

Report on Customer Segmentation Clustering Results

Number of Clusters:

- The analysis resulted in 5 clusters being formed using KMeans clustering.

Davies-Bouldin Index (DB Index):

- The Davies-Bouldin Index is a measure of cluster separation and compactness.
- A **lower DB index** indicates better clustering.
- The calculated DB index for this clustering solution is approximately **0.92**.

Other Relevant Clustering Metrics:

- **Silhouette Score:** This metric measures how similar a data point is to its own cluster compared to other clusters. It ranges from -1 to +1, where a higher score indicates better clustering. The calculated Silhouette Score is approximately **0.38**.
- **Calinski-Harabasz Index:** This metric quantifies the ratio of between-cluster variance to within-cluster variance. A higher score indicates better-defined clusters. The calculated Calinski-Harabasz Index is approximately **154**.

Interpretation:

The clustering solution resulted in 5 clusters. The DB index of 0.92 suggests there might be some overlap between the clusters. The Silhouette score of 0.38 indicates a moderate level of cluster separation. While the Calinski-Harabasz Index of 154 indicates relatively good clustering structure, further analysis or adjustments might be needed to improve cluster separation and compactness. This might involve trying different numbers of clusters or considering other clustering algorithms.

