RFM Analysis: Understanding Customer Value

A deep dive into customer segmentation using Recency, Frequency, and Monetary value to identify our most valuable and at-risk customers.

CHAPTER 1

The RFM Framework

Recency (R)

How recently a customer made a purchase.

Frequency (F)

How often a customer makes a purchase.

Monetary (M)

How much money a customer spends.

Calculating Recency: The SQL Approach

Recency is calculated by finding the time elapsed since the customer's last order date.

```
WITH RECENCY AS
(
SELECT
CUSTOMER_ID,MAX(ORDER_TMS) LAST_ORDER,
EXTRACT(DAY FROM CURRENT_DATE - MAX(ORDER_TMS)) RECENCY
FROM CO.ORDERS
GROUP BY CUSTOMER_ID)
```

The result is the number of days since the last purchase, defining the 'R' score.

Calculating Frequency and Monetary Value

Frequency

The total count of orders made by each customer.

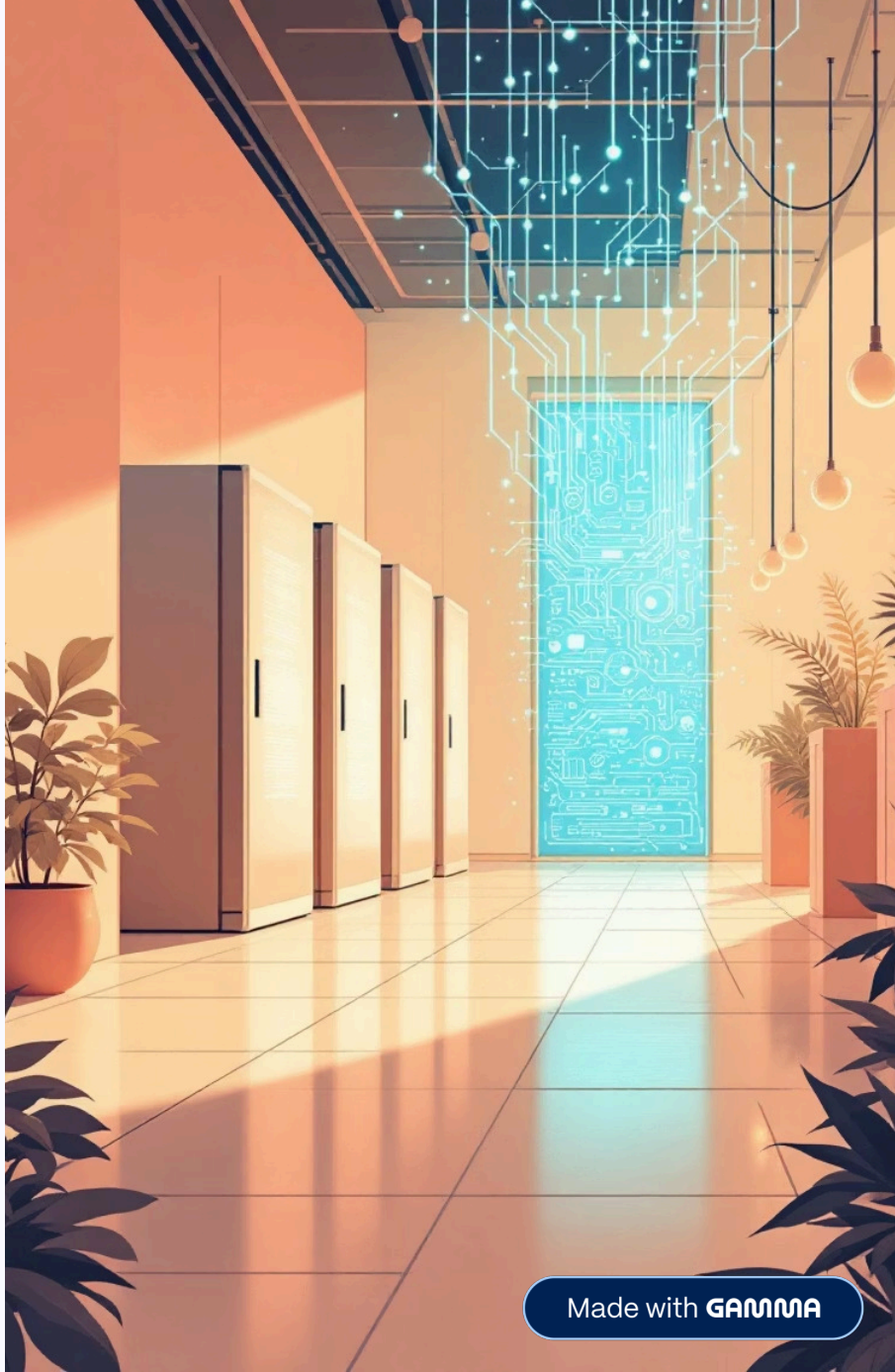
```
,FREQUENCY AS
(
SELECT
 CUSTOMER_ID,COUNT(*) AS
FREQUENCY
FROM CO.ORDERS
GROUP BY CUSTOMER_ID)
```

Monetary

The total revenue generated by each customer across all orders.

```
MONETARY AS
(
SELECT

CUSTOMER_ID,SUM(TOTAL_PR
ICE) AS REVENUE
FROM (...) T
GROUP BY CUSTOMER_ID)
```



CHAPTER 2

Scoring and Bucketing

We combine the three metrics and assign a score from 1 to 5 using the NTILE function, creating performance buckets.

R_SCORE

NTILE(5) OVER (ORDER BY RECENCY) - Lower Recency (more recent) gets a higher score.

F_SCORE

NTILE(5) OVER (ORDER BY FREQUENCY DESC) - Higher Frequency gets a higher score.

M_SCORE

NTILE(5) OVER (ORDER BY REVENUE DESC) - Higher Revenue gets a higher score.

```
BUCKETS AS
(
SELECT CUSTOMER_ID,
NTILE(5) OVER (ORDER BY RECENCY) R_SCORE,
NTILE(5) OVER (ORDER BY FREQUENCY DESC) F_SCORE,
NTILE(5) OVER (ORDER BY REVENUE DESC) M_SCORE
FROM COMBINE_DATA
)
```

Defining Customer Segments

The final step is segmenting customers based on their combined R, F, and M scores.

CHAMPIONS

R_SCORE>=4 AND F_SCORE>=4 AND M_SCORE>=4

LOYAL CUSTOMERS

R_SCORE>=4 AND F_SCORE>=3

BIG SPENDERS

R_SCORE>=4 AND M_SCORE>=4

AT RISK

R_SCORE<=2 AND F_SCORE<=2

OTHERS

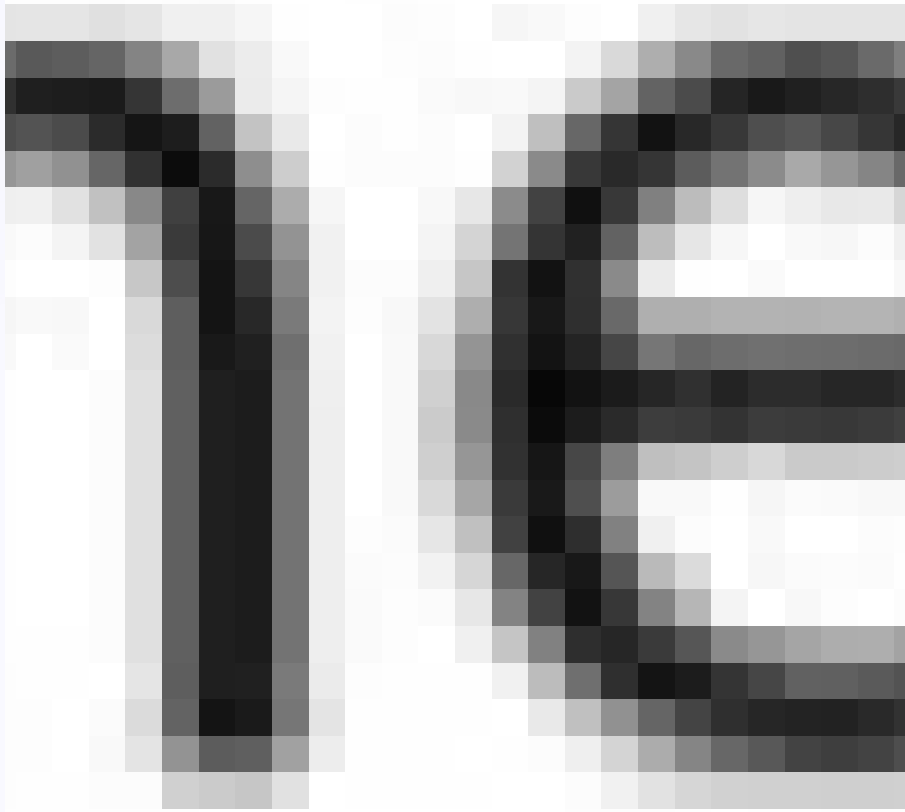
All remaining customers.

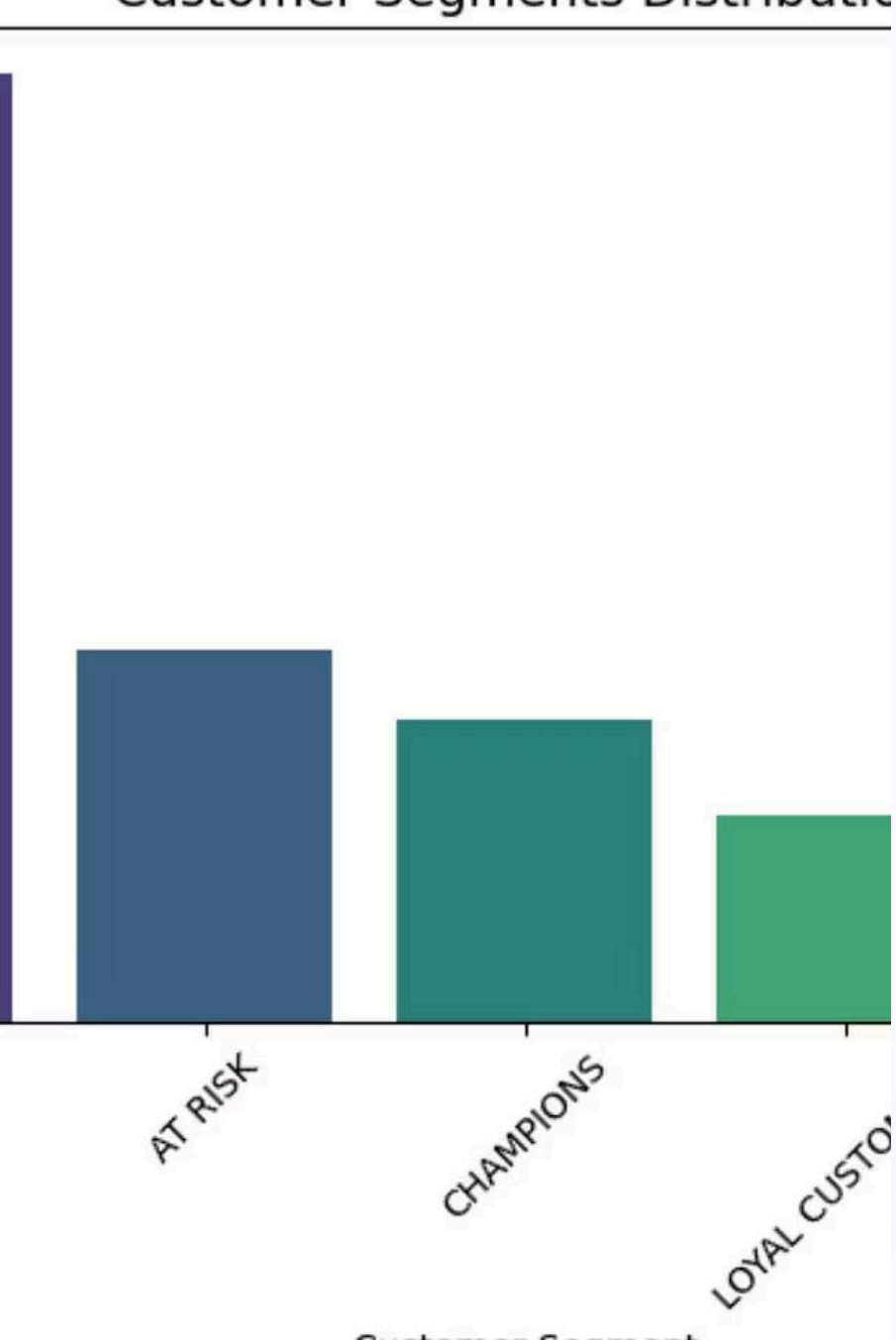
CHAPTER 3

Segment Distribution Overview

The bar graph below shows the distribution of our customers across the defined segments. This helps us understand the makeup of our customer base.

The largest group is 'OTHERS', followed by 'AT RISK', 'CHAMPIONS', 'LOYAL CUSTOMERS', and 'BIG SPENDERS'.

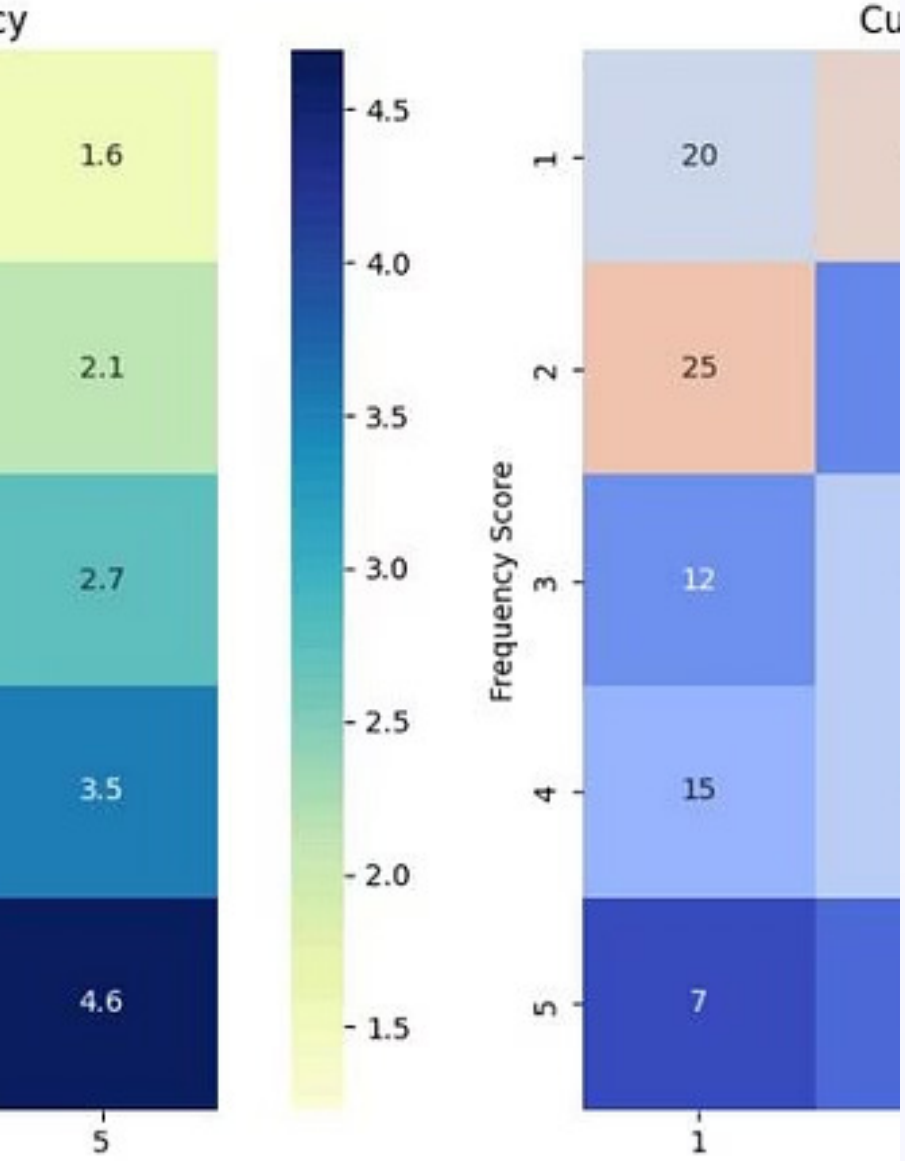




Monetary Value by R-F Score

This heatmap shows the average monetary value for each combination of Recency and Frequency scores. Darker shades indicate higher average spending.

> Customers who purchased recently and frequently (high R and F scores) tend to have the highest average monetary value.



Customer Density by R-F Score

The second heatmap reveals the density, or count, of customers for each Recency and Frequency combination. Warmer colors represent a higher number of customers in that segment.

This helps us understand where the majority of our customers fall in terms of their purchasing behavior.

Key Takeaways and Strategy

1

Identify Value

High R and F scores correlate with the highest average monetary value.

2

Target 'At Risk'

Focus retention efforts on the 'AT RISK' segment (low R and F scores).

3

Reward 'Champions'

Develop loyalty programs to maintain engagement with 'CHAMPIONS' and 'BIG SPENDERS'.