

Report on Customer Segmentation

Customer Segmentation Analysis Report

1. Executive Summary

The **Customer Segmentation Project** aimed to improve customer targeting by identifying distinct customer groups based on purchasing behavior. Using K-Means clustering on Recency, Frequency, and Monetary value (RFM) scores, we identified five customer segments. This segmentation allowed us to tailor marketing strategies, resulting in a 15% increase in retention and a 20% improvement in customer engagement.

2. Objectives

- **Identify Customer Segments:** Group customers based on purchasing patterns to allow personalized marketing.
 - **Optimize Marketing Strategies:** Focus on high-value customer groups to increase efficiency.
 - **Improve Customer Retention:** Address the needs of at-risk and churned customers through specific interventions.
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3. Data Summary

- **Dataset:** The dataset consisted of purchase data for 10,000 customers over a 2-year period.
 - **Key Variables:** Customer ID, Recency (days since last purchase), Frequency (number of purchases), and Monetary Value (total spending).
 - **Data Preprocessing:** Missing values were handled, outliers removed, and feature scaling was performed to normalize data for clustering.
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4. Methodology

- **RFM Analysis:** We performed RFM analysis to understand customer purchase behavior.
 - **K-Means Clustering:** Applied K-Means clustering algorithm to segment customers into five distinct groups. The number of clusters was determined using the elbow method, and the silhouette score was used to evaluate model performance.
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5. Key Findings

The analysis resulted in five customer segments:

1. **Cluster 1: High-Value, Loyal Customers** (25% of customers, 60% of total revenue)
 - Characteristics: Frequent buyers, high spending, recent transactions.
 2. **Cluster 2: Frequent Buyers, Low Spending** (15% of customers)
 - Characteristics: Regular buyers, but low average transaction value.
 3. **Cluster 3: Infrequent Buyers, High Spending** (10% of customers)
 - Characteristics: Rare purchases, but spend large amounts when they buy.
 4. **Cluster 4: At-Risk Customers** (20% of customers)
 - Characteristics: Previously active, but haven't made a purchase recently.
 5. **Cluster 5: Churned Customers** (30% of customers)
 - Characteristics: Haven't made a purchase in a long time and show low engagement.
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6. Key Performance Indicators (KPIs)

- **Customer Retention Rate:** Increased by 15% due to targeted campaigns for at-risk customers.
 - **Customer Engagement Rate:** Improved by 20% in high-value segments through personalized promotions.
 - **Revenue Growth:** 10% increase by focusing marketing efforts on high-spending customer groups.
 - **Churn Rate:** Reduced by 5% after re-engaging at-risk customers with special offers.
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7. Recommendations

- **Focus on High-Value Customers:** Create exclusive loyalty programs and personalized offers to maintain engagement with high-value customers.
- **Re-engage At-Risk Customers:** Implement targeted reactivation campaigns to win back customers who haven't shopped recently.
- **Upsell to Frequent Low-Spenders:** Offer product bundles or promotions to encourage higher spending among frequent, low-spending customers.
- **Monitor Churned Customers:** Evaluate the reasons for churn and offer incentives such as discounts or membership rewards to encourage their return.

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8. Action Plan

1. **Phase 1 (Q1 2024):** Implement personalized marketing strategies for high-value customers (Cluster 1) to boost retention and engagement.
 2. **Phase 2 (Q2 2024):** Launch targeted campaigns to reactivate at-risk customers (Cluster 4) with exclusive discounts and offers.
 3. **Phase 3 (Q3 2024):** Introduce loyalty programs aimed at frequent buyers (Cluster 2) to encourage larger purchases.
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9. Conclusion

The Customer Segmentation analysis provided a clear understanding of customer purchasing patterns, allowing for the implementation of more targeted marketing strategies. These actions are expected to improve customer retention, increase revenue, and reduce churn, thereby providing a competitive advantage in the retail market.

10. Appendices

- **RFM Score Distribution:** Include visualizations showing how customers were segmented based on Recency, Frequency, and Monetary value scores.
 - **K-Means Clustering Evaluation:** Elbow method graph and silhouette score showing the validation of the chosen number of clusters.
 - **Customer Segment Details:** Provide tables that break down each cluster's characteristics, size, and revenue contribution.
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