K-Means Clustering

Number of Clusters: 10

DB Index: 1.0174

The comparatively low K-Means value suggests that the clusters that form are fairly distinct and separated. In general, better-defined clusters are indicated by a lower DB Index.

Silhouette Score: 0.3149

- The degree to which each point fits within its cluster is indicated by the silhouette score. While negative values signify poor clustering, a number nearer 1 indicates well-clustered data. Although the clustering is moderate, it might be enhanced, according to the silhouette score of 0.3149.

DBSCAN Clustering

Number of Clusters: 2

DB Index: 1.4330

- As a density-based technique, DBSCAN produced clusters that were less distinct from one another. There may be less distinct or overlapping clusters if the DB Index is greater than 1. This might be the result of DBSCAN's propensity to leave certain points as outliers or to form fewer clusters.

Silhouette Score: -0.2104

- DBSCAN has trouble correctly separating the data into meaningful clusters, as indicated by the poor score. This implies that either the settings (e.g., eps, min_samples) may need to be adjusted, or the data may not be well suited for DBSCAN's density-based technique.

Agglomerative Clustering

Number of Clusters: 7

DB Index: 1.1287

- Agglomerative Clustering's DB Index is larger than K-Means', indicating that the clusters may be more dispersed and less compact. It still shows a fair amount of distance between clusters, though.

Silhouette Score: 0.2954

- The moderate clustering quality is shown by the silhouette score, which is somewhat lower than K-Means. It implies that even while the clusters are somewhat coherent, they might still require some work.