

Exploratory Data Analysis Report: E-commerce Dataset

Introduction

This report provides key business insights derived from the exploratory data analysis (EDA) of an e-commerce dataset, which consists of customers, products, and transactions. The insights aim to enhance business strategies by understanding customer behavior, product performance, and transaction trends.

Business Insights

1. Customer Distribution by Region:

The majority of customers are from South America, contributing the highest sales volume. This highlights South America as a significant market with a substantial contribution to revenue.

2. Product Pricing Insights:

The product with most price is TechPro Textbooks which comes in the category of Books. This suggests opportunities for positioning books and clothing in targeted segments.

3. Sales Trends Over Time:

The graph of Transactions over time is constant from 01-2024 to 01-2025. This suggests strong consumer activity during holiday seasons, making it an ideal time for marketing campaigns and promotions.

4. Customer Signup Trends:

Transactions show a clear upward trend during the months of September and November possibly driven by successful promotional campaigns. This underscores the importance of targeted

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acquisition strategies during key quarters.

5. High-Value Customers:

Top 20% customers contribute 35.14% of the total revenue, reflecting the Pareto principle. Prioritizing these high-value customers with loyalty programs or personalized offers could enhance retention and profitability.

Conclusion

The EDA revealed actionable insights into customer behavior, product trends, and revenue distribution. These findings can guide marketing, product development, and customer relationship strategies to optimize business growth.