Business Report with final conclusions

Abhi pratap

Overview:

This study focuses on leveraging transactional data to deeply understand customer segmentation for strategic business improvements. By identifying distinct customer segments based on their unique characteristics and purchasing behaviors, we aim to tailor marketing strategies and enhance oerall customer satisfaction. The analysis identifies three primary customer groups, each showcasing specific traits and preferences that can be effectively targeted to drive repeat business and optimize the customer journey. This segmentation approach not only enhances operational efficiency but also enables personalized engagement strategies that foster stronger customer relationships and sustainable business growth.

Introduction:

This analysis focuses on understanding different types of customers using transaction data. By carefully identifying and studying these customer groups, our aim is to create targeted marketing strategies and operational improvements that cater specifically to each group's preferences. This approach is crucial for enhancing customer satisfaction and encouraging repeat business. By offering personalized experiences that align with what our customers want, we can build stronger relationships and ensure long-term success for our business.

Methodology:

To identify distinct customer segments, we utilized RFM (Recency, Frequency, Monetary) analysis on our transactional data. This approach involved deriving RFM metrics from key transaction attributes:

- **Recency:** Determined by analyzing purchase dates to gauge how recently customers made purchases.

- **Frequency:** Measured by counting the number of transactions each customer has made over a specific period.

- **Monetary Value:** Calculated by summing up the total spending of each customer.

By leveraging these RFM metrics, we were able to segment customers based on their buying behaviors and transactional characteristics. This method provides a structured approach to understanding customer preferences and enables us to tailor marketing strategies and operational decisions effectivel

Insights from the data:


Distribution of Quantity
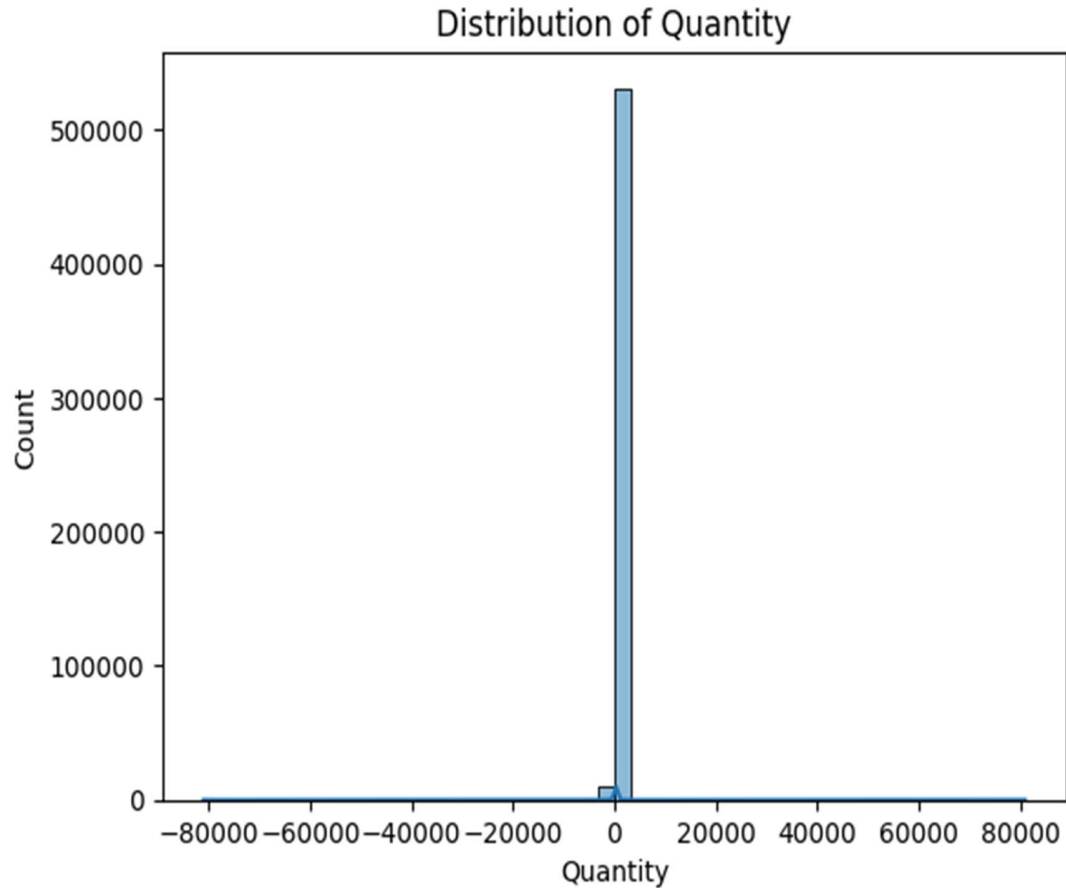
The extremely high peak near zero suggests that most transactions involve small quantities. This could mean that most customers purchase items in low quantities.

Negative quantities might indicate returns or cancellations.

Total Sales Over Time
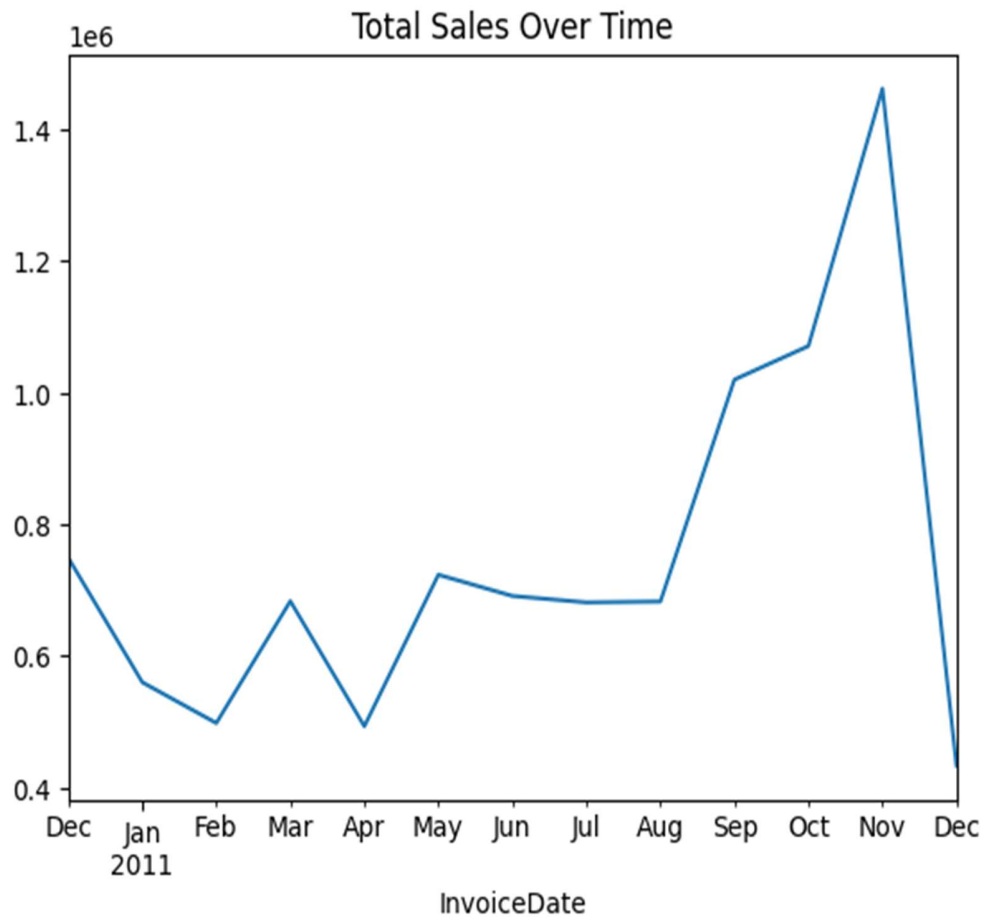
Seasonal Trend: There is a noticeable increase in sales towards the end of the year, particularly in November. This is likely due to the holiday season when retail sales typically spike.

Fluctuations: Sales exhibit fluctuations throughout the year, with some months showing dips and others showing peaks. This suggests variability in purchasing behavior over time, which could be influenced by various factors such as marketing campaigns, holidays, or other events.

Top 10 Products by Total Sales
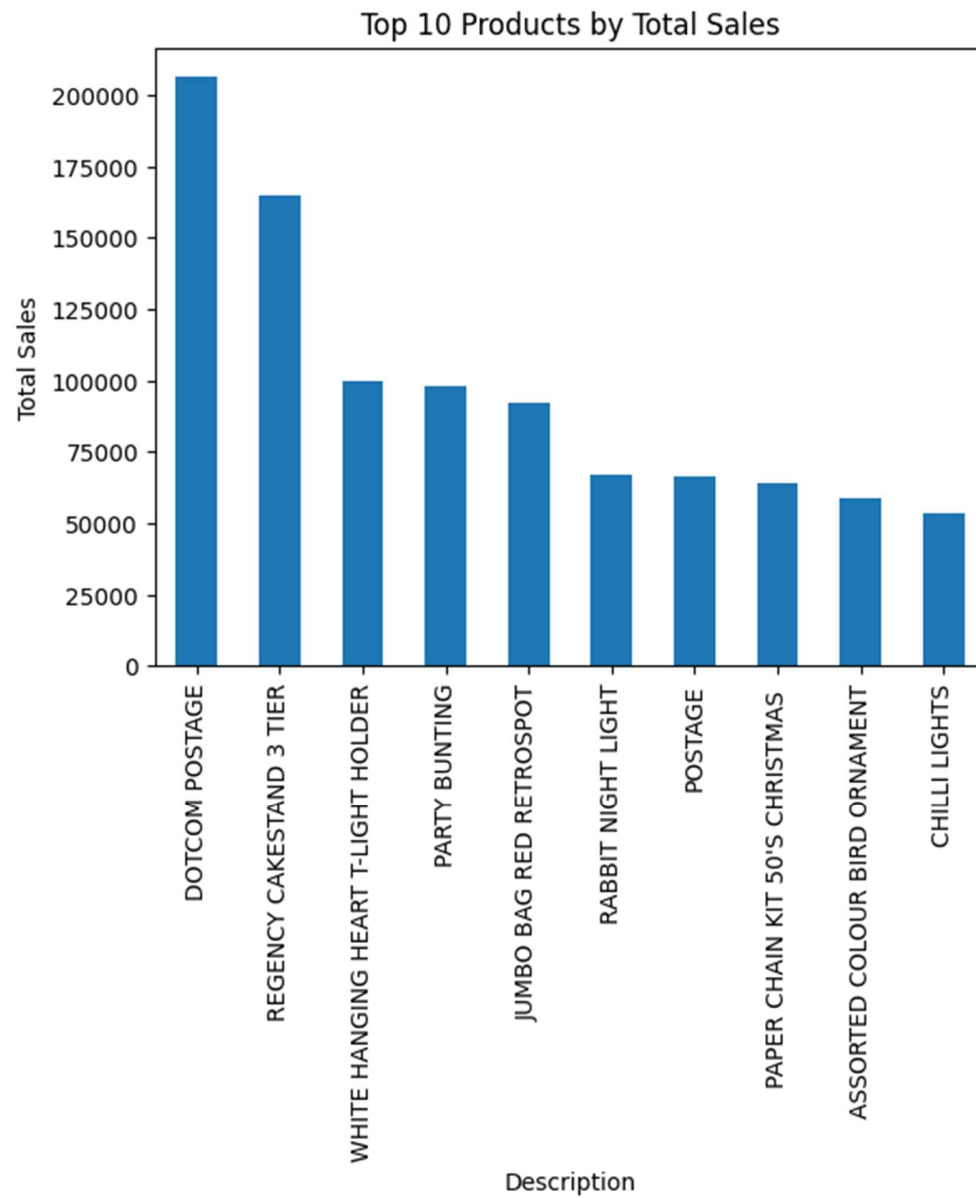
Top Product: "DOTCOM POSTAGE" is the highest-grossing product, significantly outperforming other products.

Therefore the company needs to focus on the supply of this product.
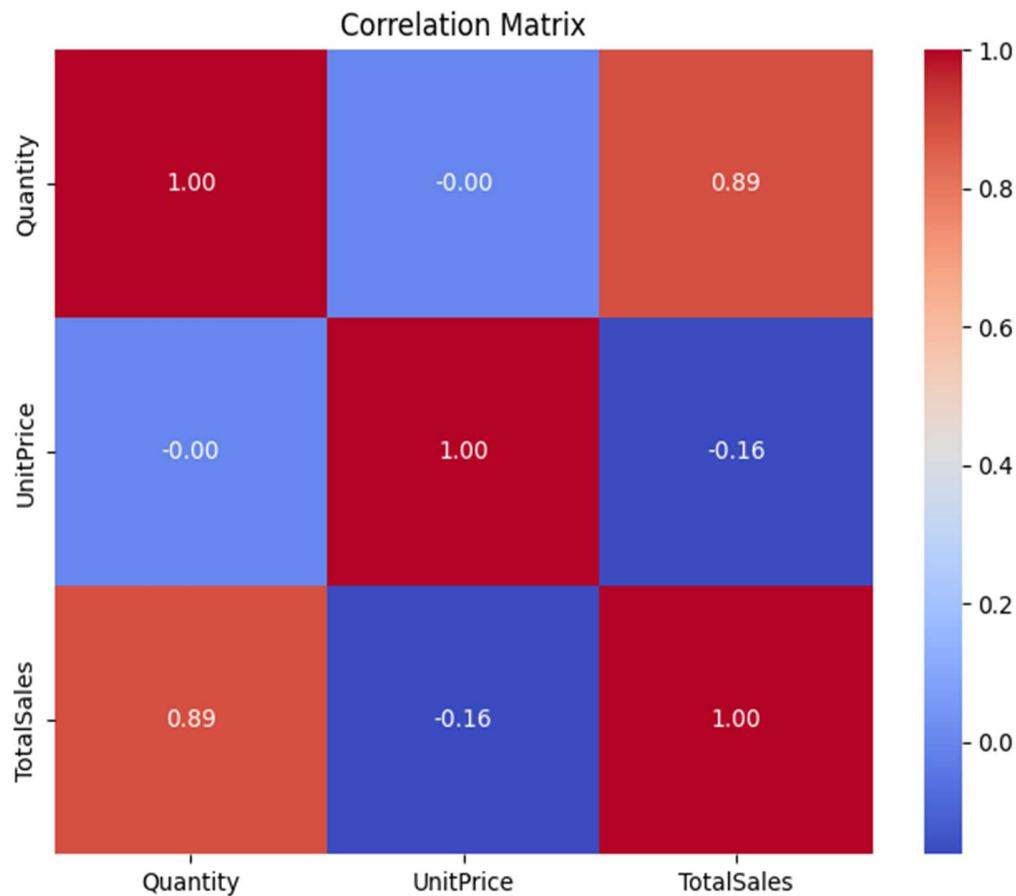
key insights from the correlation matrix:

Strong Positive Correlation (0.89) between Quantity and TotalSales: Higher quantities sold lead to higher total sales.

No Significant Correlation (-0.00) between Quantity and UnitPrice: The quantity sold does not affect the unit price.

Weak Negative Correlation (-0.16) between UnitPrice and TotalSales: Slight tendency for total sales to decrease as unit price increases, but the relationship is weak.

Cluster Profiles:

Cluster 0 - Regular Customers

- **Amount:**
  - Mean: $951.04
  - Median: $688.60
  - Standard Deviation: $810.75
- **Frequency:**
  - Mean: 59.21 purchases
  - Median: 44.0 purchases
  - Standard Deviation: 49.86 purchases
- **Recency:**
  - Mean: 44.38 days since last purchase
  - Median: 34.0 days
  - Standard Deviation: 37.01 days
- **Behavior:**
  - Regular Customers exhibit moderate spending and frequent purchases.
  - They maintain a consistent buying pattern, indicating loyalty and regular engagement with the company.

Cluster 1 - High-Value Purchasers

- **Amount:**
  - Mean: $4933.95
  - Median: $4132.65
  - Standard Deviation: $2652.58
- **Frequency:**
  - Mean: 286.23 purchases
  - Median: 265.0 purchases
  - Standard Deviation: 140.87 purchases
- **Recency:**
  - Mean: 21.90 days since last purchase
  - Median: 11.0 days
 - Standard Deviation: 32.61 days

Behavior:

- High-Value Purchasers exhibit the highest spending and purchase frequency.
- They engage frequently and recently with the company, highlighting their high value and the need for specialized care and attention.

Cluster 2 - Occasional Shoppers

- **Amount:**
    - Mean: $387.12
    - Median: $287.81
    - Standard Deviation: $474.76
- **Frequency:**
    - Mean: 25.17 purchases
    - Median: 17.0 purchases
    - Standard Deviation: 26.73 purchases
- **Recency:**
    - Mean: 248.30 days since last purchase
    - Median: 244.5 days
    - Standard Deviation: 67.26 days
- **Behavior:**
    - Occasional Shoppers show lower spending and purchase frequency.
    - They exhibit a high recency, indicating sporadic engagement and potential dissatisfaction, which may lead to lower retention rates and higher churn.

Visualizations by using boxplots:

Amount by Cluster ID
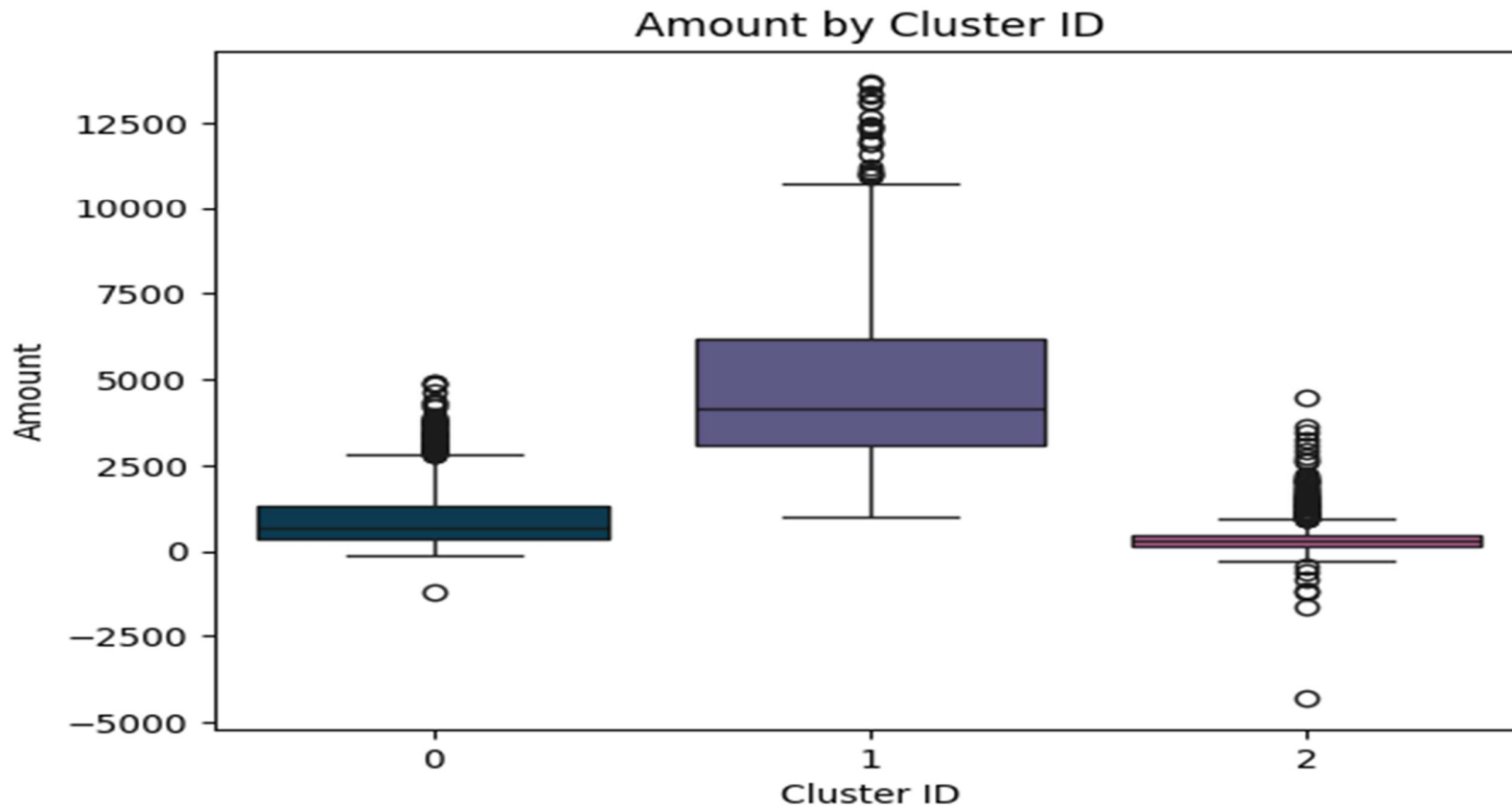
Insight: Customers belonging to cluster_id 1 exhibit robust spending behaviors, consistently demonstrating higher purchase amounts compared to customers in clusters 0 and 2.
These high-value customers not only engage frequently but also show a strong inclination towards premium offerings, reflecting their significant contribution to overall sales and profitability.

Recency by Cluster ID
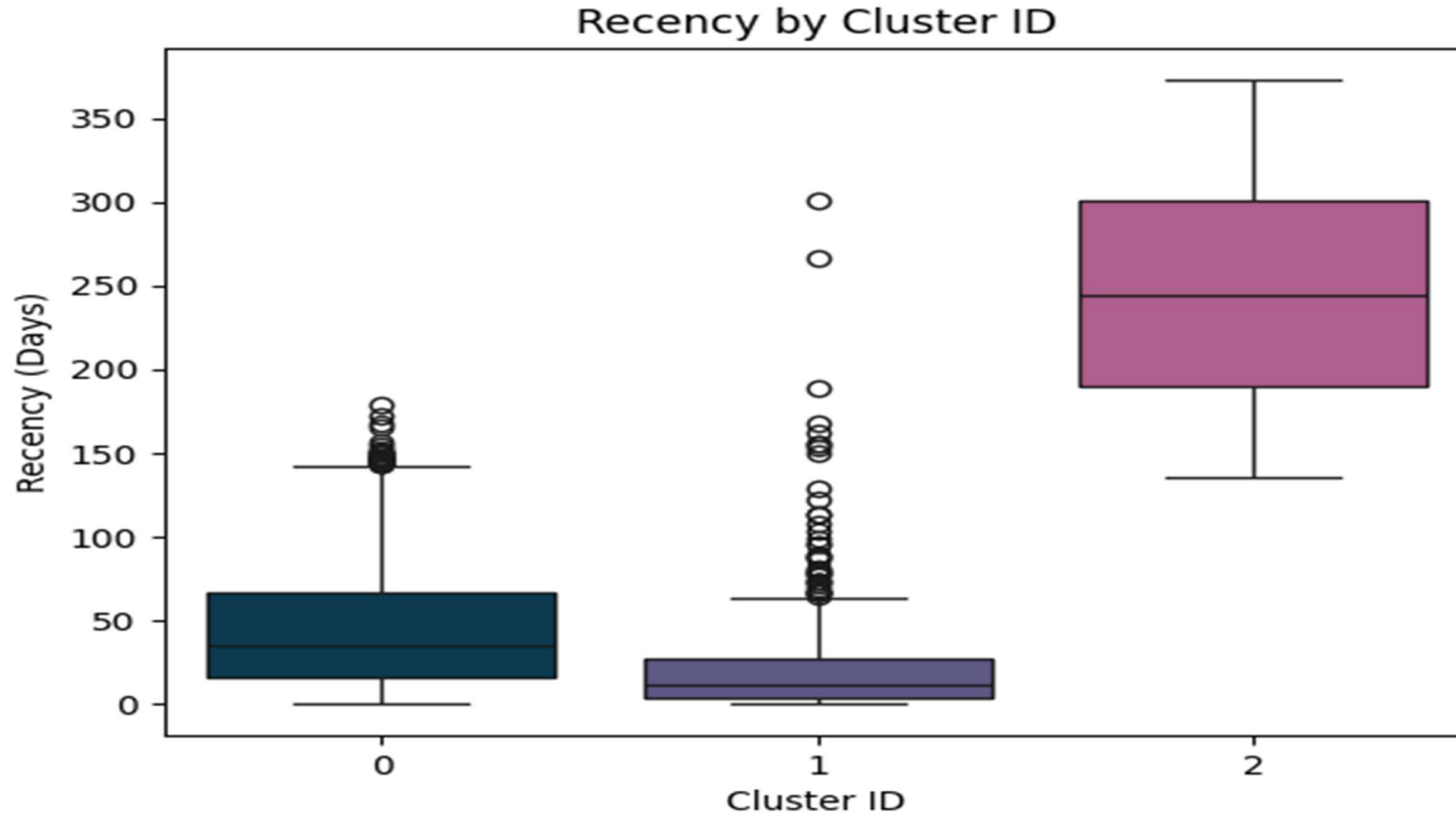
Insight: Customers in cluster_id 1 are characterized as the most recent purchasers, with an average of 21 days since their last transaction. This indicates their active engagement and current interest in our products or services, highlighting opportunities to maintain their loyalty through targeted retention strategies and personalized offers.

Frequency by Cluster ID
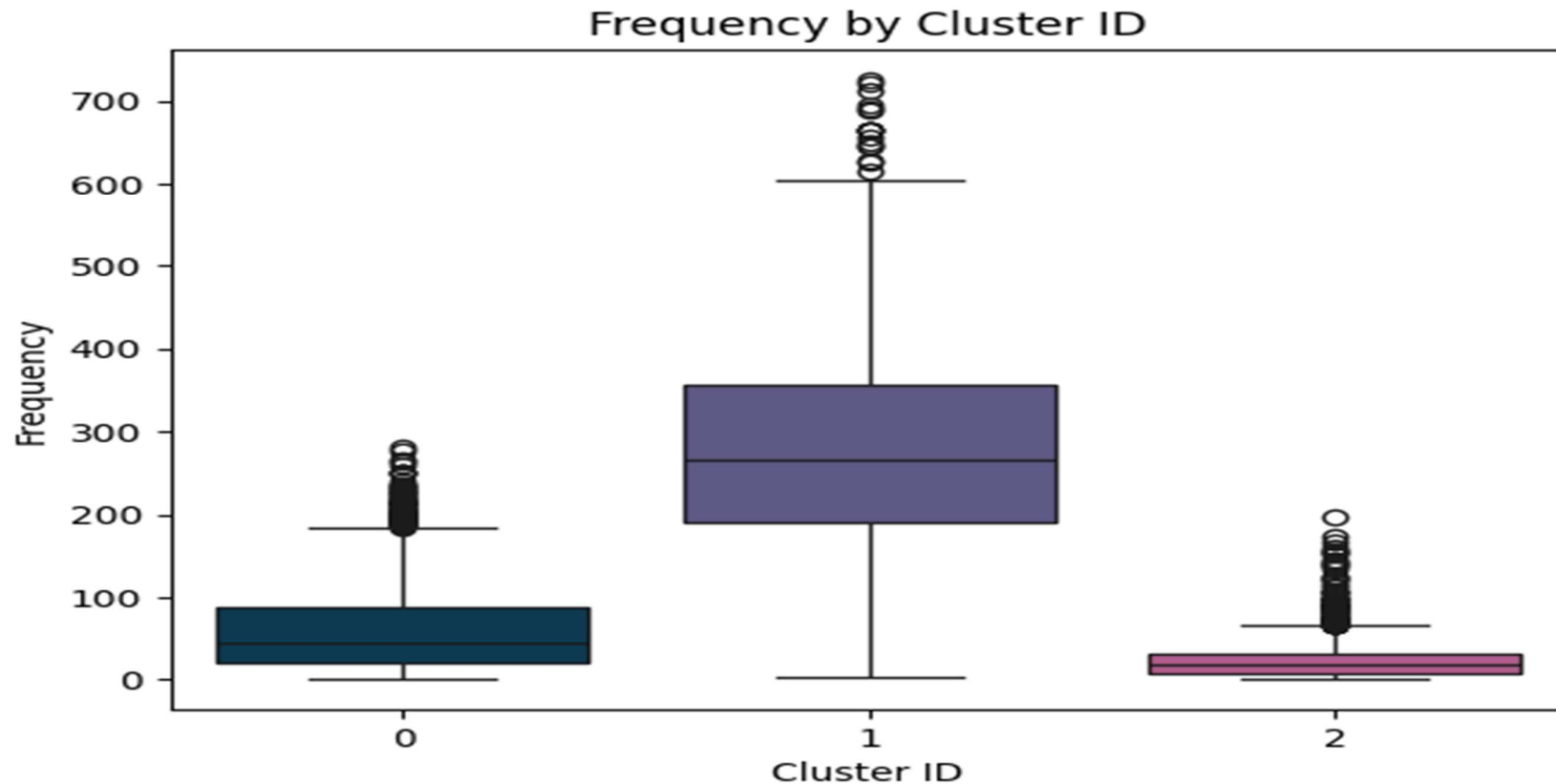
Insight: Customers in cluster_id 1 are frequent shoppers, averaging 285.63 purchases. This high frequency underscores their consistent interaction with our brand, presenting an opportunity to further enhance engagement through tailored loyalty programs and exclusive offerings that cater to their purchasing habits and preferences.

Overall Insight:

High-Value and Engaged Segment: Cluster 1 customers are the <u>most valuable</u> to the business. They not only spend the most, with an impressive <u>average purchase amount of $4,933.95</u>, but they also shop very frequently, averaging <u>286.23 transactions</u>. Their purchases are made regularly, about <u>every 22 days on average</u>. These customers show strong loyalty and consistent engagement with the company, making them crucial for driving significant revenue.

Moderate Engagement Segment: Cluster 0 customers are <u>moderately engaged</u>, providing a stable and reliable source of revenue. With an <u>average purchase amount of $951.04</u> and a median of $688.60, they represent a middle-tier customer group. They shop fairly regularly, with an <u>average of 59.21 transactions</u> and a median of 44.0 transactions, making purchases approximately every 44 days.

Low Engagement Segment: Cluster 2 customers are the <u>least engaged</u> and spend the least amount, with an <u>average purchase amount of $387.12</u> and a median of $287.81. They shop infrequently, averaging <u>just 25.17 transactions</u>, and their purchases are spaced out, with an <u>average recency of 248.30 days</u>. This indicates they are not as connected or loyal to the company

In summary, Cluster 1 is the high-value group that should be nurtured with special programs, Cluster 0 is the middle-tier that can be encouraged to spend more with targeted promotions, and Cluster 2 is the low-engagement group that needs re-engagement strategies to boost their activity. By understanding and addressing the unique needs and behaviors of each cluster, we can effectively enhance customer loyalty, engagement, and overall revenue.

Mean amount Across Clusters

Mean frequency Across Clusters

Mean recency Across Clusters

To highlight the significance of Cluster 1 customers, it is essential to visualize and compare the mean values of Amount, Frequency, and Recency across all clusters. By doing so, we can clearly demonstrate why Cluster 1 holds a pivotal role in the company's overall performance.

Recommendations for the business

Cluster 0 - Regular Customers

Insight: This segment represents the majority of the customer base, characterized by moderate purchasing behavior with an average spend of $951.04 and frequent transactions.

Recommendations:

- **Implement Loyalty Programs**: Encourage repeat purchases and increase average order value by rewarding regular customers. Consider tiered rewards based on purchase frequency or total spend.

- **Personalized Email Marketing:** Enhance engagement and retention through tailored email campaigns based on purchase history, birthdays, or anniversaries. Use segmentation to deliver relevant content.

- **Targeted Promotions:** Offer customized discounts and promotions to incentivize continued loyalty. Use A/B testing to optimize offers and measure effectiveness over time.

- **Improve Customer Service:** Ensure consistent and responsive customer support to resolve queries promptly and enhance overall satisfaction.

- **Community Engagement:** Foster a sense of community among regular customers through forums, social media groups, or exclusive events to strengthen brand affinity.

Cluster 1 - High-Value and Engaged Segment

Insight: This group exhibits high engagement rates, with substantial spending and frequent purchases, demonstrating strong loyalty.

Recommendations:

- **Personalized Customer Service:** Provide dedicated support to address the unique needs of high-value clients, including proactive outreach and personalized recommendations.

- **Exclusive Offers:** Offer special promotions and early access to new products to maintain their loyalty. Consider limited-edition items or personalized shopping experiences.

- **Understand Preferences:** Continuously gather and analyze customer feedback to tailor services and products. Use data analytics to anticipate needs and preferences.

- **VIP Program:** Develop a VIP program with exclusive benefits such as priority shipping, dedicated account managers, or invitations to VIP events. Encourage advocacy and referrals through referral bonuses or exclusive previews.

- **Cross-Sell and Upsell Opportunities:** Identify opportunities to suggest complementary products or upgrades based on purchase history and preferences. Use personalized recommendations to increase average order value.

Cluster 2 - Low Engagement Segment

Insight: This segment shows low engagement levels, with minimal spending and infrequent transactions, indicating potential disconnection with the brand.

Recommendations:

- **Re-Engagement Campaigns:** Implement strategies to reconnect with these customers, such as targeted offers (e.g., welcome back discounts) or personalized outreach (e.g., surveys to understand preferences).

- **Improve Communication Channels:** Utilize multiple touchpoints like social media, SMS marketing, and newsletters to rekindle interest and provide valuable content.

- **Incentivize Repeat Purchases:** Offer incentives like discounts, free trials, or loyalty points for every purchase to encourage more frequent transactions.

- **Customer Feedback Loop:** Establish a structured feedback mechanism to gather insights into why these customers are disengaged. Use this data to refine products and services.

- **Customer Journey Mapping:** Analyze the customer journey from discovery to purchase and identify pain points or barriers. Optimize the user experience across all touchpoints to improve conversion rates and retention.

Conclusion:

Customer segmentation is a powerful tool that allows businesses to understand and cater to the diverse needs of their customer base. By dividing customers into distinct segments based on behavior, preferences, and spending patterns, businesses can implement targeted strategies to foster loyalty, satisfaction, and revenue growth.

Key Points

1) **Tailored Marketing Strategies**: Personalized email campaigns and targeted promotions resonate uniquely with each customer segment, boosting engagement and repeat purchases.

2) **Operational Improvements**: Insights guide enhancements like transparent product information and simplified return policies, boosting loyalty among high-return customers.

3) **Enhanced Customer Experience**: High-value purchasers benefit from VIP programs and exclusive benefits, reinforcing loyalty and driving positive word-of-mouth.

4) **Revenue Growth**: Addressing unique segment needs optimizes sales and increases average order value; tiered loyalty rewards incentivize higher spending.

5) **Customer Satisfaction**: Segmentation-driven strategies meet expectations, fostering trust and long-term relationships while reducing churn.

Recommendations for Action

To strengthen our market position and maximize customer value, we should consider the following actions:

1) **Implement Loyalty Programs**: Encourage repeat purchases and increase average order value by rewarding regular customers. Consider tiered rewards based on purchase frequency or total spend.

2) **Personalized Email Marketing**: Enhance engagement and retention through tailored email campaigns based on purchase history, birthdays, or anniversaries. Use segmentation to deliver relevant content.

3) **Targeted Promotions**: Offer customized discounts and promotions to incentivize continued loyalty. Use A/B testing to optimize offers and measure effectiveness over time.

4) **Improve Customer Service**: Ensure consistent and responsive customer support to resolve queries promptly and enhance overall satisfaction.

5) **Community Engagement**: Foster a sense of community among regular customers through forums, social media groups, or exclusive events to strengthen brand affinity.

In conclusion, by adopting a segmented approach to customer engagement and service, we not only meet but exceed customer expectations, driving sustainable growth and loyalty. This strategic alignment ensures that every customer interaction contributes positively to our business objectives and reinforces our commitment to delivering exceptional value.