



Diwali Sales Analysis – Final Project Report

📌 Business Questions Solved

1. Who are the main buyers during Diwali sales?
 2. Which age group and gender contribute most to the sales?
 3. Which states generate the highest sales?
 4. What are the top-performing product categories?
 5. Which profession and marital status groups are the most active buyers?
 6. How can these insights help in targeted marketing and inventory planning?
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🛠️ Steps Involved in the Project

1. Library Import and Data Loading

- Imported essential Python libraries: Pandas, NumPy, Seaborn, and Matplotlib.
- Loaded the Diwali Sales dataset using Pandas.

2. Data Cleaning

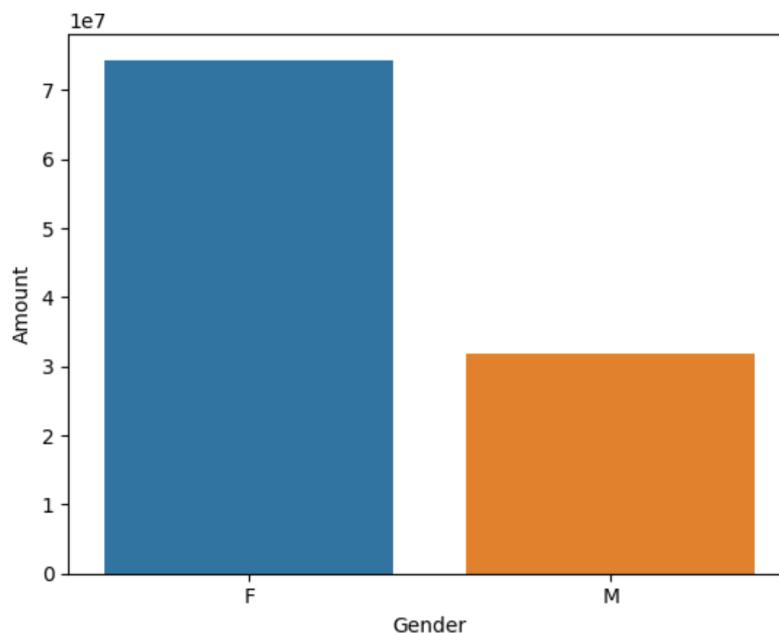
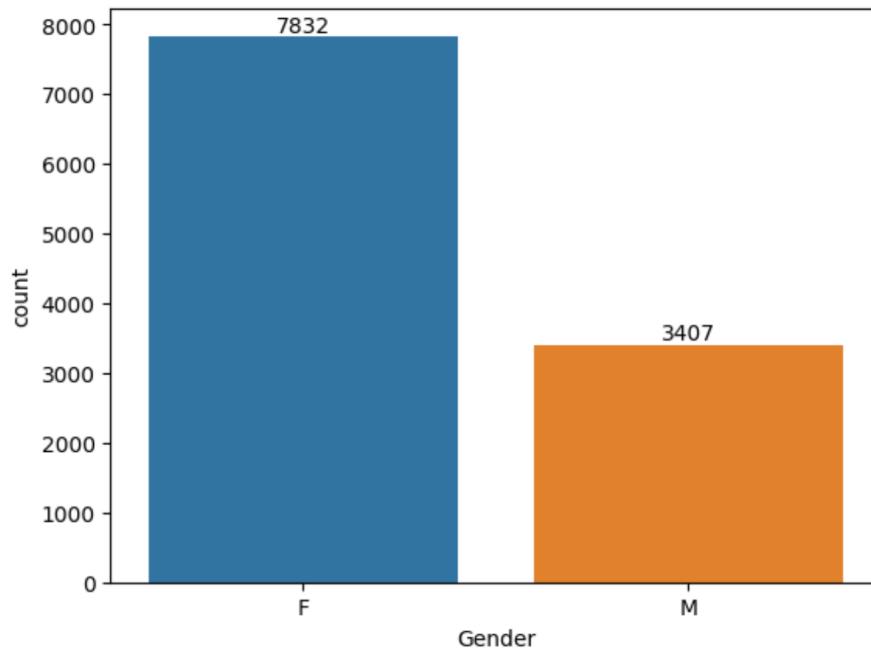
- Initial dataset had **11,251 rows and 15 columns**.
- Removed **2 completely empty columns**.
- Handled missing/null values, especially in the **Amount** column.
- Verified and standardized data types and formats.

3. Exploratory Data Analysis (EDA)

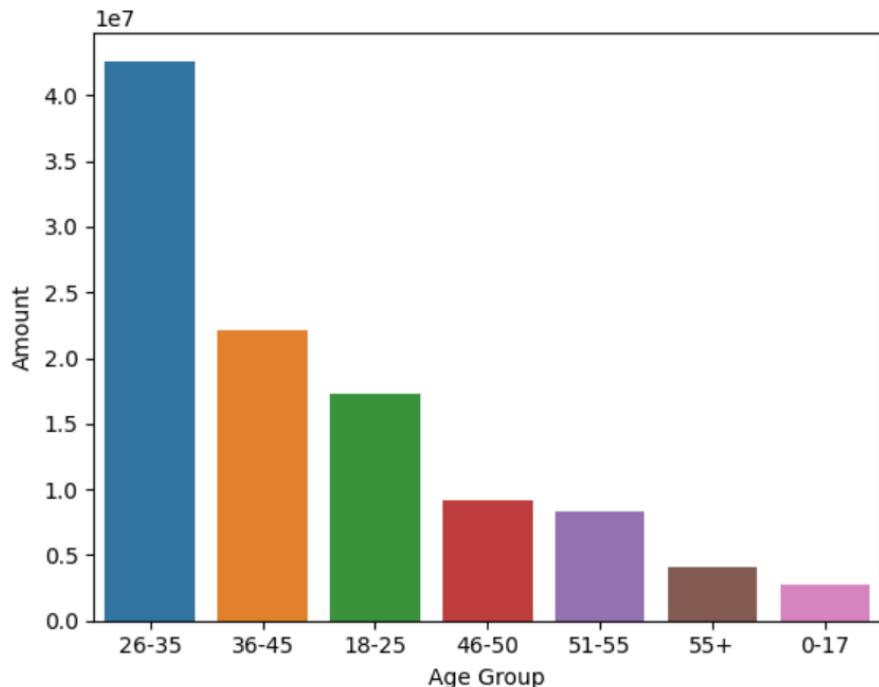
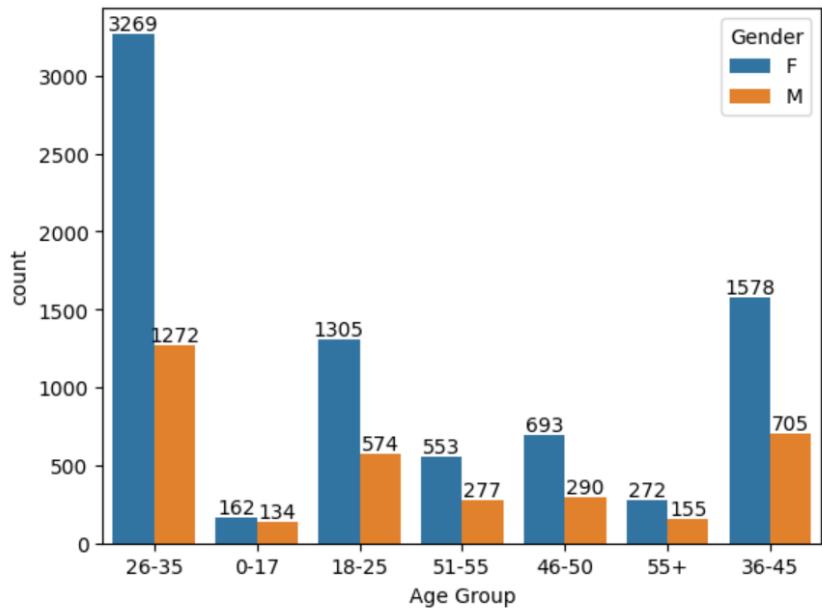
- **Demographic Analysis:**
 - Gender-wise and age-wise buyer distribution.
 - Marital status and profession-based purchase behavior.
- **Geographic Analysis:**
 - Identified top-performing states (Uttar Pradesh, Maharashtra, Karnataka).
- **Category Performance:**
 - Analyzed sales across product categories: Food, Clothing, Electronics.
- **Visualization Tools Used:**
 - Bar plots, count plots, histograms using Seaborn and Matplotlib for better insights.

4. Insight Generation

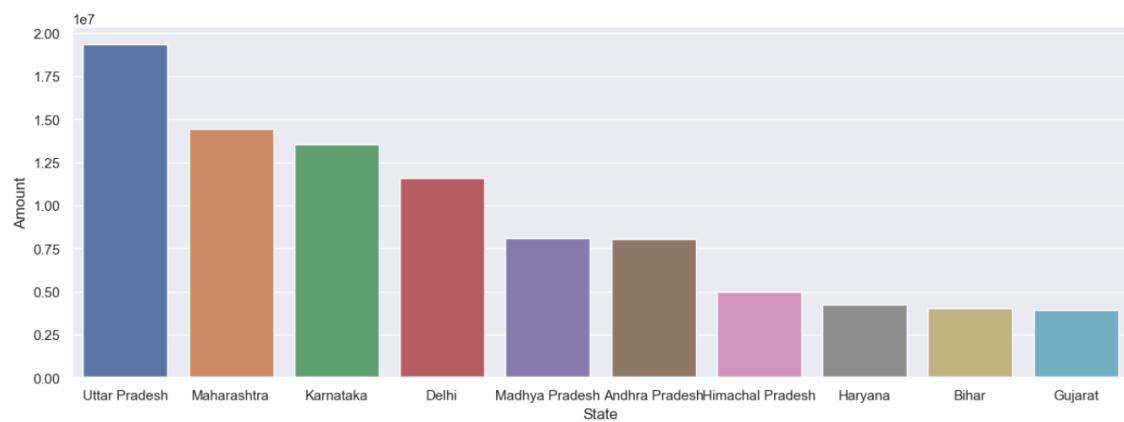
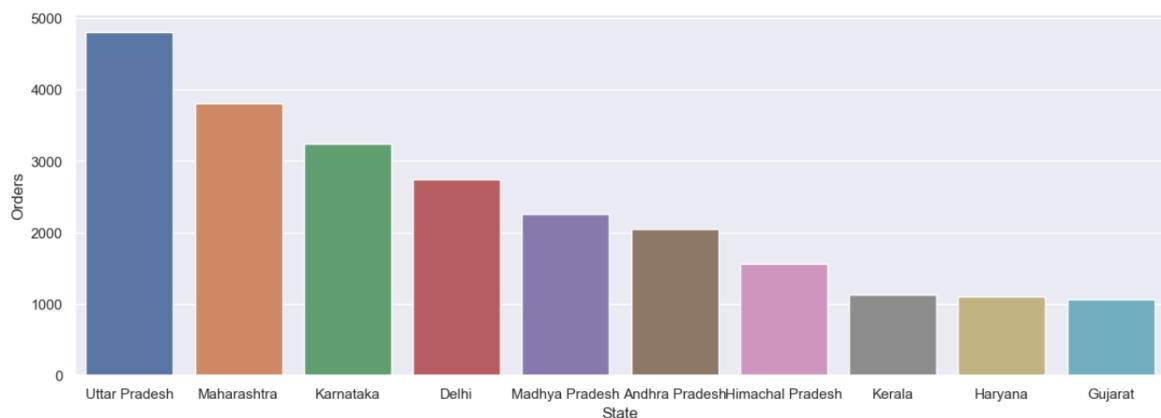
- Derived key patterns to inform strategic business decisions.
- Linked demographic, geographic, and category data to form customer personas.



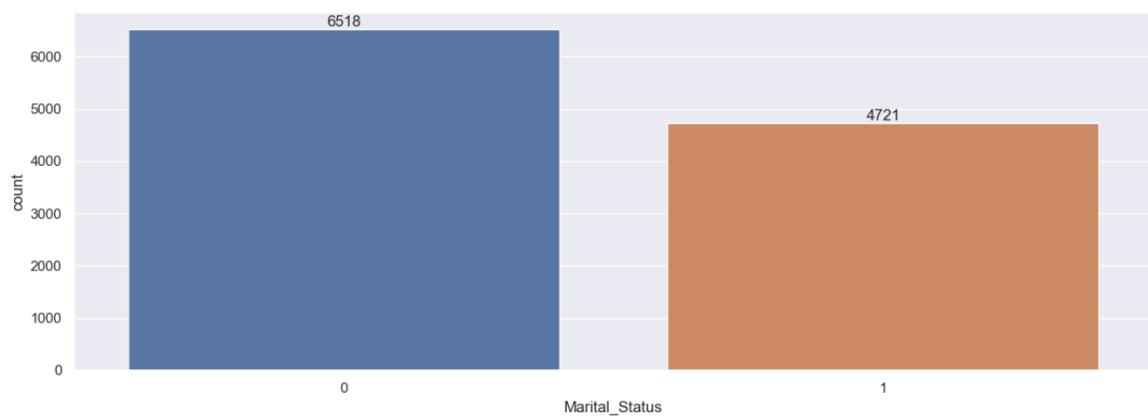
1. *From above graphs we can see that most of the buyers are females and even the purchasing power of females are greater than men*

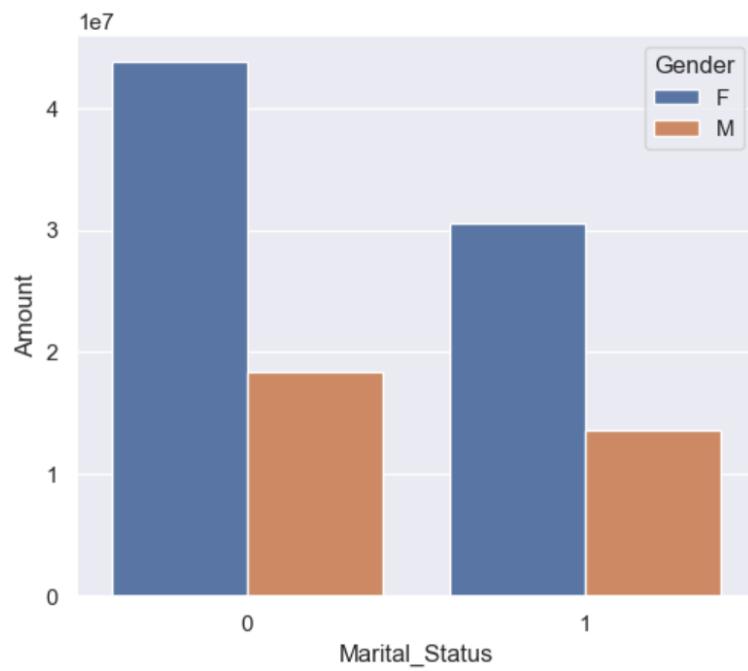


2. From above graphs we can see that most of the buyers are of age group between 26-35 yrs female

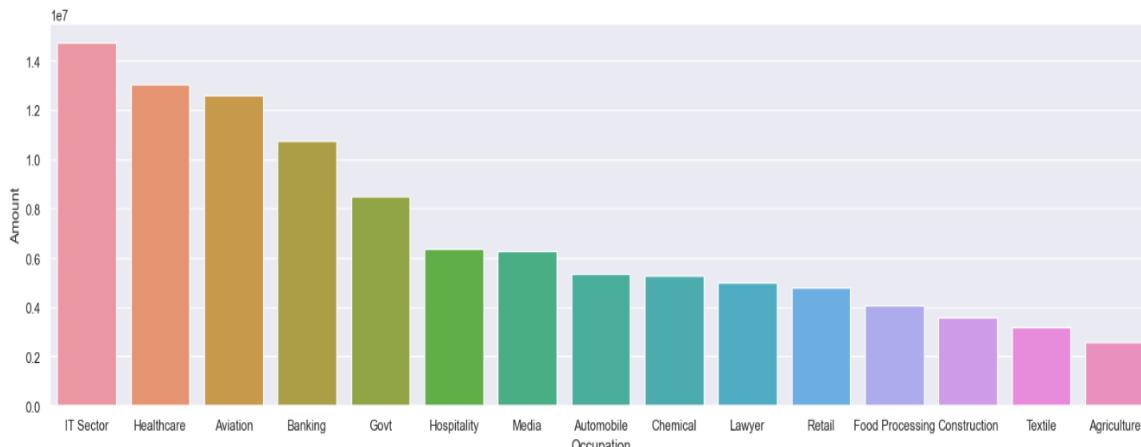
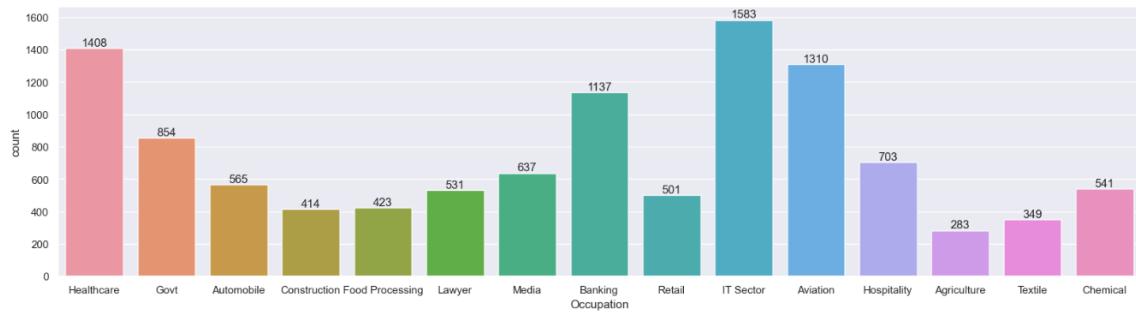


3. From above graphs we can see that most of the orders & total sales/amount are from Uttar Pradesh, Maharashtra and Karnataka respectively

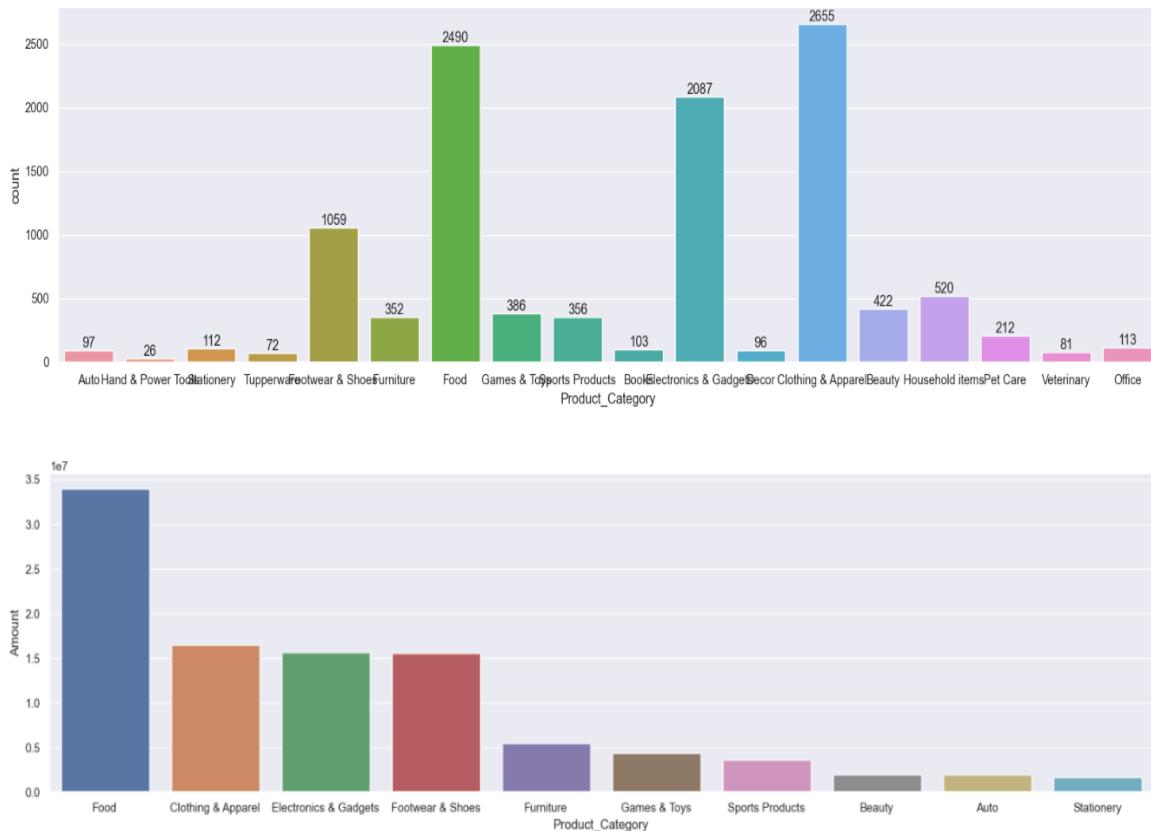




4. From above graphs we can see that most of the buyers are married (women) and they have high purchasing power



5. From above graphs we can see that most of the buyers are working in IT, Healthcare and Aviation sector



6. From above graphs we can see that most of the sold products are from Food, Clothing and Electronics category

Summary of Findings

- Women aged 26–35, particularly married, are the dominant buyers.
- Top states contributing to sales: Uttar Pradesh, Maharashtra, and Karnataka.
- Professions with highest purchases: IT, Healthcare, and Aviation.
- Most purchased categories: Food, Clothing, and Electronics.
- These insights can guide targeted digital marketing, localized promotions, and efficient inventory planning during festive sales campaigns.