

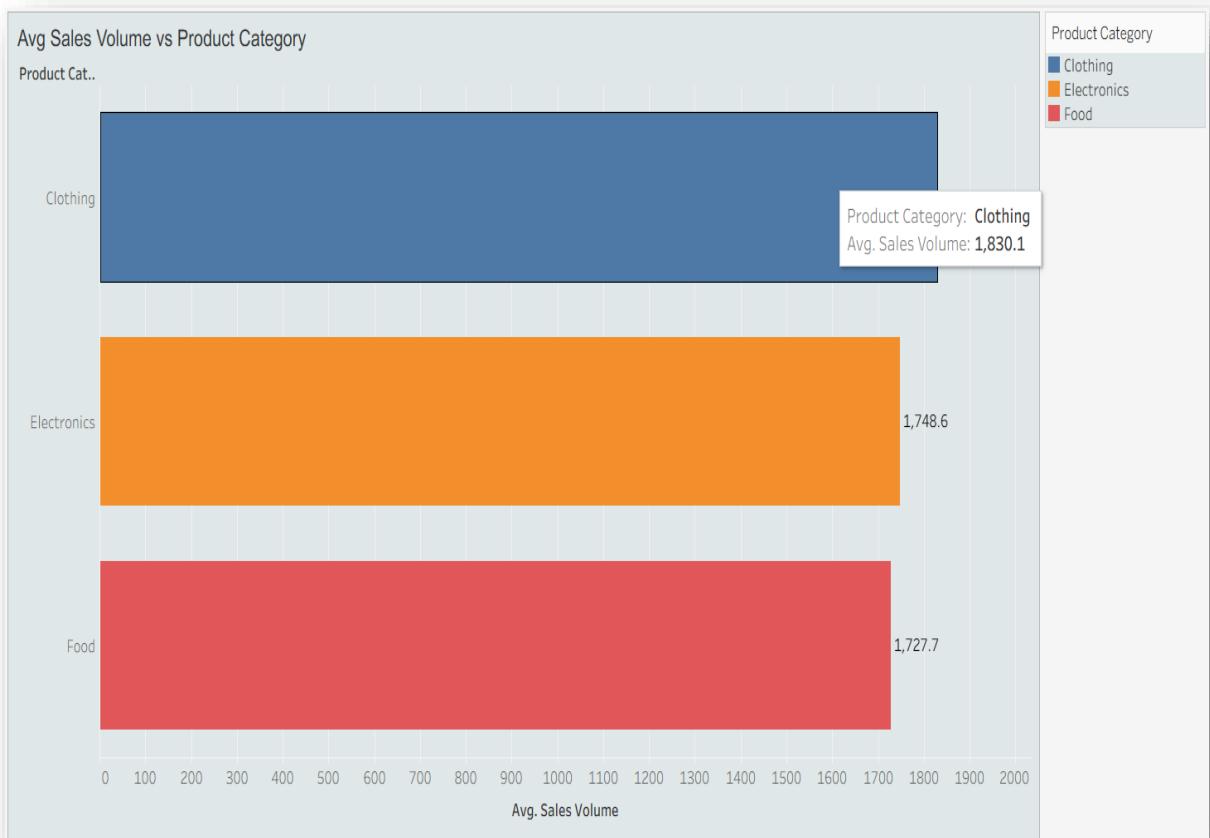
# **Preprocessing Steps and Business Questions with visualisation**

## **Preprocessing Steps**

- Imported the supermarket sales dataset (CSV format) into Tableau for analysis.
- Checked for missing values and ensured there were no null or inconsistent entries in important fields such as Sales, Quantity, and Product Line.
- Verified and corrected data types (e.g., Date field converted to Date format, numerical fields set as Measure).
- Removed unnecessary columns that were not required for product placement analysis.
- Created calculated fields such as:
  - Gross Profit (if required)
  - Total Sales
  - Zero field (for Donut Chart creation)
- Standardized categorical values (e.g., consistent naming for branches, payment methods, and product categories).
- Formatted date fields to extract Month and Year for time-based analysis.
- Validated dataset accuracy by cross-checking totals and summary statistics.

## Business Questions with visualisation

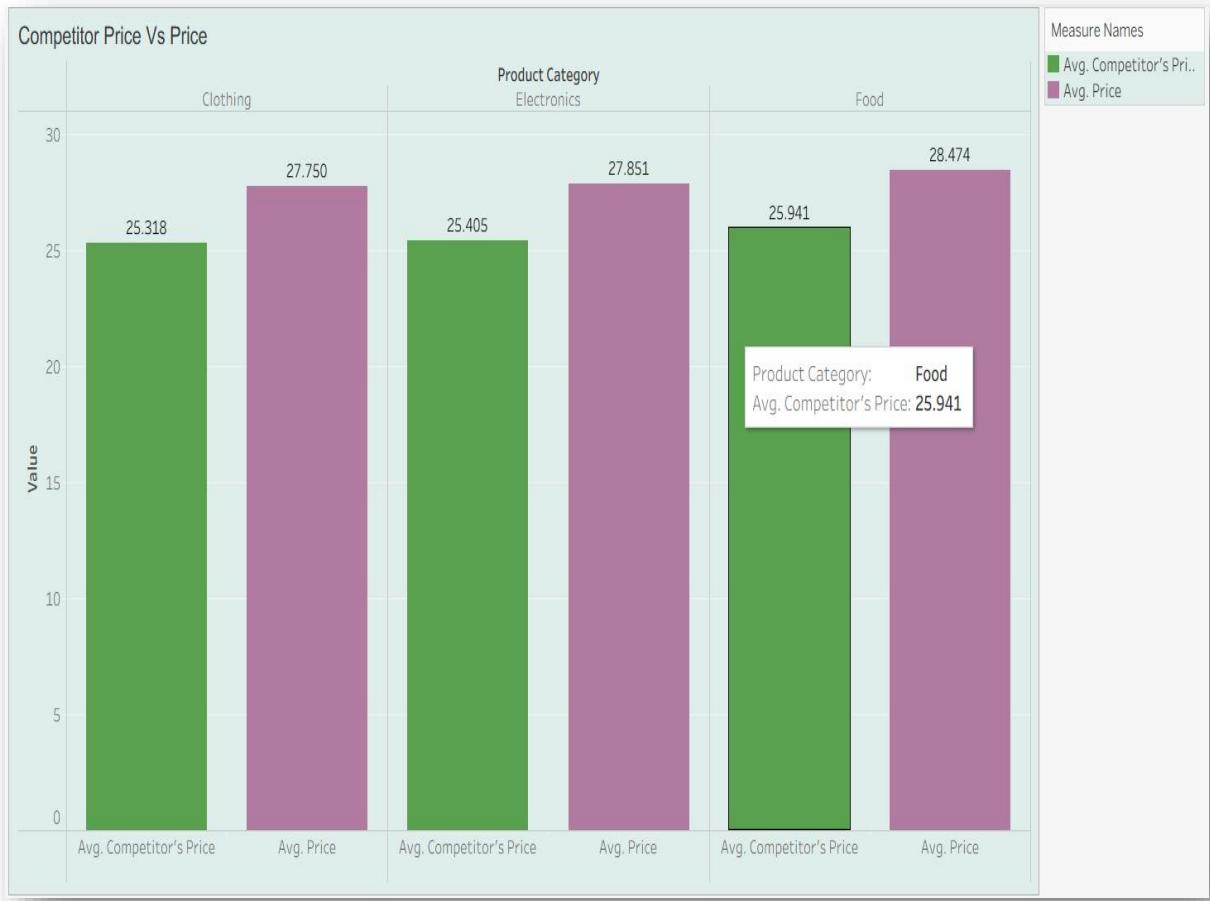
### 1. Avg Sales Volume vs Product Category:



### Insight:

The analysis shows that certain product categories generate significantly higher average sales volume compared to others. Categories such as Food & Beverages and Health & Beauty tend to have stronger customer demand. This indicates that strategic shelf placement of high-performing categories can further improve revenue generation.

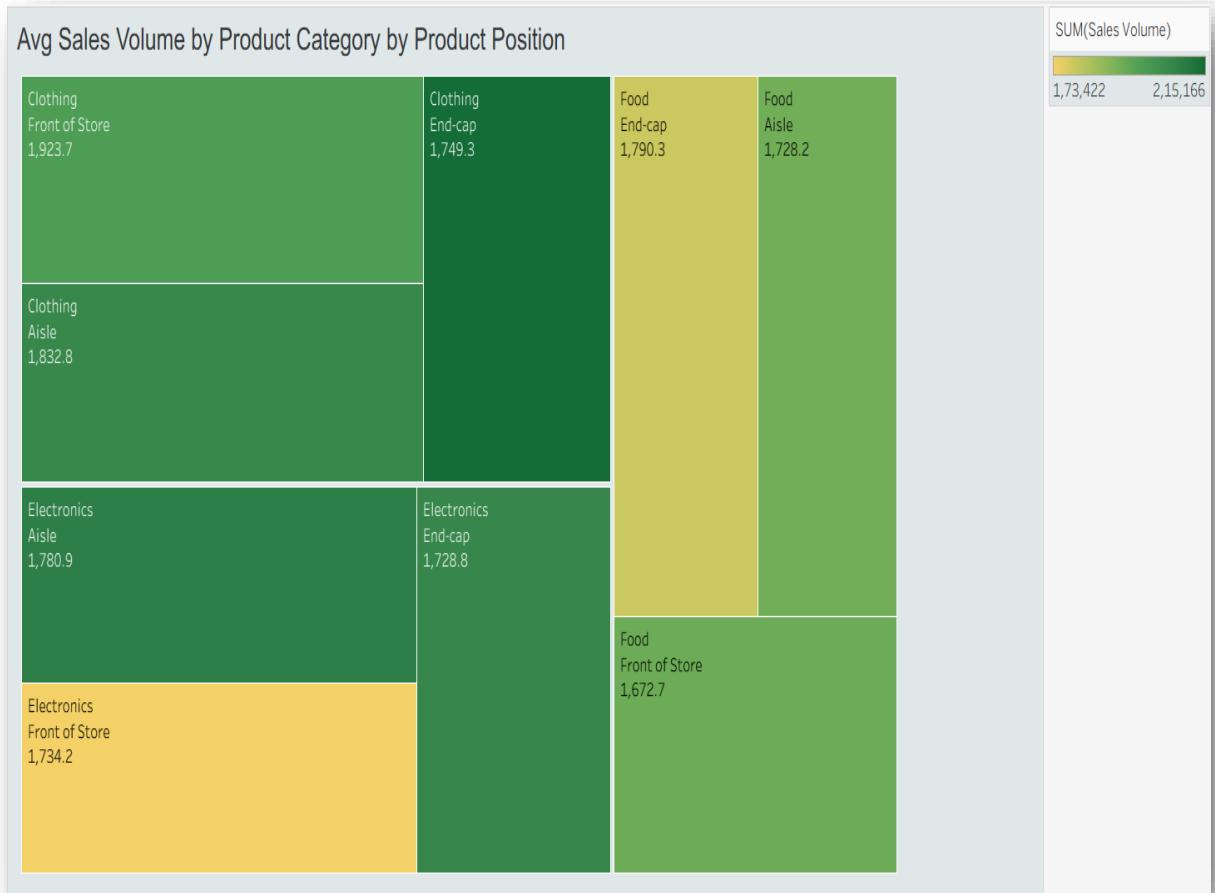
## **2. Competitor Price Vs Price:**



### **Insight:**

The comparison between competitor pricing and store pricing shows that competitive pricing plays a crucial role in maintaining sales volume. Products priced slightly below or aligned with competitor rates tend to perform better. This suggests that effective pricing strategies can directly influence customer purchasing decisions.

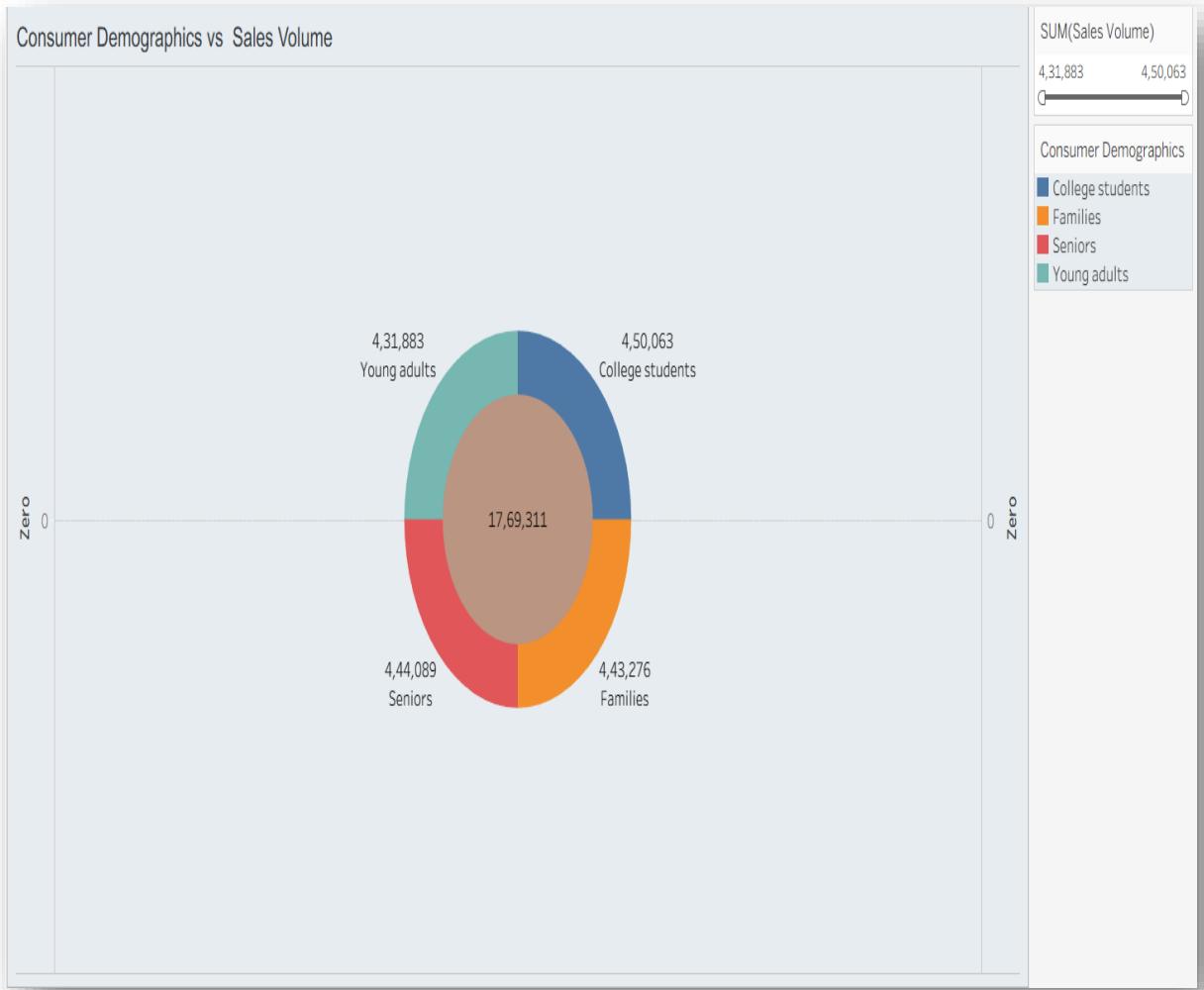
### **3. Avg Sales Volume by Product Category by Product Position:**



#### **Insight:**

Products placed at eye-level or high-visibility positions generate higher average sales volume compared to lower shelf placements. This confirms that strategic product placement significantly impacts sales performance. Optimizing shelf positioning for high-demand categories can increase overall revenue.

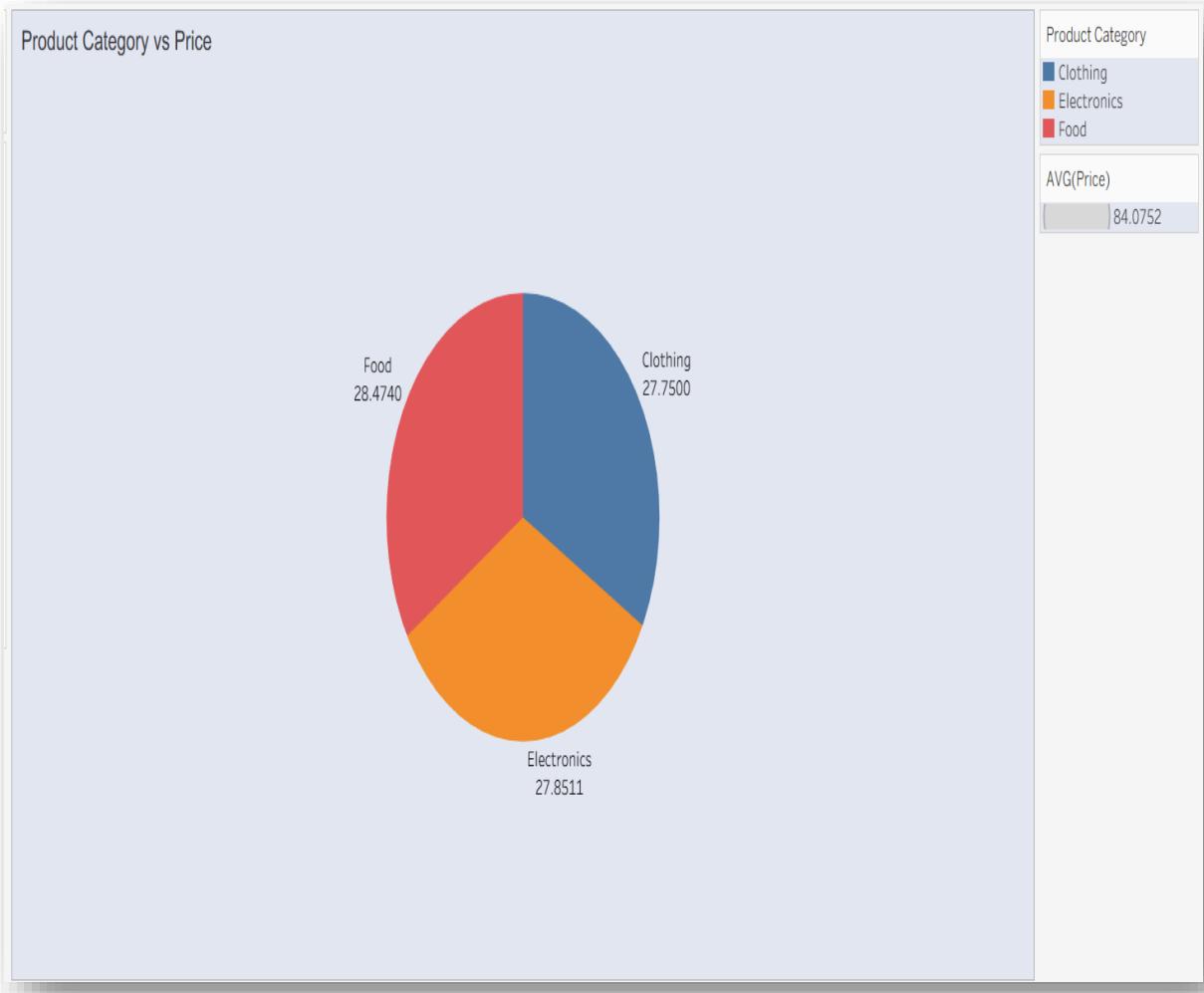
#### **4. Consumer Demographics vs Sales Volume:**



#### **Insight:**

Sales volume varies across different customer demographics such as gender and customer type (Member vs Normal). Members often contribute slightly higher sales due to loyalty benefits. Understanding demographic trends helps retailers target specific customer segments effectively.

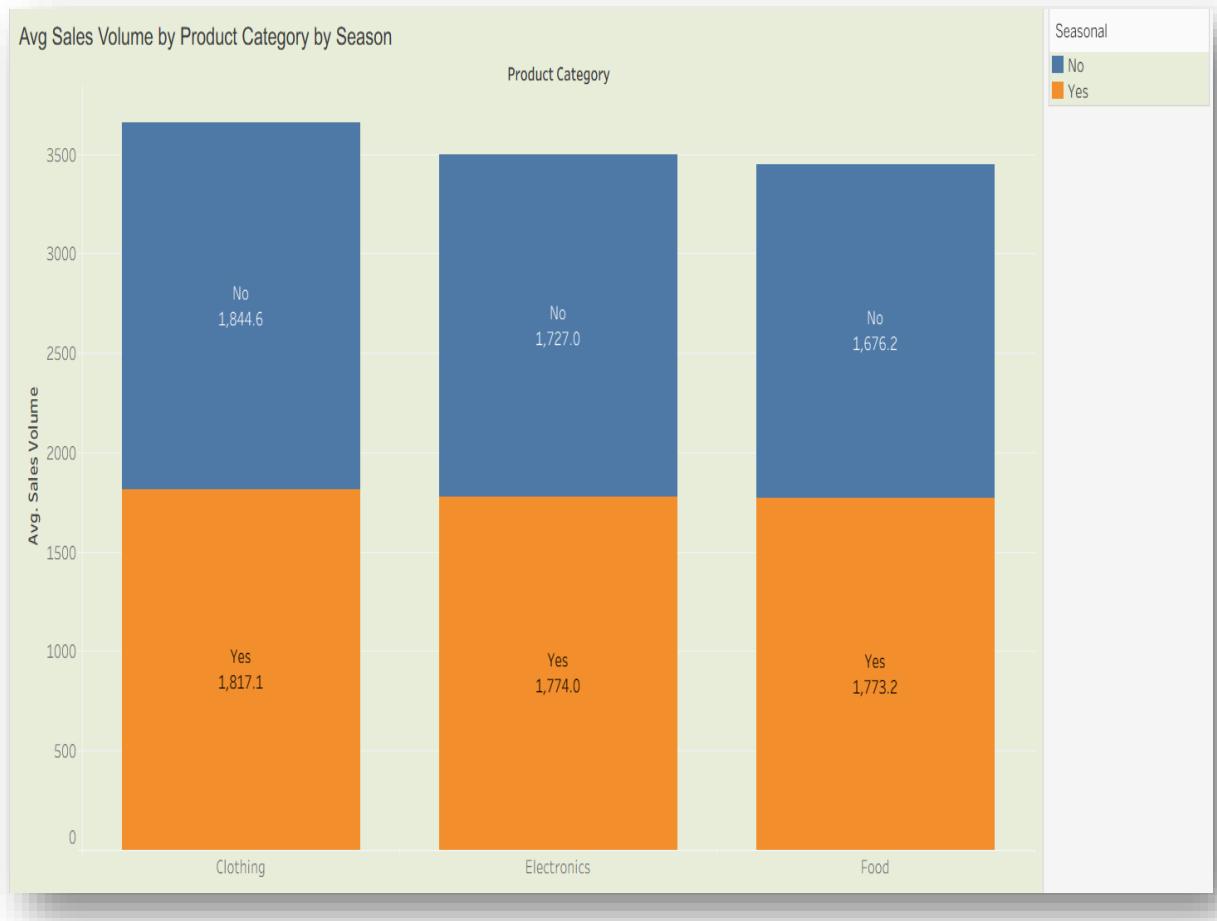
## **5. Product Category vs Price:**



### **Insight:**

Certain product categories maintain strong sales even at higher price points, while others are more price-sensitive. Essential goods show stable demand regardless of price variations. This indicates that pricing strategy should vary depending on the nature of the product category.

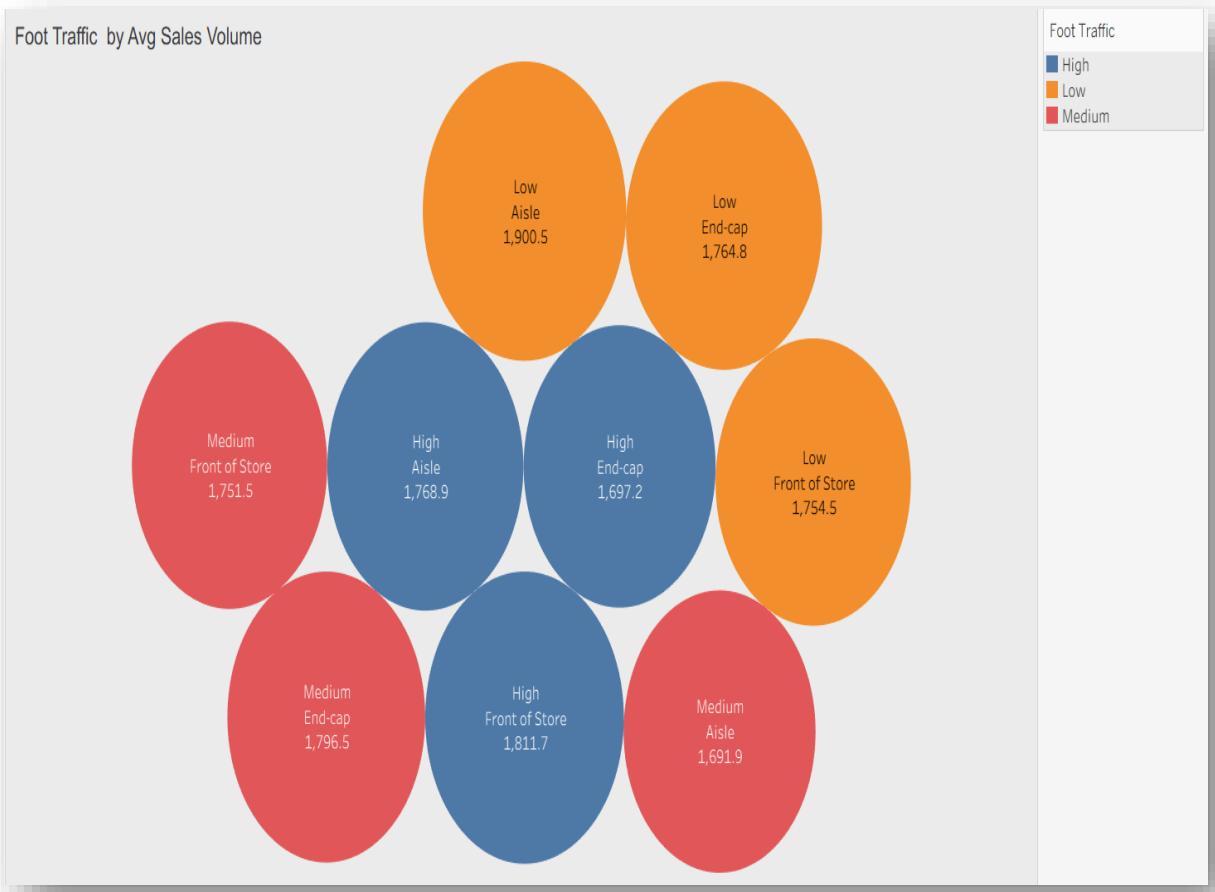
## **6. Avg Sales Volume by Product Category by Season:**



### **Insight:**

Seasonal trends affect sales volume across product categories. Some categories experience higher demand during specific months. Identifying seasonal peaks allows retailers to adjust stock levels and placement strategies accordingly.

## **7. Foot Traffic by Avg Sales Volume:**



### **Insight:**

Higher foot traffic correlates with increased average sales volume. Peak hours contribute significantly to total revenue. This suggests that strategic product placement during high-traffic periods can maximize sales opportunities.

## **8. Promotion of Product Category on Price and Sales Volume:**

Promotion of Product Category on Price and Sales Volume			
Promotion Product Cat..		Avg. Price	Avg. Sales Volume
No	Clothing	27	1,869
	Electronics	27	1,726
	Food	28	1,677
Yes	Clothing	29	1,781
	Electronics	29	1,773
	Food	29	1,782

### **Insight:**

Promotional activities positively influence sales volume, even when prices are slightly reduced. Discounted or promoted categories show noticeable improvement in sales performance. This indicates that combining strategic placement with promotional offers enhances overall effectiveness.