Clustering Report

Objective:

The goal of this analysis was to segment customers based on their profile and transaction data. The segmentation helps identify different customer types for personalized marketing strategies.

Clustering Method:

We used the **K-Means** clustering algorithm, a simple and effective method for grouping customers based on their spending and interaction patterns.

Clusters Formed:

Three clusters were identified in the data:

1. **High Engagement, High Spending:** Customers in this group exhibit high activity and spending. They are the most valuable and may benefit from loyalty programs or personalized offers.
2. **Moderate Engagement, Moderate Spending:** These customers show moderate interaction and spending. Targeted promotions or offers could help convert them into more active buyers.
3. **Low Engagement, Low Spending:** This group consists of less active customers. They might be new or less loyal, and strategies like introductory offers could be used to increase their engagement.

Evaluation Metrics:

The **Davies-Bouldin Index (DBI)** was used to evaluate the clustering quality. A low DBI score indicates well-separated clusters. The DBI value obtained suggests that the clusters were well-defined, making the segmentation effective.

Conclusion:

The segmentation provides valuable insights into customer behavior:

- **High-value customers**: Targeted retention strategies.
- **Moderate customers**: Encourage higher engagement.
- **Low-engagement customers**: Use offers to boost activity.

This segmentation can inform targeted marketing and improve customer retention.