

Introduction

There are 3 different files in the given dataset: Customers.csv, Products.csv and Transactions.csv. Each contains key information important for analyzing the customer behavior, product performance and sales patterns.

1. Customers.csv:

- **CustomerID** > Unique identifier for each customer.
- **CustomerName** > Name of the customer.
- **Region** > Geographical region where the customer resides.
- **SignupDate** > Date when the customer signed up.

2. Products.csv:

- **ProductID** > Unique identifier for each product.
- **ProductName** > Name of the product.
- **Category** > Category to which the product belongs.
- **Price** > Price of the product in USD.

3. Transactions.csv:

- **TransactionID** > Unique identifier for each transaction.
- **CustomerID** > ID of the customer who made the transaction.
- **ProductID** > ID of the product sold.
- **TransactionDate** > Date of the transaction.
- **Quantity** > Quantity of the product purchased.
- **TotalValue** > Total value of the transaction.
- **Price** > Price at which the product was sold.

To get meaningful insights from the data, I've merged the files based on shared keys such as CustomerID and ProductID. This integration allows us to link customer demographics with their transactional data and product information. This allows us to perform comprehensive analysis and build the models for customer segmentation, product recommendations and more.

Insight 1: Customer vs Revenue Distribution by Region

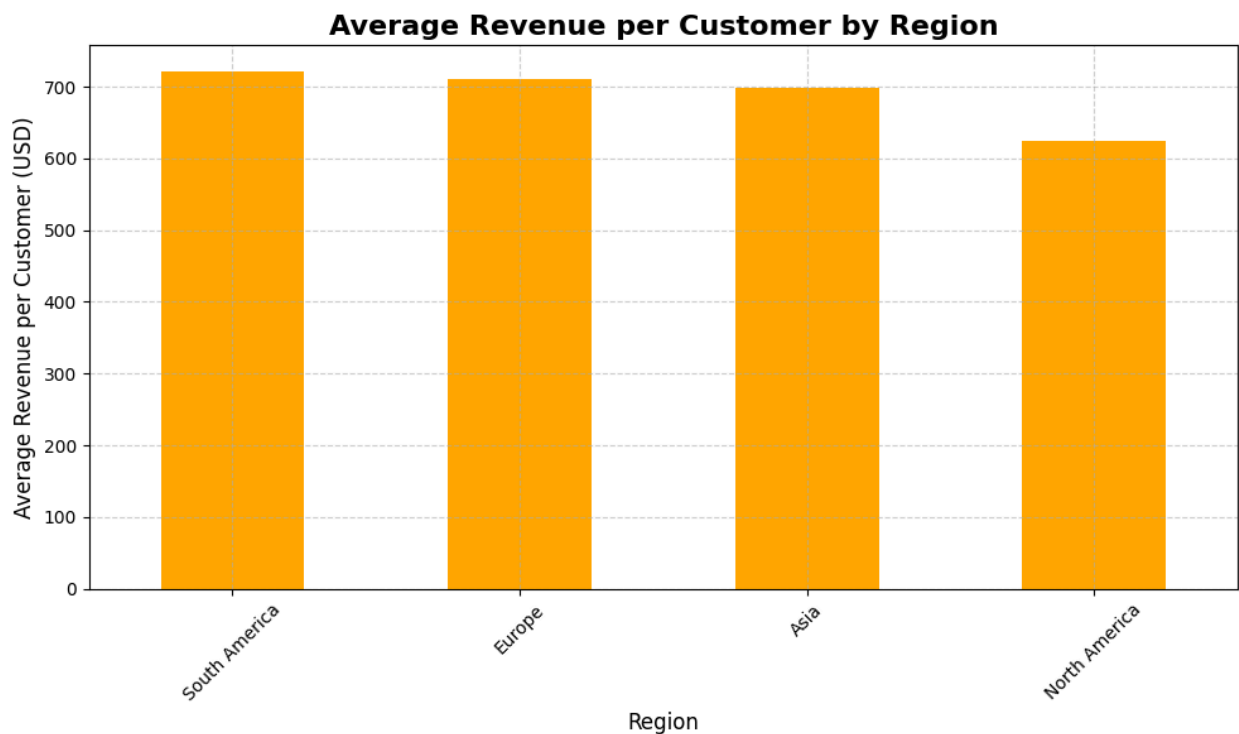


Figure 1

South America leads in both customer count and revenue. Europe has a higher average order value than North America. Revenue per customer is similar in South America, Europe, and Asia, with a significant gap compared to North America.

South America has the highest revenue and customers. Europe generates more revenue than North America despite fewer customers. Revenue per customer is nearly equal in South America, Europe, and Asia, with South America leading slightly. North America lags behind.

Expanding the customer base in Europe and Asia can drive significant revenue growth due to higher spending per customer.

Insight 3: Quarterly Revenue (Not taking Fiscal Year)

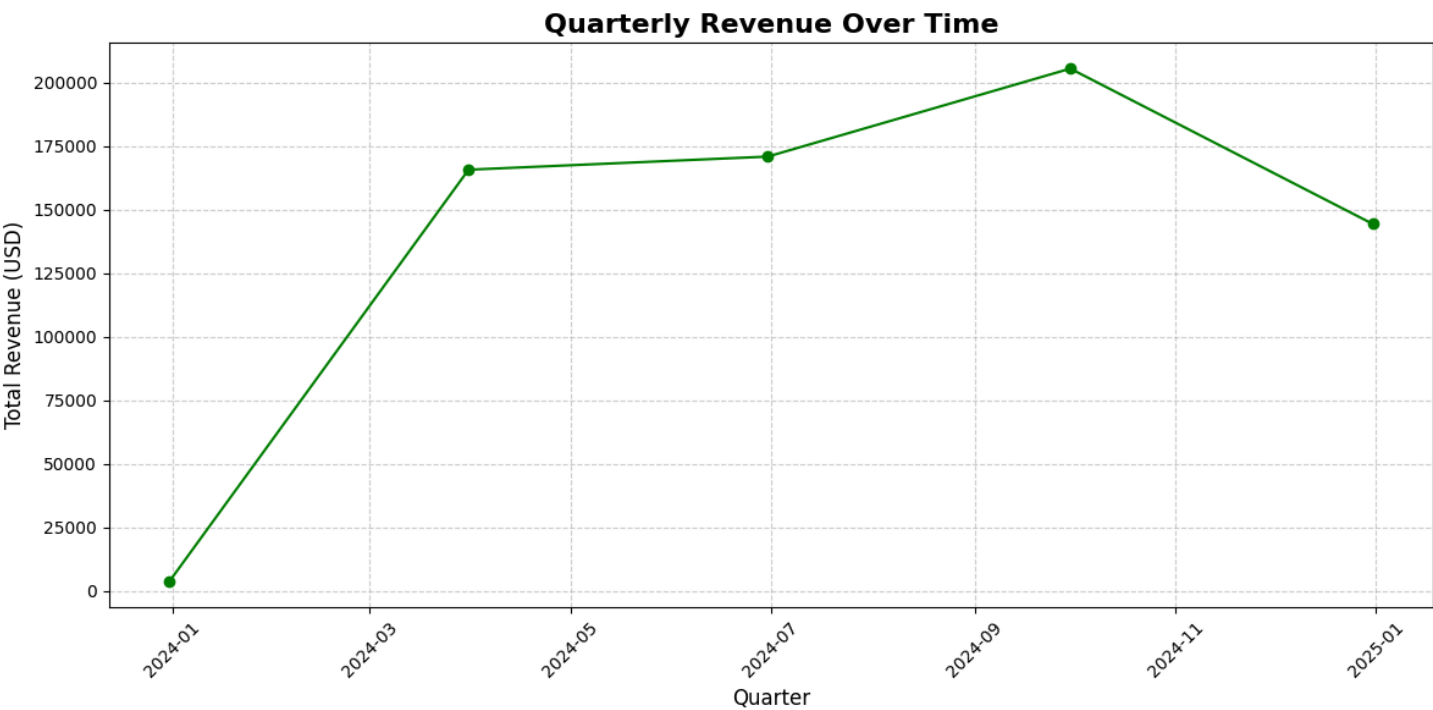


Figure 7

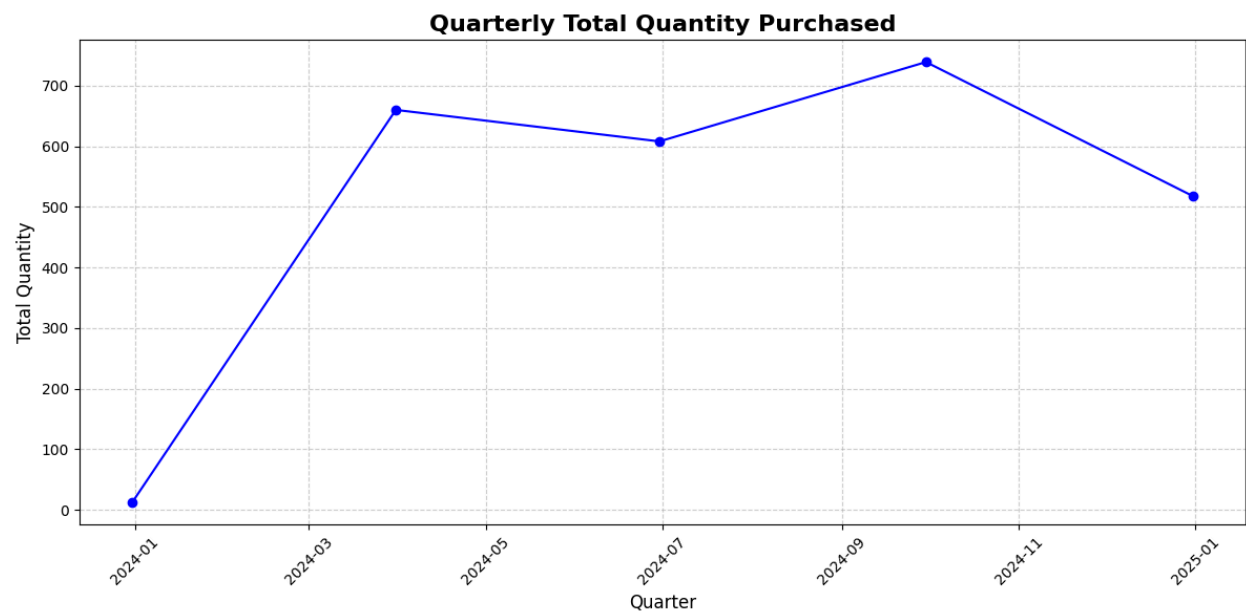


Figure 8

Revenue generally increases throughout the year but dips at the start of the new year, including January 2025, despite Christmas and New Year. This decline suggests potential issues in festive season sales performance.

The decline is not just in revenue but also in sales volume, indicating that the issue may not solely be related to discounts. The timing of the dip, despite the holiday season, suggests that other factors, such as competitor offers or ineffective promotions, could be at play.

Given the reduced sales volume, it seems more likely that competitor promotions are drawing customers away. To address this, we need to refine our festive marketing strategy and assess competitor tactics to remain competitive and drive higher sales during this critical period.

Insight 3: Revenue Contribution by Category

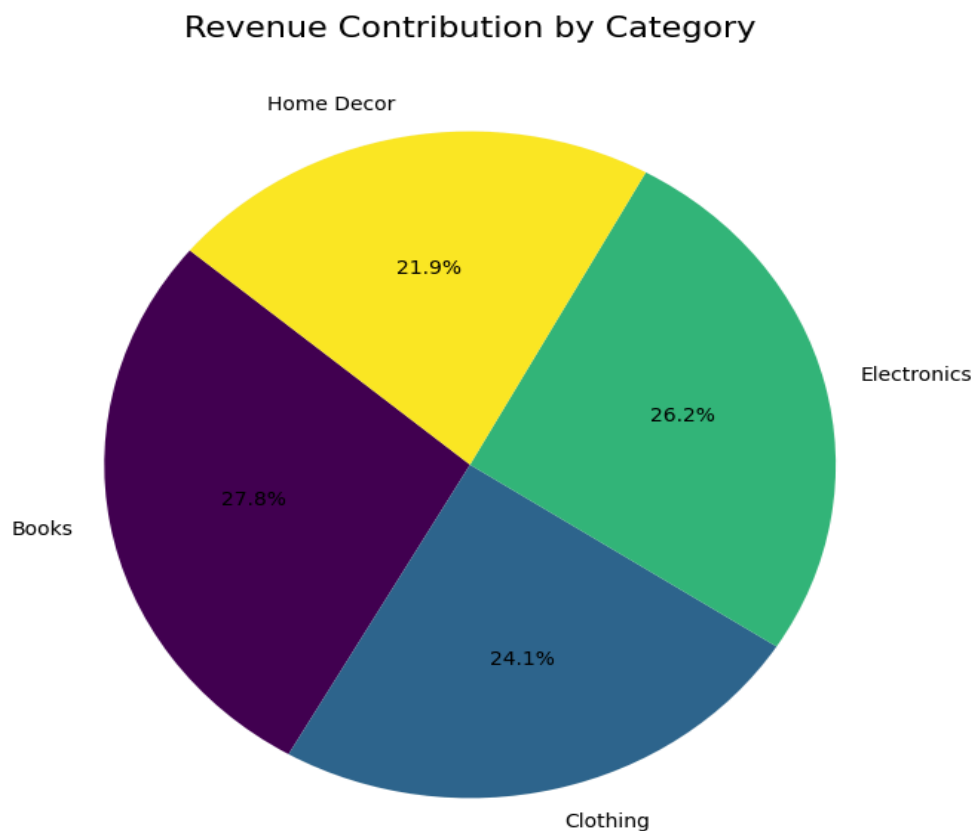


Figure 10

The revenue distribution across regions is fairly consistent, with Home Decor contributing about 22%, Electronics around 26%, Books making up 28%, and Clothing at 24%.

However, when we see the revenue distribution region wise, we have different observations.

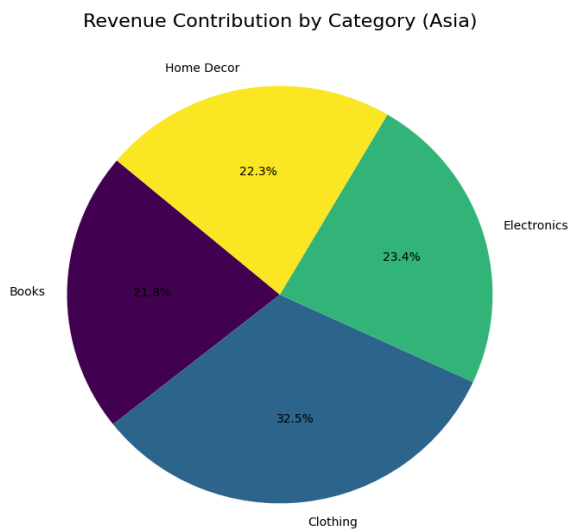


Figure 11

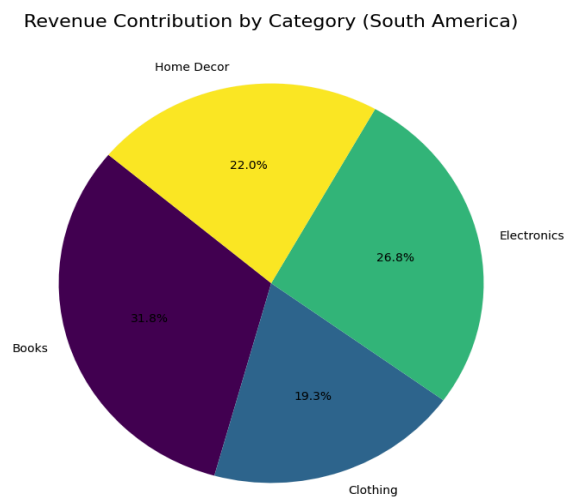


Figure 13

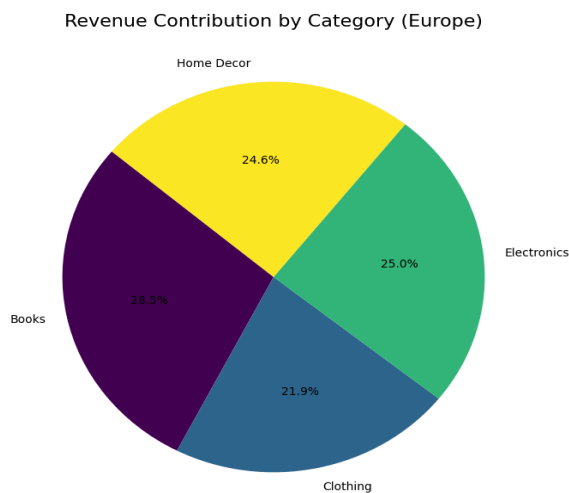


Figure 12

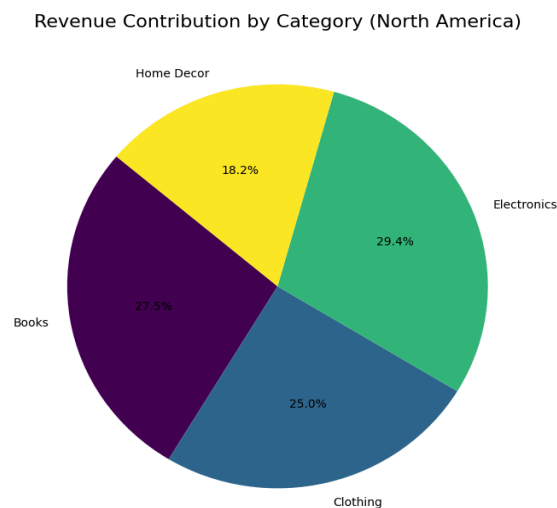


Figure 14

Region-wise analysis reveals significant differences in product preferences. Certain regions exhibit higher revenue contributions from specific categories, while others deviate from the overall trend.

Insight 4: Customer Retention

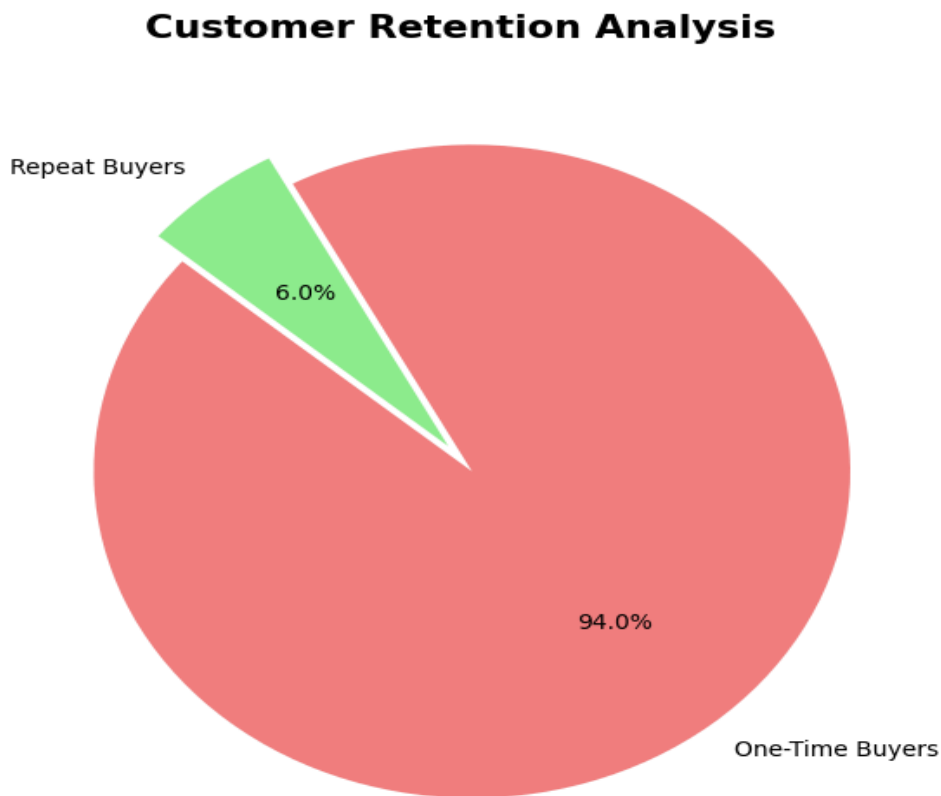


Figure 9

There is very low overall customer retention throughout our products. Indicating that our products attract customers and make them purchase our products initially but they don't keep customers coming back. This shows we need to improve to encourage repeat sales and loyalty.

The low retention rate suggests that customers might not feel loyal to the products or brand. This could be because we aren't engaging with them enough after they make a purchase, or there aren't enough rewards to encourage repeat buying.

We should focus on implementing strategies to increase customer loyalty. This could include introducing loyalty programs, personalized follow-up offers, and incentives for repeat purchase.

Insight 5: Top Products Sold by quantity

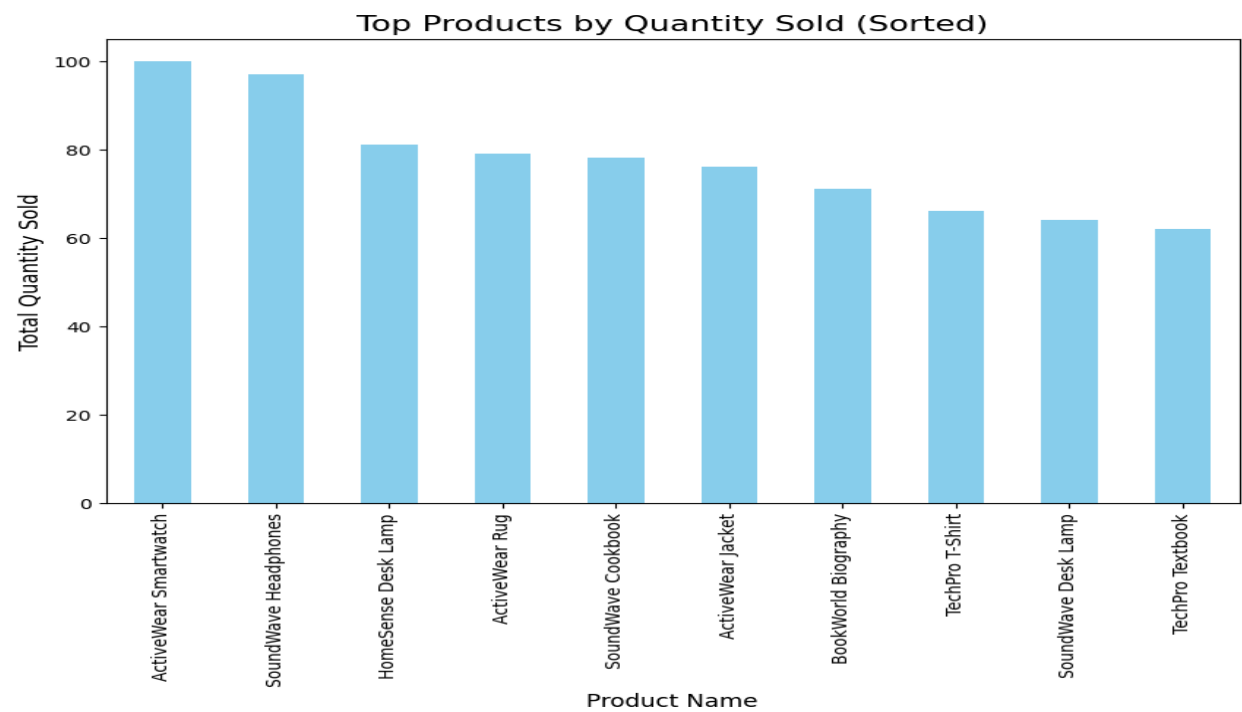


Figure 2

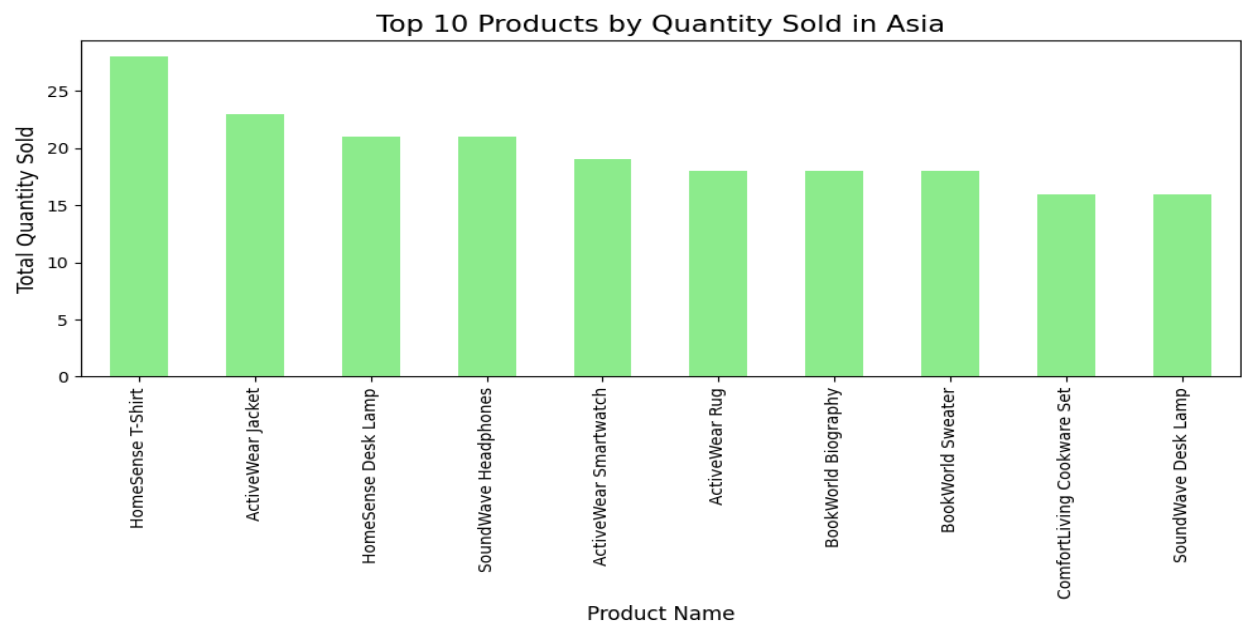


Figure 3

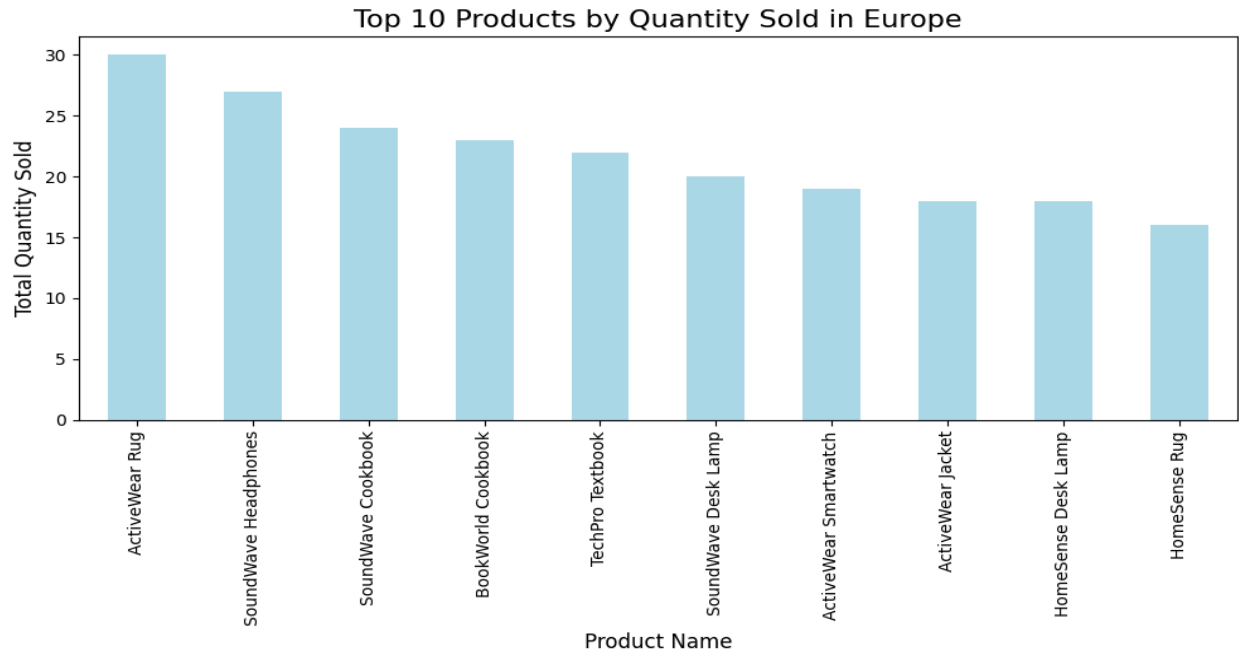


Figure 4

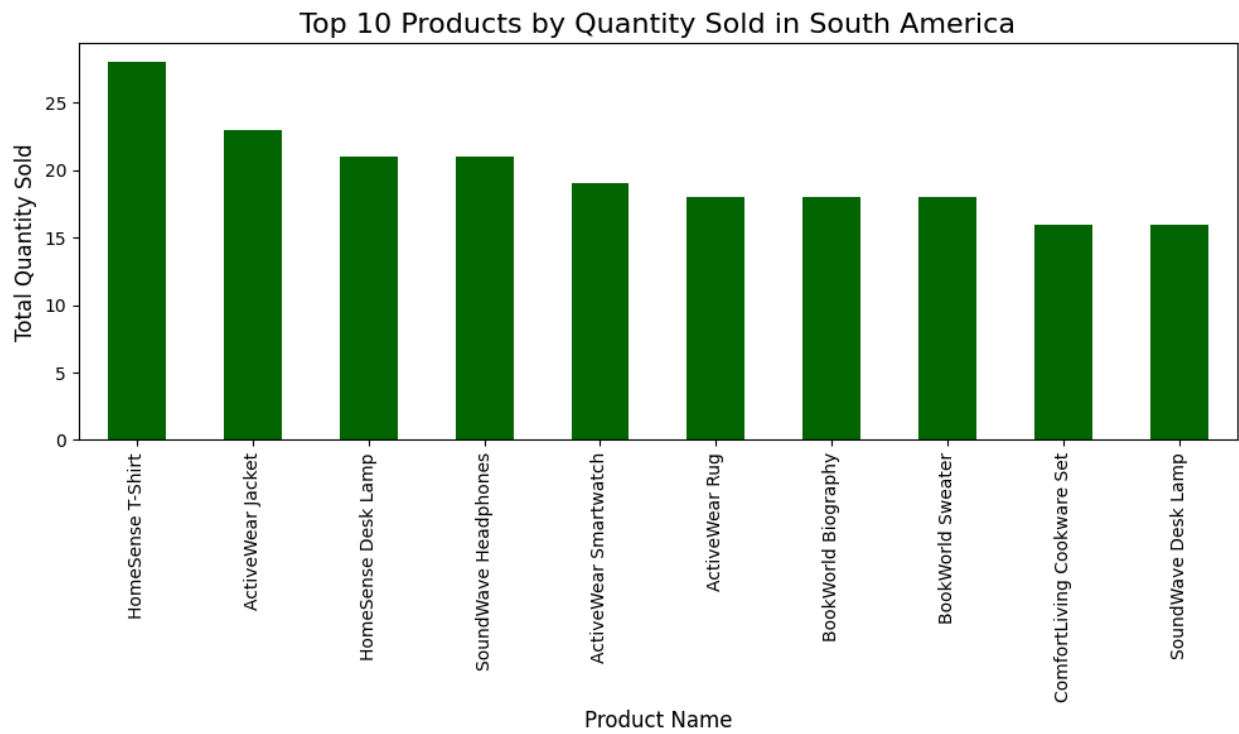


Figure 5

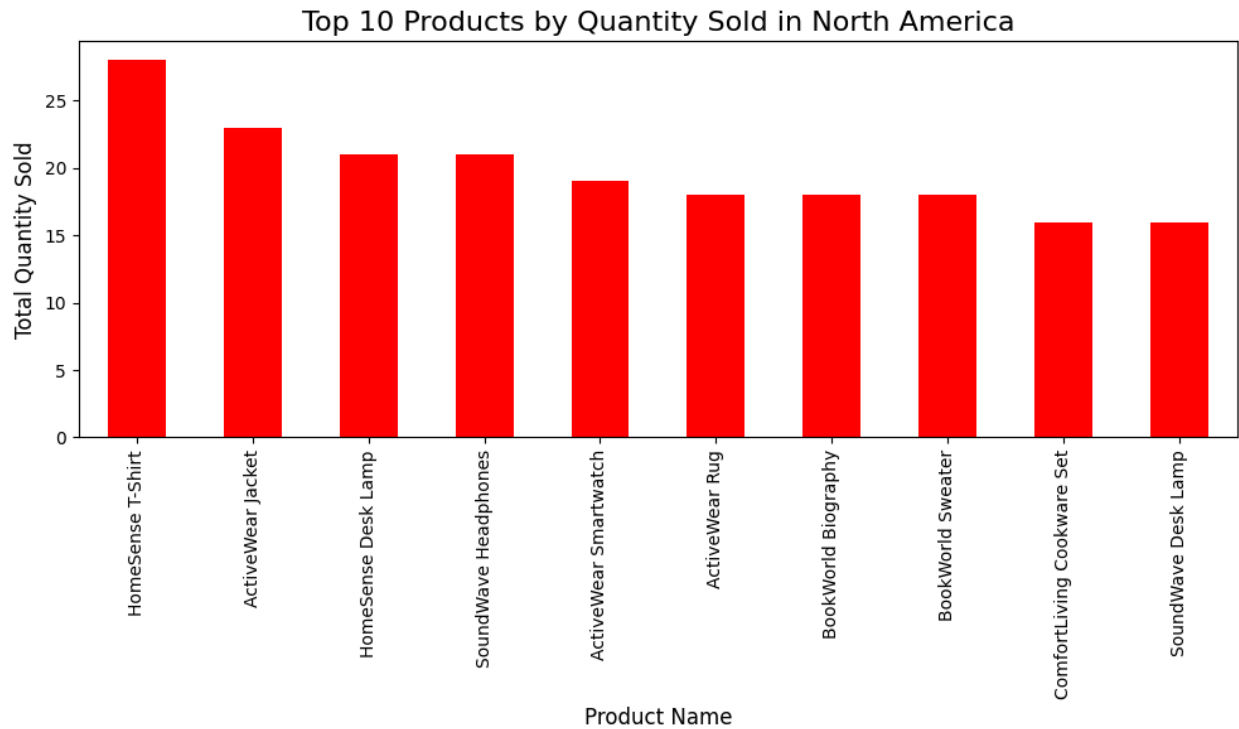


Figure 6

Active Wear Smartwatch and Sound Waves Headphones are the top 2 products globally and rank in the top 5 in every region except Europe, where they are less popular. Similarly, Home Sense T-Shirt is a top product in all regions except Europe, where it does not even make the top 10. The North and South American markets exhibit similar trends.

The European market has distinct preferences, requiring a tailored marketing and sales strategy compared to other regions.