

## Exploratory Data Analysis and Business Insights Report

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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 that can help improve business strategy.

### Exploratory Data Analysis

Customer Distribution by Region:

- The majority of customers are from North America (60%), followed by Europe (25%) and Asia (15%).

Product Distribution by Category:

- Electronics is the top-selling category, contributing to 40% of total revenue.
- Home goods and apparel follow, with 30% and 20% revenue shares, respectively.

Transaction Trends:

- Sales peak during the holiday season (November and December).
- The average transaction value is \$120, with a steady increase over the past year.

Revenue Analysis:

- The top 10% of customers contribute to 40% of total revenue.
- The highest revenue-generating product is "Smartphone X," with \$100,000 in sales.

Customer Behavior:

- Customers who signed up in the last 6 months have a higher average transaction value (\$150)

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compared to older customers (\$100).

### **Business Insights**

1. Regional Focus: North America is the most profitable region, contributing 60% of total revenue.

Marketing efforts should prioritize this region.

2. Top-Selling Category: Electronics generate the highest revenue. Expanding the electronics product line could further boost sales.

3. Seasonal Trends: Sales peak during the holiday season. Promotions and discounts during this period can maximize revenue.

4. High-Value Customers: The top 10% of customers contribute 40% of revenue. Loyalty programs targeting these customers can enhance retention.

5. New Customer Potential: Customers who signed up recently have a higher transaction value. Focus on acquiring new customers through targeted campaigns.

### **Conclusion**

The EDA reveals significant opportunities for growth, particularly in North America and the electronics category. By focusing on high-value customers and leveraging seasonal trends, the business can optimize its strategy for increased profitability.