“Python Diwali Sales Analysis”

Abstract

This project involves analysis of the Diwali sales dataset with proper data processing. Dataset has been checked for any missing or duplicate values and thus those values have been fixed. Dataset is analysed by finding different statistical measures and plotting the graphs to check the relationship of different parameters with having more sales using matplot library and seaborn library. Various inferences have been made by analysing the plots. This is a classification problem, with input features as a variety of parameters, and the target variable as a binary variable predicting which gender spends more on shopping. The analysis is based on sales data collected from various retail sources and consumer surveys conducted before and during Diwali. The findings reveal that *Married women of 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 report concludes that businesses can leverage these insights to enhance their marketing strategies and inventory management for future Diwali seasons, potentially improving sales performance and customer

satisfaction. This project delves into the hidden insights and trends that drive impactful decision-making.

1. Introduction

Diwali, also known as Deepavali, is one of the most significant and widely celebrated festivals in India. Marked by the lighting of lamps, vibrant decorations, and various cultural festivities, Diwali also represents a major economic event due to its substantial impact on consumer spending. During this period, retailers and businesses experience a surge in sales as consumers engage in purchasing gifts, decorations, and new products to celebrate the festival.

2. Source of the Data

I have collected the data from kaggle.The dataset consists of 11252 datasets. The customer's id was collected to study the sales of product during Diwali sales. Specifically, the analysis attempted to study how the sales is affected in different states. Accordingly, the data constitutes key variables like customer's name, product id, age, marital status, state, occupation.

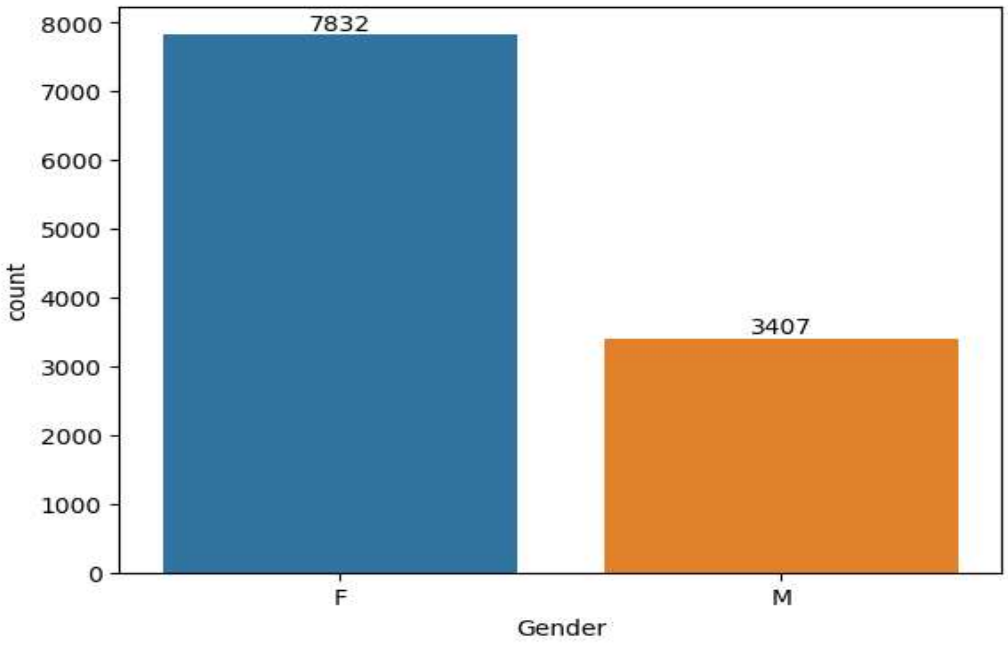
3. Motive of the project

Our objectives for this project are multifaceted. Here the objectives of our project are given below:

- **EDA:** Exploratory Data Analysis (EDA) is the art of uncovering hidden gems within data, transforming raw information into actionable insights. It's like exploring a treasure map, where each data point is a clue leading to a deeper understanding of the story behind the numbers. Through EDA, we illuminate patterns, unveil trends, and unravel mysteries, empowering us to make informed decisions and unlock the full potential of data-driven solutions. So, at first we will EDA to understand and visualize the whole data.

“Exploratory Data Analysis (EDA)”

1 Gender



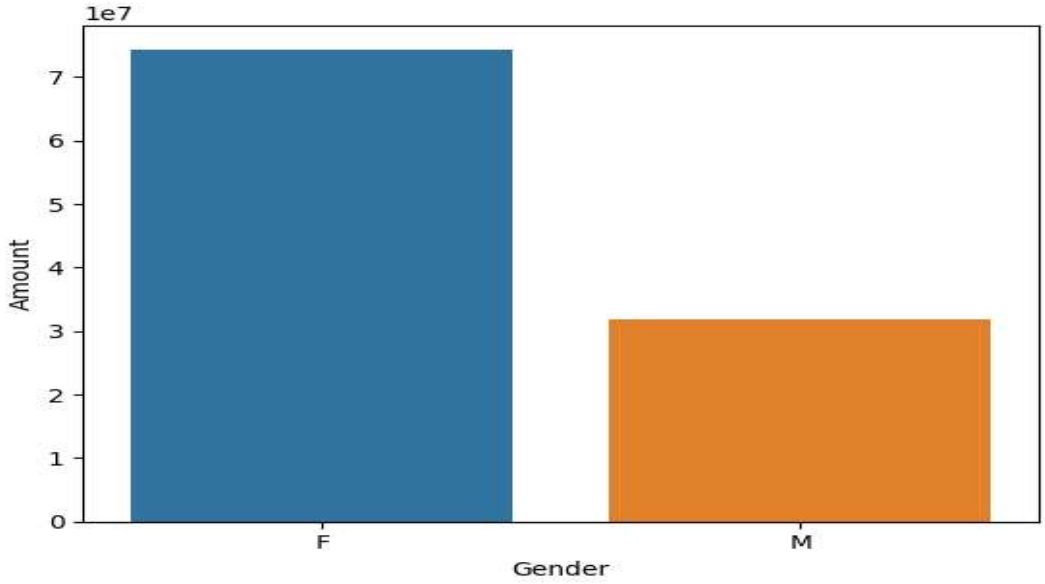


Fig:1

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

2 Age Group

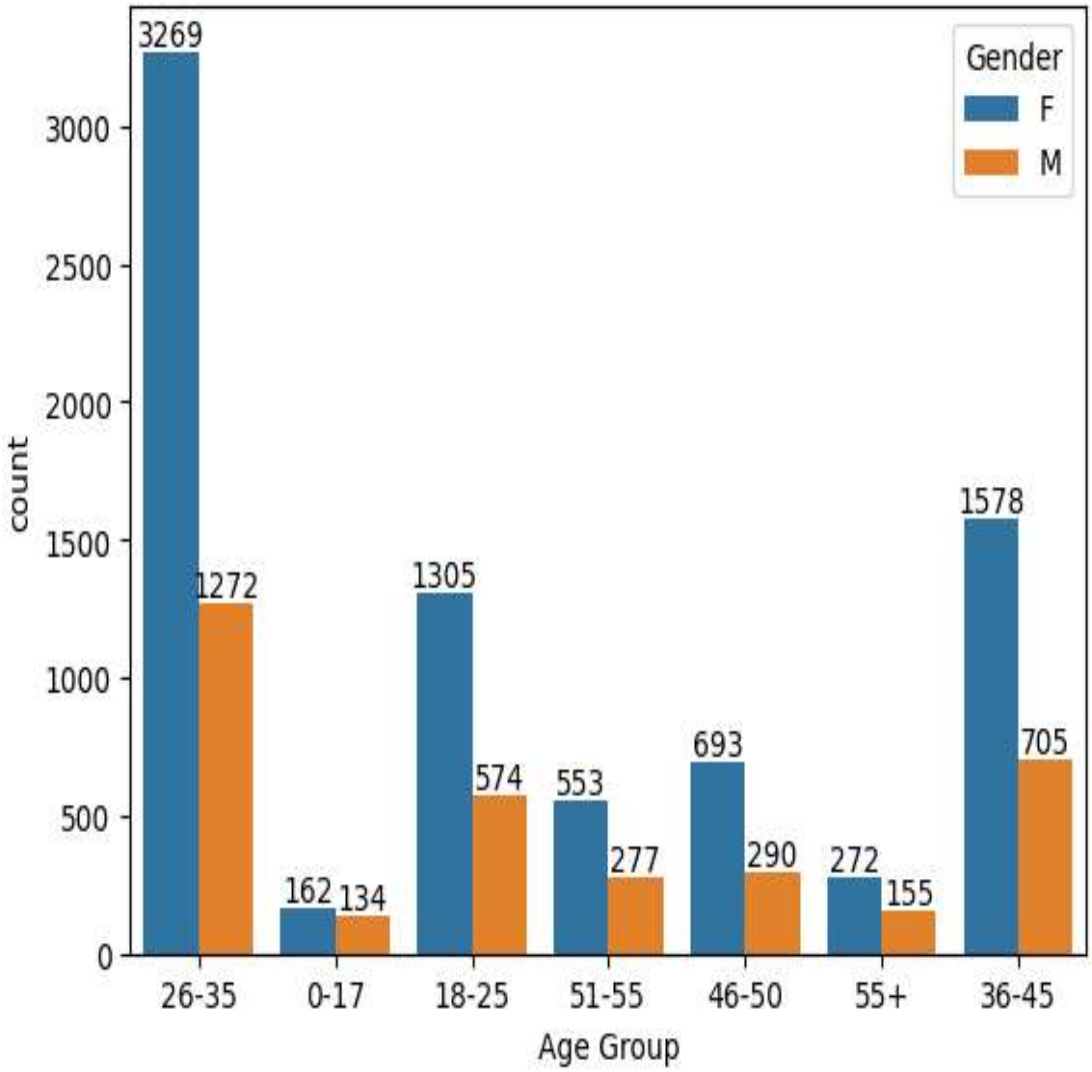


Fig:2(a)

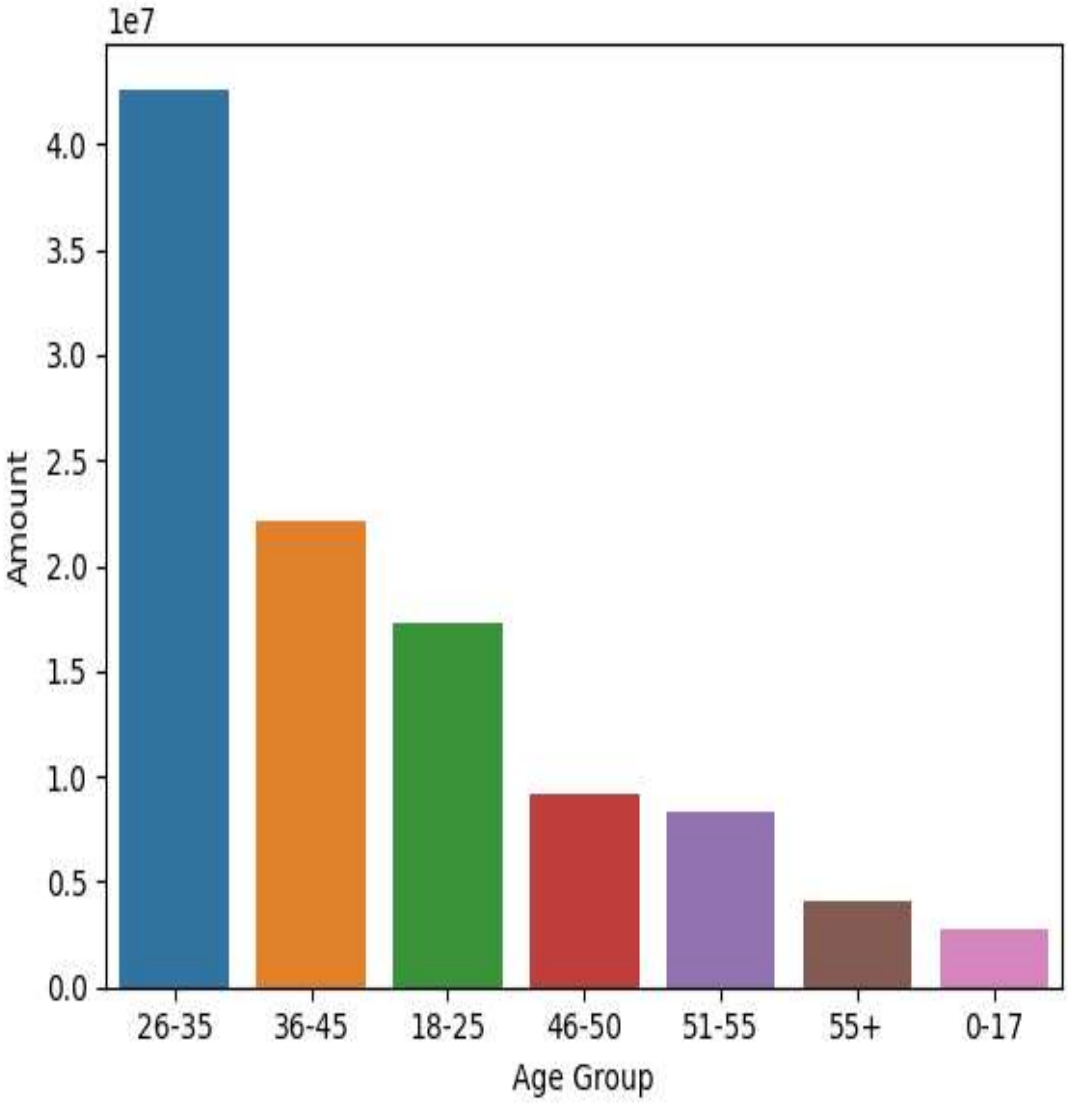


Fig:2(b)

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

3 States

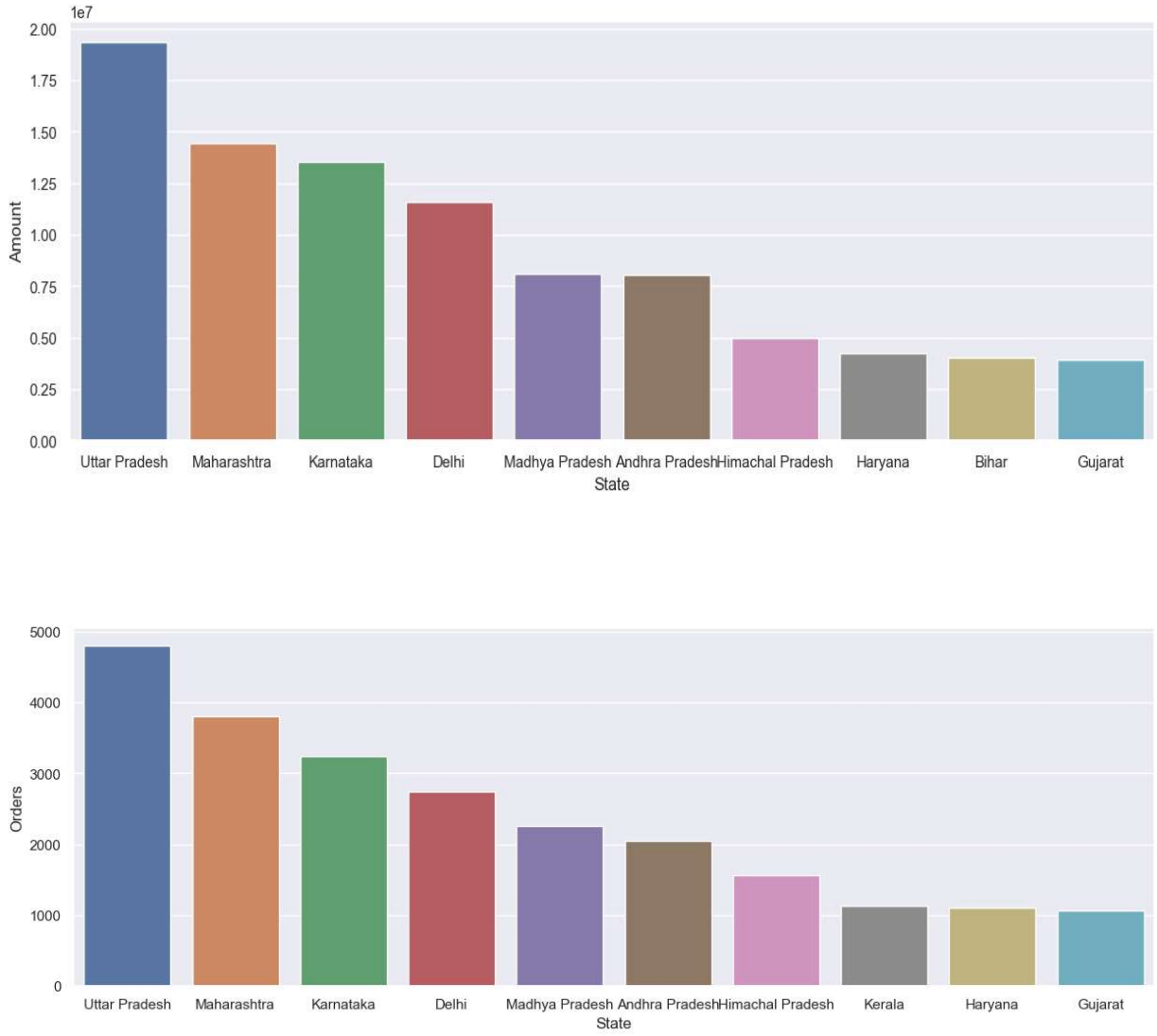
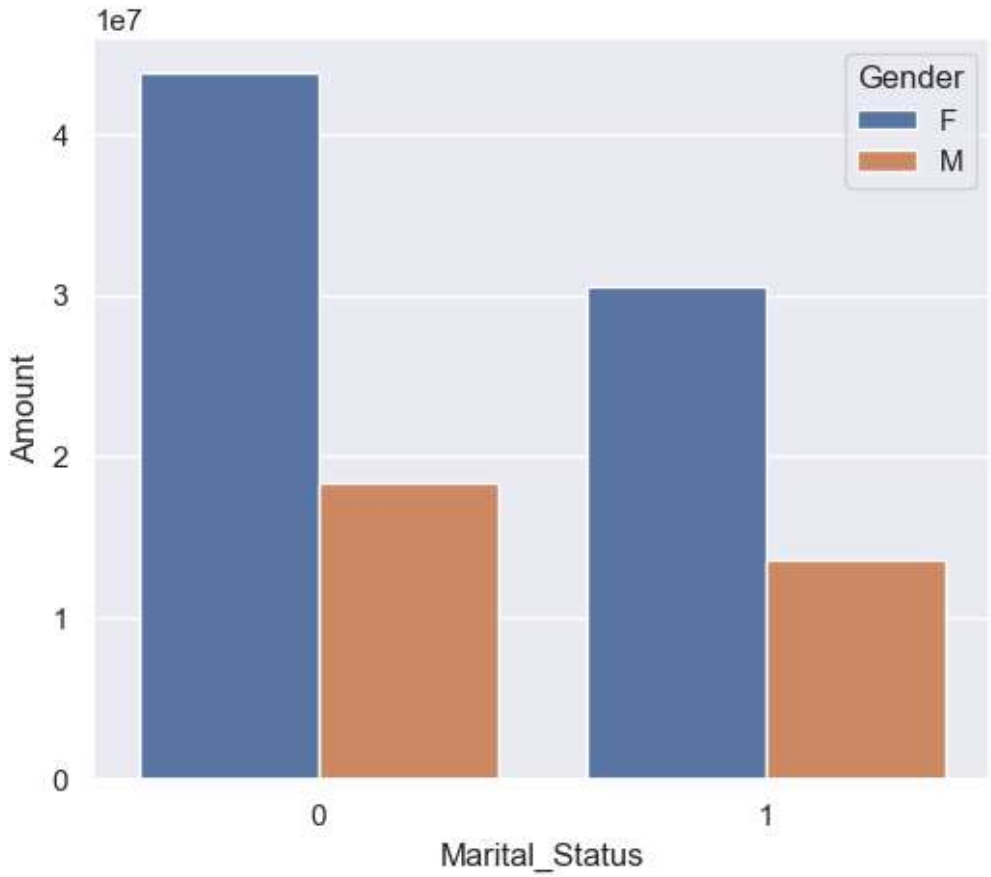


Fig:3

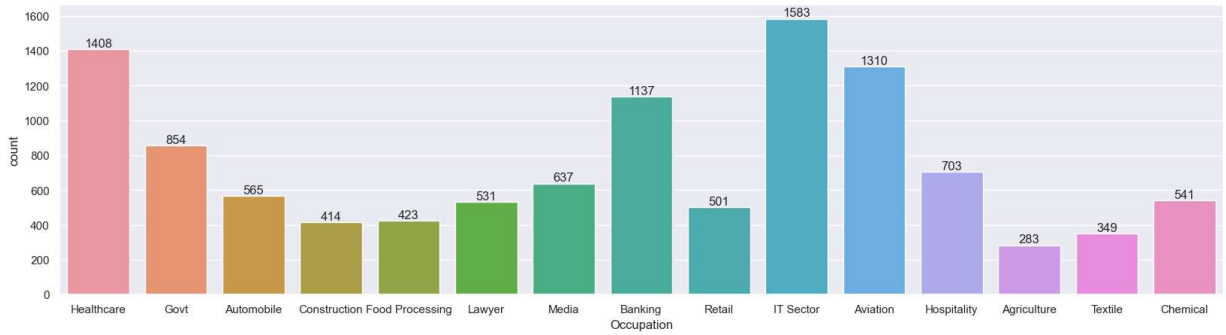
From the above graphs we can see that most of the orders & total sales/amount from Uttar Pradesh ,Maharashtra and Karnataka respectively.

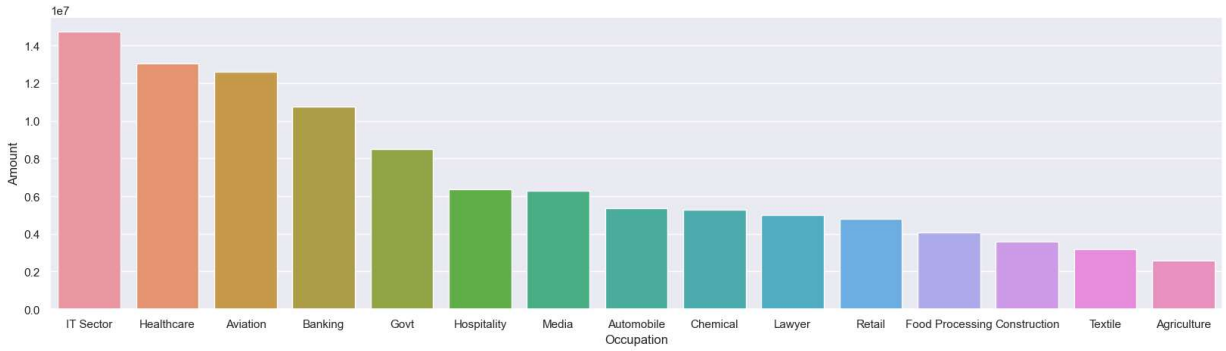
4 Marital status



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

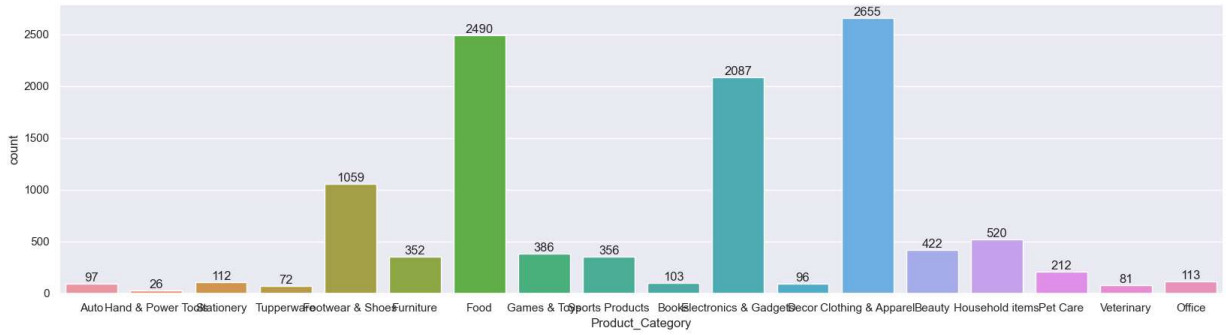
5 Occupation

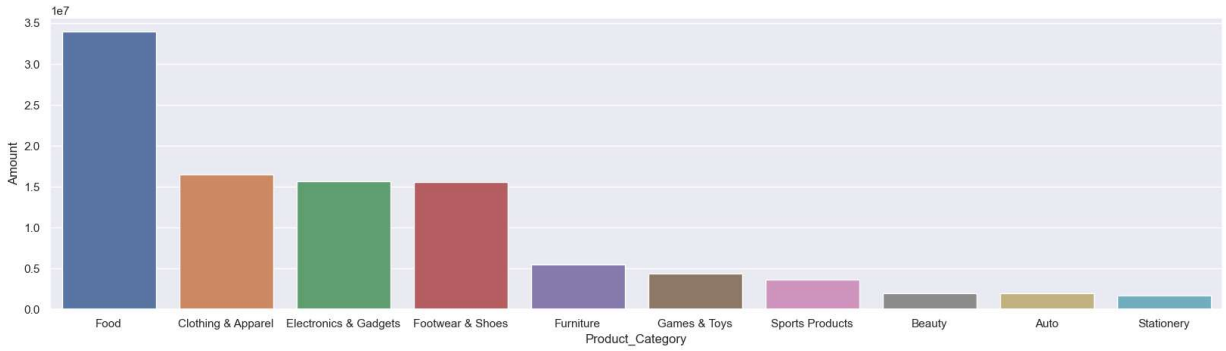


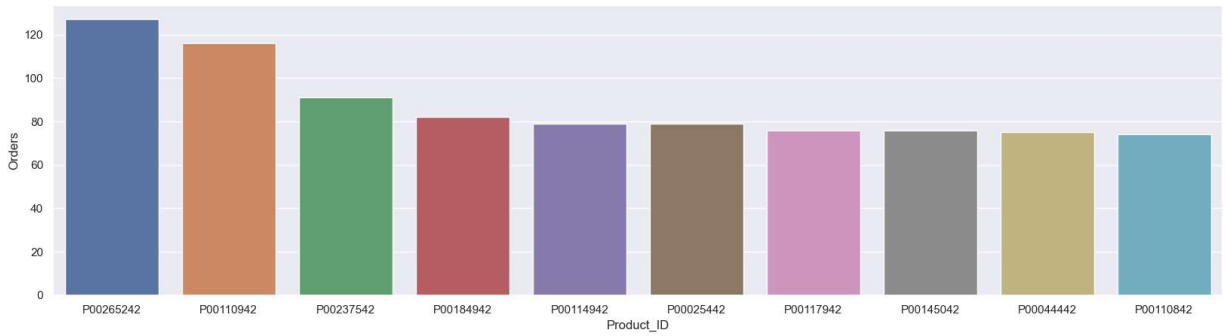


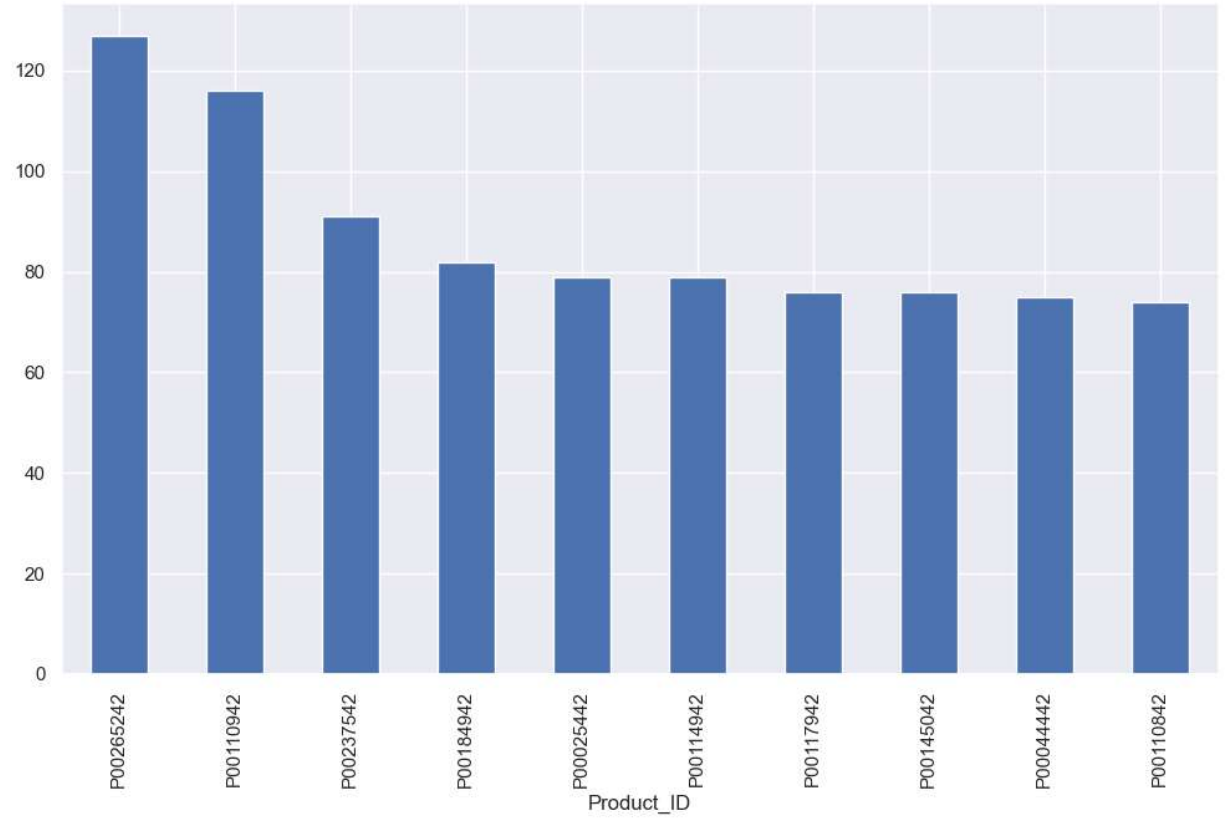
From the graphs we can see that the most of the buyers are working in IT ,Healthcare and Aviation

6 Product Category









From the above graphs we can see that most sold products are food ,clothing and electrical category

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 .