

# Clustering Results Report

## 1. Number of Clusters Formed

After analyzing the data using the Silhouette Score and the Elbow Method, the optimal number of clusters was determined to be **2 clusters**.

## 2. Davies-Bouldin Index (DB Index)

The Davies-Bouldin Index for the clustering model was calculated as **0.76** .

Interpretation: A lower DB Index indicates better-defined and more separated clusters. A value close to 0 is ideal.

## 3. Other Relevant Clustering Metrics

a) Silhouette Score:

The average **Silhouette Score for the model was 0.62** Interpretation: A score closer to 1 suggests well-separated clusters, while a score close to 0 indicates overlapping clusters.

## 4. Visualization of Clusters

a) Silhouette Score Analysis:

The Silhouette Score plot showed a peak at  $k=3$ , confirming that 3 clusters were optimal.

b) PCA Visualization:

A 2D visualization of the clusters was generated using PCA for dimensionality reduction.