

# Everything Plus's U.K. Customer Profiles Using RFM Analysis

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[Online Retail II Dataset](#)\* from UCI Machine  
Learning Repository

\* Data provided by Practicum by Yandex. Some values may differ  
from the dataset from UCI repository.



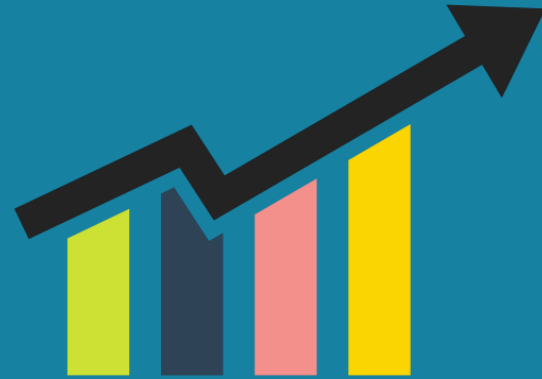
# OVERVIEW

1. The Setting (general overview of process)
2. The Analysis (insights from EDA)
3. The Segments (RFM segments and analysis)
4. Conclusion and Recommendations

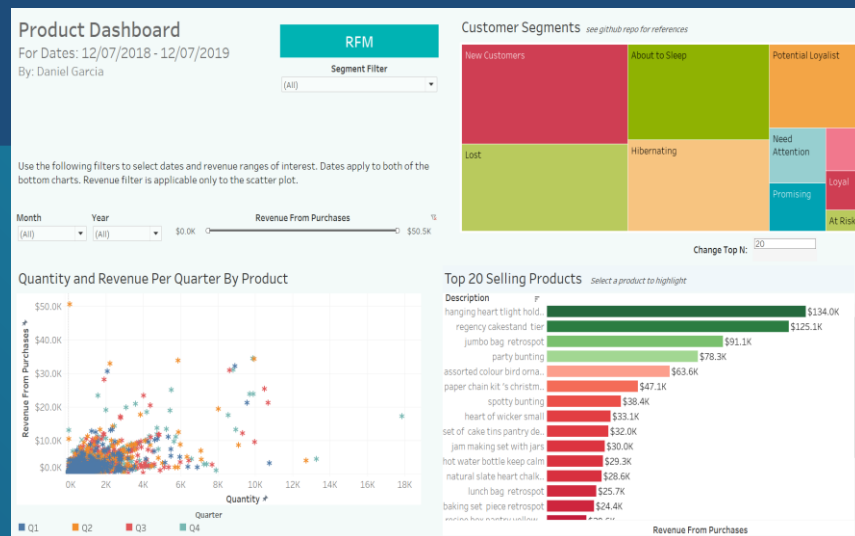
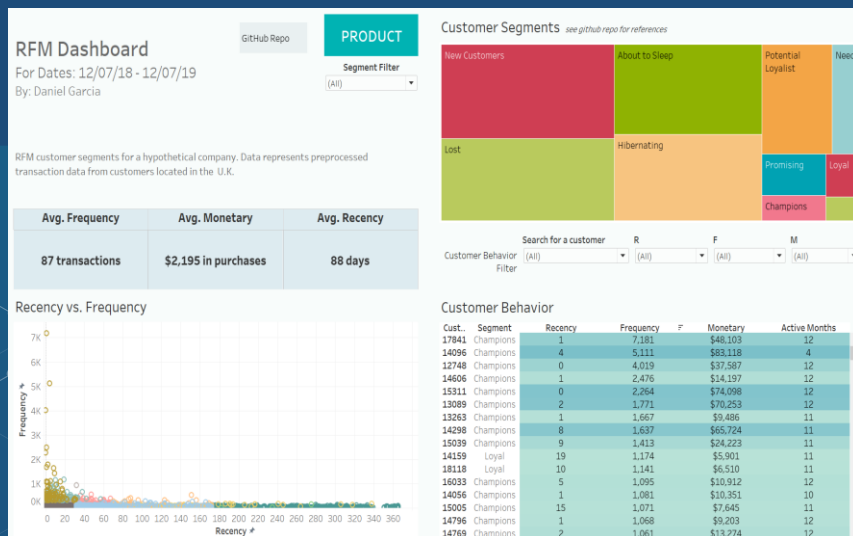
# 1. The Setting



**Problem:** Form segments of customers based on similar purchasing characteristics.



# Solution: RFM Segments Interactive Dashboard



See: [https://public.tableau.com/views/graduationProject/RFMDashboard?:language=en&embed\\_code\\_version=3&loadOrderID=17&display\\_count=y&publish=yes&origin=viz\\_share\\_link](https://public.tableau.com/views/graduationProject/RFMDashboard?:language=en&embed_code_version=3&loadOrderID=17&display_count=y&publish=yes&origin=viz_share_link)

# Data Context

## Customers:

Must be in the  
U.K.

Currency: Must be in  
US Dollars rather than  
the pound sterling

## Time span: *One year*

- Threshold set at one year from the day of last recorded transaction in the dataset.

# Methods Overview

## Data Understanding

- Got a general idea of the underlying data through basic exploration steps

## Data Preprocessing

- Dealt with missing values, erroneous or faulty data (ie. negative values), dropped duplicates, and changed data types when needed.

## Exploratory Data Analysis

- Explored the distribution of variables (ie. quantity) over time (date, month) and per unique customer.
- Feature creation
- Clustering analysis of the products

## RFM Segmentation

- Used RFM analysis to segment customers

## Tableau Dashboard

- Exported relevant data from analysis and created a Tableau dashboard as a deliverable for the hypothetical stakeholder.

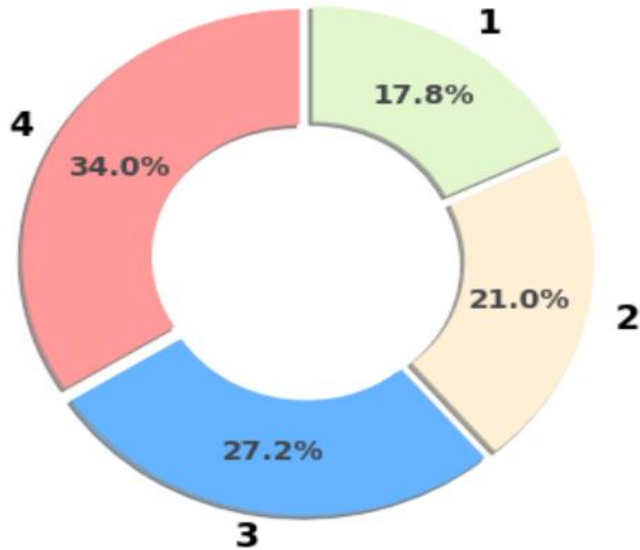
# 2. The Analysis





# Sales Increase Over Each Quarter

Share of Sales Per Quarter  
From 12/07/18 - 12/07/19



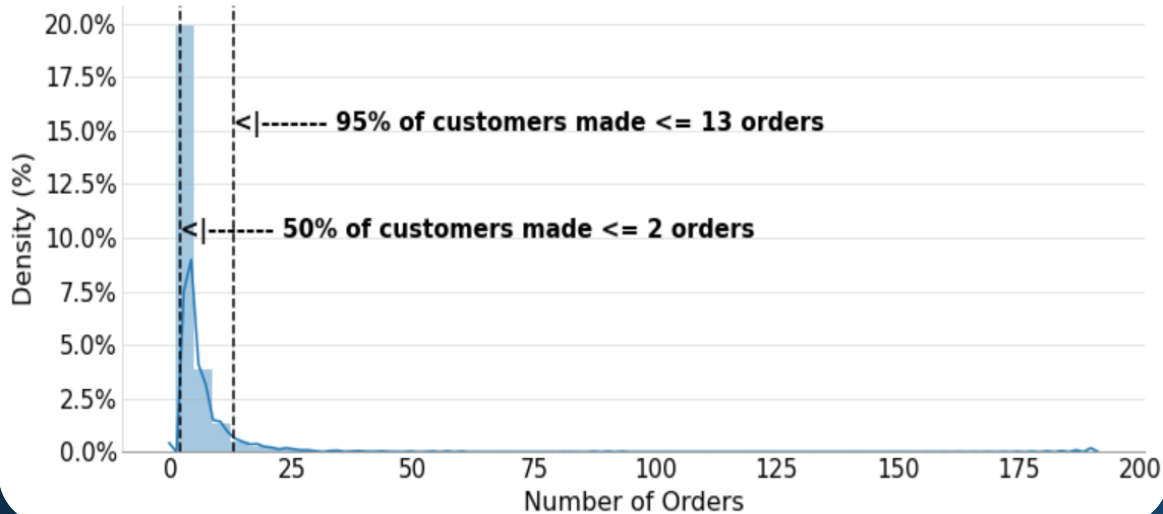
More than 1/3 of revenue is earned during months in the 4<sup>th</sup> quarter with the first quarter bringing in the least



Seasonality seems to come into play; 4<sup>th</sup> quarter should get the most attention.

# Most Customers Are One Time Purchasers

Distribution of Orders For Dates: 12/07/18 - 12/07/19

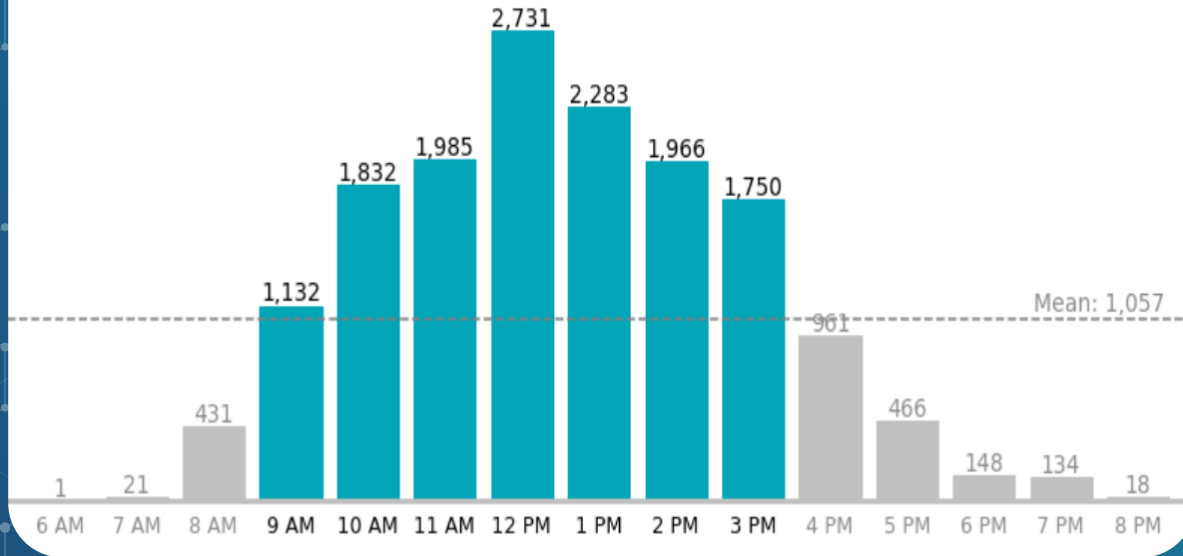


Only 5% of customer made more than 13 orders over the year

When accounting for revenue, most customers seem to be wholesalers

# Noon: The Most Important Hour

For the year, what hour did customers make the most orders?



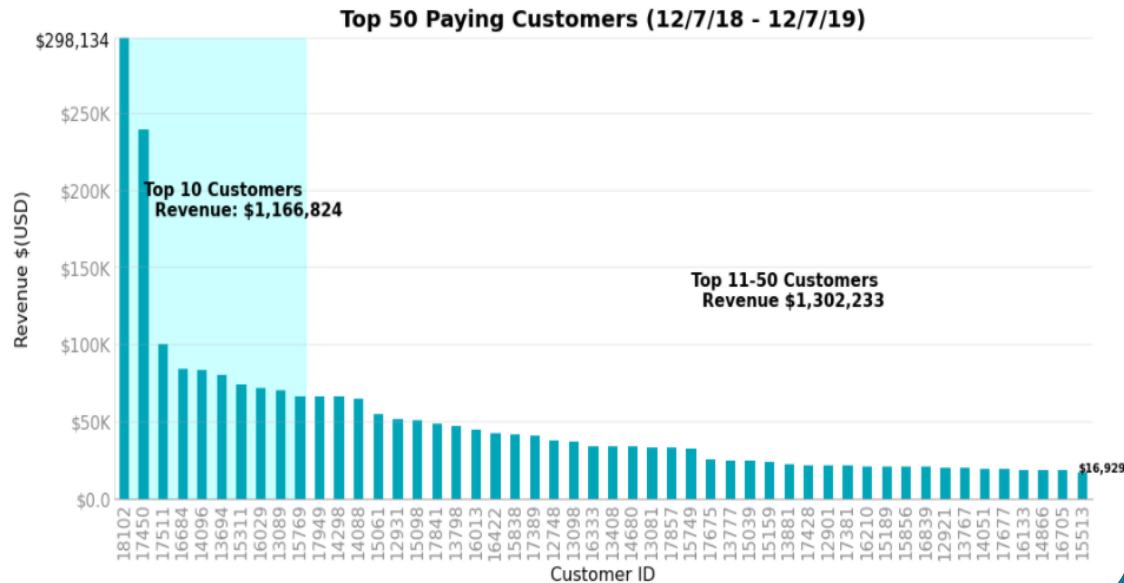
In terms of purchases, **12 to 2 pm** are the online store's **peak hours**

The company can expect **most revenue** to have been made **during 10 am to 4 pm.**

\*Note\*: may differ given timezone differences; shows distribution based on time log of software

# The MVPs: Wholesalers

Total revenue \$8,453,539 Customers: 3851



**Top 50 customers** made up **almost 30%** (~\$2.5 mil) of **total revenue** (~\$8.45 mil)..

**Top 10** customers brought **~\$1.15 mil** whilst the others top 40 brought in **~\$1.30 mil**.

# 3. The Segments



# RFM Definitions Used



## **RECENCY**

The recency of customer activity.

Used last day of purchased since max date (12/07/2019)



## **FREQUENCY**

How consecutive is the customer's transactions.

Used number of product transactions made (not orders)

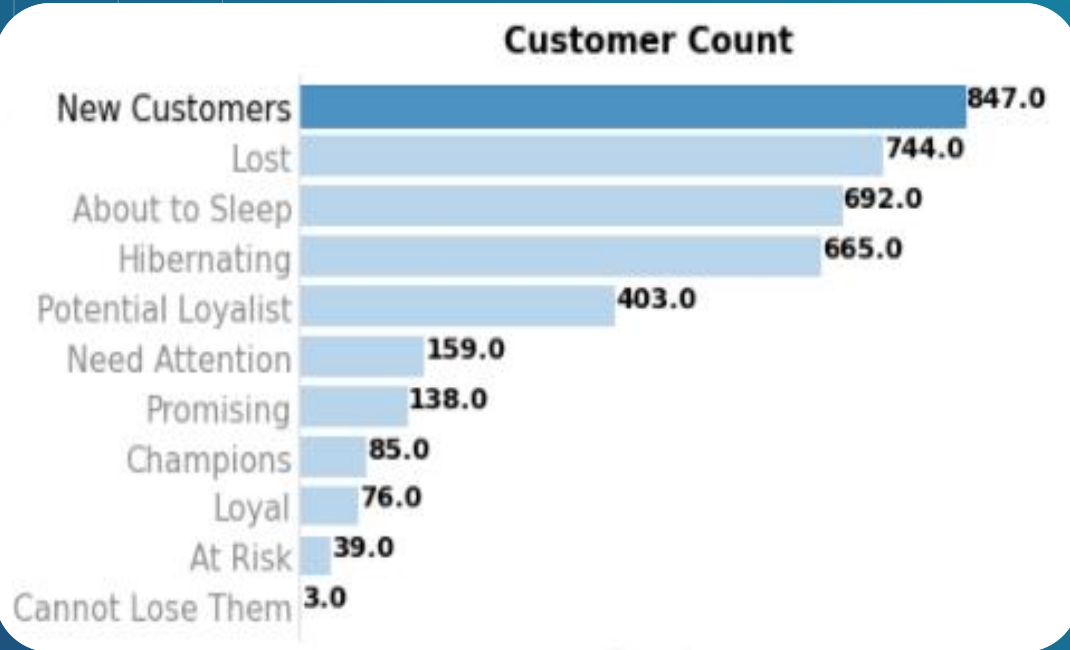


## **MONETARY**

The willingness to pay

Used total purchase amount

# Share of Segments: Most Are Lost or New

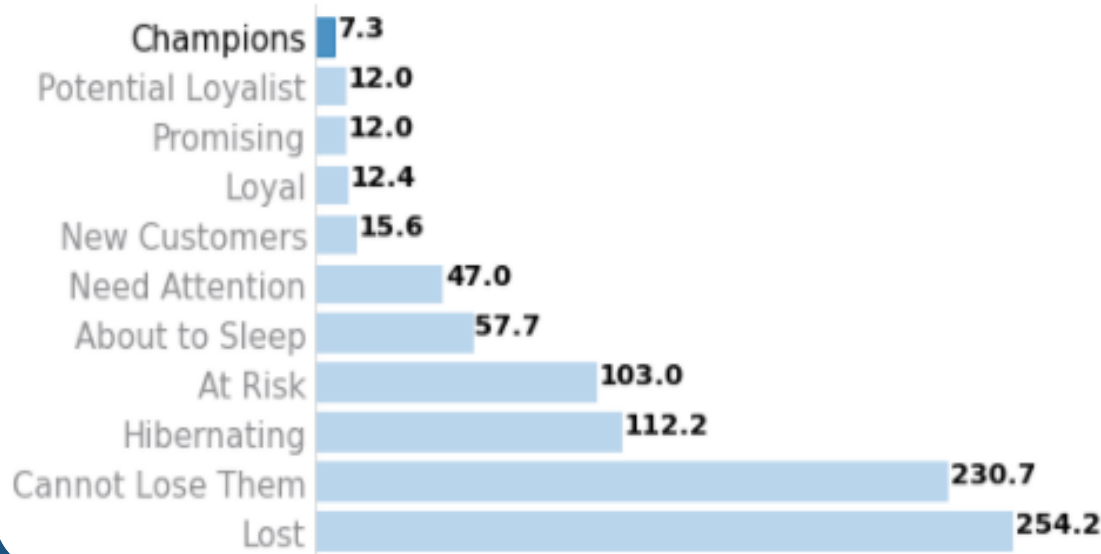


**Most** of the company's customers are either **new, lost, about to sleep or hibernating** customers. **Need improvements.**

Champions, loyal, at risk and 'cannot lose them' customers represent the **least of the total customers.**

# The Top 4 Recency Customers Segments: Consistency Is Key

Avg Recency

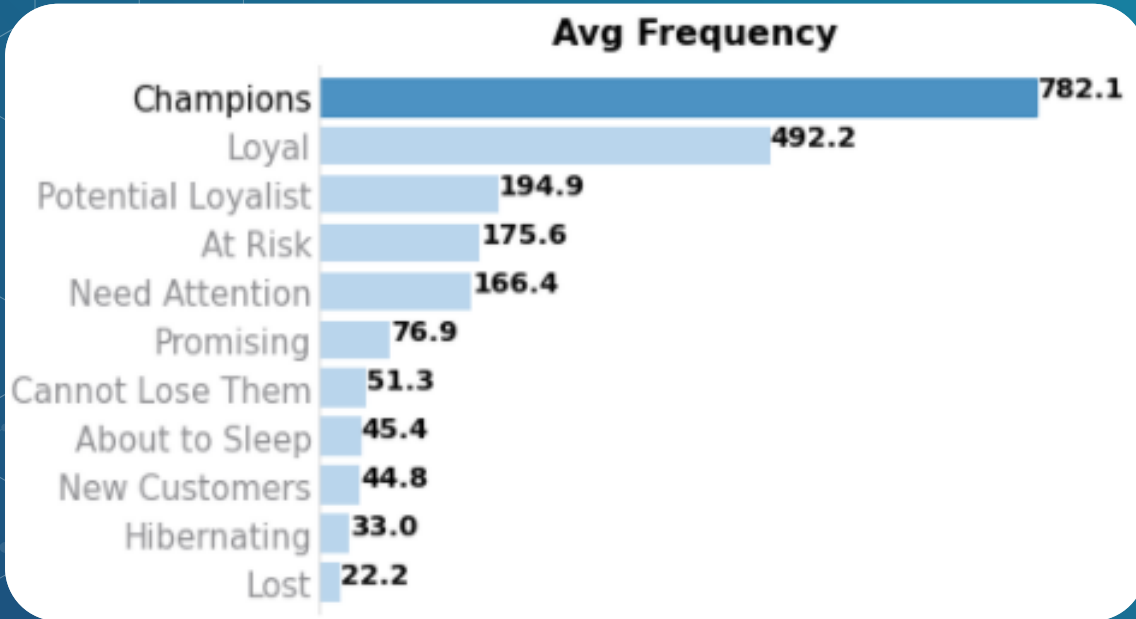


**Lost and 'Cannot Lose Them'**  
Customers Haven't Made a Purchase For Over **8 Months**

**Recency** in purchase is a **key feature** of **the top segments**. (w/ exception of ne customers).



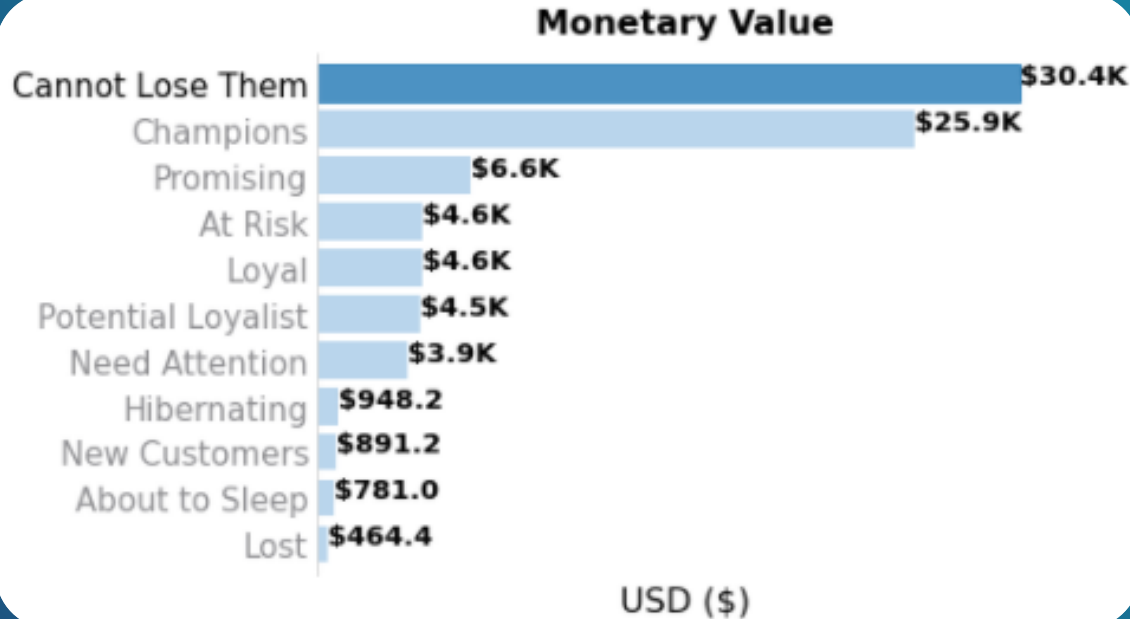
# Champions and Loyal Customers, the Kings of Transaction Frequencies



**Champions and loyal customers** avg. product transaction count for the year, trump the others. The two segments **deserve loyalty/rewards** program

Given count seen earlier, **most customers don't make as much purchases**, hence the low average transaction frequencies.

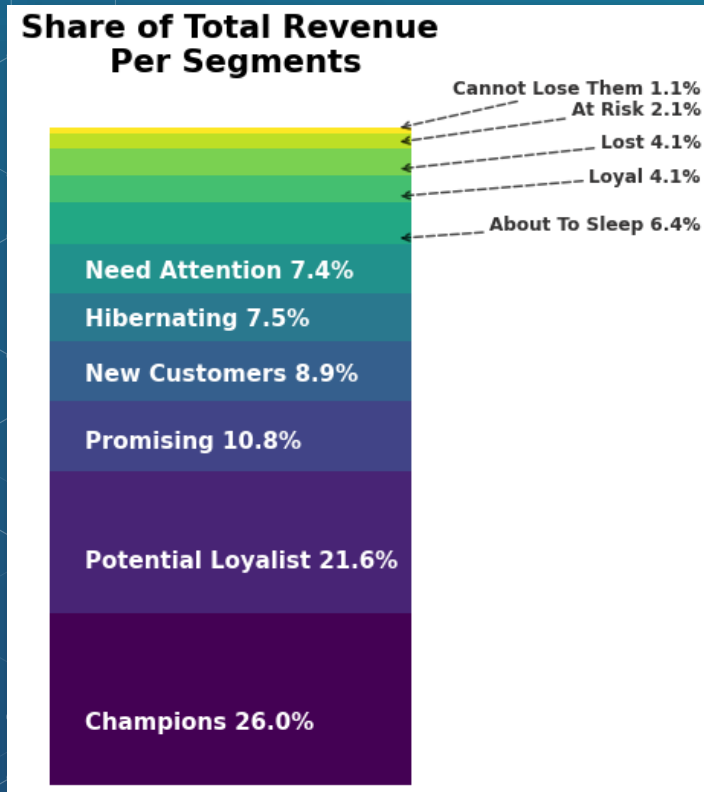
# Monetary Value For Top Two Segments: Promotional Offer(s) Needed



Top 2 customer segments brought in ~\$26k to \$30k over the year.

Lost customer segment on average spends \$464 over the year.

**~16% of customers make up  
~58% of the total revenue**



**Top 3 segments**, in terms of **revenue share** should be of interest to the marketing team given their **large revenue contribution** relative to the other segments.

'Lost' segment (low R,F, and M scores): despite **representing ~19% of total customers**, their share of contribution to **total revenue is a low 4%**. **Lost segment => Low Priority**

# 4. Conclusion and Recommendations



# Relevant Segment Summary

- **Store's champions (n= 85)** : loyal customers who make **large number of transactions with high monetary expenditure** over the year.
- **Loyal customers (n=76)** have the highest potential of **becoming store's champions** given their **high avg. RFM values relative to their size**.
- **Promising customers (n =138)**: relatively **new customers** given that on average, their last purchase was made 12 days from the max date.
- **Lost customers (n=744)** can be considered lost as they haven't made an **order for over 8 months** and have on average made a low amount of **transactions (22) and total money expenditure** for the year.



# Suggestions

1. For **champions**, **loyal**: They should be treated with extra care by offering rewards, discounts, bundle offerings (given large order size).
2. For '**Cannot lose**', **at risk**, and **needs attention** segment: The company should attempt to reach out to them to win them over as loyal customers through engagement.
3. For **potential loyalist**, **new customers** and **promising**: Create relationships with them and an offer personalized discounts.
4. For **hibernating** and **about to sleep** segments: Launch campaigns or create a win-back strategy to 'reawaken' them.
5. For **lost** segment: Should have the lowest, if any, marketing and sales attention. They do not bring as much value to the company

# Questions?

