

# Customer Segmentation Analysis

Understanding the need to  
categorize customers for better  
marketing strategies.



01

# Business Overview



# Definition and Importance of customer segmentation

Customer segmentation is the practice of dividing a company's customers into groups based on shared characteristics such as demographics, purchasing behavior, or preferences. This enables businesses to understand their customers better, create targeted marketing strategies, and improve customer service.

Customer segmentation is critical for businesses as it allows for personalized marketing approaches, maximizes sales by targeting specific groups, enhances customer retention by addressing individual needs, and improves resource allocation by focusing efforts on the most profitable segments.



# Data Source

With growing demands and cut-throat competitions in the market, a Superstore Giant is seeking your knowledge in understanding what works best for them. They would like to understand which products, regions, categories and customer segments they should target or avoid.

Dataset containing Information related to Sales, Profits and other interesting facts of a Superstore giant.

[Kaggle: Superstore dataset](#)



# Metadata

Row ID	→ Unique ID for each row.
Order ID	→ Unique Order ID for each Customer.
Order Date	→ Order Date of the product.
Ship Date	→ Shipping Date of the Product.
Ship Mode	→ Shipping Mode specified by the Customer.
Customer ID	→ Unique ID to identify each Customer.
Customer Name	→ Name of the Customer.
Segment	→ The segment where the Customer belongs.
Country	→ Country of residence of the Customer.
City	→ City of residence of of the Customer.
State	→ State of residence of the Customer.
Postal Code	→ Postal Code of every Customer.
Region	→ Region where the Customer belong.
Product ID	→ Unique ID of the Product.
Category	→ Category of the product ordered.
Sub-Category	→ Sub-Category of the product ordered.
Product Name	→ Name of the Product
Sales	→ Sales of the Product.
Quantity	→ Quantity of the Product.
Discount	→ Discount provided.
Profit	→ Profit/Loss incurred.



02

# Methods and Tools



# RFM Analysis

Recency, Frequency, and Monetary (RFM) analysis is a powerful marketing technique used to segment customers based on their purchasing behavior.

Component	Meaning	Example
Recency	How recently a customer made a purchase. Customers who purchased more recently are more likely to respond to promotions or re-engage.	Customer A last purchased 5 days ago → high Recency score Customer B last purchased 300 days ago → low Recency score
Frequency	How often a customer makes a purchase in a given period. Frequent customers are often loyal and more engaged with the brand.	Customer A made 12 purchases → high Frequency Customer B made 2 purchases → low Frequency
Monetary	How much money the customer has spent in total. Customers who spend more are usually more valuable.	Customer A spent \$1,500 → high Monetary Customer B spent \$50 → low Monetary



# Power BI

RFM (Recency, Frequency, Monetary) Analysis in Power BI is a powerful customer segmentation technique used to evaluate and group customers based on their purchasing behavior. By importing transactional data into Power BI, analysts can calculate the recency, frequency, and monetary value for each customer. These RFM metrics are then scored and used to segment customers into meaningful groups such as "Best Customers," "Loyal Customers," or "At-Risk Customers." **With Power BI's interactive visuals and DAX formulas, businesses can build dynamic dashboards to monitor customer segments, identify trends, and develop targeted marketing strategies that drive customer retention and sales growth.**





03

## RFM Analysis



# Building the RFM Table

## Creating a New Table

A new table named RFM\_Table is created using DAX formula to calculate recency, frequency, and monetary values for each customer



## Calculating Recency

Find the last transaction date using the MAX() formula against the 'order date' column. Then Recency is calculated using the DATEIFF function to find the difference in days between the last transaction date and specified date (timestamp of data extraction)

## Calculating Frequency

Frequency is determined by counting the distinct number (DISTINCTCOUNT function) of orders a customer has made, indicating the customer's transaction history



## Calculating Monetary

Monetary value is calculated by summing up the sales after discount for each customer, providing insights into their spending habits



# Building the RFM Table



## Determining Recency Score

Measures how recently the customer made their last purchase. The value is then ranked (usually on a scale of 1 to 5) using PERCENTILE.INC() and SWITCH() to determine their relative their recently last purchase. A higher score indicates more recent activity from the customer, which is better

## Determining Frequency Score

Measures how often a customer shops. The value is then ranked (usually on a scale of 1 to 5) using PERCENTILE.INC() and SWITCH() to determine their relative frequency. A higher score indicates more frequent purchases from the customers, which is better



## Determining Monetary Score

Measures how much money the customer has spent in total. The value is then ranked (usually on a scale of 1 to 5) using PERCENTILE.INC() and SWITCH() to determine their relative spending. A higher score indicates more spending money from the customers, which is better



# Building the RFM Table

R, F, and M scores are combined into a 3-digit code, for example:

- 555 = highest in all categories
- 132 = recency 1, frequency 3, monetary 2

Based on the `rfm_score`, customers are grouped into segments, using the `SWITCH()` logic in DAX.

RFM Score	Segment	Description
111 - 155	Need Attention	Customers in this segment have not made purchases for a long time (low recency) and may stop being customers. There are two possible behaviors: (1) Customers who previously had medium to high purchase frequency and spending (monetary). They might have bought products with long-term usage or made bulk purchases. (2) Customers with historically low purchase frequency and spending, who may only be interested in specific products and have no intention of making frequent repeat purchases.
211 - 345	At Risk	Customers in this segment are considered at risk, meaning they are at risk of not making purchases for a long time. Their transaction frequency has started to decline.
351 - 445	Potential	Customers who continue to make purchases relatively frequently, although their frequency and spending are low to medium.
451 - 455	Loyal	Customers who still make transactions (but not as frequently as Champions) with medium to high purchase frequency and spending.
511 - 555	Champions	There are two possible types of customers in this segment: (1) New customers who appear to have started shopping recently but have relatively low frequency and spending. (2) Long-time customers who continue to make purchases with very high frequency and spending.

# Building Dashboard

## CUSTOMER SEGMENTATION

Customer Segment: All

Date: 1/1/2014 12/30/2017

793

Total Customer

5009

Total Transaction

38K

Sales Quantity

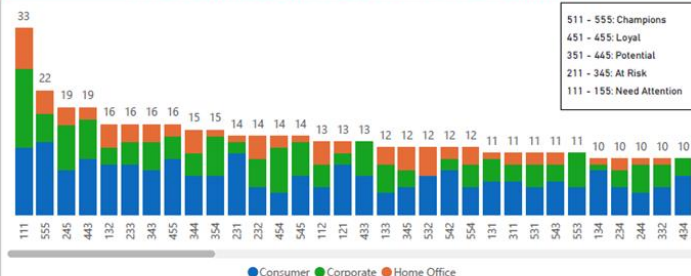
1.97M

Total Sales

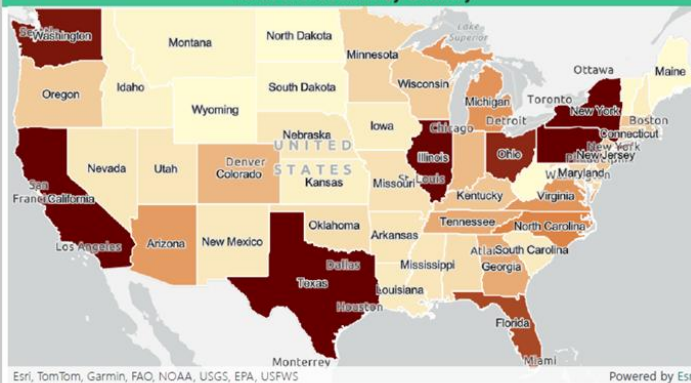
0.29M

Total Profit

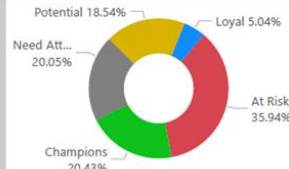
### Total Customers by RFM Score and Market Segment



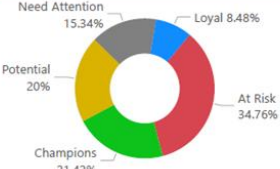
### Total Transaction by Country



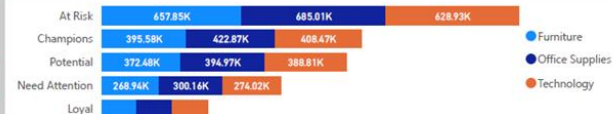
### % Customer Segment



### % Sales Contribution



### Total Spending by Customer Segment and Product Category



148

Avg of Recency

6

Avg of Frequency

2.49K

Avg of Spending

0.13%

Avg of % Spending

0.96%

Max of Spending

### Customer Details (Ranking by Spending)

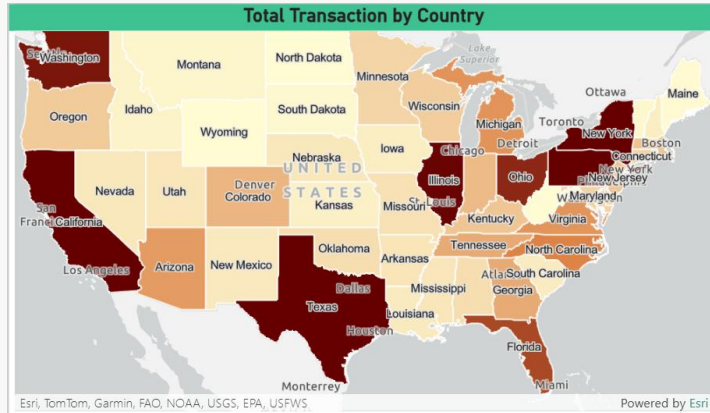
Rank	Name	Last Transaction	Recency	Frequency	Spending	% Spending
1	Tamara Chand	26 Nov 2016	400	5	19.01K	0.96%
2	Raymond Buch	25 Sep 2017	97	6	15.05K	0.76%
3	Sanjit Chand	15 Jan 2017	350	9	13.83K	0.70%
4	Adrian Barton	19 Nov 2017	42	10	13.74K	0.70%
5	Ken Lonsdale	13 Nov 2017	48	12	13.33K	0.68%
6	Sean Miller	12 Oct 2017	80	5	13.05K	0.66%
Total					1,974.62K	100.00%

04

## Business Insight and Recommendation

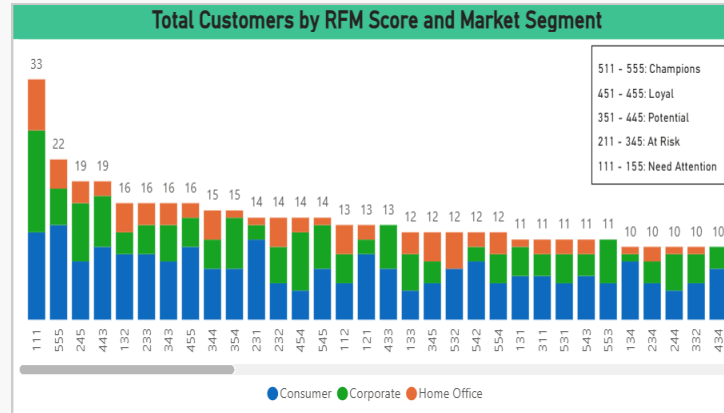


# Business Insight

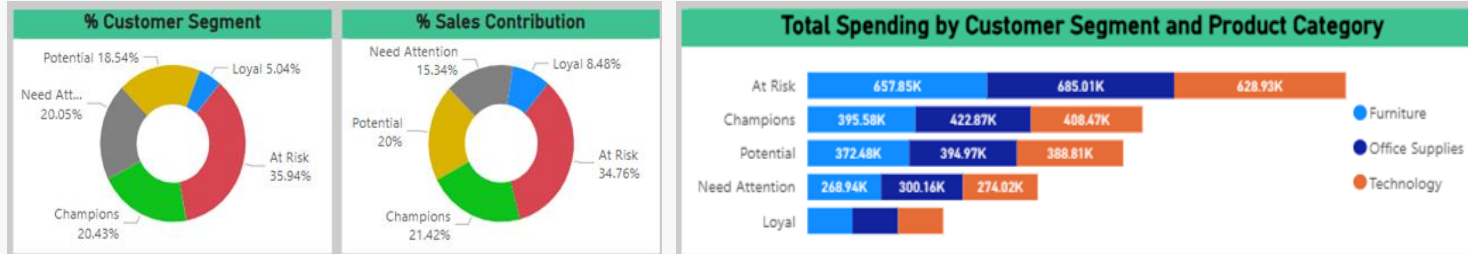


## Insight

The adjacent image illustrates the distribution of **total transactions across different states from 2014 to 2017**. The darker the color, the higher the number of transactions. Some of the states identified as **top transaction hubs include Washington, California, Texas, Illinois, New York, Pennsylvania, and Ohio**. This information serves as a valuable reference for developing targeted marketing strategies—for instance, optimizing product offerings and special discounts in regions with increasing transaction volumes or rewarding customers with the highest purchases in states with the highest transaction levels.



# Business Insight



## Insight (Based on Sales Data 2014 - 2017)

✦ **At Risk Segment:** This segment **dominates with a percentage reaching 35.94%**, contributing the highest to total sales at 34.76%. This should be a focus for the company, as it may impact sales and profitability. Customers in this segment have begun to make purchases less frequently, indicating a potential risk of disengagement.

✦ **Champions & Loyal Segments:** The percentage of customers in the Champions and Loyal categories is **relatively high** (the second-largest, exceeding 25%). Their contribution to total sales is also significant, and maintaining their engagement is crucial for long-term success.

✦ **Potential Segment** Increasing customer interest in this segment could be beneficial, as **they currently contribute around 20% to total sales**. Strengthening this group's purchasing behavior could further improve overall company performance.

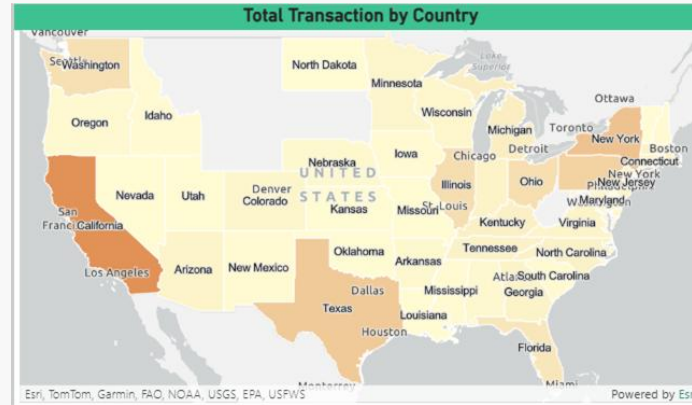
✦ **Need Attention Segment** This segment accounts for approximately **20% of customers, with a 15.34% contribution to sales** over the past few years. Strategic efforts to re-engage these customers may help boost future revenue.

✦ **Product Preferences Across Segments:** The types of products favored and frequently purchased by customers in **each segment are largely uniform**. Customers across all categories **spend the most on office supplies**, indicating that these products are the most sought-after and needed.



# Action Needed

19	8	2.92K	0.15%	0.70%		
Avg of Recency	Avg of Frequency	Avg of Spending	Avg of % Spend...	Max of Spending		
Customer Details (Ranking by Spending)						
Rank	Name	Last Transaction	Recency	Frequency	Spending	% Spending
4	Adrian Barton	19 Nov 2017	42	10	13.74K	2.33%
5	Ken Lonsdale	13 Nov 2017	48	12	13.33K	2.26%
9	Sanjit Engle	21 Dec 2017	10	11	11.61K	1.97%
12	Greg Tran	24 Nov 2017	37	11	10.13K	1.72%
15	Maria Etezadi	18 Nov 2017	43	10	9.48K	1.61%
28	Harry Marie	28 Dec 2017	3	10	7.53K	1.28%
29	John Lee	9 Dec 2017	22	11	7.45K	1.26%
Total					590.41K	100.00%



## Action #1: Rewarding Top Customers

- Provide special rewards for customers with the highest purchases. For example, Adrian Barton, Ken Lonsdale, and Sanjit Engle are the top three customers with the highest spending throughout 2017, making them eligible for rewards.
- Rewards can also be given to customers with the highest purchase quantities (sales volume).

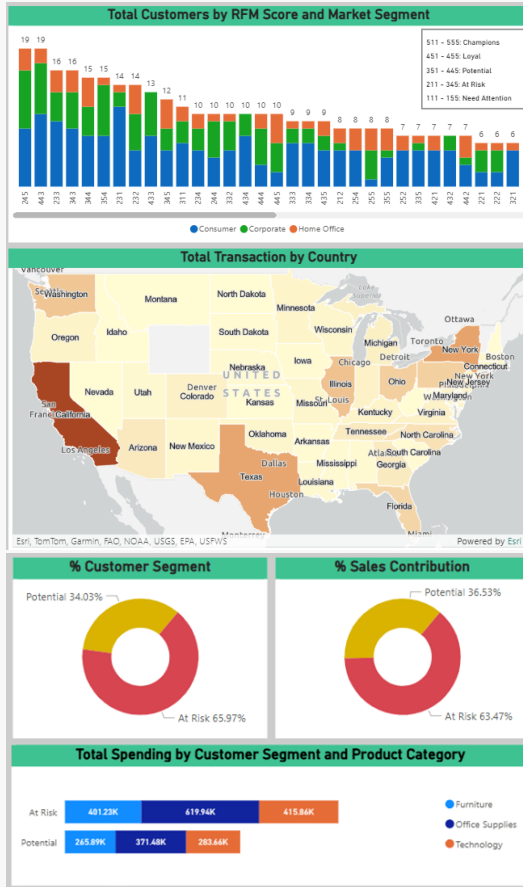
## Action #2: Targeted Retention Strategies

Based on data findings, California has the highest concentration of transactions from Champions and Loyal customers, followed by Texas and New York. Several strategies can be implemented in these regions, including:

- Hosting exclusive events for top customers.
- Offering special discounts or customized product bundles tailored for loyal customers in these areas.
- Leveraging loyal customers for product feedback to enhance company image and improve offerings.
- Introducing new product marketing initiatives in these regions as part of product diversification and business expansion strategies.



# Action Needed



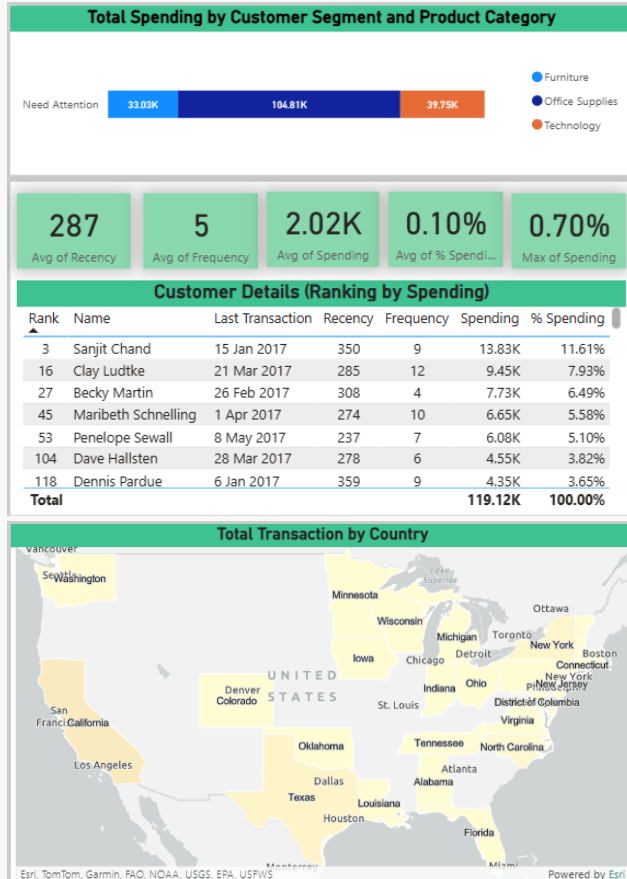
## Action #3: Focus on Increasing Purchases from Potential Customers

## Action #4: Prevent the Loss of At Risk Customers

The goal is to focus on both Potential and At Risk customers by increasing their purchase frequency and spending. Several strategies can be implemented, including:

- Offering special discounts with minimum purchase requirements. Exclusive offers such as discounts, free shipping, or free products can encourage them to shop again.
- Providing product bundles or service packages to enhance perceived value.
- Sending personalized promotional messages based on customer behavior. For example, recommending products similar to previous purchases or items they have viewed on the company's marketplace platform. Related products can also be suggested based on customer age and location segmentation.
- These strategies aim to strengthen customer engagement and drive higher retention rates, ensuring long-term business growth.

# Action Needed



## Action #5: Regaining the Interest of Customers Who Need Attention

- Sending promotional messages—Offer products similar to previous purchases or items viewed on the company's marketplace, such as office supplies, which are top products among the Need Attention segment. Additionally, recommend trending products based on age segmentation and customer interests.
- Utilizing paid advertisements on social media or other platforms targeting customers in the Need Attention segment.
- Conducting surveys to identify customer interests and needs in areas with a high concentration of Need Attention customers, then adjusting products to align with market demand.
- Providing special discounts or free shipping for customers in the Need Attention segment on their first transaction after a period of inactivity.

# Thank you!

Do you have any questions?



[noviaanggitaaprilianti](#)

