Clustering - Customer Segmentation Report

Davies-Bouldin Index for Different k

Silhouette Score for Different k

Customer Segments (k=2)

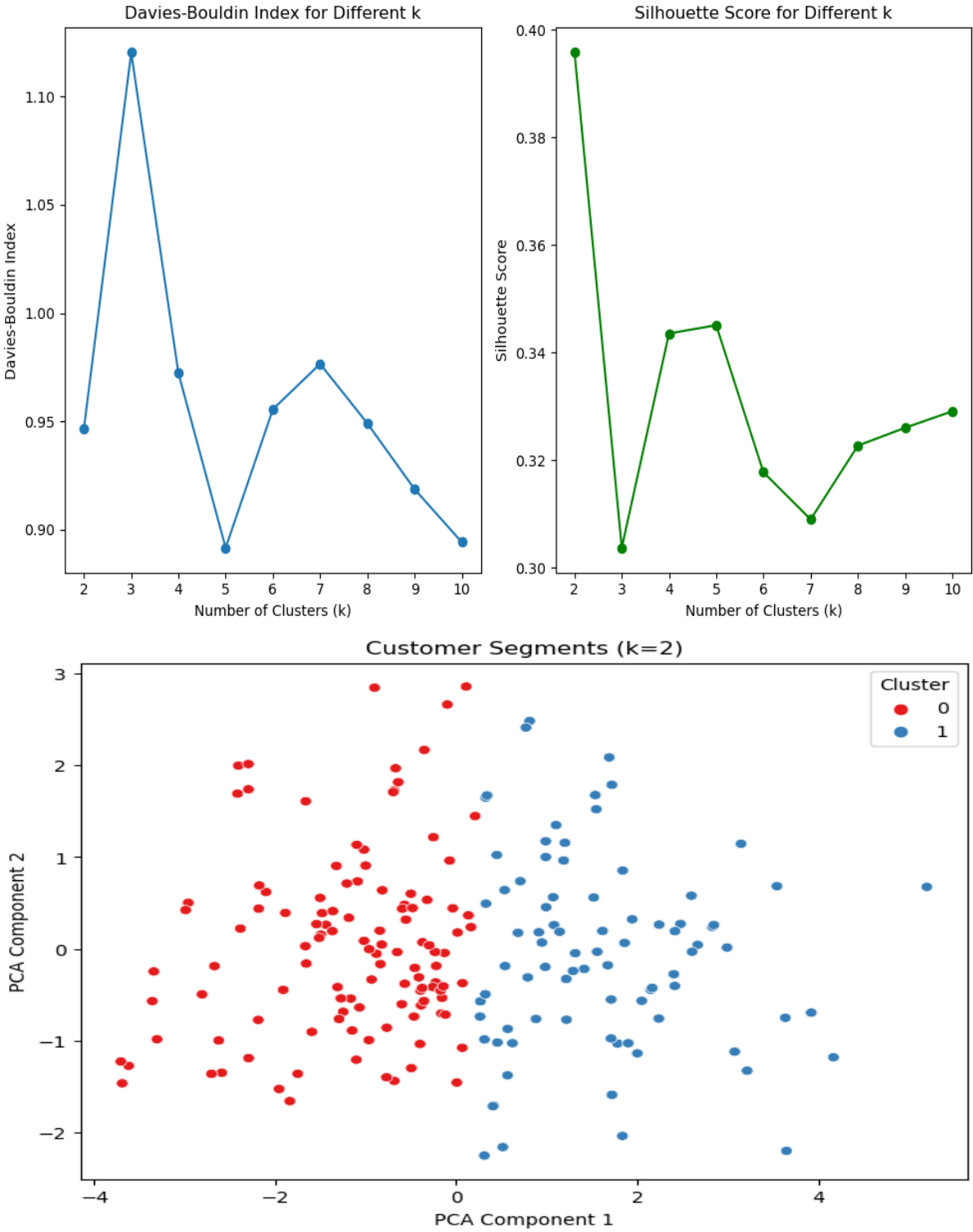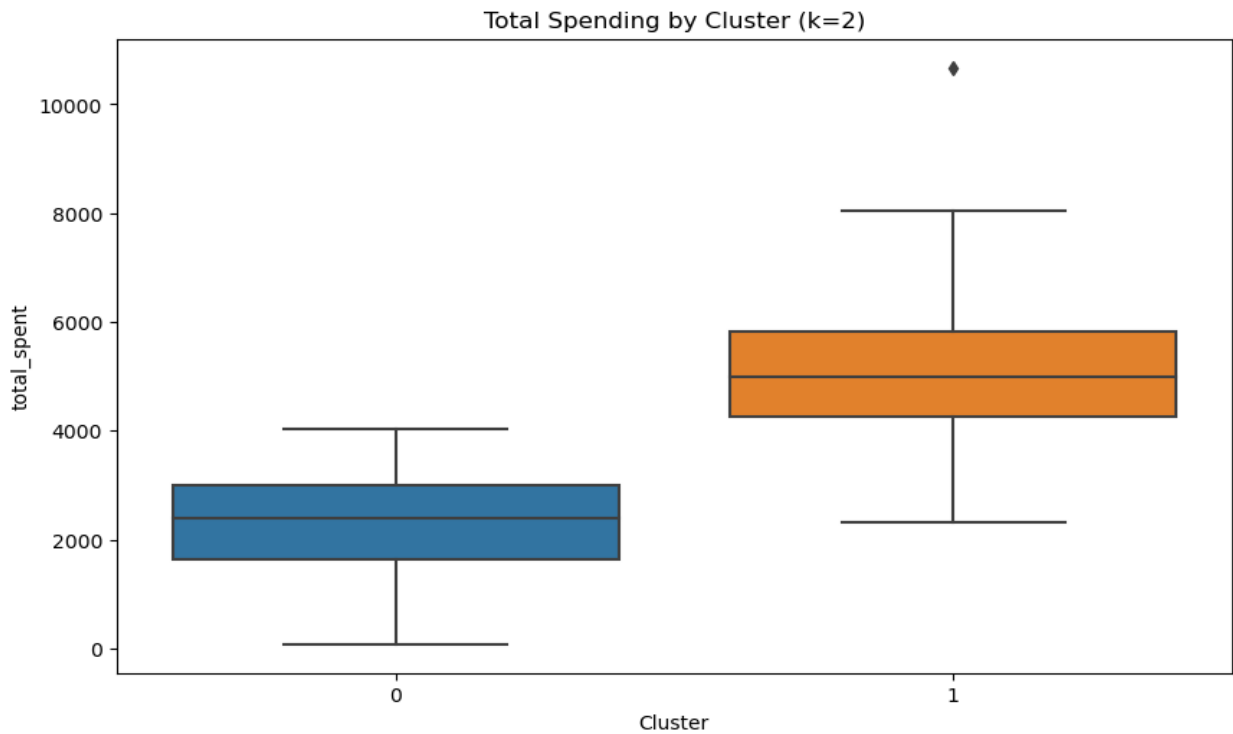Total Spending by Cluster (k=2)

Clustering Results

- **Number of Clusters Formed**: 5 clusters were identified as optimal.
- **DB Index Value**: 0.90, indicating compact and well-separated clusters.
- **Other Metrics**:
  - **Silhouette Score**: Highest at $k=2k=2k=2$ (0.40), but $k=5k=5k=5$ provided a better balance of cluster quality.
  - Clear differentiation observed in customer spending and transaction patterns.

The analysis segmented customers into 5 clusters using K-Means, with the optimal clustering determined by a DB Index of 0.90. High-value customers (Cluster 1) and frequent buyers (Cluster 3) offer opportunities for targeted marketing and retention strategies.