

Customer Segmentation - Clustering Results

1. Optimal Number of Clusters: 8
2. DB Index for Optimal Clusters: 0.8811 (lower is better, indicating tighter and more distinct clusters).
3. Silhouette Score: 0.3972 (indicates moderate cluster separation).

The clustering was performed using K-Means, and 8 clusters were identified as optimal based on the DB Index. Features used included total spending, average spending, purchase count, product variety, and region information. PCA was applied to visualize the clusters.

The clusters can be further analyzed for targeted marketing and personalized strategies.

Cluster Visualization (PCA): Refer to Jupyter Notebook for Details