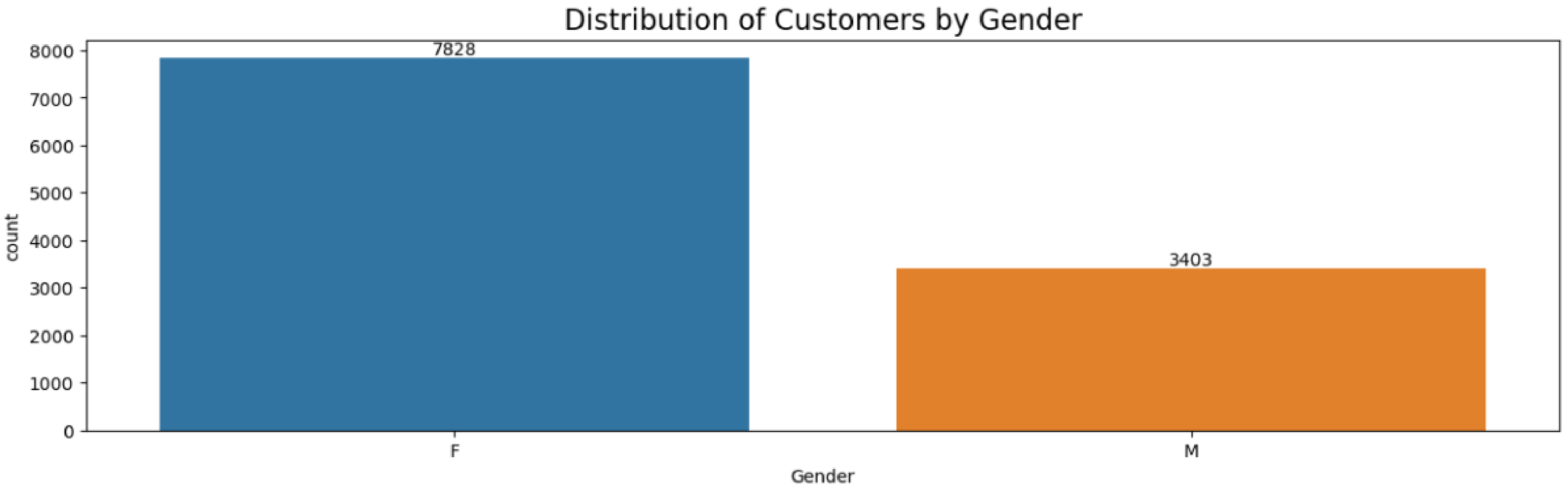
Diwali Sale Analysis

Dataset Overview

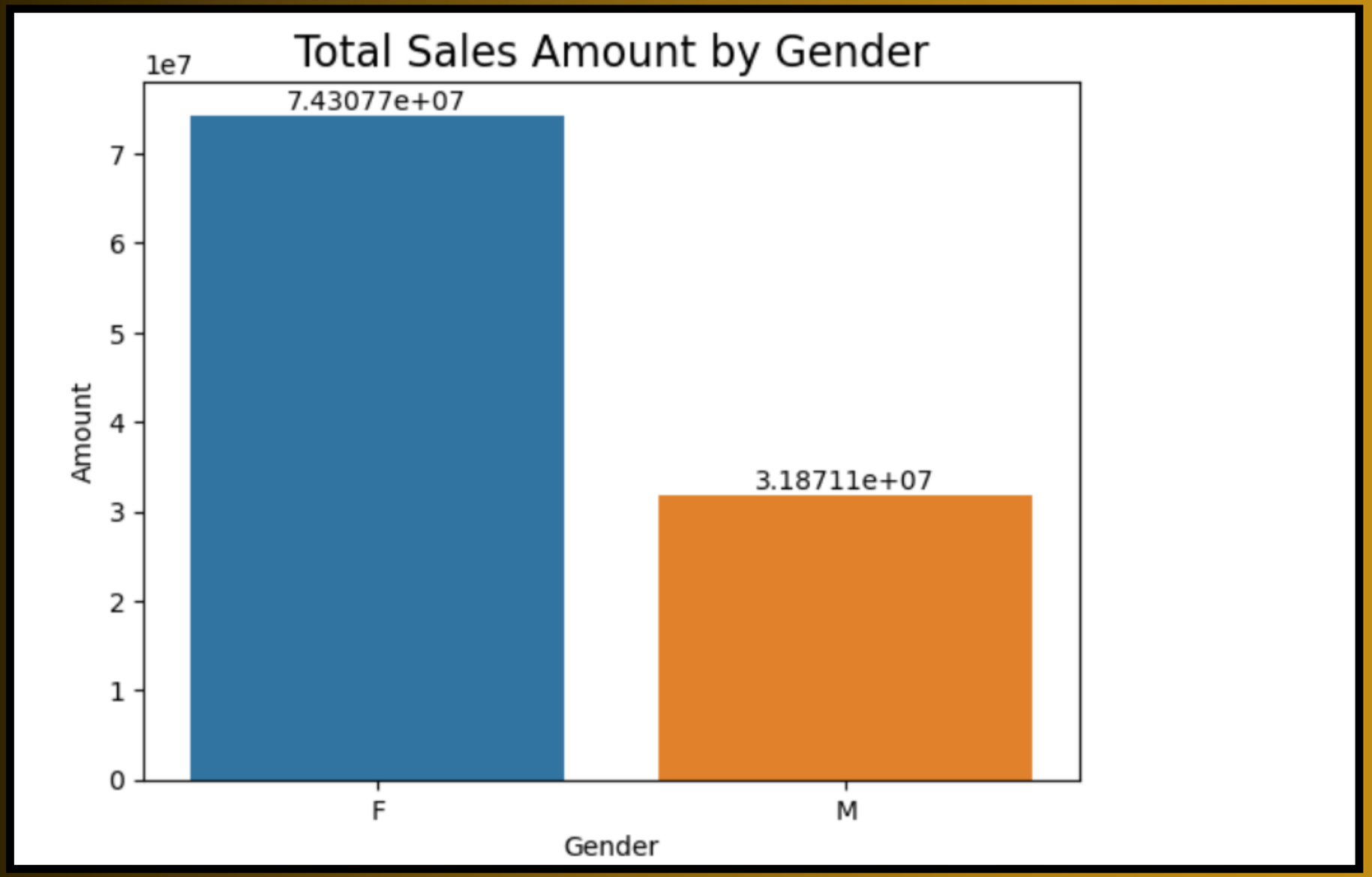
The dataset includes detailed information on customer transactions, capturing key attributes such as user ID, customer name, product ID, gender, age group, marital status, state, zone, occupation, product category, number of orders, and total amount spent. This comprehensive dataset enables in-depth analysis of sales patterns, customer demographics, and product performance during the Diwali season. By examining these attributes, businesses can gain insights into customer behavior, optimize inventory management, and enhance targeted marketing strategies.

Objectives

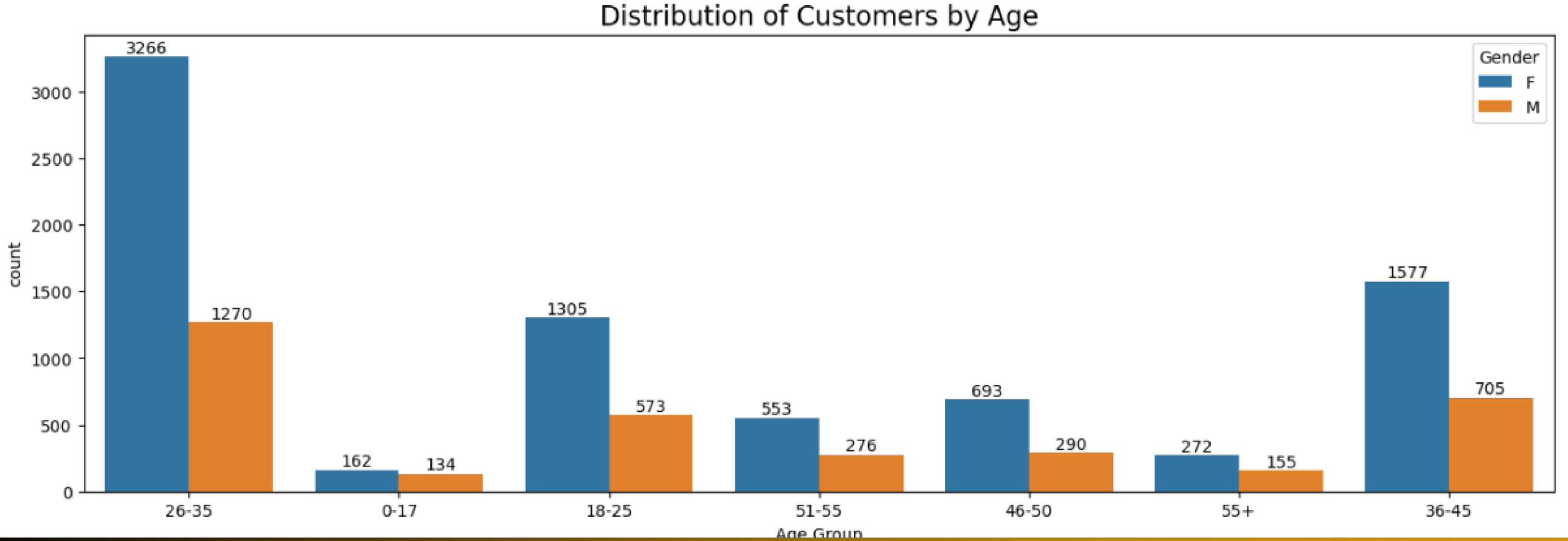
- Analyze sales data to understand customer preferences and behavior for improved service and personalization.
- Identify high-performing products, categories, and customer segments to drive targeted sales strategies and promotions.
- Use insights from sales patterns to manage stock levels effectively, reducing overstocking and understocking.
- Leverage demographic and geographic insights to tailor marketing efforts and promotions for maximum impact.
- Provide actionable insights for better decision-making in areas such as product offerings, regional focus, and customer engagement.



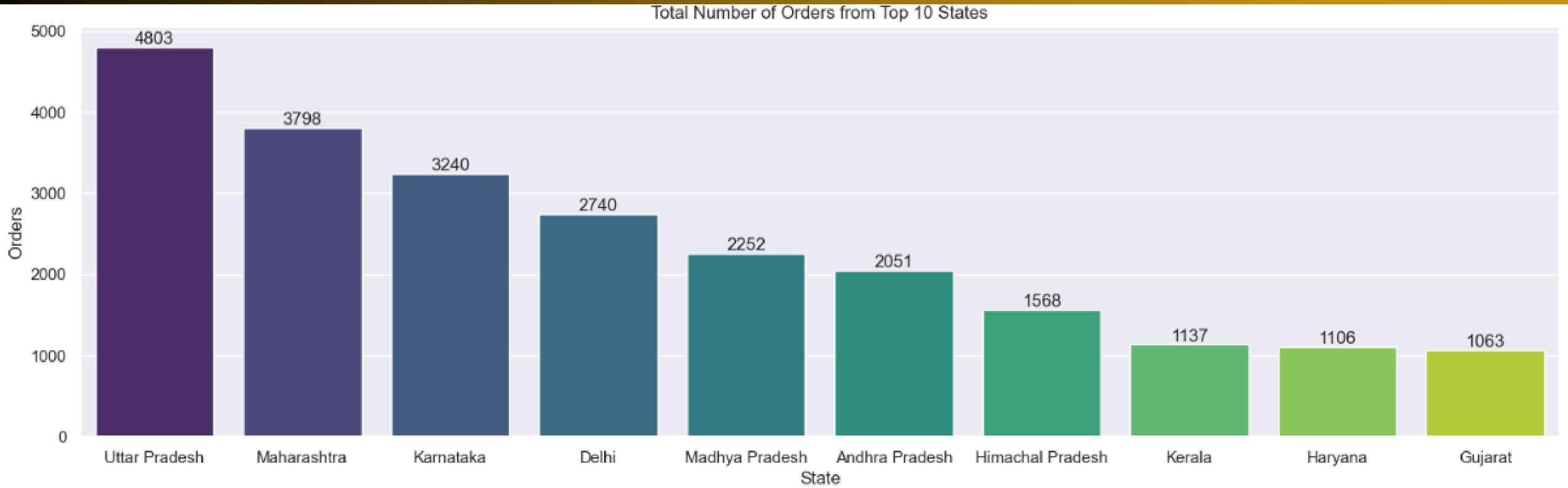
The dataset shows a gender distribution with 70% Female (7,828) and 30% Male (3,403). This suggests a female majority, which could influence targeted strategies if the data represents customer demographics. Further analysis could reveal gender-specific trends and behaviors.



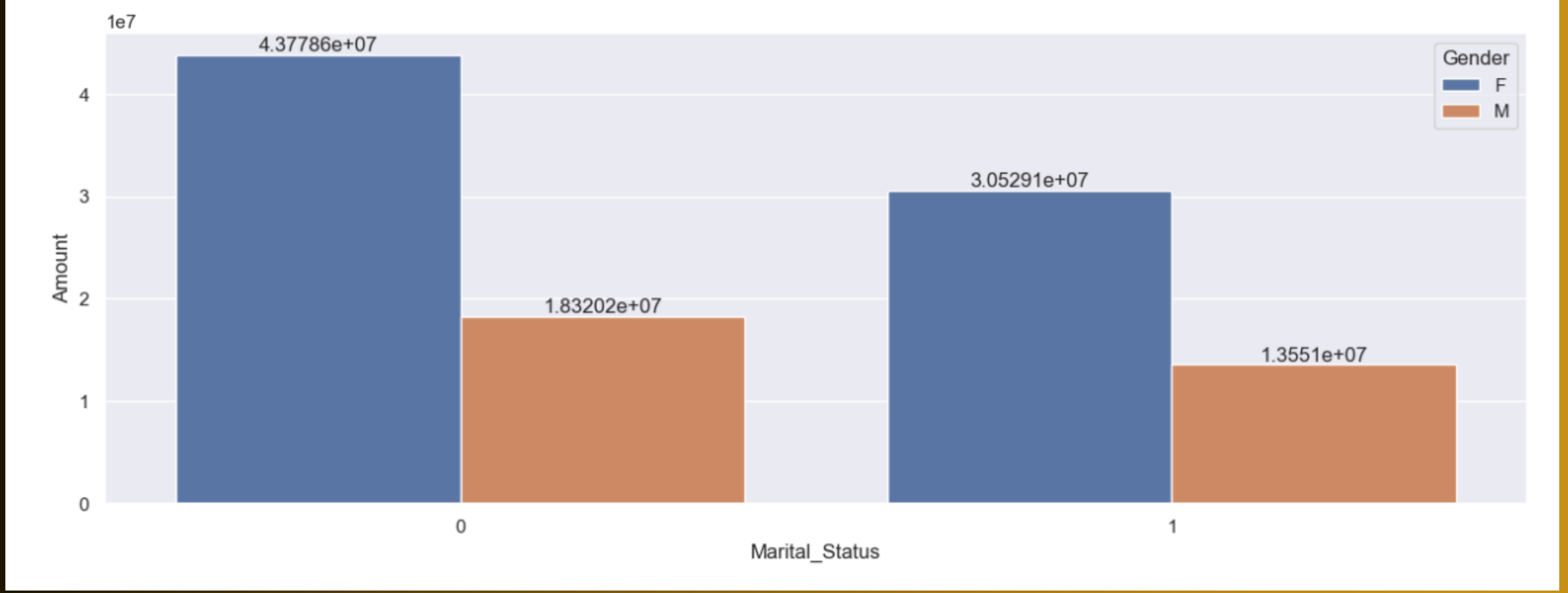
- *From above graphs we can see that most of the buyers are females and even the purchasing power of females are greater than men*



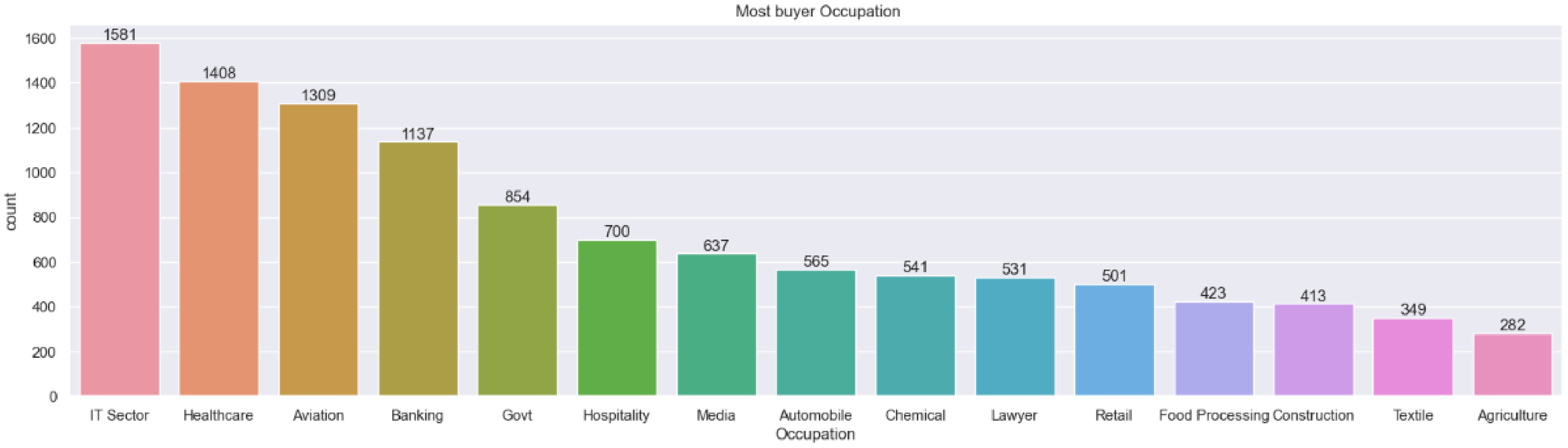
- *From above graphs we can see that most of the buyers are of age group between 26-35 yrs female*



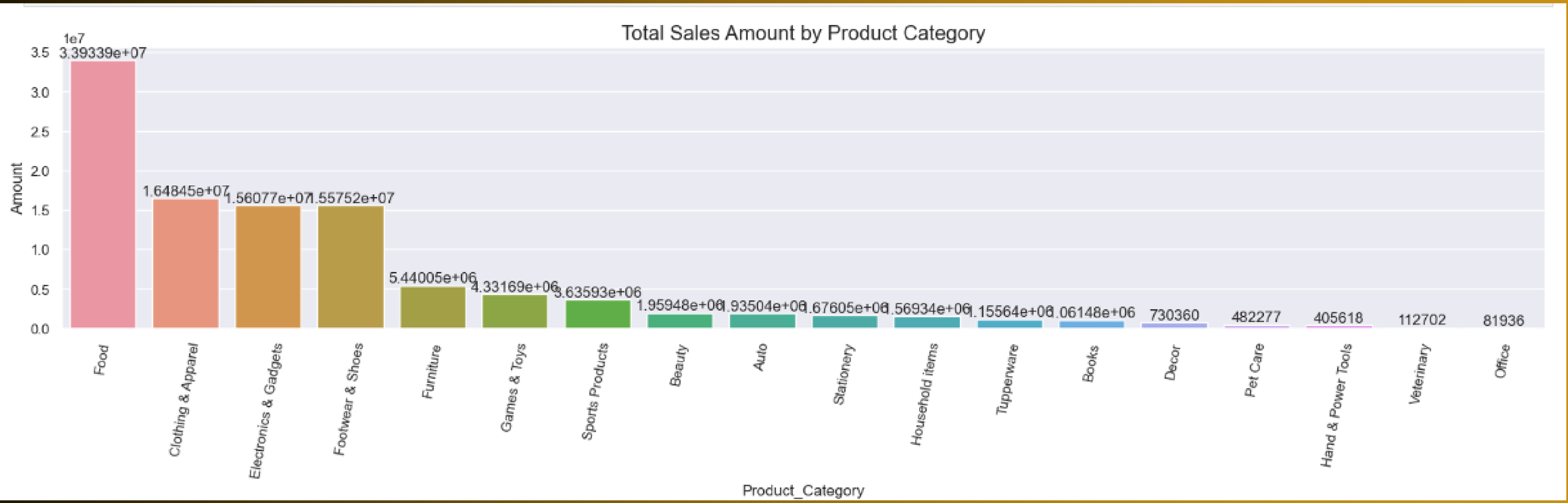
- *From above graphs we can see that most of the orders & total sales/amount are from Uttar Pradesh, Maharashtra and Karnataka respectively*



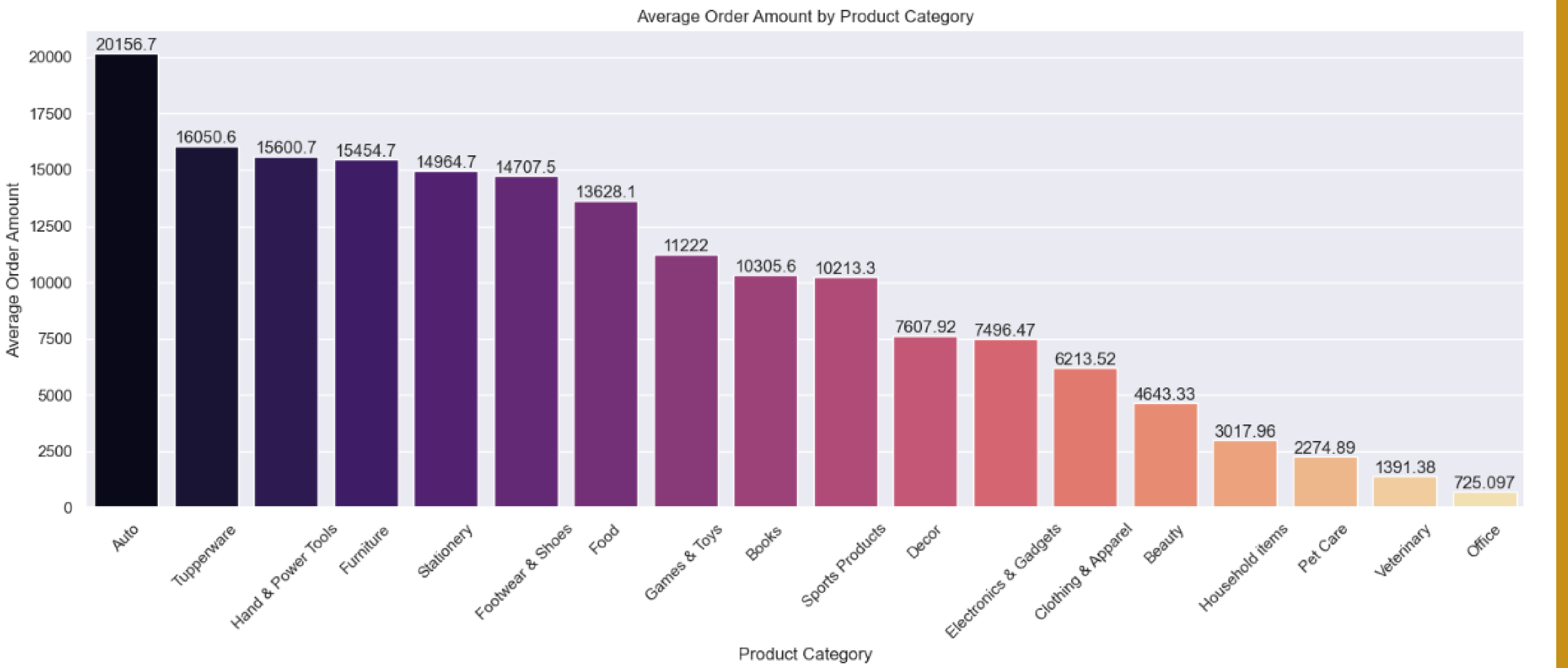
- *From above graphs we can see that most of the buyers are married (women) and they have high purchasing power*



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

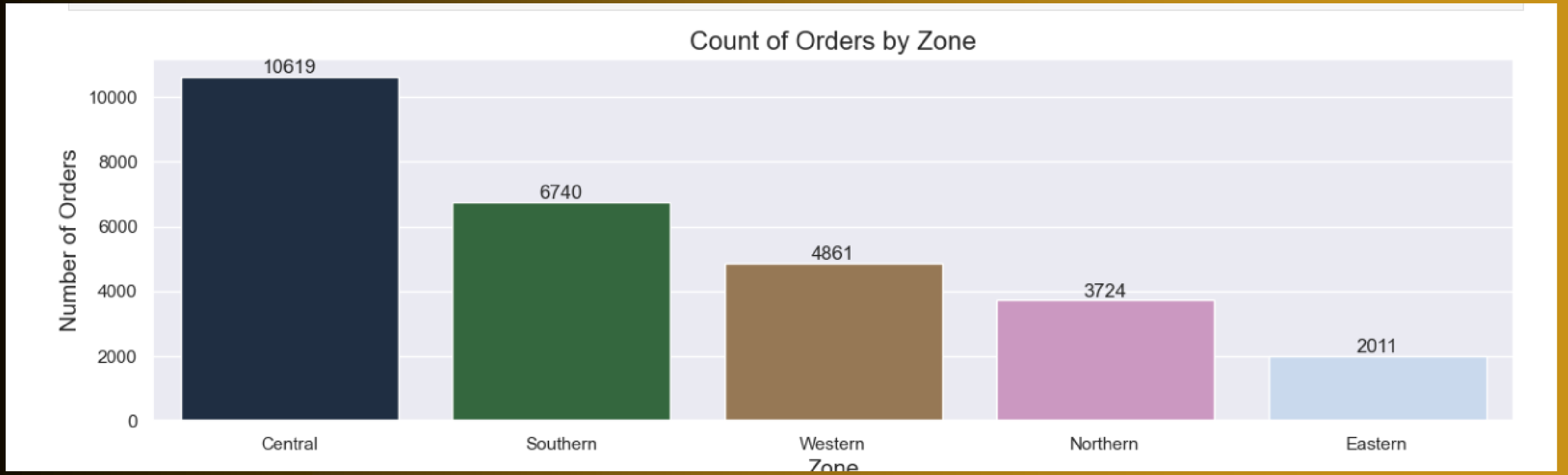


- *From above graphs we can see that most of the sold products are from Food, Clothing and Electronics category*



- *From above graph, we can see that the highest average order amounts are observed in the Product Categories of Auto, Tupperware, and Hand & Power Tools, indicating these categories generate significant revenue per order.*

Highest-selling with 127 orders, leading significantly. Close second at 116 orders, showing strong demand. Third with 91 orders, still a popular choice among customers.



- *From above graphs we can see that Central Zone has spent more amount for shopping and Order count more than 10 thousand*

Conclusion:

- *Married women age group 26-35 yrs from UP, Maharastra and Karnataka working in IT, Healthcare and Aviation are more likely to buy products from Food, Clothing and Electronics category*
- *The Diwali sales data analysis project provides valuable insights into customer behavior, product performance, and regional sales trends. These learnings can be leveraged to enhance marketing strategies, optimize inventory management, and improve overall customer experience, ultimately driving increased revenue and business growth.*

Project Learnings

- Performed data cleaning and manipulation
- Performed exploratory data analysis (EDA) using pandas, matplotlib and seaborn libraries
- Improved customer experience by identifying potential customers across different states, occupation, gender and age groups
- Improved sales by identifying most selling product categories and products, which can help to plan inventory and hence meet the demands
- Identified the gender distribution of customers and the corresponding sales amounts. This helps in understanding which gender segment is more engaged and contributes more to sales.
- Identified top-selling products and popular categories help optimize inventory and focus marketing efforts on high-demand items.
- Analysis of sales amounts and order counts highlights customer engagement levels and identifies potential areas for growth.

Thank you!