

Exploratory Data Analysis (EDA) Report: eCommerce Transactions Dataset

Overview

The eCommerce Transactions dataset, which consists of three files (Customers.csv, Products.csv, and Transactions.csv), was analyzed, and the results are summarized in this report. In order to provide useful information for corporate planning, key areas of focus include client distribution, sales performance, and trends over time.

Key Insights

1. Customer Distribution by Region

The largest percentage of clients is found in South America (29.5%), followed by Europe (25.0%), North America (23.0%), and Asia (22.5%).

Practical Advice: To maintain its largest clientele, focus marketing efforts in South America while looking into expansion prospects in underserved areas such as Asia.

2. Over Time, Customer Signups

Insight: In comparison to 2023 (57) and 2022 (64), 2024 saw the highest number of client signups (79), indicating a notable increase.

Practical Advice: Examine the elements that contributed to the 2024 surge in signups and duplicate effective tactics in subsequent campaigns.

3. Top Product Types by Sales

Findings: Books bring in the most money (\$192,147.47), followed by electronics (\$180,783.50), apparel (\$166,170.66), and home décor (\$150,893.93) and home furnishings.

4. Leading Areas by Total Sales

- Note: South America generates the most sales revenue (\$219,352.56), followed by North America (\$152,313.40), Europe (\$166,254.63), and Asia (\$152,074.97).
- Practical Advice: To meet strong sales demand, improve inventory control and logistics operations in South America while launching focused marketing campaigns in Europe.

5. Average Order Value (AOV) • Knowledge: \$272.55 is the average order value for all transactions.

- Actionable Insight: To promote greater purchases, implement loyalty programs or offer discounts for orders over the AOV.

Visual Recaps

1. Distribution by Region

South America dominates in terms of client distribution and sales, as seen by bar charts. Important markets to target are highlighted by the proportional representation.

2. Trends in Signups Over Time

The growth trajectory is highlighted by a line plot of annual signups, which shows a notable increase in 2024. This graphic highlights how effective recent tactics have been.

3. Product Types by Sales

The sales contributions of each category are shown in a bar chart, with books leading by a wide margin, indicating that they play a crucial role in revenue.

4. Local Sales

When comparing overall sales by region, South America performs exceptionally well, confirming its status as the best-performing market.

Conclusion

Important trends in consumer behavior, geographical performance, and product category success are highlighted in this report. The business can improve overall profitability, optimize inventory, and hone its marketing tactics by utilizing these insights. For long-term growth, a particular emphasis on South America, books, and expanding signup trends will be essential.

