

Title : Business Insights for eCommerce Transactions Dataset:

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INTRODUCTION:

Purpose: The report presents an Bussiness insights derived from the EDA

Dataset Overview: Datasets used(Customers.csv,Products.csv, and Transactions.csv)

Tools Used: Python, Pandas, Matplotlib, Seaborn.

Exploratory Data Analysis(EDA)

1. Data Loading and Cleaning:

- Checked for missing values and duplicates.
- Merged datasets for comprehensive analysis.

2. Customer Analysis:

- Analyzed customer distribution by region.
- Examined customer signups over time.

3. Product Analysis:

- Analyzed product distribution by category.
- Examined price distribution of products.

4. Transaction Analysis:

- Analyzed total sales by region.
- Identified top-selling products.
- Examined the distribution of transaction values.

Business Insights:

1. Regional Sales Distribution:

- The majority of sales come from **North America** and **Europe**, indicating these regions are the most profitable markets. Marketing efforts should focus on these regions to maximize revenue.

2. Top-Selling Products:

- The top 10 products contribute significantly to total sales. These products should be prioritized in inventory management and promotional campaigns.

3. Transaction Value Distribution:

- Most transactions are of low value (less than 100), but a few high-value transactions (above 100), but a few high-value transactions (above 500) contribute significantly to overall revenue. Strategies such as upselling and cross-selling should be implemented to increase average transaction values.

4. Customer Signups Over Time:

- Customer signups have been increasing steadily, with a noticeable spike in the last quarter. This indicates successful customer acquisition efforts, which should be sustained and optimized for further growth.

5. Product Category Performance:

- Certain product categories, such as **Electronics** and **Fashion**, dominate sales. Expanding the product range in these categories and introducing targeted promotions could further boost revenue.

Conclusion:

- Example: "By focusing on high-performing regions, top-selling products, and customer acquisition strategies, the business can

drive growth and improve profitability. Future work could include predictive modeling to forecast sales and customer segmentation to personalize marketing efforts."