

Task 1: Exploratory Data Analysis (EDA) and Business Insights

Exploratory Data Analysis (EDA) was performed on the provided eCommerce dataset, consisting of Customers, Products, and Transactions data. Below are the key insights derived:

1. Customer Distribution by Region:

The majority of customers are concentrated in specific regions, allowing the company to identify target markets for region-specific campaigns and marketing strategies.

2. Monthly Transaction Trends:

A seasonal pattern in transaction volume was observed, with peaks in certain months. This insight suggests the potential to align promotional activities with these high-demand periods.

3. Top-Performing Products:

A small subset of products accounts for the majority of revenue. These high-performing products should be prioritized for marketing efforts and potential product line expansions.

4. Purchasing Behavior:

Most transactions involve the purchase of single or low quantities of products, indicating a preference for smaller, more frequent purchases rather than bulk buying.

5. Customer Activity Analysis:

Customers who have signed up in the recent past tend to be more active in making purchases. This trend indicates the need to re-engage older customers through loyalty programs or targeted promotions.

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Summary

The exploratory data analysis (EDA) has provided critical insights into the eCommerce dataset. The observed trends in customer demographics, transaction volumes, and product performance indicate clear opportunities for growth and optimization.

Key recommendations include focusing on high-performing products, targeting specific regions with customized marketing campaigns, and leveraging seasonal transaction patterns for effective promotions. Additionally, strategies to re-engage inactive customers and capitalize on recently signed-up, highly active customers are essential for sustained business growth.

By implementing these insights, the company can align its strategies with data-driven decision-making, ensuring better customer satisfaction, enhanced operational efficiency, and increased revenue.