

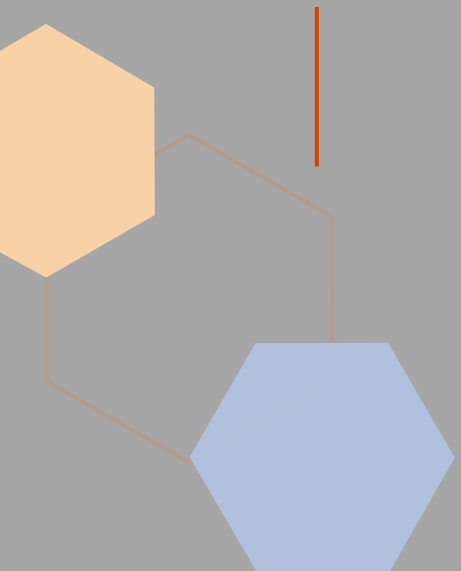
Business Report:



Customer Segmentation Insights and Strategic Recommendation

Introduction:

- ➔ The objective of this analysis is to group the customer base into different categories according to their interaction with the platform





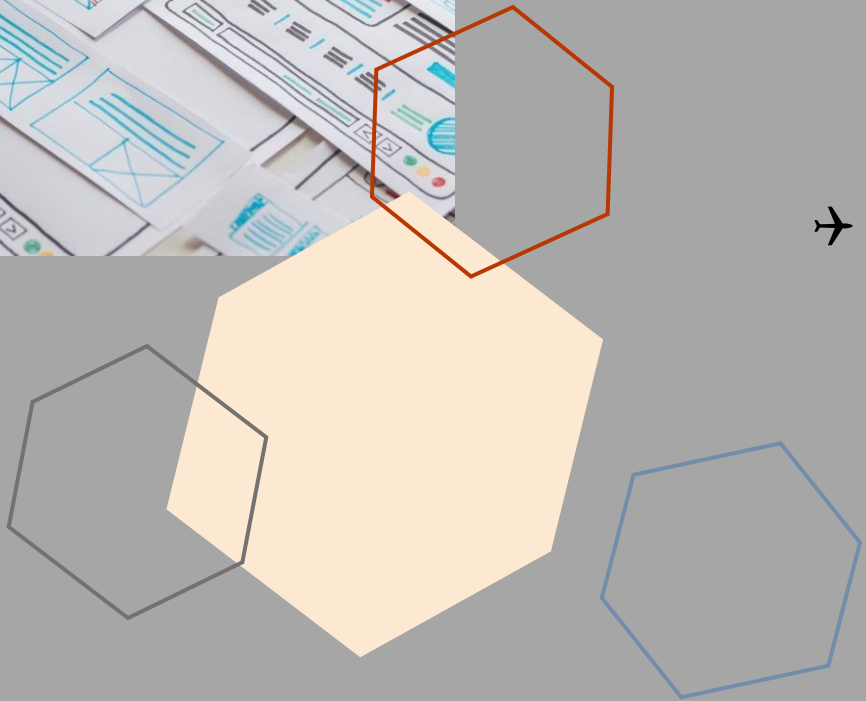
and purchase patterns.



By identifying key characteristics of each segment, the business can personalize its marketing efforts, improve customer retention, and encourage repeat customers.



The customers were divided into segments using the K-Means clustering algorithm, and useful insights were determined by analyzing the resulting clusters.



Summary:

Understanding consumer behavior is essential for developing successful marketing strategies and improving the customer experience in the highly competitive online retail industry. This case study uses K-Means clustering to give a detailed analysis of consumer subgroups taken from the online retail dataset. Three unique consumer segments with different levels of engagement, spending behaviors, and purchase patterns have been identified by the segmentation. The business can achieve increased customer satisfaction, retention, and long-term value by customizing marketing strategies and customer experiences for each respective category.





Methodology:

Data Preparation :

The raw customer profile data was processed by handling outliers using the Interquartile Range (IQR) method, and the dataset was standardized using StandardScaler.

Clustering :

The optimal number of clusters was determined using the Elbow Method, which indicated 3 as the optimal number of clusters.

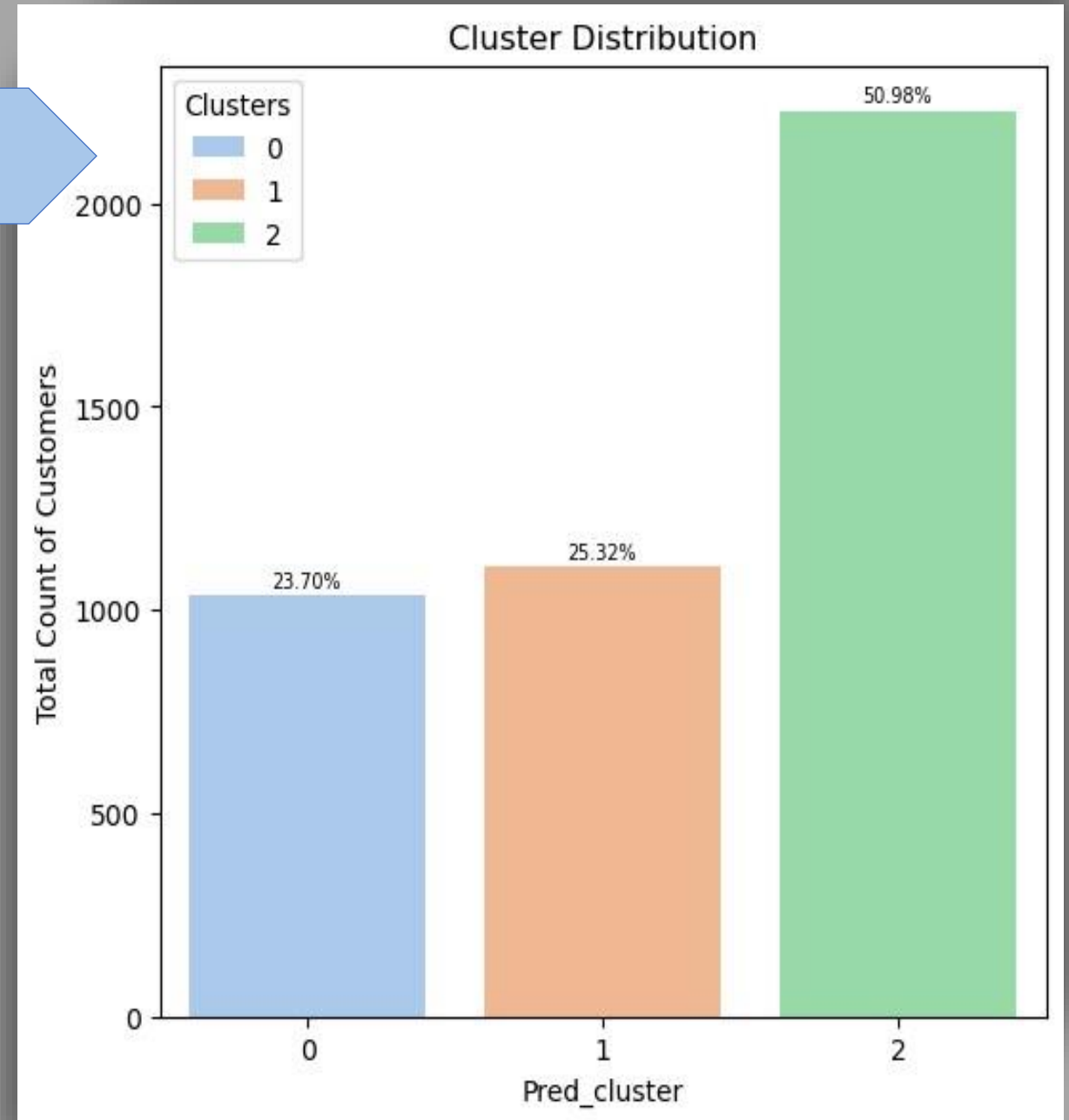
Cluster Analysis :

All key variables such as purchase frequency, monetary value, quantity purchased, and recency were analyzed for each cluster to identify customer behaviors and trends.

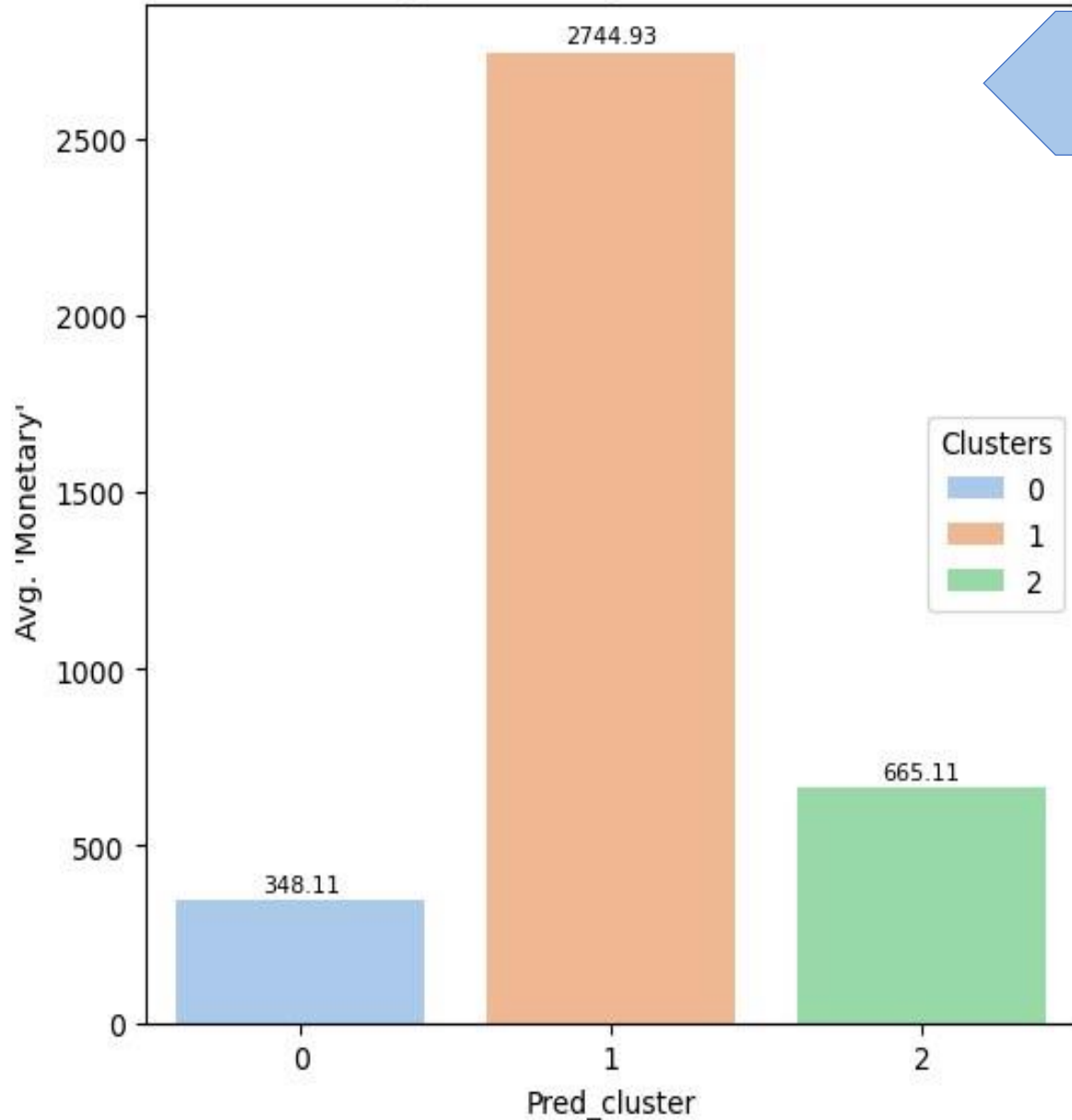
Cluster Distribution:

By applying, K-Means Clustering with K=3, we have got Total 3 Clusters i.e. Cluster-0, Cluster-1, and Cluster-2.

- ➔ **Cluster-0**, has the Lowest number of Customers, i.e. around **23.69%**.
- ➔ **Cluster-1**, has the Second Highest number of Customers, i.e. around **25.32%**.
- ➔ **Cluster-2**, has the Highest number of Customers, around **50.98%**.



Average 'Monetary' for each Cluster



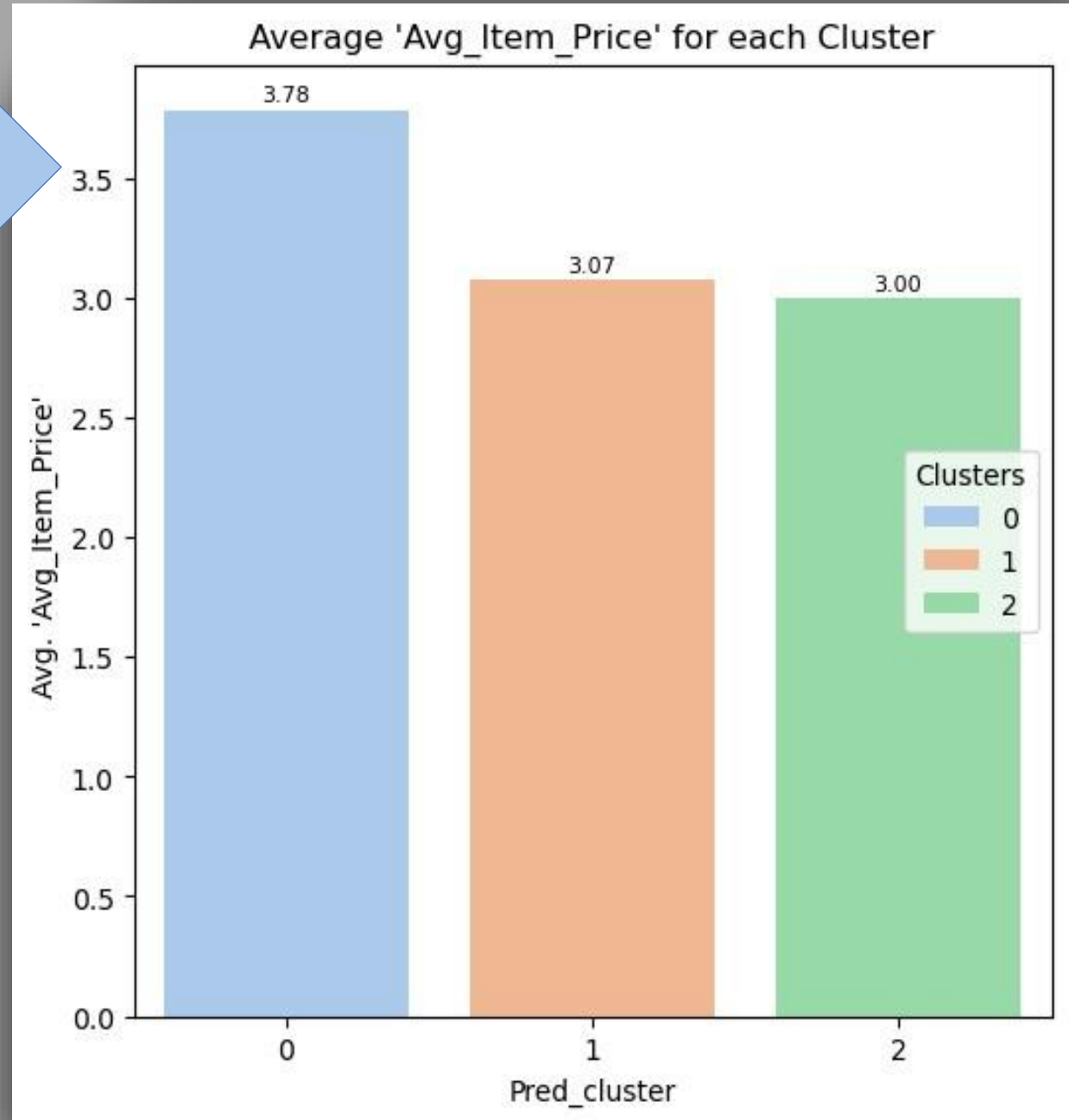
Avg. Monetary Value for each Cluster:

- **Cluster-0**, average spending is moderate at around £348.
- **Cluster-1**, average spending is highest among all, with an average of £2745.
- **Cluster-2**, also spend moderately, with an average monetary value of £665.

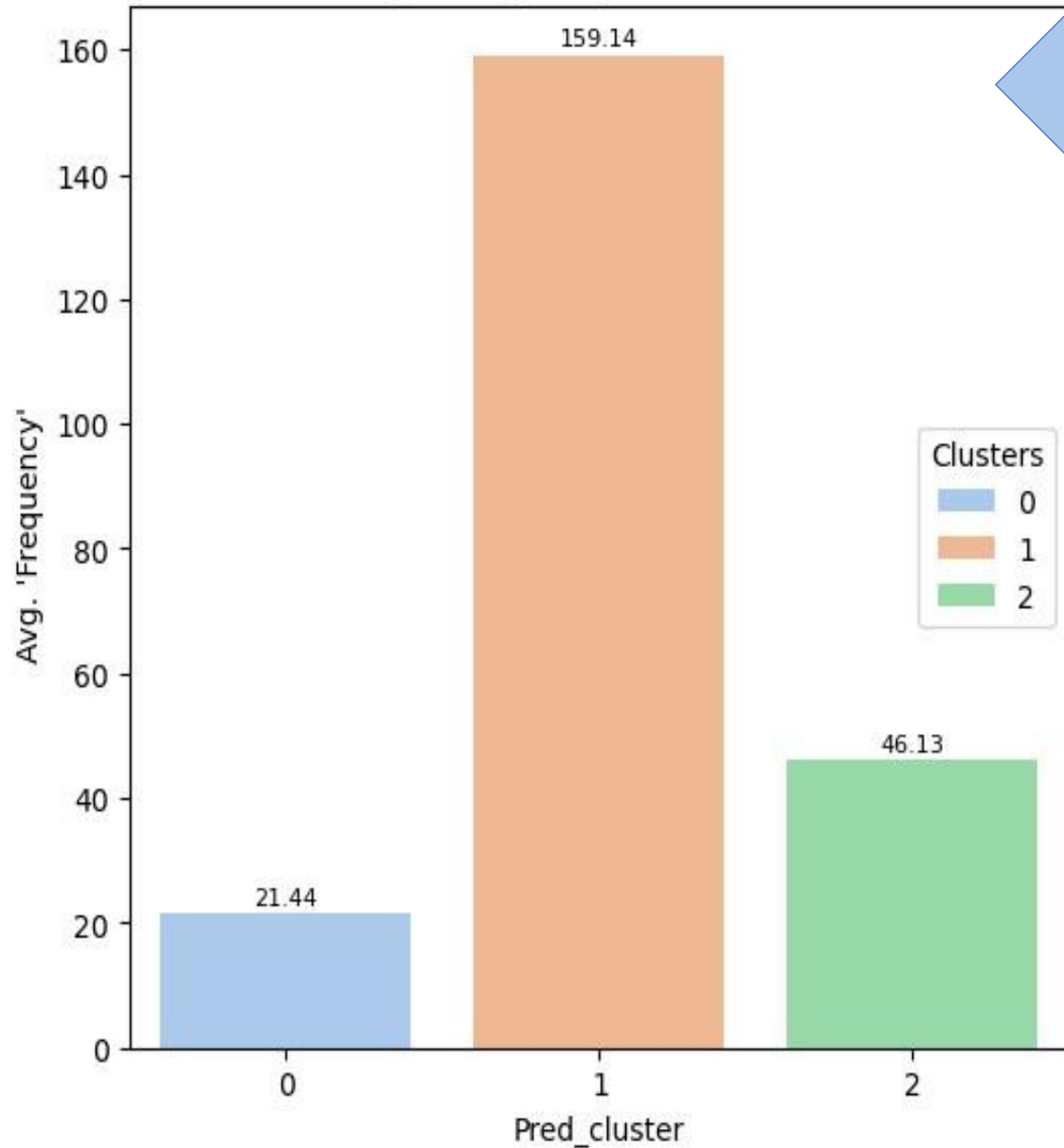


Avg. Item Price for each Cluster:

- ➔ **Cluster-0**, tends to buy items priced higher than other clusters (£3.78 on average).
- ➔ **Cluster-1**, these customers buy slightly lower-priced items on an average of £3.07.
- ➔ **Cluster-2**, tends to buy items priced at around £2.99 (approx. £3) on average.

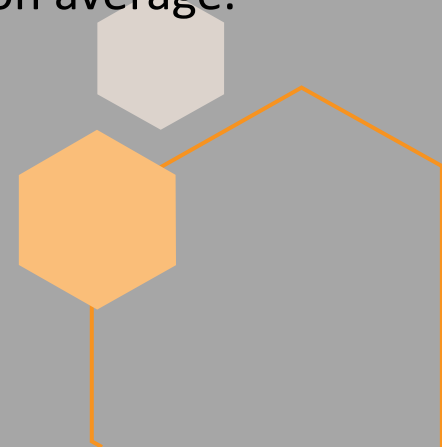


Average 'Frequency' for each Cluster



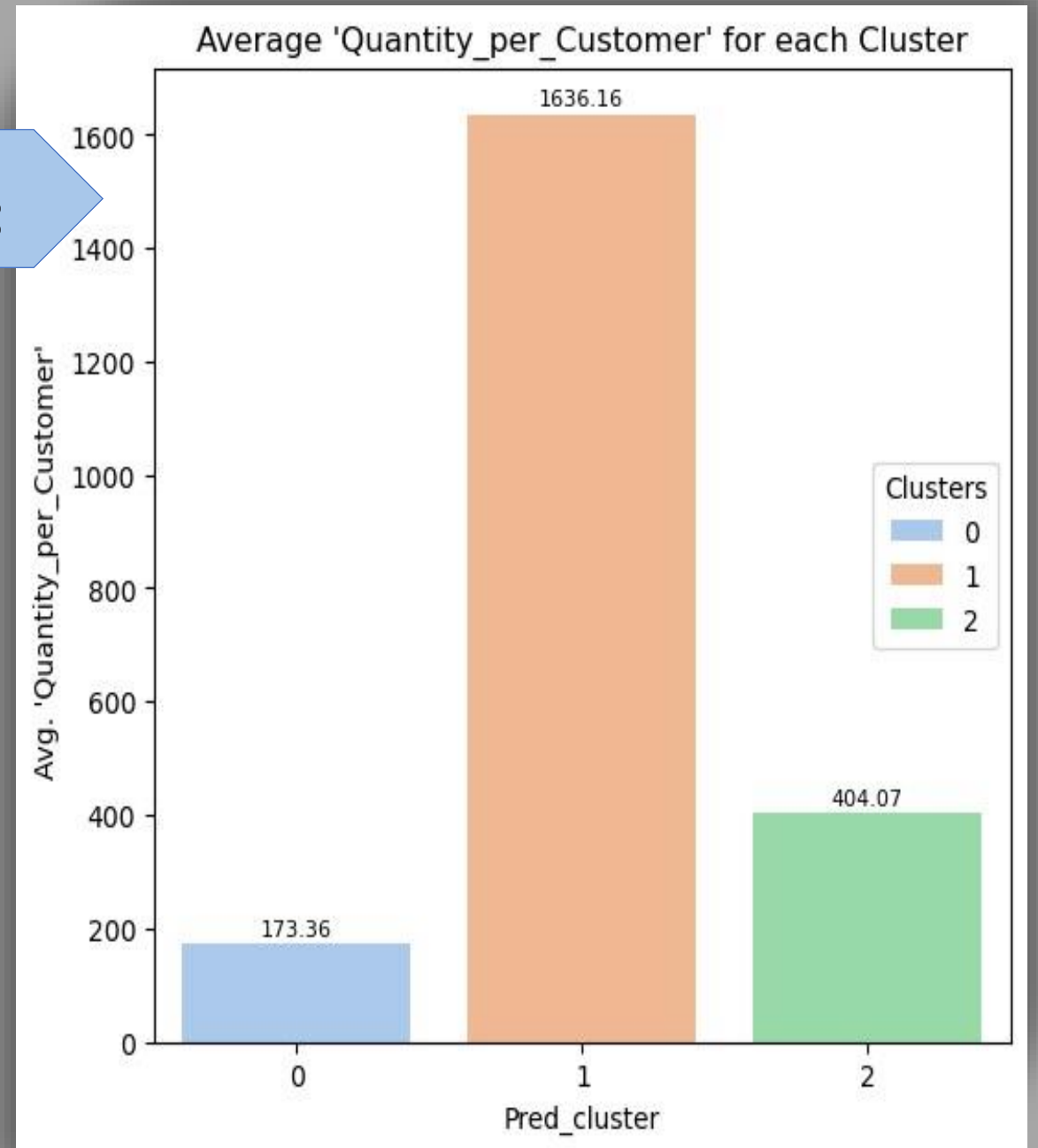
Avg. Order Frequency for each Cluster:

- ➔ **Cluster-0**, customers in this cluster make around 21 purchases on average which is lowest among all the clusters.
- ➔ **Cluster-1**, these customers are highly engaged, making around 159 purchases on average.
- ➔ **Cluster-2**, these customers has Moderate purchase frequency at 46 orders on average.

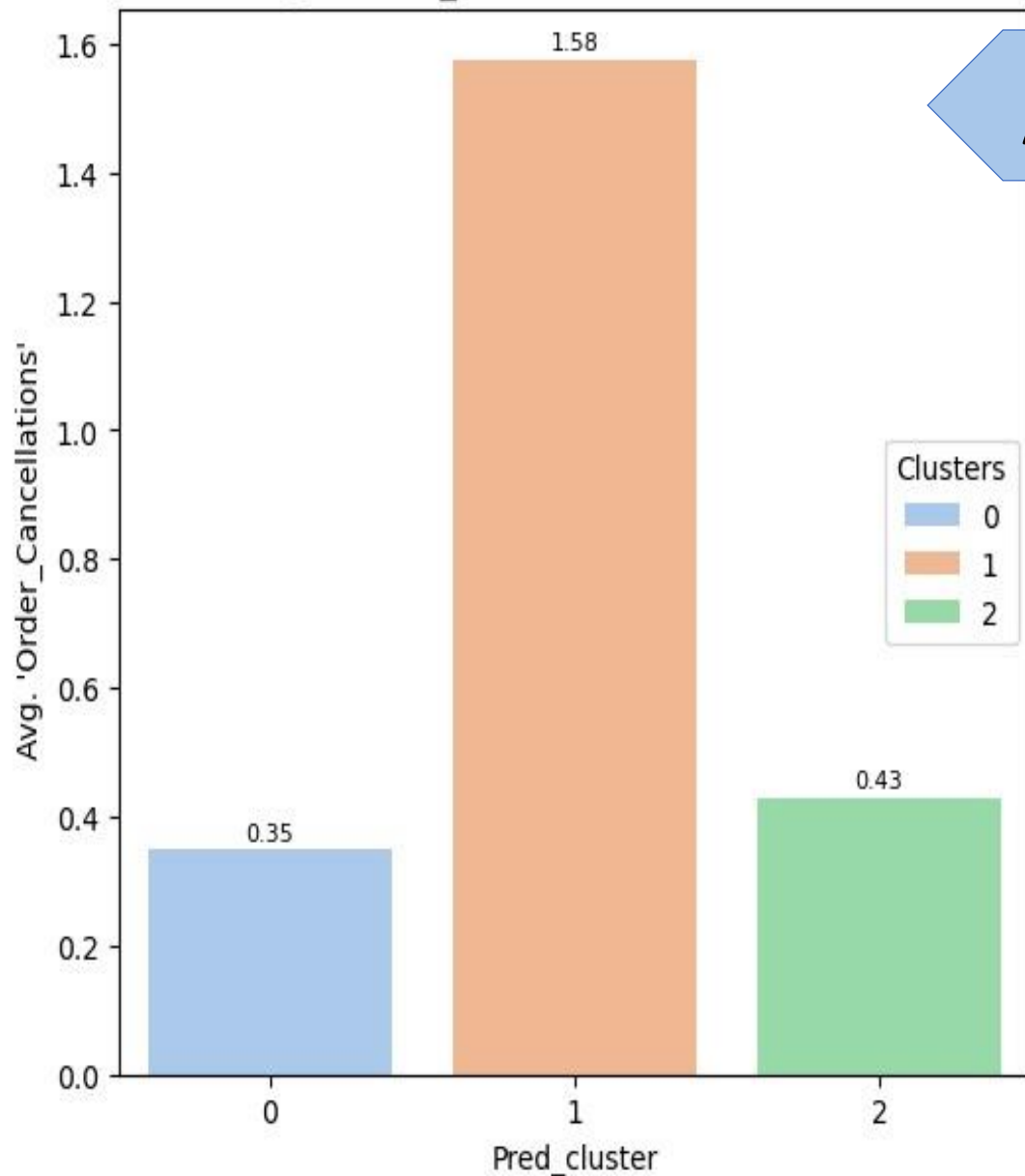


Avg. Quantity Ordered in each Cluster:

- ➔ **Cluster-0**, these customers buy fewer items when compared to other segments, with an average quantity of 173 items.
- ➔ **Cluster-1**, customers purchases large quantities of items, with an average of 1636 items.
- ➔ **Cluster-2**, these customers buy a moderate number of items with an average 404 items.



Average 'Order_Cancellations' for each Cluster



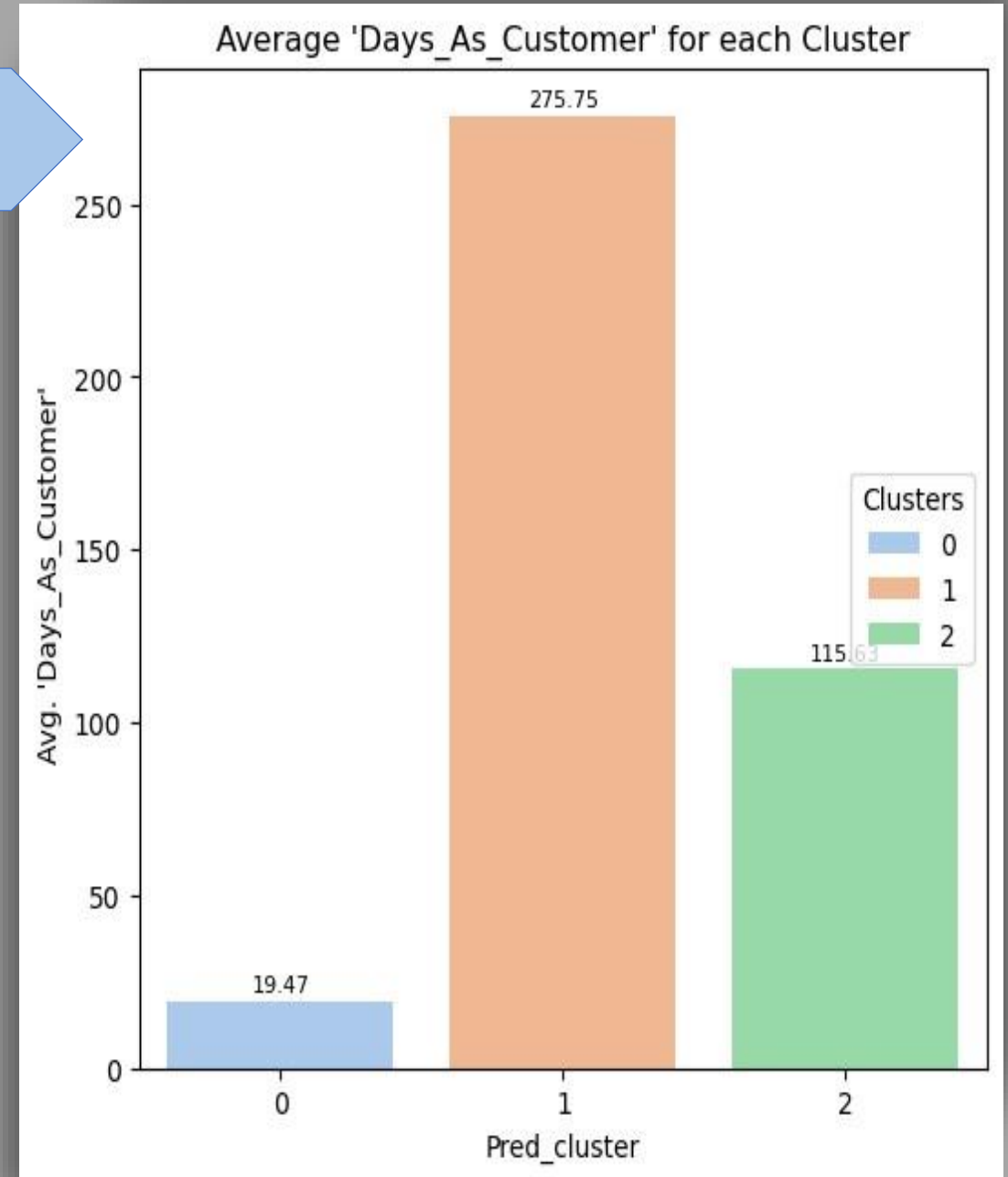
Avg. Order Cancellations in each Cluster:

- ➔ **Cluster-0**, has Very low cancellation rate with 0.35 cancellations on average.
- ➔ **Cluster-1**, customers in these cluster has Moderate, but higher than others, with an average of 1.58 cancellations.
- ➔ **Cluster-2**, these customers has very low cancellation of rate with 0.43 cancellations on average.

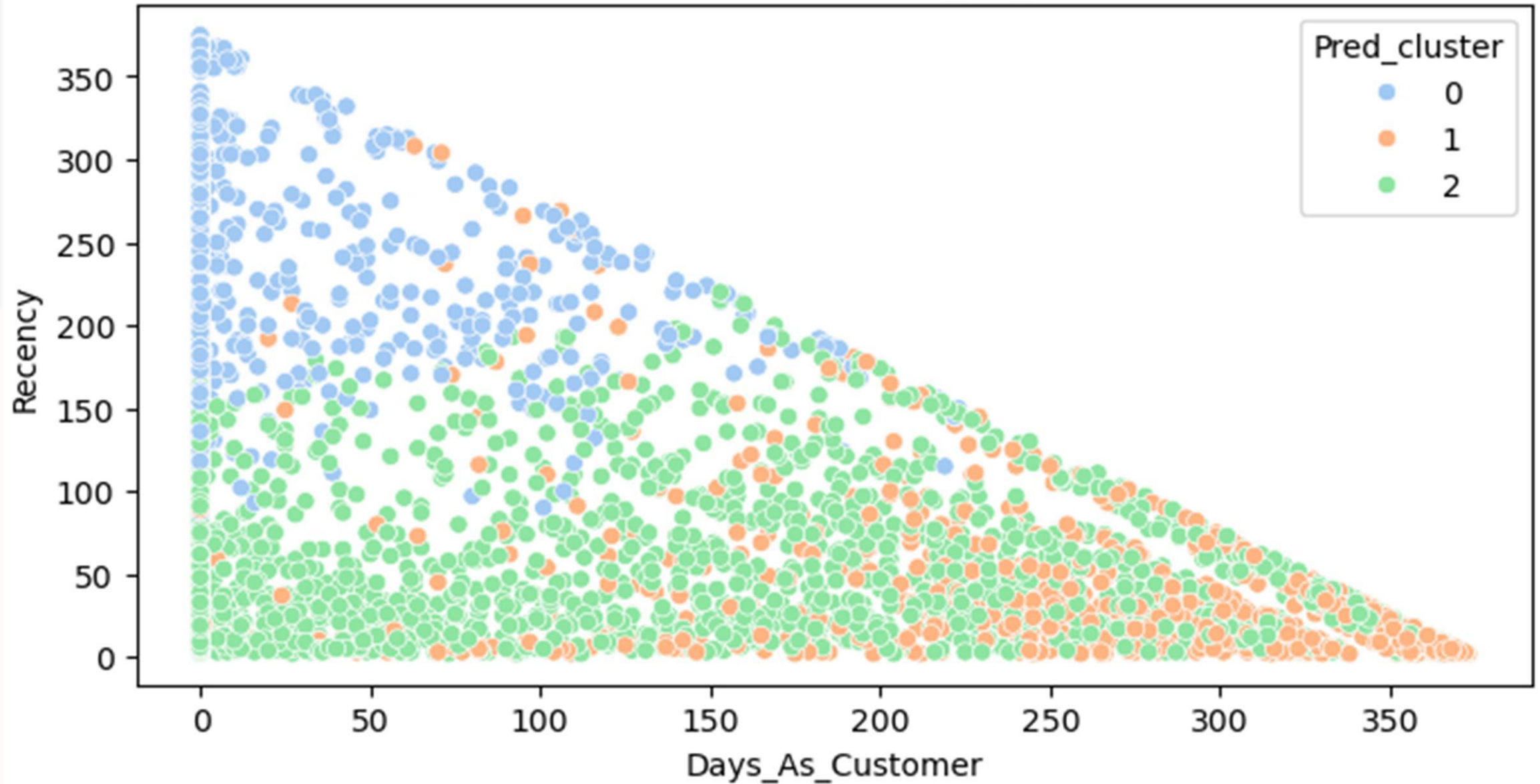


Avg. Days as Customer for each Cluster:

- ➔ **Cluster-0**, these are relatively new customers with an average tenure of 19 days.
- ➔ **Cluster-1**, these are long-term customers with an average tenure of 275 days.
- ➔ **Cluster-2**, these customers have been with the company for an intermediate duration with an average of 115 days.



Relationship between `Recency` and `Days_As_Customer` for each Cluster



Cluster Profiles



Cluster-0

Low Engagement, Low Spending Customers

Key Characteristics:

- **Frequency:** Low, with an average of 21 purchases.
- **Monetary:** Moderate spending with an average of £ 348.
- **Quantity:** Smaller quantity per purchase compared to other clusters.
- **Recency:** High, with most purchases made a long time ago (average of 248 days)
- **Days as Customer:** Relatively new customers, averaging 19 days on the platform.



Customer Behavior:

- These customers are occasional shoppers who exhibit low loyalty and engagement. Their purchasing is infrequent, and they haven't made recent transactions.



Actionable Insights:

- **Engagement Campaigns:** Create targeted email campaigns with incentives, such as discounts, to bring these customers back to the platform.

Cluster Profiles

Cluster-1



→ **Nurture Early:** Offer welcome bonuses or early access to sales for new customers to increase their activity during the early stages of their relationship with the business.

High-Value, Frequent Shoppers

Key Characteristics:

- **Frequency:** Very high, with an average of 159 purchases.
- **Monetary:** High spenders, with an average monetary value of £ 2,745.
- **Quantity:** Large quantity of items purchased per order.
- **Recency:** Low, with recent purchases (average recency of 31 days).
- **Days as Customer:** Long-term, loyal customers with an average of 275 days on the platform.



Customer Behavior:

- This segment represents the most valuable customers, who are highly engaged with frequent purchases and a high lifetime value. These customers are likely to be brand advocates.

Cluster Profiles

Cluster-2



Actionable Insights:

- **Exclusive Loyalty Programs:** Implement VIP programs or tiered loyalty rewards that offer perks like early access to sales, personalized offers, or dedicated customer support.
- **Retention Focus:** Keep these customers engaged with personalized recommendations and upselling strategies to maintain and enhance their loyalty.

Moderate Engagement, Mid-Level Spending Customers



Key Characteristics:

- **Frequency:** Moderate, with an average of 46 purchases.
- **Monetary:** Mid-level spending with an average of £ 665.
- **Quantity:** Moderate quantity per purchase.
- **Recency:** Moderate, with some time passed since the last purchase (average of 52 days).
- **Days as Customer:** Intermediate duration of customer relationship, averaging 115 days.



Customer Behavior:

Cluster Profiles

Cluster-3

- ➔ These customers display moderate engagement and spending. They return periodically but are not as frequent or high-value as Cluster 1.

Actionable Insights:

- ➔ **Personalized Offers:** Provide occasional incentives to encourage these customers to purchase more frequently, such as limited-time offers or seasonal discounts.
- ➔ **Reactivation Campaigns:** Use targeted communications to prevent these customers from lapsing, focusing on the benefits of continuing to shop with the business.

Key Insight:

Represents low-engagement customers who need targeted campaigns to encourage more frequent purchases and increase loyalty.



Cluster 0 :

Represents the business's most valuable customers, who are highly engaged and should be nurtured with personalized experiences and loyalty programs.

Cluster 1 :

Represents moderately engaged customers who can be incentivized to increase their activity with personalized offers and reactivation strategies.

Cluster 2 :

Recommendations:

Segment-Specific Marketing:



To maximize engagement, use customize marketing initiatives for each segment. For instance, concentrate on Cluster 0 reactivation, Cluster 1 loyalty awards, and Cluster 2 personalized offers.

Customer Retention Programs:



Create initiatives that incentivize recurring business and cultivate enduring connections with valuable clients. Think about putting in place tiered loyalty programs with progressively more advantages.

Personalization and Targeting:



Apply data-driven perspectives to make messages more relevant to the recipient. Based on past purchases, current engagement levels, and shopping habits, send personalized product recommendations and offers.



Feedback Loops and Continuous Improvement:



Get input from various sectors on a regular basis to comprehend how their wants are changing. Give high-value clients the chance to contribute to new product development or test new features.

Conclusion:

This study of customer segmentation

business, and improve
marketing tactics and



has revealed important information about the traits and behaviors of various consumer segments. The company may increase longterm profitability, encourage repeat customer happiness by customizing customer experiences to each segment's particular demands. The suggestions made provide the company concrete actions to take in order to improve client relations and increase loyalty, which will eventually result in long-term success.

Thank you !

