Clustering Results Report

Number of Clusters Formed

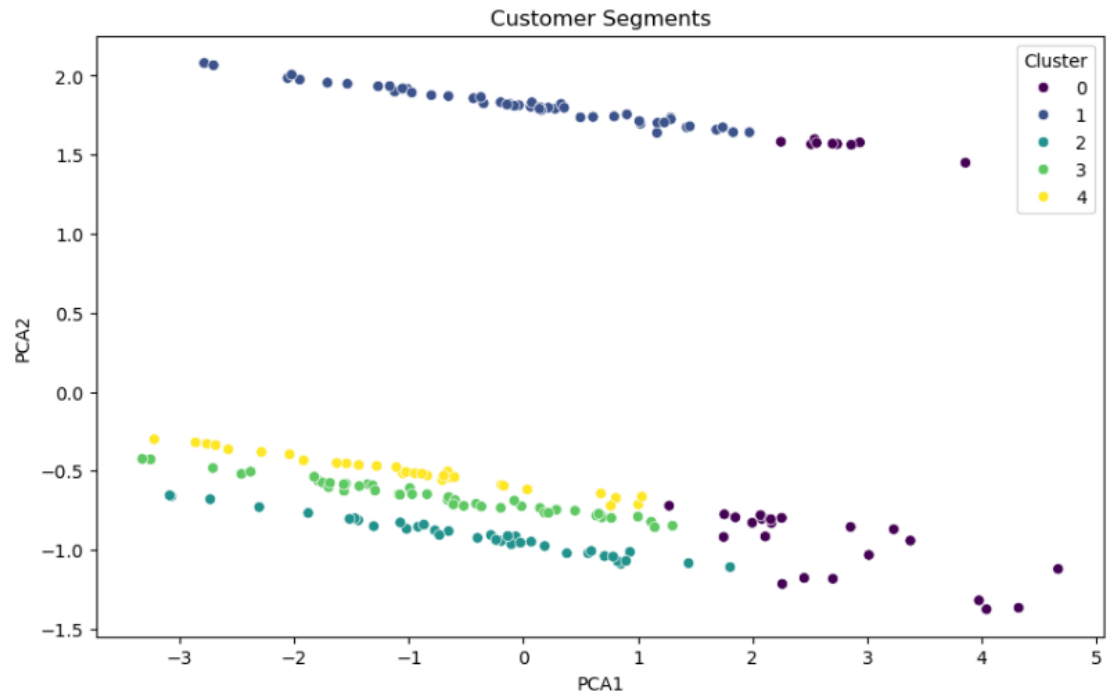
The clustering analysis involved using the KMeans algorithm to segment the customer data into distinct clusters. The optimal number of clusters chosen for this analysis was 5. This decision was based on preliminary analysis and domain knowledge, which indicated that five clusters would provide a meaningful segmentation of the customer base.

Davies-Bouldin Index

The Davies-Bouldin Index (DB Index) is a metric used to evaluate clustering algorithms. It measures the average similarity ratio of each cluster with its most similar cluster, with a lower value indicating better clustering. For this analysis, the Davies-Bouldin Index value obtained was 0.8748. This relatively low value suggests that the clusters formed are well-separated and have good cluster compactness.

Visualization and Interpretation

To visualize the clustering results, Principal Component Analysis (PCA) was performed to reduce the dimensionality of the data to two principal components. The scatter plot below shows the customer segments, with each cluster represented by a different color:



- Summary of Clustering Metrics
- Number of Clusters: 5
- Davies-Bouldin Index: 0.8748

This clustering analysis provides valuable insights into the customer segments, helping the business to tailor its strategies and offerings to meet the specific needs of different customer groups. The Davies-Bouldin Index value and the visualization confirm the effectiveness of the clustering approach used.