Customer Segmentation Using RFM and K-Means

Project Summary

This project focuses on customer segmentation using RFM (Recency, Frequency, Monetary value) combined with the K-Means clustering algorithm.

Step 1: We prepared the RFM data by applying log transformation to reduce skewness and then scaled it using StandardScaler to ensure equal contribution of features.

Step 2: We determined the optimal number of clusters using both the Elbow Method and Silhouette Score. The Elbow Method showed an optimal point at k=4, and the Silhouette analysis supported this.

Step 3: K-Means clustering was applied with k=4 to segment the customers based on their RFM values.

Step 4: We analyzed the characteristics of each segment by examining the cluster centers and labeled them accordingly.

Segment Profiles

1. Loyal High Spenders (Cluster 2):

- Recent, frequent, and high-spending customers.

- Most valuable segment. Action: Retain & reward them.

2. At-Risk Former Customers (Cluster 3):

- Haven't engaged in a long time. Frequency and spend are average.

- Action: Re-engagement campaigns.

3. Low-Value Drop-offs (Cluster 0):

- Infrequent and low-spending customers.

- Action: Not a priority, low ROI.

4. Occasional Spenders (Cluster 1):

- Recent customers with moderate spending.

- Action: Encourage them to return and build loyalty.