

# Executive Summary of Diwali Sales Exploratory Data Analysis

The Diwali Sales dataset consists of 11,239 cleaned records, including customer demographics, product categories, sales amounts, and order data. The analysis primarily focused on understanding customer behavior by gender, age group, marital status, state, occupation, and product category.

## Key Findings:

- Gender:**
  - Female customers constitute a majority of the buyers, with higher purchasing power compared to males.
- Age Group:**
  - The age group 26-35 years is the most active in terms of purchasing, contributing the highest sales. Females in this age group are the dominant buyers.
- State:**
  - The states with the most orders and highest sales revenue are **Uttar Pradesh, Maharashtra, and Karnataka**.
- Marital Status:**
  - Married individuals, especially women, make the majority of purchases, showing higher spending tendencies than their unmarried counterparts.
- Occupation:**
  - Customers working in **IT, Healthcare, and Aviation** sectors have the highest purchasing power and are the most active buyers.
- Product Category:**
  - Products from **Food, Clothing, and Electronics** are the most popular categories.
  - These product categories lead in terms of both sales and order quantities.
- Top Products:**
  - Certain product IDs have been identified as top sellers, with the highest number of orders concentrated in these items.

## Recommendations:

- Target Marketing Campaigns:**
  - Focus marketing efforts on **female** customers, particularly those in the **26-35 age group** who show high purchasing power. Tailor promotions for **married women** as they contribute the majority of the revenue.

2. **Location-Based Offers:**

- Special discounts and offers should be directed towards customers in **Uttar Pradesh, Maharashtra, and Karnataka**, as these states are generating the highest sales.

3. **Product Bundling & Promotions:**

- Bundling **Food, Clothing, and Electronics** products together could enhance sales, as these are the most purchased categories. Consider offering festive discounts or combo deals on these items.

4. **Occupation-Specific Ads:**

- Create occupation-specific ad campaigns, particularly targeting **IT, Healthcare, and Aviation** sectors, where the buyers exhibit higher spending patterns.

5. **Personalized Shopping Experience:**

- Develop a personalized shopping experience for **repeat customers** by offering loyalty rewards, especially for those in the top-selling occupations and product categories.

6. **Data-Driven Product Stocking:**

- Ensure the availability of top-selling products to meet the high demand during peak sales periods. Optimize inventory management based on the findings to **avoid stock shortages**.

## **Conclusion:**

The analysis indicates that married women, particularly in the age group of 26-35, residing in states like Uttar Pradesh, Maharashtra, and Karnataka, are the key contributors to Diwali sales. Tailoring offers to these demographics and focusing on high-demand product categories like Food, Clothing, and Electronics will likely yield the best results for future campaigns.