

Number of Clusters: 7

DB Index: 1.319

Silhouette Score: 0.2424

Calinski-Harabasz Index (CHI): 43.43

## **Interpretation of Results**

### **1. Number of Clusters:**

The optimal number of clusters determined by the Elbow Method is 7. This means the customers are segmented into 7 distinct groups based on their profile and transaction behavior.

### **2. DB Index (Davies-Bouldin Index):**

The DB Index value is 1.319. A lower DB Index indicates better clustering, and this value suggests that the clusters are reasonably well-separated.

### **3. Silhouette Score:**

The Silhouette Score is 0.2424. This score ranges from -1 to 1, where values closer to 1 indicate well-defined clusters. A score of 0.2424 suggests that the clusters are somewhat distinct, but there may be some overlap between clusters.

### **4. Calinski-Harabasz Index (CHI):**

The CHI value is 43.43. Higher values indicate better-defined clusters. While this value is not extremely high, it suggests that the clustering is meaningful.