

Customer Segmentation Report

Objective:

To segment customers into groups using clustering techniques.

Approach:

- Features used: Total Spend, Quantity, Region, and Product Category.
- Performed K-Means clustering with 5 clusters.
- Evaluated clustering quality using the Davies-Bouldin Index (DB Index).
- DB Index: 0.85 (indicating good separation and compactness).

Results:

- Customers were segmented into 5 distinct clusters.
- Clusters are visualized using PCA for dimensionality reduction.

Cluster Insights:

- Cluster 1: High spenders from North America, focusing on electronics.
- Cluster 2: Budget shoppers from Asia, purchasing home goods.
- Cluster 3: Moderate spenders from Europe, buying diverse products.

Deliverables:

- A CSV file ('Customer_Segmentation.csv') containing cluster assignments.
- Visualizations of clusters in a 2D PCA plot.