RETAIL SALES ANALYTICS

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Introduction

A Retail Store dealing with clothing, beauty and electronic products is looking to leverage data insights to improve sales.

This project aims to unravel intricate patterns, draw insights, gain deeper understanding of customer behavior as well as provide recommendations to improve sales.

Data Collection

- The dataset was gotten from kaggle. It is a CSV file with 9 columns and 1000 rows.
- It contains information on transaction ID, date, customer ID, gender, age, product category, quantity, price per unit and total amount.

Data Cleaning

- The data was loaded into Power Query in Microsoft excel for cleaning and transformation.
- I ran a data quality check and discovered there were no duplicates, missing values or irregularity in the data.

Data Transformation

I needed to transform the data in order to generate accurate insights from it.

I created 3 new columns which are:

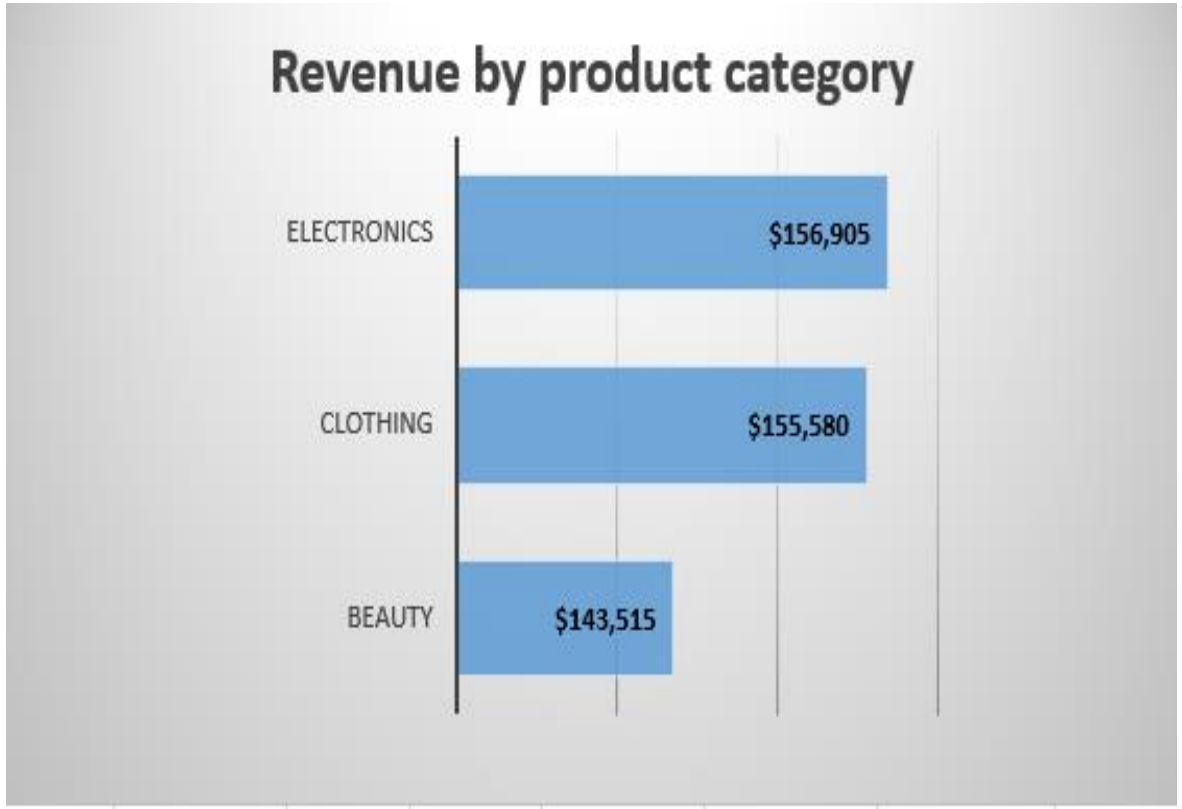
- A custom column for age group which I created out of the existing age column using the 'IF' statement.
- A column for day of the week created from the existing date column by extracting the day of the week from the date column which returned numeric values then replacing the values with corresponding text values indicating the days of the week.
- A column for yearly quarter created out of the existing date column. I extracted the month from the date column and formatted it to quarter.

Data Analysis

I created pivot tables and visualized them to enable me answer some business questions such as:

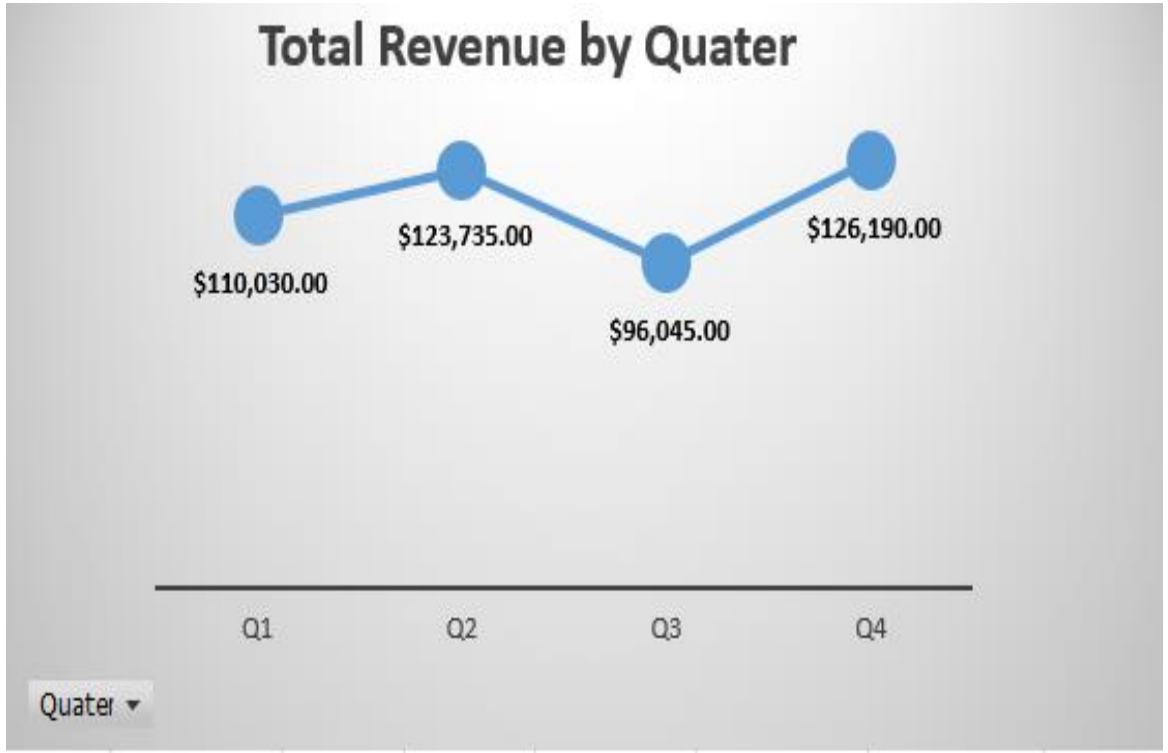
1. Which product category holds the highest appeal among customers?
   I answered this by finding the product category with the most orders and the most revenue.
2. Are there discernible patterns in sales across different time periods?
   I answered this question by finding the total revenue per quarter and the average sales per day.
3. How does customer age and gender influence their purchasing behavior?
   I answered this question by finding the revenue by age group and the orders of each product category by gender.

- What is the product category with the highest revenue?

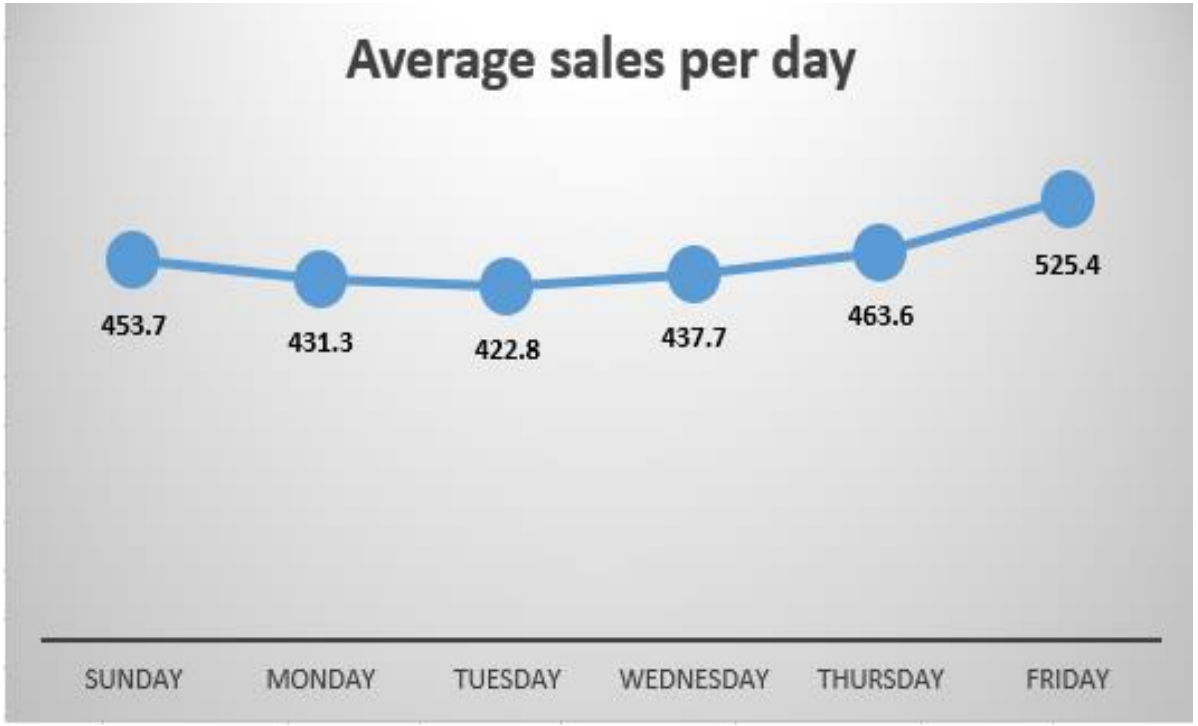


- What are the total orders generated by each product?

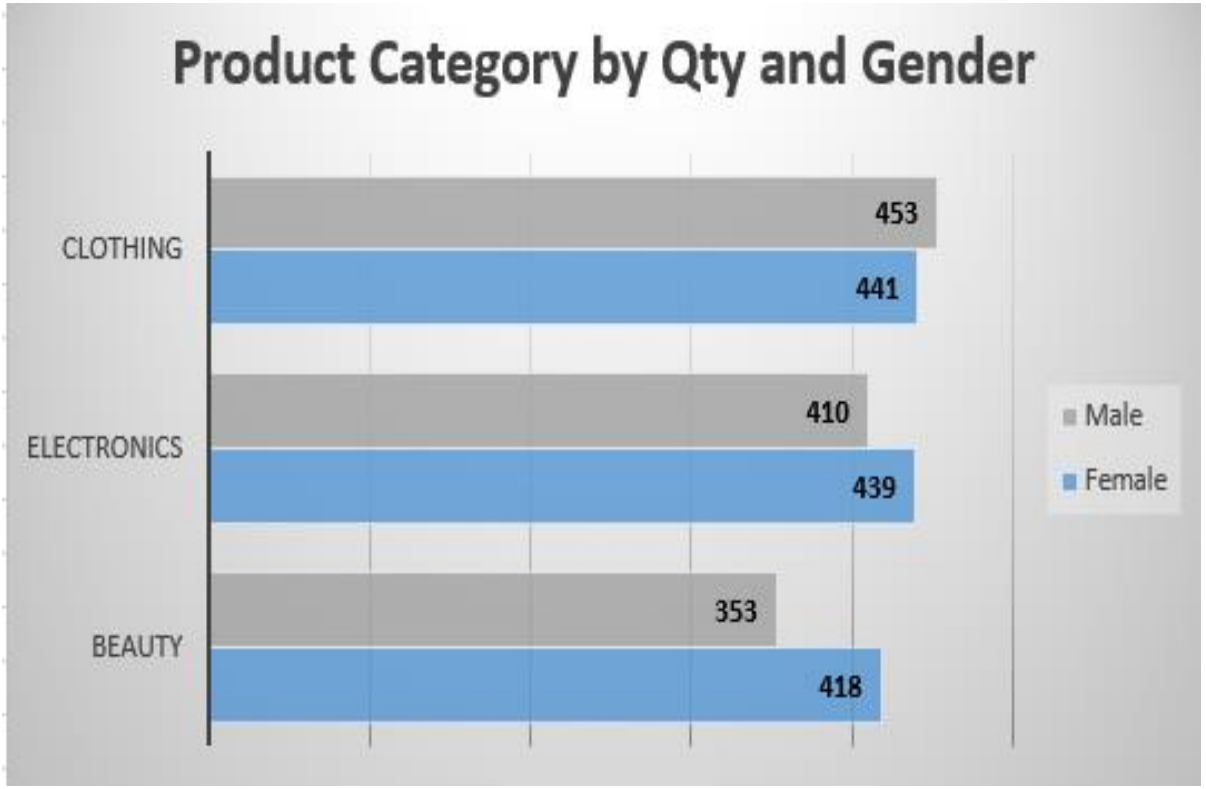
- What is the total revenue per quarter?



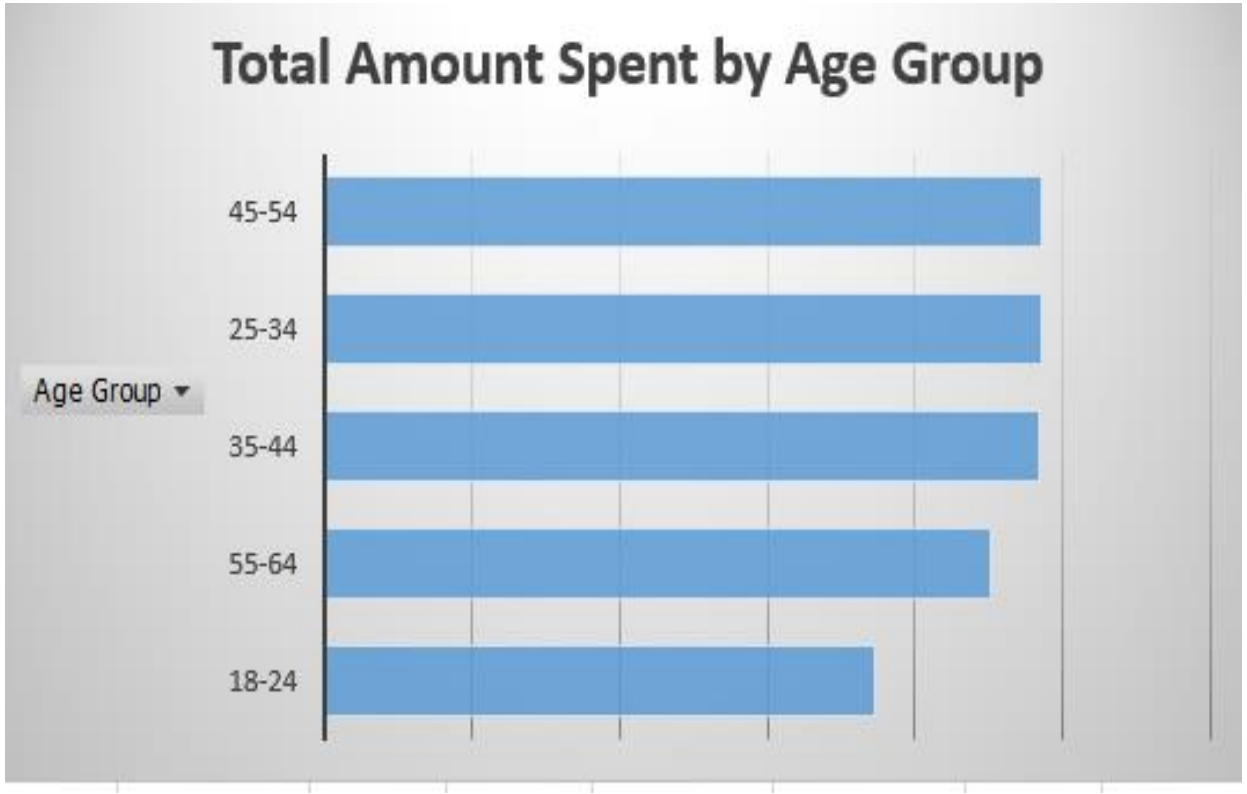
- How much sales is the store making per day on the average?



What is total quantity of products ordered by each gender?



- What is the total revenue generated by each age group?



Insights and Recommendations

- Electronic products generate the highest revenue at 34.4%, while Clothing items comprise 35.6% of total orders, marking it as the most frequently ordered product. Increase marketing initiatives and ensure product availability for both categories.

- Beauty products, while not the top revenue generator at 31.5%, account for a notable 30.7% of total orders. This indicates strong customer interest. Intensify marketing efforts to spotlight this category among customers.

- Q4 is the most profitable quarter of the year, contributing 27.7% of the total revenue, followed by Q2, which accounts for 27.1%. In contrast, Q3 records the lowest sales at 21.1% of total revenue. Effectively manage the anticipated surge in orders during Q4 with thorough planning and carry out further analysis to understand the factors behind the Q3 dip.

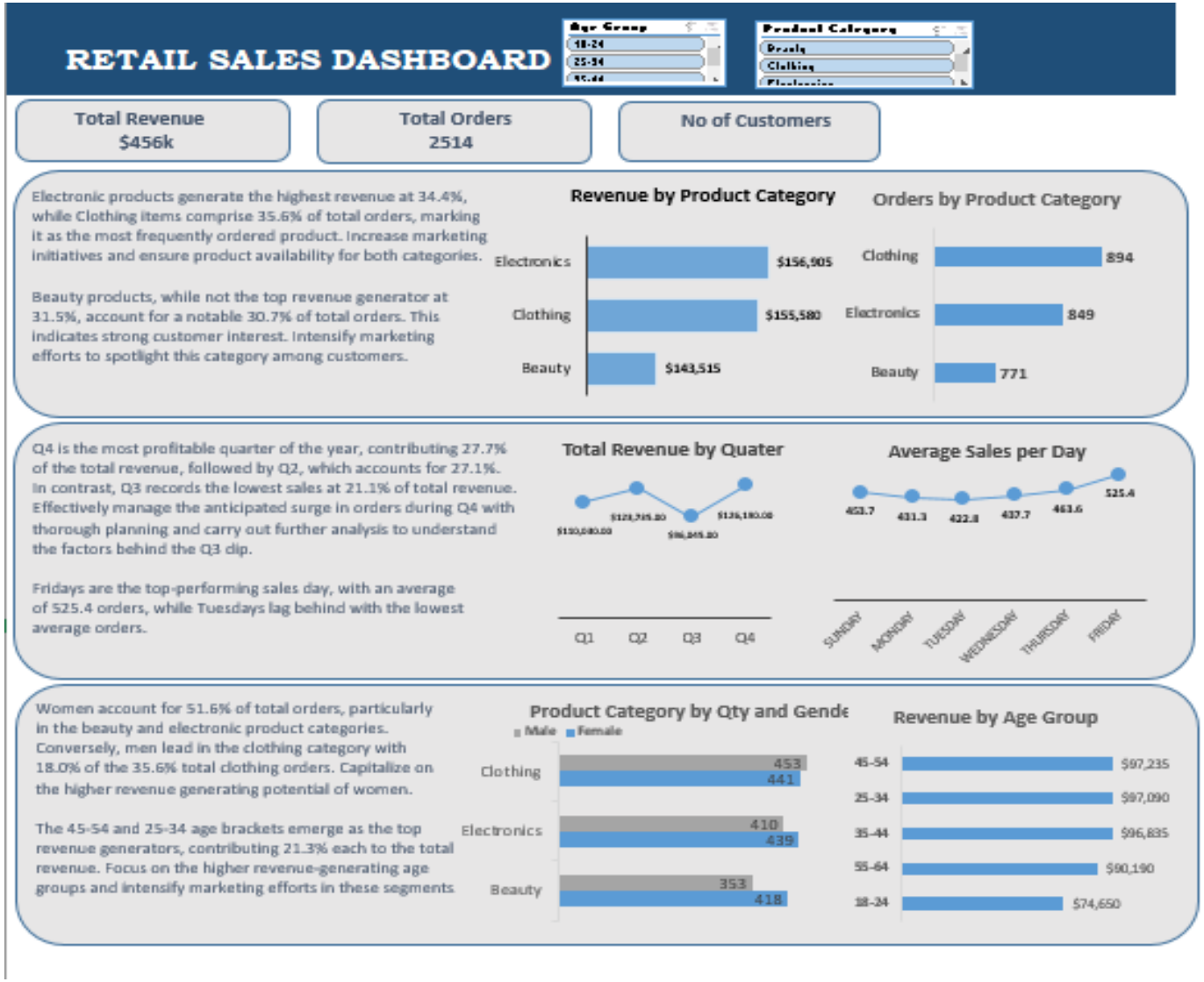
- Fridays are the top-performing sales day, with an average of 525.4 orders, while Tuesdays lag behind with the lowest average orders.

- Women account for 51.6% of total orders, particularly in the beauty and electronic product categories. Conversely, men lead in the clothing category with 18.0% of the 35.6% total clothing orders. Capitalize on the higher revenue generating potential of women.

- The 45-54 and 25-34 age brackets emerge as the top revenue generators, contributing 21.3% each to the total revenue. Focus on the higher revenue-generating age groups and intensify marketing efforts in these segments.

Data Visualization

I created a dashboard in Microsoft excel to visualize the insights gotten from the retail sales data.



Conclusion

By implementing these recommendations, the retail store can make data driven decisions to improve customer experience and increase sales performance.