

Number of Clusters Formed: 2

DB Index Value: 1.4326

Key Clustering Metrics:

- Silhouette Score: 0.2518

The analysis identified two distinct customer segments:

Cluster 0 (67% of customers):

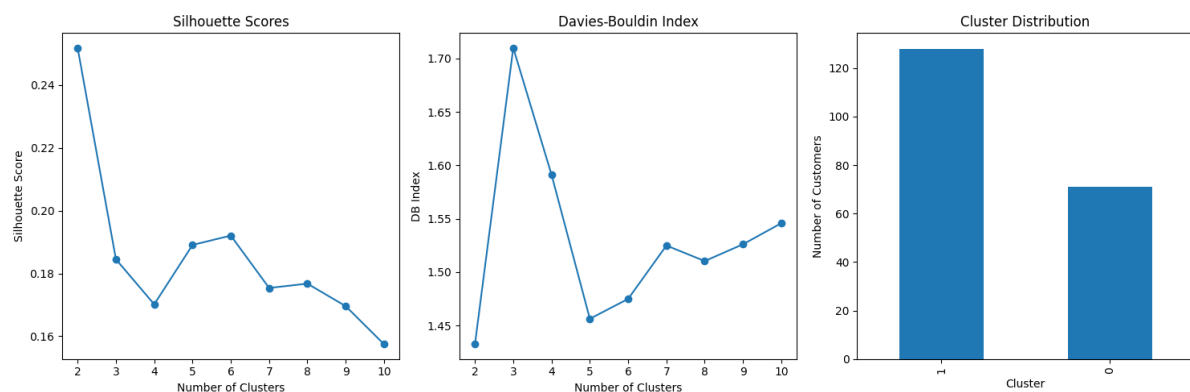
- Higher total purchase value (\$5,452 mean) and average transaction value (\$829 mean)
- Longer customer relationships (569 days mean since signup)
- Wider product range (7 unique products on average)

Cluster 1 (33% of customers):

- Lower total purchase value (\$2,366 mean) and average transaction value (\$609 mean)
- Shorter customer relationships (549 days mean since signup)
- Narrower product range (4 unique products on average)

The Davies-Bouldin Index of 1.4326 indicates reasonable separation between the clusters, while the Silhouette Score of 0.2518 suggests room for improvement in cluster cohesion.

These insights can inform targeted marketing strategies and personalized product recommendations for each customer segment.



Customer\_segments.csv:

	A	B	C	D	E	F	G	H	I
1	CustomerID	TotalPurchaseValue	AvgPurchaseValue	TotalQuantity	AvgQuantity	DaysSinceSignup	UniqueProductsPurchased	MostFrequentCategory	Cluster
2	C0001	3354.52	670.904	12	2.4	930	5	Electronics	1
3	C0002	1862.74	465.685	10	2.5	1077	4	Home Decor	1
4	C0003	2725.38	681.345	14	3.5	324	4	Home Decor	1
5	C0004	5354.88	669.36	23	2.875	839	8	Home Decor	0
6	C0005	2034.24	678.08	7	2.333333333	894	3	Electronics	1
7	C0006	4227.57	1056.8925	12	3	384	4	Books	0
8	C0007	2579.82	859.94	8	2.666666667	952	3	Electronics	1
9	C0008	4271.61	427.161	20	2	378	10	Home Decor	0
10	C0009	896.5	298.8333333	3	1	530	3	Clothing	1
11	C0010	1717.55	429.3875	12	3	772	4	Clothing	1
12	C0011	3730	746	13	2.6	775	5	Books	1
13	C0012	5231.26	747.3228571	19	2.714285714	171	6	Home Decor	0
14	C0013	6000.56	857.2228571	18	2.571428571	251	7	Clothing	0
15	C0014	318.66	318.66	2	2	217	1	Home Decor	1
16	C0015	1157.48	578.74	4	2	432	2	Books	1
17	C0016	3874.42	774.884	10	2	388	5	Clothing	1
18	C0017	4753.82	594.2275	21	2.625	417	8	Books	0
19	C0018	4781.85	956.37	18	3.6	126	5	Books	0
20	C0019	2185.82	364.3033333	11	1.833333333	744	6	Books	1
21	C0020	922.41	922.41	3	3	228	1	Electronics	1
22	C0021	5419.92	677.49	17	2.125	649	8	Electronics	0
23	C0022	4655.07	775.845	15	2.5	456	6	Clothing	0
24	C0023	5158.65	859.775	14	2.333333333	1058	6	Books	0
25	C0024	3627.02	518.1457143	14	2	355	7	Home Decor	1
26	C0025	1589.81	397.4525	8	2	936	4	Home Decor	1
27	C0026	3549.05	887.2625	12	3	267	4	Electronics	1
28	C0027	2562.94	640.735	12	3	808	4	Books	1
29	C0028	6819.57	852.44625	24	3	210	6	Electronics	0
30	C0029	1785.87	446.4675	10	2.5	1015	4	Clothing	1
31	C0030	2549.68	509.936	13	2.6	361	5	Clothing	1

Cluster\_Characteristics.csv:

	A	B	C	D	E	F	G	H	I
1		TotalPurchaseValue	TotalPurchaseValue	AvgPurchaseValue	AvgPurchaseValue	DaysSinceSignup	DaysSinceSignup	UniqueProductsPurchased	UniqueProductsPurchased
2		mean	median	mean	median	mean	median	mean	median
3	Cluster								
4	0	5451.882958	5294.99	829.1716214	803.9757143	568.9577465	635	6.549295775	7
5	1	2366.498984	2529.745	609.0411806	600.62775	549.0234375	469	3.9765625	4