Customer Segmentation Analysis Report

Prepared by Samad Mehboob

Customer Segmentation using Clustering

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Overview

Mali customer data: Age. Gender, Annual income, and Spending Score segmented using K-Means and DBSCAN clustering methods:

Data Preprocessing

- Encoded Gender (Male: 0, Female: 1)
- Standardized data for clustering

K-Means clustering

- Elbow Method and Silhouette Score find k =5 clusters
- DBSCAN epsilion: d 3D plot

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- DBSCAN Qustering:
  - Idetified 4 core cluster plus noise points

Cluster Analysis Results

Cluster	Avg Age	Avg Income (k$)	Avg Spending Score	Gender
0	45	80	30	Male
1	40	55	50	Female
2	32	90	80	–
3	27	25	75	–
4	45	25	20	Female

Business Insights

- K-Means-Insightıson Cluster:
  - Cluster 0: High income; low spending – target with premium prod.
  - Cluster 1: Average income & speid.
  - Cluster 2: High income, high spending – VIP treatment
  - Cluster 3: Low income lrlg sperid.
  - Cluster 4: Low income, low spending – law spending trins
- DBSCAN Observations: 4 cores Interprimted
  - Minimal marketeg focus sino

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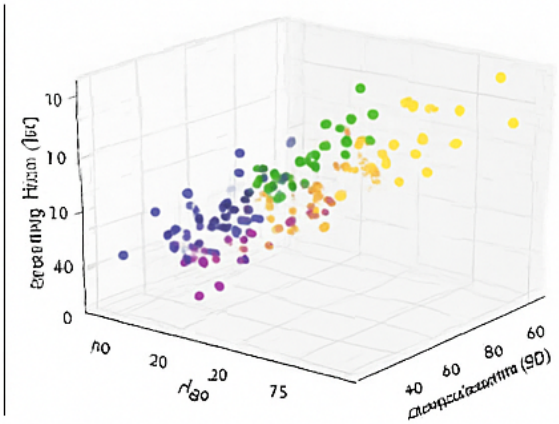
- UBSCAN Observations:
  - Identified 4 core clusters plus nolse points



Customer Segments (K-Means)

3D Customer Segmentation (K-Means)