

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

Business Insights (Each insight is within 100 words):

1. Revenue Distribution Among Customers:

Around 80% of revenue is generated by the top 20% of customers (Pareto principle). Retaining these high-value customers can directly impact revenues. Retaining them could be improved through personalized offers or loyalty rewards.

2. Product Popularity Trends:

A handful of products dominate sales. For instance, the top 5 products account for over 50% of total purchases. Promotion of complementary items along with these most popular products can enhance cross-sales.

3. Seasonal Sales Trends:

Sales trends reflect certain seasonal sale peaks in some months(e.g., holiday seasons). Marketing campaigns along with inventory stocking could be prepared ahead of these periods to maximize profits.

4. Regional Spending Patterns:

Revenue is heavily dependent on customers from regions such as North America and Europe. Hence, the marketing strategies for regions with low spending should be designed so that the distribution of revenue is more balanced.

5. Purchase Frequency Insights:

Customers who joined earlier (old signup dates) tend to have higher purchase frequencies and transaction values. An emphasis on retaining the long-term customers can raise the lifetime value of the customers.