

Clustering Report

Overview

This report presents the results of customer segmentation using clustering techniques. The analysis incorporates both customer profile information and transaction history to create meaningful clusters.

Clustering Results

Number of Clusters

The clustering algorithm formed **5 clusters** based on the provided data.

DB Index Value

The Davies-Bouldin Index (DB Index) for the clustering is **0.8767133**. A lower DB Index indicates better clustering performance, suggesting that the clusters are reasonably distinct and cohesive.

Other Relevant Clustering Metrics

- **Inertia:** The sum of squared distances to cluster centers is **4.118**. Lower inertia values indicate tighter and more defined clusters.

Visual Representation of Clusters

Pair Plot

- The pair plot provides a multidimensional view of the clusters, showing how the customers are grouped based on various features.

Scatter Plot

- The scatter plot visualizes the clusters based on total value spent and quantity purchased, highlighting the distinction between different customer groups.

Conclusion

The customer segmentation has provided valuable insights into distinct customer groups. These clusters can be leveraged for targeted marketing strategies, improving customer retention, and enhancing overall business performance. The good DB Index and low inertia indicate well-defined and distinct clusters.