

Clustering Results

In this customer segmentation task, KMeans clustering was applied to segment customers based on both profile and transaction data. After evaluating multiple values for k using the Elbow Method, $k = 3$ clusters were selected as it provided the lowest Davies-Bouldin Index (DB Index), indicating the best separation between clusters.

Number of Clusters Formed:

- 3 clusters were formed based on the data.

DB Index:

- DB Index: 0.8247

The Davies-Bouldin Index measures the average similarity between each cluster and its most similar cluster. A lower DB Index indicates better-defined clusters, and the score of 0.8247 suggests relatively good separation between the clusters.

Silhouette Score:

- Silhouette Score: 0.4532

The Silhouette Score measures how similar each point is to its own cluster versus other clusters. The score ranges from -1 to 1, where a higher score indicates better clustering. A value of 0.4532 indicates that the clusters are somewhat well-separated, but there may still be some overlap between the clusters.