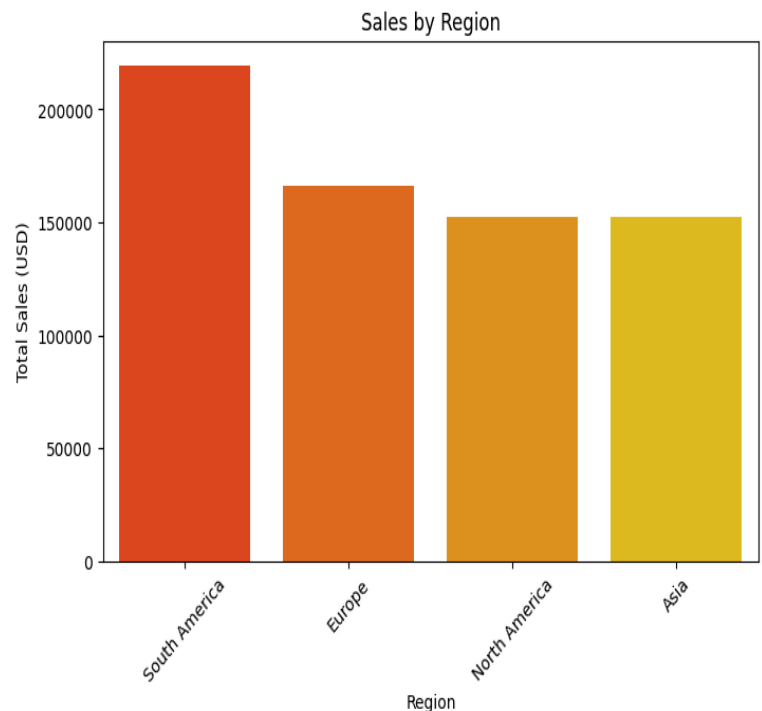
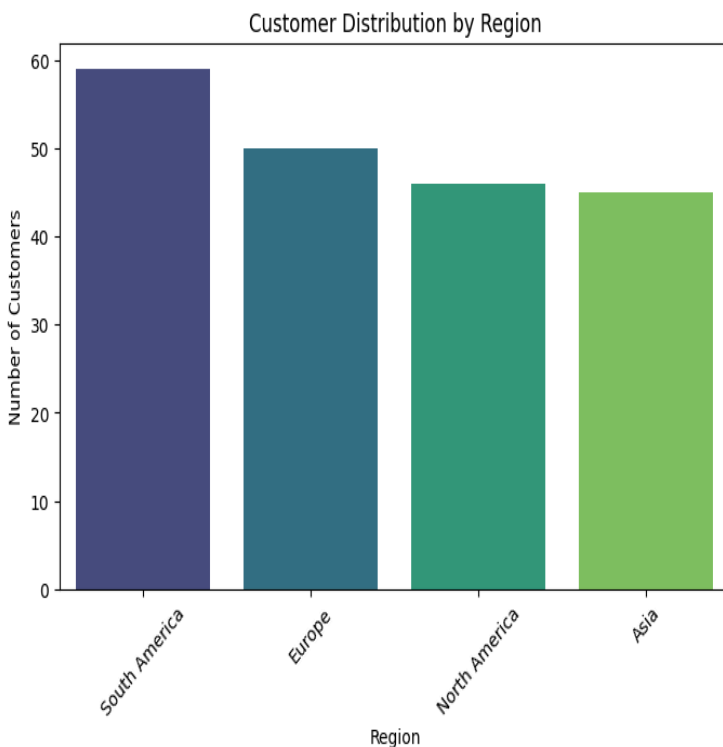


Task 1: Exploratory Data Analysis (EDA) and Business Insights

Submitted by : Sushant Chivale

This report summarizes the results of an exploratory data analysis conducted on an eCommerce dataset. The primary objective is to uncover meaningful business insights that can guide strategic decisions and drive revenue growth. The analysis identifies key patterns in customer behavior, product popularity, and regional performance.

1. Regional Market Dynamics :



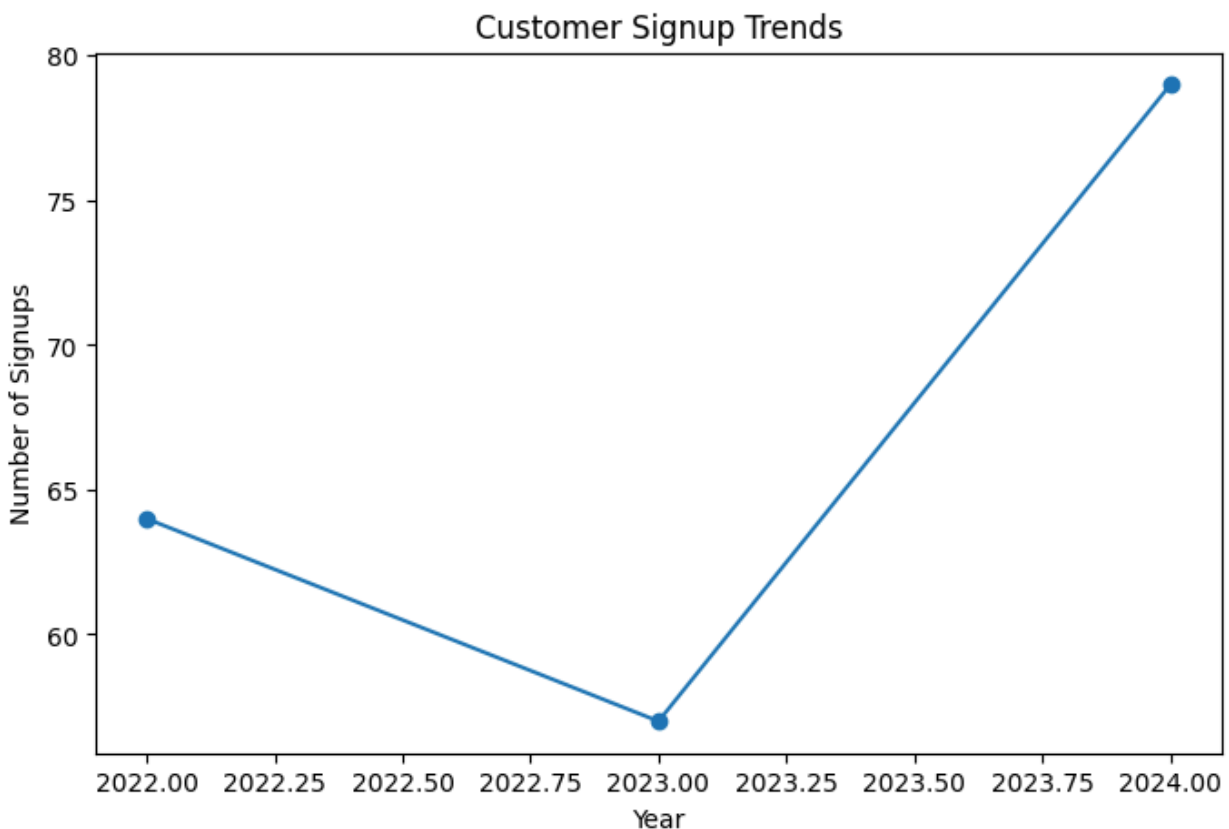
- ★ Region with Most Customers : South America
- ★ Region generating highest sales: South America

As we can observe from the plots , South America emerges as the leading market with approximately 58 customers and the highest sales volume (~220,000 USD), despite similar customer counts across regions. This suggests:

- Higher average purchase values in South America

- Potential for replicating South American success factors in other regions
- Opportunity to increase customer lifetime value in other regions. Should analyze South American market strategies for potential application in other regions.

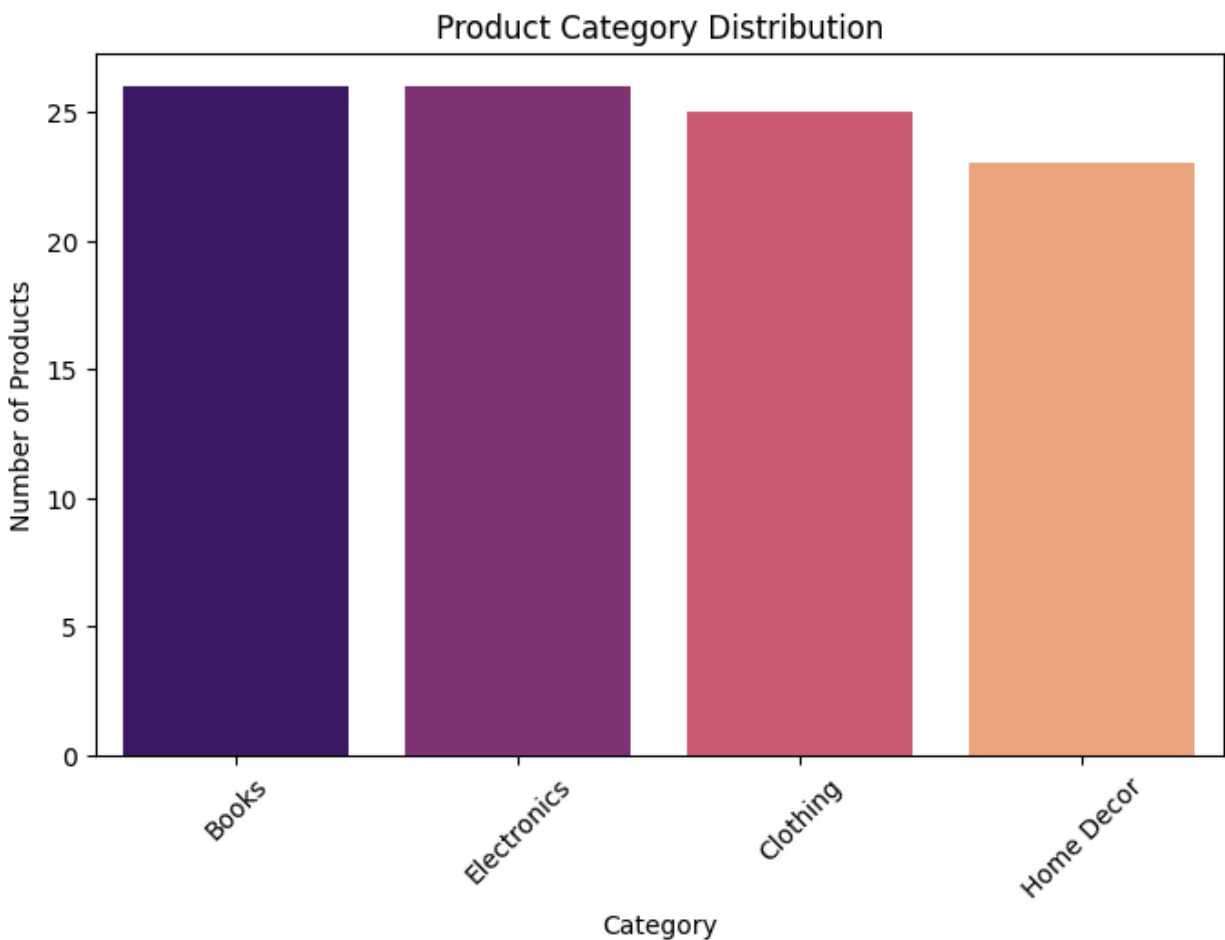
2. Customer Growth Trajectory



As we can see from the plot the customer signup trend shows a significant upward trajectory from 2023 to 2024 (57 to 79 signups), following an initial decline from 2022 to 2023. This indicates:

- Successful recent customer acquisition strategies
- Potential market expansion or effective marketing campaigns
- Strong growth momentum entering 2024.
- So, the positive thing is that overall signup has increased but should investigate the cause of the dip in 2023 (potential market saturation, seasonal variations) and adjust campaigns to ensure consistent year-over-year growth.

3. Product Category Balance

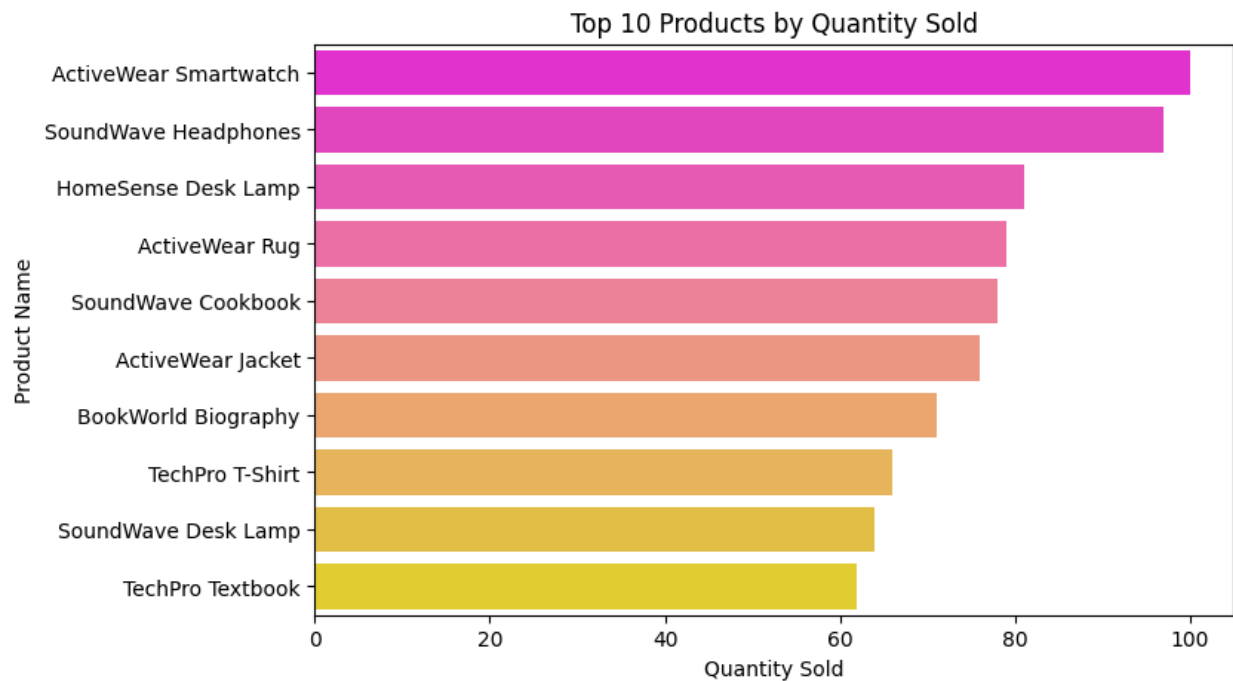


The product portfolio shows relatively even distribution across categories (Books: 26, Electronics: 26, Clothing: 25, Home Decor: 23), which suggests :

- Well-balanced inventory management
- Diverse revenue streams
- Cross-selling opportunities across categories . Can develop cross-category bundling strategies to increase average order value.

4. Product Performance Patterns

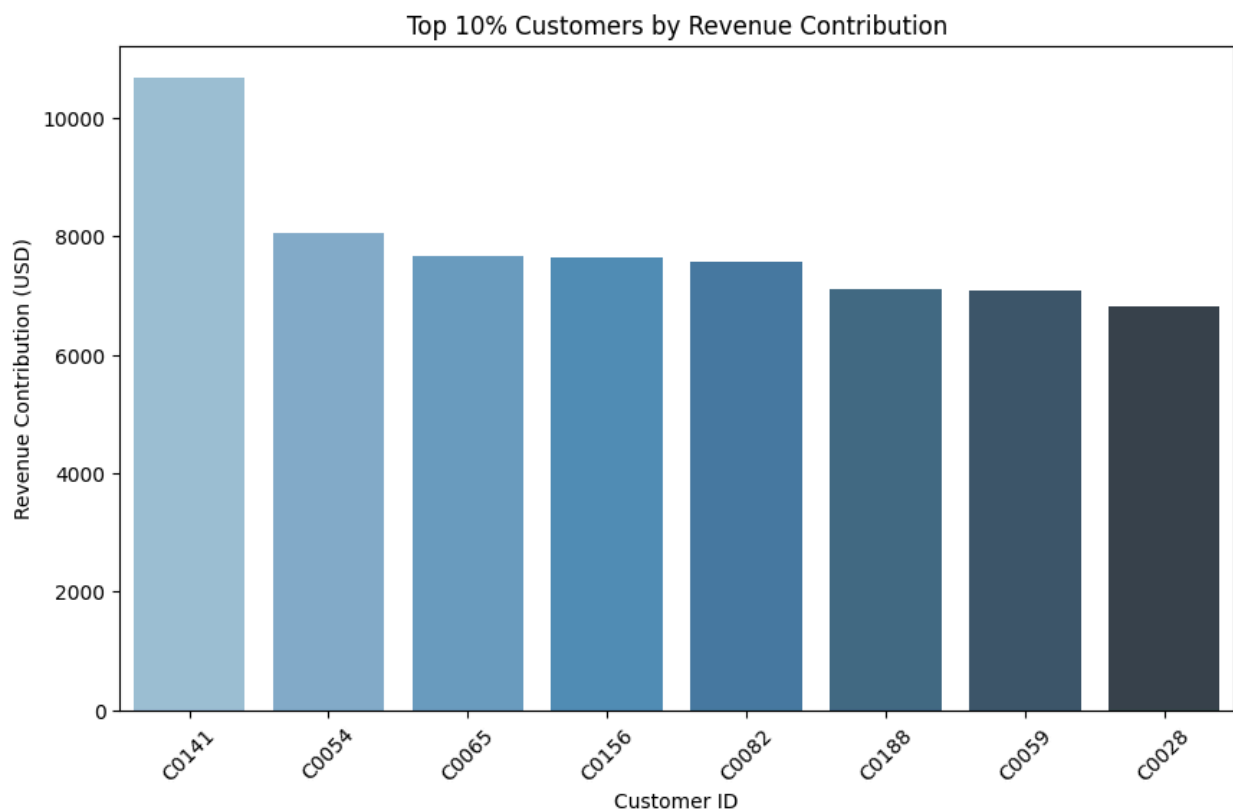
- ❖ Product with highest sales quantity: ActiveWear Smartwatch.
- ❖ Most profitable product: ActiveWear Smartwatch



Top-selling products reveal interesting patterns:

- Technology products (ActiveWear Smartwatch, SoundWave Headphones) lead sales
- Lifestyle products feature prominently in top sellers
- Mix of high-tech and traditional products in top 10 **Recommendation:** Focus inventory and marketing efforts on tech-lifestyle fusion products

5. Revenue Concentration Risk



Analysis of top customers shows significant revenue concentration:

- Customer C0141 contributes over 10,000 USD, significantly higher than others
- Sharp decline in contribution after top customer
- Top 8 customers show graduated decrease in spending **Recommendation:** Develop customer retention strategies for high-value customers while working to elevate mid-tier customers.
- Top 10% customers contribute 9.07% of total revenue.

- The top 10% of customers significantly contribute to overall revenue. These high-value customers (as shown by their revenue contributions) span different regions, including Asia, North America, South America, and Europe.

Strategic Implications

1. **Market Development:**

In this we can prioritize the American market expansion and more importantly develop the targeted marketing campaigns for underperforming regions like Asia

2. **Product Strategy:**

Could increase focus on tech/lifestyle product development and also provide bundle offerings as two products are sold equally.

3. **Customer Management:**

Should Implement tiered loyalty programs as some of the customers are consistent.

Conclusion

The analysis reveals a healthy business with strong regional variation, growing customer base, and balanced product mix. Key opportunities lie in regional market optimization, tech-lifestyle product focus, and customer tier development.