

# SIDDIGAN TM - Customer Segmentation Report

## 1. Overview of Customer Segments

We identified **four distinct customer segments** using **K-Means clustering**, based on customer profiles and transaction behavior.

### Why Four Clusters?

The optimal number of clusters was determined using:

- **Davies-Bouldin Index (DBI):** 1.55 (indicating well-separated clusters)
- **Silhouette Score:** 0.17 (suggesting some overlap, which is common in real-world data)

## 2. Understanding the Customer Segments

Each segment has distinct characteristics and behaviors.

Cluster	Customer Profile	Behavior & Spending	Suggested Actions
Cluster 0	Low-Spending, Low-Frequency Customers	Moderate tenure, low transaction count, low spending	Offer loyalty programs and targeted promotions to increase engagement
Cluster 1	New or Low-Tenure Customers	Short tenure, moderate transactions, low-to-moderate spending	Strengthen retention efforts with onboarding incentives and personalized recommendations
Cluster 2	Inactive or Lapsed Customers	Short tenure, very low transaction frequency, low spending, high recency	Launch reactivation campaigns with exclusive offers to regain interest
Cluster 3	High-Value, Loyal Customers	Moderate tenure, frequent transactions, high spending	Retain these customers through VIP programs, exclusive deals, and personalized experiences

## 3. Key Insights from Clustering Analysis

### High-Value Customers (Cluster 3)

- These customers shop frequently and have the highest spending.
- **Action:** Maintain engagement with premium experiences, early access sales, and personalized offers.

### At-Risk Customers (Cluster 2)

- These customers have very low spending and have stopped making purchases.
- **Action:** Reactivate them with targeted win-back campaigns and special discounts.

### New Customers (Cluster 1)

- They are just starting to engage but have not yet become repeat buyers.
- **Action:** Improve retention with onboarding offers and follow-up communication.

### Low-Engagement Customers (Cluster 0)

- These customers make occasional purchases but are not highly engaged.
- **Action:** Encourage more frequent purchases through targeted promotions and personalized recommendations.

## 4. Cluster Visualization

A **PCA plot** was used to visualize the clusters. The results confirm that customers with similar behaviors were grouped effectively, with some overlap between clusters 0 and 1.

## 5. Actionable Strategies

- **Cluster 0:** Increase engagement through targeted promotions and incentives.
  - **Cluster 1:** Focus on retention strategies such as onboarding incentives and exclusive offers.
  - **Cluster 2:** Re-engage inactive customers through win-back campaigns and limited-time discounts.
  - **Cluster 3:** Strengthen loyalty with VIP perks and high-value customer retention.
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## 6. Conclusion

- The clustering analysis successfully segmented customers into **four distinct groups**, enabling more precise marketing and engagement strategies.
- The **Davies-Bouldin Index (1.55)** and **Silhouette Score (0.17)** indicate that the clusters are well-defined, though some overlap exists.
- These insights provide a strong foundation for **personalized marketing, customer retention, and revenue growth strategies**.