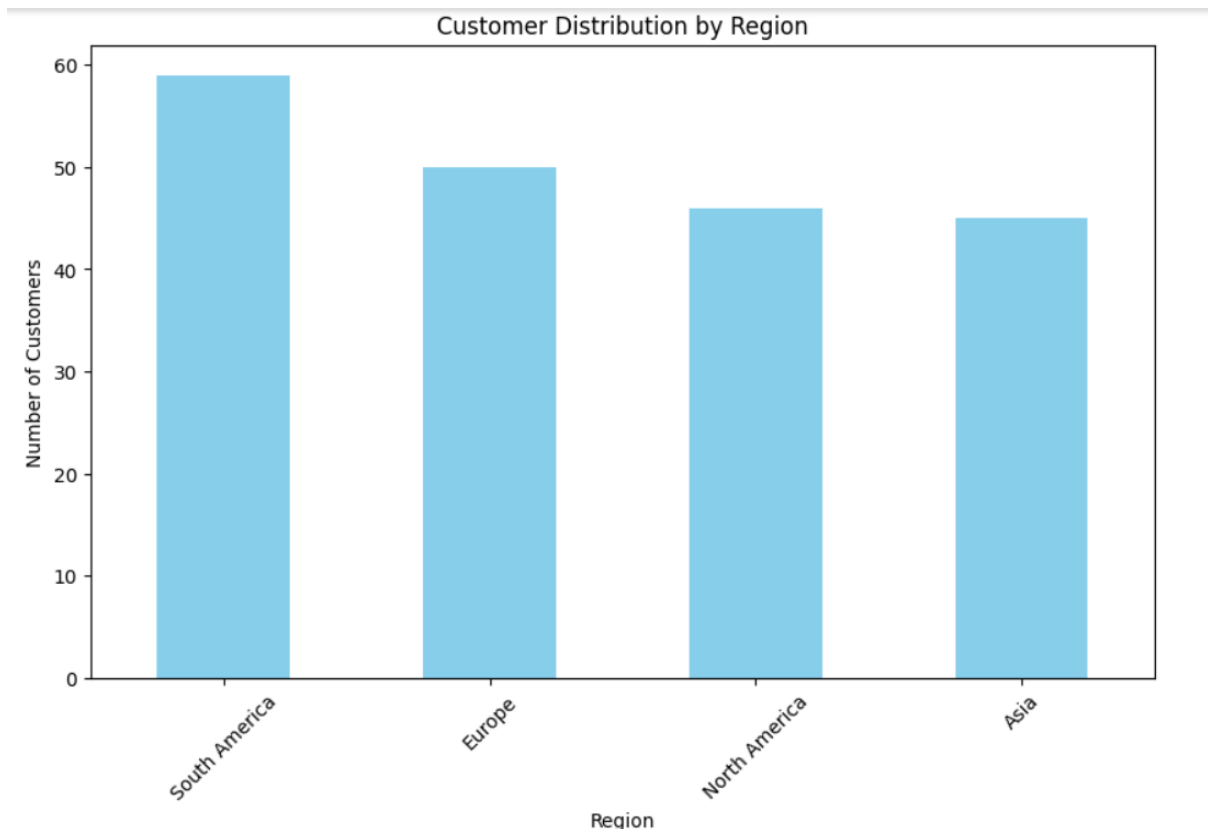


Task 1: Exploratory Data Analysis (EDA) and Business Insight

1. Customer Distribution by Region:

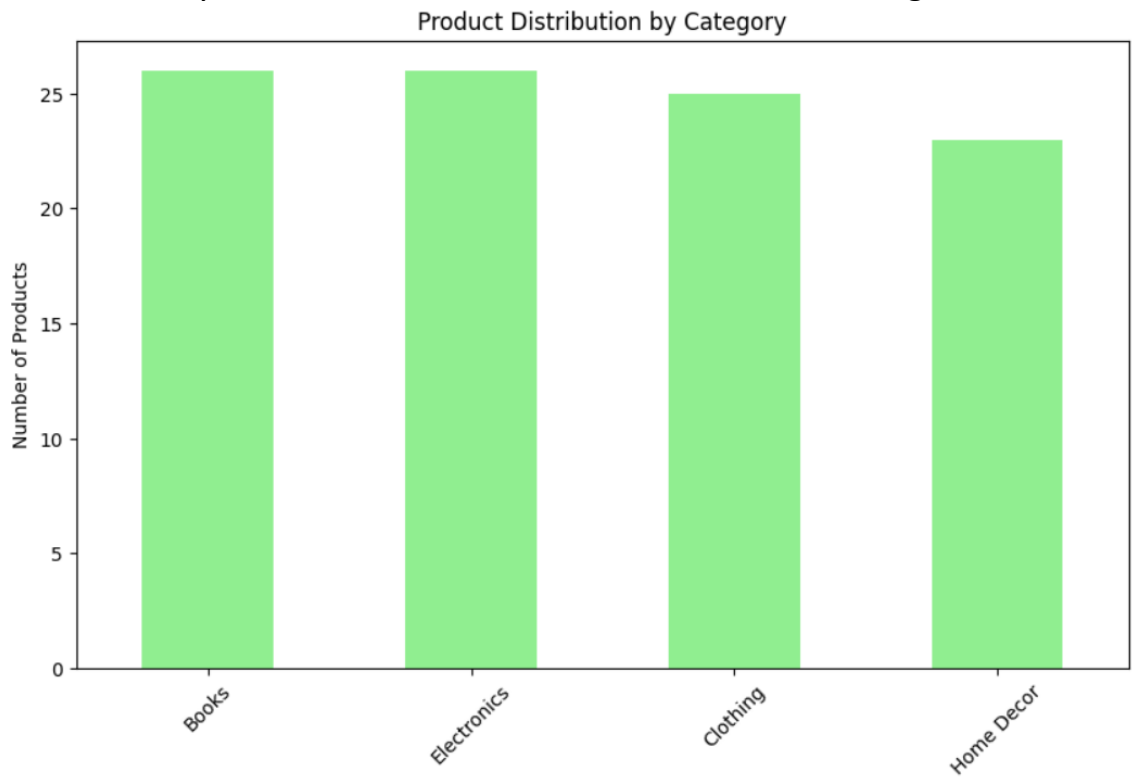
The majority of customers are concentrated in specific regions (e.g. South America, Europe etc), indicating potential region-specific marketing strategies.

The customer distribution across regions highlights key areas for targeted marketing strategies. South America has the highest number of customers, accounting for 29.5% of the total, followed by Europe with 25%, and North America with 23%. Asia contributes 22.5% to the customer base. South America, as the largest segment, presents significant opportunities for expanding market reach, while Europe and North America are strong secondary markets. Asia, with its competitive share, suggests potential for growth. Tailored marketing efforts in each region can help capitalize on their unique customer dynamics and preferences.



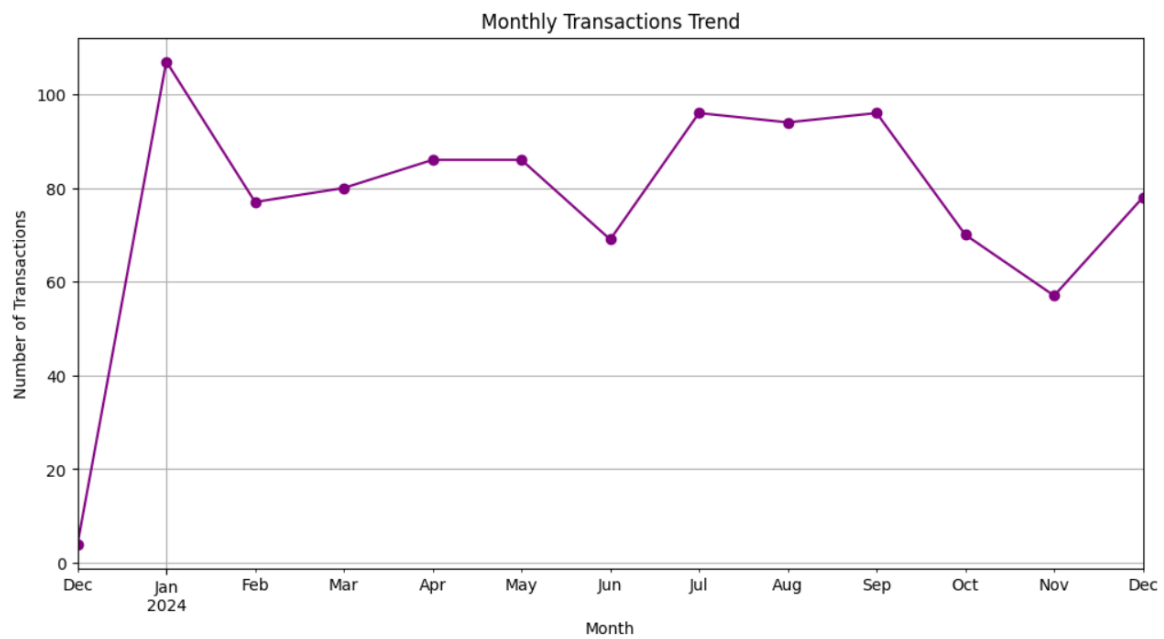
2. **Product Distribution by Category:**

The product distribution reveals "Books" and "Electronics" as the top categories, each comprising 26% of the offerings, followed by "Clothing" at 25% and "Home Decor" at 23%. These popular categories highlight key drivers of customer interest. Focusing on these segments while optimizing inventory can boost customer satisfaction and revenue growth.



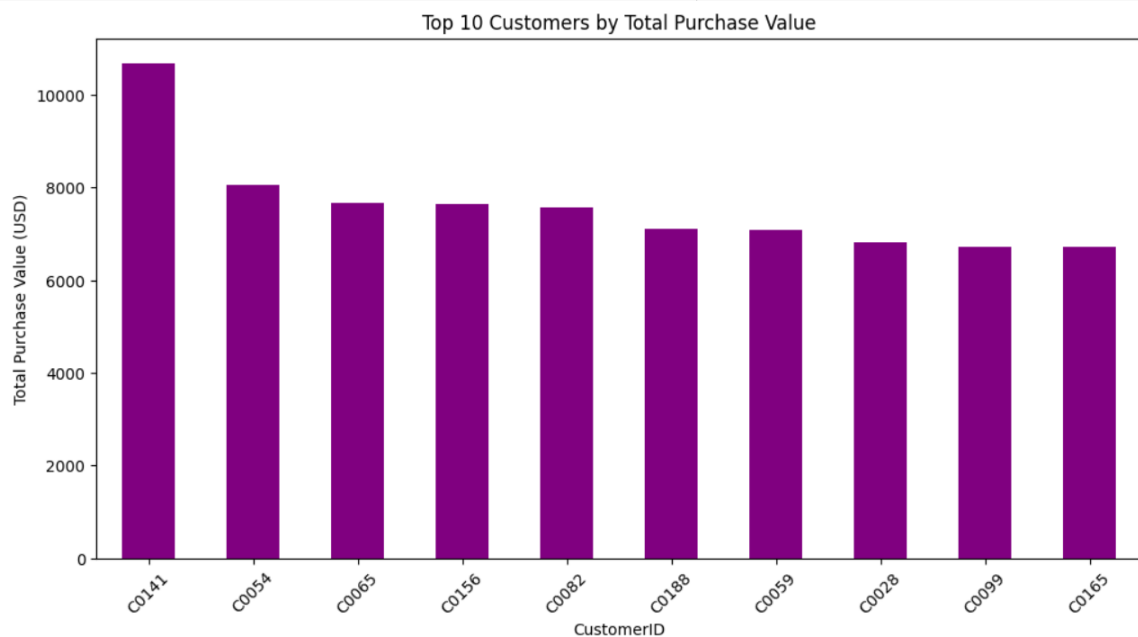
3. **Monthly Transactions Trend:**

There are observable peaks and troughs in transaction volumes over months, suggesting potential seasonal demand patterns or promotional events. The monthly transaction trends show a peak in January 2024 with 107 transactions, followed by steady volumes in February (77), March (80), and April (86). December 2023 recorded the lowest transactions (4), indicating possible seasonal patterns or promotional impacts.



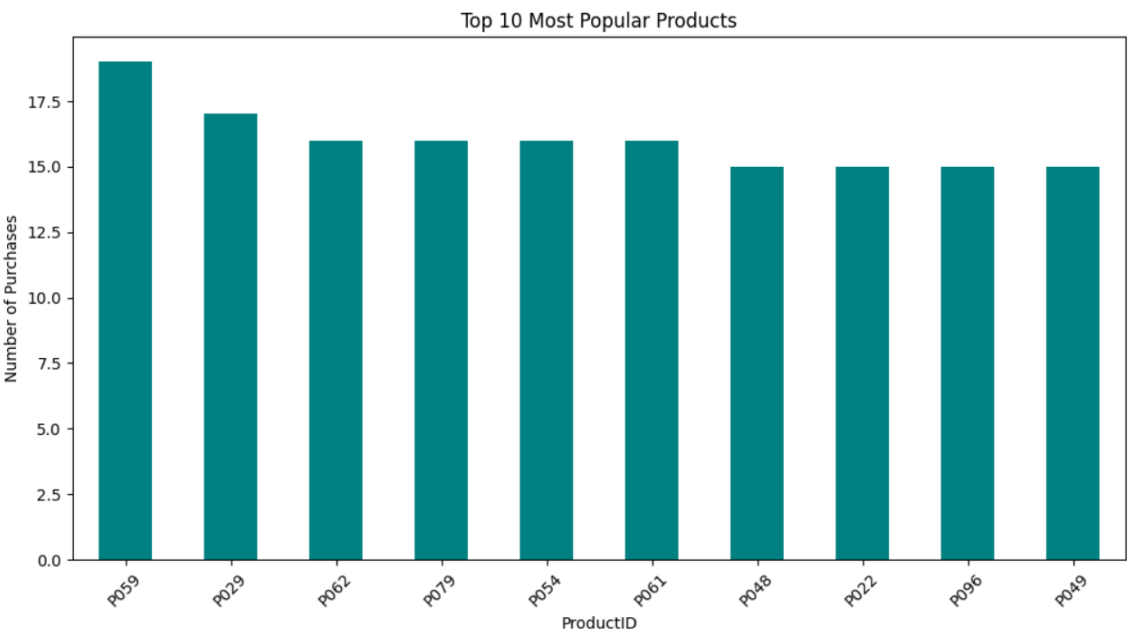
4. Top Customers by Total Purchase Value:

A small group of customers contributes significantly to the total revenue, indicating the importance of retaining these high-value customers. The top 10 customers contribute significantly to total revenue, with the highest spender (Customer C0141) generating \$10,673.87, followed by others like C0054 (\$8,040.39) and C0065 (\$7,663.70). These high-value customers highlight the importance of targeted retention strategies.



5. **Most Popular Products:**

Certain products are purchased more frequently, suggesting their widespread appeal and importance for inventory management. The most popular products are dominated by Product P059 with 19 purchases, followed by P029 (17 purchases) and P062, P079, and P054 (16 purchases each). These products demonstrate strong customer demand, highlighting



their importance in inventory management and marketing efforts.

6. **High-Value Transactions by Region:**

Specific regions dominate in terms of high-value transactions, highlighting areas where premium marketing strategies could be focused. High-value transactions are concentrated in South America, contributing \$39,079.60, followed by Europe at \$23,075.92, Asia at \$15,636.12, and North America at \$10,749.04. These regions highlight significant opportunities for premium marketing strategies tailored to high-value customers.

