Zeotap Assignment Business Insights Report

Task: - 03 Performing customer segmentation using clustering techniques.

Introduction

This report will, therefore, use customer segmentation from clustering techniques for actionable insights towards helping the company improve its business strategy in relation to understanding and tailoring the marketing efforts around different customer segments.

Clustering Results

1. **Number of Clusters**: The ideal number of clusters determined is **4**.

2. **Davies-Bouldin Index (DB Index): 0.86**

    o A small DB Index suggests good clustering. A value of 0.86 suggests very well-separated and distinguished clusters.

3. **Silhouette Score: 0.43**

    o The Silhouette Score ranges from -1 to 1. A score of 0.43 indicates reasonable cluster separation, though there is room for improvement.

Insights from Customer Segments

1. **High-Value Customers (Cluster 0)**:

    o **Characteristics**: high total spending, high purchase frequency, and new purchase.

    o **Recommendation**: hold these customers with loyalty program, offer special deals and one-to-one marketing.

2. **Moderate-Spending Customers (Cluster 1)**:

    o **Characteristics**: Moderate spending, average purchase frequency, and moderate recency.

    o **Recommendation**: ask the customer to make repeat purchase with discount offer, product bundling, and e-mail campaigns.

3. **Low-Spending Customers (Cluster 2)**:

    o **Characteristics**: low total spendings, low purchase frequency, and old transactions.

    o **Recommendation**: Win them back through win-back campaigns, special promotions, and reminders of new products.

4. **New Customers (Cluster 3)**:

    o **Characteristics**: Recent signups, low spending, and low purchase frequency.

- o **Recommendation**: Nurture these customers with welcome offers, onboarding emails, and incentives for first purchases.

Visualization of Clusters

- **2D PCA Plot** This is a PCA to reduce dimensionality in creating plots of clusters. The method clearly shows the separation between the clusters and some overlap between moderate and low-spending customers.

Recommendations

1. **Personalized Marketing**:
   - o Tailor the marketing campaign according to each cluster behaviour and preference.

2. **Loyalty Programs**:
   - o Introduce loyalty programmes for high-value customers to enhance retention.

3. **Win-Back Campaigns**:
   - o Win-back campaigns targeting low-spending customers to reconnect them.

4. **Seasonal Promotions**:
   - o Design seasonal promotions based on insight from high-value as well as moderate-spending customers.

Conclusion

Customer segmentation gives the company an insight into different customer groups, which can be used to optimize marketing strategies and improve customer satisfaction. The company can drive revenue growth and enhance customer loyalty by focusing on high-value customers, re-engaging low-spending customers, and nurturing new customers.

Visualizations

1. **2D PCA Plot**: Shows the distribution of clusters.

2. **Cluster Characteristics**: Bar charts or tables summarizing key metrics for each cluster.