

Customer Segmentation Report: eCommerce Transactions Dataset

Overview:-

This report summarizes customer segmentation performed on the dataset using clustering techniques. The goal is to group customers based on their behavior and profile information for actionable insights.

Methodology

1. Data Preparation

- Aggregated metrics: Total revenue, average price, and quantity for each customer.
- Standardized data using `StandardScaler`.

2. Clustering Algorithm

- Used KMeans clustering with 4 clusters (optimal number determined using the elbow method).
- Evaluation performed using the Davies-Bouldin Index.

Results

- Number of clusters: 4
- Davies-Bouldin Index: 0.73
- Cluster Characteristics:
- Cluster 0: High revenue, high quantity customers.
- Cluster 1: Moderate revenue and quantity customers.
- Cluster 2: Low revenue customers.
- Cluster 3: Irregular or one-time purchase customers.

Visualizations

- Scatter plot showing customer segmentation across key dimensions.

Conclusion

Customer segmentation provides actionable insights for targeted marketing strategies, inventory optimization, and improving overall customer satisfaction.