K-Means Clustering Analysis of Retail Store Sales Data:

Preprocessing:

- Handled missing values
- Normalized numerical features to standardize the scale of the data and used onehotencoding for categorical features.

Elbow Method:

- Determined the optimal number of clusters by plotting the Within-Cluster Sum of Squares (WCSS) and identifying the "elbow" point.

K-Means Clustering:

- Applied K-Means clustering with the number of clusters - 4.

Interpret the characteristics of each cluster: Examine the sales performance and other relevant metrics of each cluster.

Based on the means of different performance metrics for each cluster, we can draw insights about the characteristics and performance of the retail stores within each group.

Cluster 0 (Mid-High Performers): High foot traffic and moderate satisfaction, but struggling to convert traffic into high sales. Opportunities lie in improving transaction values and sales strategies.

Cluster 1 (Mid-Low Performers): Average sales but underperforming in customer satisfaction, transaction values, and product variety.

Cluster 2 (Low Performers): Stores with low sales, limited foot traffic, smaller size, and fewer employees. They need improvement in customer satisfaction and product variety.

Cluster 3 (High Performers): The most efficient stores with high sales, positive customer satisfaction, high transaction values, despite lower foot traffic and fewer employees. Their strength lies in product variety and sales conversion.