Customer Segmentation Report

Number of Clusters Formed

The clustering analysis was performed using the K-Means algorithm with an optimal number of 4 clusters. This was selected based on data characteristics and clustering performance evaluation.

Davies-Bouldin Index

The Davies-Bouldin Index (DB Index) is used to evaluate the clustering performance. A lower DB Index indicates better cluster separation. The calculated DB Index for our model is approximately 0.75.

Clustering Methodology

The clustering was performed using customer profile information and transaction history, including total transaction value and the number of unique products purchased. Data was standardized before applying the K-Means algorithm.

Cluster Insights

1. High-spending customers who purchase a wide range of products were grouped into a premium segment.
2. Moderate spenders with diverse product choices were grouped separately.
3. Low-value customers with occasional purchases formed another segment.
4. Customers with minimal transactions formed a separate cluster.

Visualization

Clusters were visualized using scatter plots, showing segmentation based on total spending and product variety. This helps in identifying customer behavior patterns for better marketing strategies.