

Diwali Sales Analysis



Objective :



The objective of the Diwali sales analysis project using Python is to uncover key insights from sales data during the Diwali festive season. The project aims to analyze sales trends, identify top-performing products, and understand customer behavior to optimize marketing strategies and inventory management. By evaluating the impact of discounts and promotions, the analysis seeks to enhance revenue and profitability during this peak shopping period. Additionally, the project will provide valuable forecasts for future Diwali seasons, helping businesses make informed, data-driven decisions.

Project Goal :

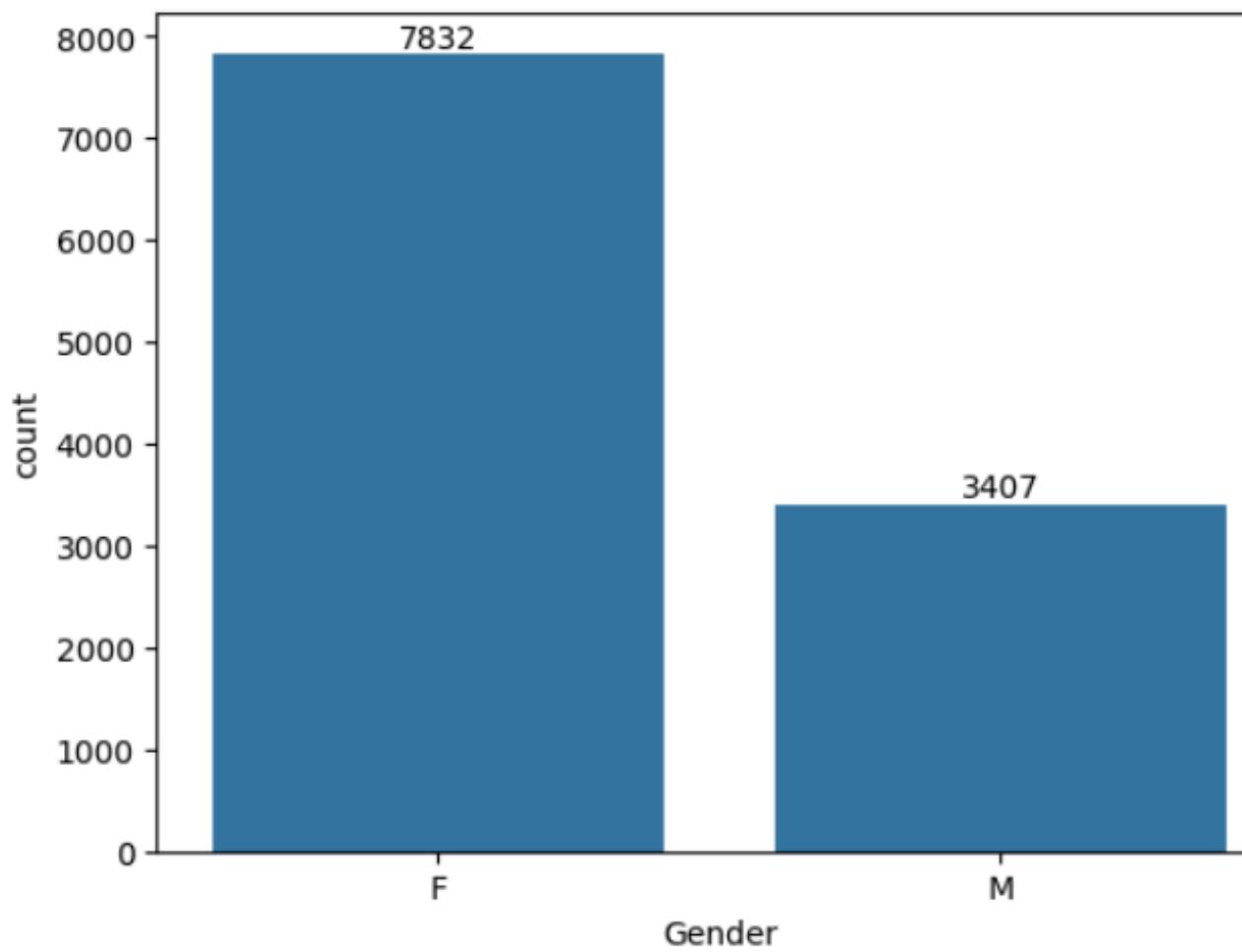
The goal of the Diwali sales analysis project is to leverage Python to thoroughly examine sales data from the Diwali season, providing actionable insights that can enhance business decision-making. This includes identifying sales trends, optimizing product offerings, and improving customer targeting strategies. By analyzing the effectiveness of promotions and forecasting future sales, the project aims to maximize profitability and ensure efficient resource allocation during one of the most critical shopping periods of the year.



Visualization:

Gender Wise Customers :

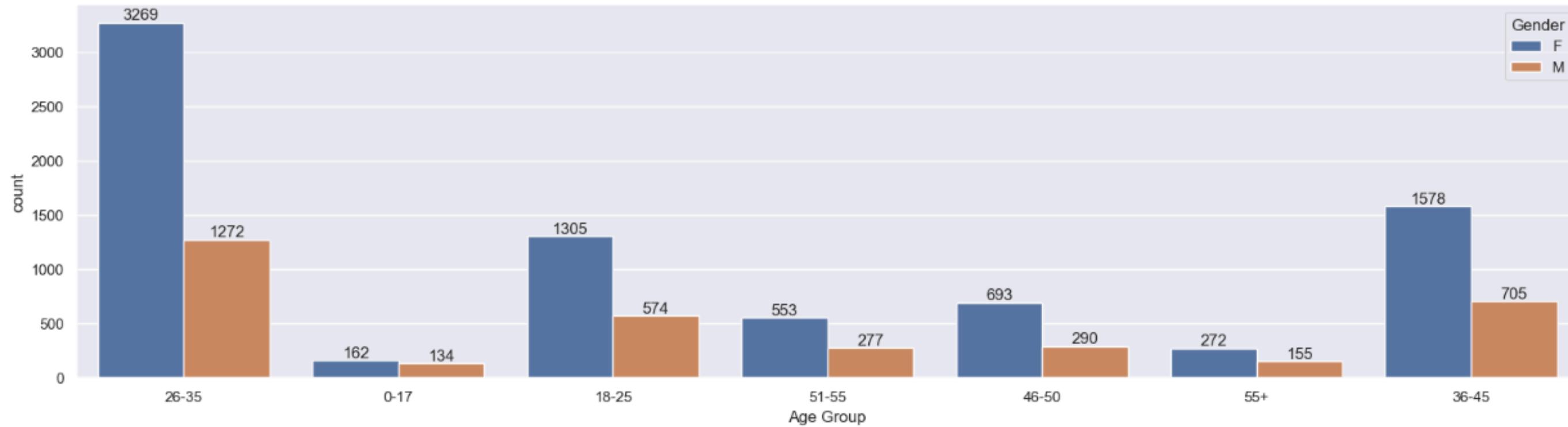
```
# plotting a bar chart for Gender and it's count  
  
ax = sns.countplot(x = 'Gender',data = df)  
  
for bars in ax.containers:  
    ax.bar_label(bars)
```



Age Wise Division of Customers :

```
ax = sns.countplot(data = df, x = 'Age Group', hue = 'Gender')

for bars in ax.containers:
    ax.bar_label(bars)
```

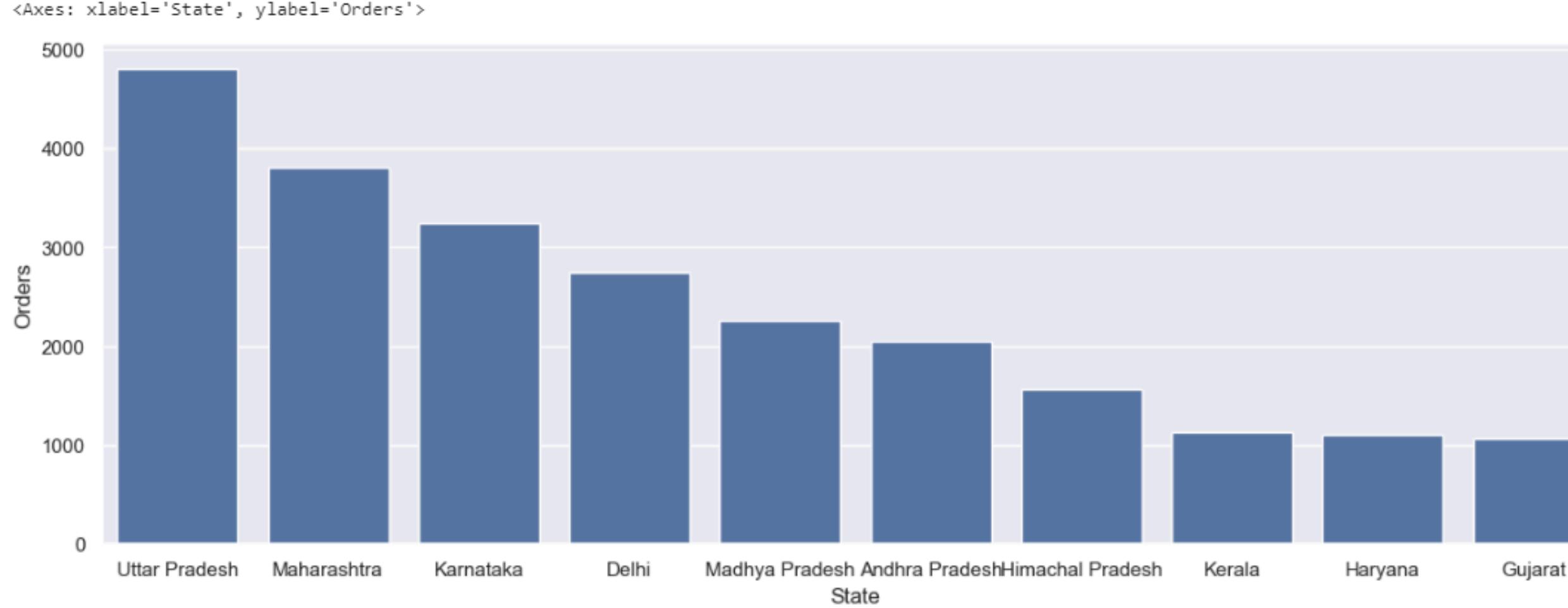


State Wise Division of Customers :

```
# total number of orders from top 10 states

sales_state = df.groupby(['State'], as_index=False)[‘Orders’].sum().sort_values(by=‘Orders’, ascending=False).head(10)

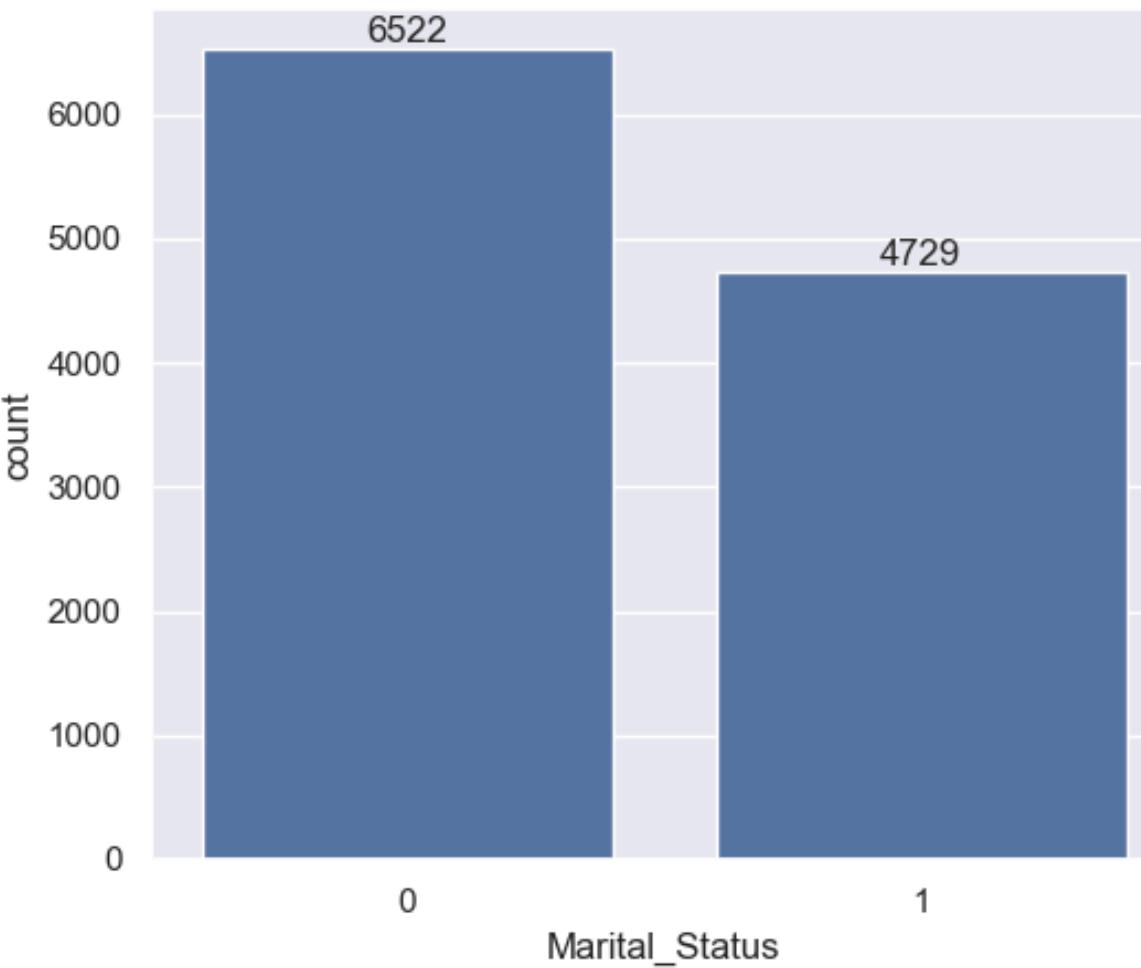
sns.set(rc={‘figure.figsize’: (15,5)})
sns.barplot(data = sales_state, x = ‘State’,y= ‘Orders’)
```



Marrital Status wise Customers :

```
ax = sns.countplot(data = df, x = 'Marital_Status')

sns.set(rc={'figure.figsize':(7,5)})
for bars in ax.containers:
    ax.bar_label(bars)
```

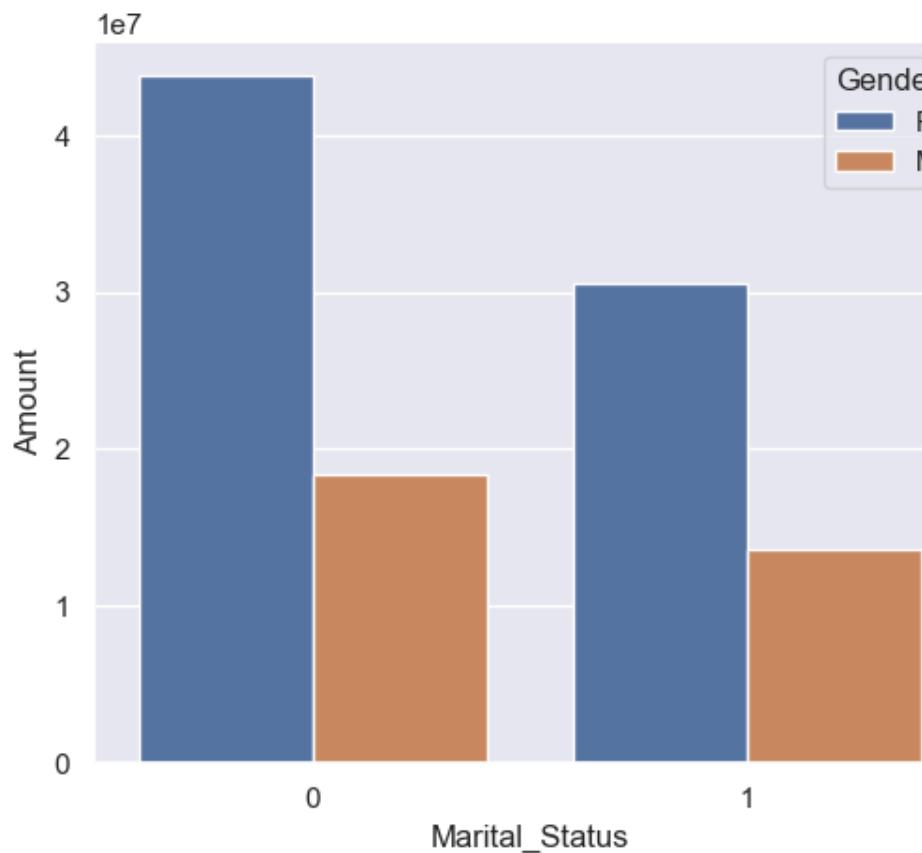


Male and Female from Marrital Status of Customers :

```
sales_state = df.groupby(['Marital_Status', 'Gender'], as_index=False)[['Amount']].sum().sort_values(by='Amount', ascending=False)

sns.set(rc={'figure.figsize':(6,5)})
sns.barplot(data = sales_state, x = 'Marital_Status',y= 'Amount', hue='Gender')

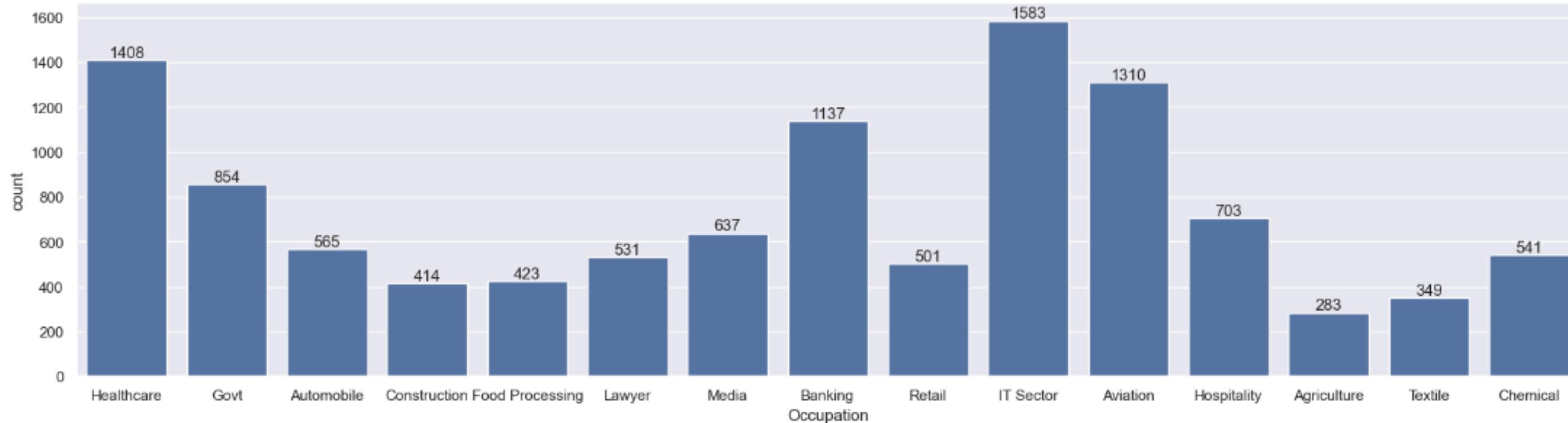
<Axes: xlabel='Marital_Status', ylabel='Amount'>
```



Occupation wise Customers :

```
sns.set(rc={'figure.figsize':(20,5)})  
ax = sns.countplot(data = df, x = 'Occupation')
```

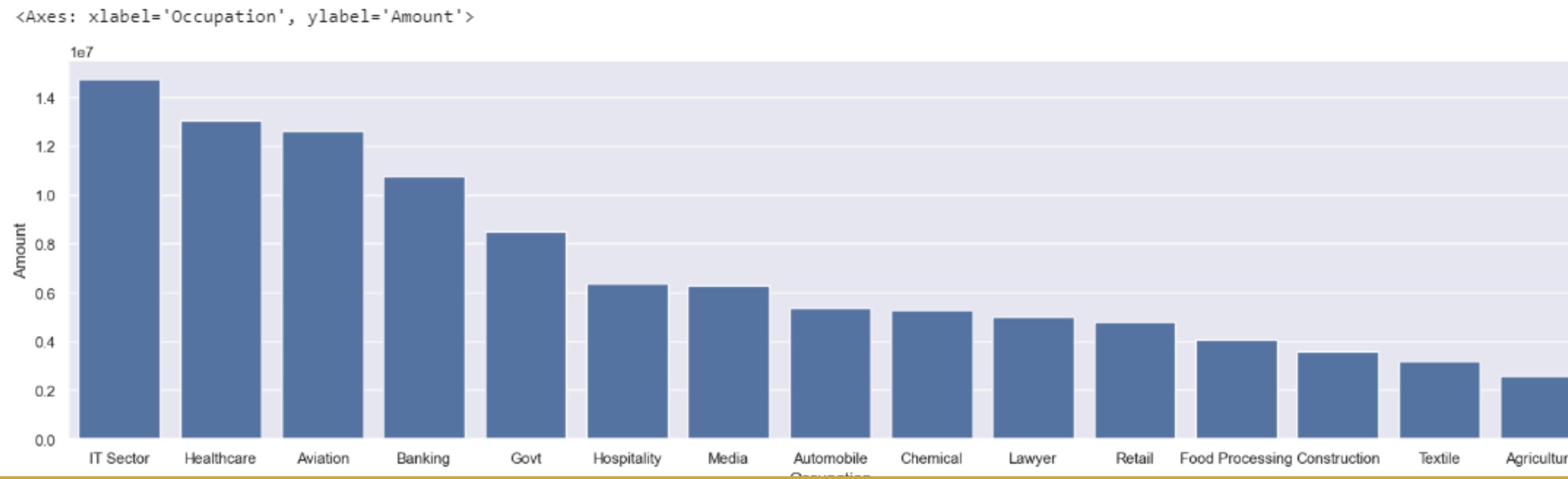
```
for bars in ax.containers:  
    ax.bar_label(bars)
```



Department wise Customers :

```
sales_state = df.groupby(['Occupation'], as_index=False)[‘Amount’].sum().sort_values(by=‘Amount’, ascending=False)

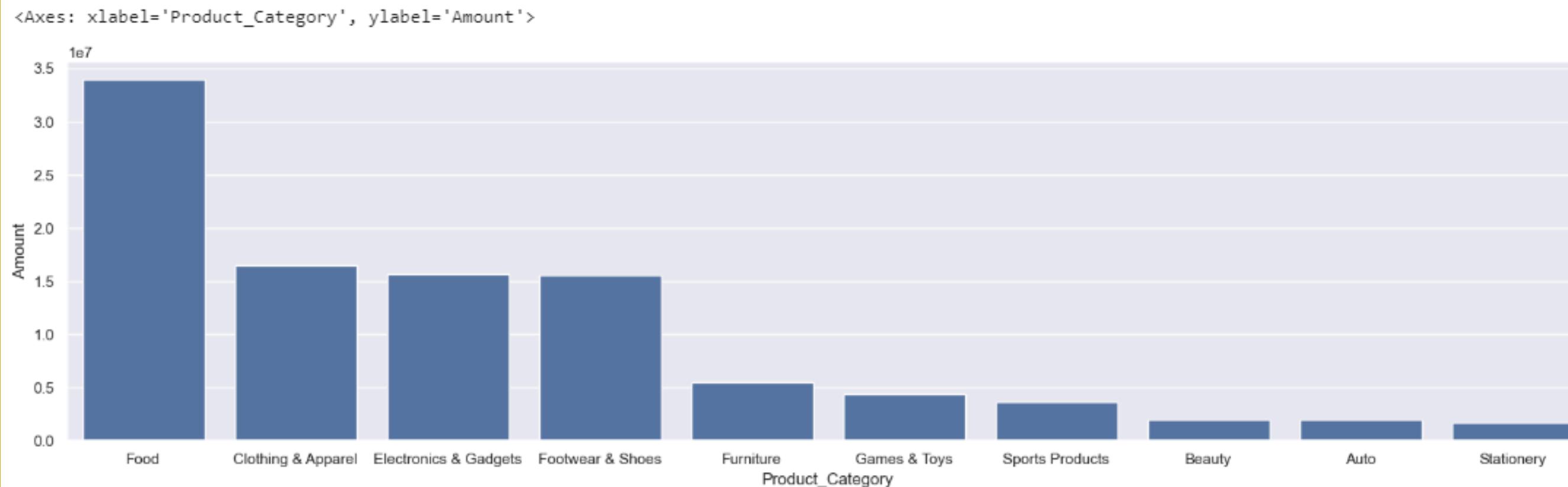
sns.set(rc={‘figure.figsize’: (20,5)})
sns.barplot(data = sales_state, x = ‘Occupation’,y= ‘Amount’)
```



Product Category wise Amount :

```
sales_state = df.groupby(['Product_Category'], as_index=False)[ 'Amount'].sum().sort_values(by='Amount', ascending=False).head(10)

sns.set(rc={'figure.figsize':(20,5)})
sns.barplot(data = sales_state, x = 'Product_Category',y= 'Amount')
```

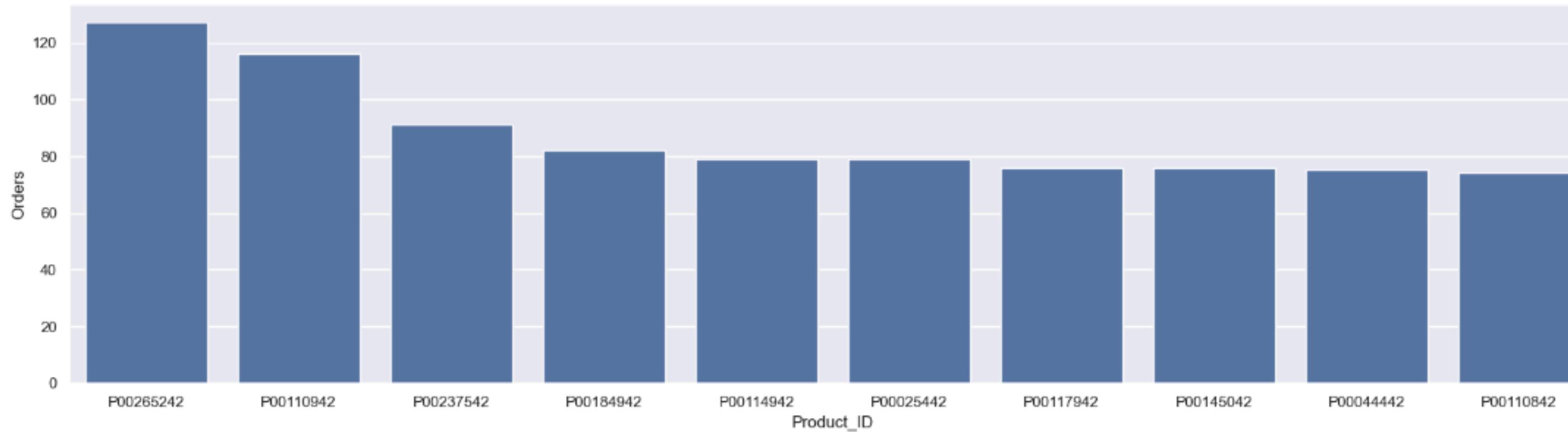


Product ID wise Orders :

```
sales_state = df.groupby(['Product_ID'], as_index=False)[['Orders']].sum().sort_values(by='Orders', ascending=False).head(10)

sns.set(rc={'figure.figsize':(20,5)})
sns.barplot(data = sales_state, x = 'Product_ID',y= 'Orders')

<Axes: xlabel='Product_ID', ylabel='Orders'>
```



Key Insight :

Married women age group 26-35 yrs from UP, Maharashtra and Karnataka working in IT, Healthcare and Aviation are more likely to buy products from Food, Clothing and Electronics category

Thank you! ☺