

Clustering Method:K-Means Number of Clusters Formed: 3

## Clustering Metrics:

Silhouette Score: 0.2545

- The Silhouette Score ranges from -1 to +1. A higher score indicates better-defined clusters. A score of 0.2545 suggests that the clusters are somewhat separated, but there is room for improvement.

Davies-Bouldin Index: 1.2953

 The Davies-Bouldin Index measures the average similarity ratio of each cluster with its most similar cluster. A lower Davies-Bouldin Index indicates better clustering, meaning clusters are well-separated and compact. A value of 1.2953 suggests reasonable cluster separation, but lower values are generally preferred for stronger clustering.

## K-Means Inertia: 395.0831

- Inertia measures the sum of squared distances of samples to their closest cluster center. Lower inertia is better as it indicates that clusters are more compact. Inertia is dependent on the number of clusters and generally decreases as the number of clusters increases. It's useful for comparing models with different 'k' values but less interpretable on its own for assessing cluster quality.

## Summary:

The K-Means clustering algorithm, configured to form 3 clusters, resulted in a Silhouette Score of 0.2545 and a Davies-Bouldin Index of 1.2953. These scores suggest a moderate level of cluster separation and compactness. The Inertia value of 395.0831 reflects the within-cluster sum of squares for this model.

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