

# REPORT

## CUSTOMER ANALYTICS USING RFM MODEL

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# INTRODUCTION

In the current era of economic development and competition, understanding customers is more important than ever. Each customer will react differently to different messages. Some customers will care about prices, promotions, and discounts. Others will buy out of habit and not pay much attention to those programs.

Therefore, instead of approaching all customers with the same interaction, businesses need to segment customers and approach each group with different messages.

This is when businesses need to use the RFM analysis method - a method based on the transaction history of customers and identifies the most valuable customers.

# DEFINITION

## 1. Customer 360

Customer 360 is a comprehensive picture of the customer, including: **demographic information, preferences, shopping history, social media interactions, etc.** Based on this data, businesses can **provide timely services to enhance customer experience** and also **predict future shopping behavior**

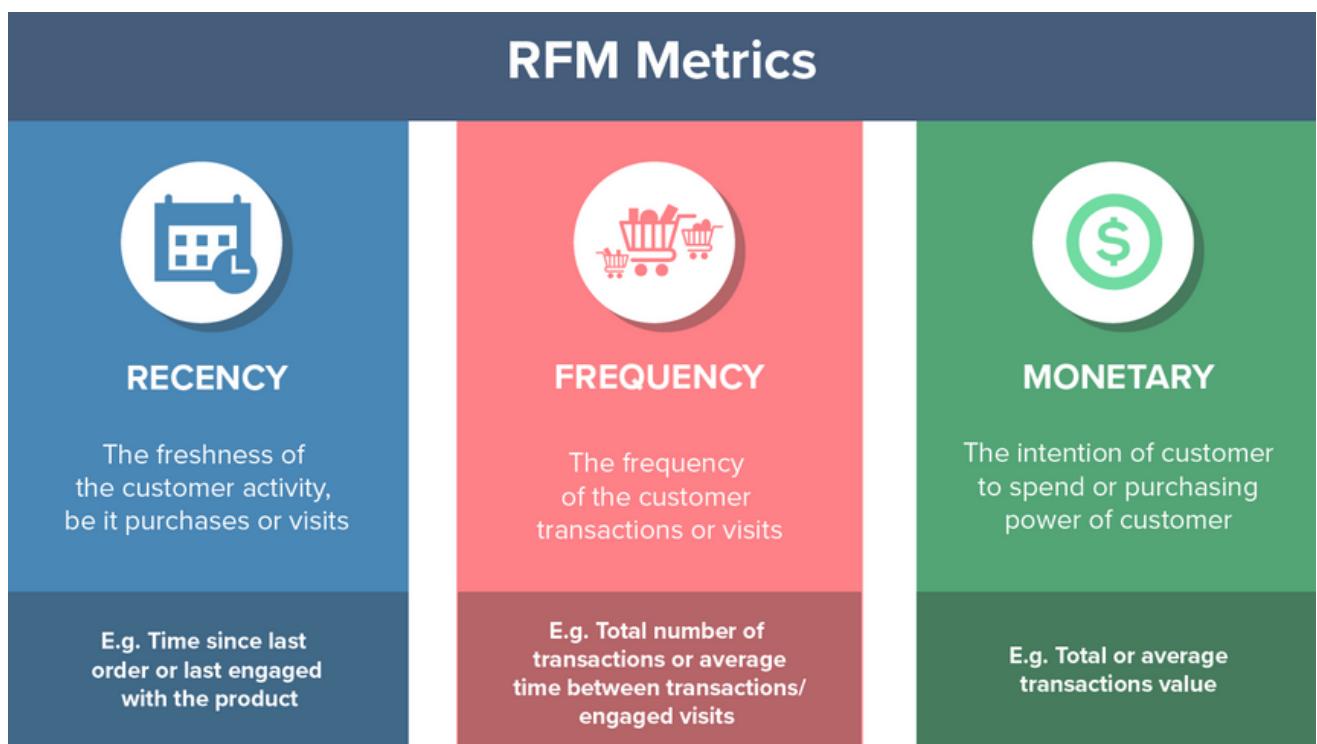


# DEFINITION

## 2. RFM

**RFM (Recency, Frequency, Monetary)** is an analytical technique to **segment customers** based on their behavior. We can divide customers into groups based on their **purchase history** - the most recent purchase time, purchase frequency, and total spending. RFM is scored on a scale of **1-4**, where:

- **Recency (Most recent purchase)**: the higher the score, the closer the purchase time and vice versa
- **Frequency (Purchase frequency)**: the higher the score, the higher the purchase frequency and vice versa
- **Monetary (Total spending)**: the higher the score, the higher the spending and vice versa



# ANALYSIS

## 1. Data overview

Dataset contains **1,048,575** transactions from **936,660** customers, made from **01-06-2022** to **31-08-2022**

Based on the RFM analysis model, we can calculate the most recent purchase time (Recency), purchase frequency (Frequency), and spending (Monetary). From there, we can score the R, F, M values based on the quartile method and segment the customers into groups to implement appropriate outreach strategies.

## 2. Detailed analysis

### 2.1. Calculate R,F,M values

**Most recent purchase (Recency/R):** based on the transaction history and the calculated data, we can see that the most recent purchase date is **01 day**, the oldest purchase date is **92 days**.

**Purchase frequency (Frequency/F):** purchase frequency is the number of purchases recorded based on the invoice of a specific day. According to the data, we can see that the lowest purchase frequency is only **01 time**. The highest purchase frequency is up to **6 times**.

**Spending (Monetary/M):** spending according to statistics is from **< 2,100,000** to **8,400,000 VND**

# ANALYSIS

## 2.2. Scoring the RFM indicators based on the interquartile range method (IQR Method)

**Most recent purchase (Recency/R):** the higher the score, the closer the purchase time and vice versa

- 1: most recent purchase time from **70-92 days**
- 2: most recent purchase time from **47-69 days**
- 3: most recent purchase time from **24-46 days**
- 4: most recent purchase time from **1-23 days**

**Purchase frequency (Frequency/F):** the higher the score, the higher the purchase frequency and vice versa

- 1: purchase frequency from **>=1 time**
- 2: purchase frequency from **2 times**
- 3: purchase frequency from **3 times**
- 4: purchase frequency from **> 3 times**

**Spending (Monetary/M):** the higher the score, the higher the spending and vice versa

- 1: spending **<2,100,000 VND**
- 2: spending **>2,100,000 VND - 4,200,000 VND**
- 3: spending **>4,200,000 VND - 6,300,000 VND**
- 4: spending **>6,300,000 VND - 8,400,000 VND**

# ANALYSIS

## 2.3. Segment customers with RFM score

| Segments           | Description   | RFM Combinations                       |
|--------------------|---|--|
| Champions          | Customers of the highest importance. They spend a lot, are frequent spenders, and they have purchased very recently                   | 444, 443, 434, 344                     |
| Loyal Customers    | Customers that are loyal to the brand. They might not be big spenders, but they very frequently purchase, and have purchased recently | 442, 441, 432, 431, 433, 343, 342, 341 |
| Potential Loyalist | Customers with potential to convert to loyalists. They purchase less frequently but do spend a lot when they do                       | 424, 423, 324, 323, 413, 414, 343, 334 |
| Promising          | Customers that spend less than loyalists but have purchased relatively frequently and recently  | 333, 332, 331, 313                     |
| New Customers      | New and recent customers who have not had the opportunity to spend big or be frequent spenders  | 422, 421, 412, 411, 311, 321, 312, 322 |

# ANALYSIS

|                 |   |   |
|-----------------|---|---|
| Price Sensitive | Customers who spend regularly, but spend small, perhaps due to being picky or tendency to save/choose only the best deals | 131, 132, 141, 142, 231, 232, 241, 242                |
| Needs Attention | Customers who have historically spent a lot and frequently, although have not spent in a while                            | 244, 234, 243, 233, 224, 214, 213, 134, 144, 143, 133 |
| About to sleep  | Customers that are small spenders, infrequent, and have not spent recently, although not too long ago                     | 223, 221, 222, 211, 212, 124                          |
| Lost Customers  | Customers that have purchased but have not been returning/are not likely to return  | 111, 112, 113, 114, 121, 122, 123                     |

# ANALYSIS

## 2.4. Data distribution

**Average Recency:** 60.39 days

**Average Frequency:** 1.11 purchases

**Average Monetary:** 88,360 VND

Number of customers by segmented groups



In the total of **936,660** customers. **Lost Customers** is the **largest segment** with **234,165 customers (25%)**. It represents customers who have not interacted with our business for a while. A re-engagement strategy could be beneficial to bring these customers back

**Champions** is our most loyal and valuable customers. Despite being a smaller segment with **154,357 customers (16.48%)**, their contribution to our business is likely significant. It's crucial to keep them satisfied and engaged.

**About to Sleep & Needs Attention:** These segments represent customers who are **at risk of becoming 'Lost Customers'**. Timely engagement might prevent this transition.

# ANALYSIS

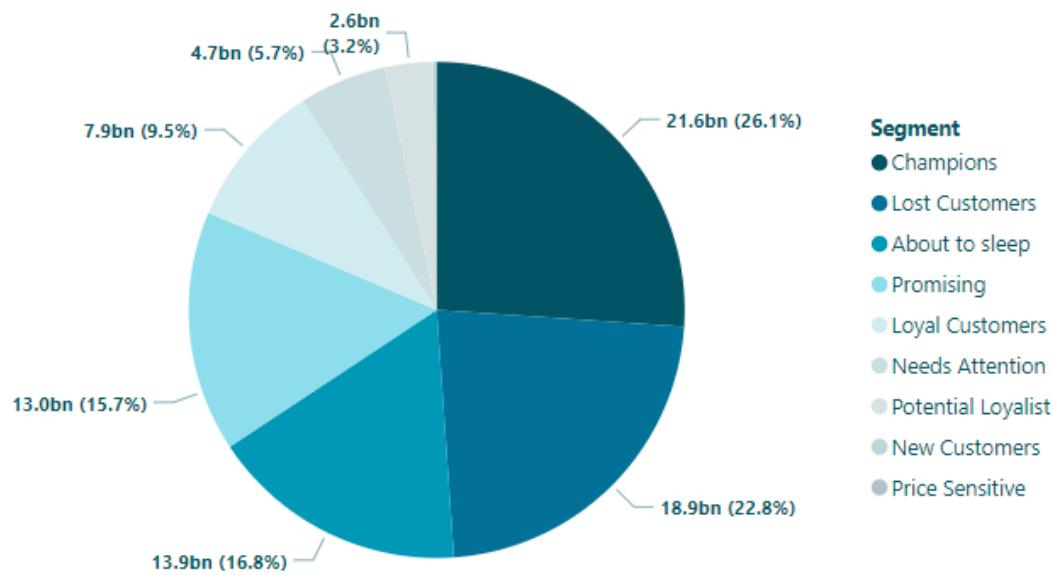
**Promising & Potential Loyalists:** These segments represent **opportunities for growth**. With the right engagement strategies, these customers could potentially become 'Champions'.

**New Customers:** This is a moderate-sized segment. Ensuring a **good onboarding process and early engagement** are crucial to retain these customers.

**Price Sensitive:** This is the **smallest segment**. It might be **worth exploring** if pricing or value perception is causing these customers to not engage more.

## 2.5. Revenue by customer segments

Revenue by Customer Segments



It's not surprising that the **Champions** customer segment contributes the highest revenue, accounting for **26.1%** of the total revenue.

# ANALYSIS

**Champions** is the highest revenue-generating segment, it's crucial to maintain their loyalty. **Regular engagement** and **personalized offers** can help ensure their continued patronage. However, there are some **concerning trends**. The **Lost Customers** and **About to Sleep** segments together make up **39.63%** of the total revenue. Despite their high contribution to the revenue, these customers are **at risk of discontinuing our services**. It's essential to understand the reasons behind their disengagement. Implementing re-engagement strategies such as **special offers, personalized messages, or customer feedback surveys** could help regain their interest.

**Promising:** This segment might not be as large as others, but it represents customers who have **shown potential for becoming more engaged and valuable over time**. They might be relatively new customers who have had a good level of engagement with the business so far. It's important to nurture these customers and encourage their journey towards **becoming 'Loyal Customers'** or **'Champions'**. This could involve **personalized communication, providing excellent customer service, and understanding their needs and preferences** to provide relevant offers.

Segments like '**New Customers**', '**Potential Loyalists**', and '**Price Sensitive**' customers should not be overlooked. Tailoring specific strategies for these segments can help improve their lifetime value and potentially move them into higher revenue-generating segments.