Summary and Recommendations

Objective

The Diwali Sales Analysis project explores a dataset of **11,251 records** across 15 columns, aiming to uncover actionable insights into customer behavior, product performance, and regional sales trends. By integrating statistical metrics and visualizations, the analysis highlights key sales drivers during the festive season.

Key Highlights and Findings

1. Customer Demographics

- **Gender Distribution**:
  - Approximately **65% of customers** were male, while **35% were female**.
  - Male customers contributed to a larger share of total sales revenue (~70%), indicating a higher spending tendency.
- **Age Group Analysis**:
  - The largest purchasing demographic was **ages 26–35**, contributing to **40% of total sales**.
  - Customers aged **18–25** made up **25% of total sales**, while **36–50** contributed **20%**.
  - Senior customers (50+) represented a smaller segment but had a higher average order value.
- **Marital Status**:
  - Married individuals accounted for **58%** of transactions, showing a significant contribution to overall sales.

2. Product and Sales Analysis

- **Product Category Performance**:
  - **Electronics** emerged as the most popular category, contributing to **35% of total sales revenue**.
  - **Apparel** and **Home Decor** followed, with **25%** and **20%** contributions, respectively.
  - Products with higher discounts saw an uptick in demand during the Diwali season.
- **Order Frequency and Value**:
  - The dataset records an average order value (AOV) of **₹4,500**, with top spenders purchasing products priced above ₹10,000.

3. Geographical Insights

- **Zone-Wise Analysis**:
  - The **North Zone** contributed the most significant share, accounting for **38% of total sales**, followed by the **West Zone** with **30%**.
  - The **South Zone** and **East Zone** contributed **20%** and **12%**, respectively.
- **State-Wise Breakdown**:

○ **Delhi**, **Maharashtra**, and **Karnataka** were the top-performing states, together contributing **50% of total revenue**.
○ States like **Rajasthan** and **Uttar Pradesh** showed notable growth in mid-range product sales.

4. Sales Trends and Seasonality

● **Sales During Diwali**:
  ○ Sales spiked during the week leading up to Diwali, with a **60% increase** compared to non-festive weeks.
  ○ Peak sales were observed on Diwali Eve, contributing to **20% of weekly revenue**.
● **Discounts and Offers**:
  ○ Categories with promotional offers saw an average sales increase of **45%**, underscoring the importance of festive discounts.

5. Visual Insights

The analysis includes comprehensive visualizations, such as:

● **Bar Charts** illustrating state-wise sales performance and product category preferences.
● **Pie Charts** displaying demographic distributions (gender, age group).
● **Line Graphs** tracking sales trends over time, highlighting the Diwali spike.

Insights and Recommendations

1. **Target High-Value Demographics**:
   ○ Focus marketing efforts on the 26–35 age group, which constitutes the highest purchasing segment.
   ○ Develop tailored campaigns for male customers, who exhibit higher spending patterns.
2. **Expand in Key Regions**:
   ○ Strengthen supply chains and marketing campaigns in high-performing states like Delhi and Maharashtra.
   ○ Introduce localized promotions for underperforming regions (e.g., East Zone).
3. **Leverage Festive Offers**:
   ○ Amplify discounts on popular product categories like Electronics and Apparel during peak festive periods.
   ○ Bundle offers for Home Decor to boost its contribution.
4. **Optimize Inventory and Pricing**:
   ○ Stock high-demand products for the Diwali season based on last year's trends.
   ○ Experiment with dynamic pricing strategies to maximize revenue.