

# **RFM Analysis**

**Bosco M Morales**

**Module 1**

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# Table of Contents

1. Executive Summary.....	3
2. Introduction.....	3
3. Methodology.....	3
4. Key Findings	
a. Top 5 Customers by Monetary Value.....	4
b. Number of Customers per Segment.....	4
c. Average Six-Month CLV per Segment.....	5
d. Percentage of Monetary Value per Segment.....	5
5. Discussion.....	6
6. Recommendations.....	6
7. Conclusion.....	6
8. References.....	6

## **1. Executive Summary**

The "Module1\_RFM\_Analysis" notebook presents a comprehensive RFM (Recency, Frequency, Monetary) analysis aimed at understanding customer behaviors and segmenting the customer base effectively. This analysis is critical for developing targeted marketing strategies and enhancing customer engagement.

## **2. Introduction**

The 'Retail Data Set' holds the basic information about sales data. The company has sales agencies/resellers and branches and the data file holds only the branch/reseller information in the customer id field. For the privacy issues, the customerID, SKU and documentID is processed with LabelEncoder. So, each customer or each product has a unique ID in the data file.

## **3. Methodology**

The analysis utilizes customer transaction data, applying the RFM model to quantify and evaluate customer value based on three dimensions:

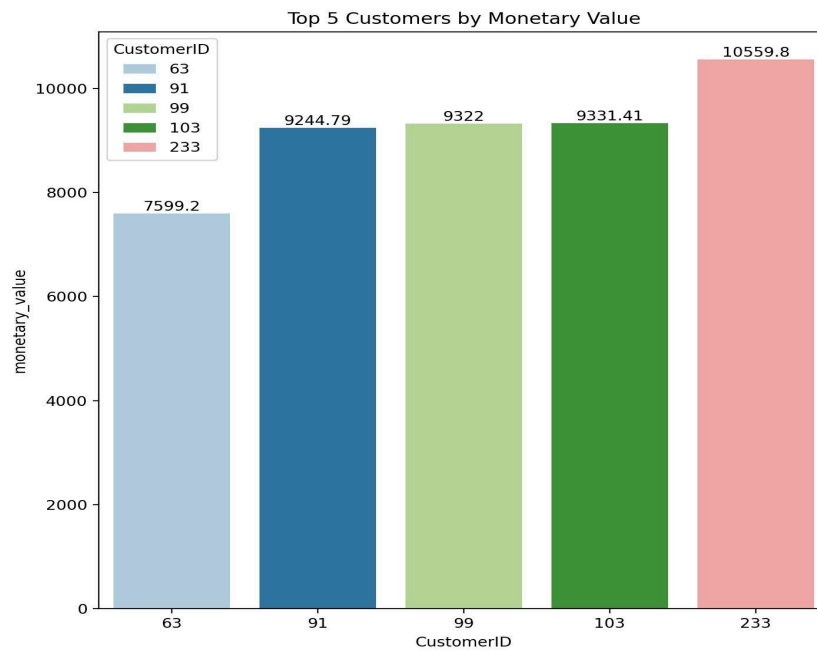
- Recency: Time since the last purchase.
- Frequency: Total number of transactions.
- Monetary: Total spending by the customer.

The methodology involved data preprocessing, including cleaning and feature engineering, followed by the calculation of the monetary value for each customer.

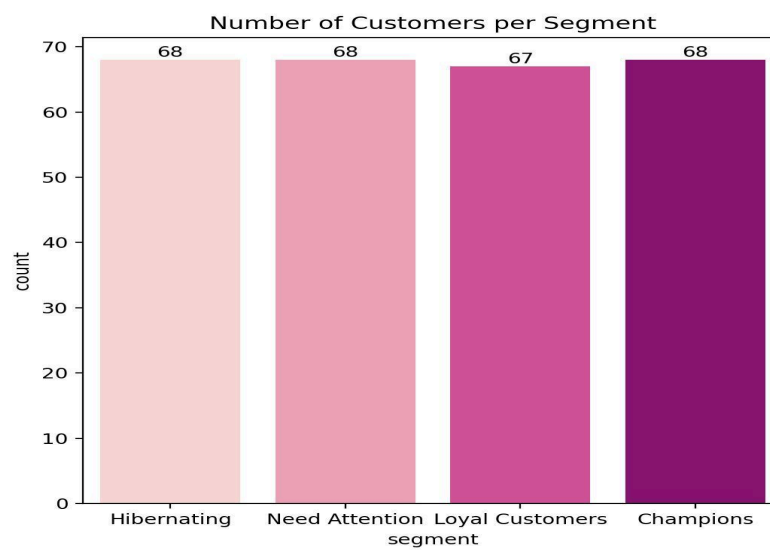
Subsequently, customers were segmented into categories based on their projected purchase dollar amount at 6 months. The projection was obtained by applying the BG/NBD and Gamma-Gamma models to the RFM metrics.

## 4. Key Findings

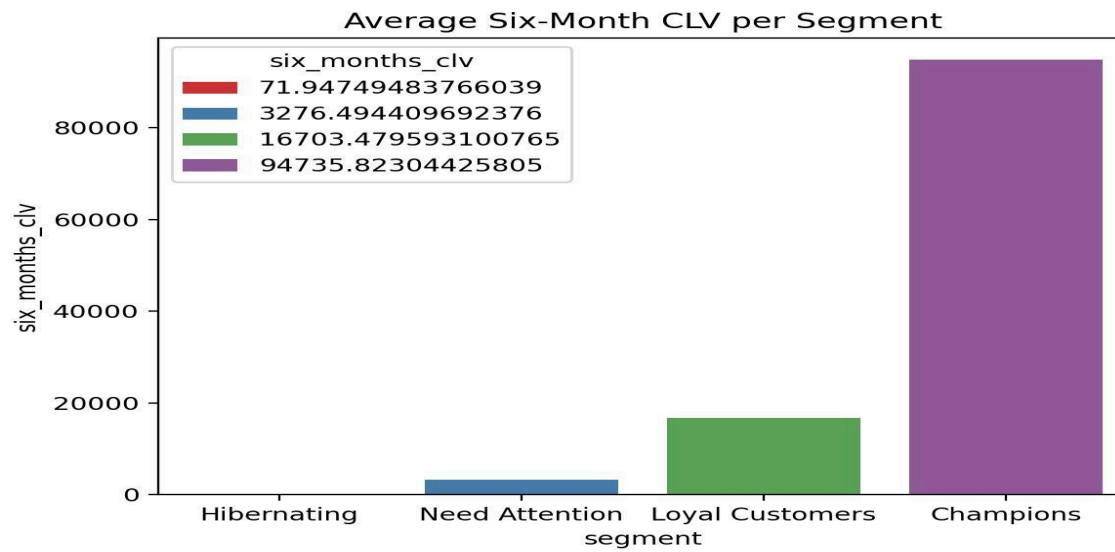
### a. Top 5 Customers by Monetary Value



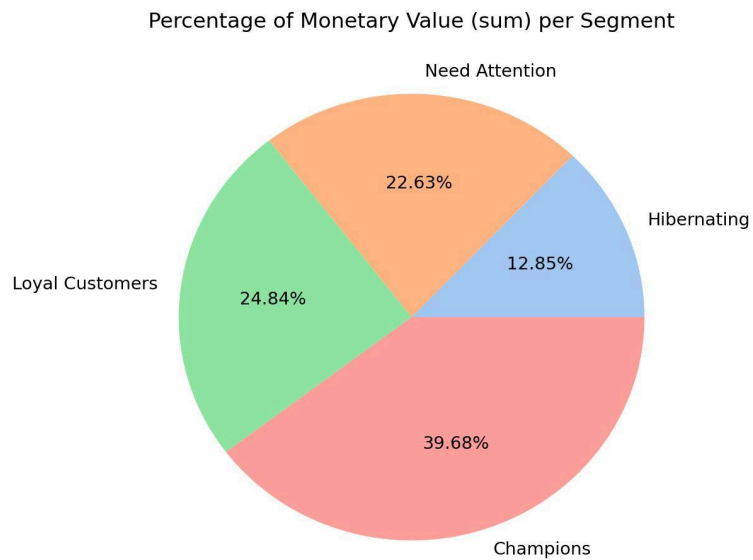
### b. Number of Customers per Segment



**c. Average Six-Month CLV per Segment**



**d. Percentage of Monetary Value per Segment**



## 5. Discussion

- Customer Segmentation: The analysis successfully identified distinct customer segments, such as high-value customers, Champions, who purchase frequently and recently, and low-value customers, Hibernating, with infrequent and older transactions.
- Strategies: General recommendations for were developed, focusing on maximizing customer lifetime value and enhancing overall customer satisfaction.

## 6. Recommendations

- Engagement Strategies: Implement targeted communication and promotional strategies tailored to each customer segment to boost engagement and retention.
- Personalization: Leverage insights from the RFM analysis to personalize product offerings, recommendations, and marketing messages.
- Loyalty Programs: Develop or enhance loyalty programs to reward high-value customers and encourage increased frequency and monetary value from other segments.

## 7. Conclusion

The RFM analysis provides a robust framework for understanding customer value and behavior, enabling data-driven decision-making in marketing and customer relationship management. By focusing on the identified key segments and implementing the recommended strategies, the organization can improve customer engagement, retention, and overall profitability.

## 9. References

Shedai. (n.d.). Retail Data Set [Data set]. Kaggle.

<https://www.kaggle.com/datasets/shedai/retail-data-set?resource=download>