

Why We Chose This Project

Customer Preferences Analysis using Clustering



Business Challenge

Retail businesses need deep customer insights to remain competitive in today's market



Data Opportunity

Rich FoodMart dataset with 152 stores and 26 variables enables deep analysis



Strategic Value

Clustering reveals natural customer segments that drive targeted strategies



Actionable Insights

Results directly inform marketing, inventory, and operational decisions

The Value of Customer Segmentation

Moving Beyond One-Size-Fits-All Approaches

Enhanced Targeting

Develop personalized marketing strategies for distinct customer segments

Inventory Optimization

Stock the right products for each store's customer profile

Store Operations

Tailor staffing and layouts to match segment behavior patterns

Competitive Advantage

Respond to customer needs more effectively than competitors

Analytical Approach

Why Two Clustering Methods Are Better Than One

K-Medoid Clustering

- Less sensitive to outliers
- Creates distinct, well-separated clusters
- Uses actual data points as centers
- Easily interpretable results

Hierarchical Clustering

- Reveals relationships between clusters
- No need to specify number of clusters
- Creates nested structure of segments
- Visualizable through dendrograms

Using both methods provides validation and reveals different aspects of customer behavior

Expected Business Impact

Turning Analysis Into Results

Short Term

3-5% Sales Growth

Through targeted marketing to identified segments

2-4% Cost Reduction

By optimizing inventory for each segment

Long Term

Customer Loyalty

Increased satisfaction through preference matching

Strategic Foundation

Platform for continuous customer-centric evolution

Team Members

Fathallah Samir	ID: 2305463
Mohamed Mohiey Eldin	ID: 2305187
Mamdouh Abdelkader Mamdouh	ID: 2305401
Muhammad Al-Sayed Saeed	ID: 2305299
Mostafa Khalid Mahmoud	ID: 2305256