

# Supplier Segmentation Report

## 1. Project Summary

This project aims to segment suppliers based on various performance criteria using hierarchical clustering. The steps include data preprocessing, standardization, dendrogram analysis, and PCA-based visualization.

## 2. Clustering Results and Interpretation

Cluster 0 (Strategic Suppliers):

This group contains 14 suppliers with high quality, excellent service, and strong financial and operational capacity. Prices are moderate. These suppliers are suitable for long-term strategic partnerships.

Cluster 1 (Operational Suppliers):

This cluster includes 20 suppliers offering average quality and service, lower financial strength, and slightly better prices. They are more suitable for short-term or non-critical operations and can be targeted for improvement programs.

Cluster 2 (Outlier Supplier):

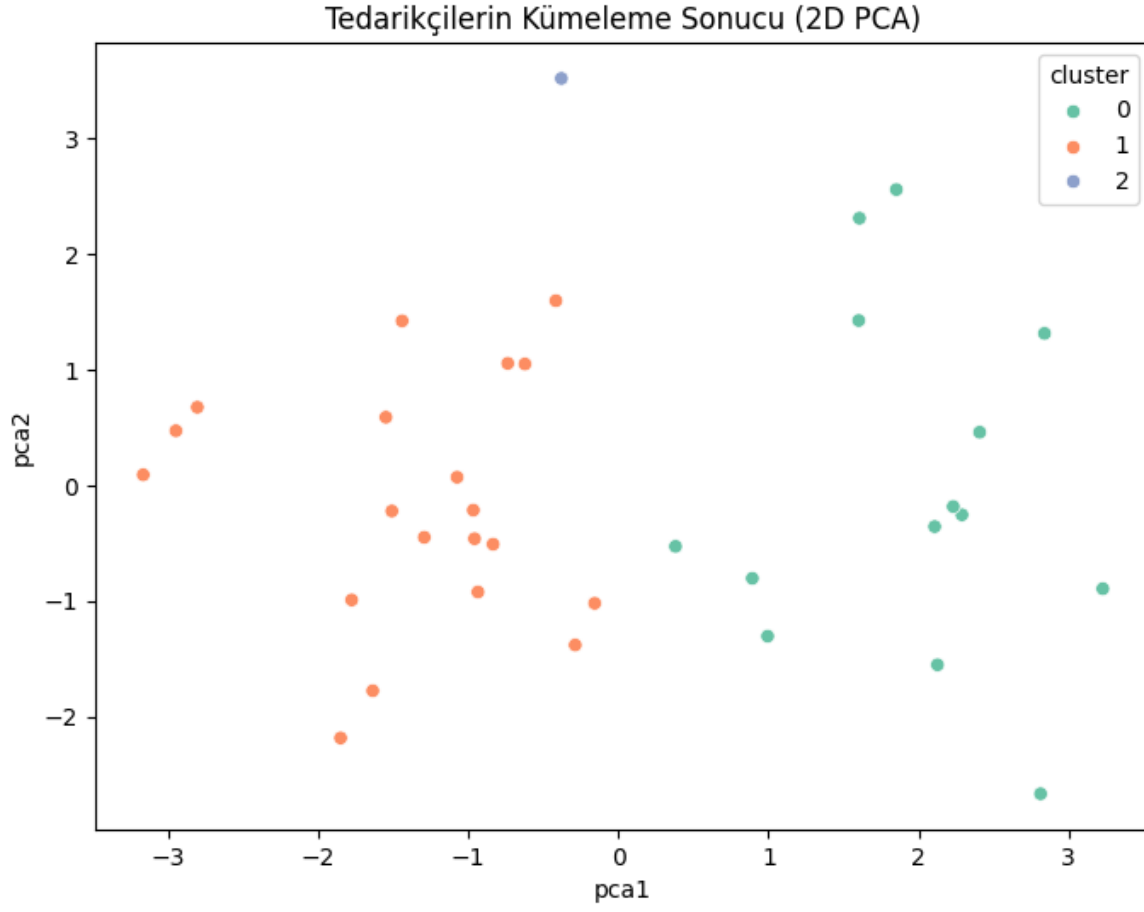
A single supplier stands out with extremely high quantity capacity but poor quality and weak infrastructure. Although the delivery time is short and the service level is high, this supplier requires special evaluation due to its outlier nature.

## 3. Conclusion and Recommendations

- Cluster 0 suppliers should be managed strategically and prioritized in long-term contracts.
- Cluster 1 suppliers can be monitored and included in development or risk mitigation programs.
- Cluster 2 should be examined individually before exclusion; it may offer operational advantages or pose serious risks.

## 4. PCA-Based Clustering Visualization

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## 5. Dendrogram of Supplier Clustering

