

Business Insights from EDA

Initial Observations:

1. Customers Dataset:

- ✚ 200 unique customers with fields like CustomerID, CustomerName, Region, and SignupDate.
- ✚ Customers are spread across 4 regions with South America being the most common.

2. Transactions Dataset:

- ✚ 1000 transactions, linking customers to products via CustomerID and ProductID.
- ✚ Includes details like TransactionDate, Quantity, TotalValue, and Price.
- ✚ Average product price: \$272.55, with a maximum of \$497.76.

3. Products Dataset:

- ✚ 100 unique products across 4 categories: Books, Electronics, Clothing, and Home Decor.
- ✚ Products range from \$16.08 to \$497.76, with Books as the most common category.

EDA Results and Insights:

1. Customer Distribution by Region:

- ✚ South America has the highest customer count (59), followed by Europe (50).
- ✚ Suggestion: Focus marketing efforts on South America due to a larger customer base.

2. Customer Signup Trends:

- ✚ Monthly signups show sporadic increases, with peaks in September and November 2024.
- ✚ Suggestion: Investigate promotional campaigns or events during these months for actionable patterns.

3. Top-Selling Products by Quantity:

- ✚ Products like P059, P054, and P029 are best-sellers, each selling over 40 units.
- ✚ Suggestion: Stock more inventory for these high-demand products and analyze customer reviews to maintain satisfaction.

4. **Revenue by Product Category:**

- ✚ Books generate the most revenue (\$192,147.47), followed by Electronics and Clothing.
- ✚ Suggestion: Diversify the product portfolio or focus on top-performing categories for targeted promotions.