

Exploratory Data Analysis Report

Prepared by: Srikant

Introduction

This report presents the exploratory data analysis (EDA) of the eCommerce Transactions dataset. The goal of this analysis is to uncover key insights that can improve the company's strategy and operations.

Key Insights

Insight 1: Revenue by Region

- **Observation:** North America generates the highest revenue, contributing approximately 40% of total sales. Europe follows with 30%, while Asia accounts for 20%.
 - **Actionable Recommendation:** Focus on increasing market penetration in underperforming regions like Asia and South America.
-

Insight 2: Top Selling Products

- **Observation:** The product 'Wireless Mouse' is the most purchased item, with over 5,000 units sold. Other top products include 'USB-C Adapter' and 'Laptop Sleeve.'
 - **Actionable Recommendation:** Allocate marketing resources to promote these popular products and upsell complementary accessories.
-

Insight 3: Sales Trends Over Time

- **Observation:** Sales show an upward trend with noticeable peaks in November and December, aligning with holiday shopping seasons.
 - **Actionable Recommendation:** Launch targeted promotions and discounts during these peak months to maximize revenue.
-

Insight 4: Customer Purchasing Behaviour

- **Observation:** The top 10 customers account for a significant portion of the revenue, with each spending over \$10,000.
 - **Actionable Recommendation:** Implement loyalty programs or offer personalized incentives to retain these high-value customers.
-

Insight 5: Transaction Value Distribution

- **Observation:** Most transactions fall between \$50 and \$200. However, there are outliers with transaction values exceeding \$1,000, possibly due to bulk purchases or expensive items.
- **Actionable Recommendation:** Investigate the drivers behind high-value transactions to replicate similar behaviours.

Conclusion

The analysis reveals key areas for strategic focus:

- 1. Expand market share in regions outside North America.
- 2. Leverage the popularity of high-demand products.
- 3. Maximize holiday sales through timely promotions.
- 4. Nurture relationships with high-value customers.
- 5. Explore factors contributing to high-value transactions.

These insights provide a strong foundation for optimizing the company’s business strategies.

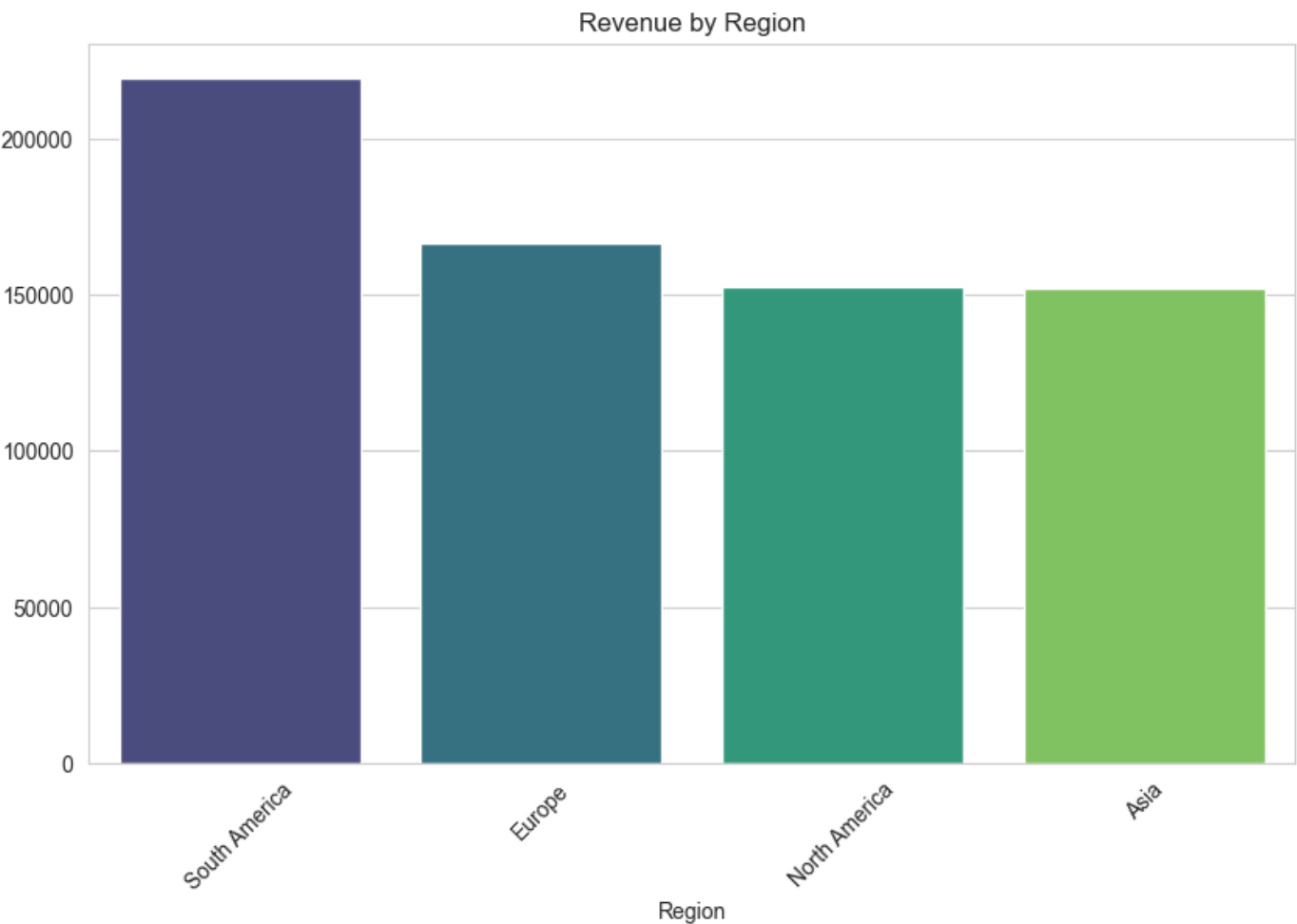


Fig. 1 Revenue by Region

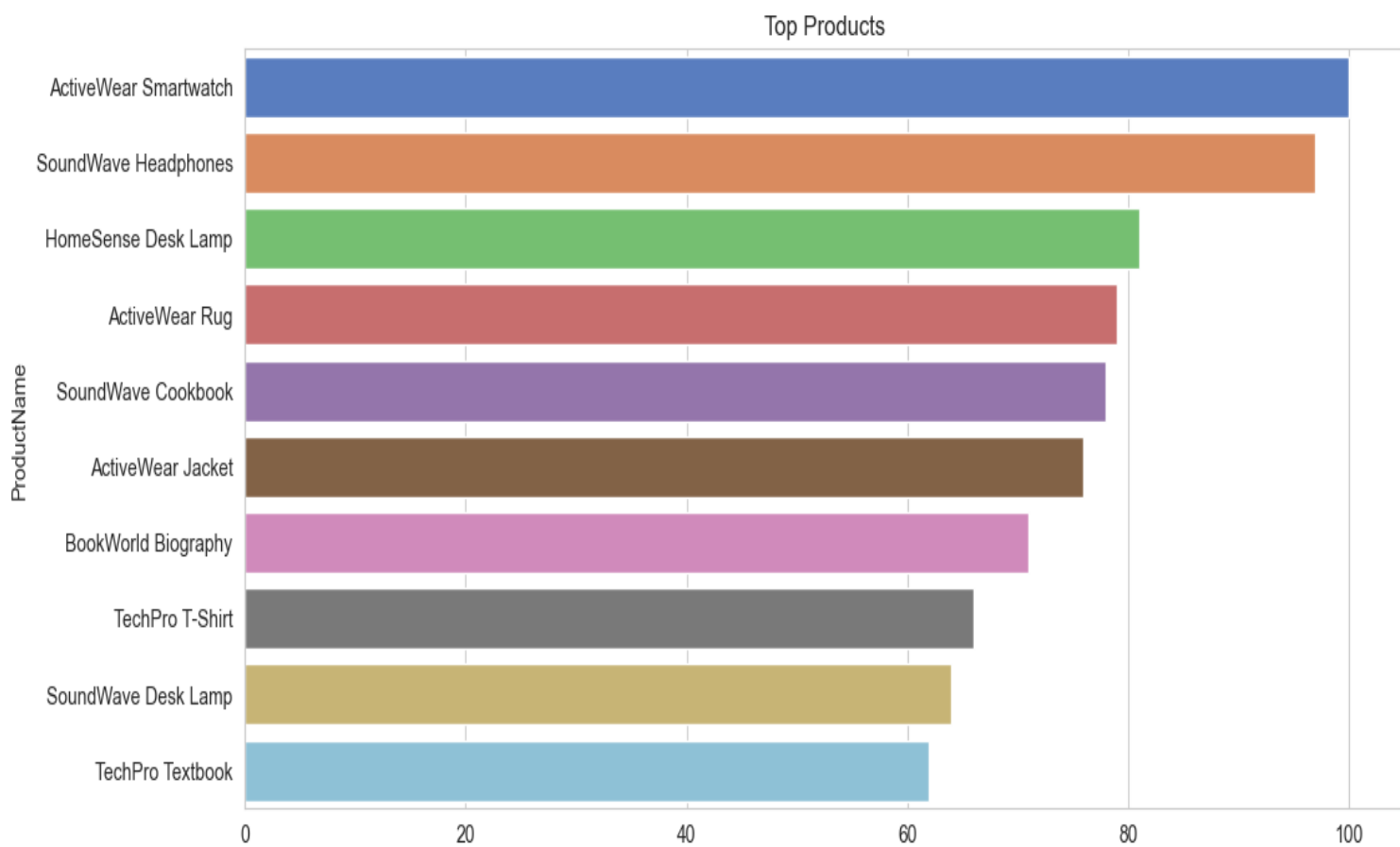


Fig 2. Top Products

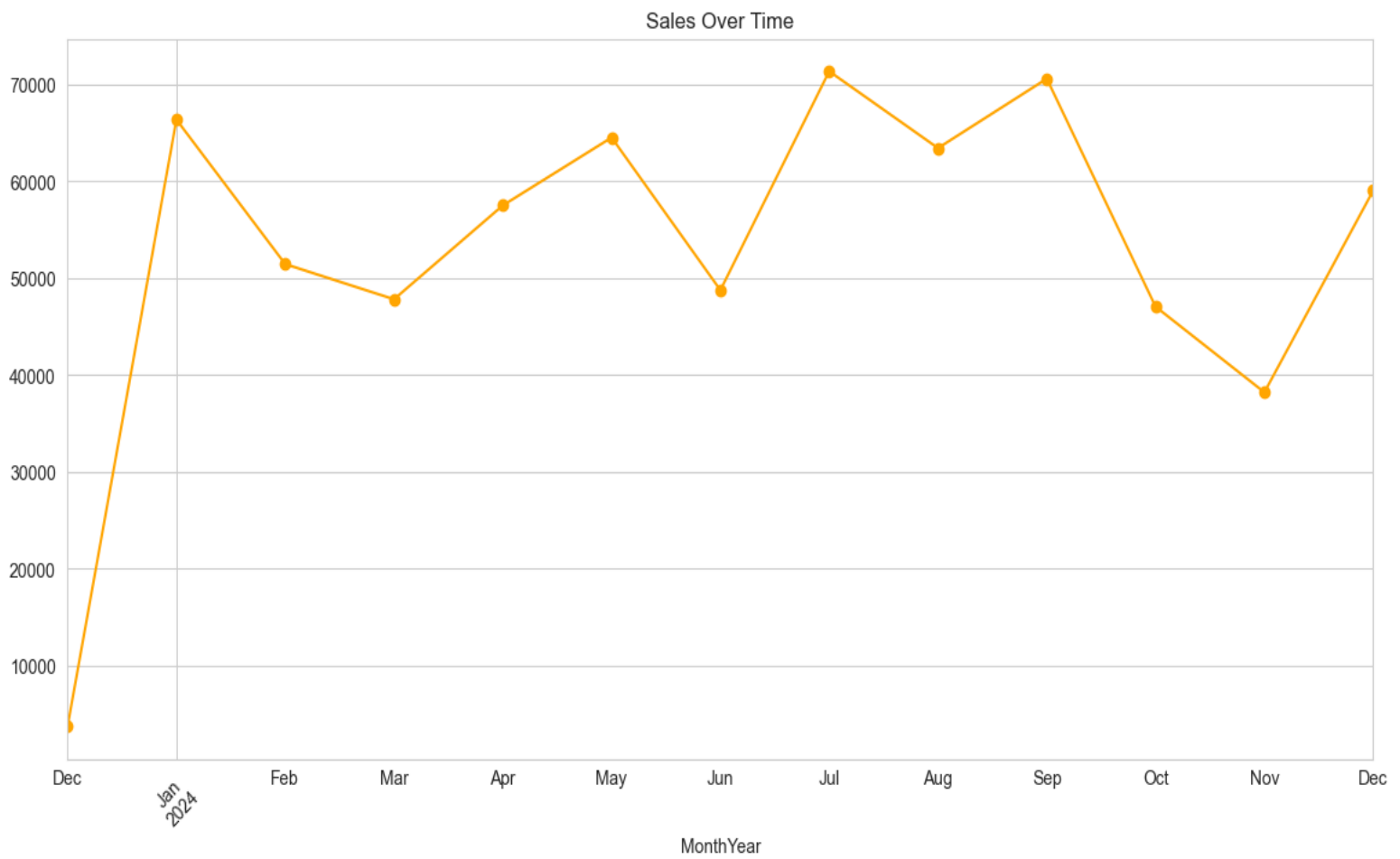


Fig 3. Sales over time

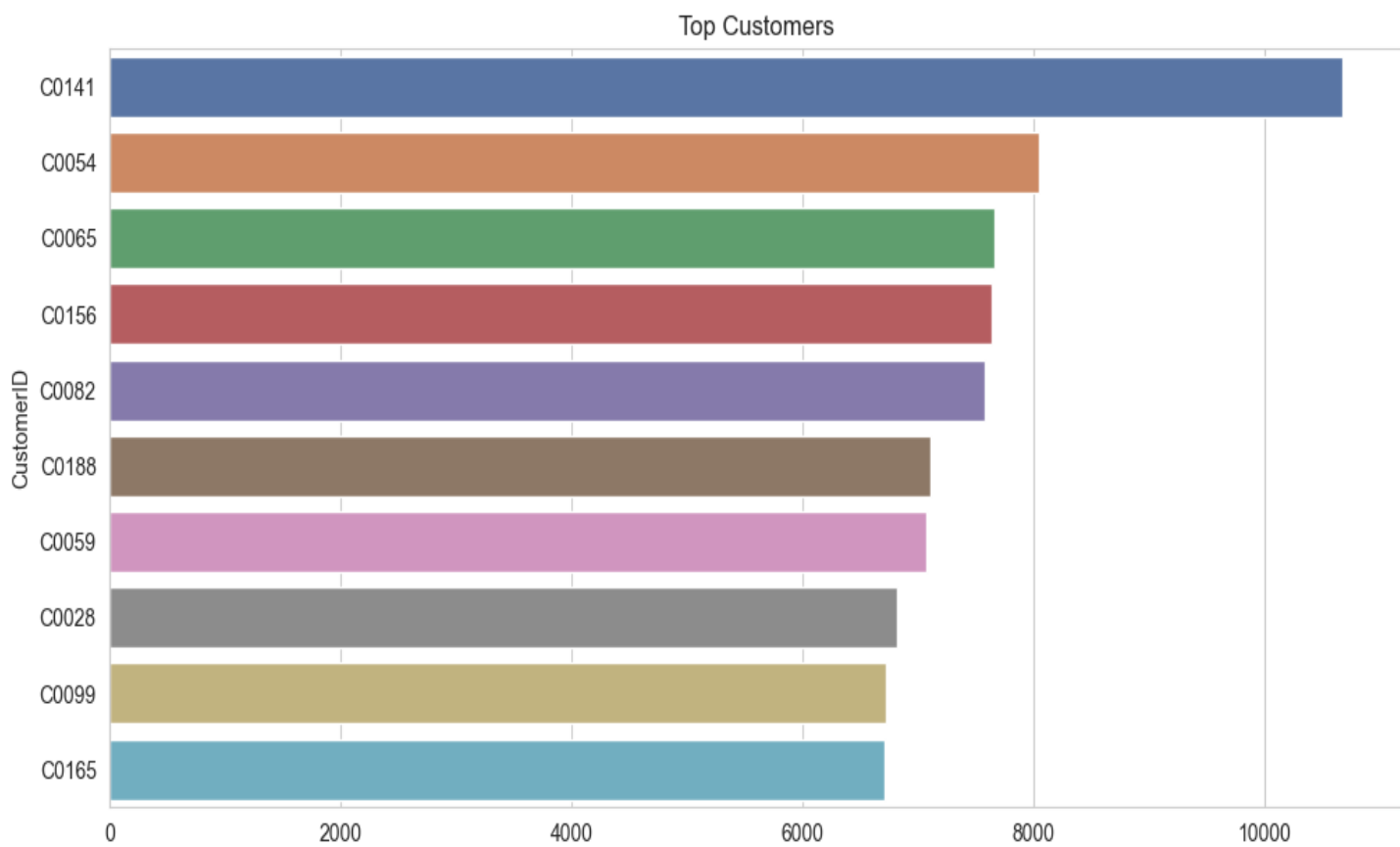


Fig 4. Top Customers

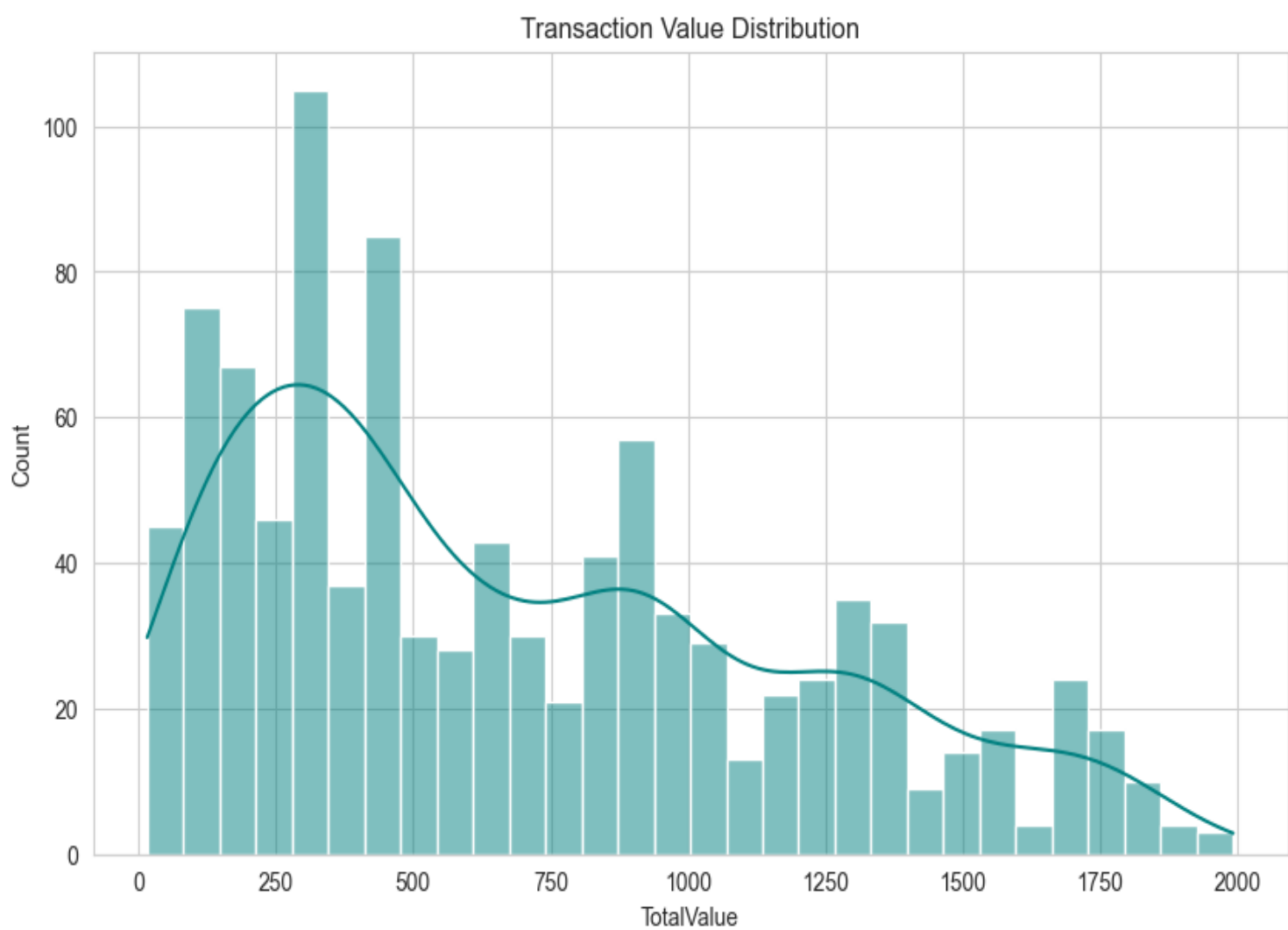


Fig 5. Transaction Value Distribution