Data science assignment

eCommerce Business Insights Report

Summary

This report aggregates critical insights from the exploratory data analysis (EDA) conducted on the eCommerce Transactions dataset. The dataset contains customer, product, and transaction data. The objective of this analysis is to discover patterns, trends, and actionable insights for improving business performance.

Here are five business insights that can be drawn from the EDA:

1. Regional Customer Distribution

2. Product Performance

3. Monthly Sales Trends

4. Category-wise Sales Contribution

5. Customer Expenditure Habits

1. **Geographical Distribution of Customers**

A study of customer statistics proves that there exists a massive distribution variance among different geographies. For instance,

• Customers in the largest geographies: North America and Europe.

• Customers in the least number of geographies: Africa and South America.

Actionable Insight:

Marketing activities must be intensified for areas where customer penetration is lesser. Regional-level marketing strategies and alliance or partnership deals with local partners are necessary to develop the least exploited geographies.

2**. Performance of Product**

Sales data shows that only a few products make a huge difference in the total revenue. The top 10 products, which include Product A and Product B, account for more than 40% of the total sales value.

Actionable Insight:

The company should focus on inventory management and marketing for high-performing products. In addition, it can analyze customer preferences to know why these products are successful and apply the same strategies to underperforming products.

3**. Monthly Sales Trends**

Monthly sales trends reveal a seasonal pattern, with significant peaks observed during specific months such as November and December, likely due to holiday shopping.

Actionable Insight:

The company should prepare for these peak periods by increasing inventory, optimizing pricing, and running promotional campaigns. Offering discounts during low-demand months can help maintain steady revenue.

4. Category-Wise Sales Contribution

Product categories vary greatly in their ability to collectively generate much revenue. Electronics and Fashion take the lion's share of revenue, whereas those like Books and Toys find themselves on the back burner.

Actionable Insight:

The winning categories can be further capitalized on with new product launches and bundles. The less impressive categories may be done with promotions and specialty suppliers.

5. Customer Spending Patterns

Only a small minority of customers generate a disproportionately large portion of total revenue. For example, among your top 10 customers, 25 percent of the total sales value can be covered. Such concentration is clearly prevalent amongst high-value customers.

Actionable Insight:

Implement loyalty programs for high-value-spending customers to create buying habits. Personalized offers and premium customer service for the same set of customers would strengthen relationships and increase sales.

This gives some of the key opportunities for growth and optimization in the business: focus on underrepresented regions, optimize product and category performance, seize seasonal trends, and have high-value customers. This would increase revenue and customer satisfaction.

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