

# EDA Report: Customer Transaction Analysis

## Introduction

This report provides an in-depth exploratory data analysis (EDA) of customer transaction data. The analysis identifies key product categories, pricing patterns, geographic trends, and customer behaviors to uncover actionable insights for business growth.

### 1. Product Category Performance

The table below highlights the performance of different product categories in terms of total revenue, transaction count, and quantities sold. Books and Electronics are major revenue contributors, while Clothing and Home Decor demonstrate competitive sales volumes, suggesting opportunities for targeted promotions.

Category	Transaction Count	Total Revenue	Quantity Sold
Books	270	192,147.47	681
Electronics	254	180,783.50	627
Clothing	228	166,170.66	590
Home Decor	248	150,893.93	639

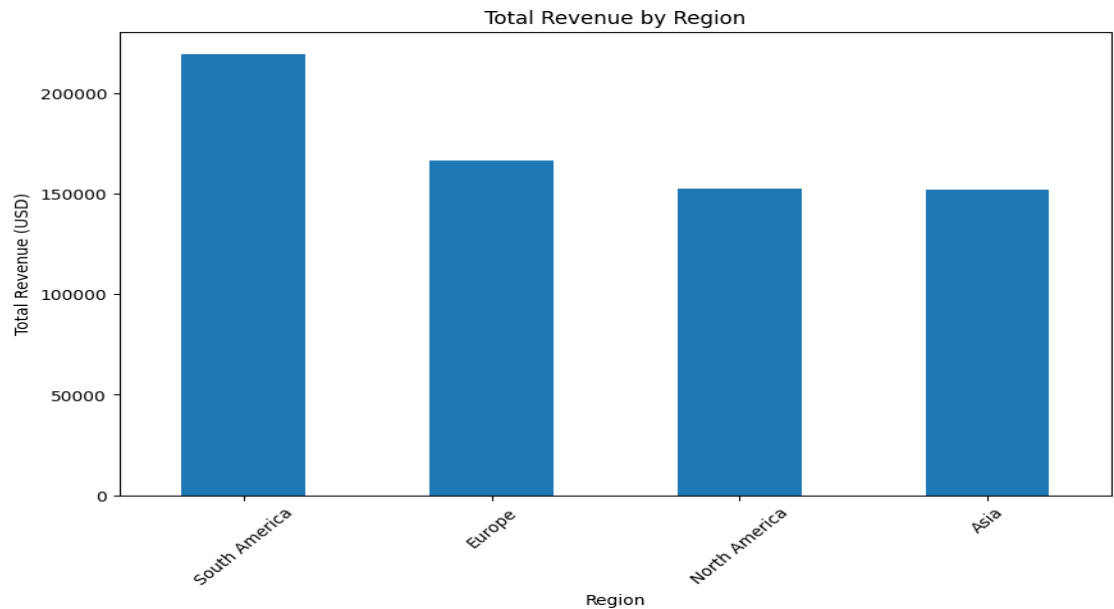
### 2. Price Sensitivity Analysis

An analysis of price ranges shows consistent transaction volumes and quantities sold across all ranges. Customers exhibit low price sensitivity, allowing premium pricing strategies for high-value products without significantly impacting sales.

Price Range	Number of Transactions	Quantity Sold
Low	255	645
Medium	249	646
High	251	627
Premium	245	619

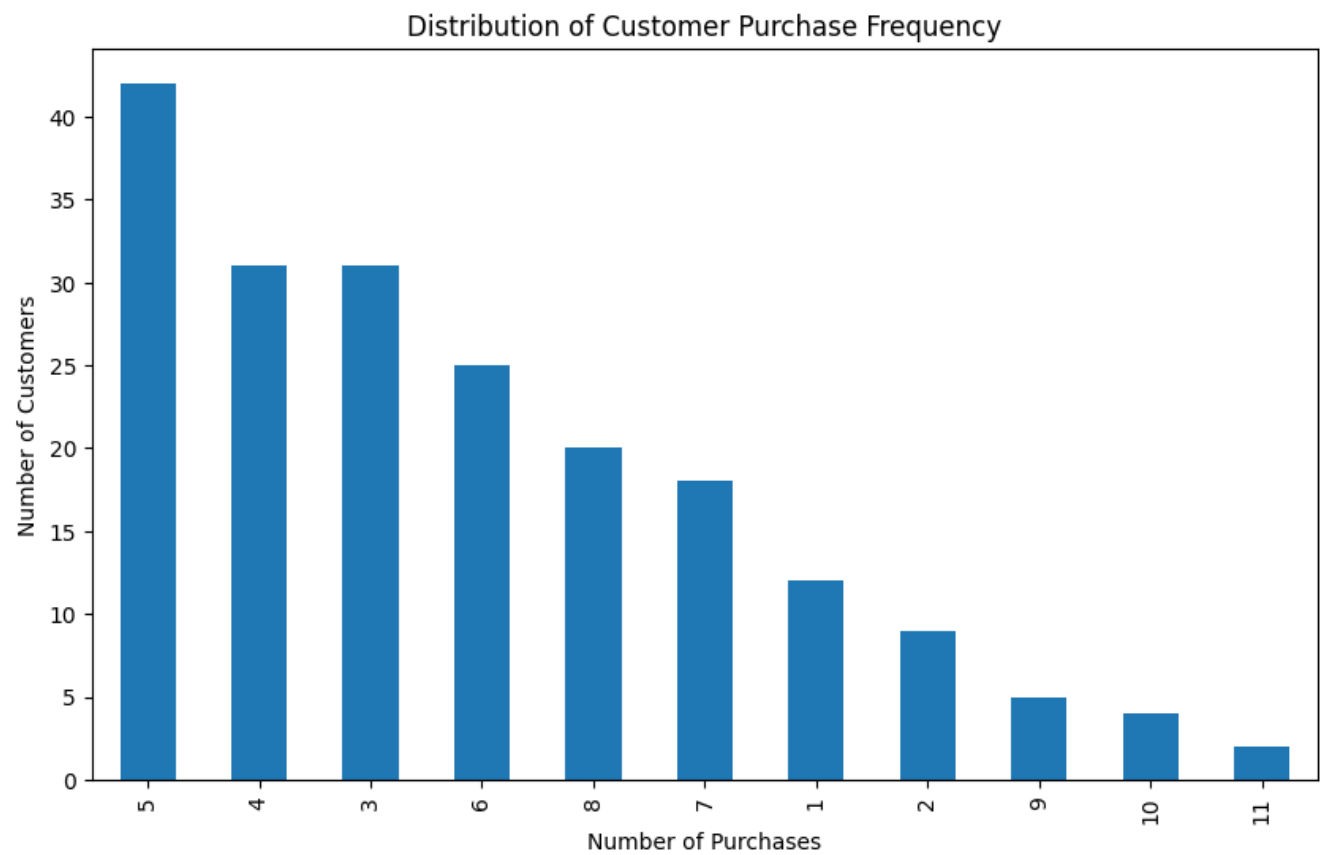
### 3. Geographic Revenue Trends

South America leads in revenue contribution, followed by Europe. North America and Asia exhibit significant potential for growth. Targeted marketing campaigns in underperforming regions could enhance revenue distribution.



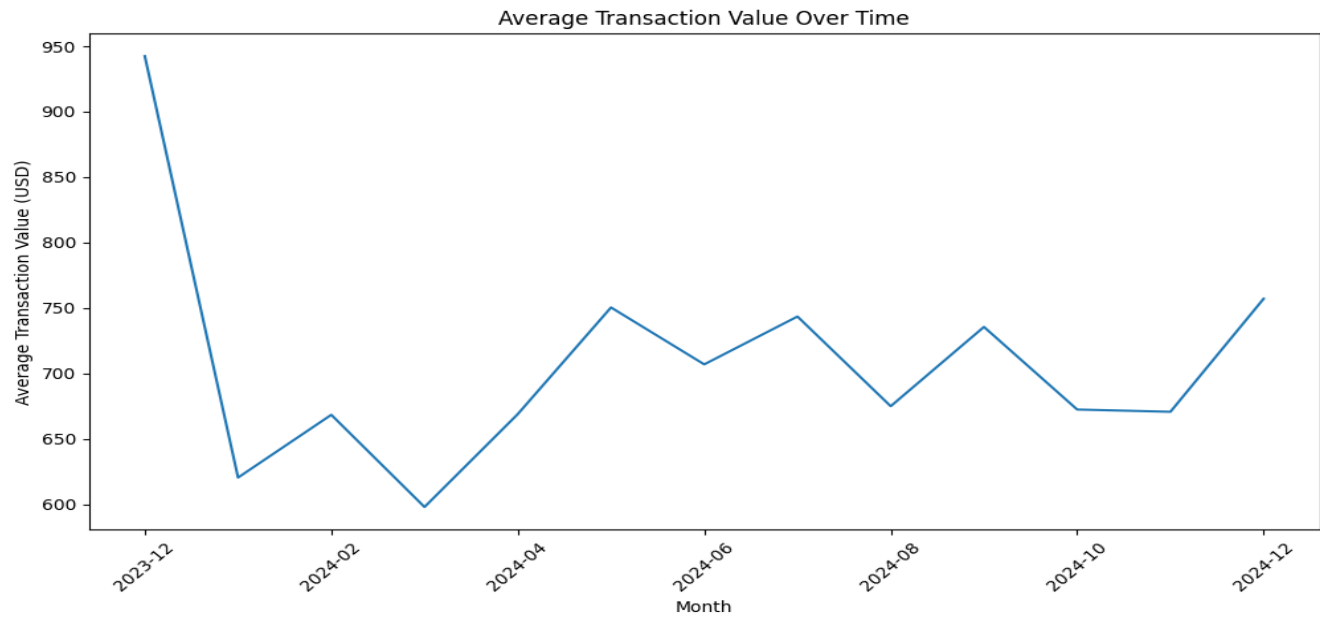
#### 4. Customer Purchase Behavior

Most customers make 3–5 purchases, indicating a loyal customer base. To increase engagement, strategies like loyalty programs or personalized offers could encourage repeat purchases.



#### 5. Seasonality Analysis

Transaction values peak in December, followed by a downward trend and fluctuations. This seasonal pattern suggests optimizing promotions during off-peak months to stabilize revenue.



## Conclusion

The analysis provides actionable insights for improving revenue distribution, enhancing customer engagement, and leveraging pricing strategies. Implementing the recommendations could significantly boost business performance.