

Clustering Results Report

1. Number of Clusters Formed:

- The clustering algorithm (KMeans) grouped the dataset into 4 distinct clusters.
- Cluster centers represent the average position of each cluster in the feature space.

2. Evaluation Metrics:

a. Davies-Boudin Index(DBI):

- Value : 0.9666
- The DBI measures the compactness and separation of clusters.
- Lower values indicate better clustering, and minimal intra-cluster distance.

b. Silhouette Score

- Value: 0.3103
- The silhouette score measures how similar data points are within their own cluster compared to others.
- The value of 0.3103 suggests moderate clustering quality. Ideal scores are closer to 1.

3. Other Observations:

a. Cluster Centres

a. Cluster Centers: Each centroid represents the mean characteristics of the respective cluster.

b. Cluster Visualization:

- A scatter plot was generated to visualize clusters based on:
- X-Axis: Number of Transactions (NumTransactions)
- Y-Axis: Total Spend (TotalSpend)
- Different clusters are color-coded, showing distinct groupings.

4. Insights and Recommendations:

Moderate Clustering Quality: The DBI and Silhouette scores indicate reasonable but not perfect clustering quality. Consider optimizing the number of clusters or preprocessing the data further.

Cluster Utility: The clusters can be used for customer segmentation, enabling personalized marketing strategies or customer retention programs.