

## **Exploratory Data Analysis (EDA) and Business Insights Report**

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

- The customer base is distributed across four primary regions:
  - South America: 59 customers (highest representation).
  - Europe: 50 customers.
  - North America: 46 customers.
  - Asia: 45 customers.

The company's reach is global, with South America being the largest customer region. Marketing efforts could focus on Europe and North America for expansion opportunities.

### **2. Product Category Distribution:**

- Products are categorized as:
  - Books: 26 products.
  - Electronics: 26 products.
  - Clothing: 25 products.
  - Home Decor: 23 products.

The product portfolio is balanced across categories. Diversifying or introducing new subcategories could attract a wider customer base.

### **3. Monthly Transaction Trends:**

- Transaction volume peaks in January (107 transactions) and remains steady throughout the year.
- Slight dips in transactions occur in June (69 transactions) and November (57 transactions).

Seasonal trends impact sales. Promotional campaigns during low-transaction months can help stabilize revenue.

### **4. Top Customers by Revenue:**

- The top 5 customers contributed significantly to total revenue:
  - C0141: \$10,673.87 (highest spender).
  - C0054: \$8,040.39.
  - C0065: \$7,663.70.
  - C0156: \$7,634.45.
  - C0082: \$7,572.91.
- Insight: Retention strategies like loyalty programs and personalized offers can strengthen relationships with high-value customers.

### **5. Top-Selling Products:**

- The top 5 products by revenue:

- P029: \$19,513.80.
- P079: \$17,946.91.
- P048: \$17,905.20.
- P020: \$15,060.92.
- P062: \$14,592.24.

Top-selling products drive significant revenue. Ensuring stock availability and promoting similar products could boost sales.

**Prepared by:** Naveena K

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