Customer Segmentation Report

This record summarizes the effects of purchaser segmentation using clustering on the provided dataset.

1. number of Clusters:

Based totally at the Elbow method and visible inspection of the cluster distributions, 4 clusters had been decided to be the most reliable range for this dataset.

2. Clustering Metrics:

•   Davies-Bouldin Index (DBI): [1.013212626152623]

o   The DBI measures the common similarity within a cluster as compared to the similarity with other clusters.

o   decrease DBI values indicate better-separated clusters.

3. Cluster characteristics:

•   Cluster 1:

o   excessive Recency, Low Frequency, Low economic

o   Interpretation: New customers: these customers are likely current signal-americawith restrained purchase history.

•   Cluster 2:

o   Low Recency, excessive Frequency, excessive economic

o   Interpretation: dependable customers: those are treasured clients who make common purchases and spend widespread amounts.

•   Cluster 3:

o   excessive Recency, Low Frequency, slight financial

o   Interpretation: One-Time buyers: these customers made a unmarried buy and feature not returned these days.

•   Cluster 4:

o   moderate Recency, slight Frequency, mild monetary

o   Interpretation: Occasional clients: those customers make purchases periodically however much less frequently than loyal clients.

4. Visualizations:

•   Scatter Plot (PCA): A scatter p lot of the facts factors within the PCA area, colour-coded with the aid of cluster, gives a visible illustration of the cluster separation.

•   Cluster Distribution Plots: Histograms of Recency, Frequency, and monetary for every cluster provide insights into the distribution of these key metrics within every phase.