

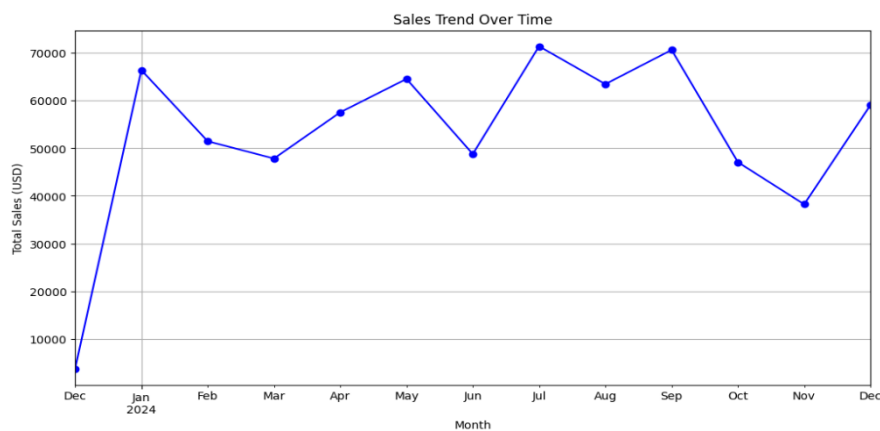
Data Science Intern Assignment | Zeotap

Task1: Exploratory Data Analysis and Insights Derived

1. Sales Trend Over Time

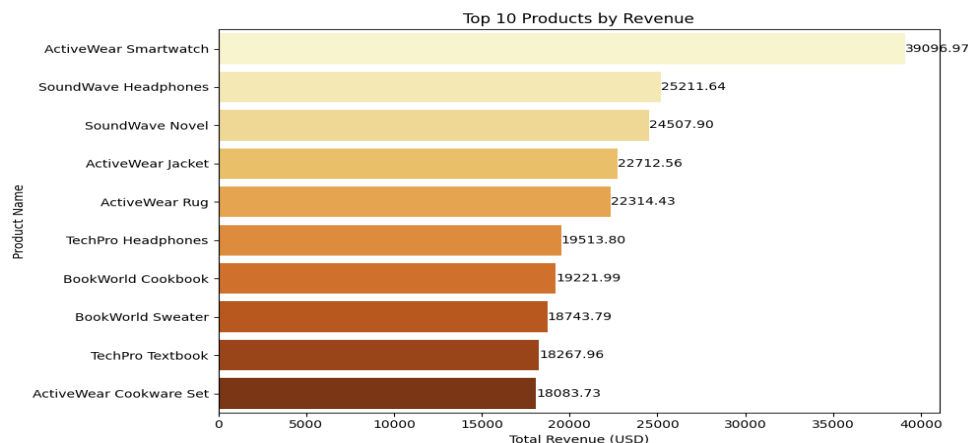
. Sales Trend Over Time

- **Description:** A line graph showing monthly total sales trends.
- **Key Insights:**
 - Sales peaked in **June** and **September**, reaching over 70,000 units.
 - There is a significant drop in sales during **February** and **November**.
 - December shows recovery, indicating possible seasonal sales patterns.



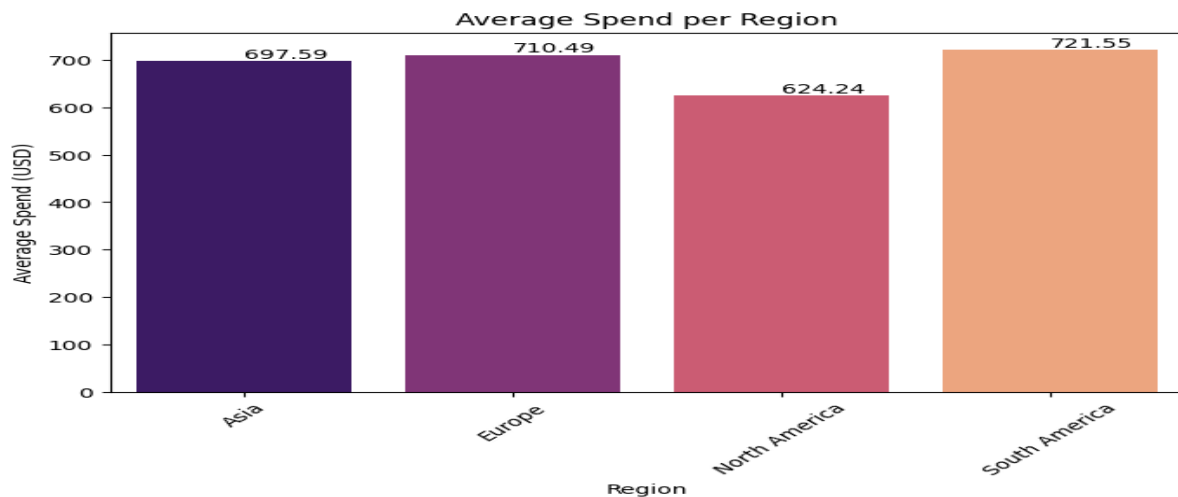
2: Top 10 Product by Revenue:

- **Description:** A horizontal bar chart ranking products by revenue.
- **Key Insights:**
 - The **ActiveWear Smartwatch** is the top-performing product, generating \$39,096.97 in revenue.
 - **SoundWave Headphones** and **SoundWave Novel** are also major contributors, exceeding \$24,000 in revenue each.
 - Products related to **tech and activewear** dominate the top 10.



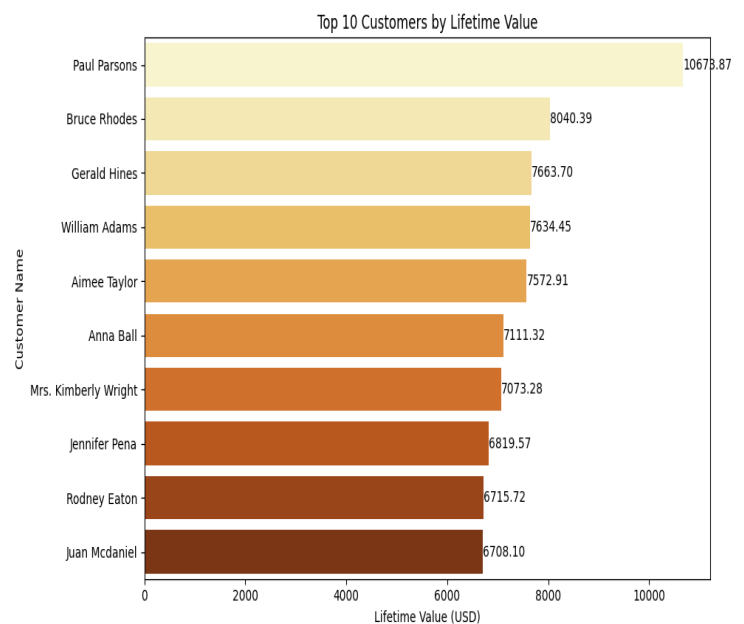
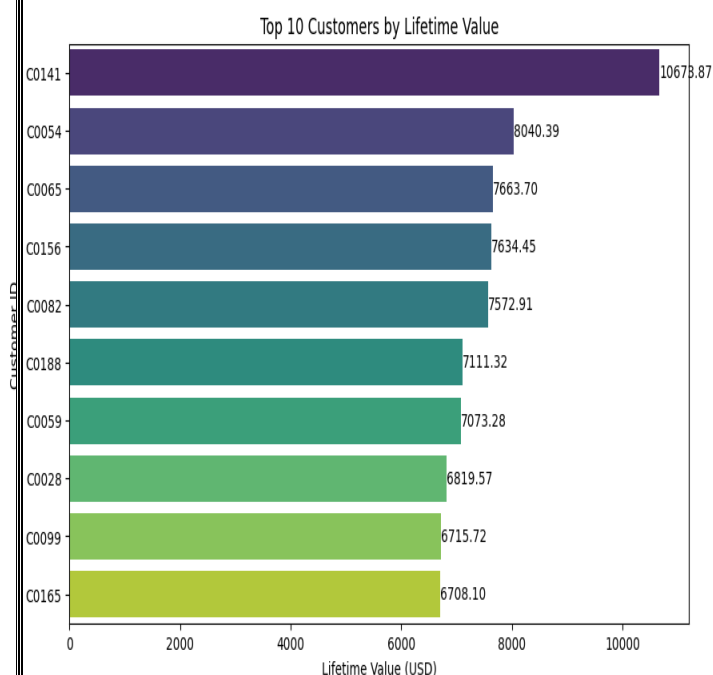
3. Average Spend per Region

- **Description:** A bar chart showing the average customer spend across regions.
- **Key Insights:**
 - Customers in **South America** have the highest average spend (\$721.55), followed closely by **Europe** (\$710.49).
 - **North America** and **Asia** have comparatively lower average spends, but they remain close to \$700.



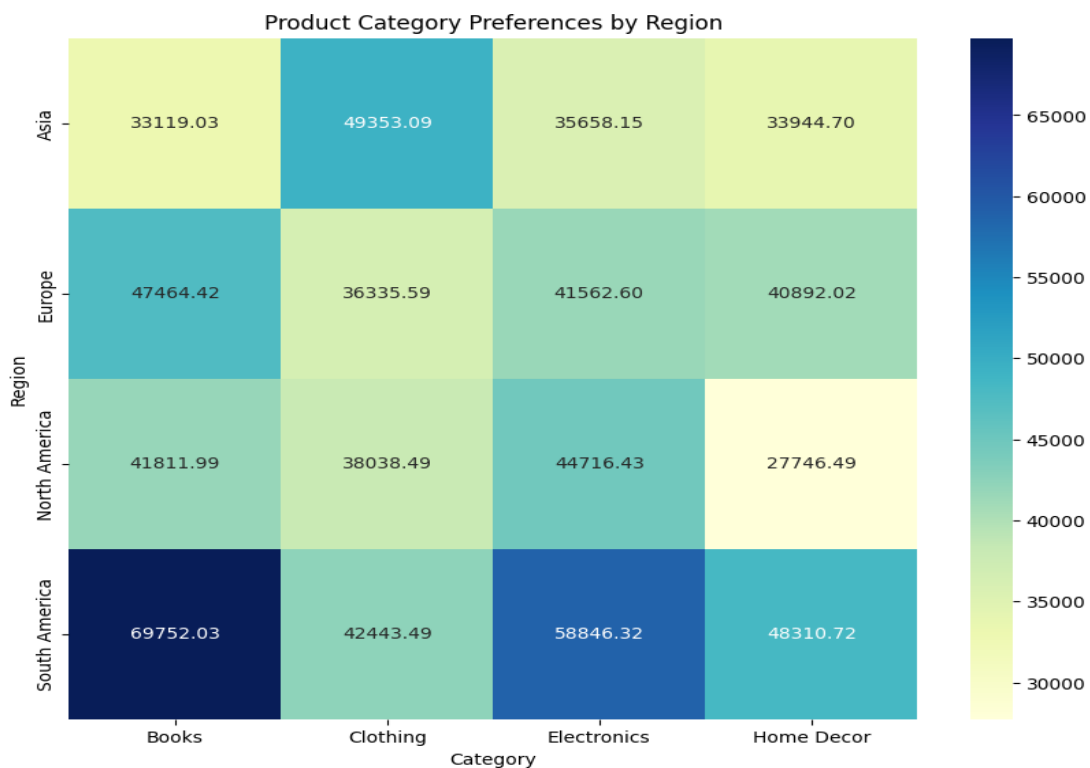
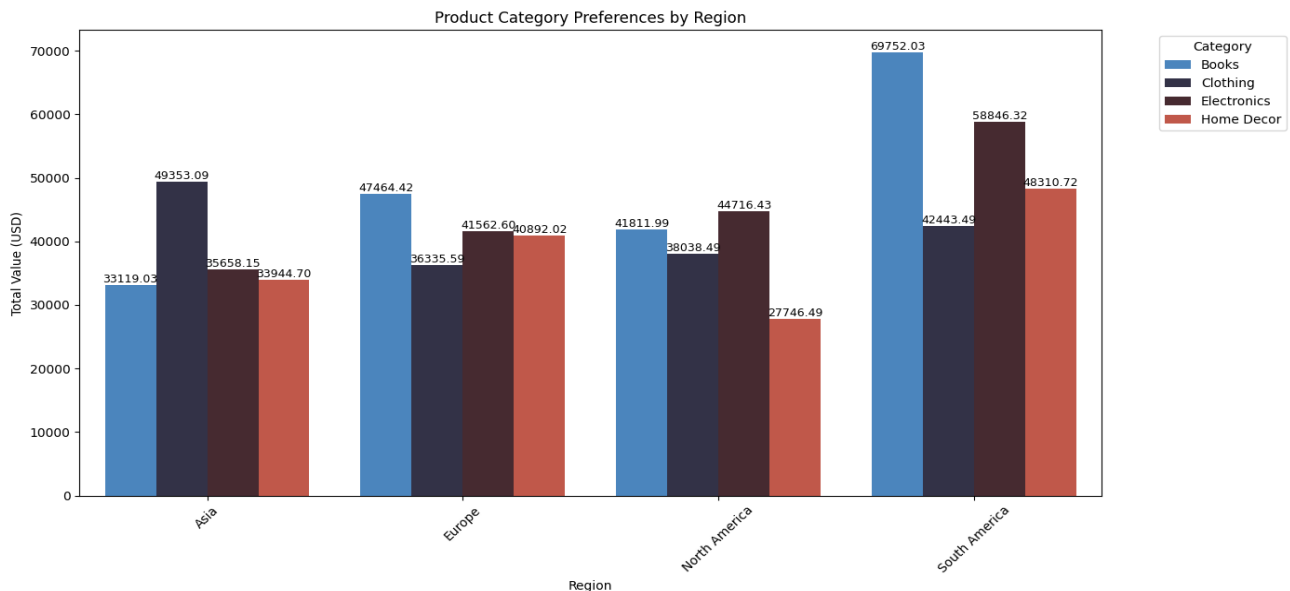
4. Top 10 Customers by Lifetime Value

- **Description:** A horizontal bar chart ranking customers by their lifetime value (total spending).
- **Key Insights:**
 - The top customer (ID **C0141**) has a lifetime value of **\$10,678.87**, significantly higher than the rest.
 - There is a gradual decline in lifetime values among the top 10 customers, but all exceed **\$6,700**.



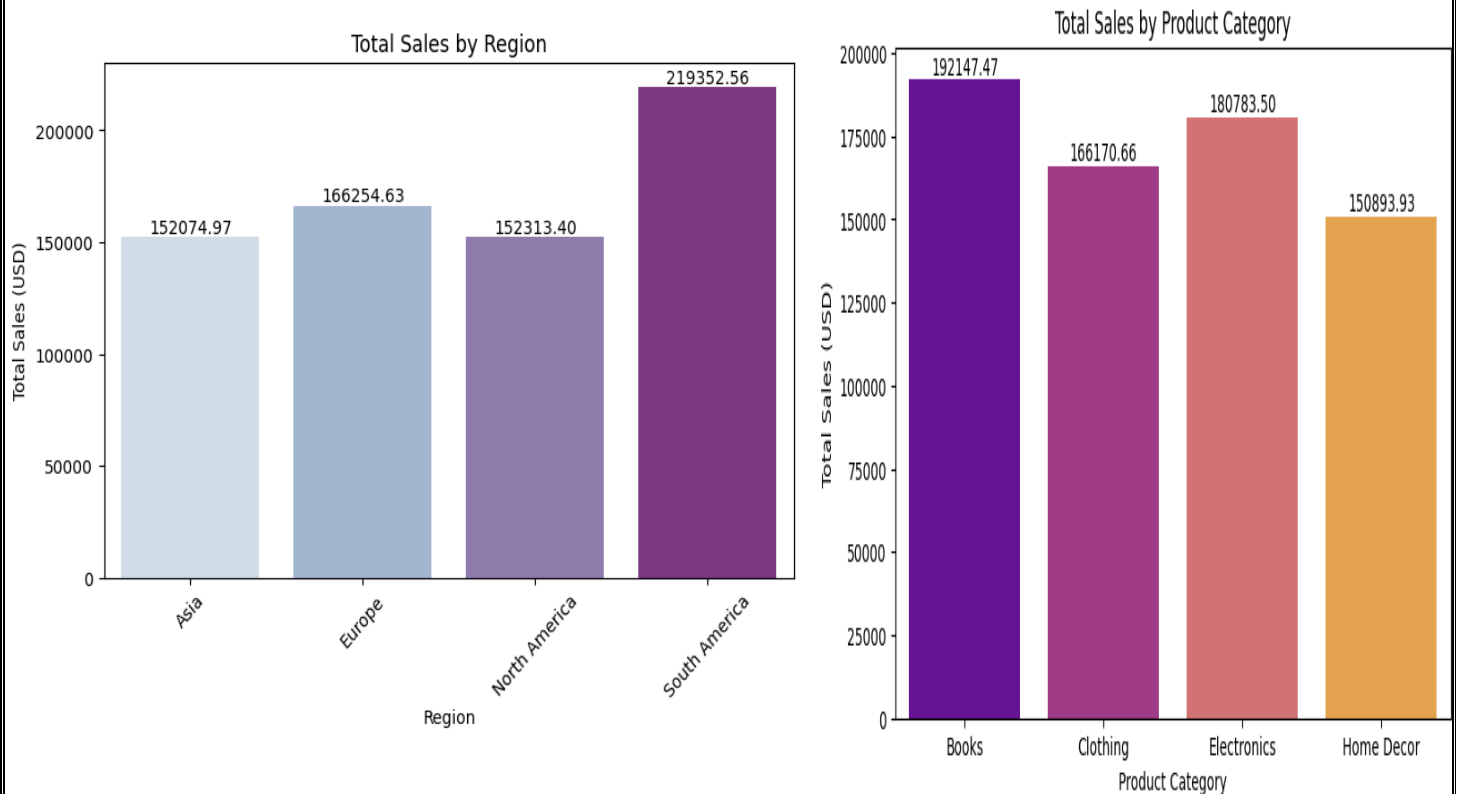
5. Products Category Preferences by Region:

- **Description:** A Heatmap and horizontal bar chart ranking Products that are more used by the regions.
- **Key Insights:**
 - All the products have shown a great impact on generating revenues by the regions but overall Books have played a major role .
 - There is a huge demand in the regions of South America followed by Europe and both North America and Asia seems to be equally contributing to the revenue generation.



General Observations

- **High-Performing Products:** Tech and activewear products are the biggest revenue drivers, suggesting a focus on these categories could further boost sales.
- **Regional Spending:** South America and Europe show strong customer engagement, and targeted marketing in these regions could maximize returns.
- **Customer Loyalty:** A small percentage of customers (top 10) generate substantial revenue, emphasizing the importance of loyalty programs and retention strategies.



Conclusion

1. **Sales Trends:**
 - Sales exhibit seasonal patterns, with noticeable peaks in June and September.
 - Efforts should be made to understand what drives these peaks (e.g., promotions, product launches) and replicate successful strategies during off-peak months.
2. **Top Products:**
 - The **ActiveWear Smartwatch** and other tech and activewear products dominate revenue, indicating strong customer demand for these categories.
 - Investment in expanding these product lines or cross-promoting similar products could yield significant returns.
3. **Regional Insights:**
 - Customers in **South America** and **Europe** spend the most on average, making these regions ideal for targeted campaigns or premium offerings.

- North America and Asia, while slightly lower in average spend, still show strong engagement and should not be overlooked.

4. Customer Value:

- A small group of high-value customers (top 10) contributes disproportionately to revenue.
- Implementing loyalty programs and personalized offers for these customers could further enhance retention and spending.

5. Actionable Insights:

- Focus marketing efforts and promotions during peak months and replicate successful campaigns in low-sales periods.
- Prioritize high-demand categories like tech and activewear for inventory and advertising investments.
- Strengthen customer retention strategies, particularly for high-value customers, by offering rewards, early access to sales, or exclusive deals.

This analysis highlights opportunities for revenue growth through strategic marketing, product expansion, and customer engagement.

...Thank You...

Rajkumar Pal