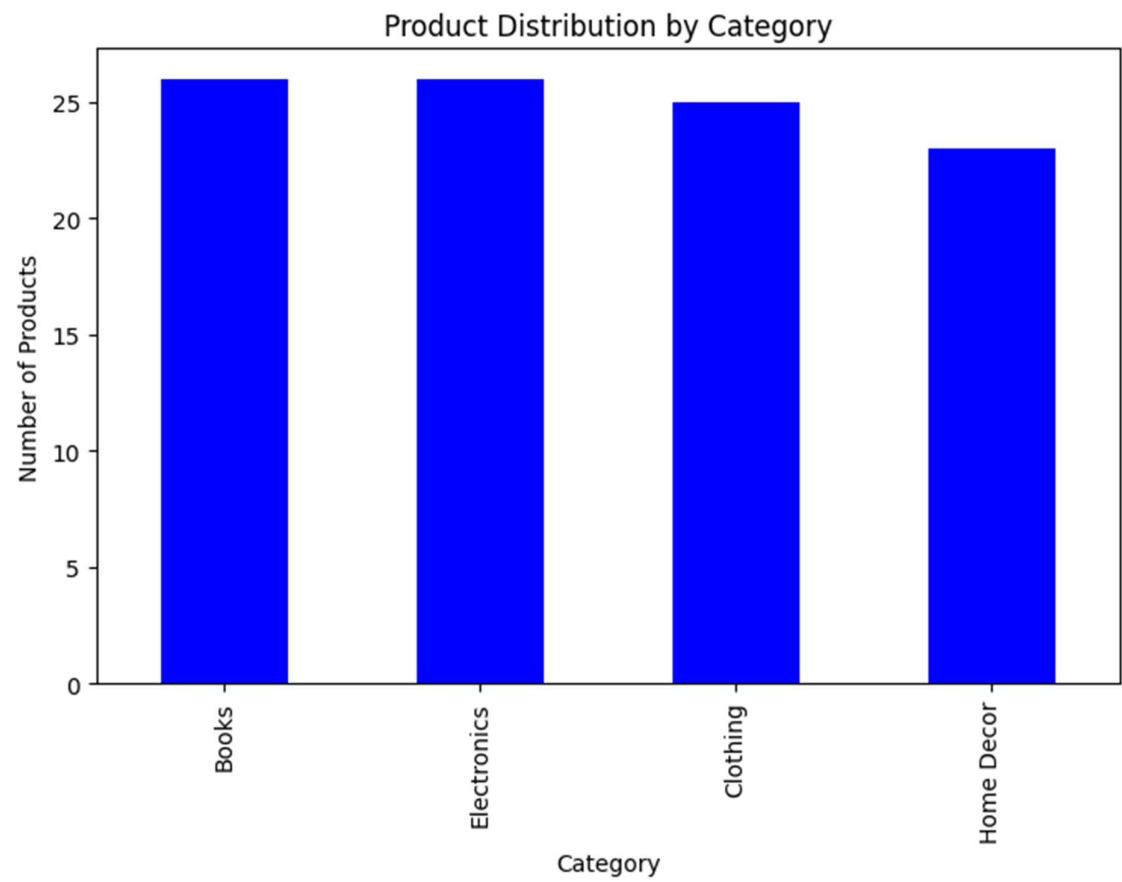
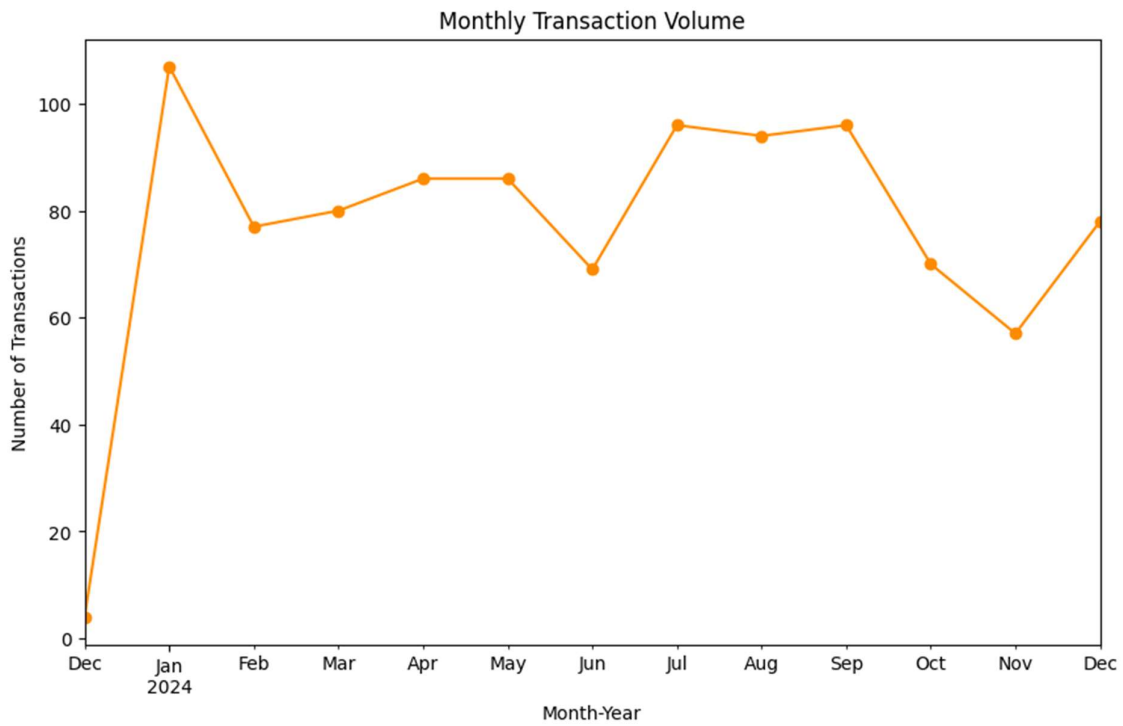


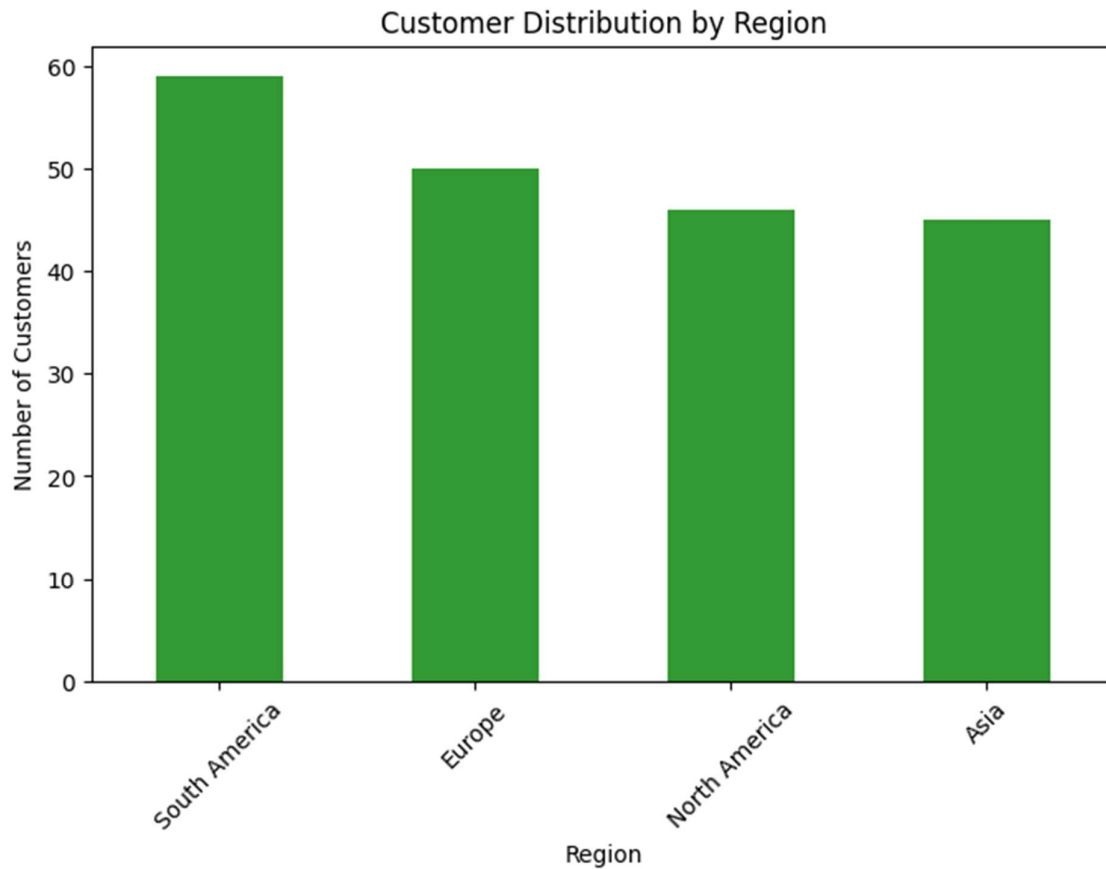
Business Insights from the EDA



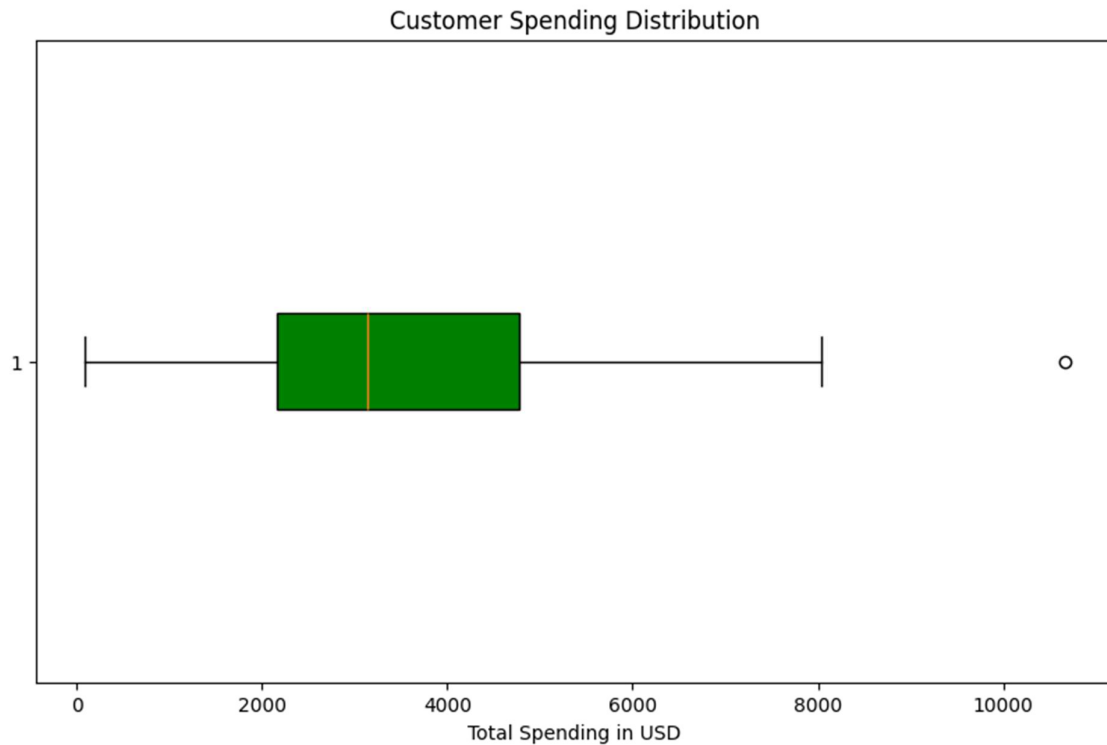
The bar chart displays how products are spread across four categories: books, electronics, clothing and home decor. Books and electronics products each comprise approximately twenty-five items, representing the largest product categories. Clothing is a close second, with a somewhat smaller number of products, while Home Decor possesses the fewest items among all the categories. This indicates an approximately even distribution of product types, with Home Decor representing a smaller proportion. This chart prominently shows key areas needing inventory adjustments or promotional efforts. The Home Decor category, in particular, considerably requires additional products to adjust with other categories or demands aggressive marketing to increase its presence.



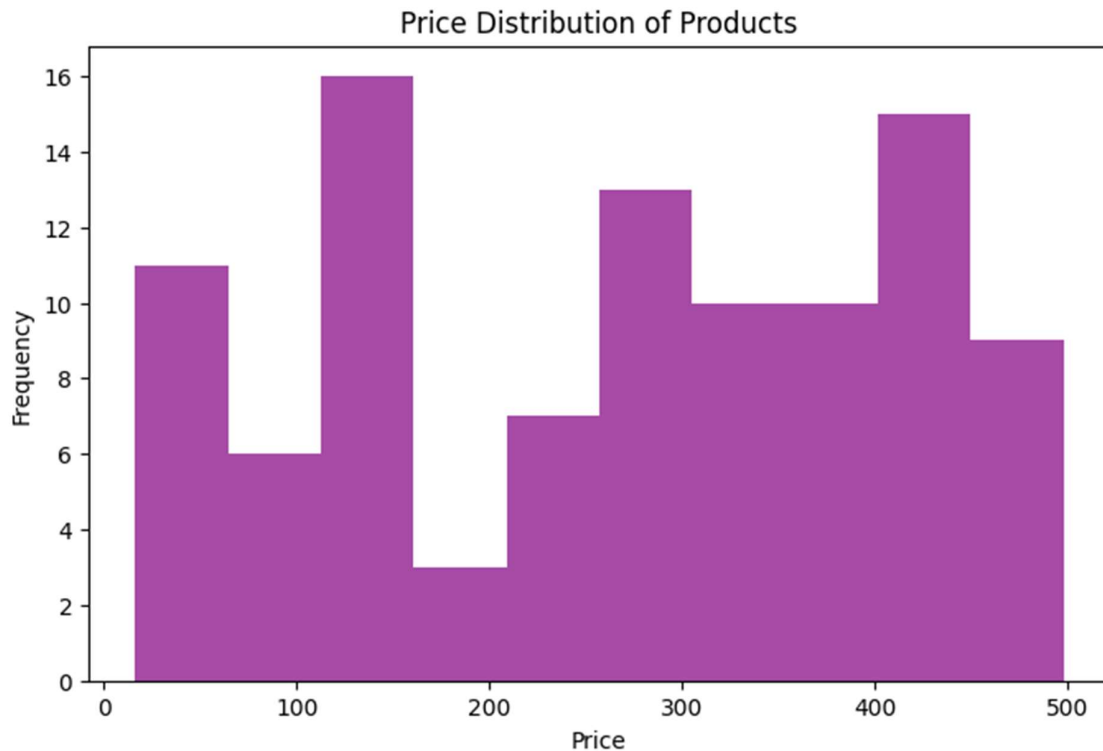
The transaction volume peaked in January 2024 with over 100 transactions, followed by a sharp decline in February. From March to May, there was steady growth in transactions, reaching around 80. In June, a significant drop occurred but was quickly recovered in July and August, maintaining high levels. September marked a slight decline, which accelerated in October and November to the lowest levels since February. December shows a recovery trend. Seasonal or external factors likely influenced these fluctuations, warranting further analysis for optimization.



The bar graph represents customer distribution across four regions: South America, Europe, North America, and Asia. South America leads with the highest customer count around 60, indicating strong market penetration or customer engagement in this region. Europe, North America, and Asia follow closely with similar customer counts, suggesting balanced but slightly lower presence compared to South America. The distribution highlights potential for expansion in regions outside South America. Businesses should focus on maintaining South America's lead while identifying growth strategies for underperforming regions like Asia and North America. Diversified marketing and tailored strategies per region could optimize overall customer base.



The box plot illustrates the distribution of customer spending in USD. The interquartile range (IQR) suggests that most customers spend between \$2,500 and \$6,500, with a median around \$4,000. The whiskers extend to approximately \$1,000 and \$8,000, indicating the range of typical spending. However, there is an outlier near \$10,000, signaling a significantly higher expenditure by one customer. This suggests that the business should start focusing on the IQR group for steady revenue while investigating high spenders to identify patterns or opportunities for premium offerings. Additionally, customer retention strategies could target those spending near the lower threshold to boost average spending.



The histogram depicts the price distribution of products. The frequency varies across the price range, with notable peaks around \$100 and \$400. The lowest frequency appears near \$200, indicating fewer products priced in this range. Prices are spread relatively evenly across the range, with no single cluster dominating the distribution. This variation suggests diverse pricing strategies or a wide range of product offerings. The even distribution with intermittent peaks highlights the presence of both budget and premium products, with gaps in certain pricing tiers. This provides an understanding of how products are distributed across different price points.