**Superstore Sales**

Retail dataset of a global superstore for 4 years. Perform Exploratory Data Analysis. Here are the steps that you can follow for univariate and bivariate data analysis on the SuperStore sales dataset:

**Univariate Analysis:**

**1. Understand Dataset:** Explore the dataset’s structure, including the number of rows and columns.

**2. Data Cleaning:** Handle missing values, if any, and check for any anomalies in the data.

**3. Data Types:** Check the data types of each column. Ensure they are appropriate for the analysis.

**4. Descriptive Statistics:** Calculate basic descriptive statistics for key numeric variables (e.g., sales, quantity).

**5. Histograms:** Create histograms to visualize the distribution of key numeric variables.

**6. Time Series Plots:** Plot time series graphs to understand the trends and patterns in sales over the 4 years.

**7. Seasonal Decomposition:** Decompose time series data into components like trend, seasonality, and residuals for deeper insights.

**8. Box Plots:** Use box plots to identify outliers and understand the distribution of numeric variables.

**9. Sales Distribution by Category:** Visualize the distribution of sales across different categories using bar charts or pie charts.

**10. Sales Variation Over Time:** Plot line charts to observe how sales vary over different periods (months, quarters, years).

**Bivariate Analysis:**

**1. Correlation Analysis:** Examine the correlation between sales and other relevant numeric variables.

**2. Scatter Plots:** Plot scatter plots to explore the relationship between sales and another numeric variable.

**3. Pair Plots:** Use pair plots for a quick overview of relationships between multiple numeric variables.

**4. Category-wise Sales Trends:** Using line charts, analyze how sales trends differ across different categories.

**5. Heatmaps:** Create heatmaps to visualize the correlation matrix for better insights.

**6. Sales by Region:** Compare sales across different regions using stacked bar charts.

**7. Customer Segment Analysis:** Explore sales trends for different customer segments using line charts or bar charts.

**8. Sales vs. Quantity:** Investigate the relationship between sales and quantity sold using scatter plots.

**9. Customer Segment vs. Quantity:** Compare the quantity sold across different customer segments using bar charts.

**10. Discount Impact on Sales:** Analyze the impact of discounts on sales using bar charts or line charts.

**11. Shipping Mode vs. Sales:** Explore the relationship between shipping modes and sales using categorical plots.

**12. Product-wise Sales Analysis:** Investigate how sales vary for different products or categories using bar charts or line charts.

**13. Region-wise Product Sales:** Compare product sales across different regions using grouped bar charts.

**14.** **Document Findings:** Summarize key findings from both univariate and bivariate analyses. Highlight any notable trends or insights.

By following these steps, you can gain a comprehensive understanding of the SuperStore sales dataset, uncovering patterns, trends, and relationships that can inform business decisions and support predictive modeling.