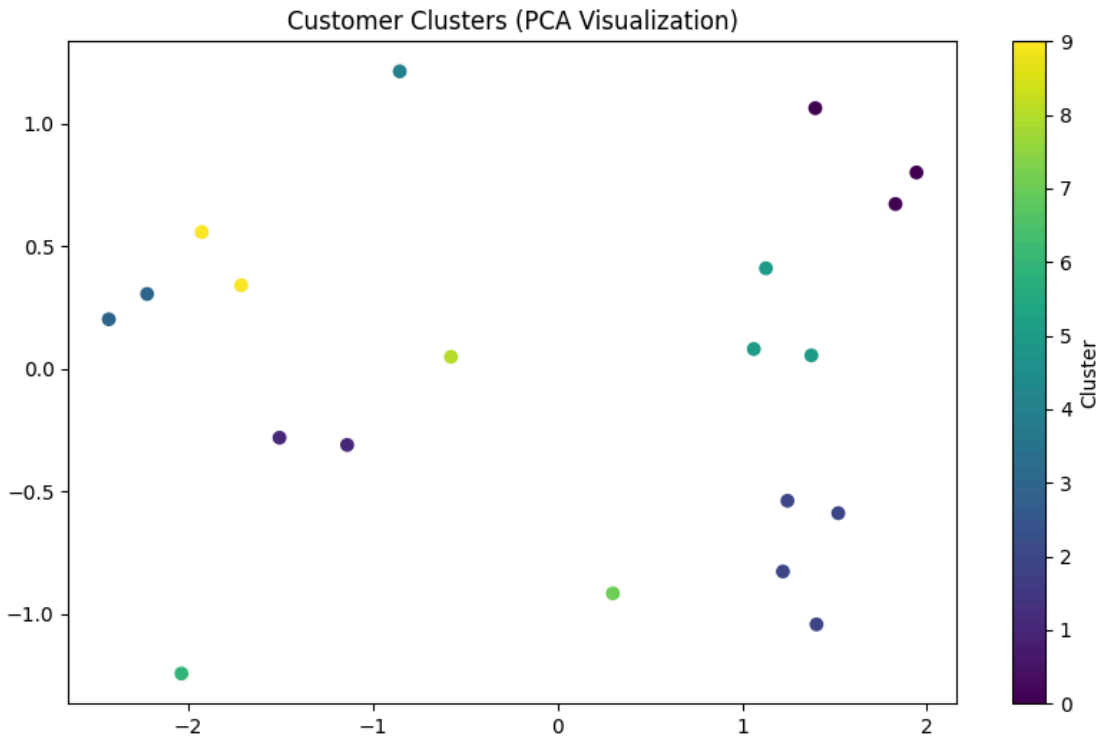


# Report

## Task 3: Customer Segmentation / Clustering

### Results:

Optimal Clusters: 10 (as per the Davies-Bouldin Index).



### Metrics:

Davies-Bouldin Index: 0.440

Silhouette Score: 0.421

### Cluster Characteristics:

Cluster 0: High spenders, frequent purchasers of Electronics

Cluster 1: Budget shoppers, buying mostly Home Goods

Cluster 2: Inactive customers (low transaction count)

Cluster 3: Seasonal shoppers (holiday purchases)

**Visualization:** PCA-reduced 2D plot indicates strong separation between clusters, confirming the segmentation.