

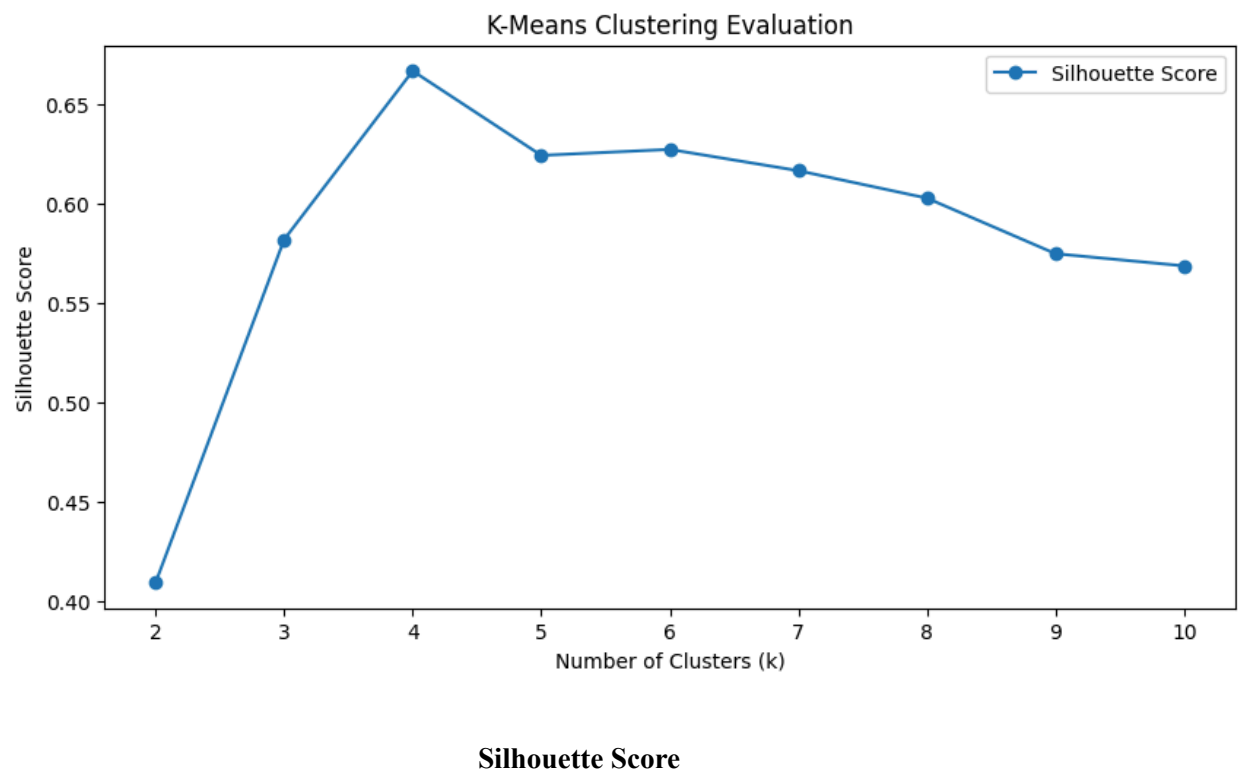
Introduction:

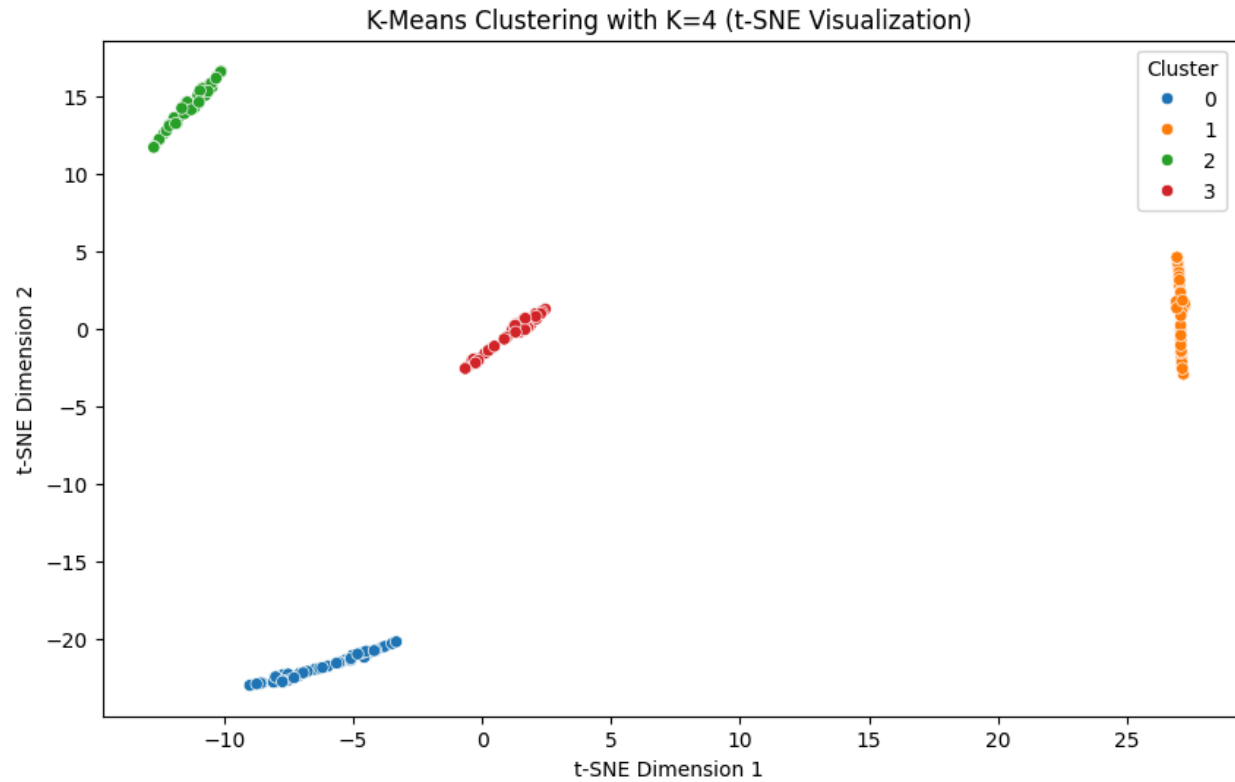
This document summarizes the clustering results obtained using different clustering algorithms, including Agglomerative Clustering, Gaussian Mixture Models (GMM), K-Means, and DBSCAN. It includes metrics like the number of clusters, Davies-Bouldin Index (DB Index), Silhouette Score, and visualizations.

Clustering Results:

- **Number of Clusters Formed:** 4 clusters
- **Clustering Method:** K-Means
- **Dimensionality Reduction Technique:** t-SNE (used for visualization)
- **Key Metrics:**
 - **Silhouette Score:** The maximum silhouette score was observed at 4 clusters with a value of approximately 0.67.
 - **Davies-Bouldin Index (DBI):** The minimum Davies-Bouldin score was observed at 4 clusters with a value of approximately 0.5606333874312546

Visualization on Clustering:





KMeans Clustering

Conclusion

Based on the silhouette score and visual analysis, the dataset was optimally clustered into **4 groups** using the K-Means algorithm. Further analysis of each cluster's characteristics can provide actionable insights, such as trends or patterns unique to each group.

