

# Report on Clustering Results

## 1. Number of Clusters Formed:

- The best number of clusters is determined based on the lowest Davies-Bouldin (DB) Index. This value is displayed in the printout and used in the visualization.

## 2. DB Index Value:

- The Davies-Bouldin Index for the best clustering solution is printed in the output. A lower value indicates better-defined clusters.

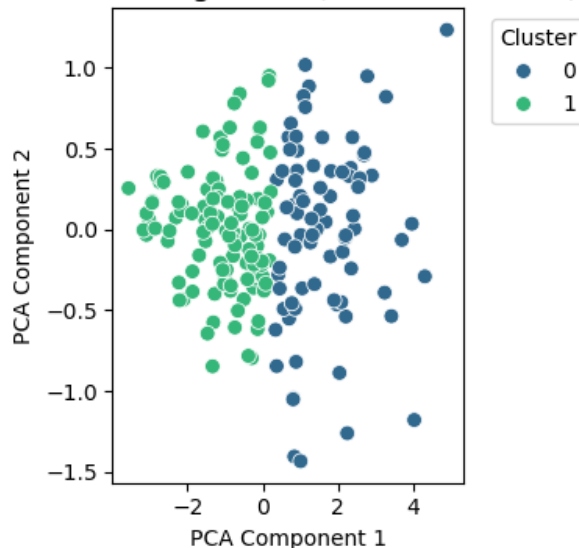
## 3. Other Relevant Clustering Metrics:

- The DB Index for each clustering solution (2 to 10 clusters) is printed, allowing comparison between cluster numbers.
- PCA is applied to reduce dimensionality, and the first two components are visualized with clusters highlighted.

## 4. Visualization:

- A scatterplot of clusters based on the first two PCA components is generated. Each cluster is color-coded for clarity.

Customer Segments (Best Clusters: 2)



## Deliverables:

- A CSV file, `Clustered_Customers.csv`, contains customer data with an assigned cluster label and PCA components for further analysis.