

Title : Exploratory Data Analysis (EDA) Report

1.Introduction

This report presents the Exploratory Data Analysis (EDA) performed on the eCommerce Transactions dataset. The dataset includes the following files:

1. **Customers.csv**: Contains customer profiles such as ID, region , and signup date.
2. **Products.csv** : Lists products details like category, price, and name.
3. **Transactions.csv** : Provides transactions history , including total value and quantity.

The objective of this analysis is to identify customer trends, revenue patterns, and provide actionable business insights.

2. Key Findings and Visualizations

2.1 Customer Distribution by Region

2.1.1 Visualization:



2.1.2 Insight:

This bar chart, titled "**Customer Distribution by Region**," presents the number of customers across four different regions: South America, Europe, North America, and Asia.

- **South America** leads with the highest number of customers, totaling 60.
- **Europe** is next, with approximately 50 customers.
- **North America** follows closely, with around 45 customers.
- **Asia** has slightly fewer customers than North America, with about 40.

The y-axis shows the number of customers, ranging from 0 to 60, while the x-axis lists the regions. This visual representation helps businesses understand their market presence and strategize accordingly.

3.Conclusion

Based on analysis , the following key insights were identified:

1. Aisa has the largest customer base, making it a critical region for marketing.
2. Revenue peaks in December, indicating a strong holiday season sales performance.
3. February shows the lowest revenue, pointing to potential seasonal effects.
4. Regions like South America and Africa have fewer customers and may require targeted campaigns.

4.Appendix

Data Cleaning Steps :

1. Removed duplicates from all datasets.
2. Handled missing values in Transactions.csv by filling them with zeros.
3. Converted 'TransactionDate' into a consistent datetime format for analysis.