REPORT

1. Number of Clusters Formed

We experimented with K-Means clustering for different numbers of clusters (from 2 to 10). The optimal number of clusters was selected based on the Davies-Bouldin Index and inertia values.

2. Davies-Bouldin Index Value

The Davies-Bouldin Index (DBI) evaluates the quality of clustering by measuring the similarity between clusters. Lower values indicate better clustering. We calculated the DBI for each number of clusters.

3. Other Clustering Metrics

• Inertia: Inertia measures the within-cluster sum of squares, indicating the compactness of the clusters. A lower inertia value suggests better clustering performance.

4. Insights and Actionable Strategies

Based on the clustering results, we can identify distinct customer segments, such as:

• High-spending, frequent customers

• Occasional shoppers with lower spending

• Infrequent shoppers with varied preference