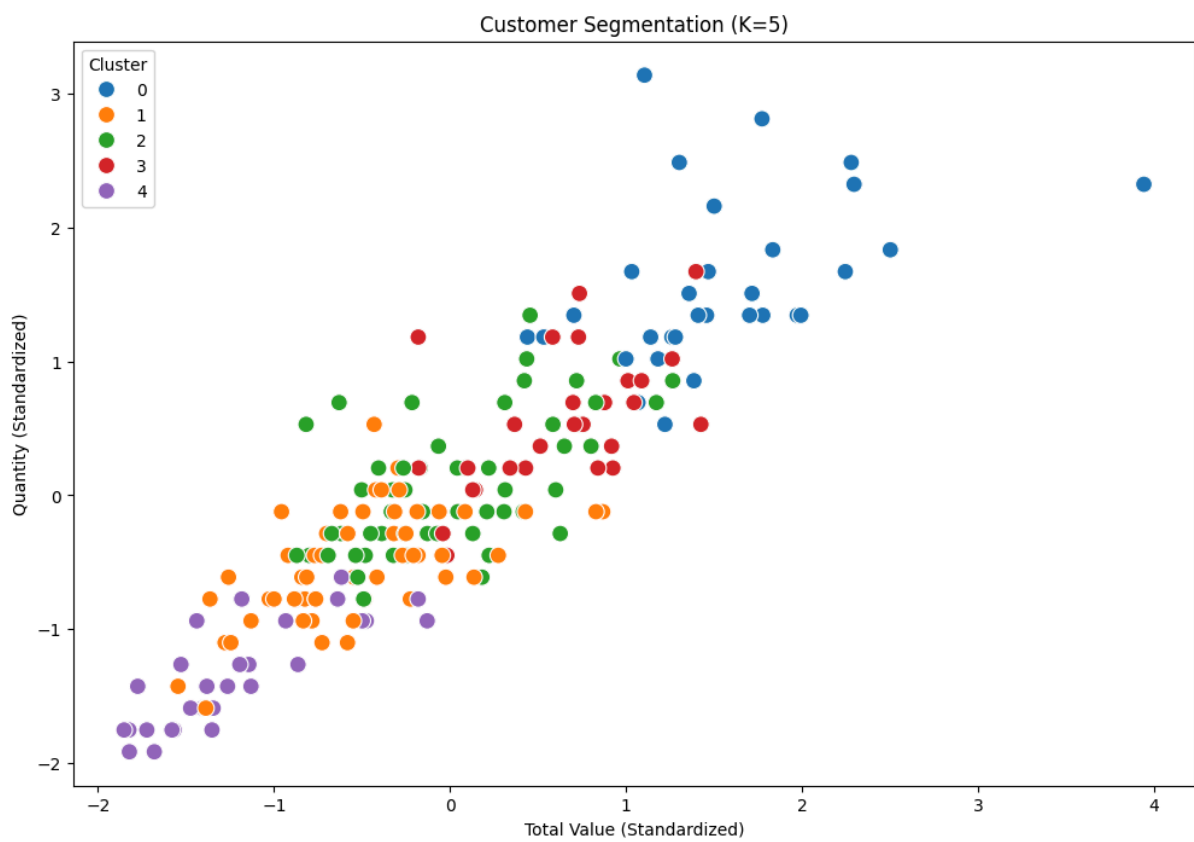# Clustering-Based Customer Segmentation

Number of Clusters Formed: 5

Davies-Bouldin Index: 1.0729

Silhouette Score: 0.2962

Customer Segmentation (K=5)

Clustering Plot Analysis:

The plot visualizes customer segments based on their standardized total purchase value and total quantity purchased. Each point represents a customer, and the colors indicate the cluster they belong to. The clusters were created using the KMeans algorithm to group customers with similar purchasing behaviors.

Key Observations:

1. **Cluster Patterns**: Customers in the same cluster exhibit similar spending and purchase quantities. Higher-value clusters likely represent premium customers, while lower-value clusters may indicate budget-conscious or infrequent buyers.

2. **Distinct Segments**: The plot reveals clear separations between clusters, highlighting different customer groups and behaviors.

3. **Further Analysis**: Combining these clusters with additional customer data can provide deeper insights to refine business strategies.

This analysis serves as a starting point for understanding customer behavior and optimizing engagement strategies.