Customer Segmentation Analysis Report

Executive Summary

This report presents the results of customer segmentation analysis using clustering techniques on the e-commerce dataset.

Methodology

Data Preparation

- Feature engineering from transaction history

- Customer profile integration

- Data standardization and scaling

Clustering Approach

- K-means clustering algorithm

- Davies-Bouldin Index for cluster validation

- Optimal cluster number determination

Results

Cluster Characteristics

1. High-Value Customers

- High average transaction value

- Frequent purchases

- Diverse category preferences

2. Regular Shoppers

- Moderate transaction values

- Consistent purchase patterns

- Category-specific loyalty

3. Occasional Buyers

- Lower transaction values

- Infrequent purchases

- Limited category exploration

Clustering Metrics

- Davies-Bouldin Index: [Value]

- Cluster sizes and distribution

- Feature importance analysis

Business Applications

1. Marketing Strategy

- Targeted promotions per segment

- Category-specific campaigns

- Retention programs

2. Product Development

- Segment-specific product offerings

- Price point optimization

- Category expansion opportunities

3. Customer Service

- Segment-specific support strategies

- Loyalty program development

- Personalized communication