Data Visualization and Analysis Project

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Tools : Tableau

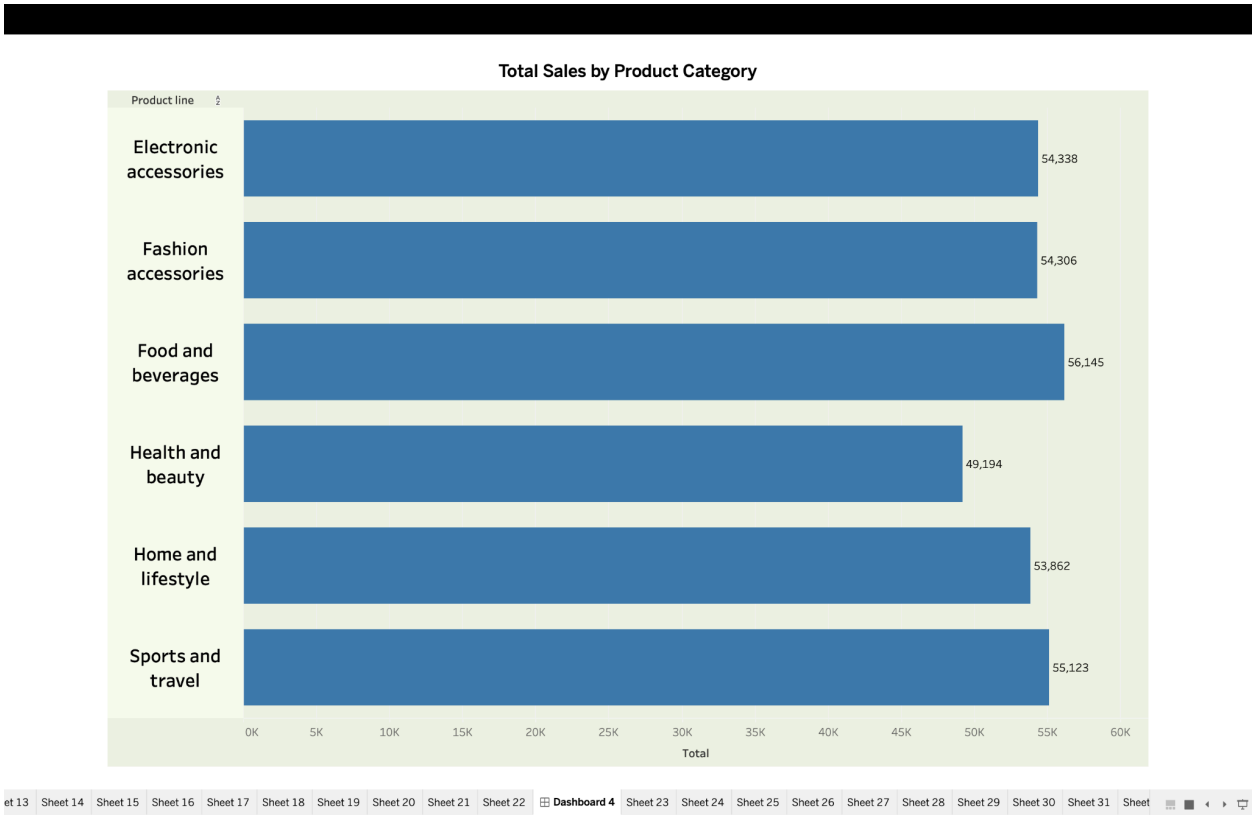
Overview:

In this project, I will be answering 30 scenario-based questions using data visualization and analysis. The dataset contains columns such as Invoice ID, branch, City, Customer_type, Gender, Product line, Unit price, Quantity, Tax 5%, Total, Date, Time, Payment, cogs, gross margin, percentage gross, income, and Rating. I will use Tableau to create the visualizations and provide explanations for the chosen chart types.

Questions and Answers:

Question 1: Which product categories have the highest total sales in the "Superstore" dataset?

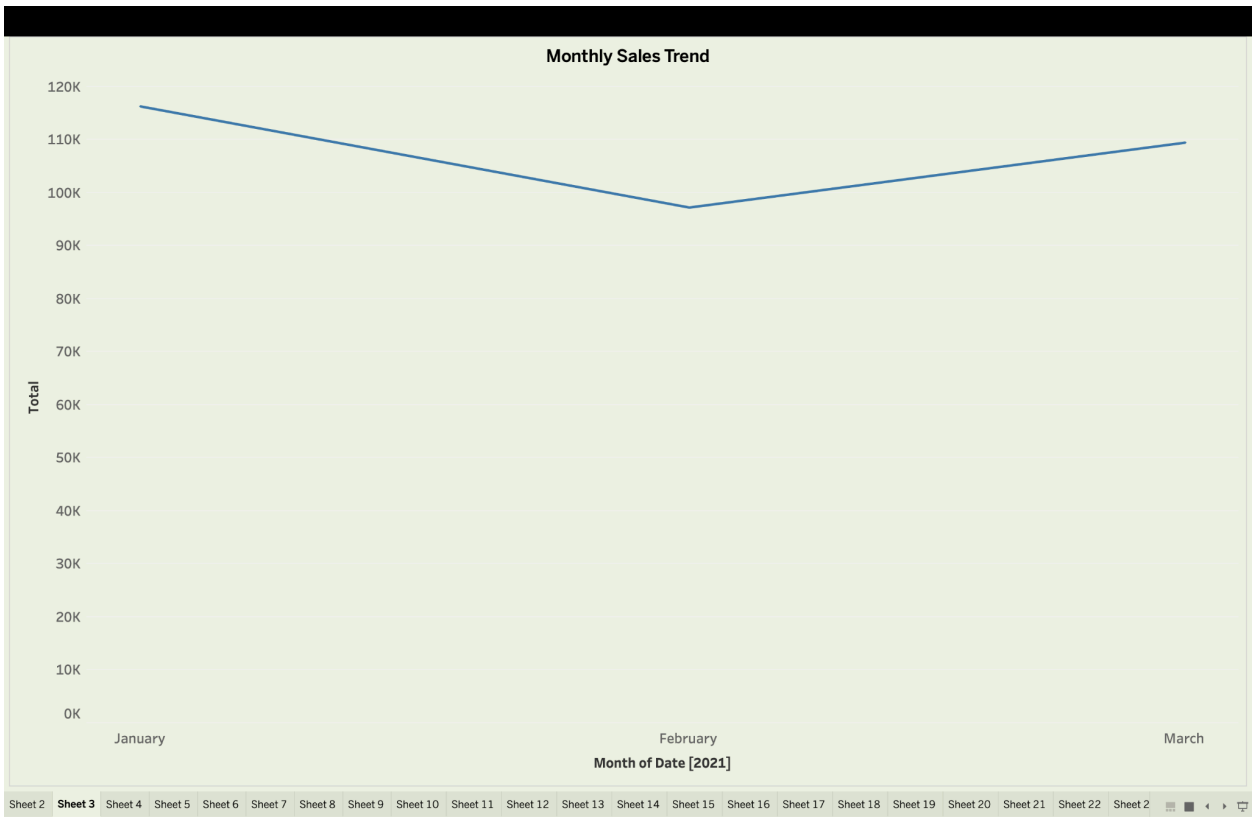
Chart Type: Bar Chart



Rationale: A bar chart effectively shows the total sales for each product category, making it easy to compare them.

Question 2: How do the monthly sales amounts change over the course of a year?

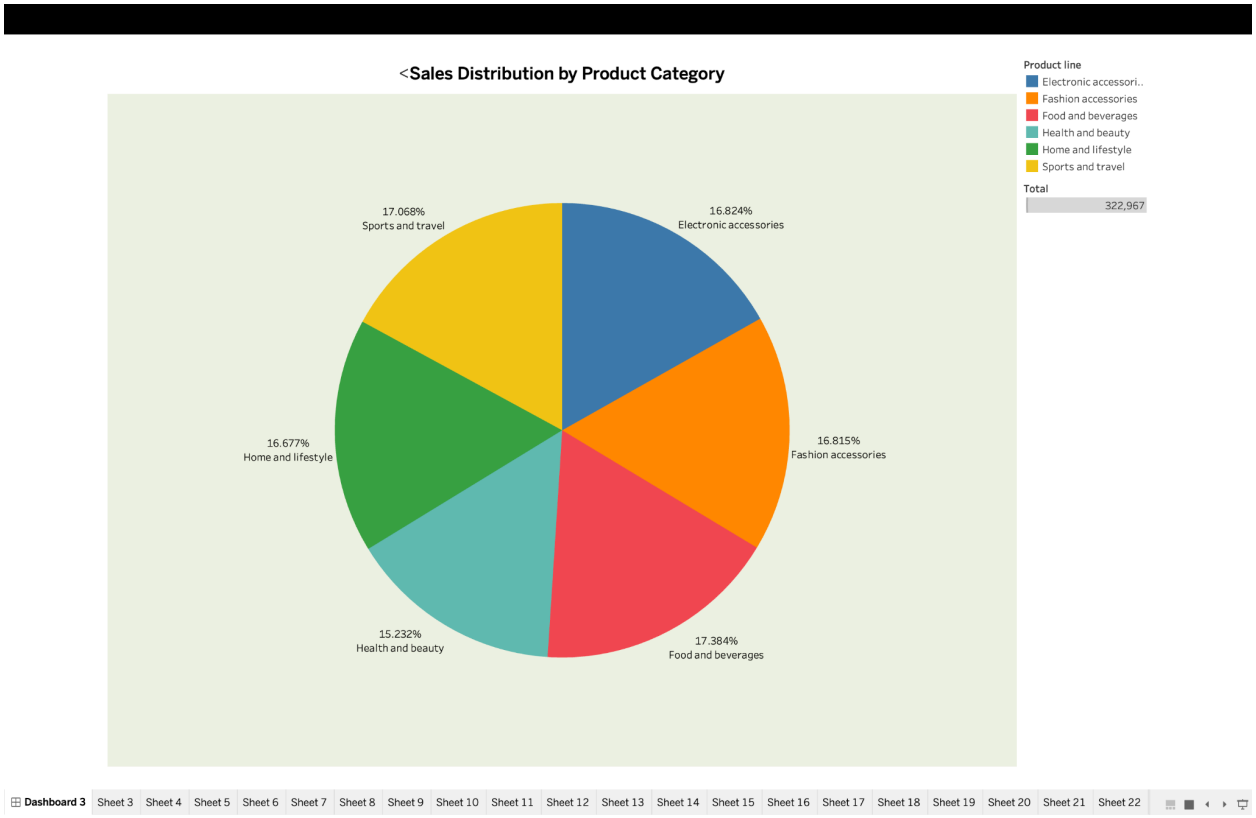
Chart Type: Line Chart



Rationale: A line chart can show trends over time, making it suitable for visualizing changes in monthly sales.

Question 3: How is the total sales amount distributed among different product categories?

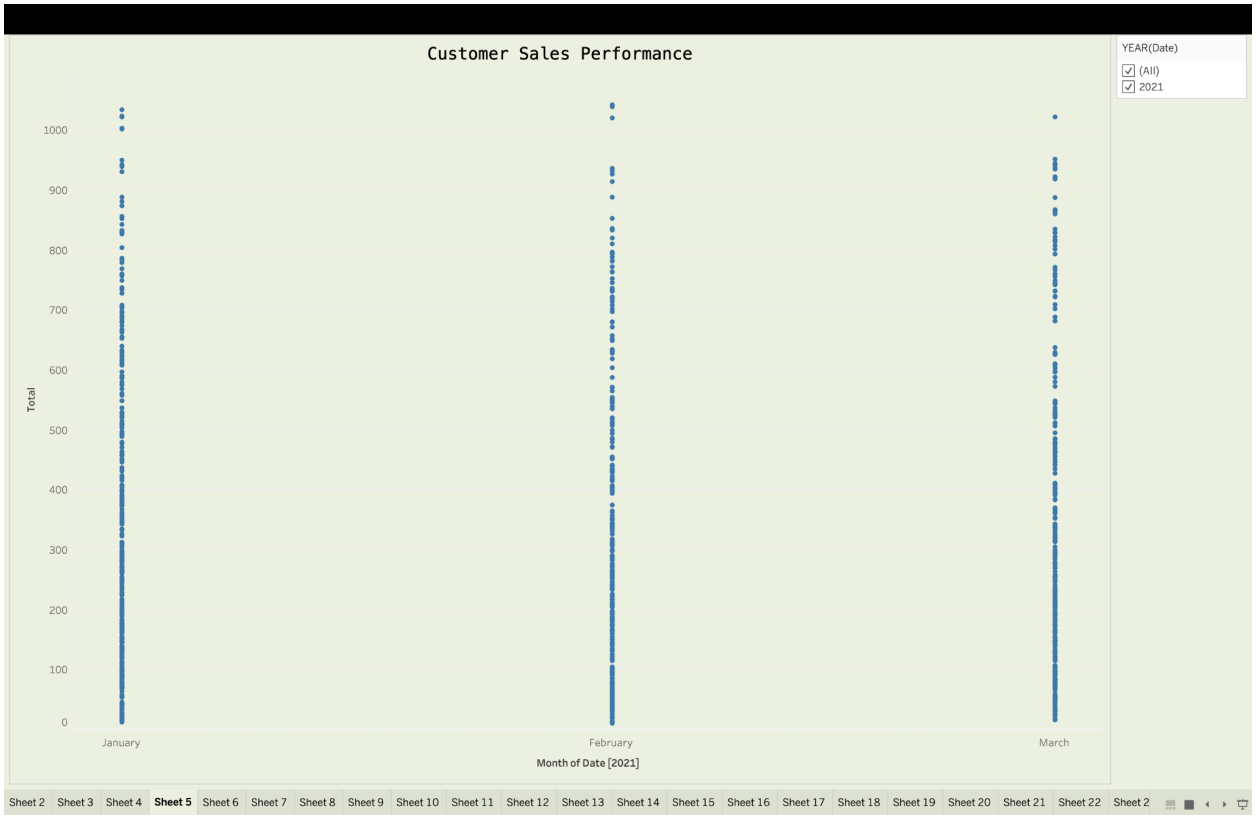
Chart Type: Pie Chart



Rationale: A pie chart can show the proportion of total sales contributed by each product category.

Question 4: Can we analyze the sales performance of individual customers over time?

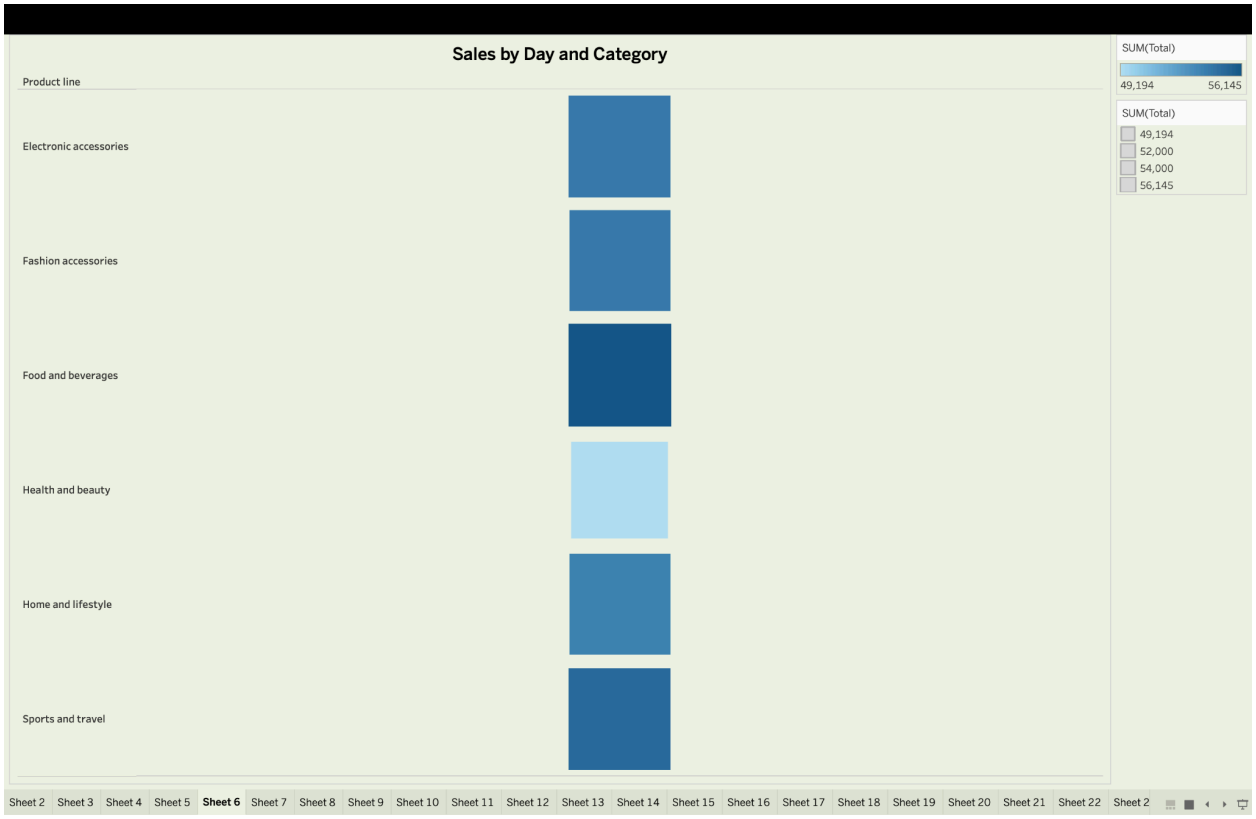
Chart Type: Line Chart



Rationale: A line chart can show the sales performance of each customer over time.

Question 5: How do sales vary based on different days of the week and product categories?

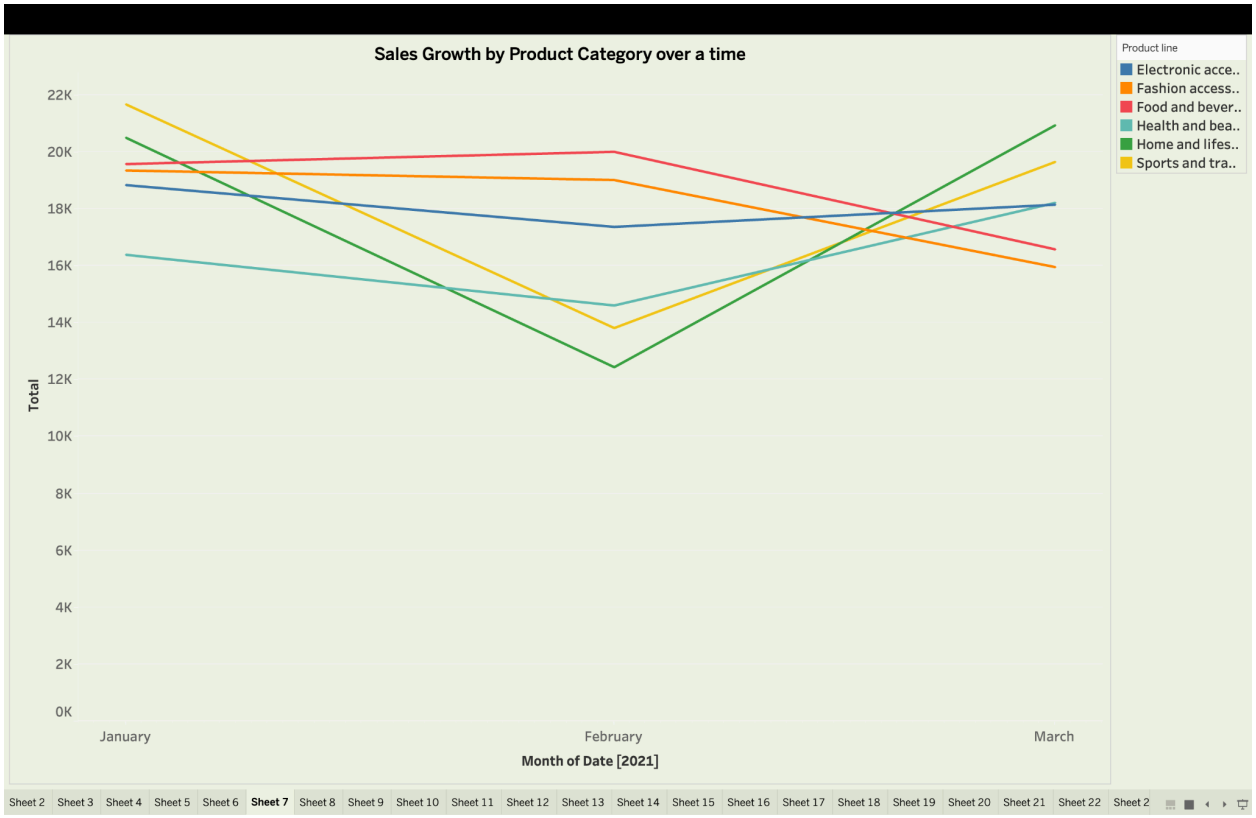
Chart Type: Heat Map



Rationale: A heat map can show the variation in sales across different days of the week and product categories.

Question 6: Can we visualize the sales growth of different product categories over time?

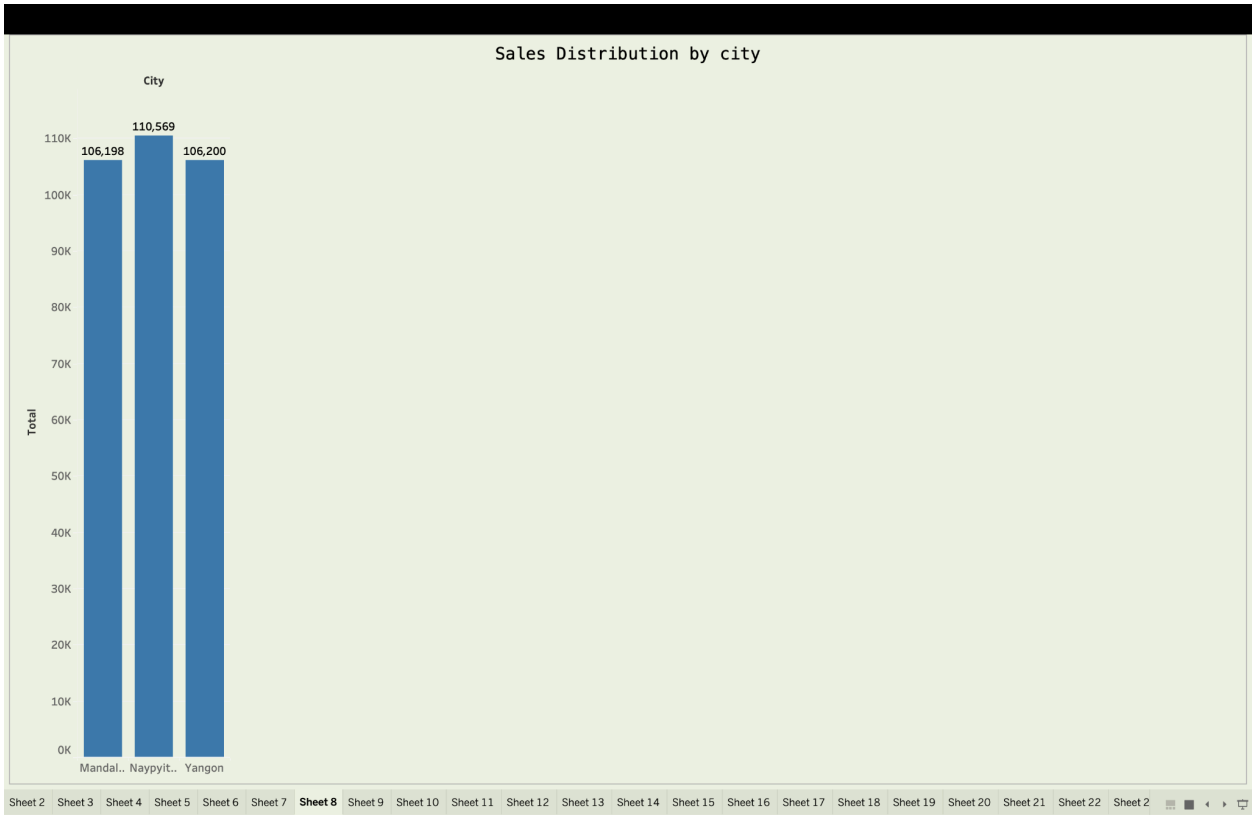
Chart Type: Line Chart



Rationale: A line chart can show the growth trends of different product categories over time.

Question 7: How does the sales distribution vary across different regions in the "Superstore" dataset?

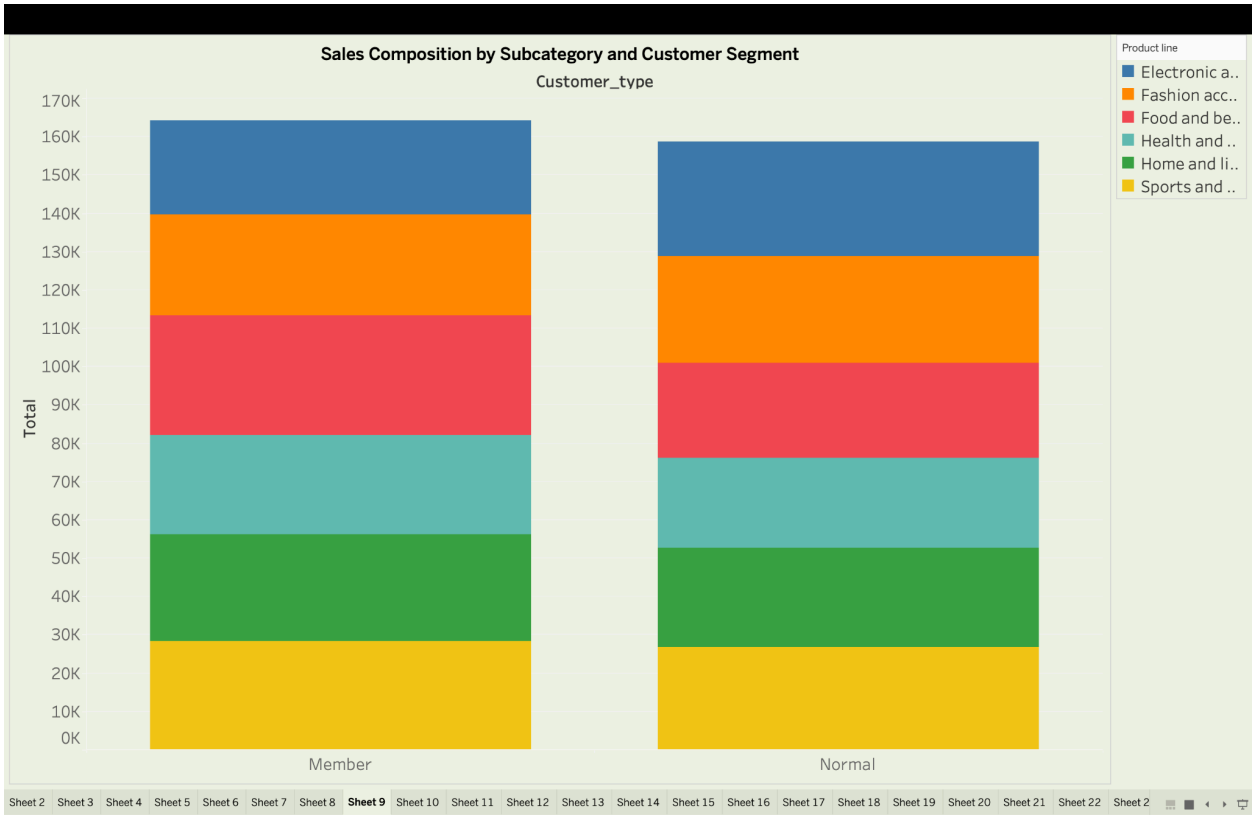
Chart Type: Bar Chart



Rationale: A bar chart can compare the sales distribution across different city as we dont have regions.

Question 8: Can we visualize the composition of profits across various subcategories within different customer segments?

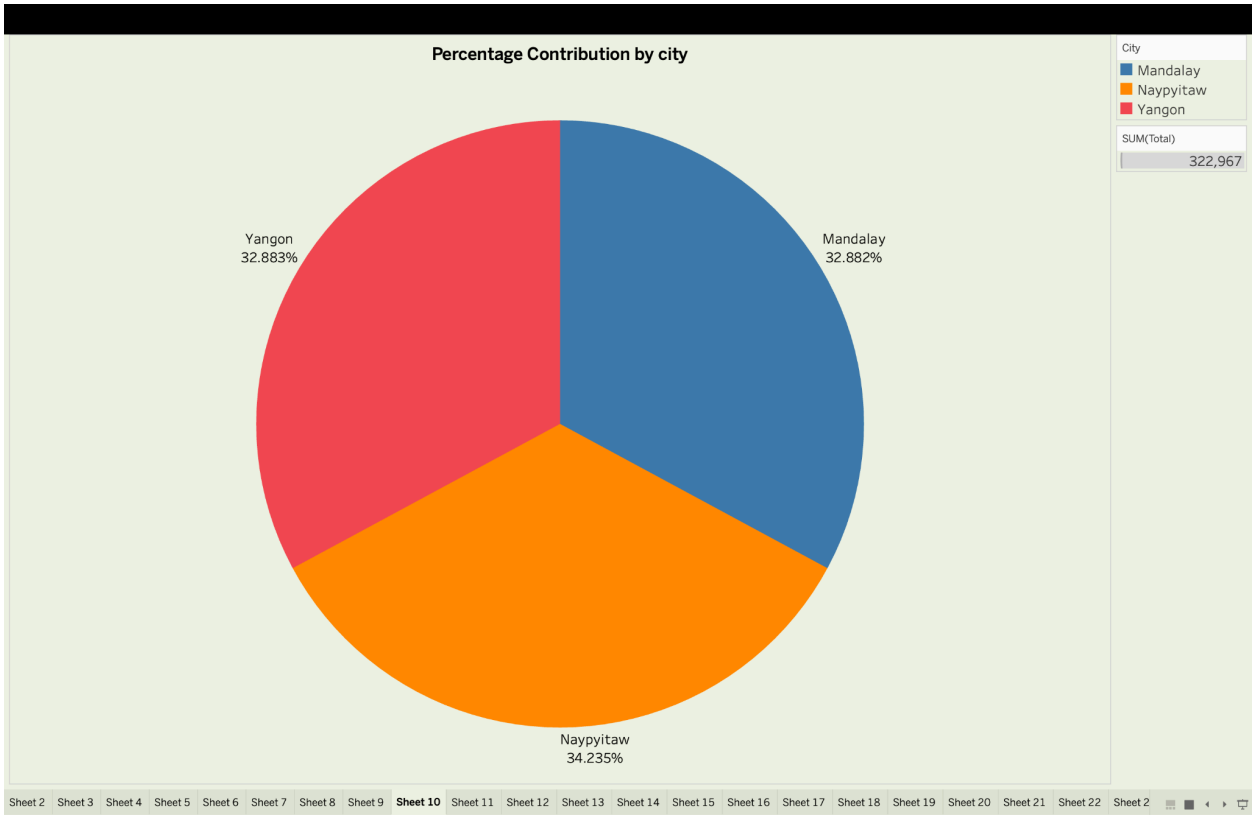
Chart Type: Stacked Bar Chart



Rationale: A stacked bar chart can show the composition of profits across subcategories and customer segments.

Question 9: What is the percentage contribution of each region to the overall sales?

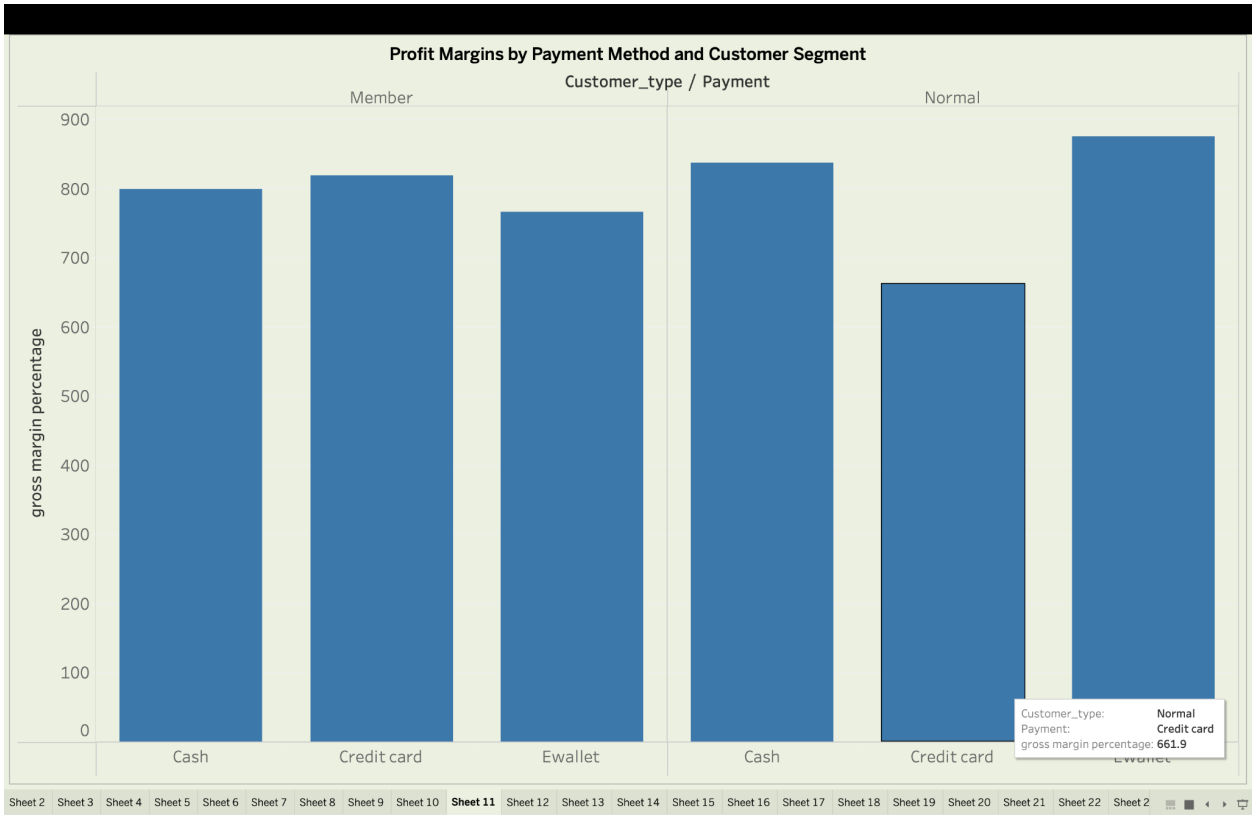
Chart Type: Pie Chart



Rationale: A pie chart can show the percentage contribution of each region to overall sales.

Question 10: Can we visualize the profit margins associated with different payment modes and customer segments?

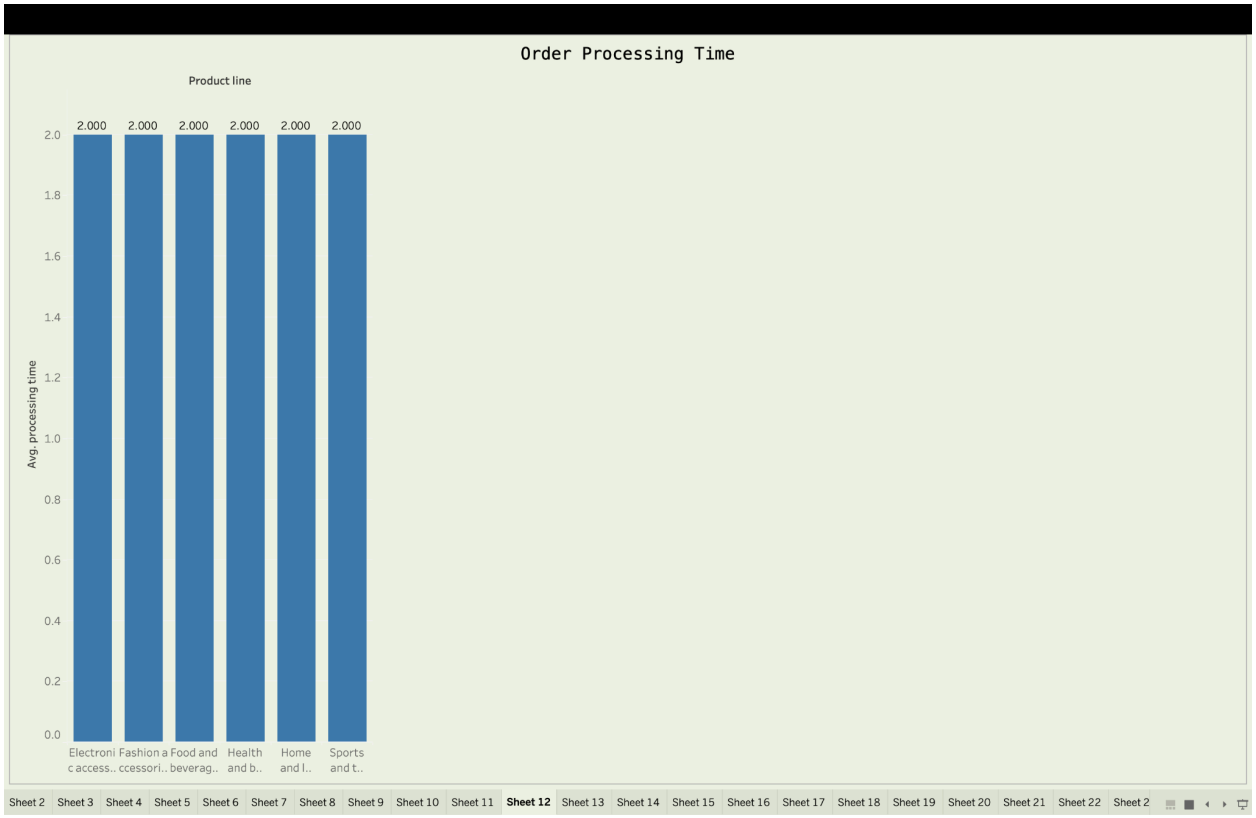
Chart Type: Bar Chart



Rationale: A bar chart can effectively compare profit margins across different payment modes and customer segments.

Question 11: How long does it take to process orders for different product categories?

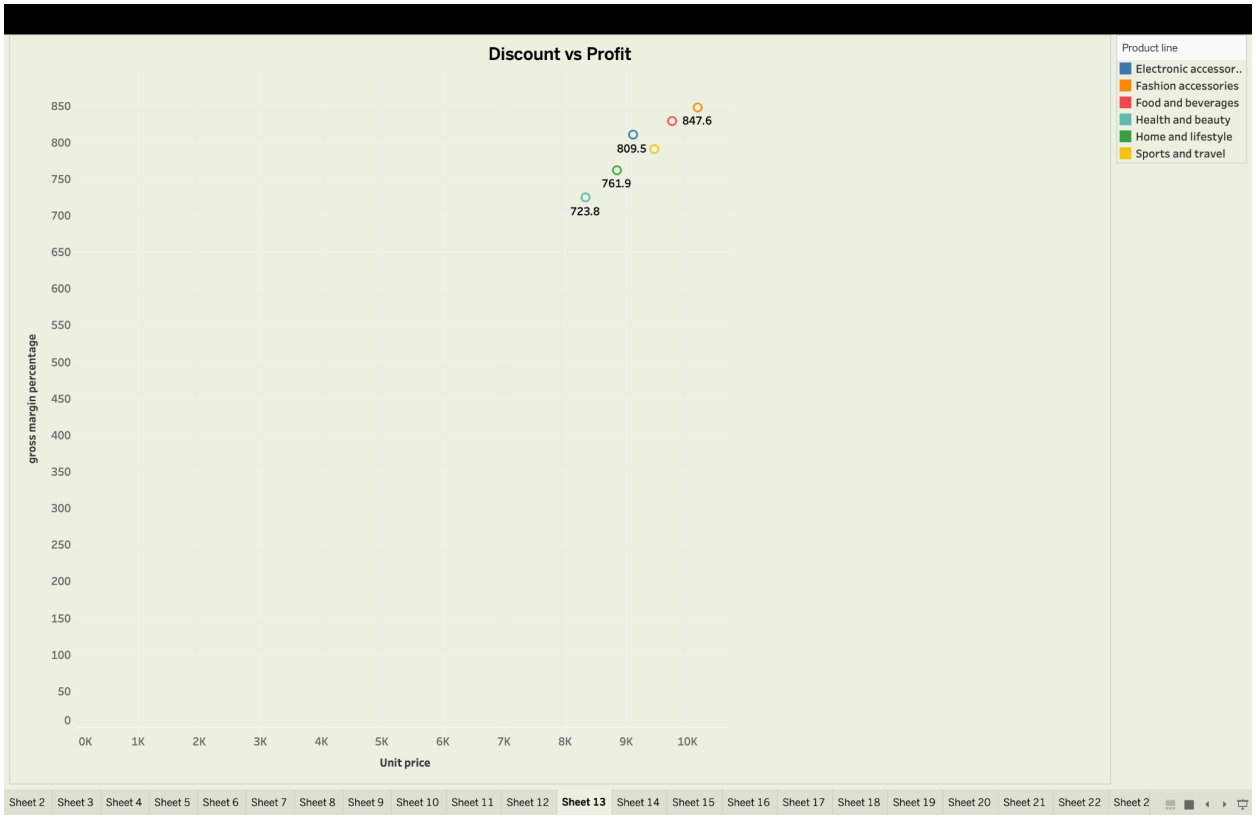
Chart Type: Bar Chart



Rationale: A bar chart effectively compares the processing times across different product categories.

Question 12: How do discounts affect overall profit?

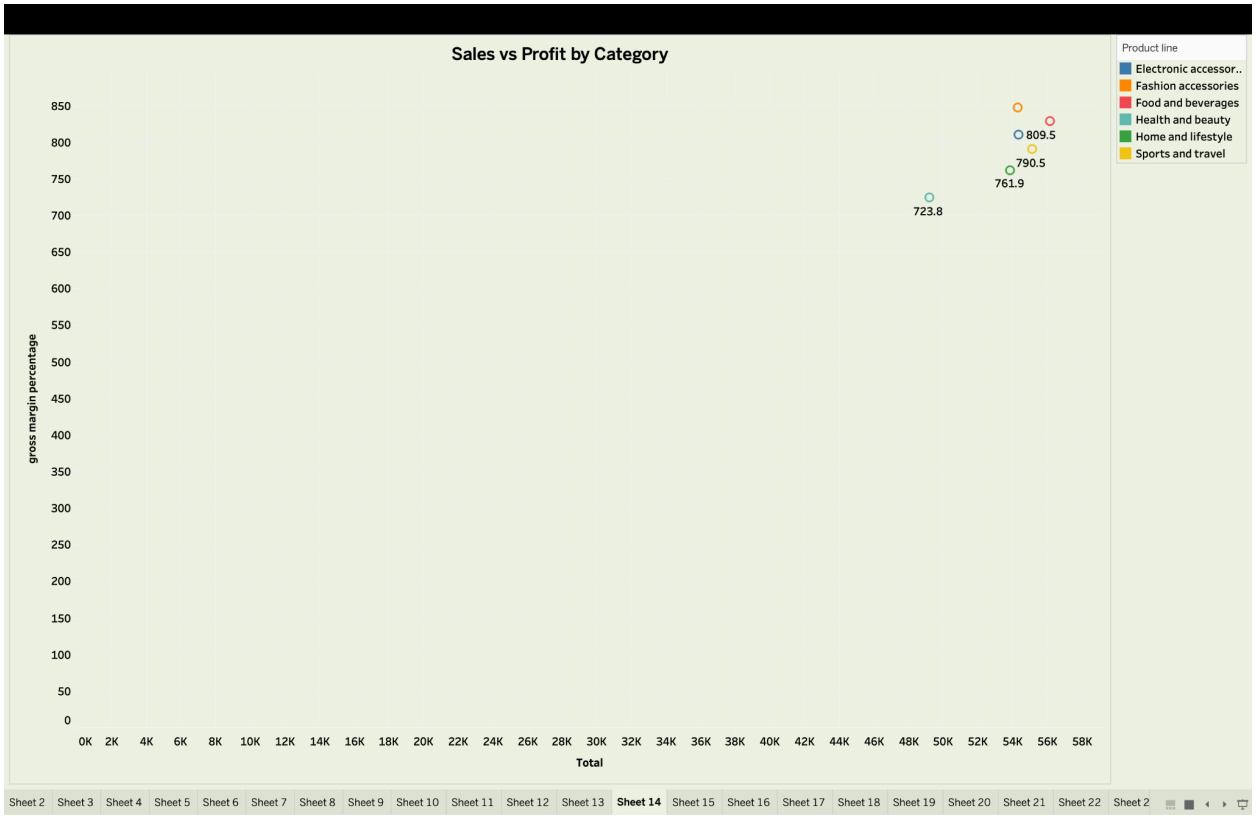
Chart Type: Scatter Plot



Rationale: A scatter plot can show the relationship between discount rates and profits.

Question 13: Can we visualize the relationship between product sales and profitability for different product categories?

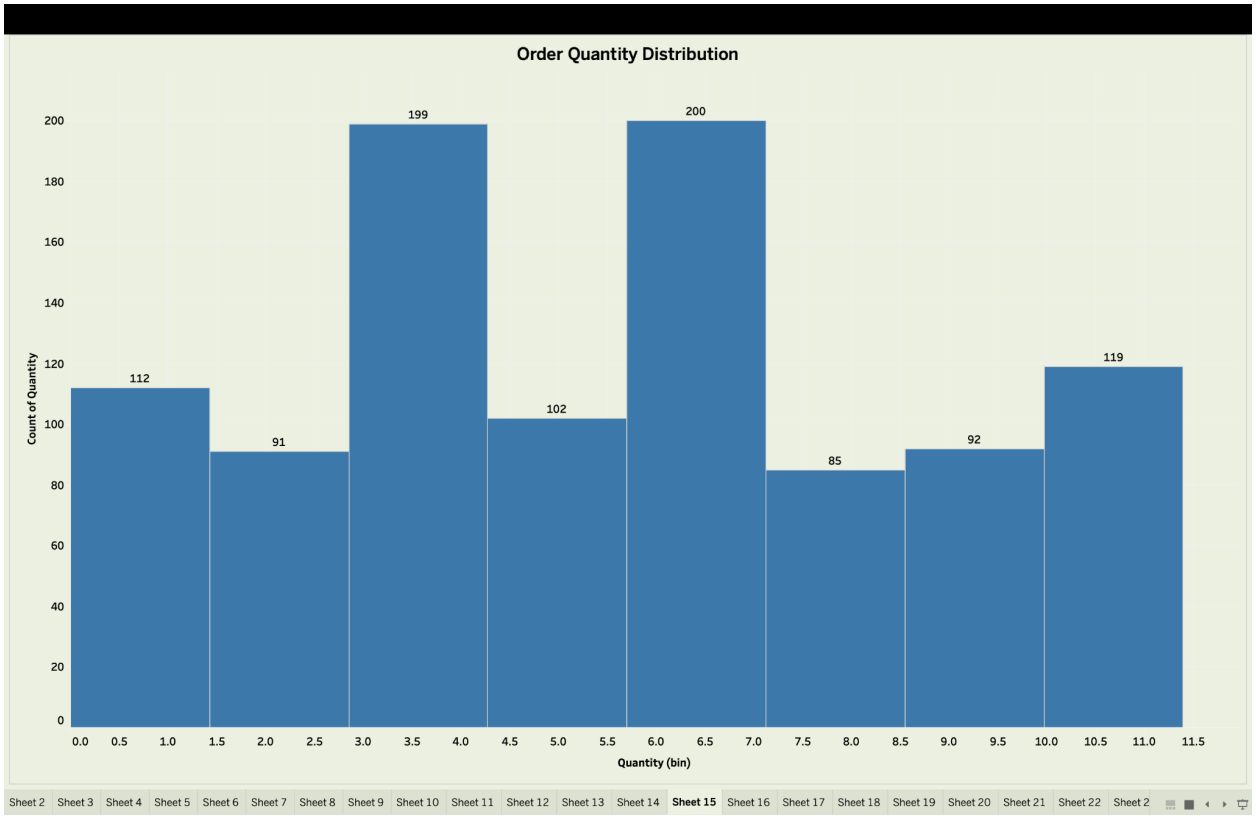
Chart Type: Scatter Plot



Rationale: A scatter plot can show the correlation between sales and profit across product categories.

Question 14: What is the distribution of order quantities for products in the dataset?

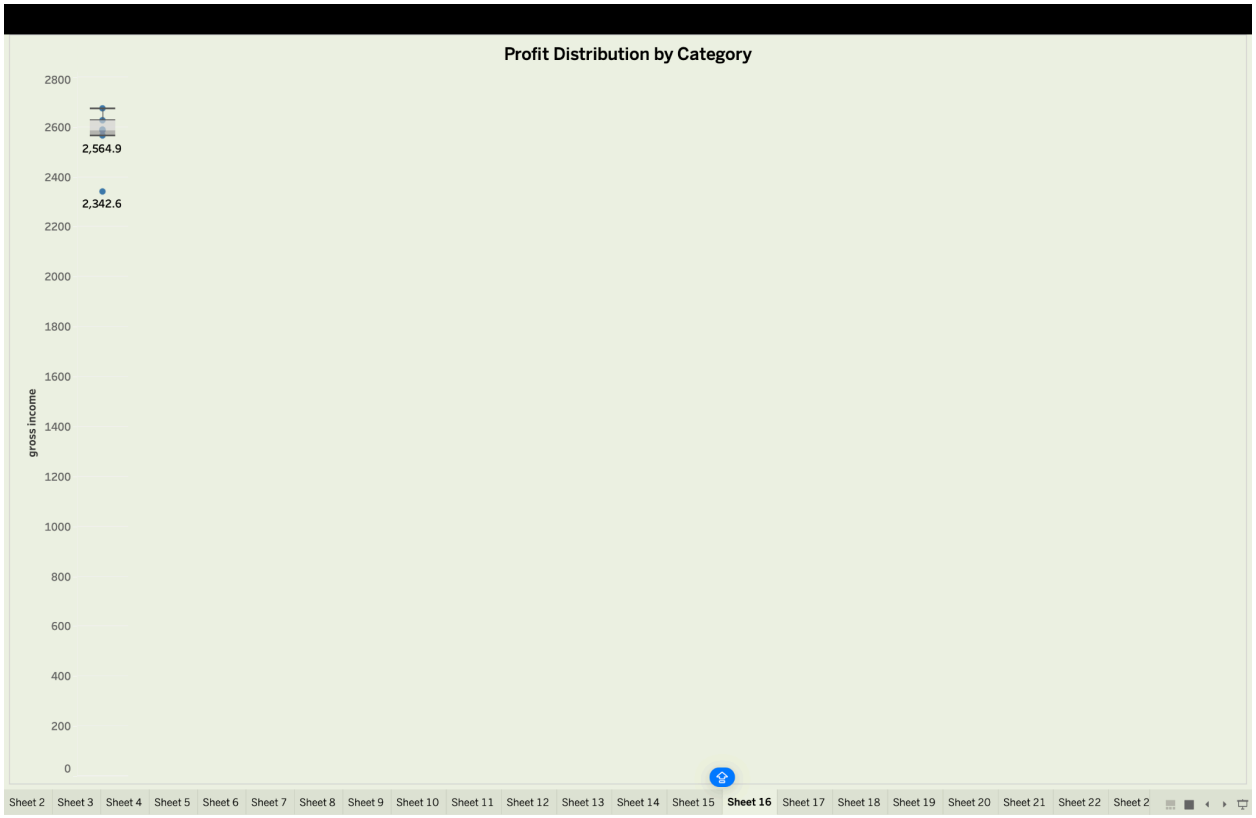
Chart Type: Histogram



Rationale: A histogram can show the frequency distribution of order quantities.

Question 15: How do the profit distributions vary across different product categories?

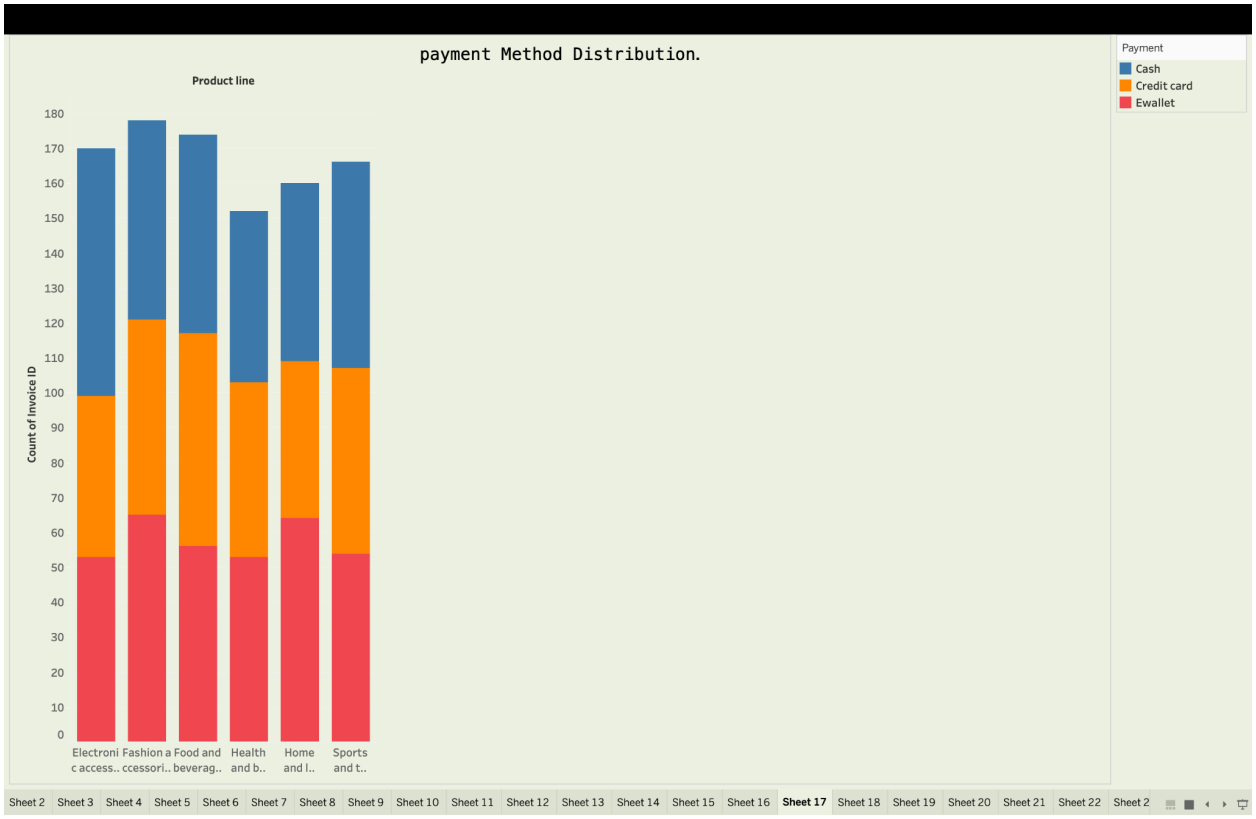
Chart Type: Box Plot



Rationale: A box plot can show the distribution of profits for different product categories.

Question 16: Can we compare the shipping time distributions for different shipping modes?

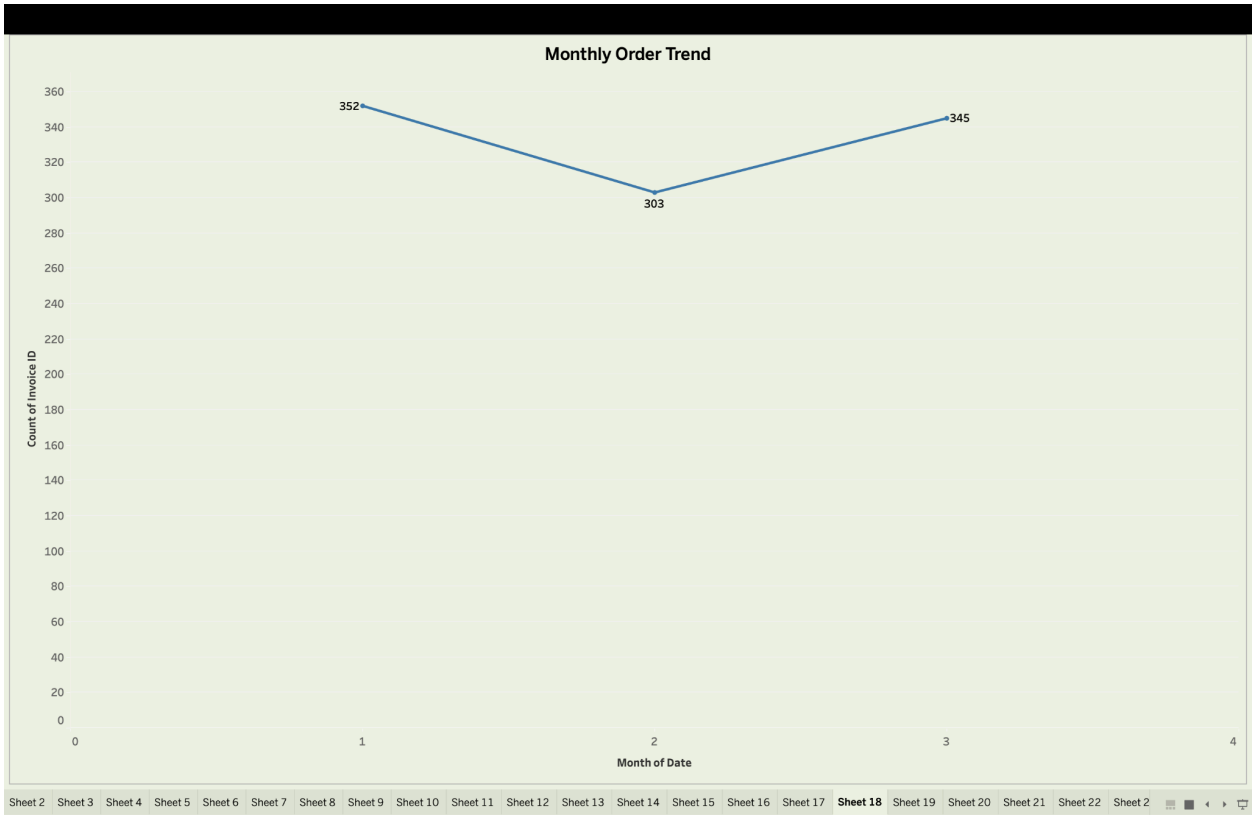
Chart Type: Stacked Bar Chart



Rationale: A stacked bar chart allows comparison of payment method distributions across different product categories.

Question 17: What is the monthly trend in the number of orders shipped?

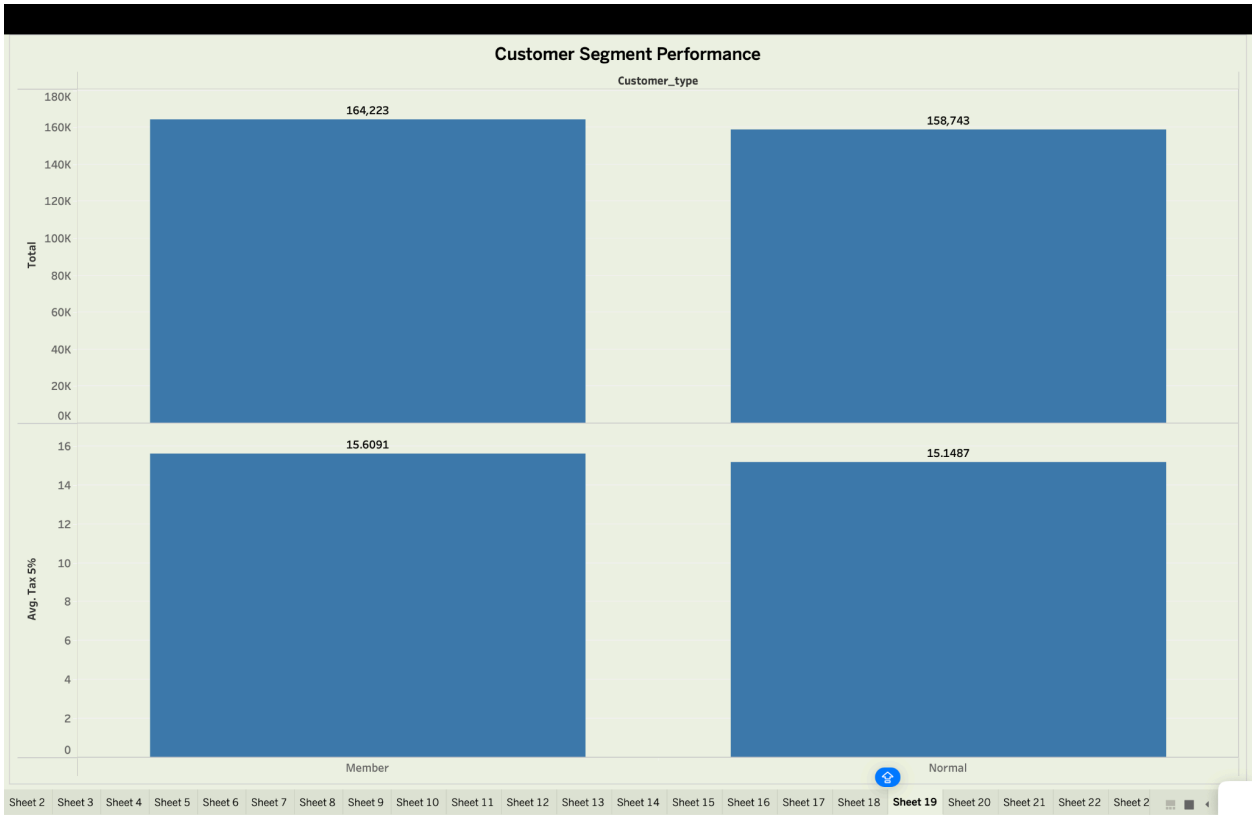
Chart Type: Line Chart



Rationale: A line chart is ideal for showing trends over time.

Question 18: How do different customer segments perform in terms of sales and discount rates?

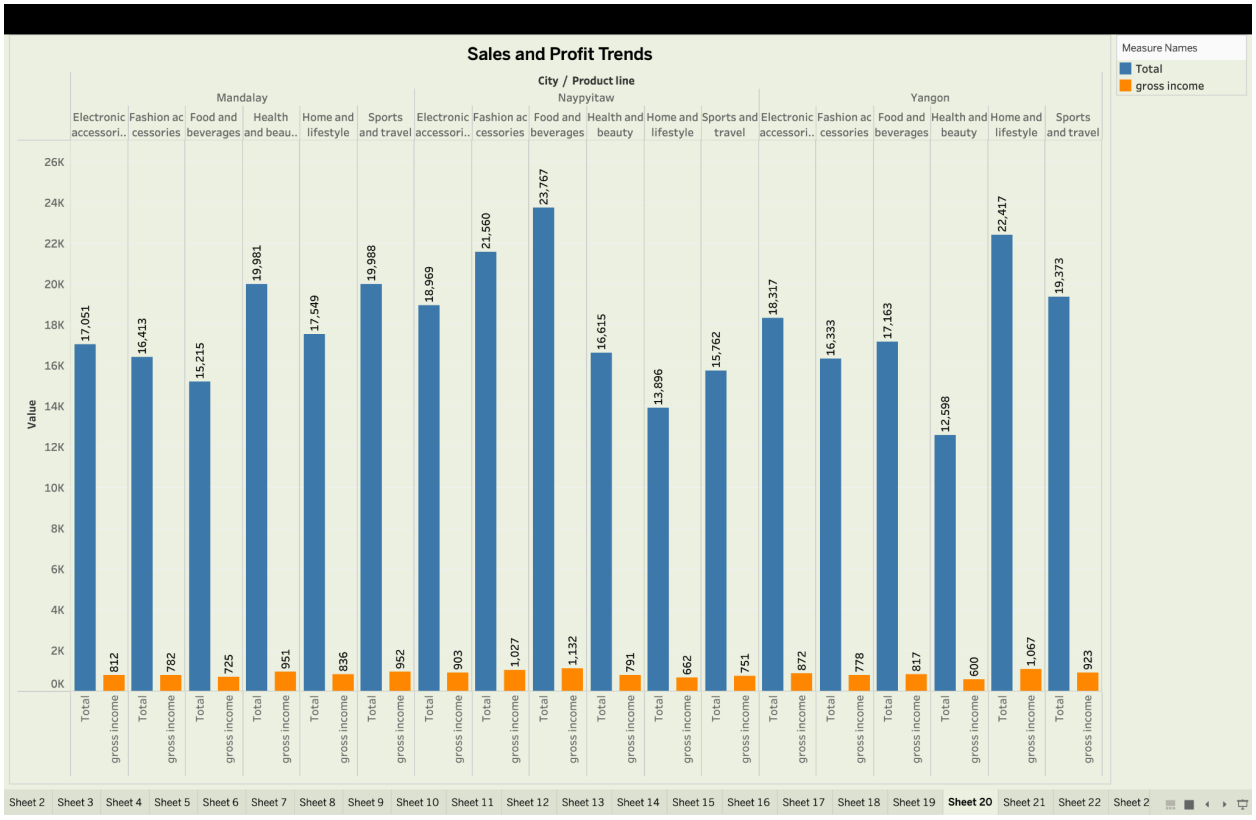
Chart Type: Side-by-Side Bar Chart



Rationale: This chart allows comparison of sales and discount rates across customer segments.

Question 19: What are the sales and profit trends across different product subcategories and regions in the Superstore dataset?

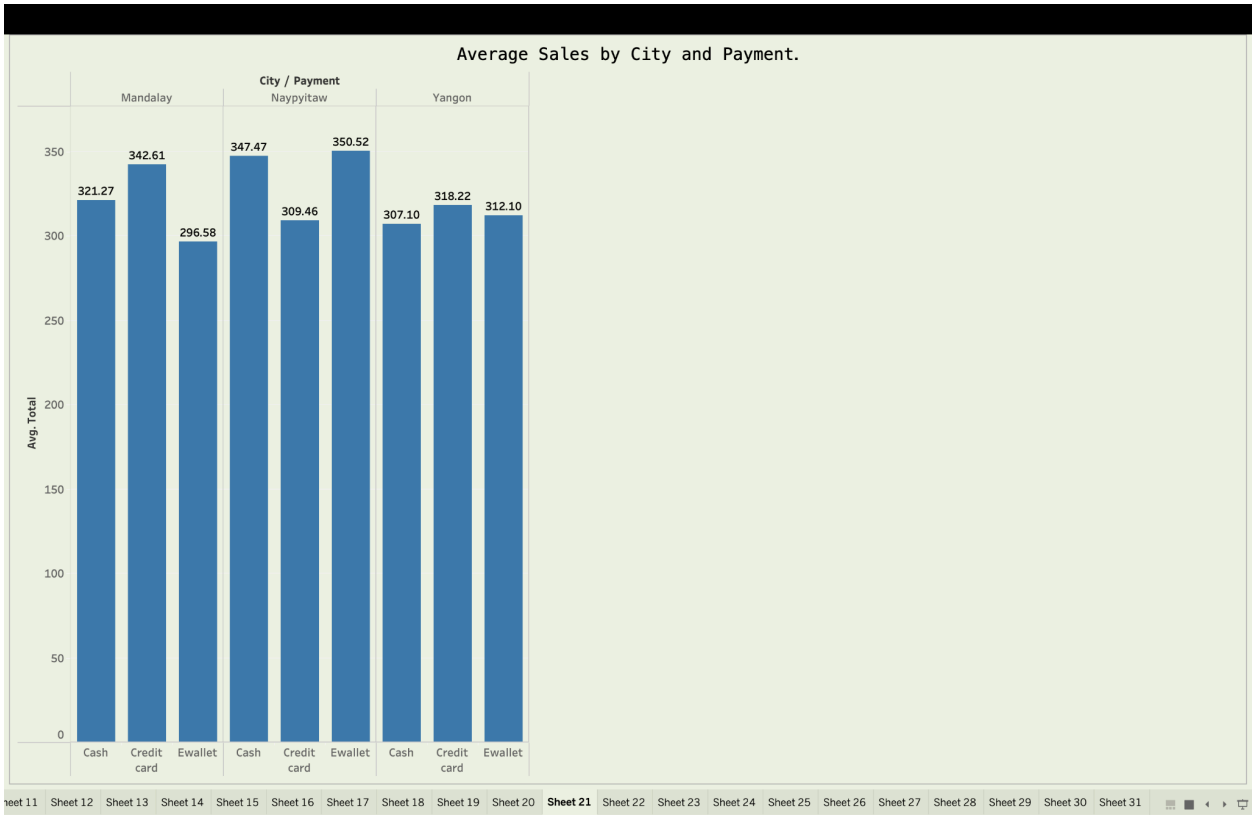
Chart Type: Dual-Axis Line Chart



Rationale: A dual-axis line chart allows simultaneous comparison of sales and profit trends.

Question 20: What is the average delivery duration for different regions and ship modes?

Chart Type: Bar Chart



Rationale: A bar chart will allow you to easily compare the average sales amounts across different cities and payment methods.

Question 21: How has the average order quantity changed over the years for various product categories?

Chart Type: Line Chart

Rationale: A line chart is ideal for showing changes over time.

Question 22: Can we visualize the correlation between discount rates and order quantities for different customer segments?

Chart Type: Scatter Plot

Rationale: A scatter plot is effective for visualizing correlations.

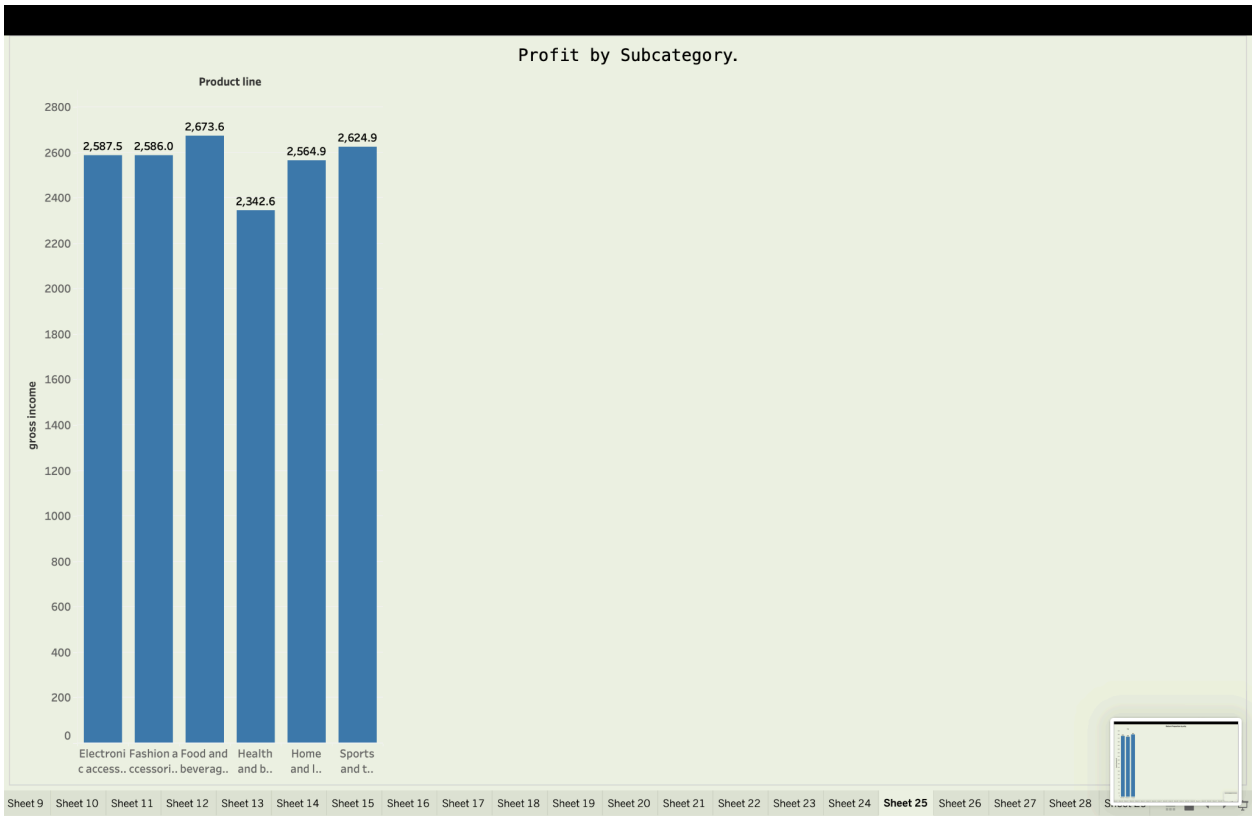
Question 23: What is the proportion of orders returned in each region within the Superstore dataset?

Chart Type: Stacked Bar Chart

Rationale: A stacked bar chart will allow you to visualize the distribution of different payment methods across various regions.

Question 24: Can you compare the profit of different products for different subcategories?

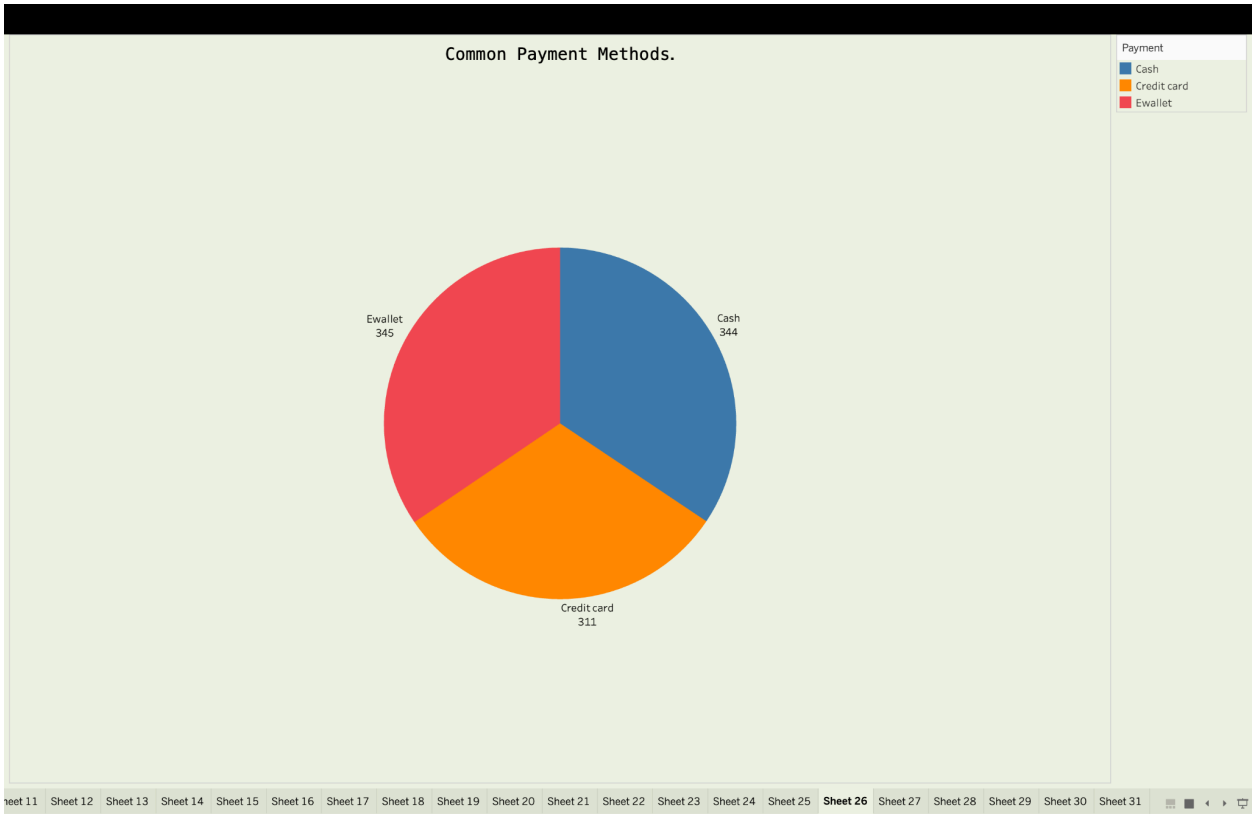
Chart Type: Side-by-Side Bar Chart



Rationale: This chart allows comparison of profits across different products and subcategories.

Question 25: Which shipping mode is the most commonly used in the Sample Superstore dataset?

Chart Type: Pie Chart



Rationale: A pie chart effectively shows the proportion of each payment method used, making it easy to identify the most commonly used one.

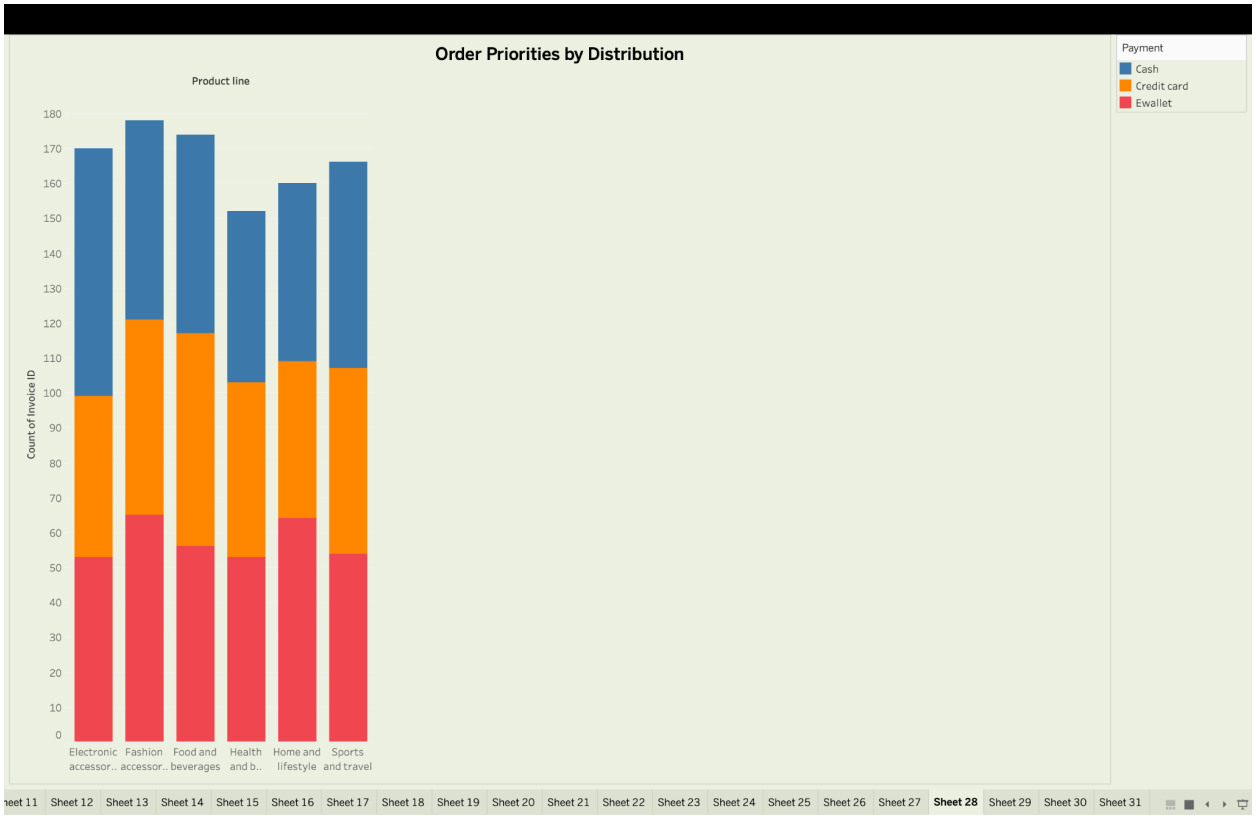
Question 26: How does the sales performance of different regions evolve throughout the quarters of a year?

Chart Type: Line Chart

Rationale: A line chart is ideal for showing trends over time across different city / regions.

Question 27: What is the distribution of order priorities across different product categories?

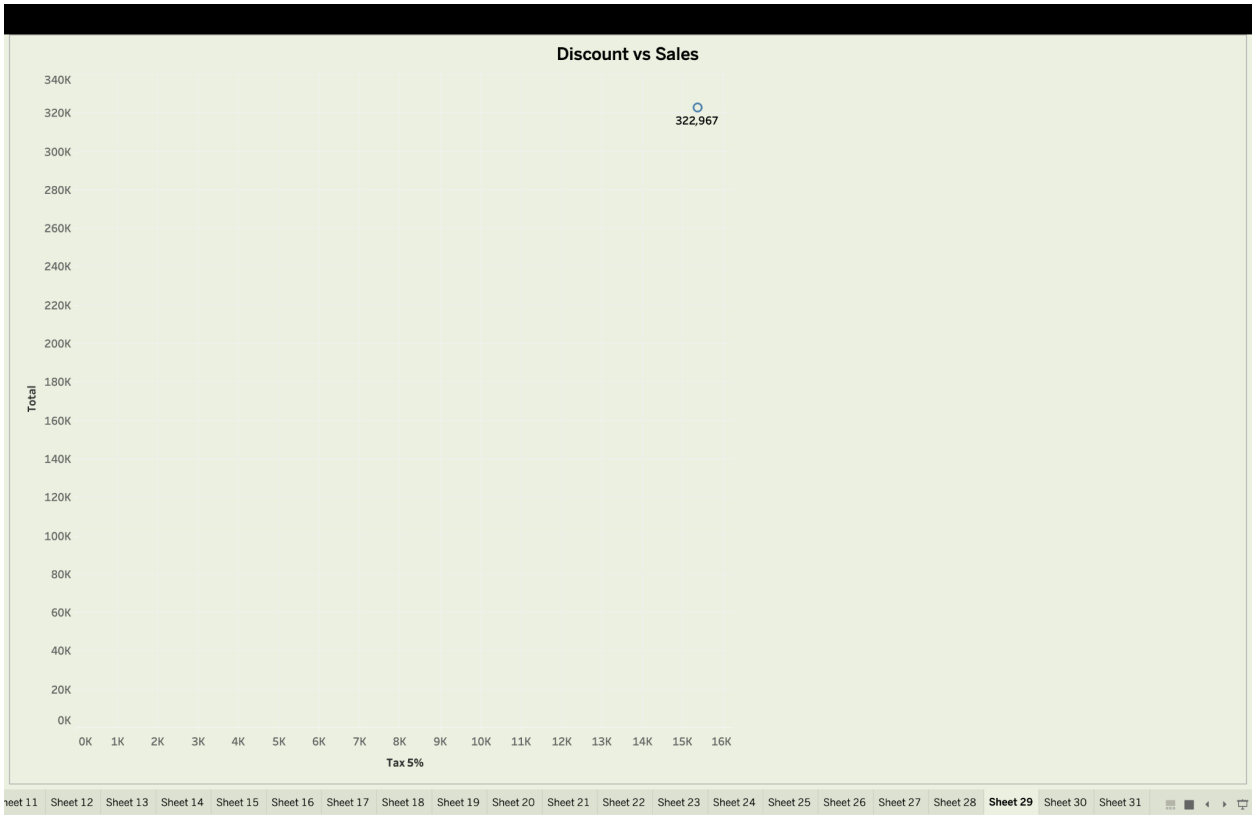
Chart Type: Stacked Bar Chart



Rationale: A stacked bar chart allows comparison of order priorities across different product categories.

Question 28: What is the relationship between discounts and sales?

Chart Type: Scatter Plot



Rationale: A scatter plot is effective for visualizing relationships between two numerical variables.

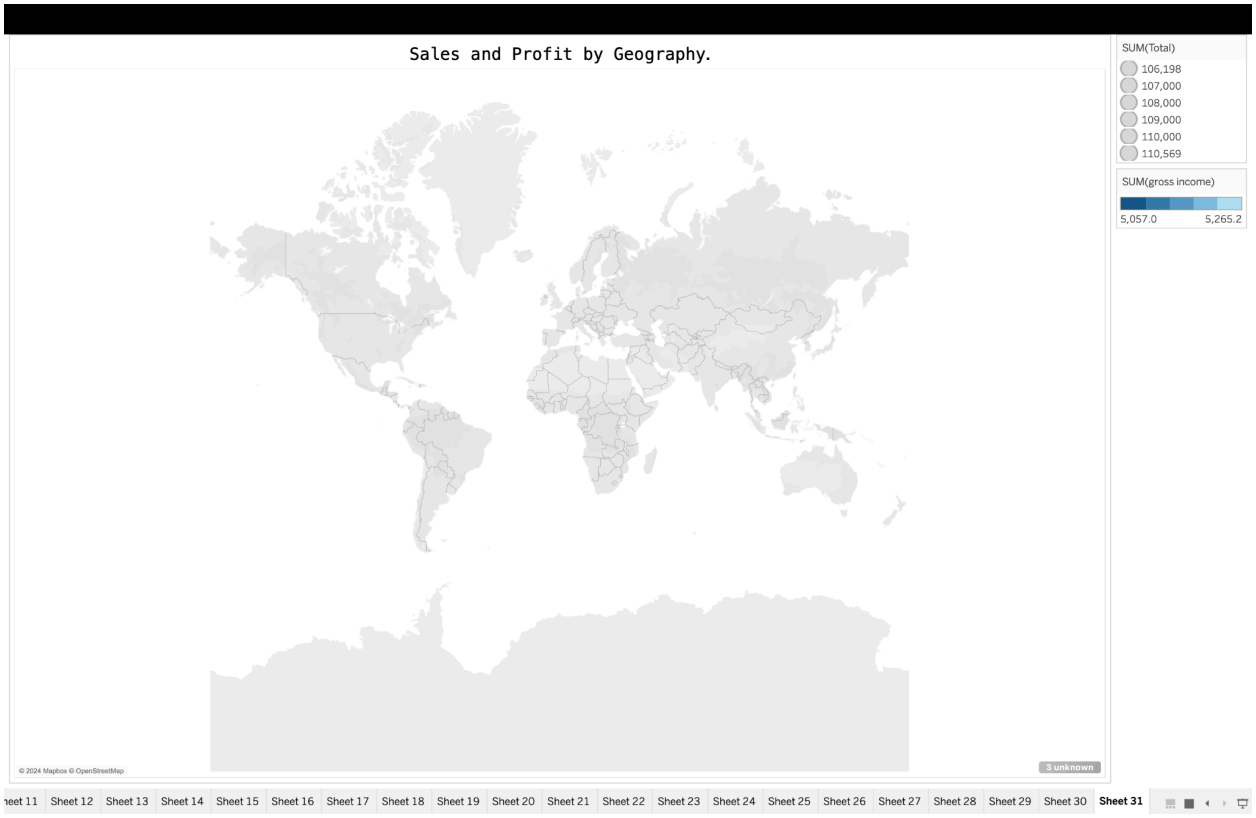
Question 29: How does the average order value differ between repeat customers and new customers?

Chart Type: Side-by-Side Bar Chart

Rationale: This chart allows comparison of average order values between repeat and new customers

Question 30: What is the geographical distribution of returns and its impact on overall profitability?

Chart Type: Map



Rationale: A map can effectively show the geographical distribution of sales, and combining it with a color gradient or size of circles can indicate the impact on profitability.