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

Five Business Insights are:

Insight 1: Sales by Region

The total sales across different regions are varied, with South America leading the charge. The breakdown of total sales by region is as follows:

- South America: 219,352.56
- Europe: 166,254.63
- North America: 152,313.40
- Asia: 152,074.97

South America shows a clear dominance in total sales, contributing significantly more than any other region. Europe, North America, and Asia follow with slightly more balanced sales figures, with North America and Asia showing similar performance.
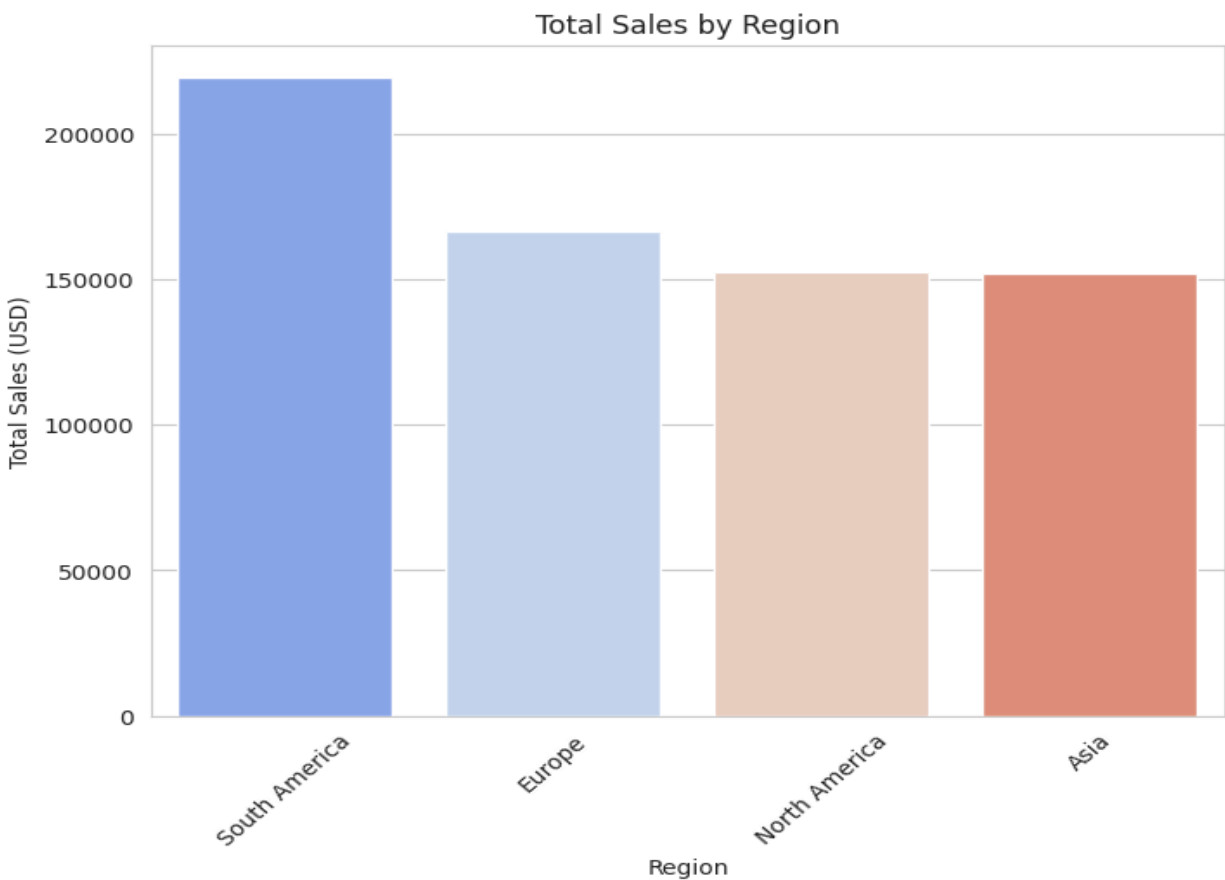
Insight 2: Top 10 Products by Quantity Sold

The product analysis reveals which items have been the most popular in terms of quantity sold. The top 10 products are:

- ActiveWear Smartwatch: 100 units
- SoundWave Headphones: 97 units
- HomeSense Desk Lamp: 81 units
- ActiveWear Rug: 79 units
- SoundWave Cookbook: 78 units
- ActiveWear Jacket: 76 units
- BookWorld Biography: 71 units
- TechPro T-Shirt: 66 units
- SoundWave Desk Lamp: 64 units
- TechPro Textbook: 62 units

ActiveWear products, including the Smartwatch, Rug, and Jacket, dominate the sales. Additionally, SoundWave electronics like Headphones and Desk Lamps also perform well, indicating strong demand for both wearable and tech accessories.


Top 10 Products by Quantity Sold
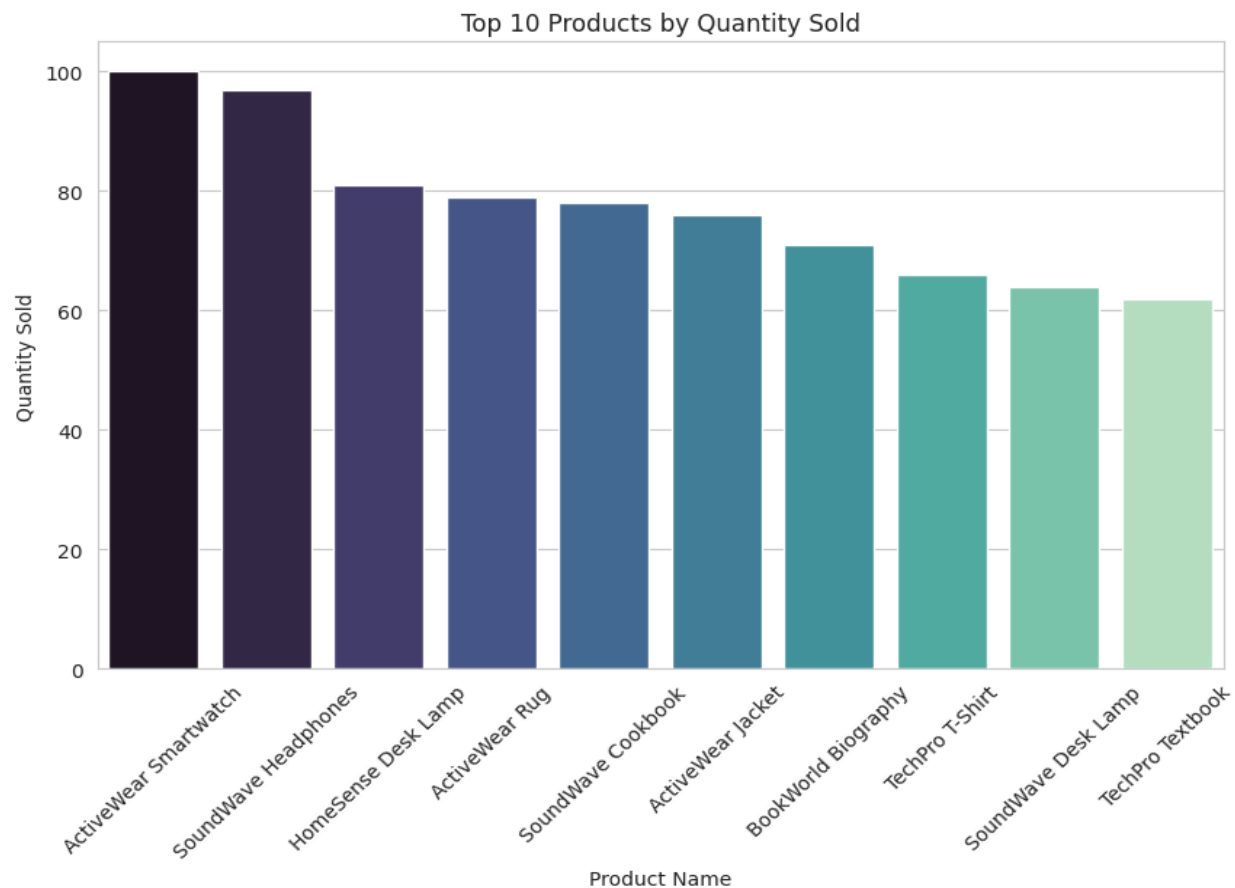
Insight 3: Monthly Sales Trend

The sales trend over the months shows fluctuations, with significant peaks in certain months. The trend is as follows:

- December 2023: 3,769.52
- January 2024: 66,376.39
- February 2024: 51,459.27
- March 2024: 47,828.73
- April 2024: 57,519.06
- May 2024: 64,527.74
- June 2024: 48,771.18
- July 2024: 71,366.39
- August 2024: 63,436.74
- September 2024: 70,603.75
- October 2024: 47,063.22
- November 2024: 38,224.37
- December 2024: 59,049.20

The highest sales were observed in July (71,366.39) and January (66,376.39). The sales dropped significantly in November 2024 (38,224.37), showing a seasonal or cyclical pattern that may be influenced by various external factors, such as consumer behavior and market events.
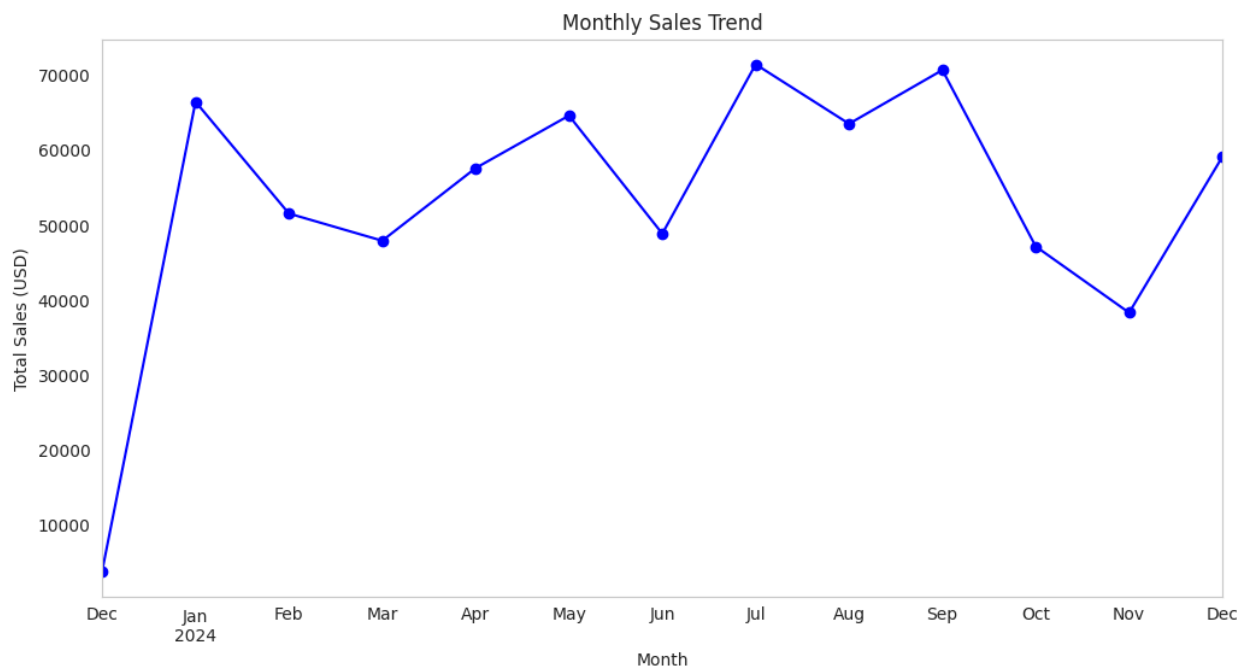
Insight 4: Average Quantity Per Transaction by Region

Analyzing the average quantity sold per transaction by region gives insight into buying patterns. The regions with the highest average quantity per transaction are:

- South America: 2.60 units
- Asia: 2.57 units
- Europe: 2.54 units
- North America: 2.43 units

South America stands out with the highest average quantity per transaction, suggesting that customers in this region tend to purchase more per order. This contrasts with North America, where customers tend to buy fewer units per transaction.
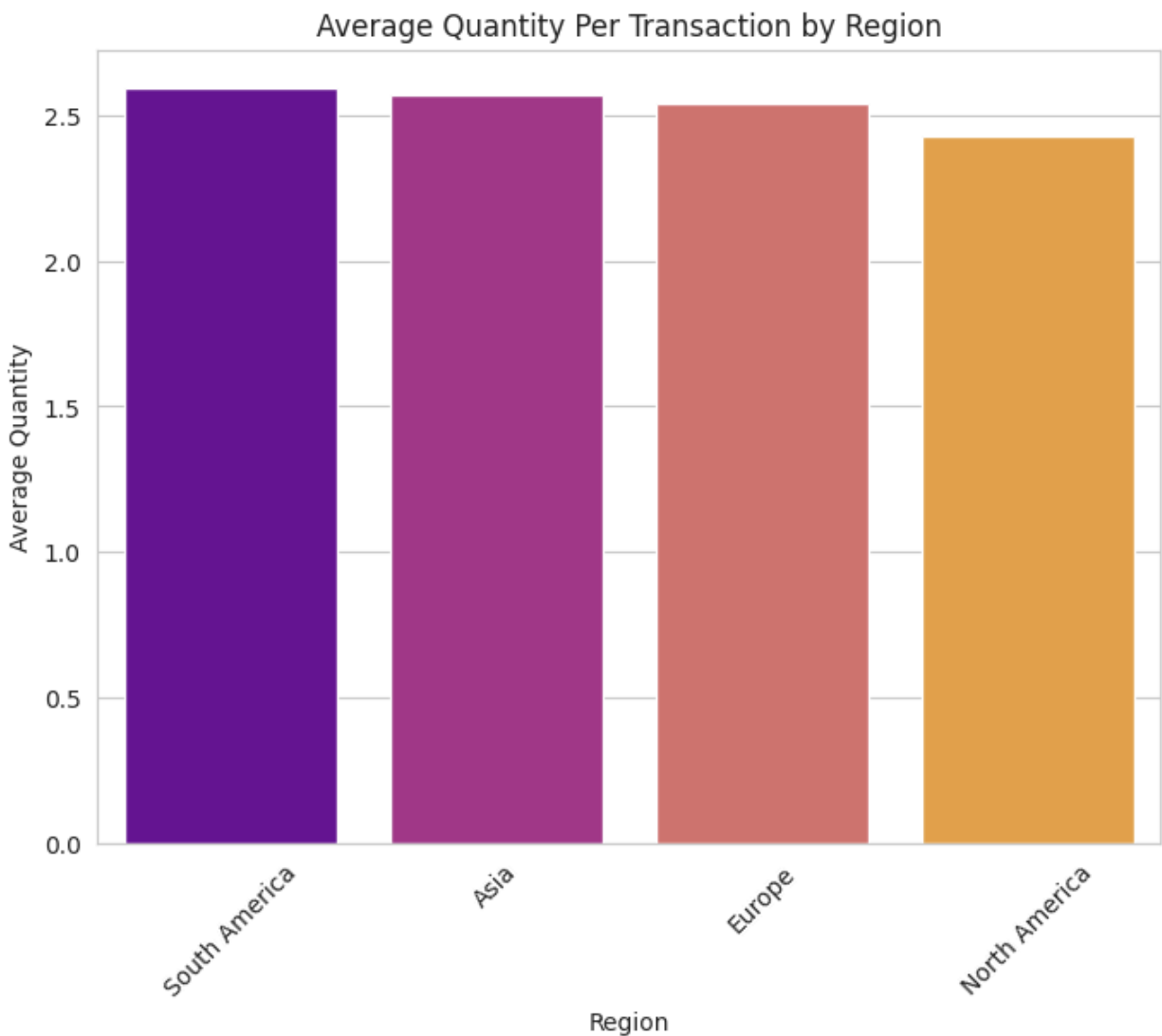
Insight 5: Category Contribution to Revenue

Revenue generation varies across product categories:

- Books: 192,147.47
- Electronics: 180,783.50
- Clothing: 166,170.66
- Home Decor: 150,893.93

Books lead in revenue, followed by Electronics. The strong performance of the Book category indicates that it is a major revenue driver, while Electronics and Clothing also show significant contributions. Home Decor, though contributing the least, still plays a notable role in overall revenue generation.
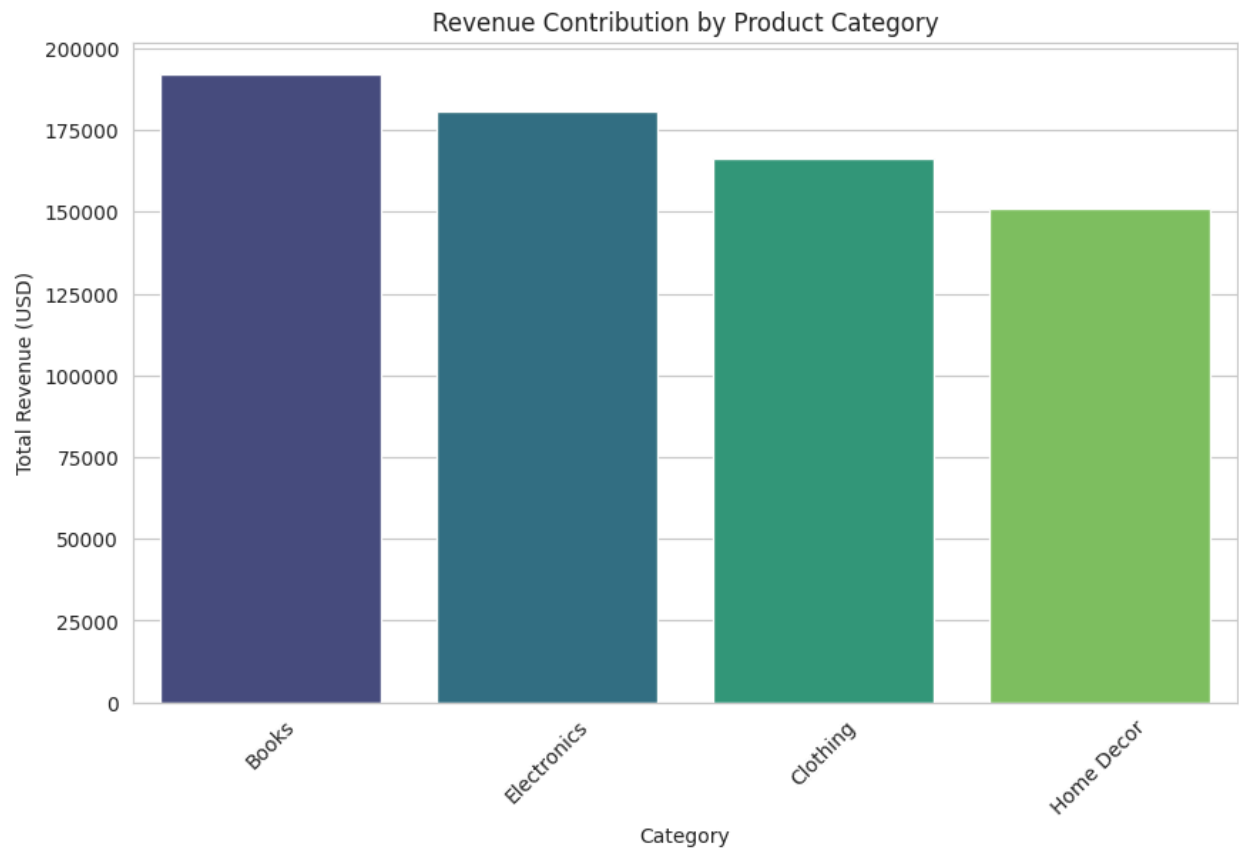
In conclusion, South America has the highest sales, with significant product demand for ActiveWear and SoundWave products. The sales are strongest in certain months, especially in the middle of the year, while the average quantity per transaction suggests buying patterns are highest in South America. The Books category continues to drive substantial revenue, along with strong contributions from Electronics and Clothing.