walmart can make data-driven decisions to enhance product offerings, stock management, and promotional strategies across different categories.

Average of Total by Product line and Total

Total ● 49193.739 ● 53861.913 ● 54305.895 ● 54337.5315 ● 55122.8265 ● 56144.844

SALES DISTRIBUTION BY REGION

SALES DISTRIBUTION BY REGION

1. Description of the Data

- This stacked bar chart visualizes the distribution of average sales across three cities: Naypyitaw, Yangon, and Mandalay, for different product lines.

- Each city is broken down by the proportion of sales contributed by the following product lines: Electronic Accessories, Fashion Accessories, Food and Beverages, Health and Beauty, Home and Lifestyle, and Sports and Travel.

Average of Total by City and Product line

SALES DISTRIBUTION BY REGION

2. Key Insights:

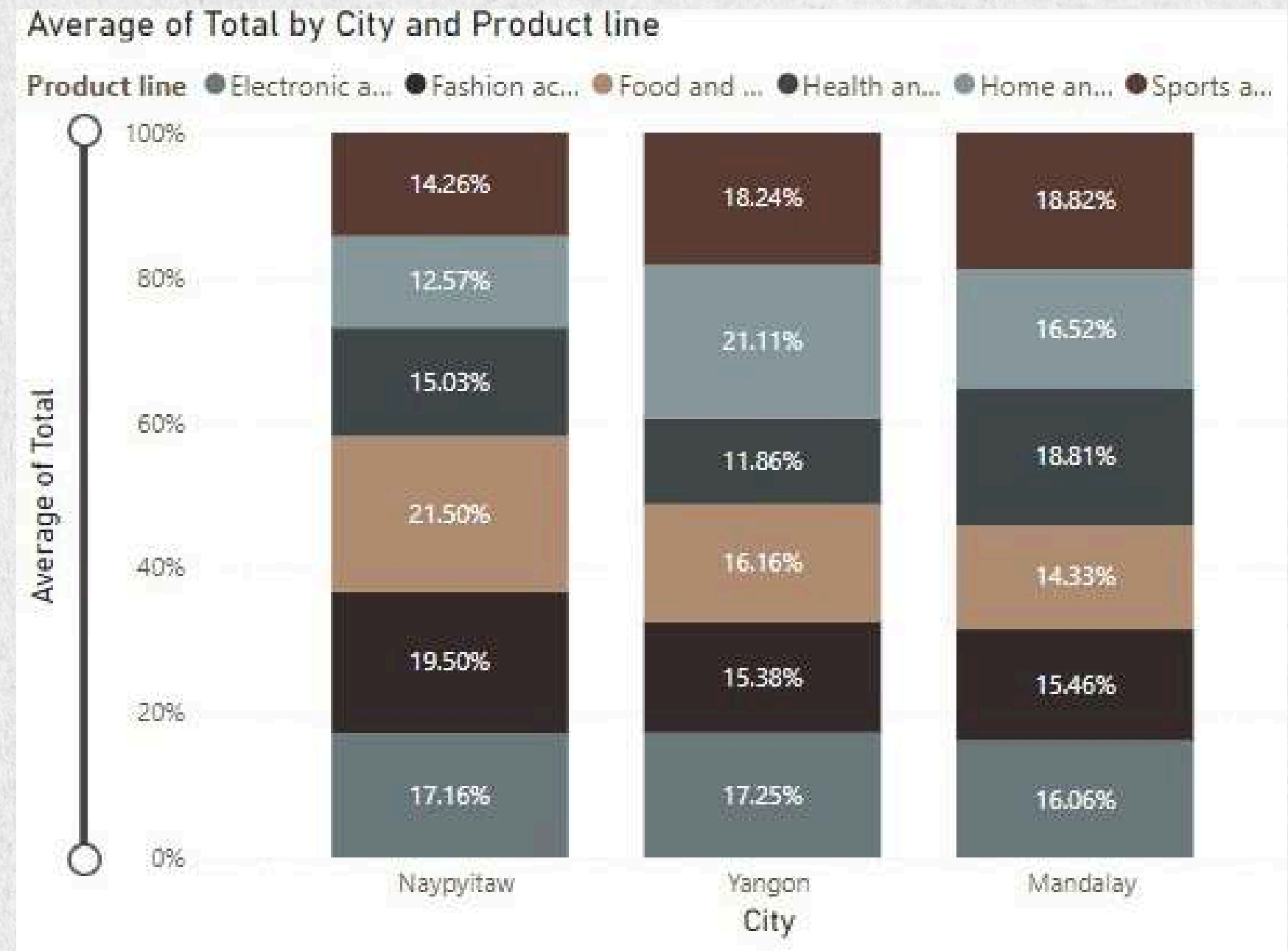- In Naypyitaw, the Food and Beverages category contributes the largest share of sales at 21.50%, followed by Sports and Travel at 19.50%.

- In Yangon, Health and Beauty leads the sales with 21.11%, while Home and Lifestyle comes second at 17.25%.

- For Mandalay, Health and Beauty also takes the top spot at 18.82%, followed closely by Fashion Accessories at 16.52%.
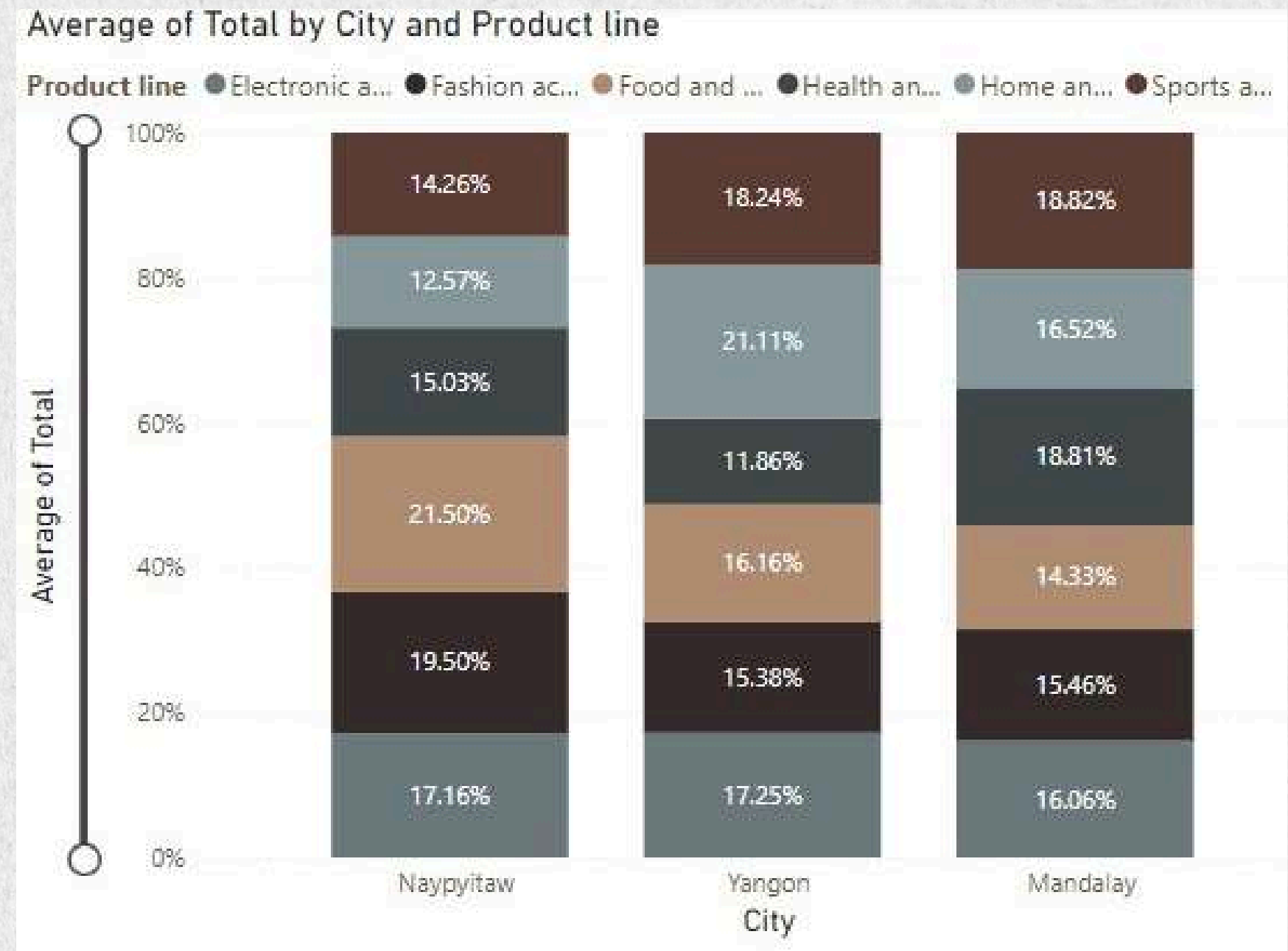

Average of Total by City and Product line

Product line ● Electronic a... ● Fashion ac... ● Food and ... ● Health an... ● Home an... ● Sports a...

SALES DISTRIBUTION BY REGION

2. Key Insights:

City Comparison:

- The chart shows that Health and Beauty is consistently a top-performing product line across all three cities, particularly strong in Yangon and Mandalay.

- Interestingly, Food and Beverages dominates in Naypyitaw but contributes less in Yangon and Mandalay compared to other categories.

- The distribution across cities suggests regional differences in customer preferences for certain product lines

Average of Total by City and Product line

Product line ● Electronic a... ● Fashion ac... ● Food and ... ● Health an... ● Home an... ● Sports a...

Naypyitaw: 14.26%, 12.57%, 15.03%, 21.50%, 19.50%, 17.16%

Yangon: 18.24%, 21.11%, 11.86%, 16.16%, 15.38%, 17.25%

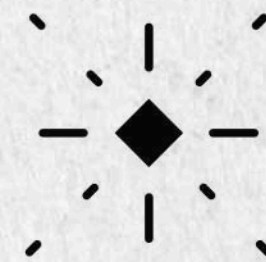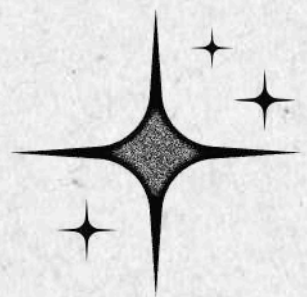Mandalay: 18.82%, 16.52%, 18.81%, 14.33%, 15.46%, 16.06%

SALES DISTRIBUTION BY REGION

Conclusion:

- Understanding how sales differ by product line in each city helps Walmart tailor its offerings, promotions, and stock management to meet regional demand and customer preferences more effectively.
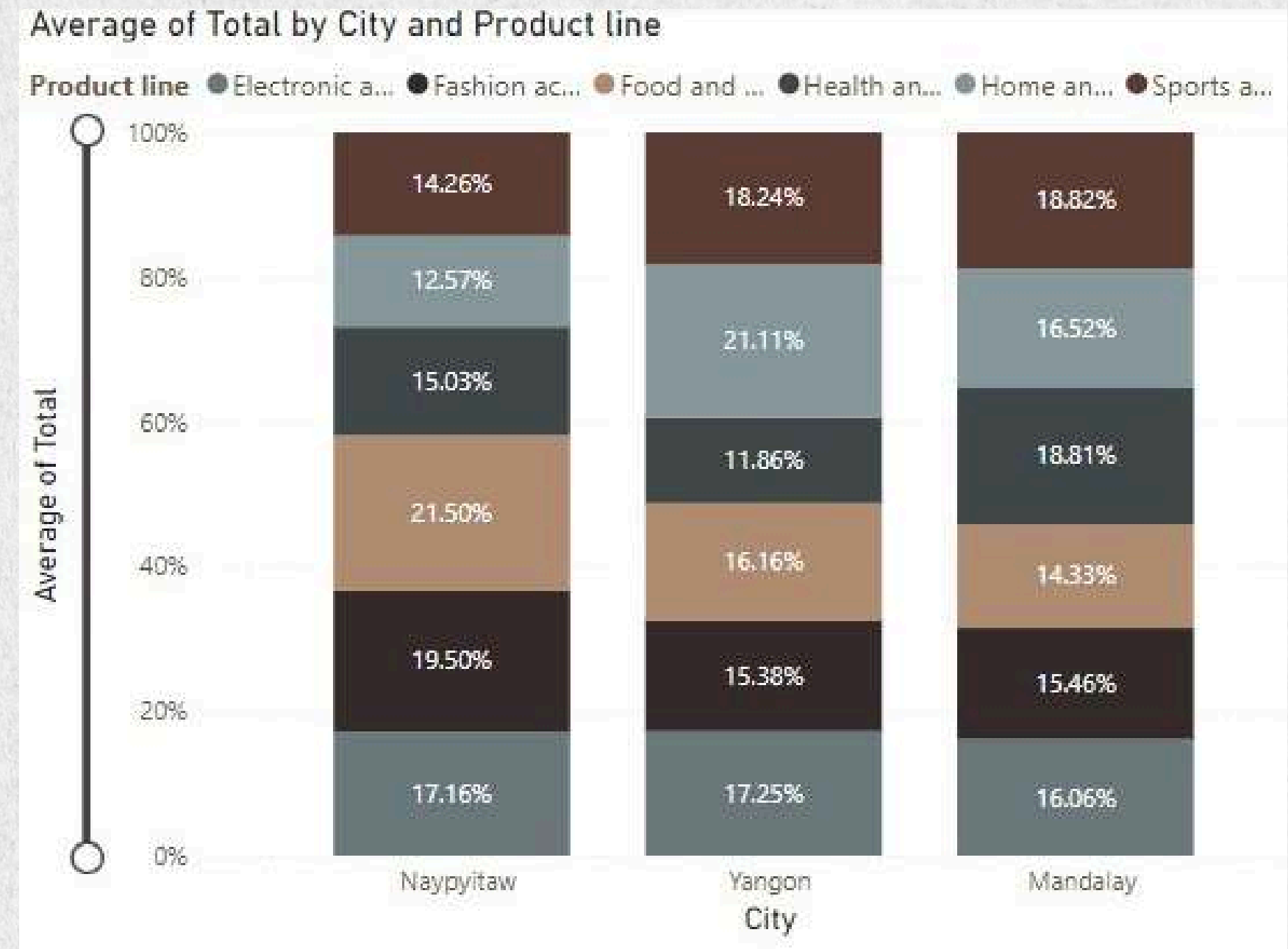

Average of Total by City and Product line

SALES DISTRIBUTION BY REGION

SALES DISTRIBUTION BY REGION
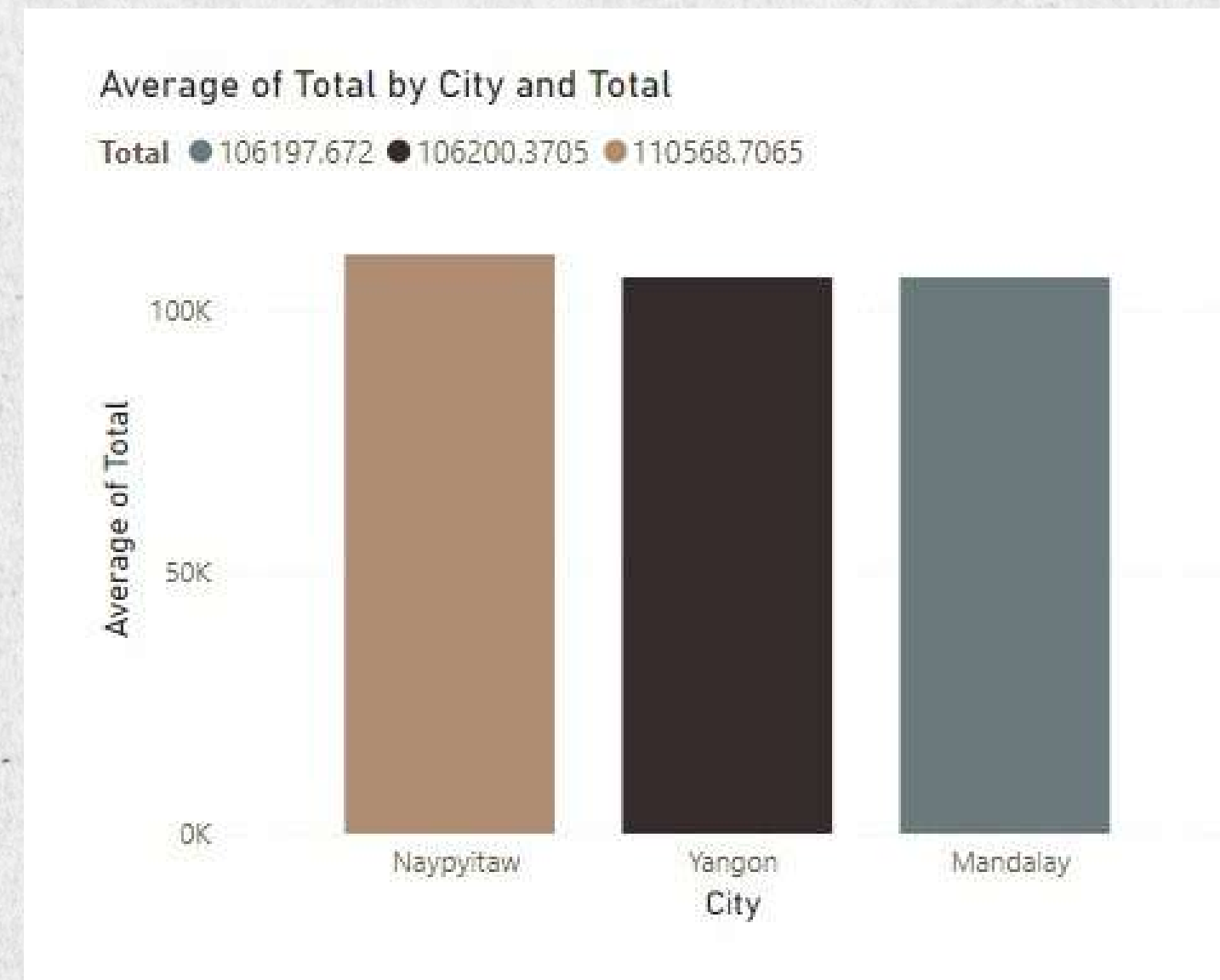
1. Description of the Data:

- This bar chart illustrates the average total sales across three major cities: Naypyitaw, Yangon, and Mandalay.

- It helps us understand how sales are distributed geographically.

Average of Total by City and Total

Total ● 106197.672 ● 106200.3705 ● 110568.7065
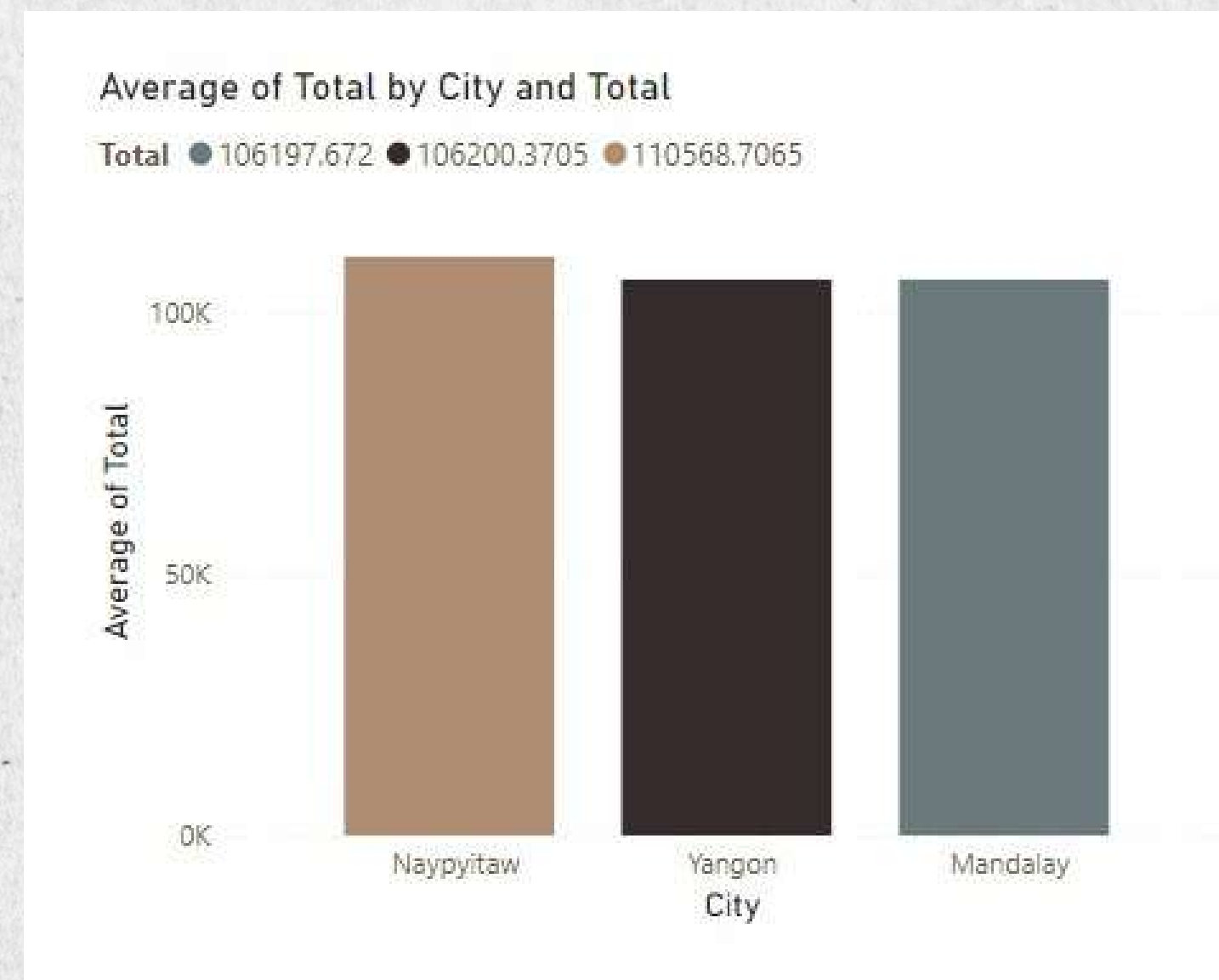
SALES DISTRIBUTION BY REGION

2. Key Insights
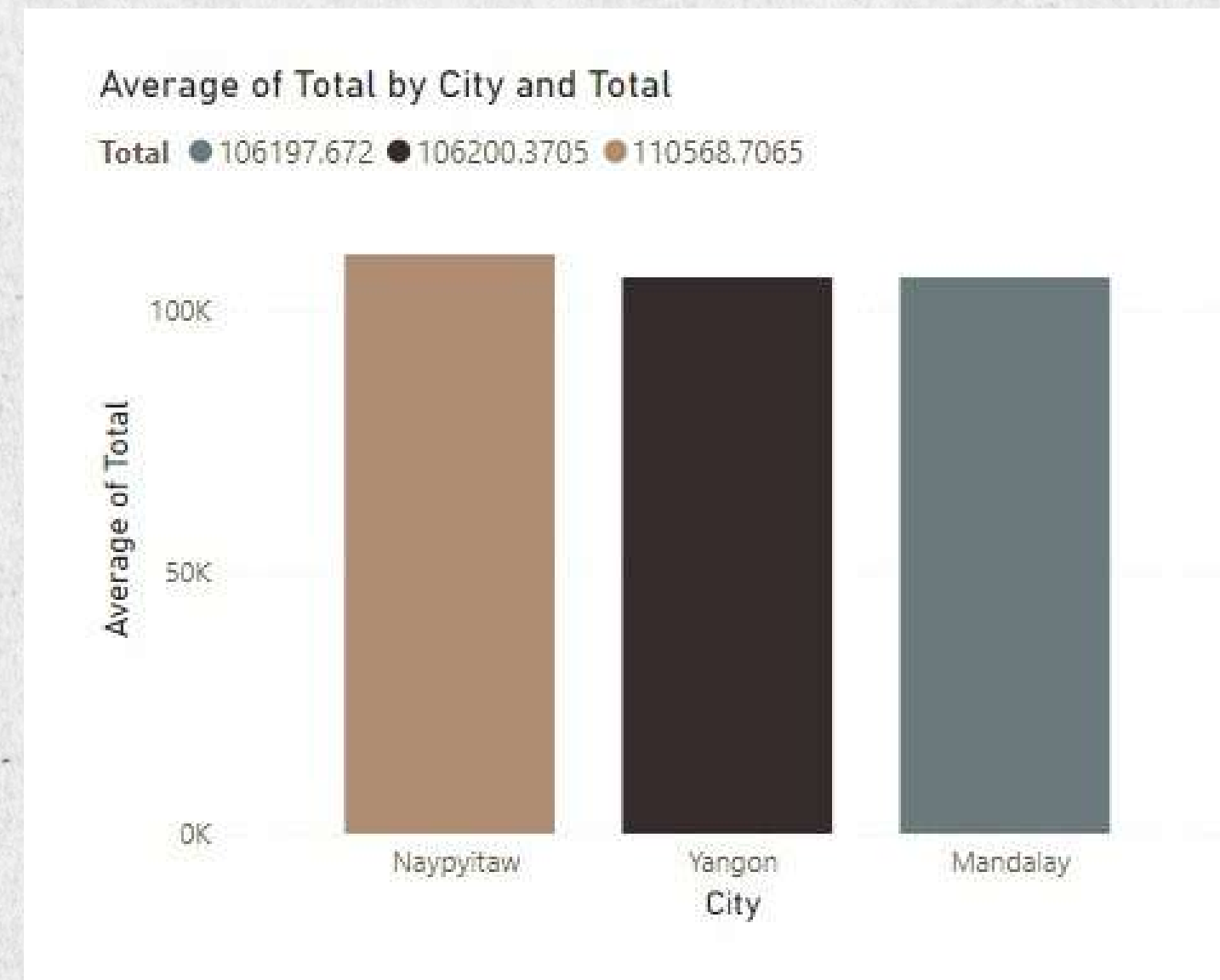
- The average sales are fairly close across all three cities.

- Naypyitaw has the highest average sales, reaching approximately $110,568.

- Yangon and Mandalay follow closely, with average sales around $106,200 and $106,197 respectively.

Average of Total by City and Total

Total ● 106197.672 ● 106200.3705 ● 110568.7065

SALES DISTRIBUTION BY REGION

Conclusion:

- By comparing sales across cities, Walmart can better allocate resources and tailor marketing strategies to the needs and preferences of customers in each region, ensuring optimal performance.

Average of Total by City and Total

Total ● 106197.672 ● 106200.3705 ● 110568.7065

RECOMMENDATIONS

1. OPTIMIZE PEAK TIME SALES:

- Increase promotional offers during peak times to maximize
- sales. Introduce special deals during non-peak times to attract customers during less busy periods.
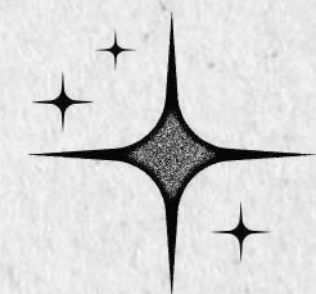
2. REVIEW UNDERPERFORMING PRODUCTS:

- Reevaluate marketing strategies for underperforming products, or consider discontinuing products that consistently show poor performance.

3. ENHANCE REPEAT CUSTOMER PROGRAMS:

- Implement loyalty programs or incentives to encourage repeat purchases from existing customers.

4. REGION-SPECIFIC SALES STRATEGIES:

- Tailor sales strategies to regions contributing the most revenue to further capitalize on their potential.

THANK YOU