

Insights from Naman Mishra Clustering.ipynb file

1) Optimal Number of Clusters:

- Using the Elbow method and Silhouette scores, the optimal number of clusters was decided to be 4.

2) Cluster Metrics:

- Davies-Bouldin Index (DB Index): 0.5399770426508923

The calculated DB Index is low, that means here well-separated clusters.

- Silhouette Score: 0.5570604035590846

A silhouette score between 0.5 and 1 showing that the clusters are compact and well-separated.

3) Customer Segmentation Features:

- Clustering done while utilizing RFM metrics (NormRecency, LogFrequency, LogMonetary).
- Scaling and Dimensionality reduction for improved clustering.

4) Cluster Characteristics:

- Customers from different clusters showing variations in spending patterns from different regions.
- These insights could help to prepare marketing strategies for different segments.

5) Visualization:

- Principal Component Analysis (PCA) was used to perform the reducing of the dimensionality of the data to 2D for visualization.
- The clusters are visually distinct in the scatterplot, confirming their separation.

