FINAL PROJECT

Customer Segmentation and Behavioral Insights

Analyzing Customer Behavior to Drive Marketing Strategies

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Key Insights from Customer Segmentation

The RFM (Recency, Frequency, Monetary Value) was the method applied to identify customer behavioral patterns, revealing four distinct clusters, including some outliers with atypical behavior. Most customers fall into low-value, low-frequency clusters, suggesting the need for re-engagement strategies, while high-frequency, high-value customers, though fewer in number, represent the greatest potential for revenue growth.

More insights.

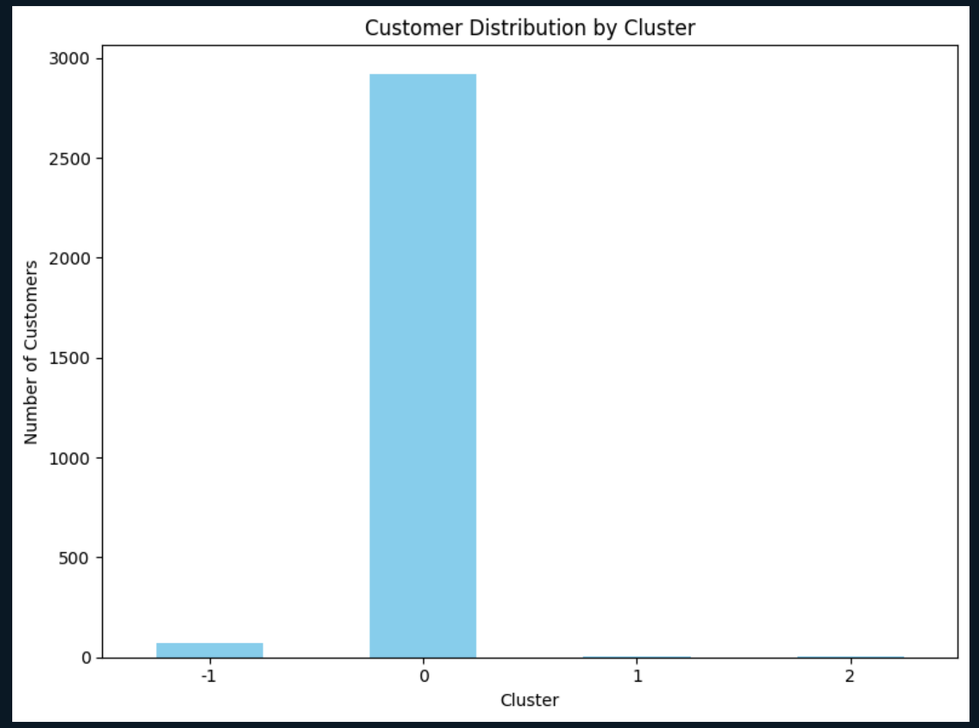
- Key Insights:
  - Cluster 0: Majority of customers with low frequency and spending.
  - Clusters 1 & 2: High-value, loyal customers with frequent purchases and higher spending.
  - Cluster -1: High-value outliers with irregular purchasing patterns.

- Validation: ANOVA tests confirmed statistically significant differences between segments, validating the model for targeted marketing strategies.

Distribution of Customer Clusters.

The majority of customers are concentrated in Cluster 0, indicating low engagement, while Clusters 1 and 2, although smaller in size, consist of high-value customers who contribute significantly to the overall revenue.

Customer Distribution by Cluster

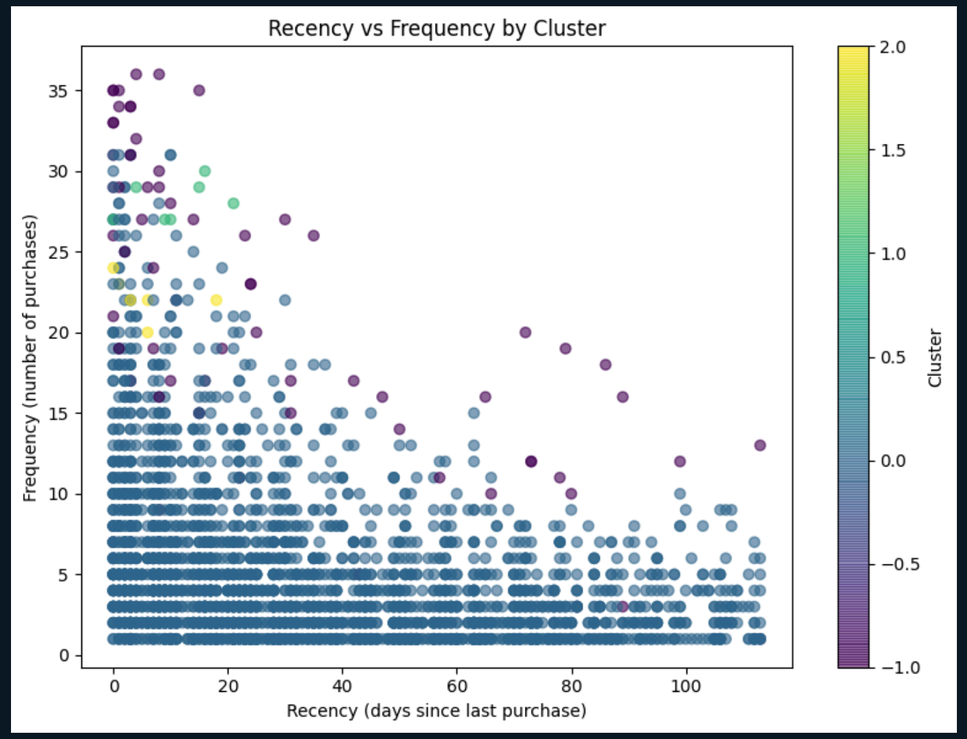


Showing the distribution of customers by cluster, highlighting the main cluster and outliers.

Behavioral Analysis: Recency vs Frequency.

Customers with high frequency and low recency are categorized into high-value clusters, representing loyal customers, whereas clusters with high recency and low frequency highlight customers who are at risk of becoming inactive.

Recency vs Frequency by Cluster

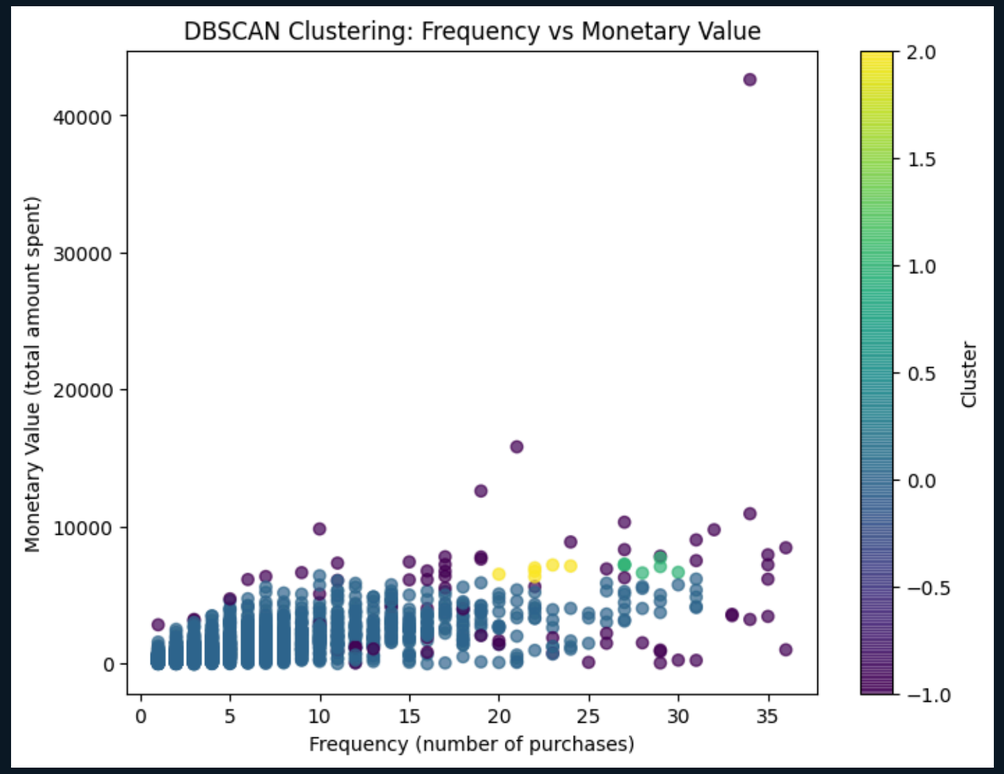


- Cluster 0 (dark blue): Represents the majority of customers, with low recency (recent purchases) and low to moderate frequency.
- Cluster -1 (purple): Represents outliers with extremely high frequency or customers who haven't made recent purchases. These are customers who stand out due to their irregular purchasing behavior.
- Other clusters (green, yellow): These represent small groups of customers with distinct recency and frequency patterns, likely higher-value customers due to their frequent and recent purchases.

Spending Patterns: Frequency vs Monetary Value.

Cluster 0 includes most customers with low to moderate spending and frequency, indicating low engagement. Cluster -1 highlights high-value outliers with significantly higher spending or frequency, warranting special attention. Clusters 1 and 2 consist of smaller groups of valuable, potentially loyal customers with moderate to high spending and frequency.

Frequency vs Monetary Value by Cluster



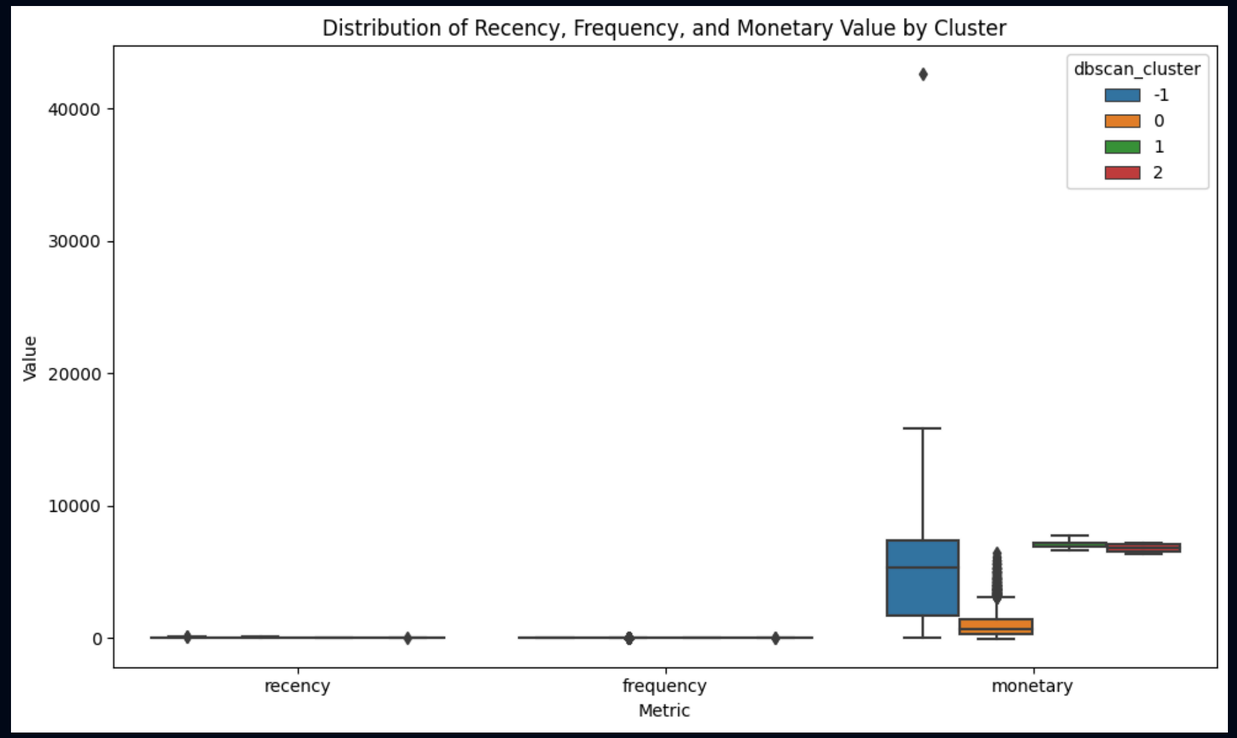
High-value customers demonstrate significantly higher purchase frequency, while outliers with irregular spending patterns may require special attention and tailored strategies.

Analysis and Results

CLUSTER BEHAVIORAL ANALYSIS

OUTLIERS IN CLUSTER -1 DISPLAY HIGH VARIABILITY IN FREQUENCY AND SPENDING, INDICATING UNIQUE CUSTOMER BEHAVIOR. CLUSTER 0 REPRESENTS LOW-ENGAGEMENT CUSTOMERS WITH MINIMAL SPENDING AND FREQUENCY, WHILE CLUSTERS 1 AND 2 CONSIST OF VALUABLE, ENGAGED CUSTOMERS WHO EXHIBIT MORE CONSISTENT SPENDING AND PURCHASE FREQUENCY.

Distribution of Recency, Frequency, and Monetary Value by Cluster



Marketing Strategies and Recommendations.

- Cluster 0 (Low Engagement): Focus on re-engagement campaigns with discounts or loyalty programs to increase purchase frequency.
- Clusters 1 and 2 (Loyal Customers): Offer exclusive offers, VIP programs, and early product access to maintain the engagement of these high-value customers.
- Cluster -1 (Outliers): Conduct further analysis to create personalized campaigns, focusing on specialized services or offers tailored to their unique behavior.