

# Report

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## Exploratory Data Analysis (EDA) and Business Insights

This report provides insights into customer behavior, product performance, and transactional patterns. Data analysis was conducted on customer, product, and transaction datasets to identify key trends and opportunities for business growth.

### Regional Performance by Category:

- **Asia:** The top-performing category is **Clothing**, with a total quantity of 166 sold and a staggering sales figure of **17,200**, showcasing its dominance in this market. Sales peak in January and July, indicating strong seasonal demand during these months. However, mid-year dips in May, June, and November suggest an opportunity for promotions or marketing efforts to stabilize sales during these periods.
- **Europe: Home Decor** leads with 167 units sold. While January, March, and September see significant activity, November's sharp decline suggests potential for targeted seasonal promotions or campaigns.
- **North America: Books** top the chart with 155 units sold, backed by a total sales figure of **18,135**. Consistent performance throughout the year with peaks in April and January indicates reliable demand, though November and June remain low-performing months.
- **South America: Books** also dominate this region, achieving the highest sales in this category globally with **25,409**. With peaks in July and May, the region shows consistent strength in Books, particularly during mid-year.

### Monthly Transaction Trends:

- January records the **most transactions (107)** across all regions, emphasizing the importance of this month for promotions and inventory readiness. July and September follow closely, with 96 transactions each, making them critical for mid-year performance.

### Top-Selling Products:

- The **ActiveWear Smartwatch** (100 units), **SoundWave Headphones** (97 units), and **HomeSense Desk Lamp** (81 units) emerge as the most popular products across all regions. These products should be prioritized for marketing, bundling strategies, and inventory management to maximize revenue.

### Repeat Orders:

- A total of **41 repeat orders** highlights customer retention opportunities. The **ActiveWear Rug** and **HomeSense Desk Lamp** top the list with 7 repeat purchases each, followed by the **TechPro Textbook** and **ActiveWear Smartwatch** (6 each). This indicates potential for fostering loyalty programs or discounts for frequently purchased products to increase customer retention.

### Regional Strength in Books:

- South America leads globally in Book sales, generating **25,409**, followed by Europe (**18,557**) and North America (**18,135**). This presents an opportunity to analyze South America's success and replicate strategies in other regions.