

# Analysis of Client Spending Patterns for XYZ

Harshal Sable, Abraham George, Aakash Patil, Rahma Hassan, Charlotte Wang

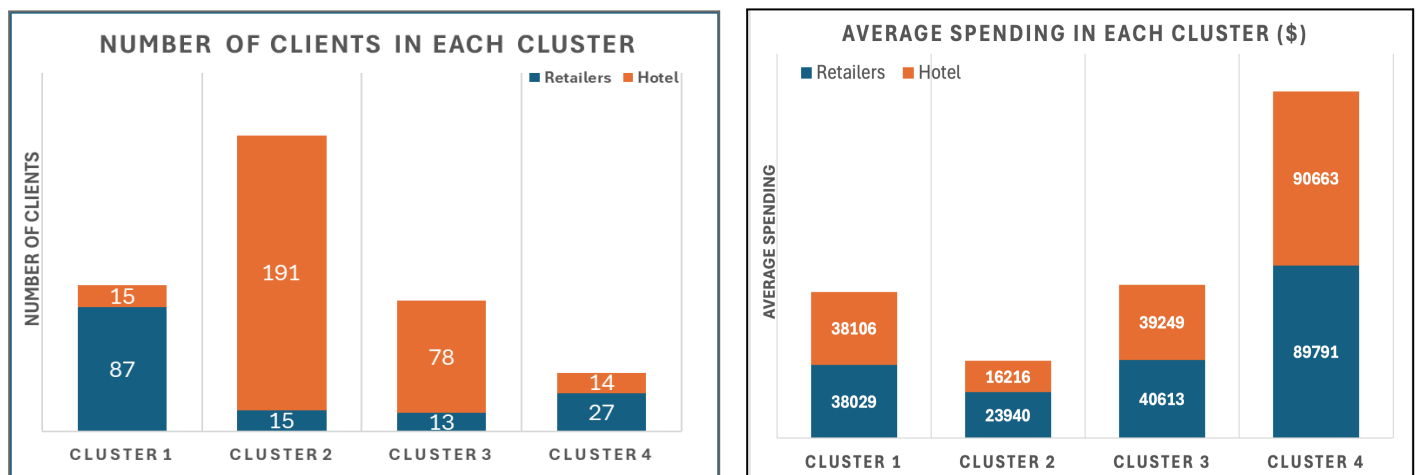
## Overview

To gain insights into client spending patterns, we analyzed the annual spending of 440 clients across six product categories. By using a clustering approach, we identified 4 client segments with unique purchasing behaviors. The following sections detail the clusters and provide specific recommendations to enhance XYZ's overall performance.

## Approach/Methodology

During the initial analysis, we identified several high spenders that were skewing the results. These outliers were separated into their own cluster to ensure a more accurate analysis. After removing these outliers, we applied the K-means clustering algorithm to the remaining data and determined that three clusters provided the best fit. This algorithm grouped the clients by minimizing the similarities within each cluster and maximizing the differences between them, giving us distinct actionable client segments.

## Detailed Cluster Insights and Strategic Recommendations



### Cluster 1: Primarily high-expenditure suburban retailers focused on milk, grocery and detergents.

- **Who are they?** [23.2% of clients] This cluster mostly has retailers (87 out of 102) located outside the big cities and are focused on stocking everyday consumer essentials like milk, groceries and detergent paper. However, there is limited spending on categories like frozen and fresh products.

- **Strategic Recommendations:** As these clients require more non-perishable products, delivery and inventory needs to be optimized:
  - A bulk purchasing program for non-perishable items could be introduced with volume discounts. XYZ can benefit from larger order sizes and delivery optimization.
  - As most clients are rural and non-perishable item buyers, XYZ could set up regional hubs for storage and distribution.

**Cluster 2: Low volume low-spending buyers across all categories, primarily small Horeca businesses.**

- **Who are they?** [46.8% of clients] This cluster likely consists of low-spending clients, such as new or small Horeca businesses (191 out of 206) that are still establishing their customer base. Their low average spending across all categories suggests they may also be tourist-driven or seasonal businesses, with fluctuating demand.
- **Strategic Recommendations:** As most of these clients are new or seasonal businesses, delivery and inventory management should be optimized:
  - By analyzing seasonal demand patterns, XYZ can adjust inventory levels to match peak tourist seasons or holiday periods, enabling Horeca clients to access products more efficiently.
  - XYZ can negotiate flexible supplier contracts with incentives for new businesses to increase order quantities as demand grows, Providing adjustable terms based on business expansion allows clients to manage cash flow and inventory more effectively.

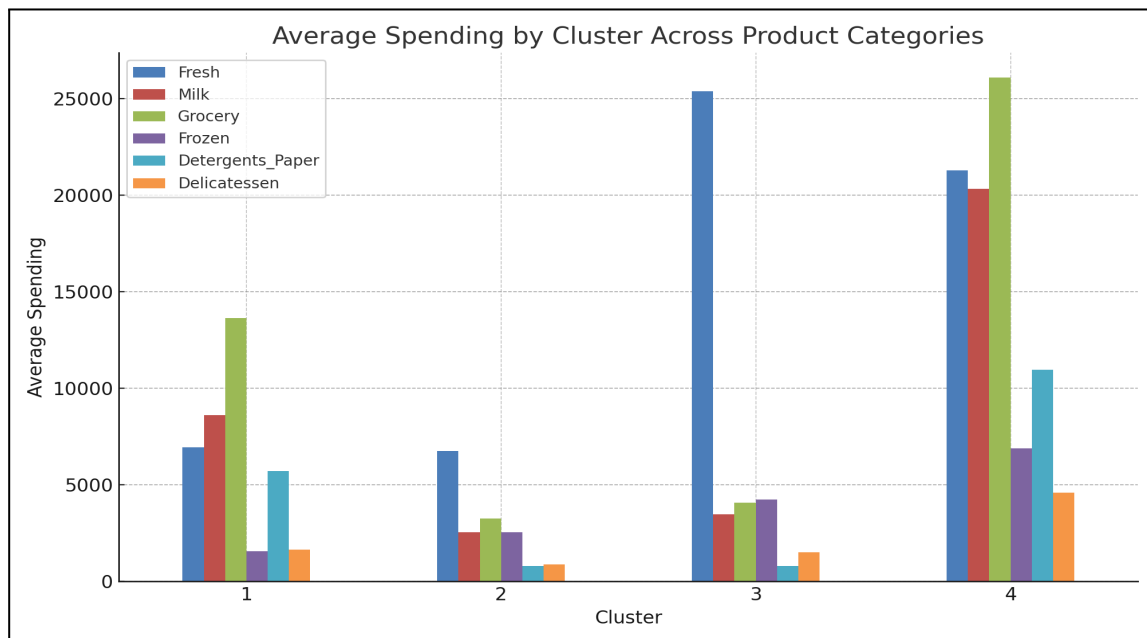
**Cluster 3: Mostly Horeca Fresh and frozen buyers with high spending on fresh and frozen products.**

- **Who are they?** [20.7% of clients] These clients are heavily spending on fresh and frozen products, majorly Horeca (78 out of 91) from regions outside the cities. These could be upscale restaurants or hotels who prioritize fresh ingredients.
- **Strategic Recommendations:** As these clients require top-quality perishable products, they might need frequent deliveries of fresh goods and are willing to pay more for prioritized service:
  - A premium delivery subscription service could be offered for flexible schedules, freshness guarantees and relationship managers.

- Data-driven forecasting for seasonal fluctuations of demands can be done to ensure stocking of high demand items.

#### **Cluster 4: Anomalous high-value Horeca and Retail clients located mostly in other regions.**

- **Who are they?** [9.3% of clients] This cluster is a mix of extremely high spenders (identified as outliers - double spending on average) across product categories located outside the cities. These are the most valuable clients and are likely major retailers, large hotels and prestigious restaurants.
- **Strategic Recommendations:** As these are the most valuable clients, retaining them is crucial:
  - Dedicated account managers can be assigned to manage their large and complex orders as well as quick resolutions of issues.
  - A loyalty program can be introduced tailored for these clients, offering various rewards for volume-based discounts as well as specialty pricing.



## **Conclusion**

The clustering analysis gave us valuable insights into the diverse needs of XYZ's clients, helping guide more strategic decisions. By understanding spending patterns and behaviors better, XYZ can fine-tune inventory management, streamline logistics, and offer more tailored solutions. This should allow XYZ to better meet client demands, reduce inefficiencies, and drive long-term growth in an increasingly competitive market.