

Summary: Diwali Sales Analysis

This report presents a detailed analysis of Diwali season sales, offering key insights on customer demographics, geographic trends, and purchasing behavior. The analysis was performed using Python with tools such as pandas, seaborn, and matplotlib.

Customer Demographics

✓ Gender-Based Insights

- A **higher proportion of buyers are females** — approximately **60–65%** of the total customer base.
- **Females also contribute more to total purchase value** than males, suggesting stronger shopping intent and purchasing power during the Diwali season.
- Recommendation: Focus marketing and promotion strategies on women-centric product categories.

✓ Age Group Distribution

- The **26–35 years age group** dominates both in number of orders and in total sales — accounting for **around 40% of all purchases**.
- This group also shows a strong female presence, making it the **most profitable customer segment**.
- Recommendation: Create tailored festive campaigns and loyalty programs targeting this age group.

✓ Marital Status

- **Married individuals**, especially women, make up the majority of buyers — estimated at **over 60%** of total transactions.
- Their purchasing value is also comparatively higher, indicating they are key decision-makers during the festive season.
- Recommendation: Highlight family-oriented, value-for-money deals during promotions.

Geographic Distribution

✓ Top 3 States by Orders & Revenue

- The top contributors are:
 - **Uttar Pradesh**
 - **Maharashtra**
 - **Karnataka**
- These three states alone contribute **over 45% of the total orders**.
- Recommendation: Focus supply chain, logistics, and regional offers in these high-performing regions.

Professional Background of Buyers

✓ Top Occupations

- Customers working in the **IT, Healthcare, and Aviation** sectors form the majority of the buyer base.
- These segments are likely to have higher disposable income and a preference for online shopping.
- Recommendation: Curate product bundles or early-access deals for professionals in these fields.

Product Preferences

✓ Most Purchased Product Categories

- The top 3 categories in terms of volume and revenue are:

- **Food & Beverages**
 - **Clothing & Apparel**
 - **Electronics & Gadgets**
 - Together, these categories account for **over 70% of total sales** during the Diwali period.
 - Recommendation: Prioritize inventory and offers in these categories during peak seasons.
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Key Takeaway

The most valuable customers are **married women aged 26–35**, living in **Uttar Pradesh, Maharashtra, or Karnataka**, and working in **IT, healthcare, or aviation** sectors.

Their preferred purchases include **food, clothing, and electronics**.

Visual Highlights

- The notebook includes **insightful visualizations**: bar plots for gender vs amount, age group comparisons, top-performing states, and product breakdowns.
- These visuals effectively support each insight and strengthen the data-driven approach.