



Advance Data Workshop

# RFM ANALYSIS

Customer Segmentation using SQL



# Content

01

RFM Analysis Overview

02

RFM Metrics

03

Quartiles & Quintiles

04

Example 1

05

Example 2

06

Extension for RFM



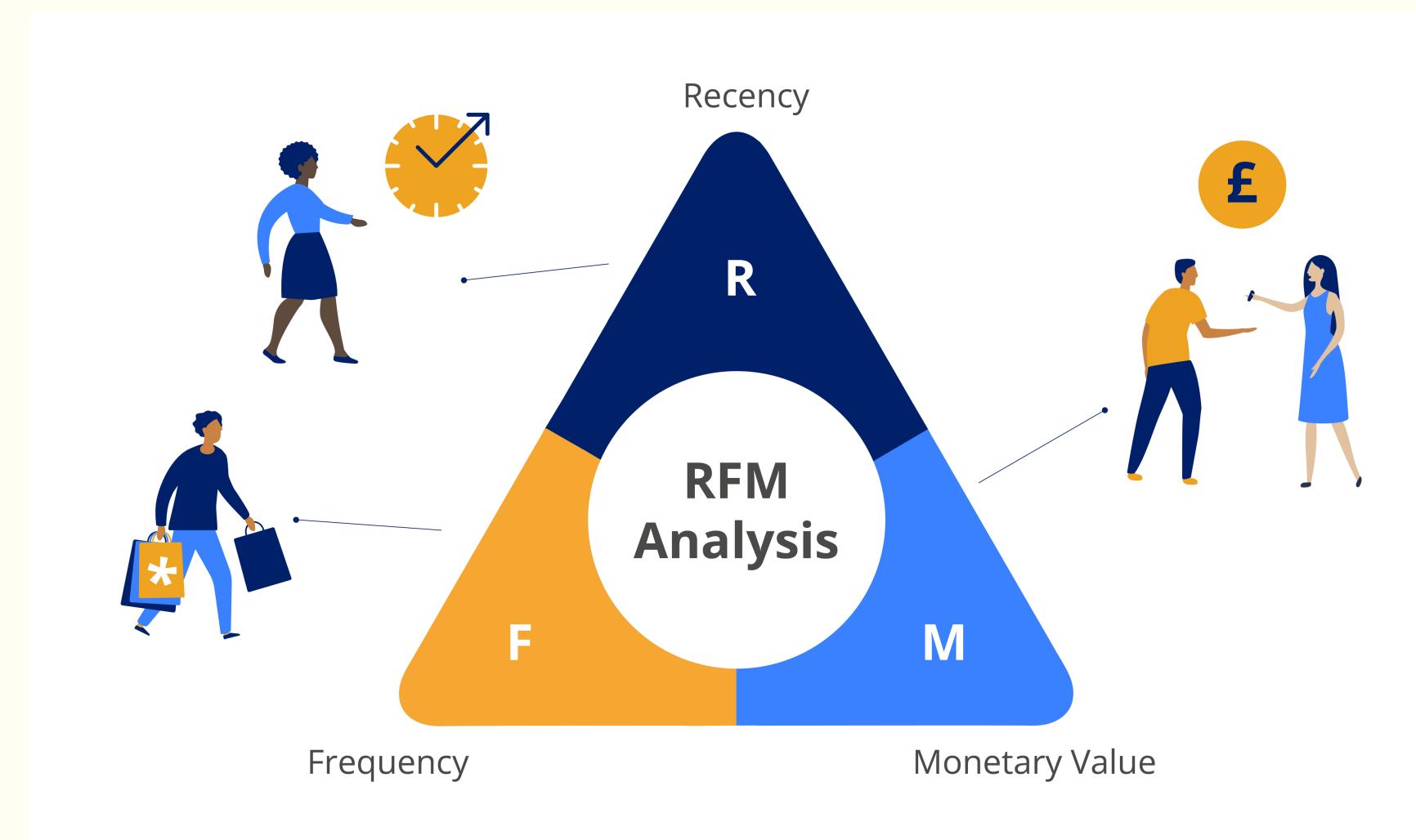
# RFM ANALYSIS OVERVIEW

## DESCRIPTION

The “RFM” in RFM analysis stands for recency, frequency and monetary value. RFM analysis is a way to use data based on existing customer behavior to predict how a new customer is likely to act in the future. An RFM model is built using three key factors:

- a. how recently a customer has transacted with a brand
- b. how frequently they've engaged with a brand
- c. how much money they've spent on a brand's products and services

RFM analysis was born out of direct mail marketing, in particular a 1995 article by Tom Wansbeek and Jan Roelf Bult titled “Optimal Selection for Direct Mail,” which was published in the journal Marketing Science. Their work helped confirm the Pareto Principle — the idea widely held among marketers that 80% of sales come from 20% of a brand's customers.



# RFM METRICS



## RECENCY

The freshness of the customer activity, be it purchases or visits

E.g. Time since last order or last engaged with the product



## FREQUENCY

The frequency of the customer transactions or visits

E.g. Total number of transactions or average time between transactions/engaged visits



## MONETARY

The intention of customer to spend or purchasing power of customer

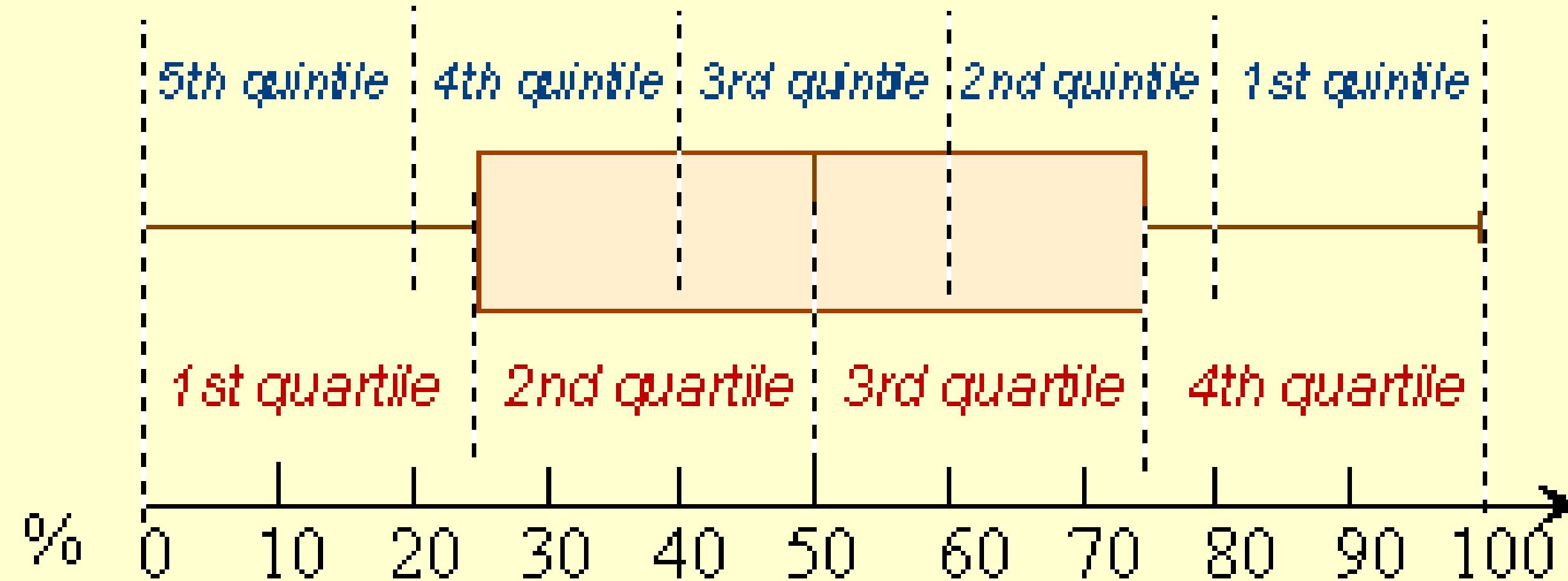
E.g. Total or average transactions value

Customer Segment	Activity	Actionable Tip
Champions	Bought recently, buy often and spend the most!	Reward them. Can be early adopters for new products. Will promote your brand.
Loyal Customers	Spend good money with us often. Responsive to promotions.	Upsell higher value products. Ask for reviews. Engage them.
Potential Loyalist	Recent customers, but spent a good amount and bought more than once.	Offer membership / loyalty program, recommend other products.
Recent Customers	Bought most recently, but not often.	Provide on-boarding support, give them early success, start building relationship.
Promising	Recent shoppers, but haven't spent much.	Create brand awareness, offer free trials
Customers Needing Attention	Above average recency, frequency and monetary values. May not have bought very recently though.	Make limited time offers, Recommend based on past purchases. Reactivate them.
About To Sleep	Below average recency, frequency and monetary values. Will lose them if not reactivated.	Share valuable resources, recommend popular products / renewals at discount, reconnect with them.
At Risk	Spent big money and purchased often. But long time ago. Need to bring them back!	Send personalized emails to reconnect, offer renewals, provide helpful resources.
Can't Lose Them	Made biggest purchases, and often. But haven't returned for a long time.	Win them back via renewals or newer products, don't lose them to competition, talk to them.
Hibernating	Last purchase was long back, low spenders and low number of orders.	Offer other relevant products and special discounts. Recreate brand value.
Lost	Lowest recency, frequency and monetary scores.	Revive interest with reach out campaign, ignore otherwise.

Segment	Scores
Champions	555, 554, 544, 545, 454, 455, 445
Loyal	543, 444, 435, 355, 354, 345, 344, 335
Potential Loyalist	553, 551, 552, 541, 542, 533, 532, 531, 452, 451, 442, 441, 431, 453, 433, 432, 423, 353, 352, 351, 342, 341, 333, 323
New Customers	512, 511, 422, 421 412, 411, 311
Promising	525, 524, 523, 522, 521, 515, 514, 513, 425, 424, 413, 414, 415, 315, 314, 313
Need Attention	535, 534, 443, 434, 343, 334, 325, 324
About To Sleep	331, 321, 312, 221, 213, 231, 241, 251
At Risk	255, 254, 245, 244, 253, 252, 243, 242, 235, 234, 225, 224, 153, 152, 145, 143, 142, 135, 134, 133, 125, 124
Cannot Lose Them	155, 154, 144, 214, 215, 115, 114, 113
Hibernating customers	332, 322, 231, 241, 251, 233, 232, 223, 222, 132, 123, 122, 212, 211
Lost customers	111, 112, 121, 131, 141, 151

## Quartiles and Quintiles

quintiles are ordered from top to bottom  
each quintile includes approximately 20% of the data.



each quartile includes approximately 25% of the data.

name	height
mohan	1.2
maria	2.3
sakib	4.9
tao	5.1
virat	5.2
khusbu	5.4
dmitry	5.5
selena	5.5
john	5.6
imran	5.6
jose	5.8
deepika	5.9
yoseph	6
binod	6.1
gulshan	6.2
johnson	6.5
donald	7.1
aamir	14.5
ken	23.2
Liu	40.2

mohan	1.2
maria	2.3
sakib	4.9
tao	5.1
virat	5.2

khusbu	5.4
dmitry	5.5
selena	5.5
tao	5.6
imran	5.6

jose	5.8
deepika	5.9
yoseph	6
binod	6.1
gulshan	6.2

johnson	6.5
donald	7.1
aamir	14.5
ken	23.2
Liu	40.2

**min**                   **Q1**  
**25<sup>th</sup> Percentile**      **5.35**  
**Q2**                   **5.75**  
**50<sup>th</sup> Percentile**  
**Q3**                   **6.27**  
**75<sup>th</sup> Percentile**  
**max**                   **40.2**

$$\begin{aligned}
 \text{IQR} &= Q_3 - Q_1 \\
 &= 6.27 - 5.35 \\
 &= 0.925
 \end{aligned}$$

$$\begin{aligned}
 \text{lower\_limit} &= Q_1 - 1.5 * \text{IQR} \\
 &= 3.96 \\
 \text{upper\_limit} &= Q_3 + 1.5 * \text{IQR} \\
 &= 7.66
 \end{aligned}$$



# THANK YOU!