Business Problem

The festive seasons bring joy alongside a lot of business with them, Diwali is one of a kind of such festivals. People tend to buy many things at Diwali, in fact almost every shop and e-commerce platform brings their huge sale during this auspicious festive season. Therefore, this opportunity also brings huge competition along with this. So, we need to analyze the sale data and find all the insights which might be useful to make the utmost benefit of these sales.

Assumptions

1. Data collected is accurate and represents actual Diwali sales transactions.
2. Missing or null values (e.g., in "Amount") are minimal and do not significantly affect results.
3. Customers are assumed to have made purchases independently (no group/family dependencies).
4. Marital status is binary (0 = Married, 1 = Unarried).
5. "Orders" represents the number of units purchased, while "Amount" reflects total purchase value.

Research Question

1. How to improve customer experience?
2. How can the revenue be increased?

Hypothesis

1. Female customers contribute more to Diwali sales in terms of purchase amount.

2. Married customers spend more during Diwali than unmarried customers.
3. Customers in the 26–35 age group are the biggest contributors to Diwali sales.
4. Sales are higher in metropolitan states (like Maharashtra, Uttar Pradesh, Karnataka) compared to smaller states.
5. Certain product categories (e.g., Clothing & Apparel, Electronics, Home Appliances) dominate Diwali sales.

# Analysis & Findings

1. Gender-wise Analysis
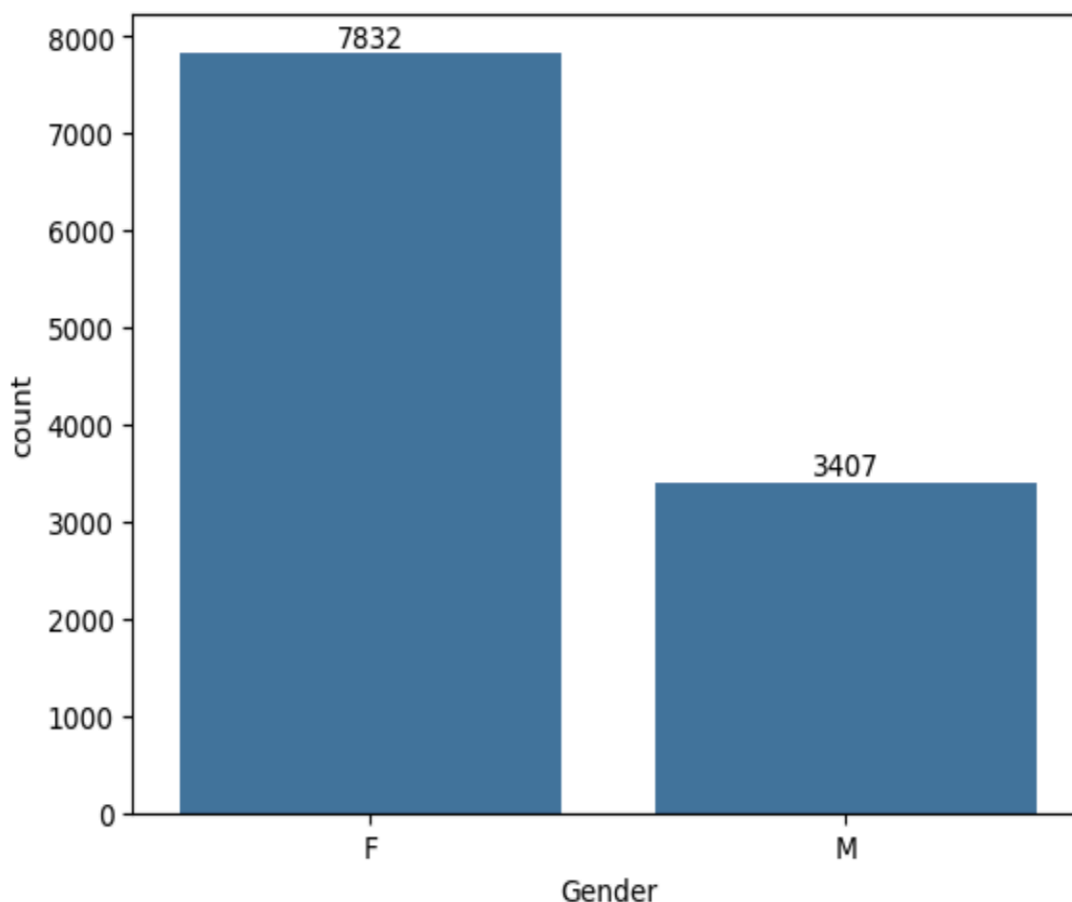
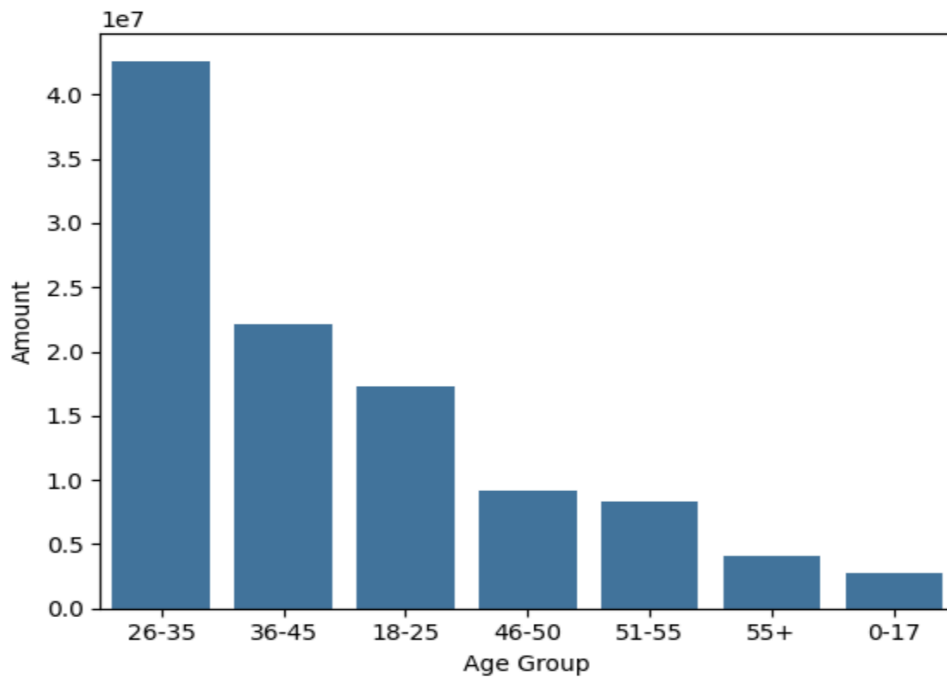No. of orders made by males and females
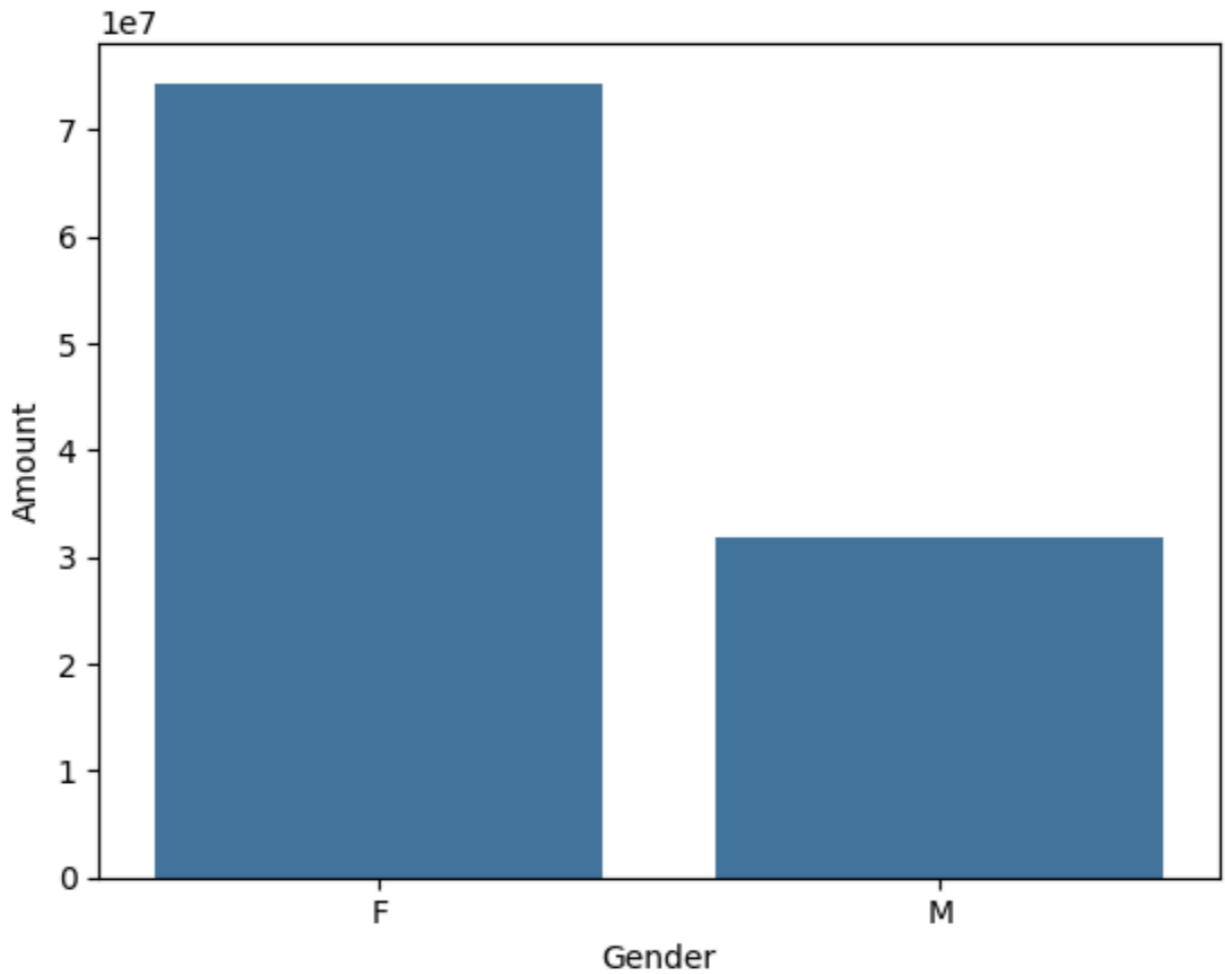
Total amount spent by males and females in sales

- Female customers outnumber male customers in terms of both total purchase amount and orders.

- Women are the primary buyers during festive shopping, possibly due to household and family shopping responsibilities.
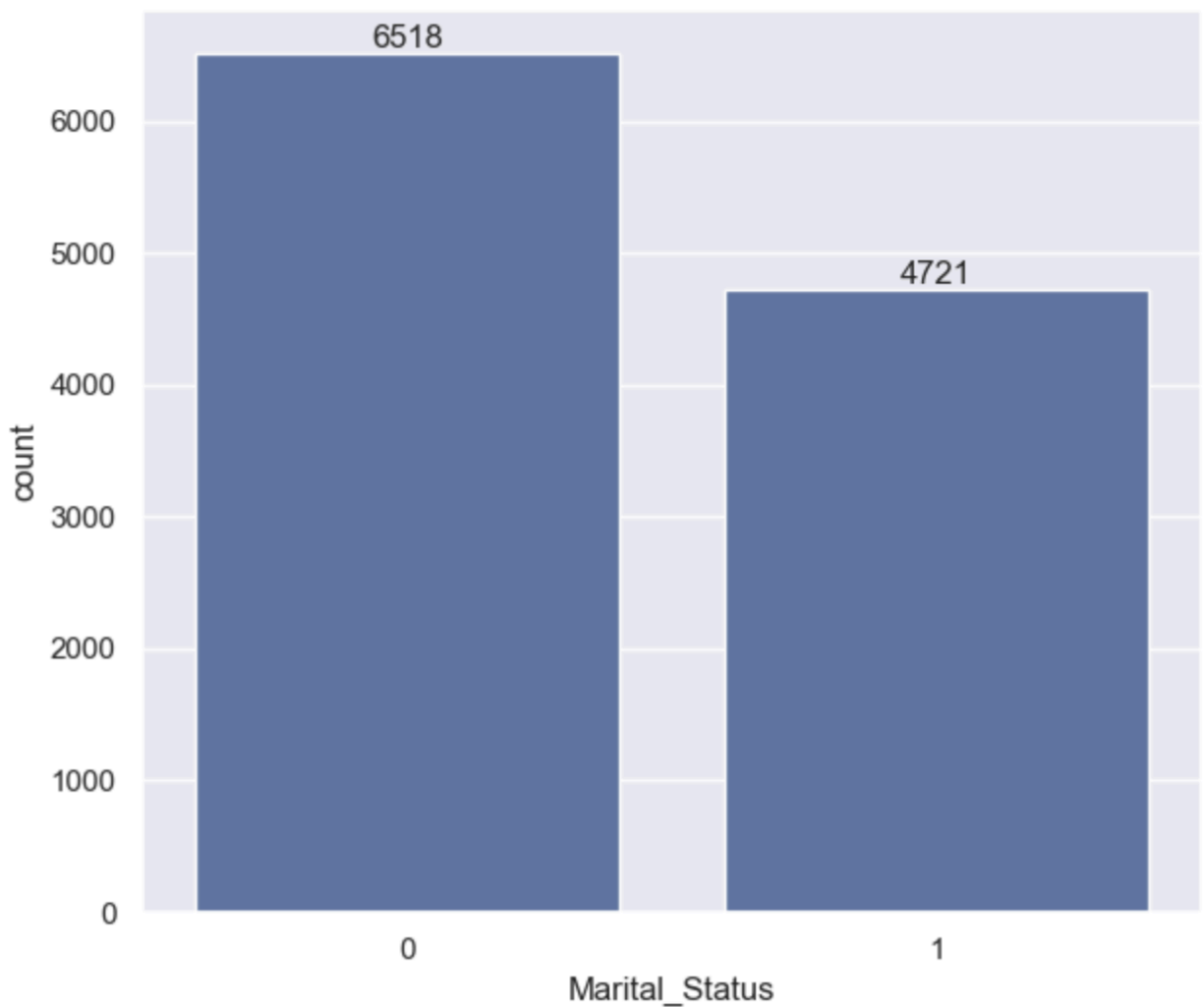
2. Age Group Analysis
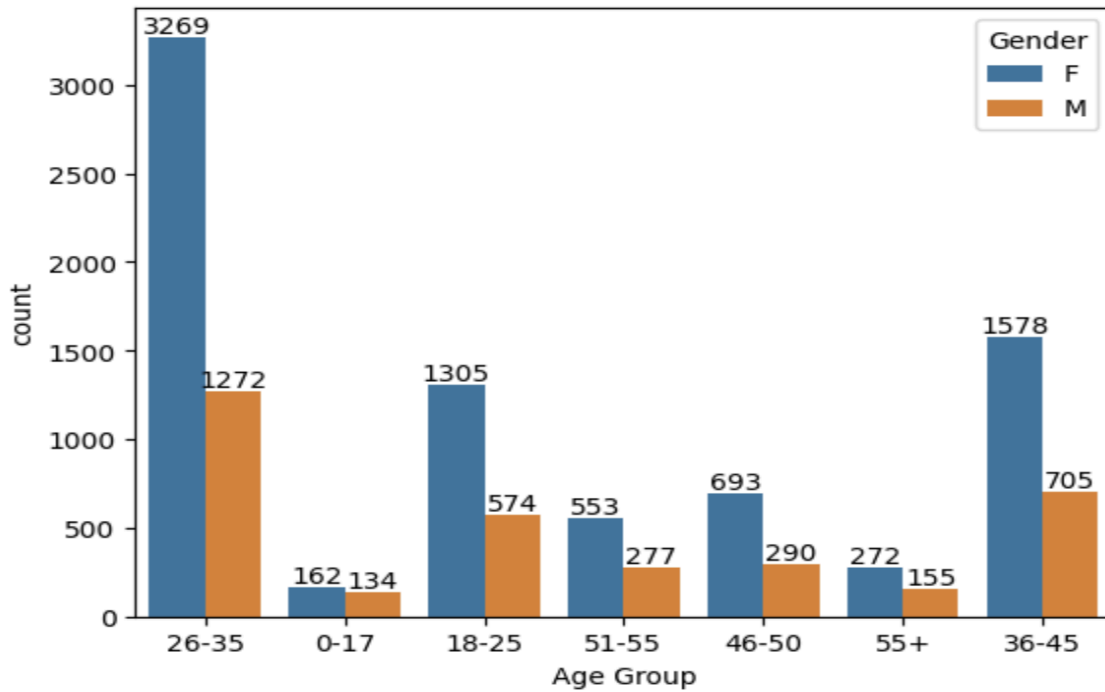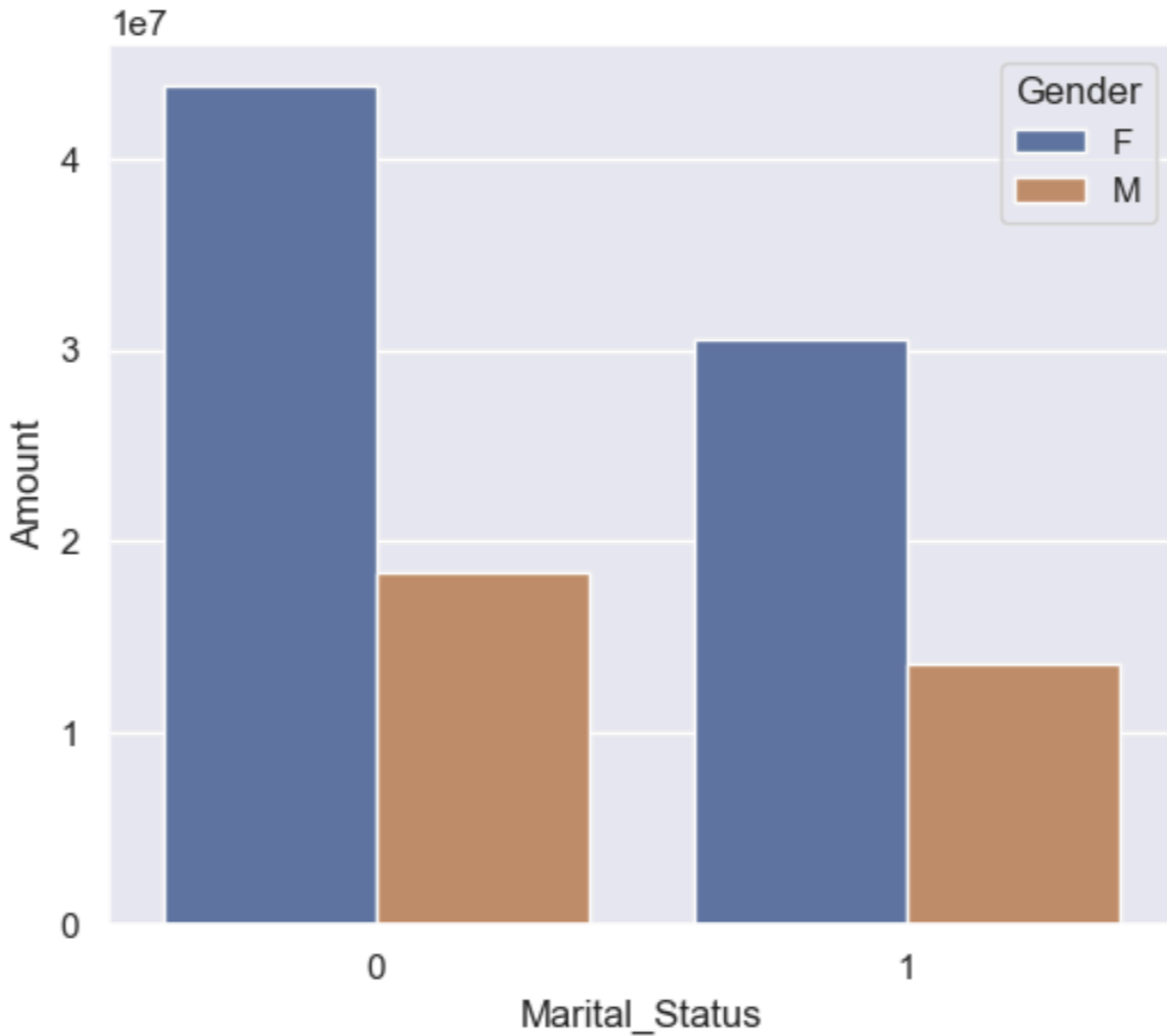

No. of orders made by Age Group

Total Amount spent by Age Group

- The **26–35 age group** contributes the highest share of sales, followed by the 36–45 age group.

- Younger groups (0–17) and senior customers (55+) contribute relatively less.
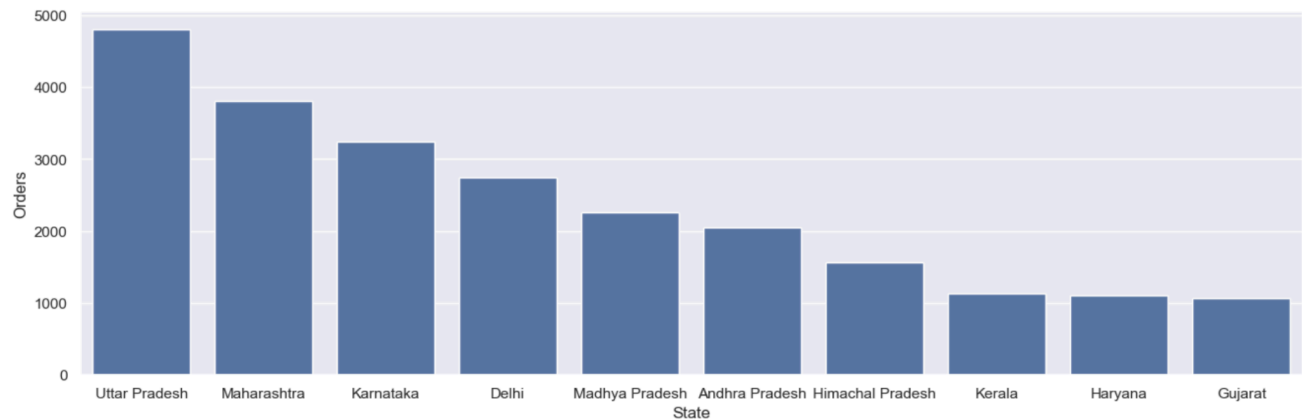
3. Marital Status

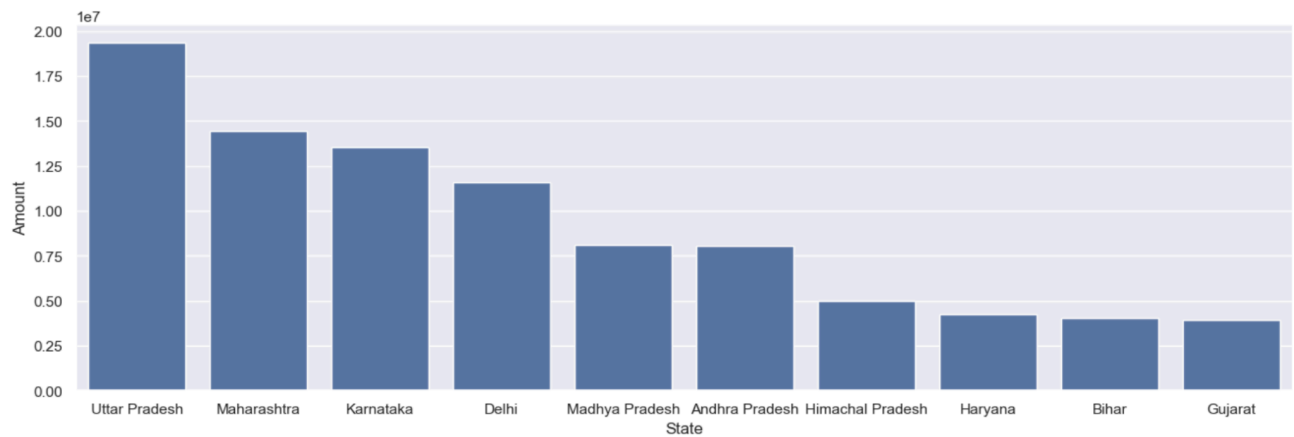No. of Orders made by Married & Unmarried people

<u>Total Amount spent split by males and females in married and unmarried</u>

- Married customers show higher spending than unmarried ones, supporting the hypothesis that families purchase more during Diwali.

4.State & Zone

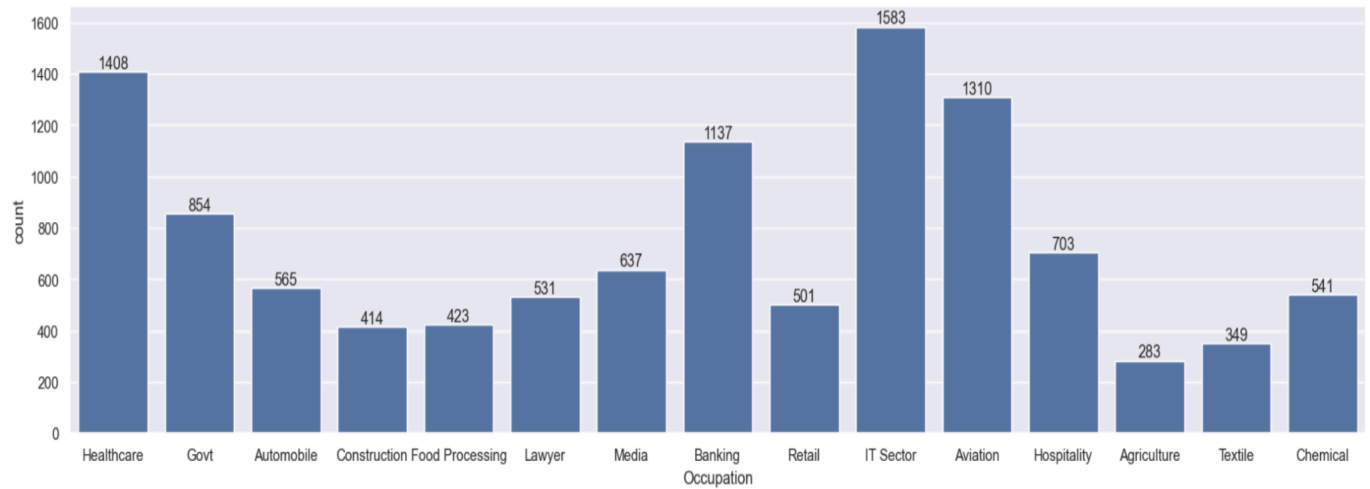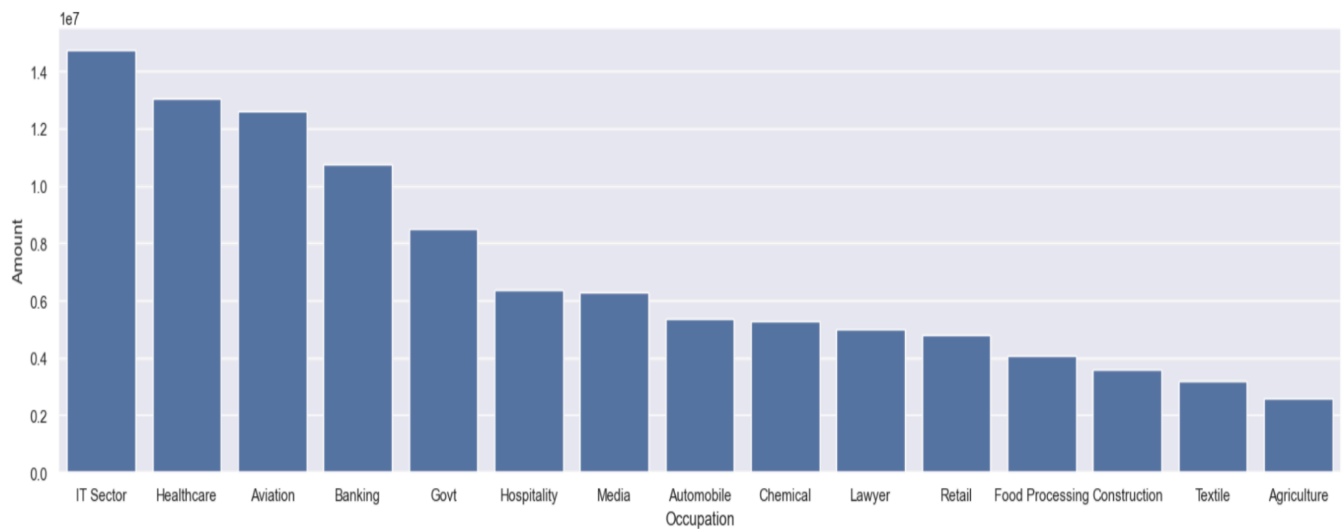
No. of orders made by top 10 states

Total amount spent by top 10 states

- Top contributing states include **Uttar Pradesh, Maharashtra, and Karnataka**.

- Sales are concentrated in **Northern and Western zones**, suggesting higher urban purchasing power.
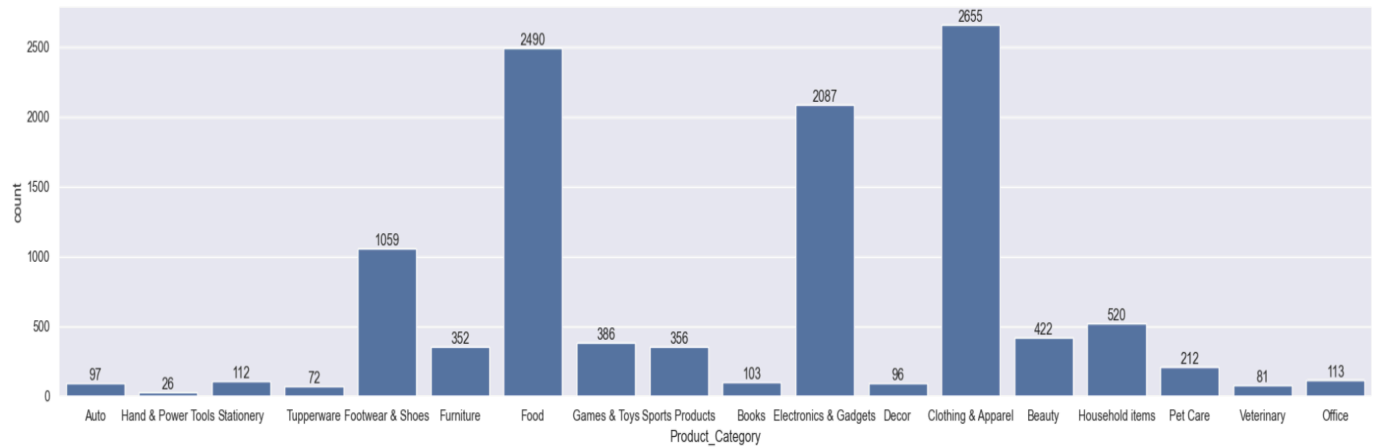
5. Occupation
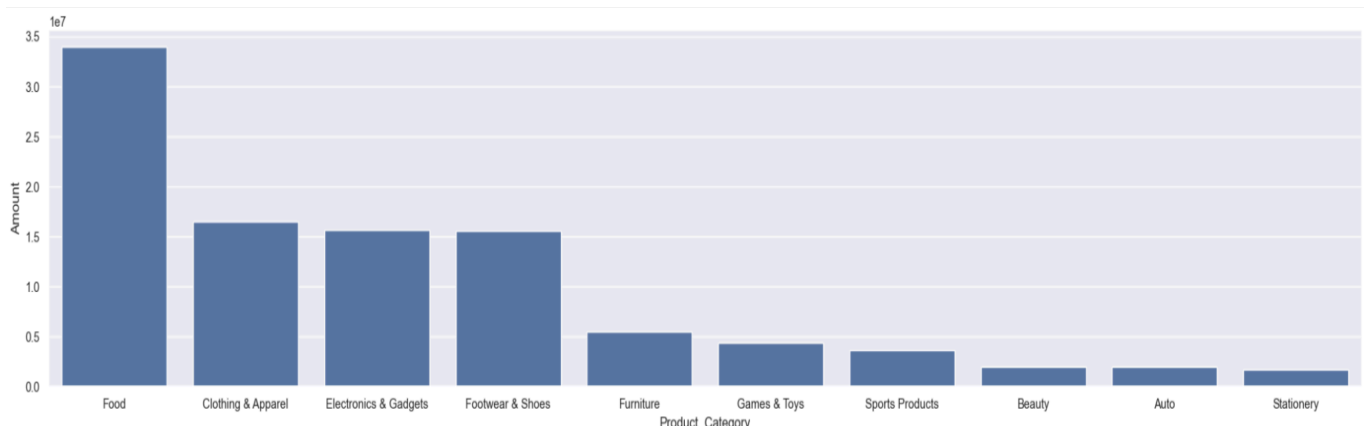

No. of orders made by people in Occupations

Total amount spent by people in Occupations

- Customers working in **IT, Healthcare, and Government jobs** are the leading spenders.

- Students and low-income occupations contribute minimally.

6. Product Categories

No. of orders vs Product Category

Amount spent vs Product Category

- **Clothing & Apparel** records the highest sales, followed by **Electronics & Gadgets** and **Home Appliances**.

- Categories like **Auto** and **Food Processing** have relatively lower demand during Diwali.

Suggestions

1. **Target Female Shoppers:** Launch women-focused campaigns and festive offers on apparel, jewelry, and household items.

2. **Focus on 26–45 Age Group:** Offer EMI schemes, bundle deals, and loyalty rewards tailored to working professionals and family buyers.

3. **Promote in High-Spending States:** Concentrate marketing efforts in Uttar Pradesh, Maharashtra, and Karnataka with state-specific ads.

4. **Leverage Occupations:** Provide corporate offers/partnerships with IT, Healthcare, and Government institutions.

5. **Product Strategy:** Stock and promote high-demand categories like Apparel, Electronics, and Home Appliances with festive discounts.

6. **Engage Married Customers:** Bundle family-centric products (appliances, clothing sets, home décor) to encourage higher spending.