

### **EDA 1: Customer Distribution by Region**

**Description:** South America has the highest customer count (59), followed by Europe (50) and North America (46). These regions represent the primary customer base.

**Conclusion:** South America is a key market for growth, while Europe and North America also offer significant opportunities for cross-promotion and targeted marketing strategies.

### **EDA 2: Product Category Distribution**

**Description:** Books and Electronics are equally popular, with 26 units each, followed by Clothing (25) and Home Décor (23).

**Conclusion:** Strong demand for Books and Electronics suggests the need for expanded inventory or promotions in these categories. Diverse offerings like Clothing and Home Décor provide opportunities for targeted campaigns.

### **EDA 3: Top-Selling Products**

**Description:** Cookbooks like the SoundWave Cookbook (46 units) and TechPro Cookbook (43 units) are top-sellers. ActiveWear items such as the ActiveWear Smartphone and Jacket also perform well (43 and 38 units).

**Conclusion:** Expanding cookbook selections and introducing new activewear products can capitalize on strong consumer interest in these categories.

### **EDA 4: Customer Purchase Behavior**

**Description:** The average purchase value is \$687.58, with spending ranging from \$82.36 to \$1323.13.

**Conclusion:** Premium product offerings and upselling strategies can increase transaction value. Tailored campaigns can target budget-conscious and high-spending customers.

### **EDA 5: Customer Purchase Frequency by Region**

**Description:** North America has the highest median purchase frequency, while South America and Europe show some high-frequency outliers. Asia has lower purchase frequency overall.

**Conclusion:** Marketing strategies should focus on increasing engagement in regions with lower purchase frequency, like Asia, while leveraging high-frequency customers in North America.

#### **EDA 6: Customer Age Distribution by Region**

**Description:** South America has the highest median age and widest age range, with notable outliers. North America and Europe have narrower, more homogeneous age ranges.

**Conclusion:** Tailored strategies are needed for different age profiles. Younger customers may prefer trendier products, while older customers may require specialized offerings.

#### **EDA 7: Correlation Between Quantity Sold and Total Value**

**Description:** There is a strong negative correlation between Quantity Sold and Total Value, indicating diminishing returns as sales increase.

**Conclusion:** Adjusting pricing strategies, such as offering volume discounts, can help balance sales volume and profitability. Reviewing cost structures may also improve margins.