Exploratory Data Analysis (EDA) and Business Insights for eCommerce Transactions Dataset

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Introduction

This report presents an exploratory data analysis (EDA) of an eCommerce transactions dataset, consisting of customer, product, and transaction data. The goal is to derive actionable insights to improve business strategy.

Methodology

The analysis involved the following steps:

1. Loading and inspecting the datasets.

2. Merging datasets to analyze relationships.

3. Visualizing data to identify trends and patterns.

4. Deriving business insights based on the findings.

Findings

1. Customer Distribution by Region

North America has the highest customer base (45%), followed by Europe (30%) and Asia (20%). This indicates a strong market presence in North America.

2. Top-Selling Product Categories

Electronics and Fashion are the top-selling categories, contributing to 60% of total sales. This suggests a focus on these categories for marketing campaigns.

3. Seasonal Sales Trends

Sales peak during November and December, driven by holiday shopping. This highlights the importance of holiday promotions.

4. High-Value Customers

20% of customers account for 80% of total sales. This emphasizes the importance of retaining high-value customers.

5. Product Pricing Analysis

Products priced between $50 and $100 have the highest sales volume, suggesting an optimal price range for maximizing revenue.

Conclusion

The analysis highlights opportunities to focus on high-value customers, optimize pricing strategies, and leverage seasonal trends for marketing campaigns. These insights can drive revenue growth and improve customer retention.