

Exploratory Data Analysis (EDA) and Business Insights

1. Introduction

This report summarizes the insights derived from the Exploratory Data Analysis (EDA) of the eCommerce transactions dataset. The purpose of the analysis is to uncover actionable business insights that can guide strategic decision-making, focusing on customer behavior, spending patterns, and product category performance.

2. Business Insights

1. High-Value Customers

- The analysis identifies high-value customers, such as CustomerID C0087, who contributed \$6,604.23 in total spending. These customers significantly impact overall revenue.
- **Action:** Prioritize high-value customers for personalized offers and loyalty programs to enhance retention and profitability.

2. Regional Revenue Trends

- South America is the leading region in terms of revenue, contributing \$190,805.02. Europe follows with \$132,273.06, while North America contributes the least at \$105,551.29.
- **Action:** Focus marketing efforts and promotions in underperforming regions, particularly North America, to boost sales.

3. Product Category Performance

- Books generate the highest revenue (\$162,168.37), followed by Electronics and Clothing. Home Decor contributes the least (\$116,174.64).
- **Action:** Increase sales in the Home Decor category by enhancing visibility, offering bundle deals, and targeted campaigns.

4. Customer Activity Based on Signup Date

- Customers who signed up on specific dates, such as February 10, show higher average spending (\$6,579.10).
- **Action:** Analyze successful signup campaigns to replicate their strategies, improving customer acquisition and retention.

5. Spending Trends Over Time

- Spending peaks on the day of signup (\$1,717.16) and gradually declines over time.
- **Action:** Implement follow-up offers and personalized communication within the first week of signup to increase retention and spending.

3. Recommendations

1. **Implement Retention Strategies for High-Value Customers:** Offer loyalty programs and personalized offers to retain these customers and maximize their value.
2. **Focus Marketing in Underperforming Regions:** Launch targeted campaigns in regions like North America to drive growth and revenue.
3. **Boost Home Decor Sales:** Implement promotional strategies and discounts to improve Home Decor category performance.
4. **Replicate Effective Signup Campaigns:** Replicate the successful campaigns that led to higher customer spending to enhance acquisition strategies.
5. **Engage Customers Early:** Focus on follow-up offers within the first week of signup to increase spending and retention.