

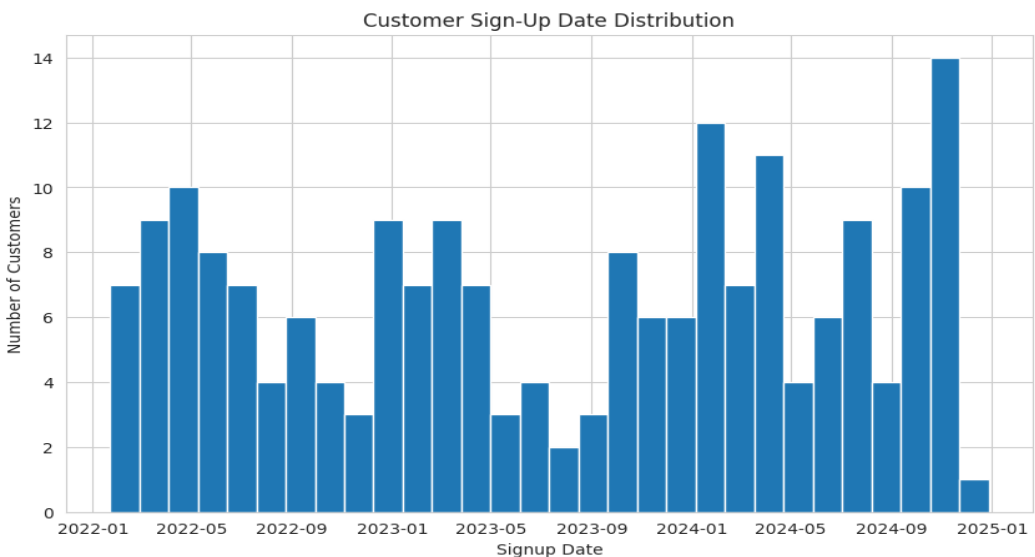
Business Insights from eCommerce Transactions Dataset

Introduction:

This report presents the business insights derived from exploratory data analysis (EDA) performed on an eCommerce transactions dataset. The dataset contains information on customers, products, and transactions, and the analysis is focused on identifying key trends and patterns that can help inform strategic business decisions. The insights are drawn from an examination of customer sign-up trends, product pricing, regional customer distribution, transaction behavior, and seasonal sales fluctuations.

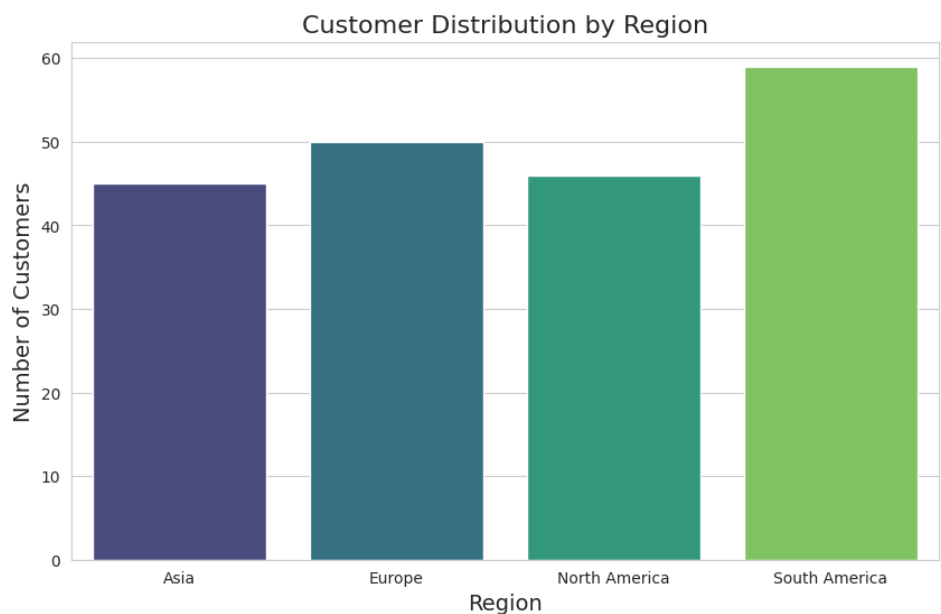
Business Insights:

1. Customer Sign-Up Trends and Growth:



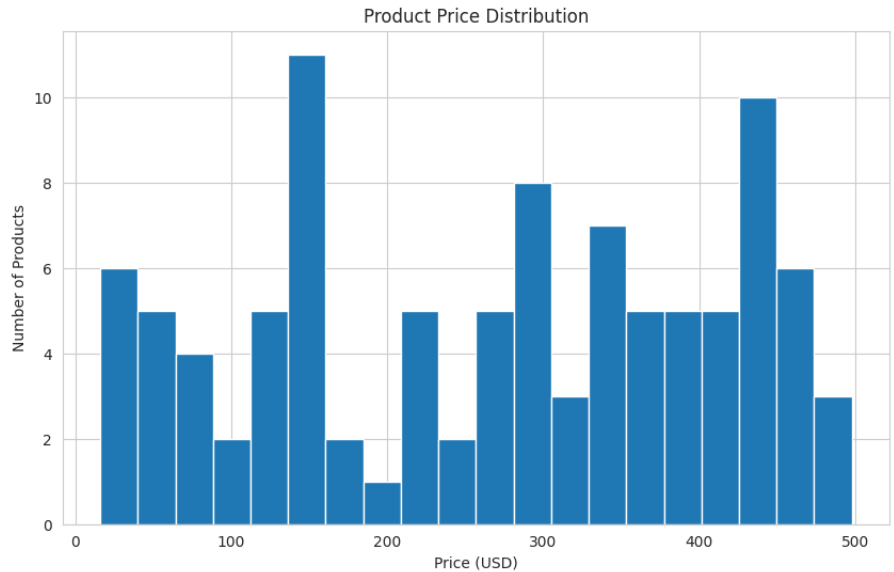
Analysis of the customer sign-up data reveals a clear upward trend in customer acquisition, particularly towards the end of 2024. The most notable surge in new sign-ups occurred in late 2024, with a peak of approximately 14 customers in a single month. This suggests that the business experienced significant growth during this period, possibly due to effective marketing campaigns or seasonal promotions. Periods of slower growth were observed in early 2023, indicating a need for potential re-engagement strategies during off-peak times.

2. Regional Distribution of Customers:



Customer distribution by region highlights significant variations in customer presence across continents. South America has the highest customer concentration, followed by Europe, Asia, and North America. South America alone accounts for over 60 customers, while North America has the lowest representation with around 30 customers. These findings suggest that the business should consider regional marketing strategies tailored to the strengths of each market. For example, focusing on South America and Europe for promotions may yield higher returns, while increasing presence in North America could drive further growth.

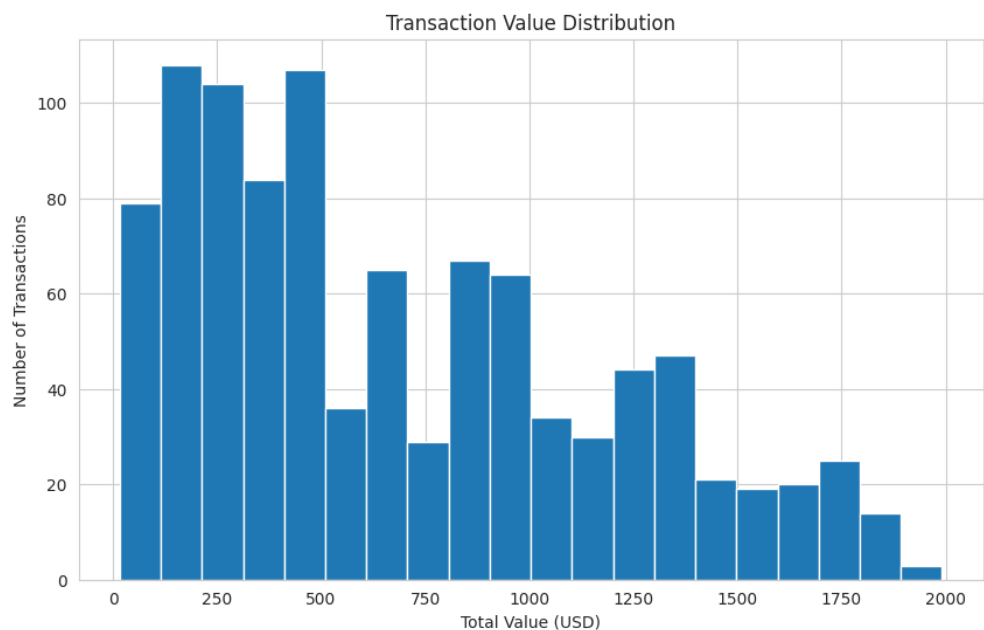
3. Product Price Distribution and Pricing Strategy:



The product pricing analysis indicates that most products are priced in the mid-

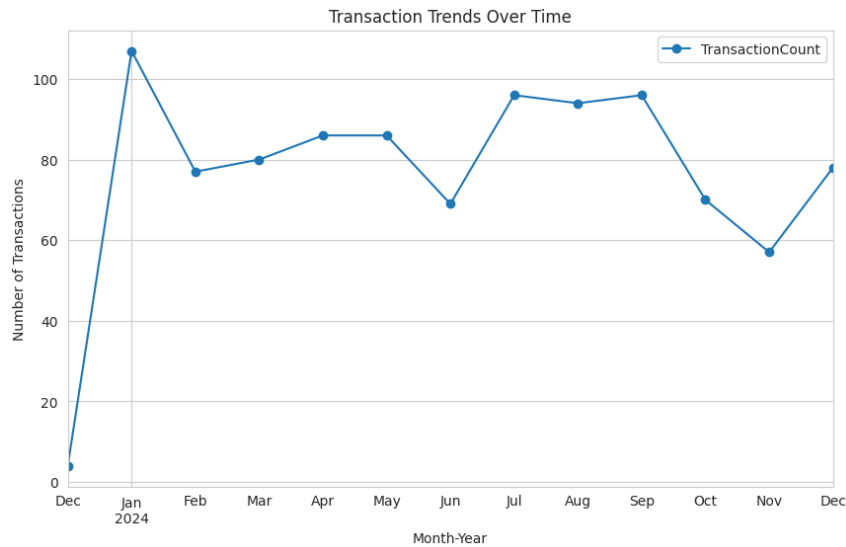
range, specifically between \$100 and \$200. This is the most common price range in the dataset, with the highest concentration of products falling within this bracket. However, fewer products exist in the lower (\$0-\$100) and higher (\$400-\$500) price ranges. The concentration around mid-range prices suggests that the business may already be targeting a broad customer base. Introducing higher-priced, premium products could diversify the portfolio and attract more affluent customers.

4. Transaction Value and Purchasing Behavior:



The transaction value distribution reveals that the majority of transactions fall within the \$0 to \$500 range, suggesting that customers tend to make smaller, more frequent purchases. The peak at this range indicates that most customers are making low-to-medium value transactions. However, as transaction values increase, the frequency of purchases drops significantly, with very few transactions exceeding \$1500. This suggests that customers are more likely to buy lower-cost products in higher quantities, rather than making large, one-off purchases.

5. Seasonal Trends and Transaction Patterns:



The analysis of transaction trends over time shows a distinct seasonal pattern. Transactions peak during the holiday season, particularly in December 2023, and again in June, likely due to mid-year sales. This seasonal fluctuation is typical of many eCommerce businesses and indicates the importance of preparing for high-demand periods. A post-holiday slump in January and fluctuations throughout the mid-year months suggest that marketing campaigns should focus on capitalizing on peak periods and addressing slowdowns through targeted promotions.

Conclusion:

The insights gained from this EDA provide valuable information for strategic decision-making. Key recommendations include focusing on regional marketing strategies for South America and Europe, considering the introduction of higher-priced products, and utilizing seasonal sales trends to optimize marketing campaigns. These insights will enable the business to refine its product offerings and customer acquisition strategies, driving future growth and increasing customer retention.