

## 1. Number of Clusters

- Clusters Formed : 4
- Algorithm Used : K-Means Algorithm

## 2. Clustering Metrics

The following metrics were used to evaluate the quality of the clustering results:

### 1. Davies-Bouldin Index (DB Index):

- Value: 0.315
- Interpretation: A lower DB Index indicates better cluster separation. A value of 0.315 suggests excellent separation between clusters.

### 2. Silhouette Score:

- Value: 0.784 (Range: -1 to 1)
- Interpretation: A score closer to 1 indicates well-defined clusters. A value of 0.784 reflects strong cluster cohesion and separation.

## 3. Cluster Characteristics

Below is the summary of the 4 clusters, including their spending behaviour and regional distribution:

Cluster Summary:						
	Cluster	TotalValue	Quantity	Region_Europe	Region_North America	Region_South America
0	0	0.306163	0.505701	1.0	0.0	0.0
1	1	0.343245	0.526067	0.0	0.0	1.0
2	2	0.304848	0.488982	0.0	1.0	0.0
3	3	0.318547	0.516513	0.0	0.0	1.0

## 4. Cluster Insights

Cluster 0:

- Region: Europe (100%).
- Behaviour: Moderate spending (0.306) and moderate quantity purchased (0.506).

Cluster 1:

- Region: South America (100%).
- Behaviour: Slightly higher spending (0.343) and quantity (0.526) compared to other clusters.

Cluster 2:

- Region: North America (100%).

- Behaviour: Lowest spending (0.305) and quantity (0.489) among all clusters.

Cluster 3:

- Region: Asia (100%).
  - Behaviour: Moderate spending (0.319) and quantity (0.517).
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