



Customer Segmentation RFM Analysis

September 2022

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RFM Analysis

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Project Overview

Customer 360

Customer 360 is a **comprehensive view** of the customer, providing a holistic understanding of their **demographics, interactions, preferences, and behaviors** across various touchpoints.

Benefit of Customer 360:

Provide 360-degree
Customer View



By connecting customer, household and business relationship data with product, channel and activity data, company could **identify cross and up-selling opportunities**.

Provide more
personalized
customer experiences



By connecting customer, usage, behavior, activity, support and satisfaction data, company could **increase customer retention and loyalty**.

Act as the single
source of truth



By relying on a single version of customer data across your apps, employees **no longer have to question which data is accurate and which is not**.



Project Overview

RFM Model

➤ Definition

The **RFM Model** (Recency, Frequency, Monetary) is a customer segmentation technique that **classifies customers based on their purchase history**.

➤ Main Benefits of RFM model:

- **Identify high-value customers** and **prioritize** them for **targeted campaigns**
- **Reactivate dormant customers** through personalized outreach
- **Develop retention strategies** for at-risk customers
- **Heighten** levels of customer **acquisition, retention, and conversion rates**.

The **amount of time** since the customer's **most recent transaction**.



Recency

R

The **total number of transactions** made by the customer (during a defined period).



Frequency

RFM
Analysis

M

F



Monetary Value

The **total amount** that the **customer has spent** across all transactions (during a defined period).

Project Overview

Quartiles

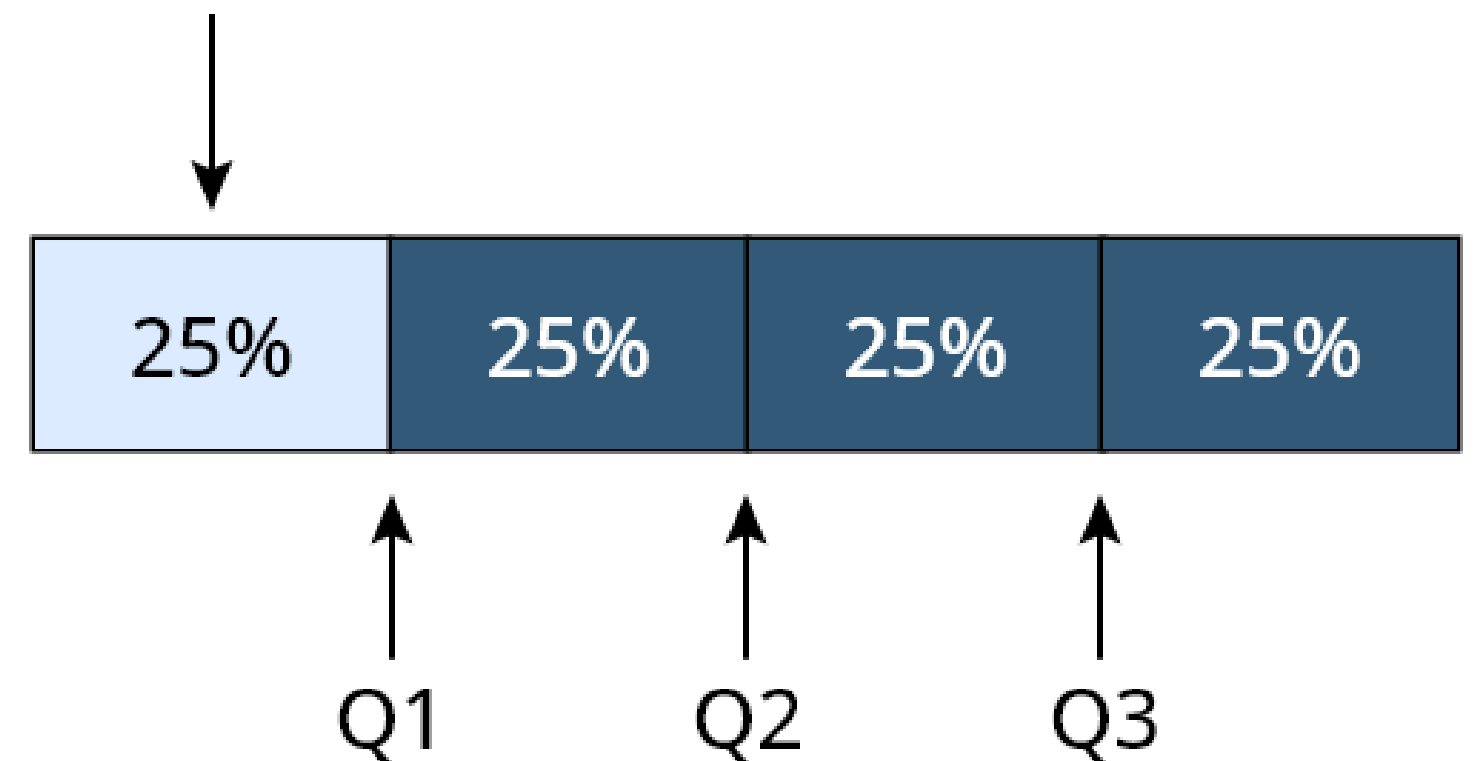
Quartiles divide the entire set into **four equal parts**. So, there are **three quartiles: first, second and third** represented by **Q1, Q2 and Q3**, respectively.

Calculate the quartiles:

*To find quartiles of a group of data, we have to **arrange the data in ascending order**, then calculate the following:*

- » The **first quartile (Q1, or the lower quartile)**: is the **number halfway** between the **lowest number** and the **middle number**.
- » The **second quartile (Q2, or the median)**: is the **middle number halfway** between the lowest number and the highest number.
- » The **third quartile (Q3, or the upper quartile)**: the **number halfway** between the **middle number** and the **highest number**.

First
Quartile



RFM Analysis

Data Preparation

About dataset: Data is collected from the **CRM system** with two tables Customer_Registered and Customer_Transaction including transaction occurred from **June 01, 2022 to August 31, 2022**.

Column name	Data type	Meaning
ID	bigint	Customer ID
Contract	varchar	Contract ID
LocationID	int	Location ID
BranchCode	tinyint	Brand ID
Status	tinyint	Status ID
created_date	datetime	Customer Creation date
stopdate	datetime	Customer stop date

Table 1: Customer_Registered

Column name	Data type	Meaning
ID	bigint	Transaction ID
CustomerID	varchar	Customer ID
Purchase_Date	datetime	Date of Purchase
GMV	bigint	Gross merchandise value

Table 2: Customer_Transaction

Data Cleaning:

- Remove rows that have ID = null
- Remove rows that have Created_date = null

Data Cleaning:

- Remove rows that have CustomerID = null
- Remove rows that have Purchase_Date = null

RFM Calculation

➤ Step 1: Calculate Recency, Frequency, Monetary

- Calculate Recency (R), Frequency (F), Monetary (M) based on the merged dataset from two tables Customer_Registered and Customer_Transaction

➤ Step 2: Score RFM according to quartiles

- Calculate Quartiles and divide the R-F-M data into **4 parts** scored from **1 to 4**.
- Convention that that **the better the score, the higher the value (Score=4 is the best)**.
 - Except for R, the lower its score, the higher its value, indicating that customers have not come back to purchase for a long time.

Recency = Date of report - Date of the most recent purchase
(The report date is September 01, 2022)

Frequency = Total days a customer has purchased / Contract age
(Contract age = Report year – Customer Creation year)

Monetary = Total value of transactions per customer

Quartile	Recency	Frequency	Monetary
Q1	92 days	0.20	17,500 VND
Q2	62 days	0.25	21,250 VND
Q3	31 days	0.33	26,250 VND

Result table of Quartile Calculation

Score	Recency	Frequency	Monetary
1	>= 92 days	< 0.20	< 17,500 VND
2	62 – 91 days	0.20 – 0.24	17,500 – 21,249 VND
3	31 – 61 days	0.25 – 0.32	21,250 – 26,249 VND
4	< 31 days	>= 0.33	>= 26,250 VND

Result table of RFM scoring

Customer Segmentation

Macro group	Segment	Description	RFM score
Loyal	Champions	Bought recently, buy often and spend the most	[3-4][3-4]4
Loyal	Loyalists	Spend good money with us often. Responsive to promotion	[3-4][3-4]3
Loyal	Potential Loyalist	Recent customers, bought often	[3-4][3-4][1-2]
Promising	Recent Big Spenders	Bought recently and spent at a good level, but not often.	[3-4][1-2][3-4]
Promising	Recent Small Spenders	Bought recently, but spent at a low level and not often.	[3-4][1-2][1-2]
Sleeping	At Risk Customers	Spent at a good level, but haven't returned for a long time.	[1-2][1-4]3
Sleeping	Can't Lose Them	Spent the most, but haven't returned for a long time.	[1-2][1-4]4
Sleeping	Hibernating	Last purchase was long back, low spenders and low number of orders	[1-2][1-4][1-2] (exclude 111)
Lost	Lost	Lowest RFM score	111

Result Analysis

► Data Overview

Over a **three-month period** from **June 2022** to **August 2022**, the company recorded **114,081 transacting customers**, generating **total revenue of 2.73 billion VND**

114.08K

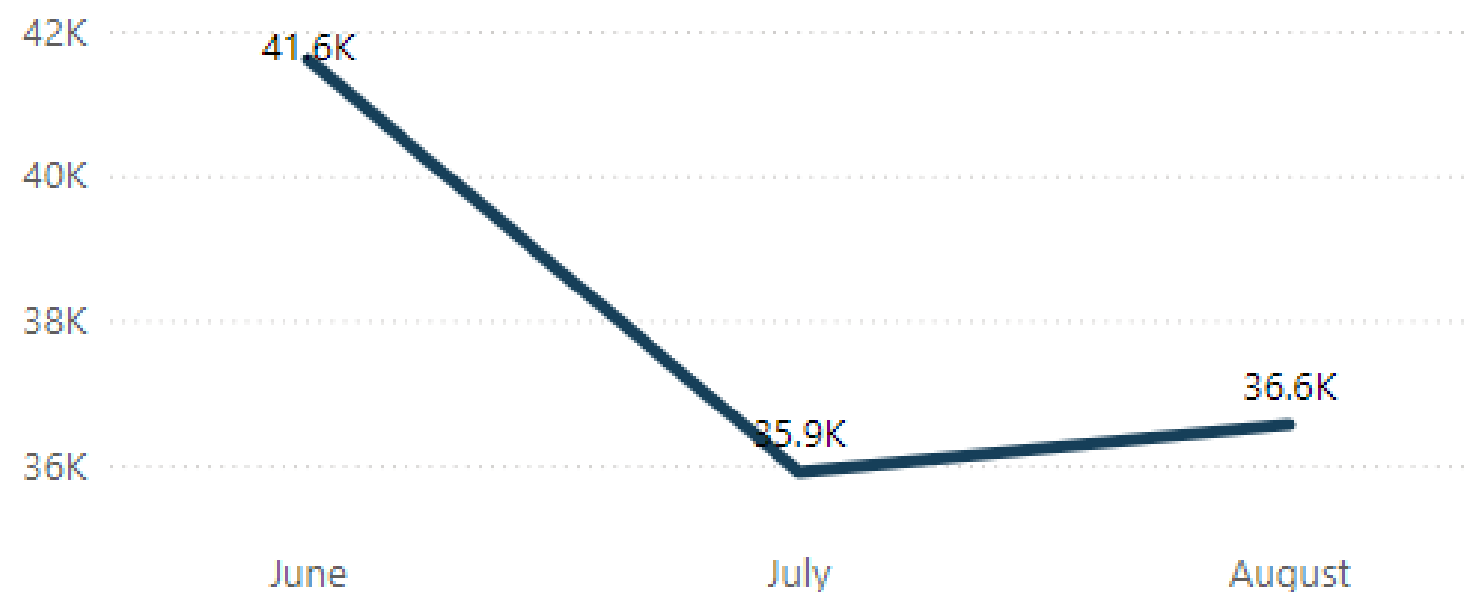
Total customers

2.73bn

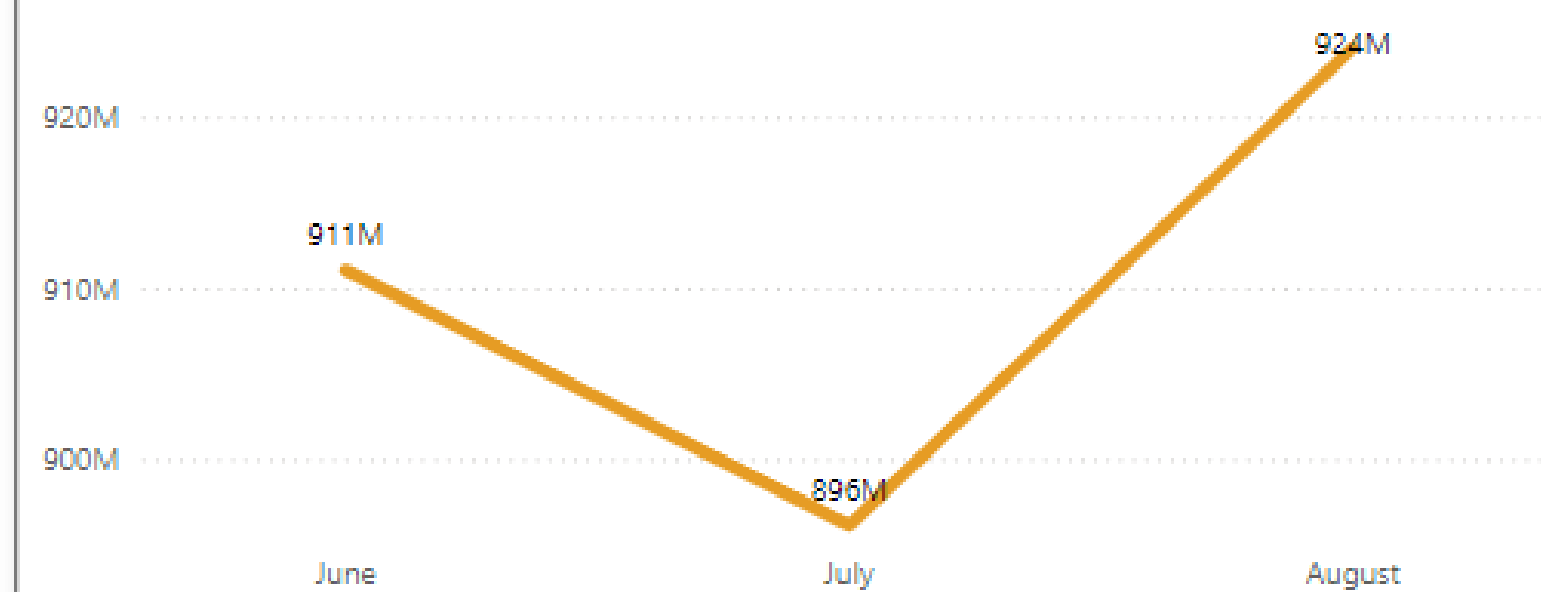
Total revenue

Despite a **5,000 customer decrease** from the preceding two months, total revenues **peaked at 924 million VND in August**

Total customers by month



Total revenues by month



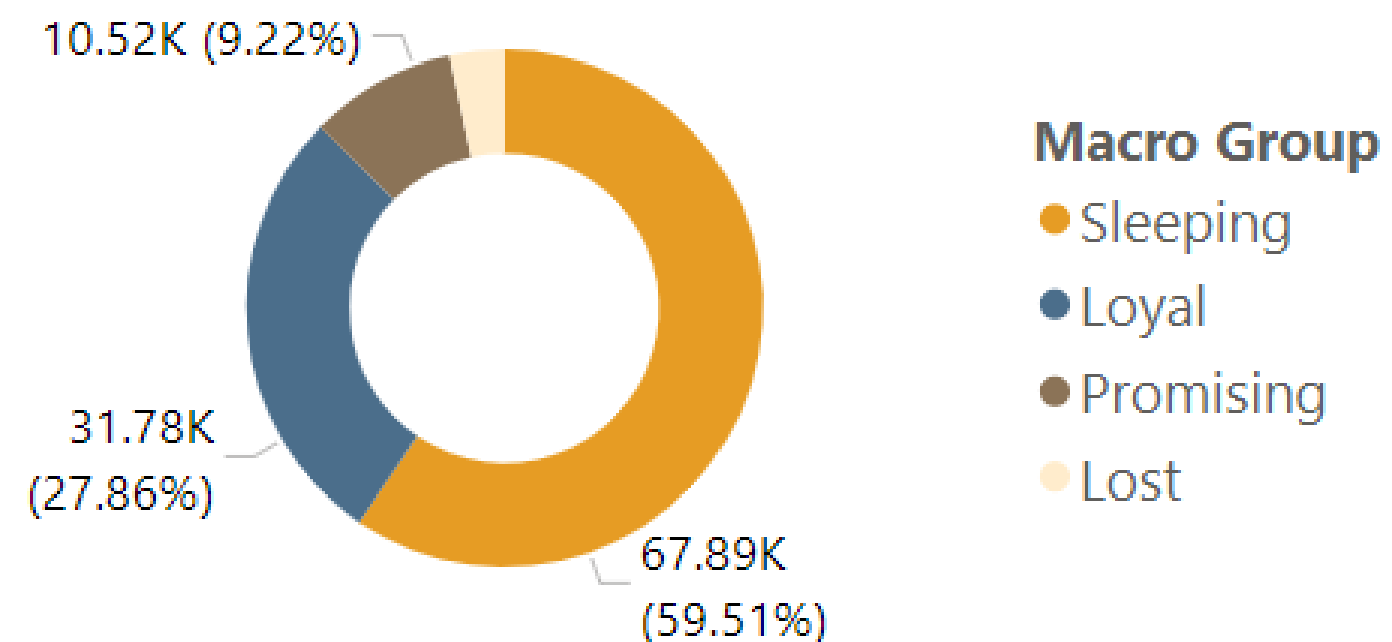
Result Analysis

➤ Data Overview

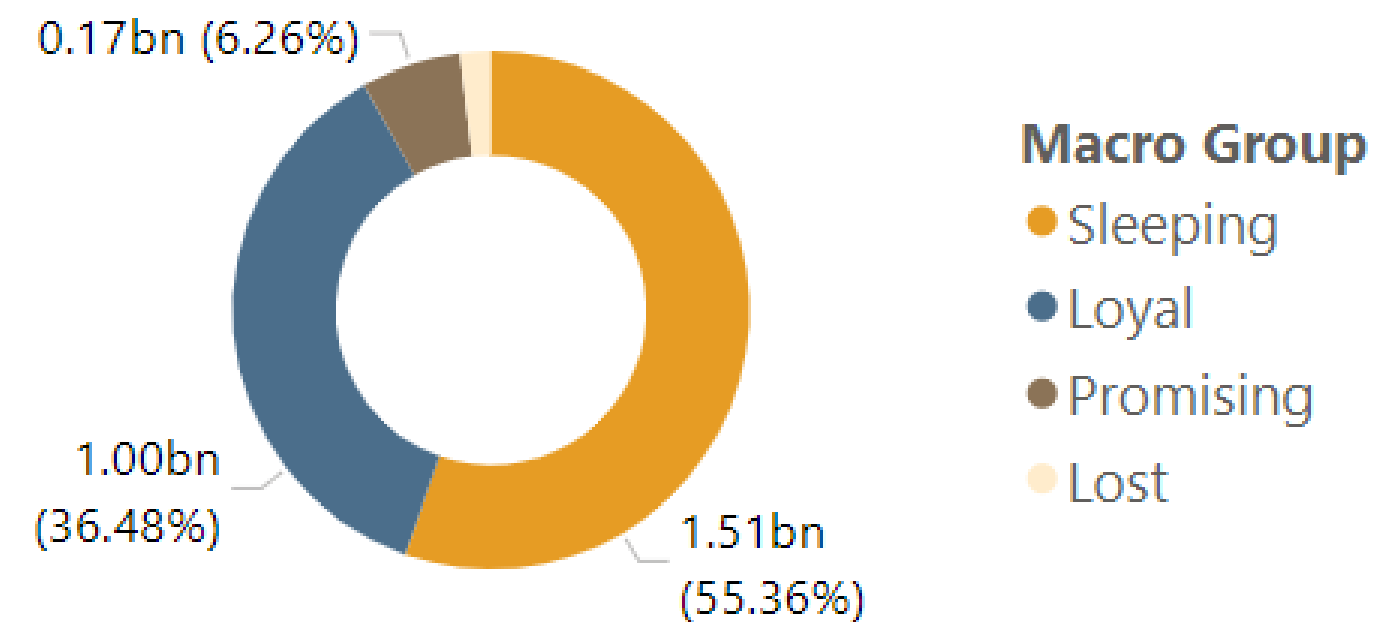
Sleeping group emerged as the **top performer**, accounting for nearly **60% of total customers** and **55% of total revenue**.

Loyal group secured the **second position** with a **customer base** representing close to **30% of the total** and **revenue** exceeding **one-third of the total**.

Total customers by macro group



Total revenues by macro group

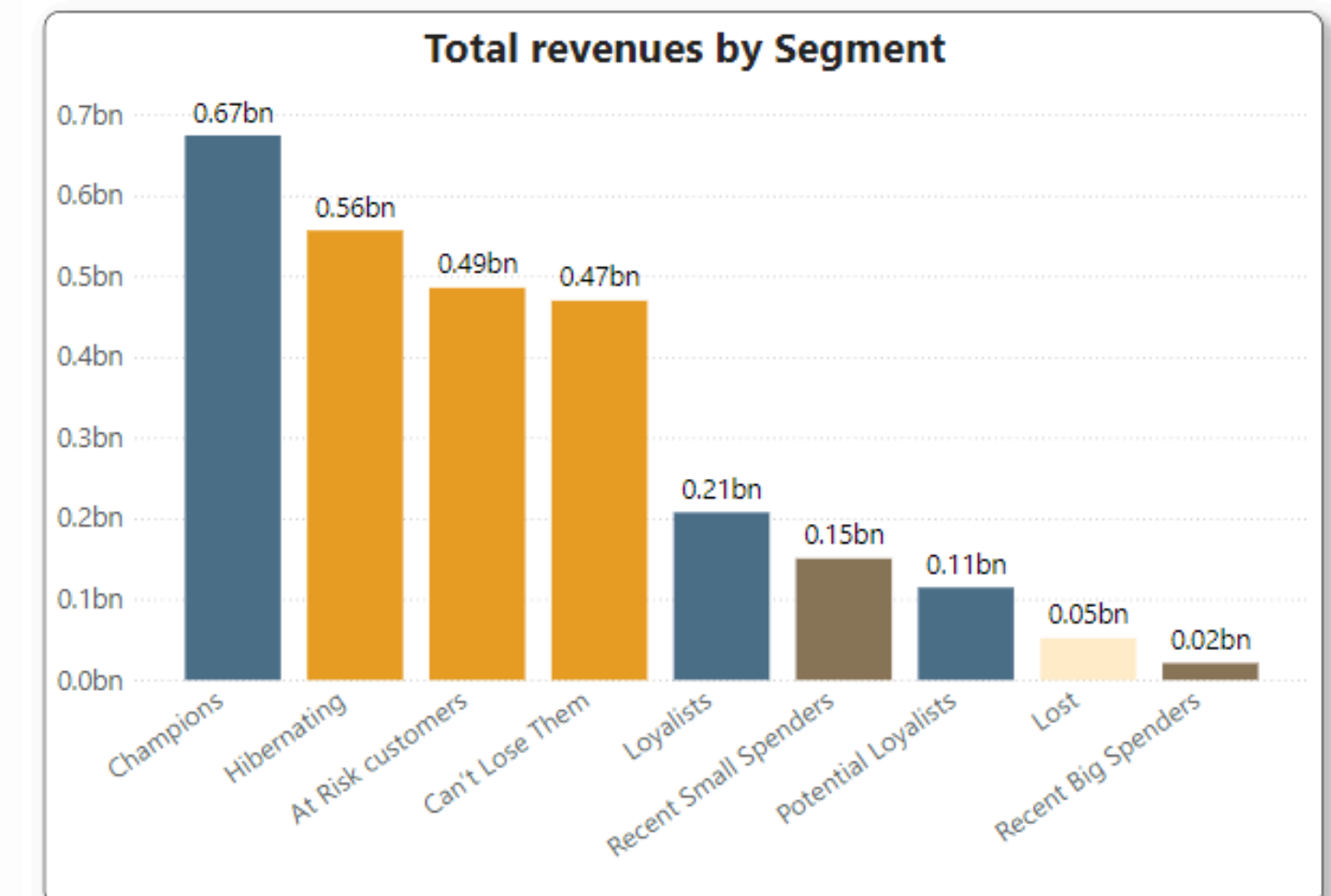
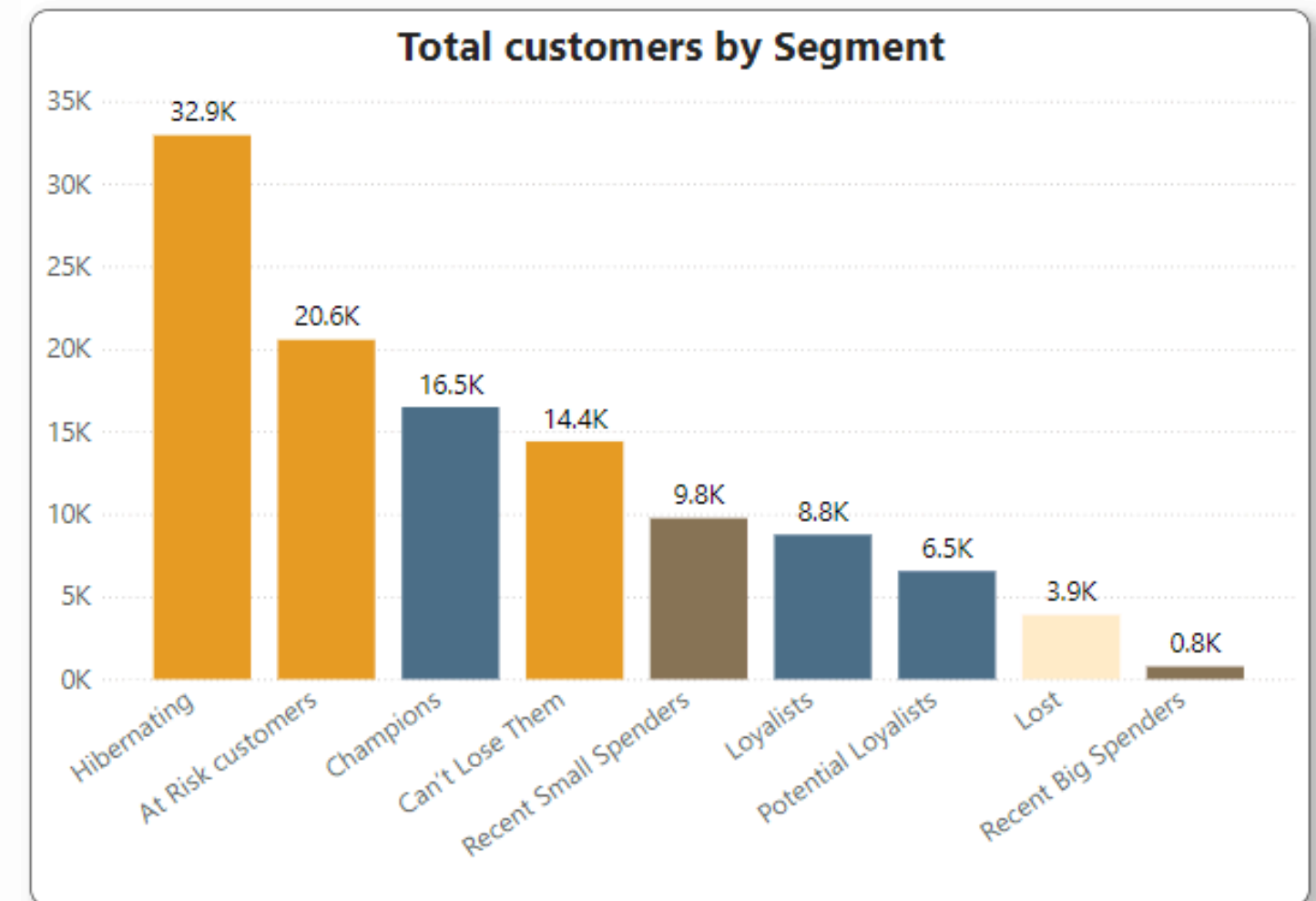


Result Analysis

➤ Customer segmentation analysis

The four segments with the highest revenue are **Champions, Hibernating, At-Risk Customers, and Can't-Lose Them**. These segments also lead in customer volume.

- **Hibernating segment**, with customers who **last transacted over two months ago**, accounts for the largest group at **nearly 30%**. Despite generating relatively **high revenue of 560 million VND**, the **average spending per customer** is quite low at **17,000 VND**.
- **At-Risk Customers segment** ranks **second** in customer count behind Hibernating and has a relatively **high total revenue of 490 million VND**. However, customers have **not made any purchases in nearly three months**.
- **Champions segment** ranks **third** in customer count but has the **highest total revenue at 670 million VND**. Additionally, the **average spending per customer** in this segment is also the **highest** and the **number of orders** is the **most** compared to other segments.
- While **Can't-Lose Them segment** ranks **fourth** in customer count, the **average spending per customer** in this segment is also the **second-highest**, only behind the Champions segment.



Result Analysis

➤ Customer segmentation analysis

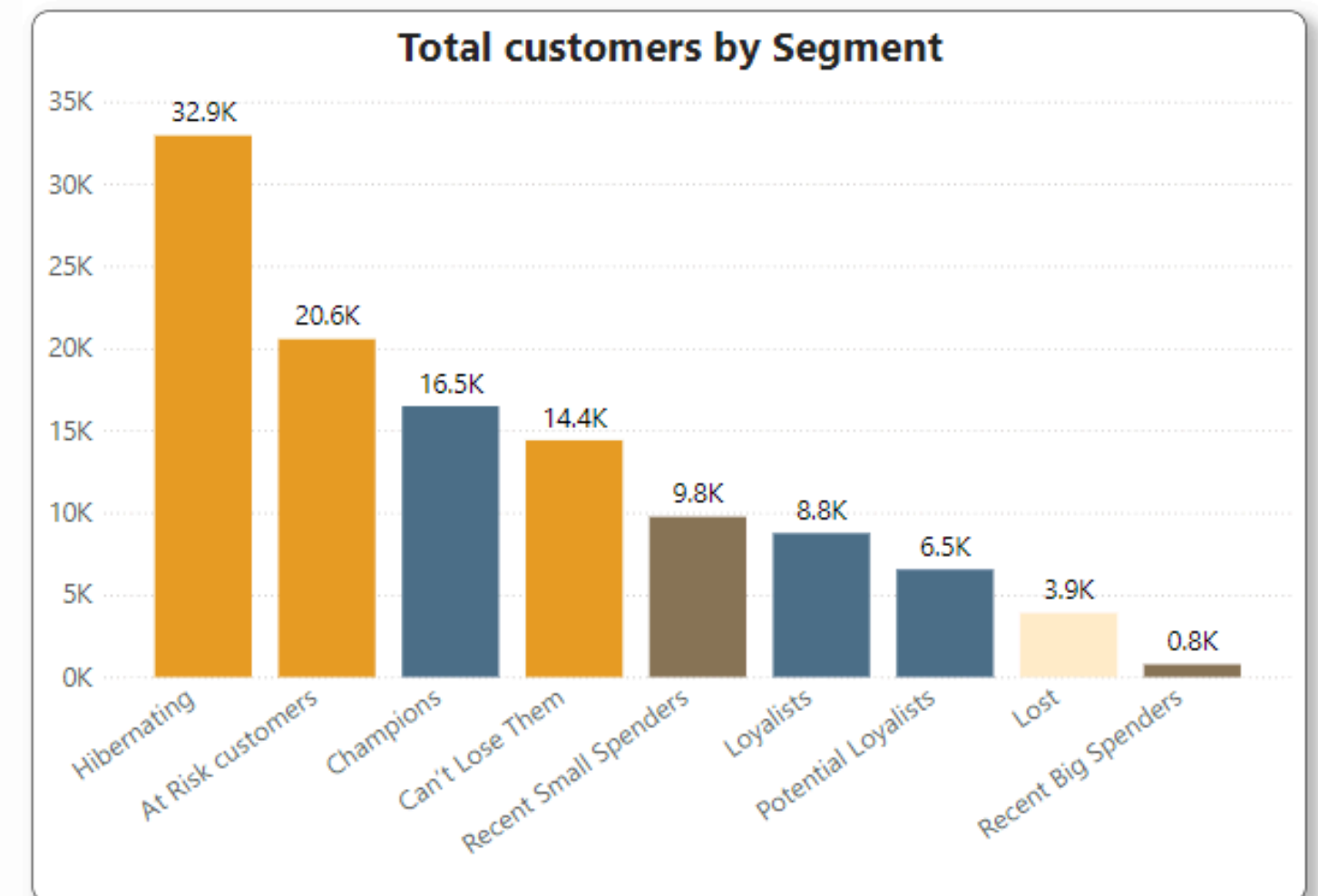
The **Promising Group** comprising **Recent Big Spenders** and **Recent More Spenders**) have **10,000 customers in total**).

➔ Since these are **new customers** who have made their **first purchase within the past month**, they present a **promising opportunity** for future revenue growth.

The **Sleeping Group** including **Hibernate**, **At-Risk**, and **Can't-Lose Them** have **not made purchases** in the **past two months**.

- Notably, **Can't-Lose Them** segment had the **second-highest average transaction** value among all segments.

➔ This highlights the need for a **reactivation strategy** to **re-engage these customers**.



Segment	Mean Recency (days)	Mean Frequency	Mean Monetary (VND)
Champions	30.95	0.43	40,916.38
Can't Lose Them	78.67	0.30	32,615.41
Recent Big Spenders	30.80	0.19	27,010.80
Loyalists	30.95	0.29	23,702.91
At Risk customers	79.16	0.28	23,631.60
Potential Loyalists	30.81	0.26	17,493.18
Hibernating	77.76	0.22	16,902.94
Recent Small Spenders	30.94	0.19	15,414.85
Lost	92.00	0.17	13,285.26

Recommendations



Macro Group: Sleeping

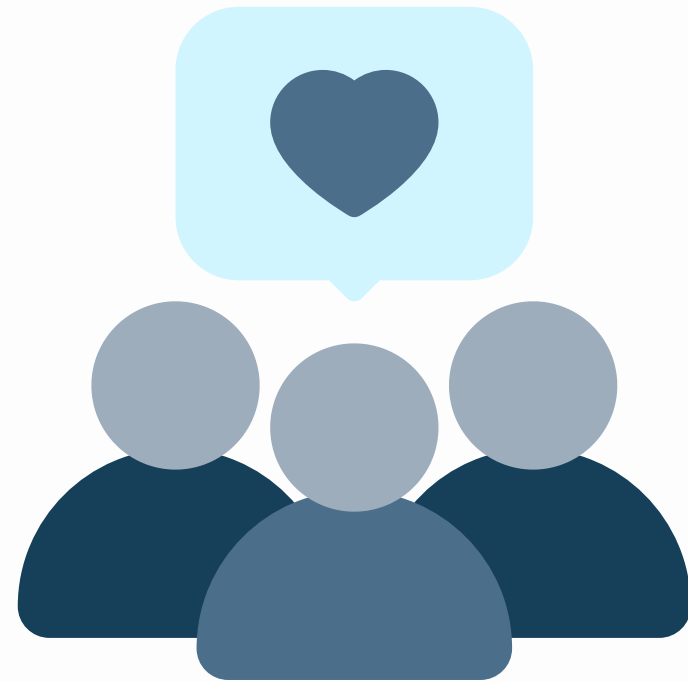
Hibernating Segment:

- ***Personalized Win-Back Offers:*** Craft personalized offers, discounts, or bundles to re-engage these dormant customers.
- ***Customer Feedback:*** Conduct surveys or feedback sessions to understand the reasons behind their inactivity and address any underlying issues.
- ***Value Proposition Reinforcement:*** Reiterate the value your brand and products offer, emphasizing the benefits they can regain by returning.

Can't-Lose Them and At-Risk Segments:

- ***Leverage Customer History:*** Utilize past purchase data to tailor personalized reactivation campaigns. Highlight products or services that align with their previous interests.
- ***Personalized Incentives:*** Offer exclusive discounts, promotions, or loyalty rewards to entice these high-value customers back.
- ***Targeted Communication:*** Employ email marketing, SMS, or social media outreach to reach these segments directly.

Recommendations



Macro Group: Loyal



Macro Group: Promising

With approximately **6,500 Potential Loyalists**, to **transition** them **into** the **Loyalists** and **Champions segments**, the company needs to:

- **Create a tiered loyalty program:** Offer different levels of rewards based on purchase frequency or spending, motivating customers to reach higher tiers.
- **Foster a sense of community:** Build a community around the brand through social media, events, or online forums to increase engagement and loyalty.
- **Excellent customer service:** Provide exceptional support to build trust and loyalty among Potential Loyalists.

Since these are **new customers**, the company needs to attract their attention throughout the following strategies

- Welcome new customers with **special offers** and **discounts**.
- Provide **informative onboarding** and **engage** through **email** and **social media**.
- Offer **personalized product recommendations**.
- **Gather customer feedback** to improve the customer experience.