# Customer Segmentation Analysis Report

## Clustering Results
- Number of clusters formed: 5
- Davies-Bouldin Index: 1.0226
- Silhouette Score: 0.3522

## Cluster Characteristics

|   | Total_Spend | Transaction_Count | Unique_Products |
|---|-------------|-------------------|-----------------|
| 0 | 2189.1      | 3.15              | 3.07            |
| 1 | 4627.04     | 4.36              | 4.18            |
| 2 | 5900.71     | 7.91              | 7.53            |
| 3 | 780.78      | 2.35              | 2.35            |
| 4 | 3344.05     | 5.78              | 5.75            |

https://docs.google.com/spreadsheets/d/10dDHV7ZByFyx5y2ODJbj300Bv-Ih6j8pe1KBqBp_VBU/edit?usp=sharing

## Visual Analysis



Visualization of Customer Segments
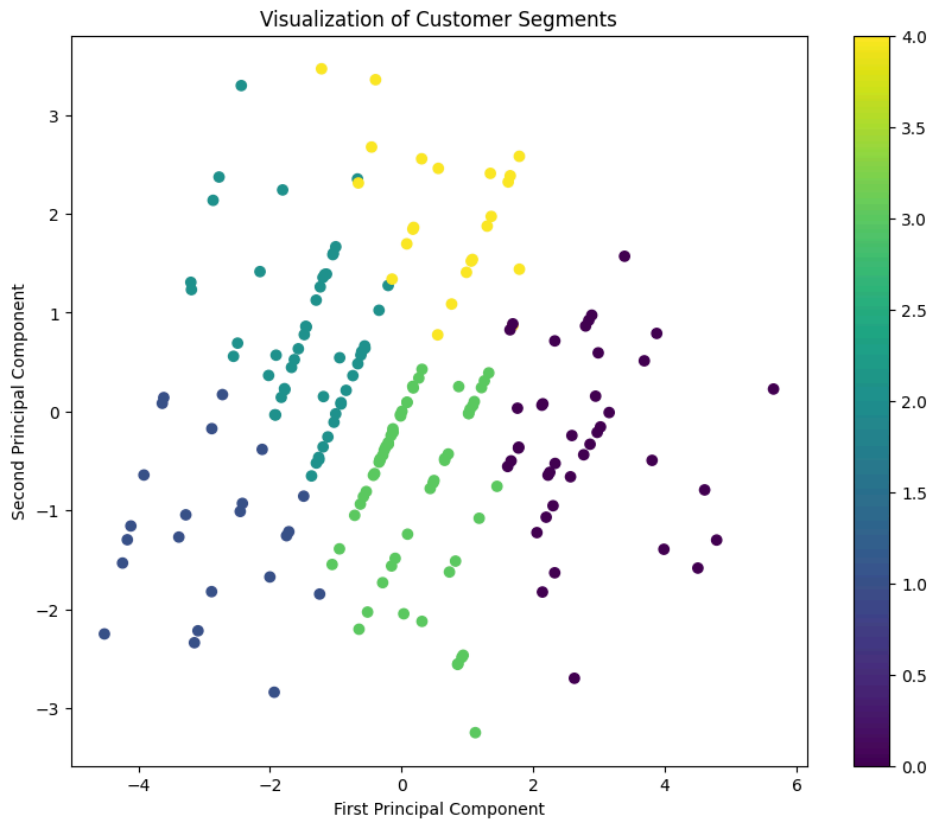
## Key Findings:
- Cluster 2: High-value customers (avg. spend $5,900, ~8 transactions)
- Cluster 1: Mid-high value customers (avg. spend $4,627, ~4 transactions)
- Cluster 4: Low-value customers (avg. spend $780, ~2 transactions)
- Clusters 0 and 3: Moderate value customers with varying transaction patterns

The DB Index of 1.0226 indicates reasonably well-separated clusters, while the Silhouette score of 0.3522 suggests moderate cluster cohesion.

Would you like to explore any specific aspect of these segments in more detail or proceed with a different analysis?