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# CUSTOMER 360 ANALYTIC REPORT

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## Table of Contents

# CONTENTS

01.

Introduction to Customers Data

**02.**

Introduction to RFM Analytics

**03.**

RFM Analytics

**04.**

Customer Segmentation

**05.**

Segmentations Analytic

**06.**

Recommended Actions

# INTRODUCTION

## Why do we need to analyze customer data ?

- **Segmentation** Efficiently categorize customers based on their transactional behavior.
- **High-Value Identification** Pinpoint high-value customers for targeted marketing efforts.
- **Personalization** Tailor marketing campaigns to match each segment's preferences.
- **Churn Prediction** Anticipate and prevent customer churn by monitoring RFM changes.
- **Optimized Strategy** Fine-tune product assortment and pricing strategies for maximum

Customer Data is stored into two separate tables which are: customer transaction and customer registered.

Customer Transaction table is shown below. It stores Customer ID, Purchase Date and Gross merchandise value (GMV)

123 ID	ABC CustomerID	🕒 Purchase_Date	123 GMV
0	1327813	2022-06-01 00:00:00.000	95,000
1	1157830	2022-06-01 00:00:00.000	75,000
2	873915	2022-07-01 00:00:00.000	95,000
3	3505071	2022-07-01 00:00:00.000	90,000
4	2930918	2022-07-01 00:00:00.000	109,091
5	899882	2022-06-01 00:00:00.000	105,000
6	2248818	2022-06-01 00:00:00.000	75,000
7	3331485	2022-06-01 00:00:00.000	90,000
8	3497579	2022-06-01 00:00:00.000	60,000
9	2636994	2022-07-01 00:00:00.000	75,000

Customer Registered table is shown below. It stores Contract number, Location ID, Branch Code, Status, Contract created date and Contract end date

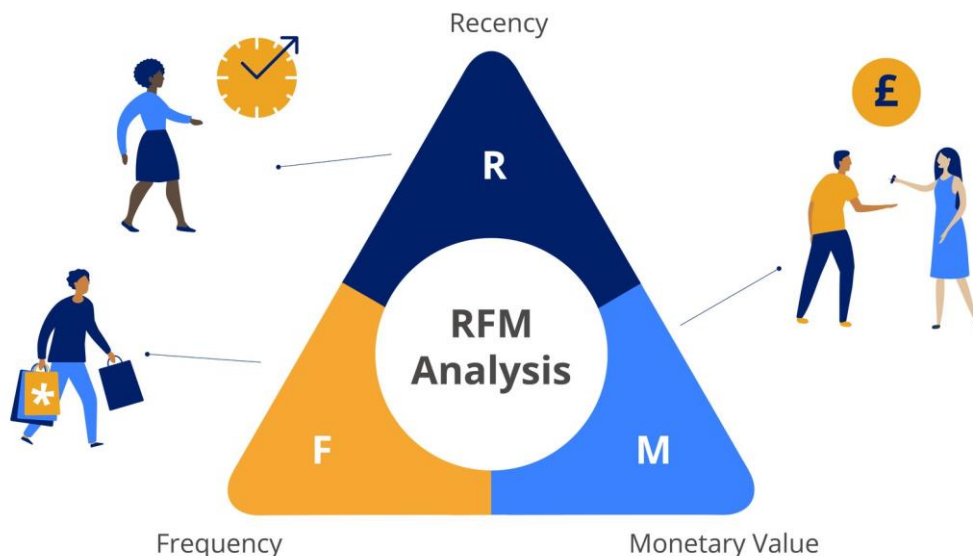
123 ID	ABC Contract	123 LocationID	123 BranchCode	123 Status	🕒 created_date	🕒 stopdate
0	SGDN00215	8	1	0	2011-11-25 00:00:00.000	2012-01-05 00:00:00.000
1	SGDN00214	8	1	0	2012-06-14 00:00:00.000	[NULL]
2	SGD374348	8	1	0	2012-11-01 00:00:00.000	[NULL]
3	SGD022064	8	1	2	2011-06-22 00:00:00.000	2013-05-29 00:00:00.000
4	SGD041015	8	5	2	2011-12-17 00:00:00.000	2014-11-11 00:00:00.000
5	SGDN00211	[NULL]	[NULL]	2	2015-06-09 00:00:00.000	2015-09-09 00:00:00.000
6	SGD374348	8	1	3	2012-11-26 00:00:00.000	2012-12-13 00:00:00.000
7	SGDN00013	0	0	1	2017-12-11 00:00:00.000	[NULL]
8	BEAAA1809	75	0	1	2022-04-04 00:00:00.000	[NULL]
9	BNAAA4298	241	2	1	2022-04-19 00:00:00.000	[NULL]

The NULL values in the 'stopdate' column indicate that the contract is still in effect.

# INTRODUCTION TO RFM ANALYTICS

RFM analytics is a method to segment customer base on three dimensions:

Recency, Frequency and Monetary



- **Recency** is the score calculated based on how long is it since the last time the customer purchased at our stores.

- **Frequency** is determined by how frequently a customer purchases from the store on average. To calculate this, we tally all purchases made by the customer and divide by the length of their contract. If the contract duration is ongoing and hasn't ended, we use the date of the report's creation, in this case, **2022-09-01**, to calculate the contract's length.
- **Monetary** calculated by sum up the value of all goods purchased by the customer and then divide this sum by the length of their contract. Same as Frequency, if the contract is still under effects, we utilize the report's date of creation (**2022-09-01**) to determine the contract's length.

We score the value of R,F,M by dividing the customer base into 4 range using interquartile range: Range 1: Min Value - First

- Quartile
- Range 2 :First Quartile (Q1) - Median
- Range 3: Median - Third Quartile (Q3)
- Range 4: Third Quartile (Q3) - Max Value

If the values of R,F,M of customers fall within each of these range, the R,F,M scores will be assigned following the range they belong to. For example: 111,123,444,132,444,... The first number is Recency score, second is Frequency and then Monetary.

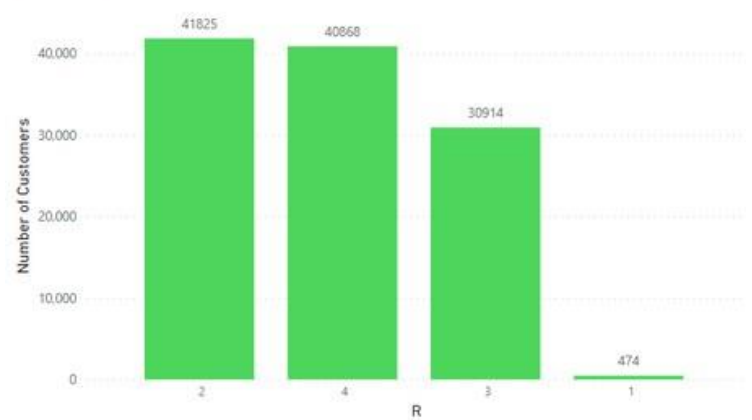
# RFM ANALYTICS

Looking at three charts shown in this page, we can have an overview about the current situation of the company.

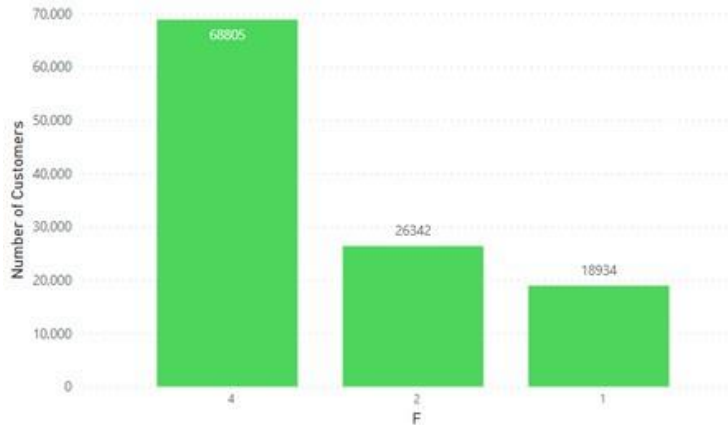
- In the chart showing customers in each Recency group, we can see that about 96% of customers are in group 2 - 3 - 4, while group 3 and 4 total total customers accounts for about 63%.

=> This result indicates that more than a half of our customer purchased recently, while the other 30% did not purchased for a longer period of time.

Number of Customers by R



Number of Customers by F



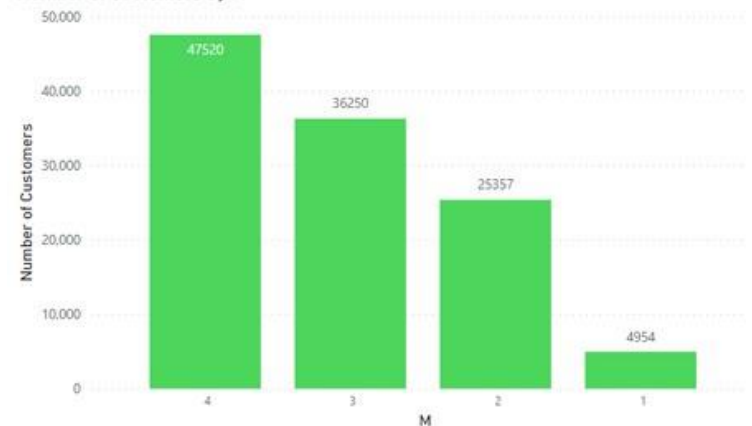
- The beside figure illustrates the numerical values of customers in each Frequency group. It is clear that the largest number lies in group 4, which accounting for 68805 customers ( 60%),while group 3 has no customers. On the other half, group 1 and group 2 accounting for 16% and 23%, respectively.

=> From the result of Frequency groups, we can see that there are 2 types of customers: 60% customers purchase very frequently at our store and the other are walk-in customers.

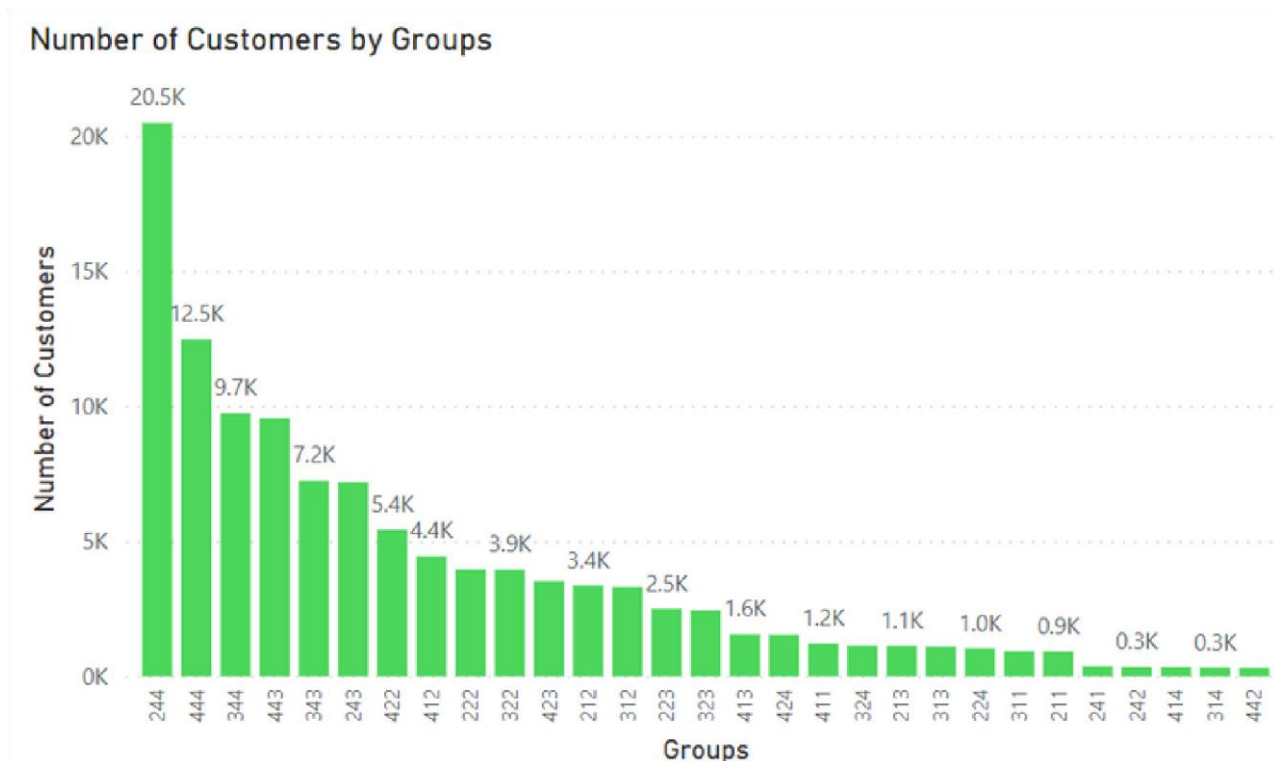
- The last figure shows number of customer in the last dimension group, Monetary. In this attribute, the number of customers decrease descendingly from group 4 to group 1. Most of customers fall into group 4 (41%) and group 3 (31%) while group 1 and group 2 cross percentage is just 26%.

=> This number reveals that 72% of customer base purchased for larger order value.

Number of Customers by M



# RFM ANALYTICS



The above figure illustrates number of customers in each RFM group. We can easily see that in 6 largest groups, there are **444**, **344**, **443**, **343** which purchased very frequently with high order value and still purchase recently. While the other 2 groups are **244** and **422**. These 2 groups are quite opposite, the **244** are purchase very frequently with large value of order but recently they do not purchase any more, while the **422** purchased recently but with decent order value and not very often. On the other part of this chart, we have **242**, **414**, **314**, **442** with very few customers, just accounting for about 300 customers in each groups.

This result suggest that most of our customers purchase frequently with high order value, and they also still purchase recently. Another significant observation that can be gleaned from this data is there are a very large part of customer (17%) that purchased frequently with high order value but they do not purchase recently (244). Then we need a suitable plan to prevent these customer from attrition, if not, we will lose a lot of revenue that is contributed by this customer group. Another things need to be done is develop a marketing plan to boost the number of customer in groups like **442**, **414**, **424**, **413**, **423**, **412**. Because these customer groups have a very high potential to become our regular customer or VIP customer.

It is obvious that there are many customer groups with same characteristics like **444,344, 443, 343** or **222, 212, 221**,... To establish the precise marketing plan, customer care or selling strategy for each customer in customer base, we need to segmentations these customer groups with same characteristics into a larger groups called customer segments. The methodology to segmentation the customer base depending on RFM customer group is presented in the next section of the report

# CUSTOMER SEGMENTATION

The customer segmentation method is developed based on BGC matrix below



Now we apply the dimensions of RFM analytics into this matrix to segment the customer base. Firstly, we will just apply Recency to the vertical axis and Frequency to the horizontal axis of the matrix.

Then we can divide the customer base into 4 quarters:

- Low Recency (R = 1 - 2) & Low Frequency (F = 1 - 2) (Dog): Walk-in guests
- Low Recency (R = 1 - 2) & High Frequency (F = 3 - 4) (Cash Cow): At-risk Customers
- High Recency (R = 3 - 4) & Low Frequency (F = 1 - 2) (Question mark): New Customers
- High Recency (R = 3 - 4) & High Frequency (F = 3 - 4) (Star): Regular customers

Then we apply the third dimension which is Monetary into our current result:

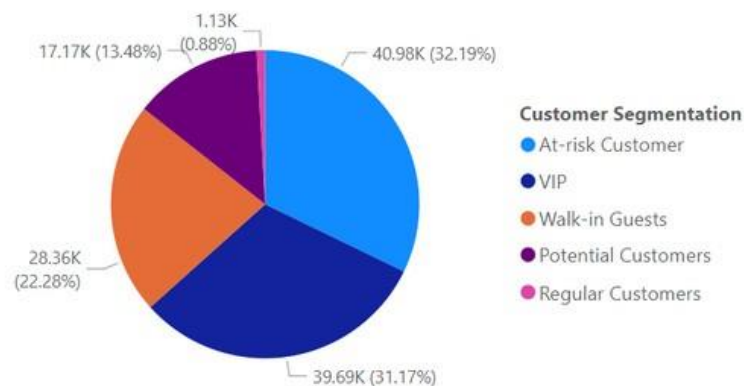
- Walk-in guest & Low Monetary (M = 1 - 2): **Walk-in guests**
- Walk-in guest & High monetary (M = 3 - 4): **Potential Customer**
- At-risk customer & Any monetary score (M = 1 - 2 - 3 - 4): **At-risk Customers**
- New Customer & Low Monetary (M = 1 - 2): **Walk-in guests**
- New Customer & High Monetary (M = 3 - 4): **Potential Customer**
- Regular Customers & Low Monetary (M = 1 - 2): **Regular Customers**
- Regular Customers & High Monetary (M = 3 - 4): **VIP Customers**



# SEGMENTATION ANALYTICS

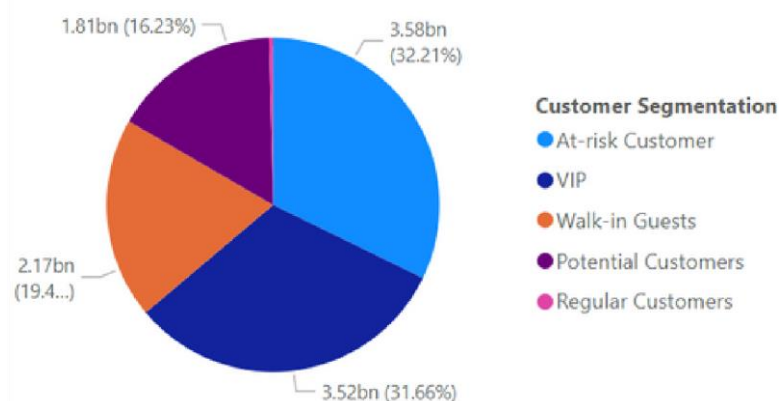
The below figure show proportion of each customer segmentations in our customer base. As can be seen in the chart below, the largest customer segment is '**At-risk customer**' which occupying **32%** of our customer base while the smallest piece is **Regular customer (0.88%)**. This problem is very serious because one-third of our customer base having high risk to churn, while the regular purchased customers group is too small. Besides this problem, other customer segments are performing well. We have lots of **VIP customers (31%)** and also many **Walk-in customer (28%)**. The number of **Potential Customers** is quite good with **13,5%**.

Number of customers by Customer Segmentation



One more important attribute to be aware of is the revenue contribution of customer segments. As illustrated in the figure below, the '**At-risk Customer**' and '**VIP**' customers contributed almost the same proportion of revenue, **35%** and **31%** respectively. This result is understandable because of the population of these 2 segments. This outcome of revenue shows the necessity of a strategy to retain the customer in **At-risk customers**, otherwise we will lose **35%** of company revenue. Besides that **Walk-in Guests** come third in terms of revenue, which contribute **22,3%** of total revenue.

Revenue by Customer Segmentation



# RECOMMENDED ACTIONS

Depending on the result of data analytics carried out in the previous parts. We want to have some suggestion on what is needed to be done in the next steps to improve the performance of the company :

- **Prevent customer attrition:** Considering the significant proportion of "at-risk customers" in the customer base (32.19%), preventing customer attrition should be a priority. Implementing targeted retention strategies focused on this segment can help mitigate the risk of losing valuable customers. These strategies may include personalized communication to address their concerns, offering loyalty rewards or incentives to encourage continued engagement, and providing proactive customer support to resolve any issues promptly. By proactively addressing the needs and concerns of at-risk customers, the company can enhance customer satisfaction and loyalty, ultimately reducing attrition rates and preserving revenue streams.
- **Transition of customer between segment:**
  - **At-risk to Regular or VIP:** because **At-risk customers** vary in 'Monetary' value, so if we can retain these customers from churning, we can have more **Regular** (Low Monetary) and **VIP customers** (High Monetary). It can be done by offering personalized incentives and proactive customer support, offering loyalty rewards, offering vouchers for this segment.
  - **Potential to VIP:** Implement exclusive promotions and tailored experiences to entice potential customers to have more purchases and buy our products more frequently. **Walk-In to Regular:** Engage walk-in guests through loyalty programs and incentives designed to cultivate repeat business. Offer personalized recommendations and rewards based on their preferences to encourage their frequency of buying at our stores.