

PSN Customer Segmentation

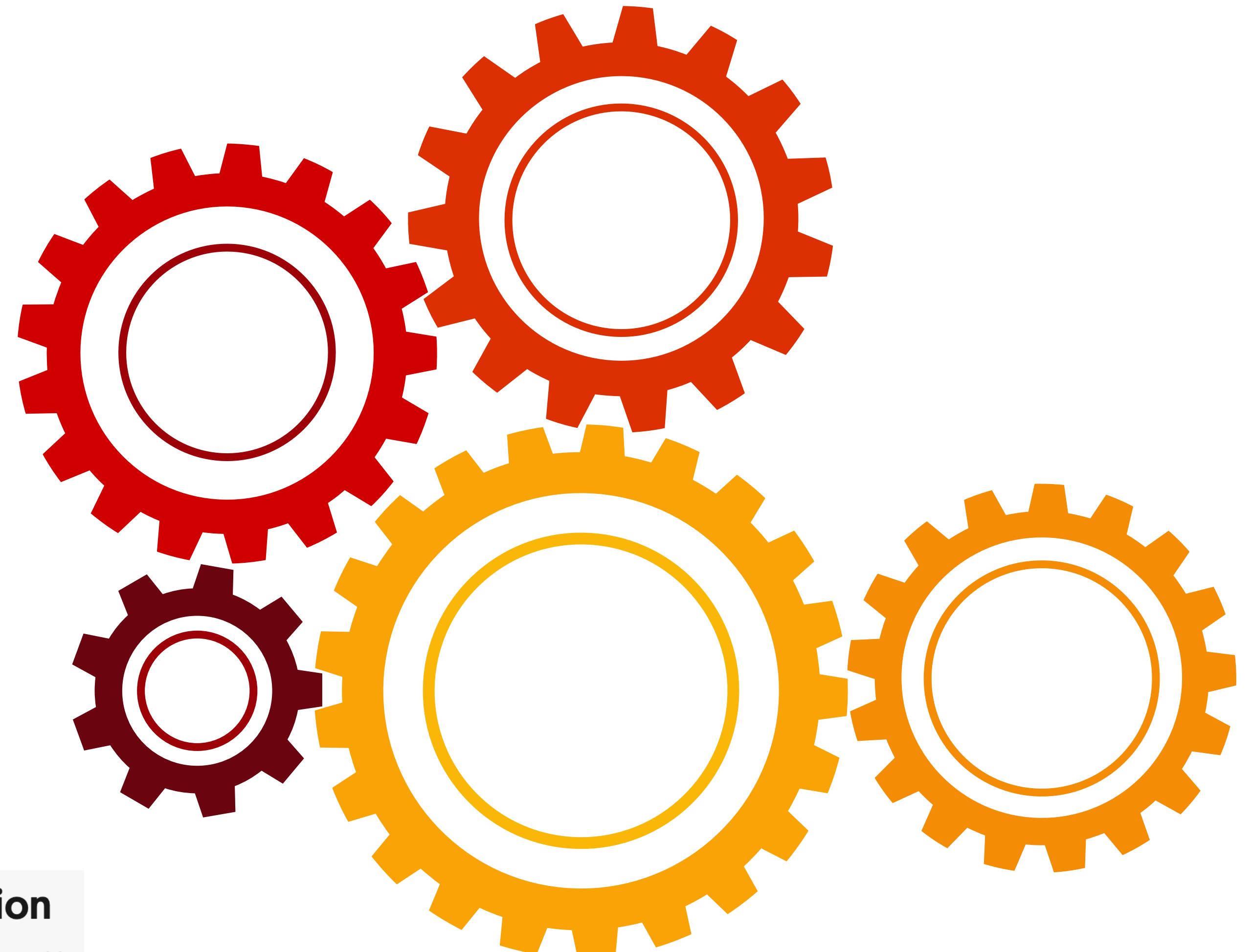
About PSN

Powersports Nation is the largest premier
remanufacturing/salvage UTV/ATV parts
seller in the US.

SELLER IN THE USA

Background

- **Substantial growth** - going from 2 employees out of garage to 80+ employees working out full onsite facilities for warehousing, engine rebuilding, tear down, shipping and machine shop
- **Process 40+ salvage units a week** - complete tear-down, picture, price, warehouse and list
- **Rebuild 40+ engines a week**
- **\$14M in revenue a year**
- **On-line business** primarily selling on **eBay** and **PSN website**
- **eBay Top Seller Status**



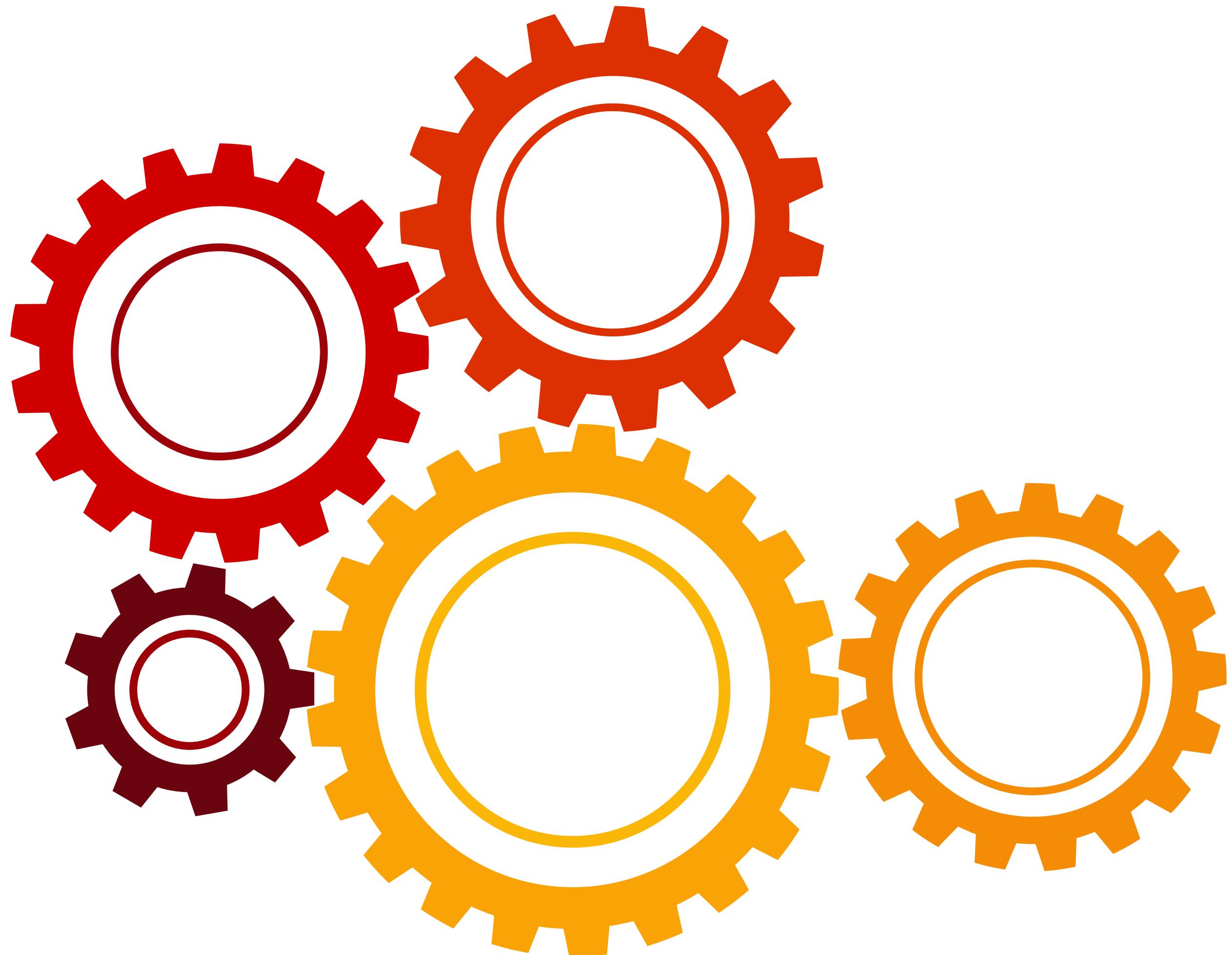
PowerSportsNation

100% Positive feedback 729K Items sold

Agenda

PSN Customer Segmentation

- Objectives
- Approach
 - Data gathering and transformation
 - Customer Segmentation
 - RFM Statistical
 - Machine Learning
- Initial Insights
- Going Forward
- Questions



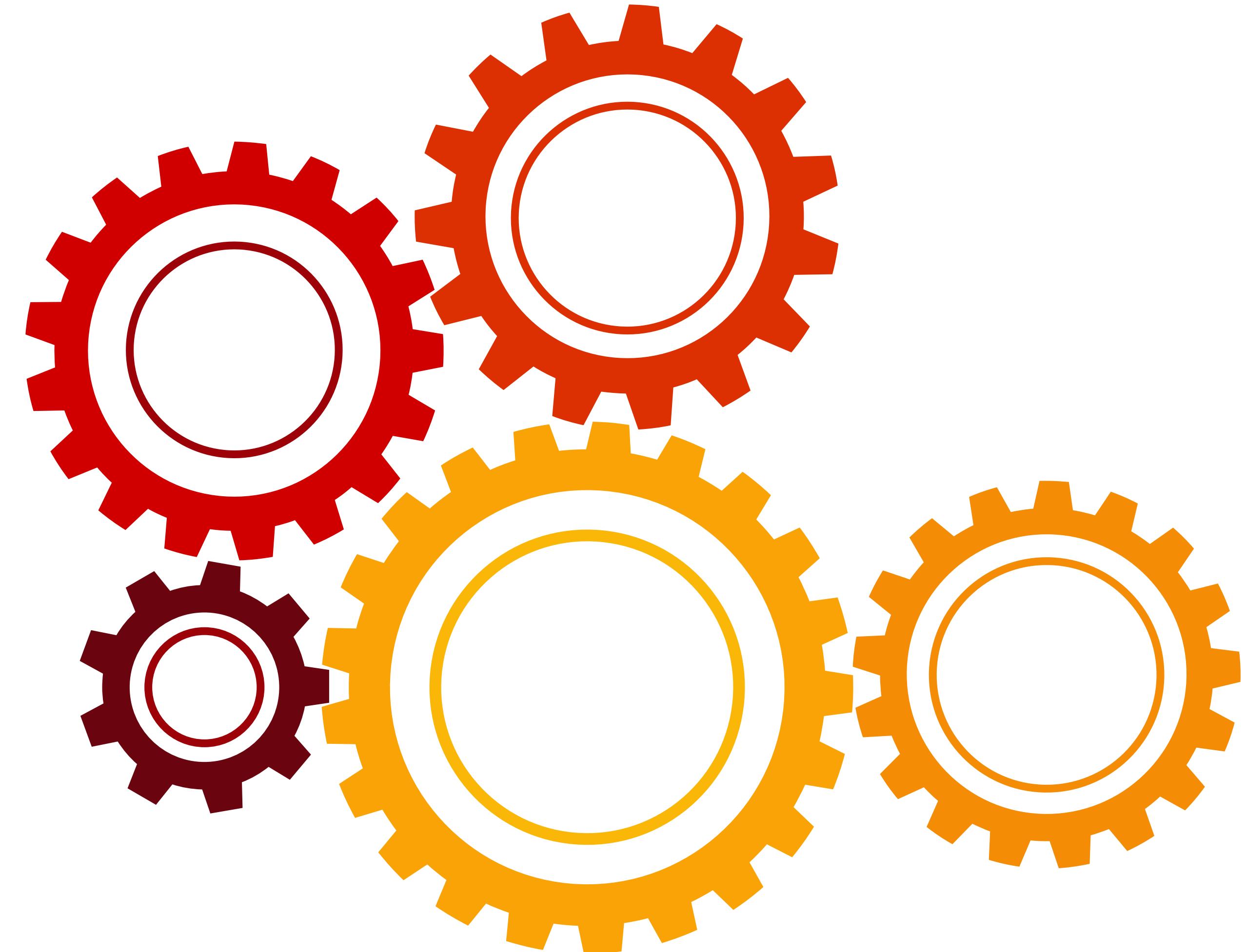
140,000+ Unique Customers but how to market to?



Objectives

Customer Segmentation

- Identify classifications of customers across the various markets
- Identify loyal customers for the initial phases of a customer loyalty program
- Acquire background data to begin development customer personas and areas for growth
- Acquire background data to begin development of yearly marketing plan.

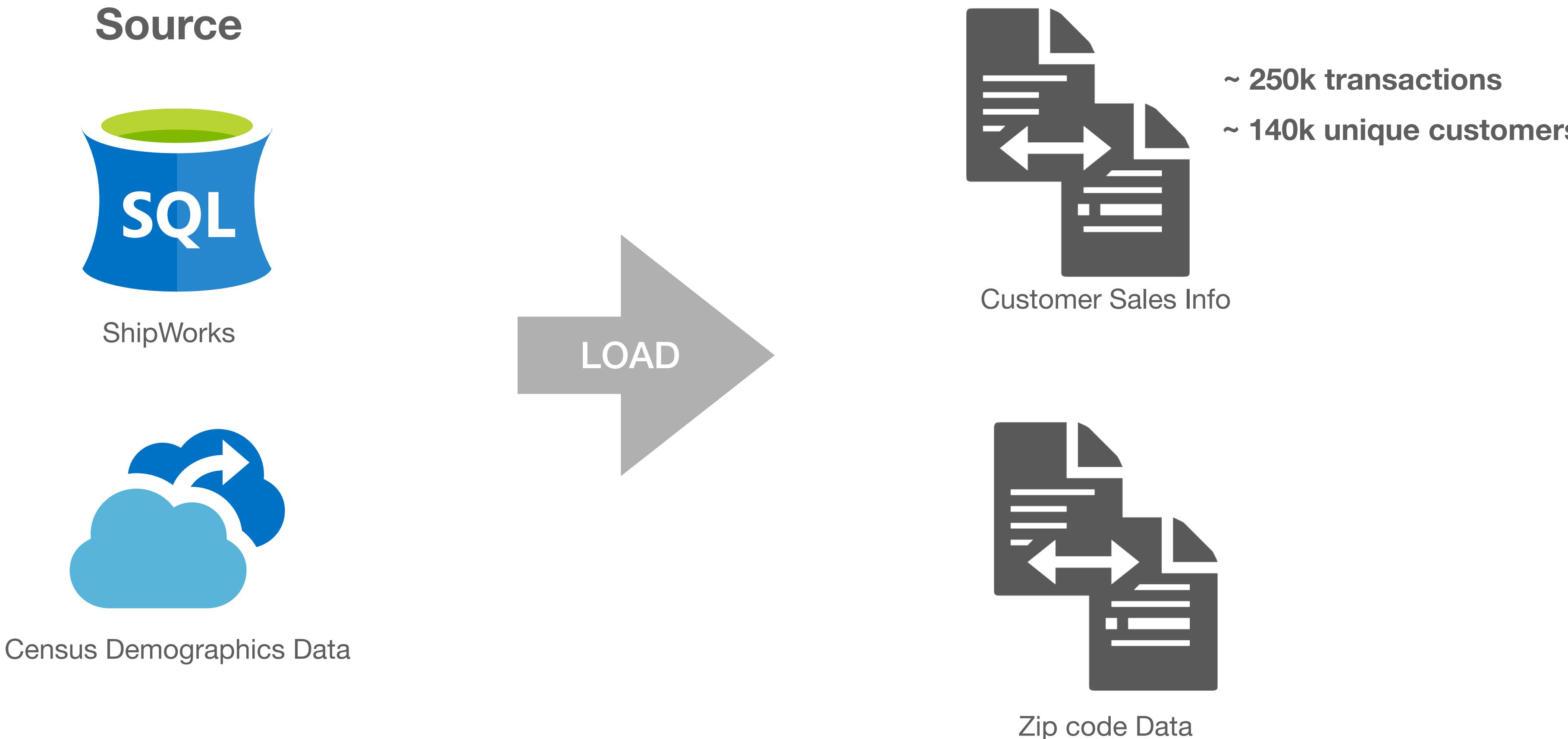


Approach

Data Gathering
Transformation

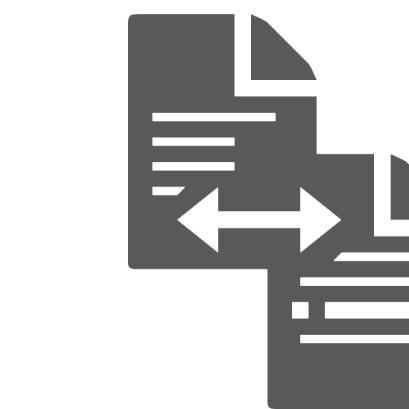
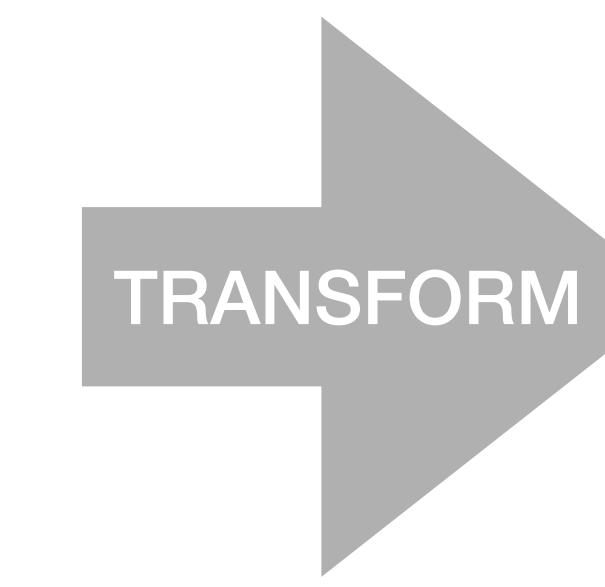
Data Gathering and Transformation

1 Extract

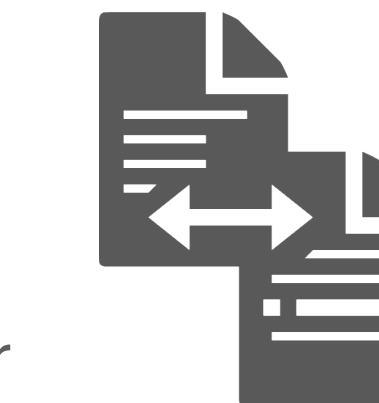


Data Gathering and Transformation

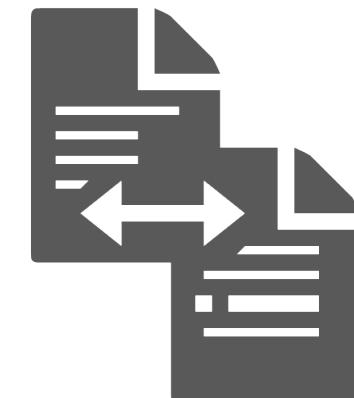
2 Transform



Customer Master



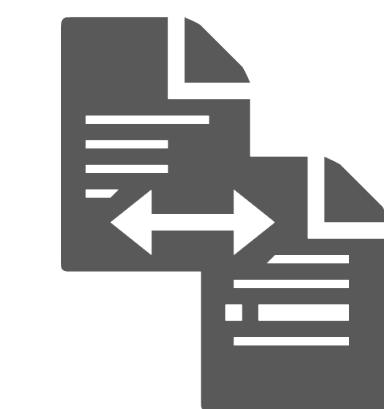
Customer LOB Pivot



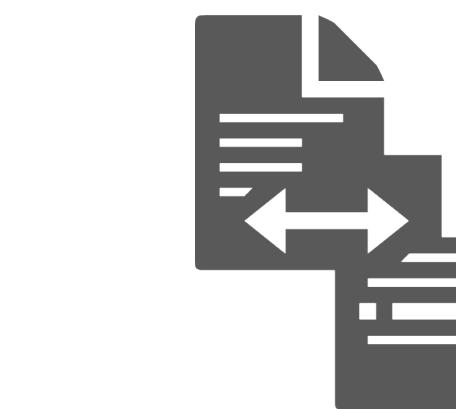
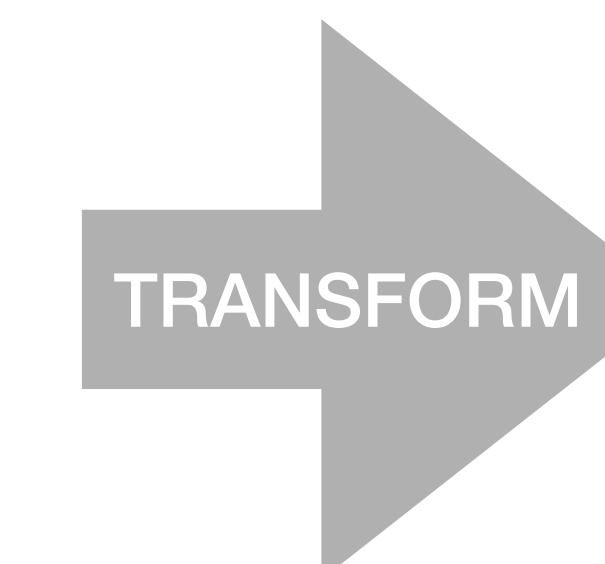
Customer RFM



Customer Brand Pivot



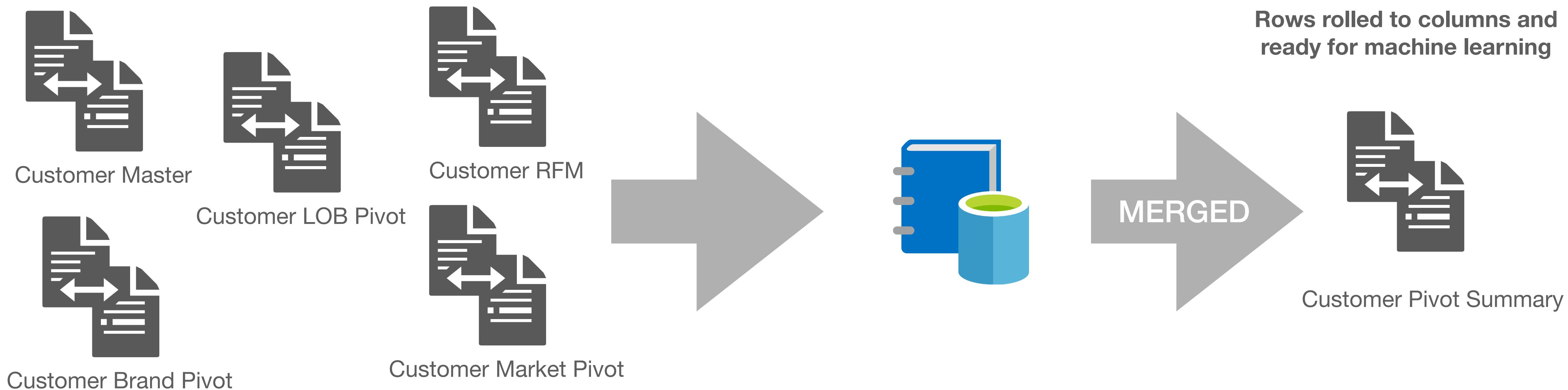
Customer Market Pivot



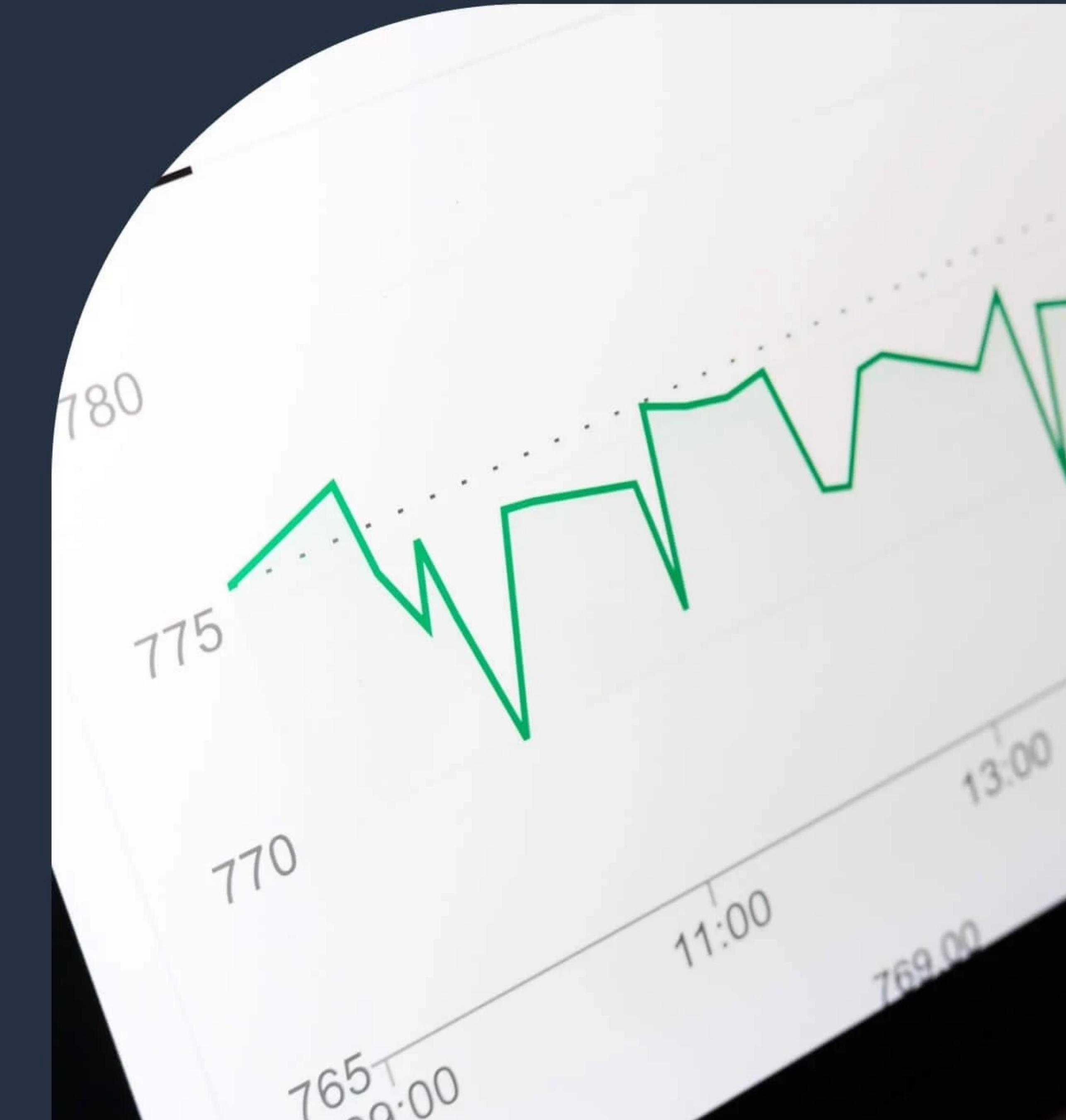
Zip code Demographics

Data Gathering and Transformation

3 Load



RFM Analysis for Customer Segmentation



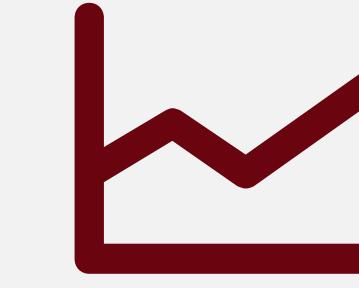
Customer Segmentation - RFM Statistical Approach

RFM Data



RECENCY Days

How recent has the customer done business.



FREQUENCY Number

How many times of the course of a time period has the customer .



MONETARY Total

The intention of the customer to spend. The sum of the total spend for the customer.

Customer Segmentation - RFM Statistical Approach

RFM Quantiles

“In statistics and probability, **quantiles** are cut points dividing the range of a probability distribution into continuous intervals with equal probabilities, or dividing the observations in a sample in the same way.”

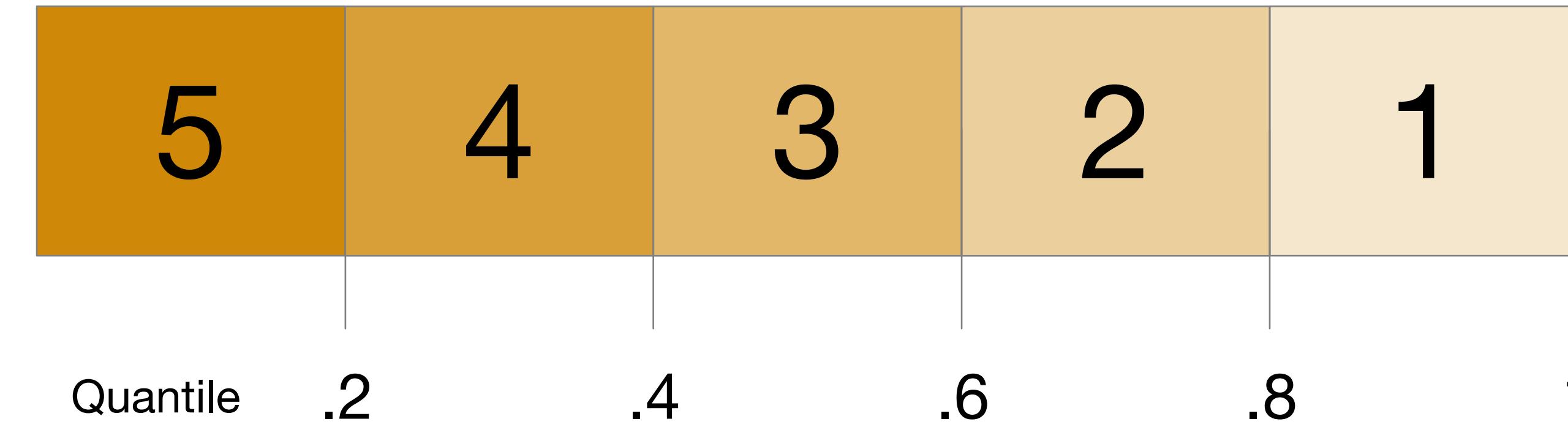
[Wikipedia](#)

Quantiles								
Monetary	0.2	\$18.99	0.4	\$36.99	0.6	\$71.99	0.8	\$172.94

Customer Segmentation - RFM Statistical Approach

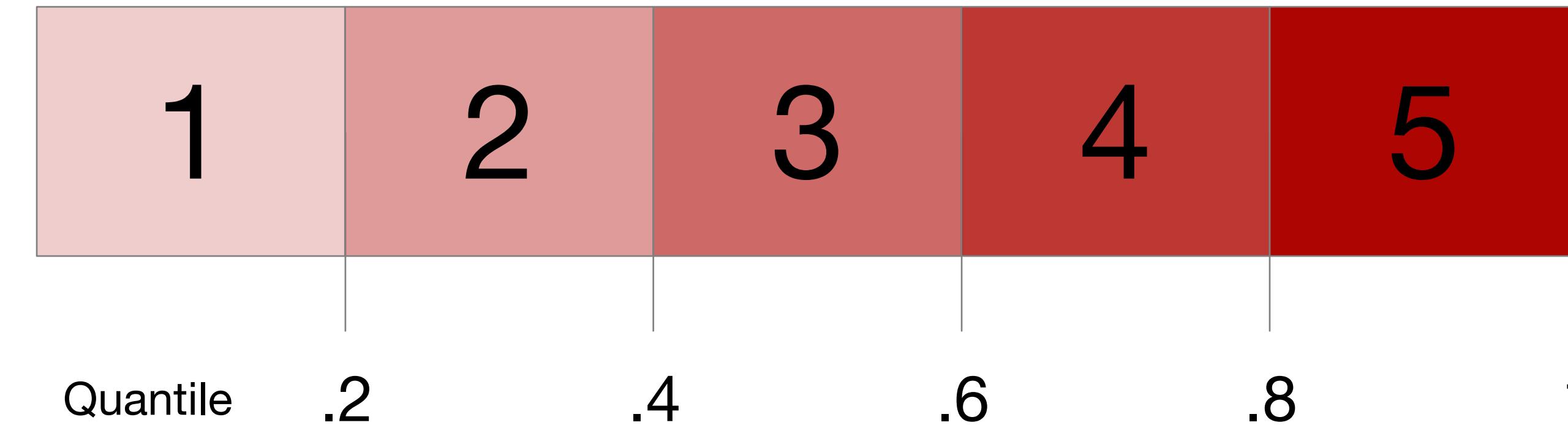
RFM Data Ranking

R



F

M



Customer Segmentation - RFM Statistical Approach

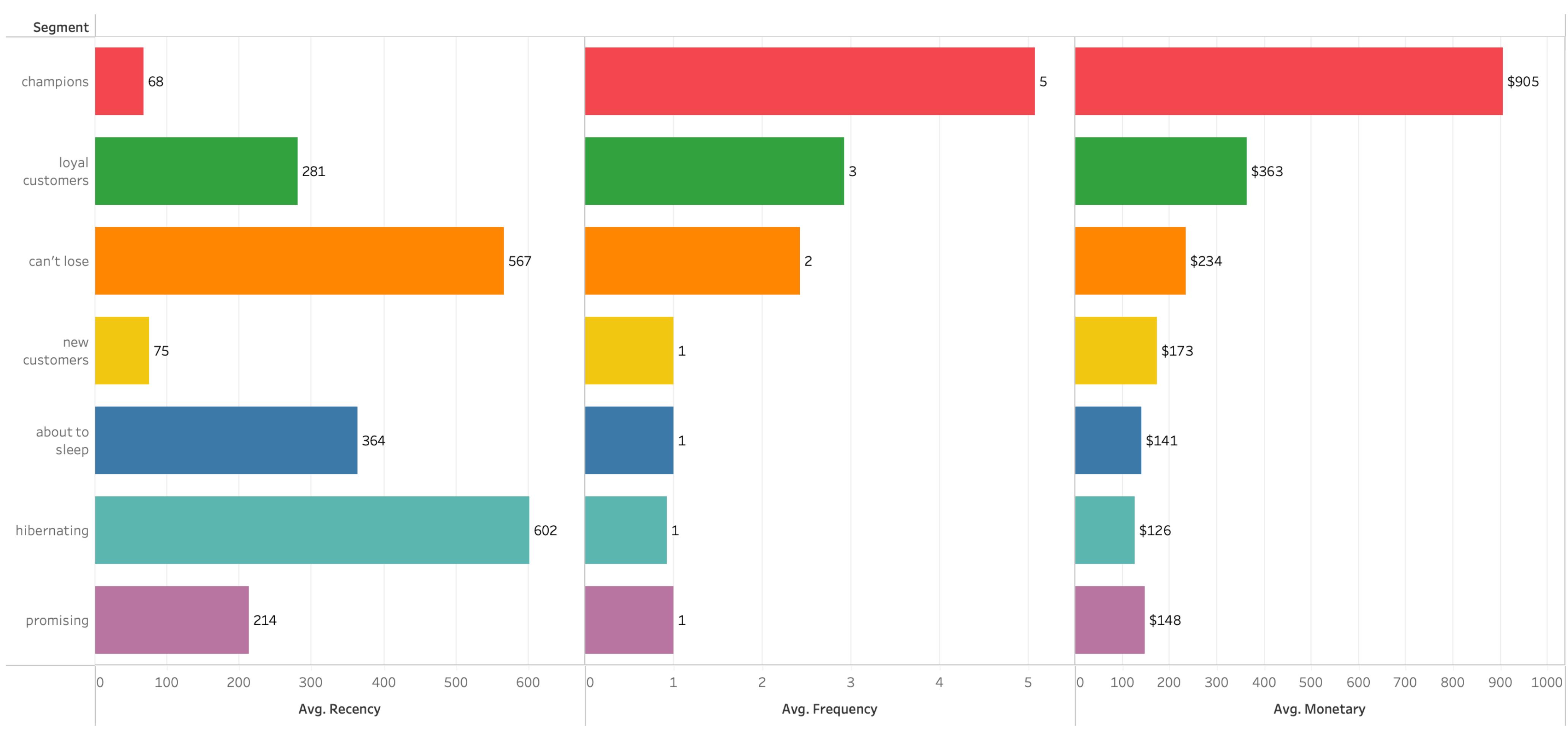
RFM Rank Mapping

	CustomerID	Recency	Frequency	Monetary	R	F	M	RFM Score
0	10012	636	3	121.98	1	5	4	154
1	24012	50	11	1152.57	5	5	5	555
2	36012	48	7	268.83	5	5	5	555
3	48012	15	42	7014.86	5	5	5	555
4	49012	43	14	2460.47	5	5	5	555

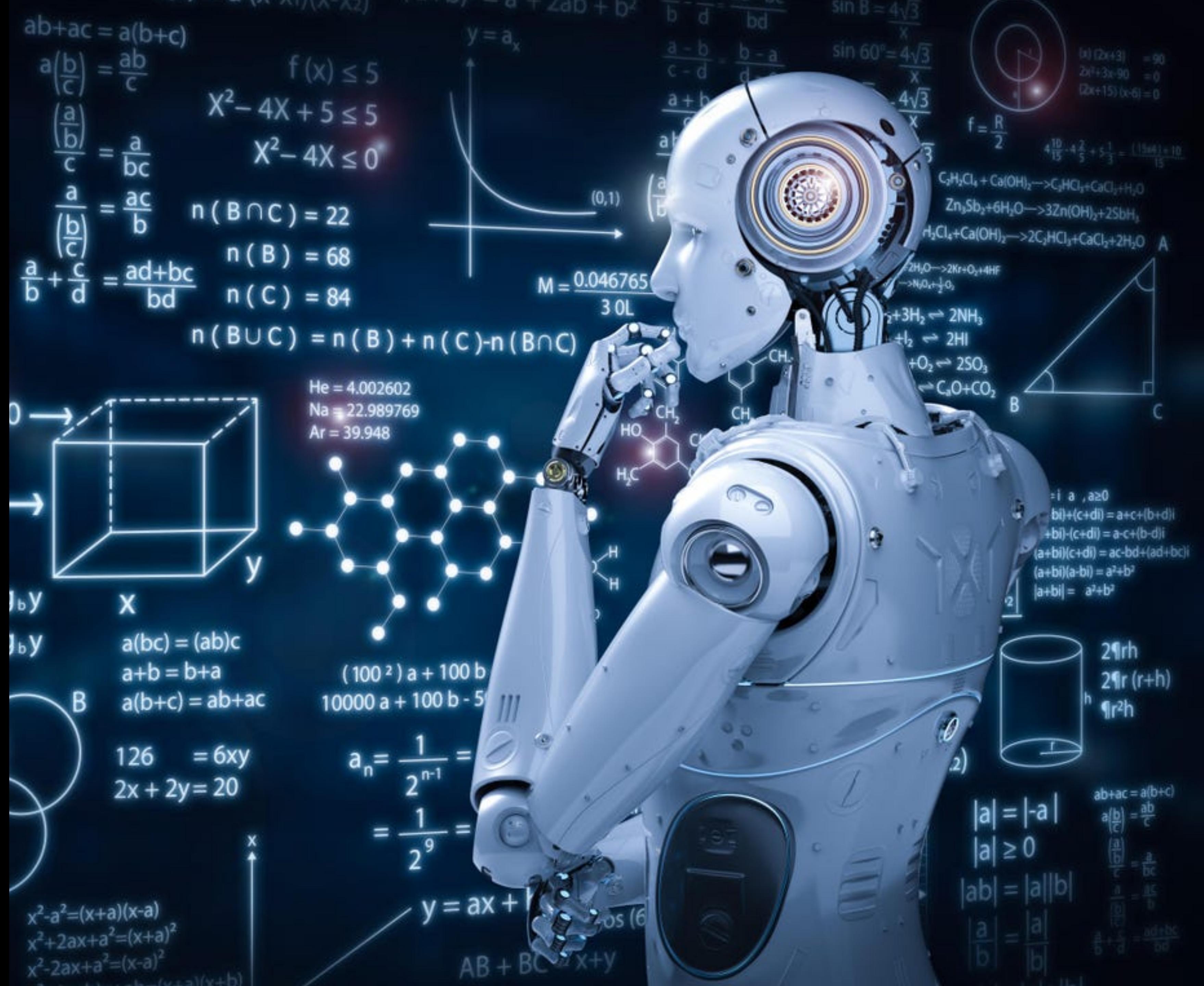
```
segt_map = {  
    r'[1-2][1-2]': 'hibernating',  
    r'[1-2][3-4]': 'at risk',  
    r'[1-2]5': 'can\'t lose',  
    r'3[1-2]': 'about to sleep',  
    r'33': 'need attention',  
    r'[3-4][4-5]': 'loyal customers',  
    r'41': 'promising',  
    r'51': 'new customers',  
    r'[4-5][2-3]': 'potential loyalists',  
    r'5[4-5]': 'champions'  
}  
  
rfm_df['Segment'] = rfm_df['R'].map(str) + rfm_df['F'].map(str)  
rfm_df['Segment'] = rfm_df['Segment'].replace(segt_map, regex=True)  
rfm_df
```

Customer Segmentation - RFM Statistical Approach

RFM Segments

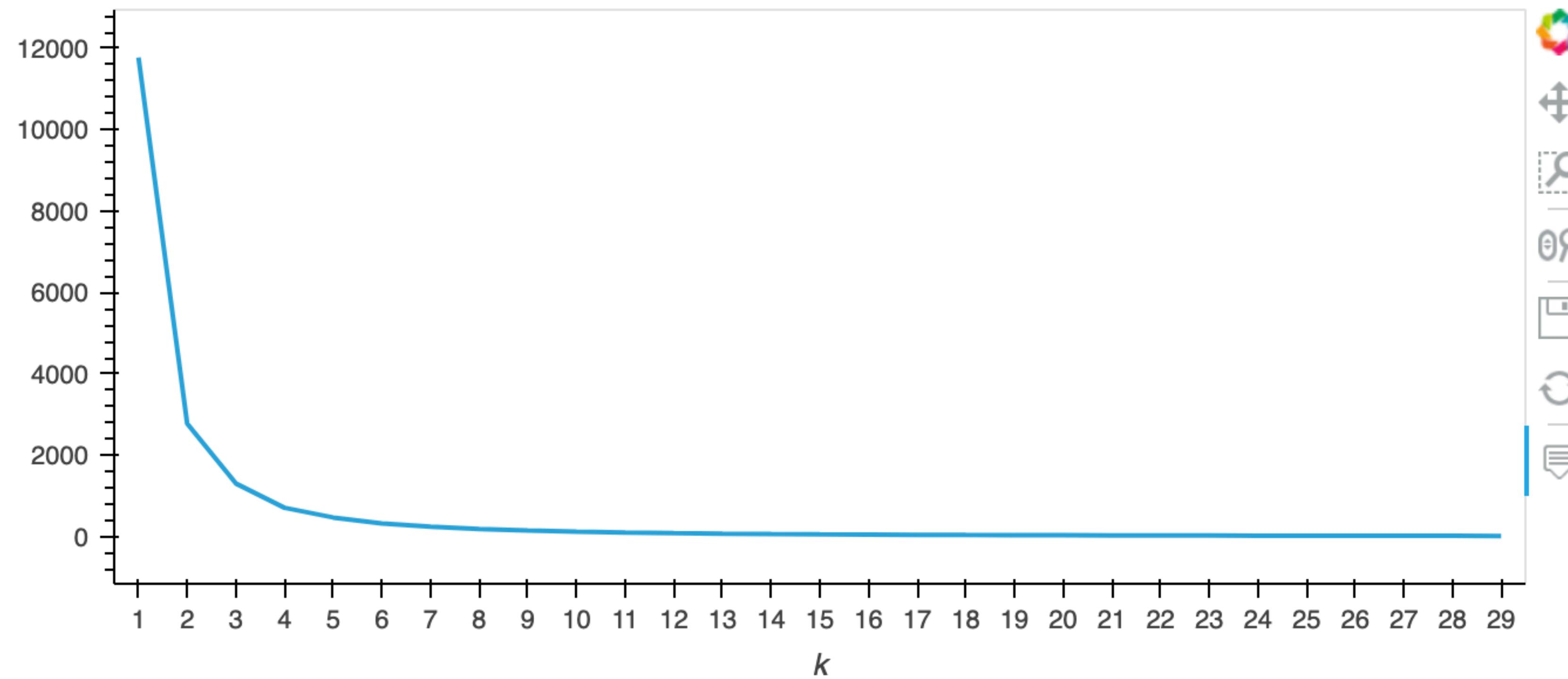


Machine Learning



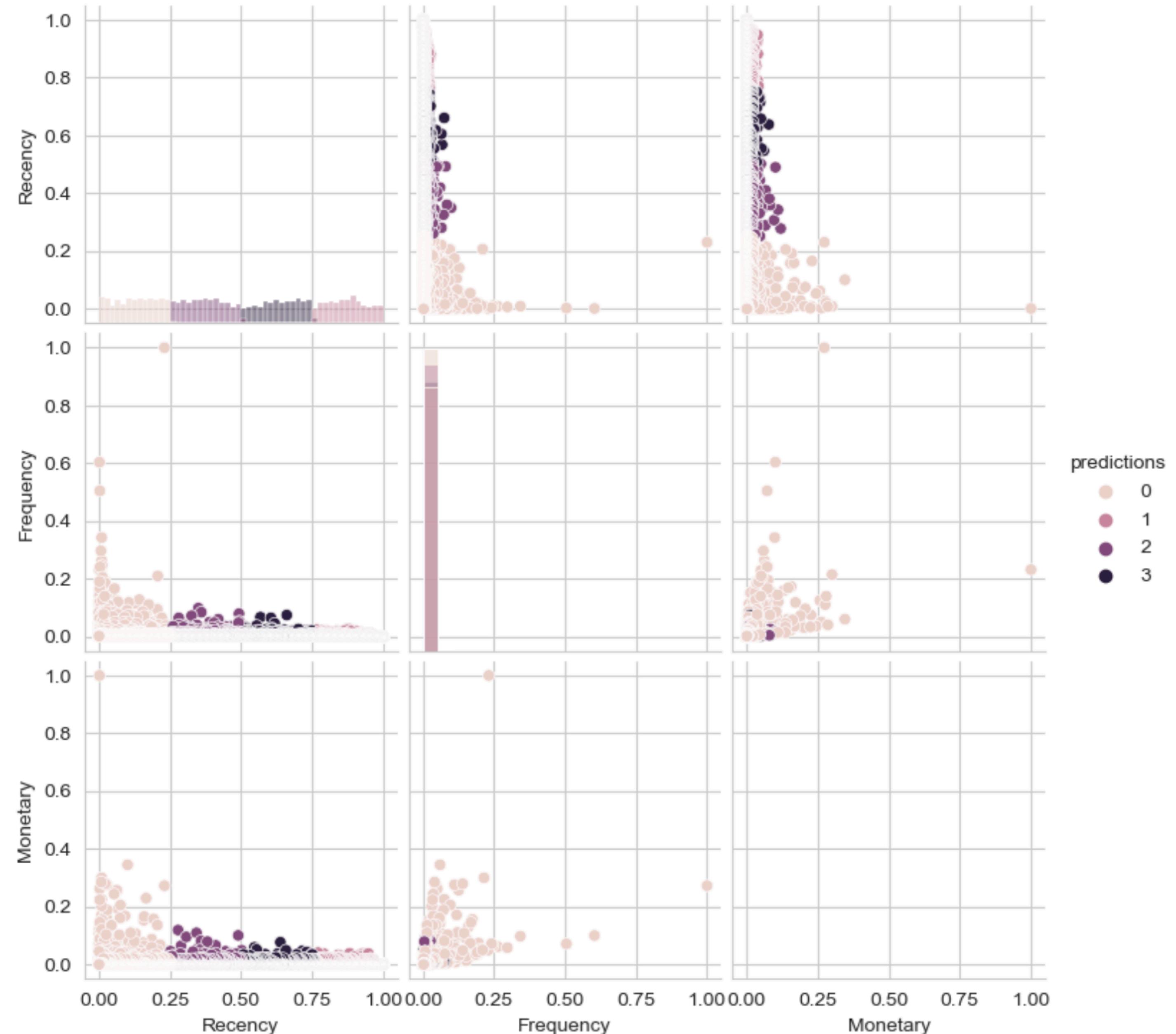
Customer Segmentation - Machine Learning Approach

RFM Elbow



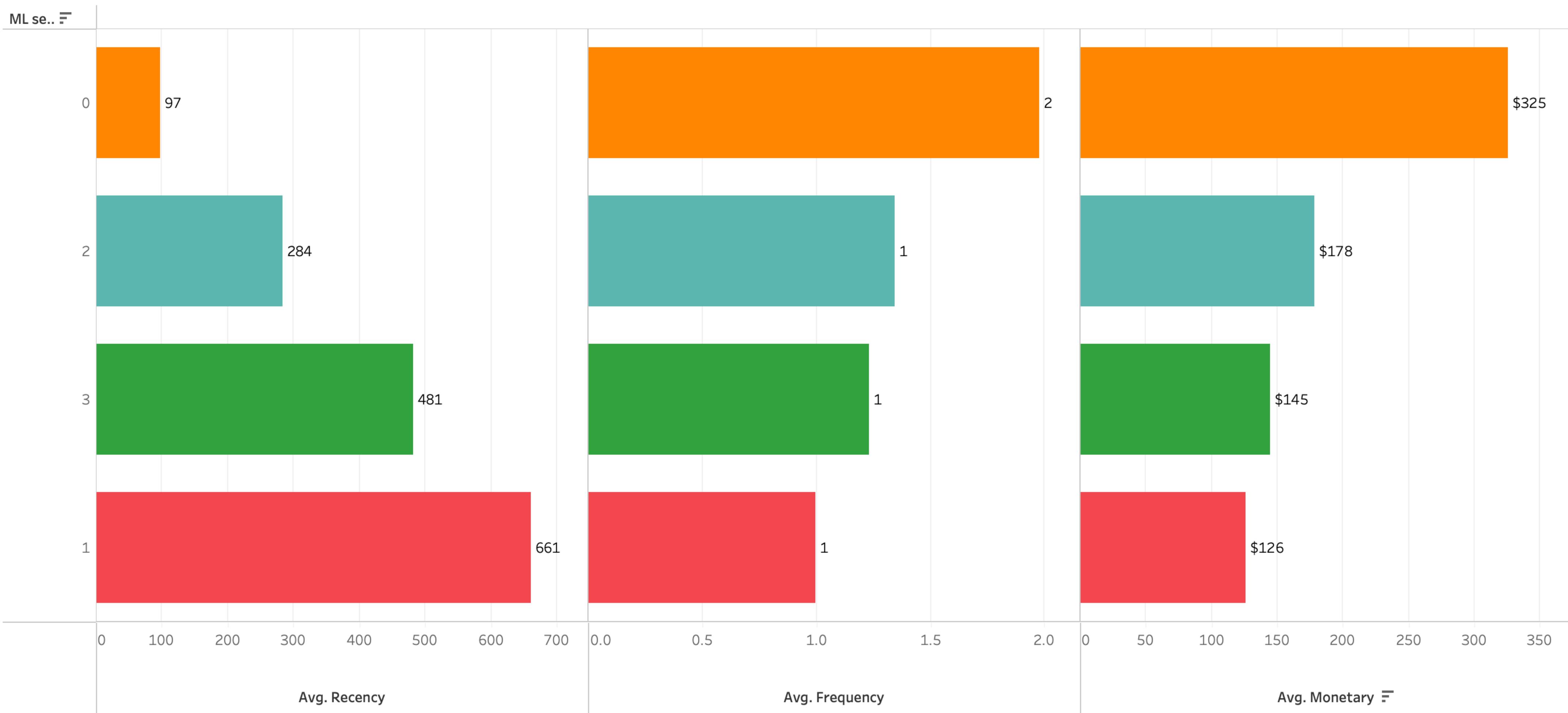
Customer Segmentation - Machine Learning Approach

RFM Machine Clusters



Customer Segmentation - Machine Learning Approach

RFM Segments



Initial Insights



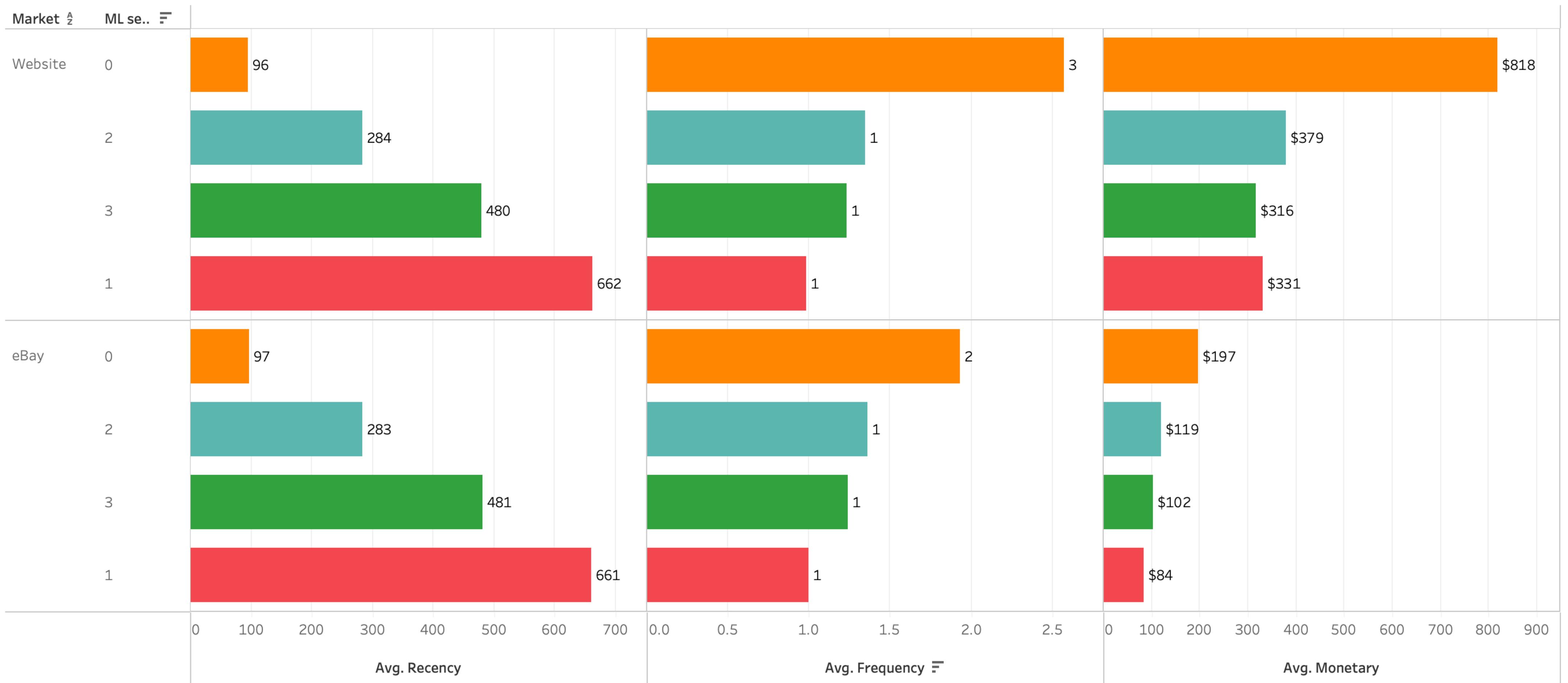
Initial Insights

Monthly buying patterns differ in fall months between key segments



Initial Insights

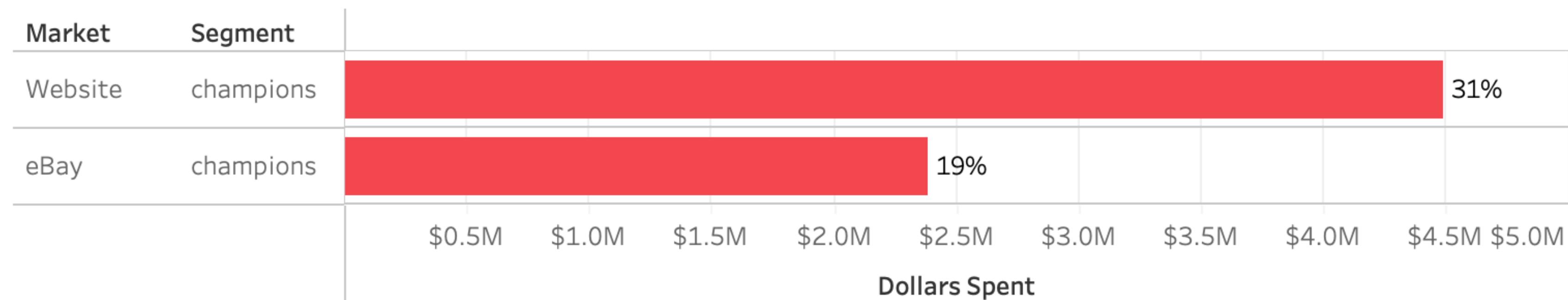
Customer segment revenue varies significantly between market places



Initial Insights

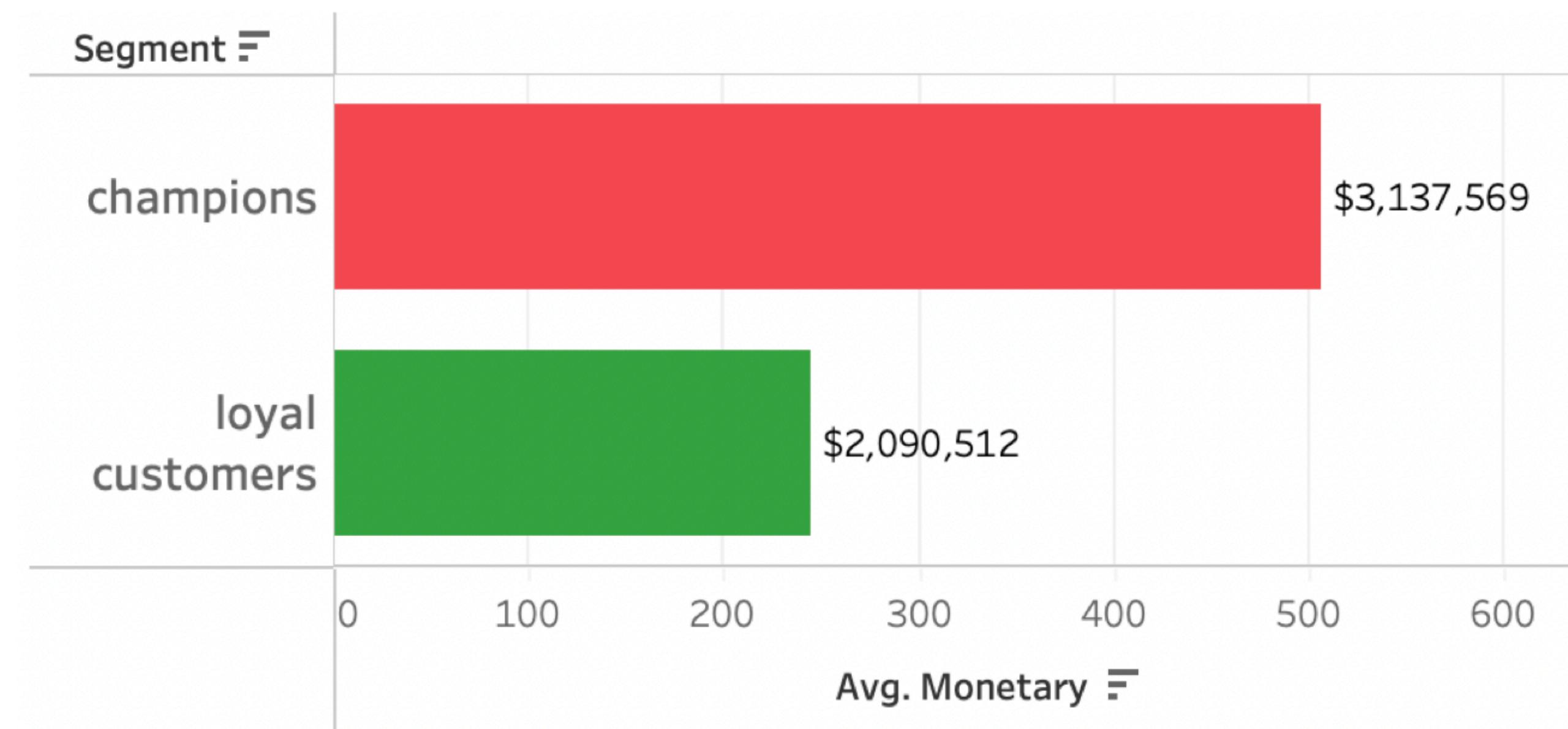
Website champions spend significantly more than eBay champions

RFM Segment Dollars by Market



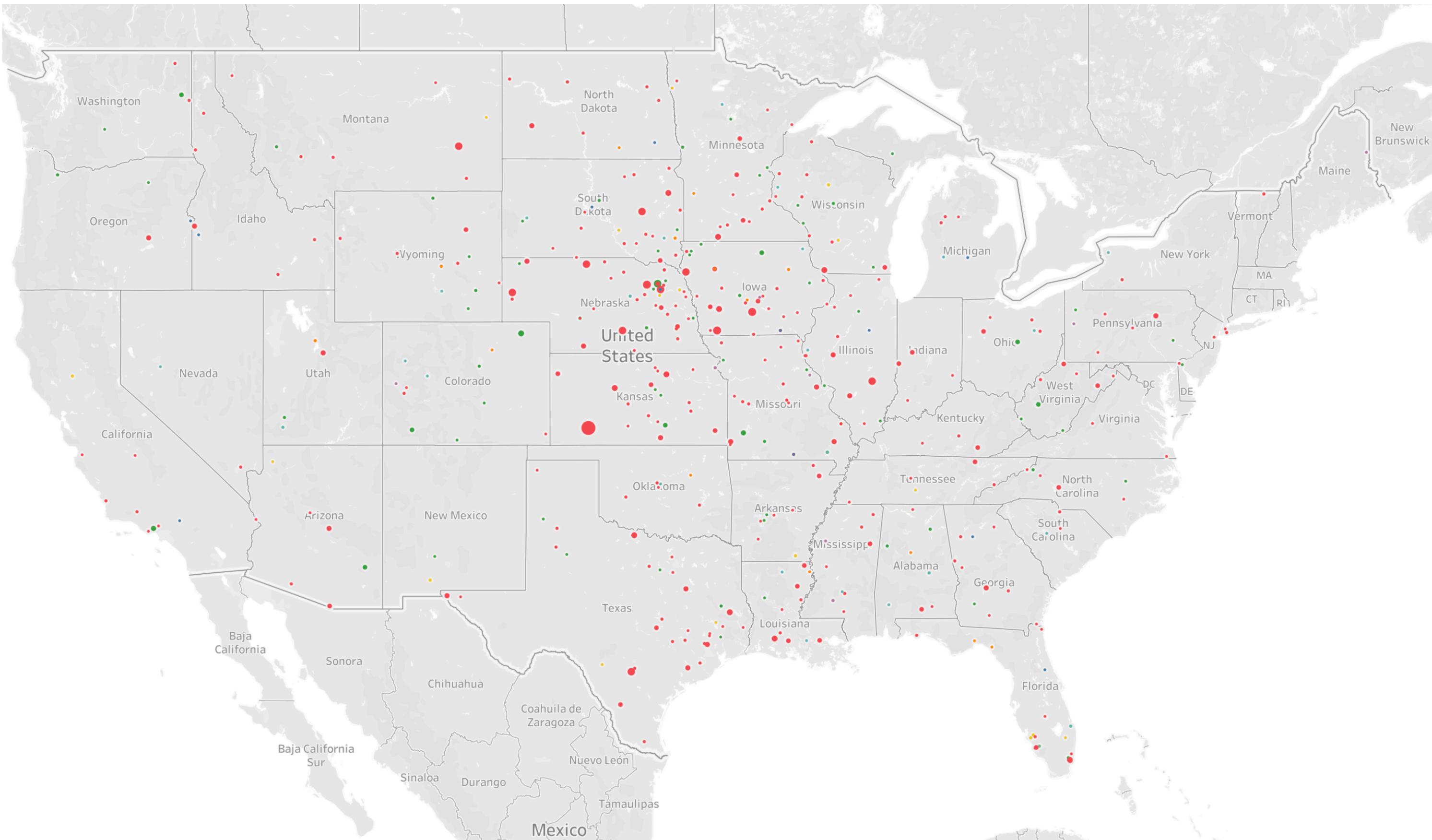
Initial Insights

Loyal market place customers prime for conversion



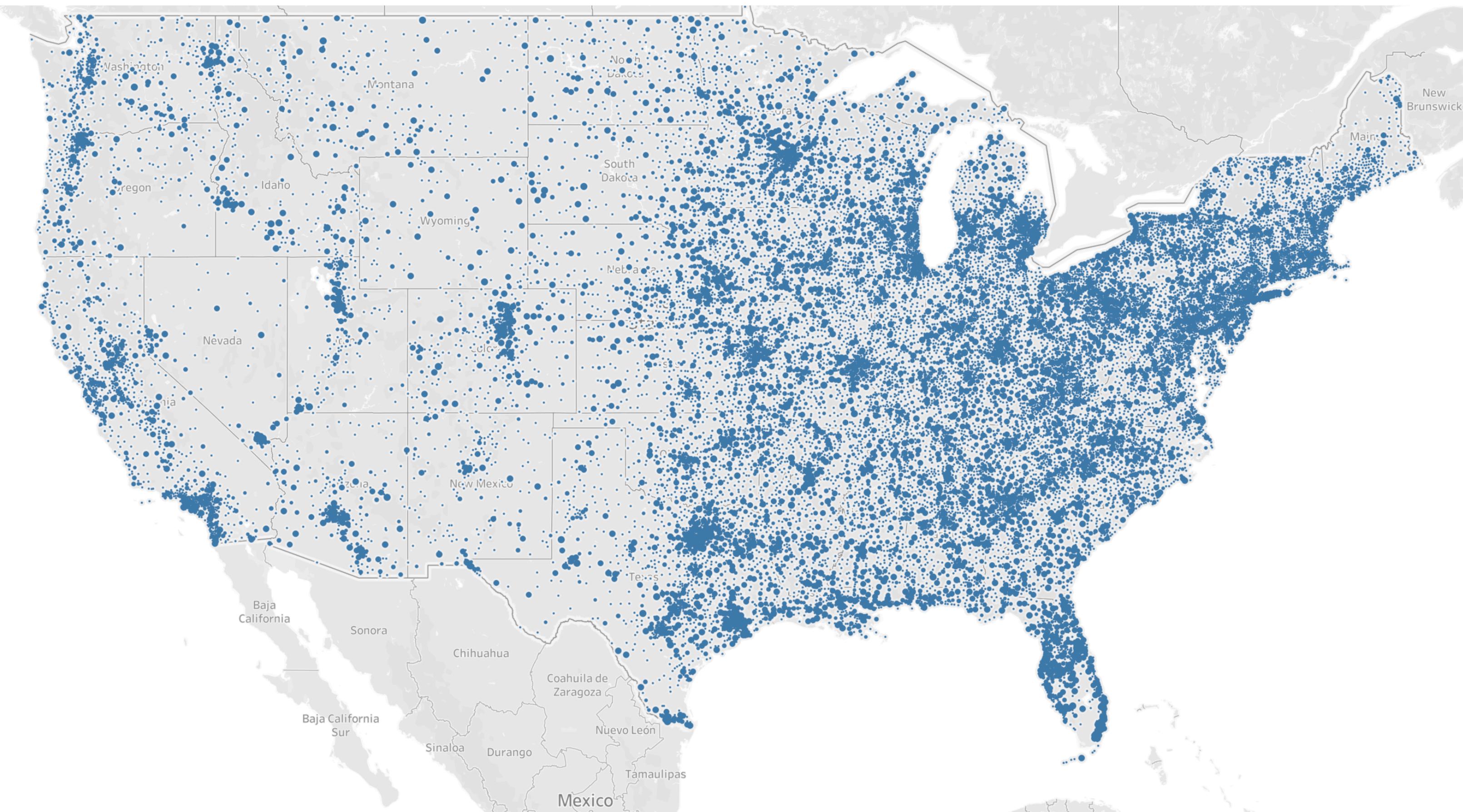
Initial Insights

Customer Distribution - spending total more than \$5000



Initial Insights

Customer Distribution - spending total less than \$5000





The background features a high-angle aerial shot of a multi-lane highway or bridge spanning a body of water. The image is characterized by intense motion blur, creating streaks of red, blue, and white light that curve across the frame, suggesting speed and forward momentum. In the distance, a city skyline with several skyscrapers is visible through a hazy atmosphere.

THE PATH FORWARD

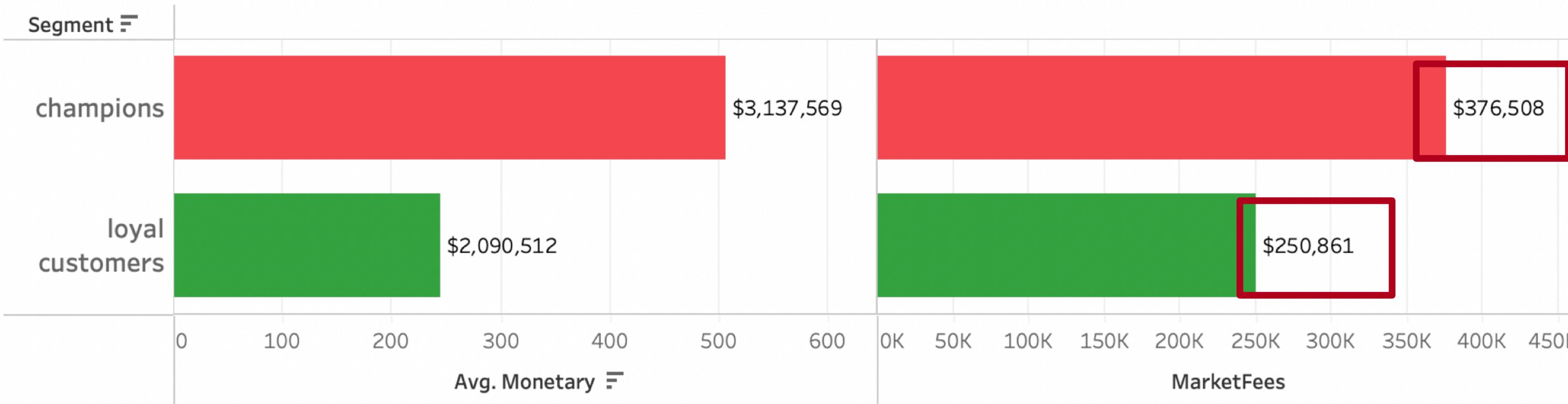


Action Steps

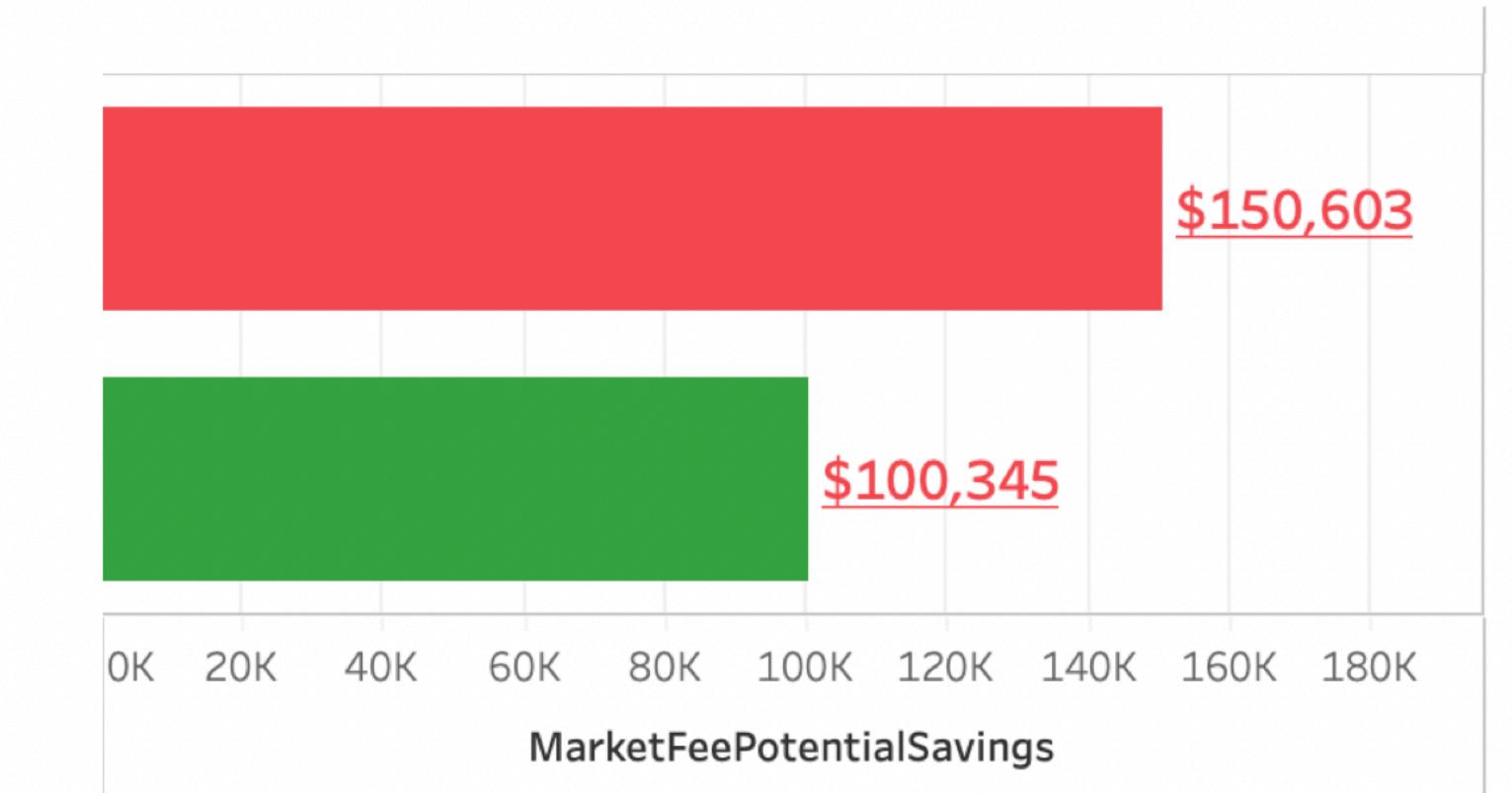
- 1** Match back to customers
- 2** Develop ecosystem conversion plan
- 3** Develop at-risk plan

The Path Forward

Actionable Insights - Move customers into ecosystem eliminating marketplace fees



40% Conversion

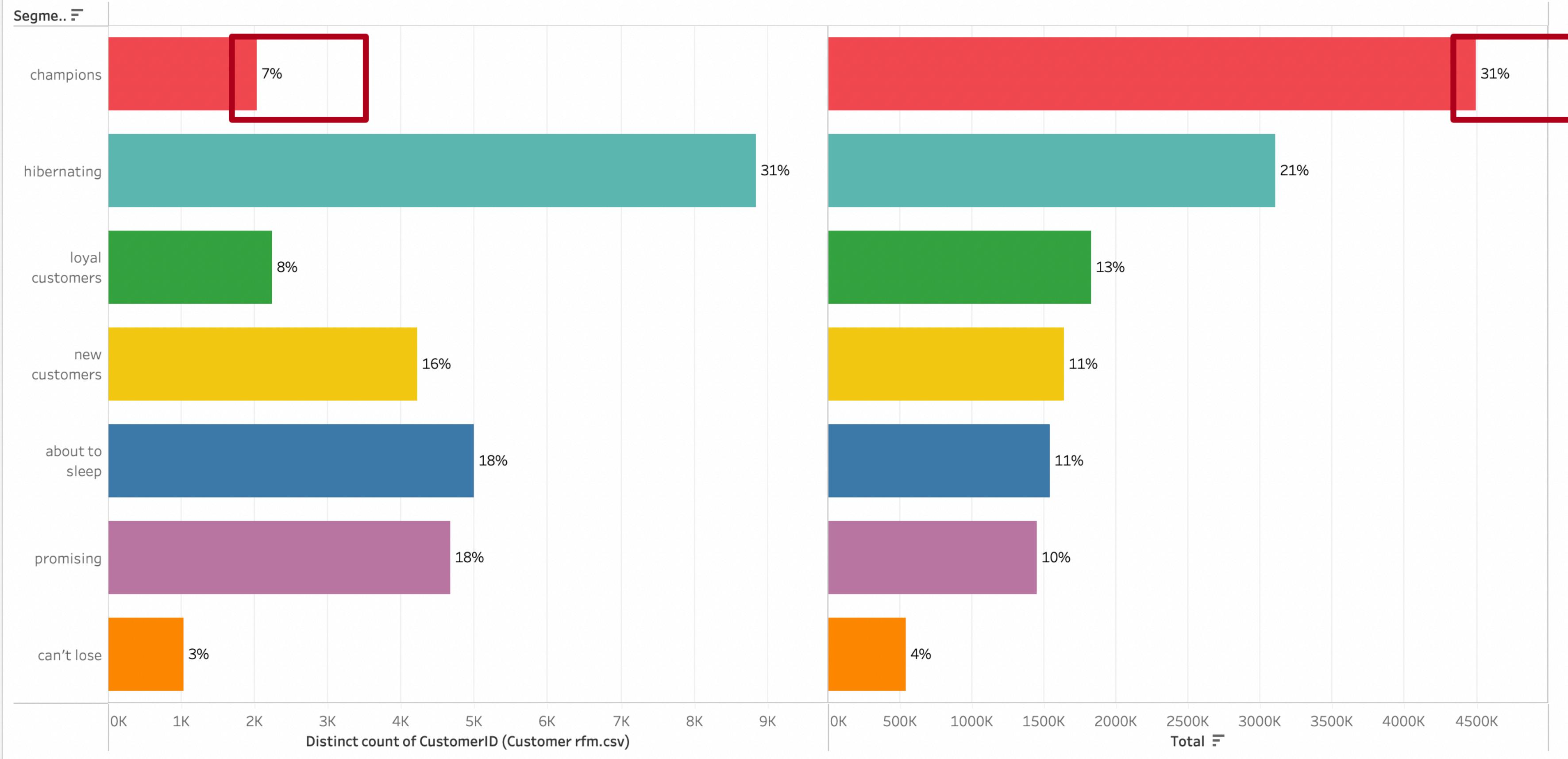


No Additional Operations Costs

Questions

Level of Detail Expressions

RFM Dollars



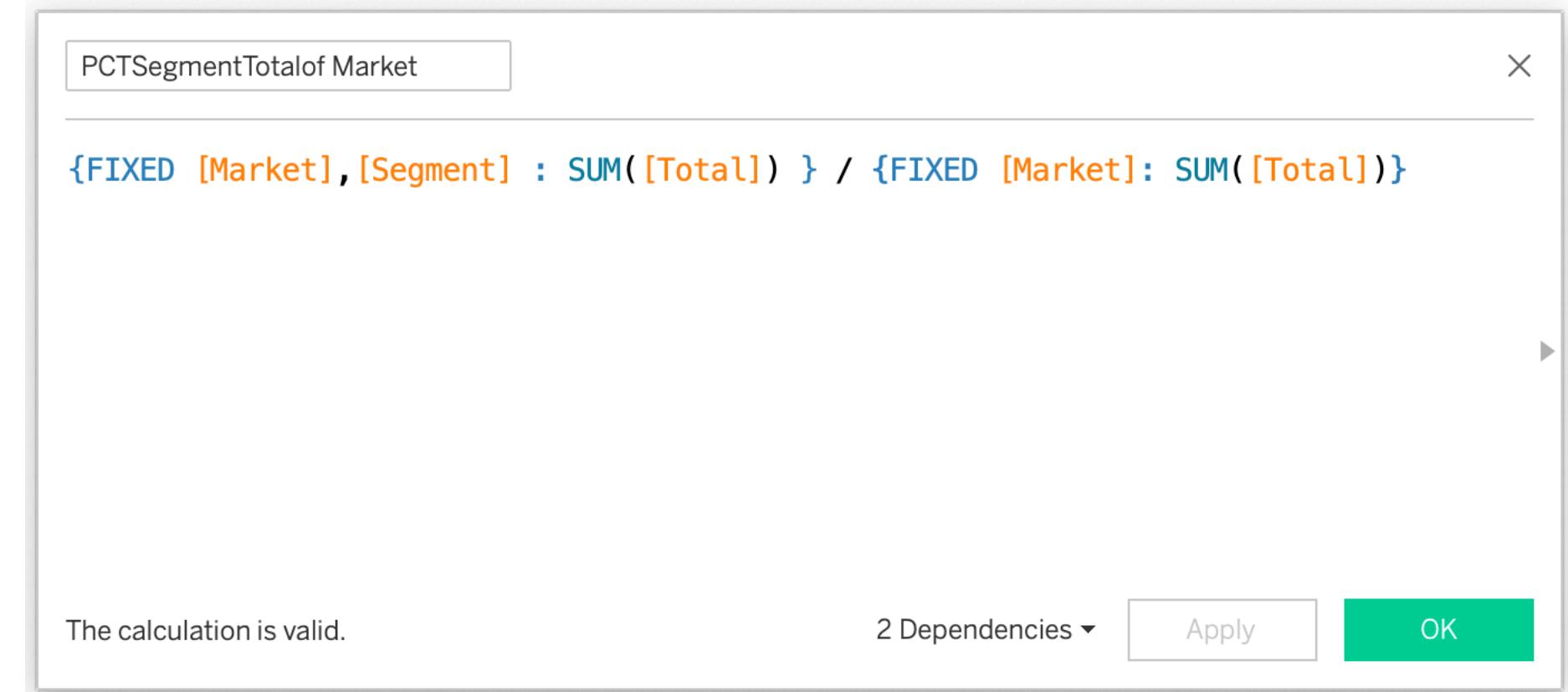
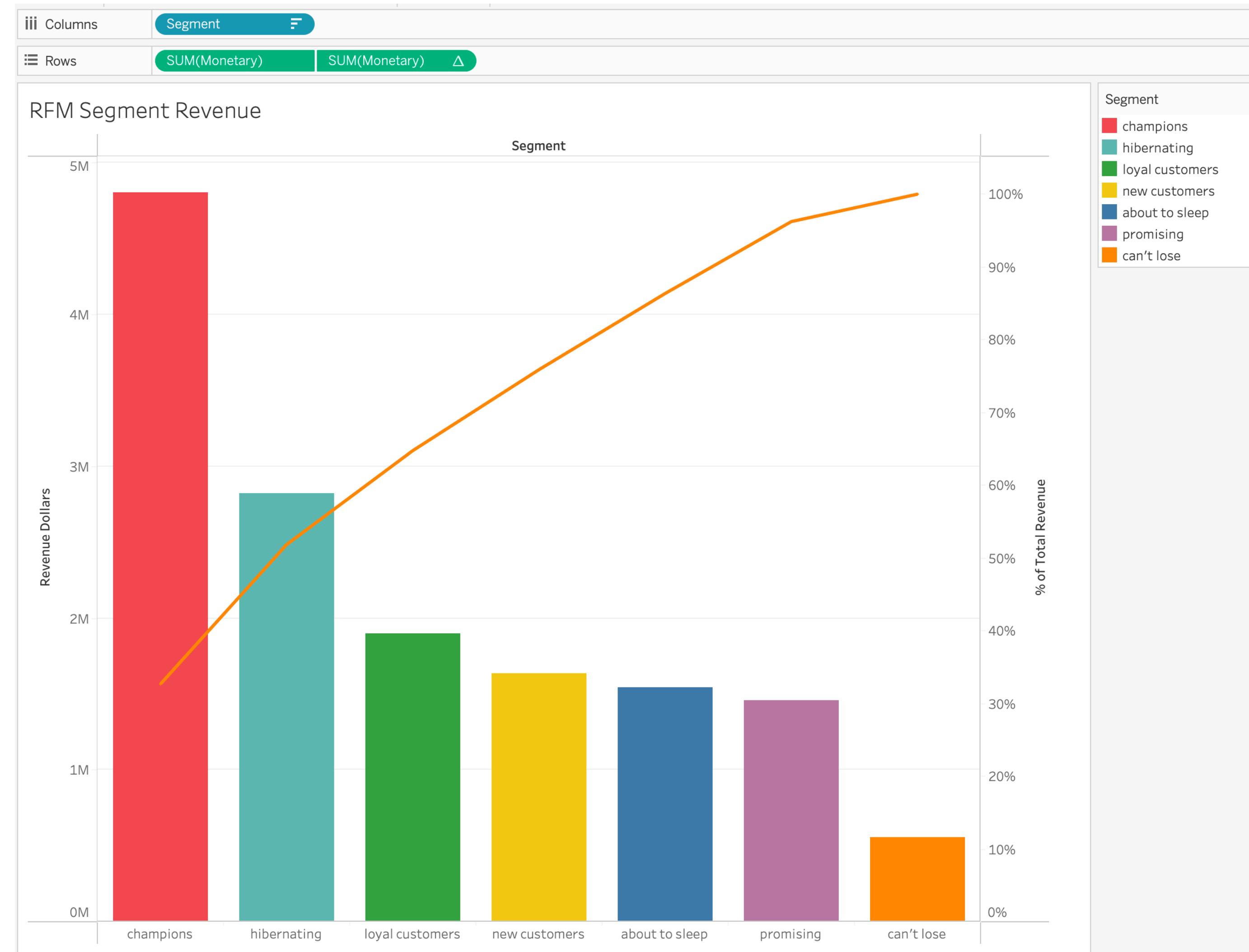
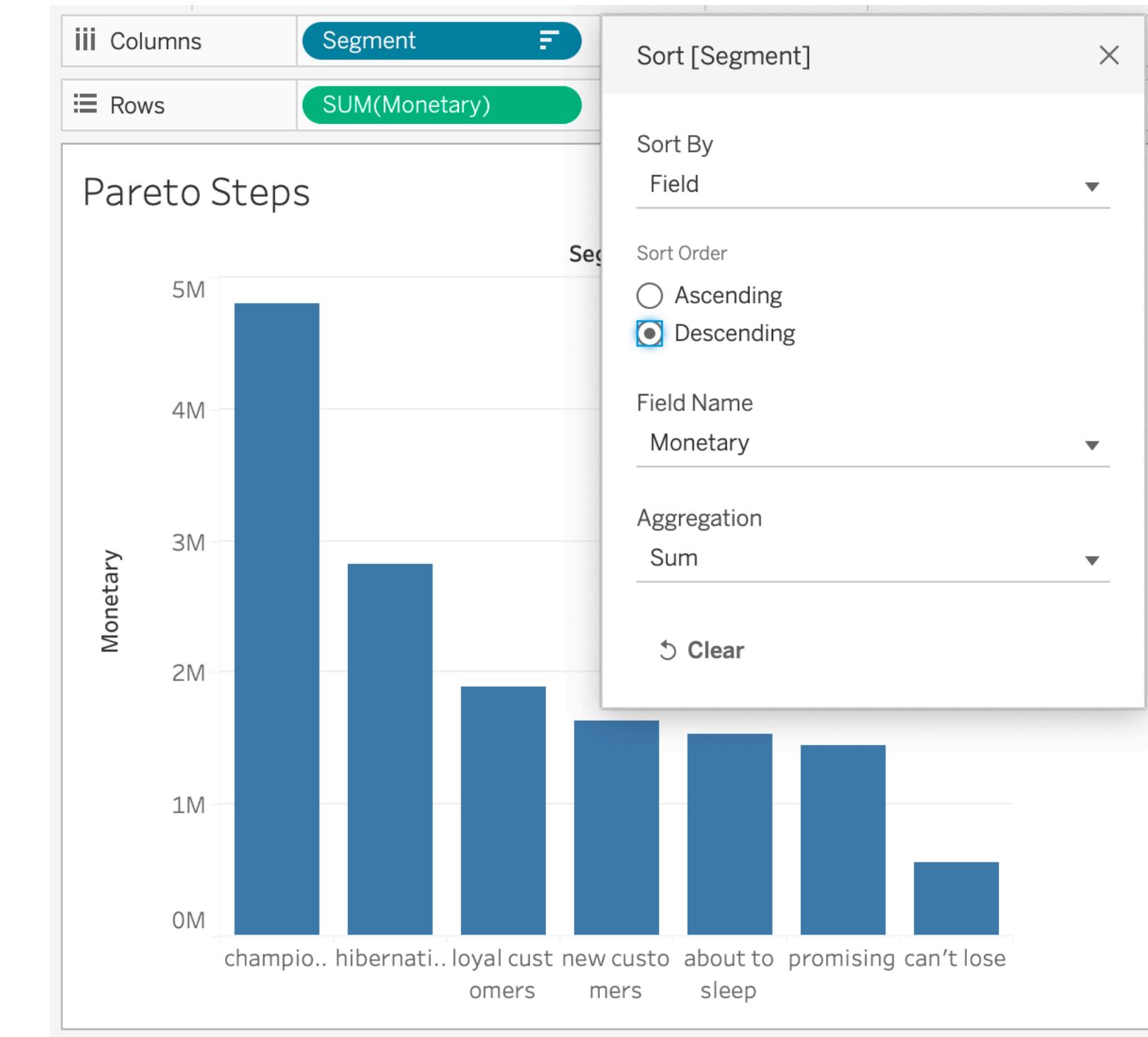
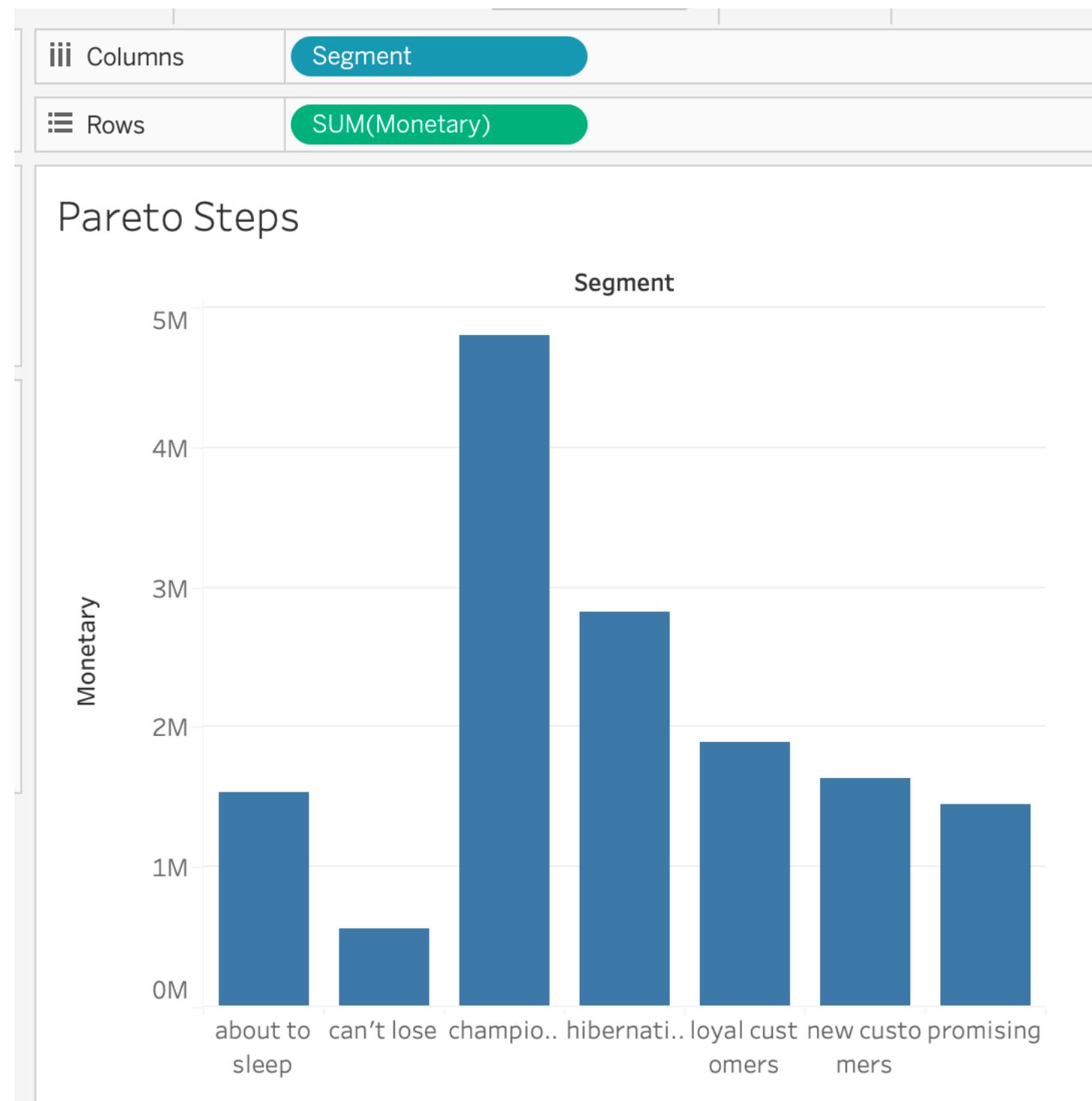
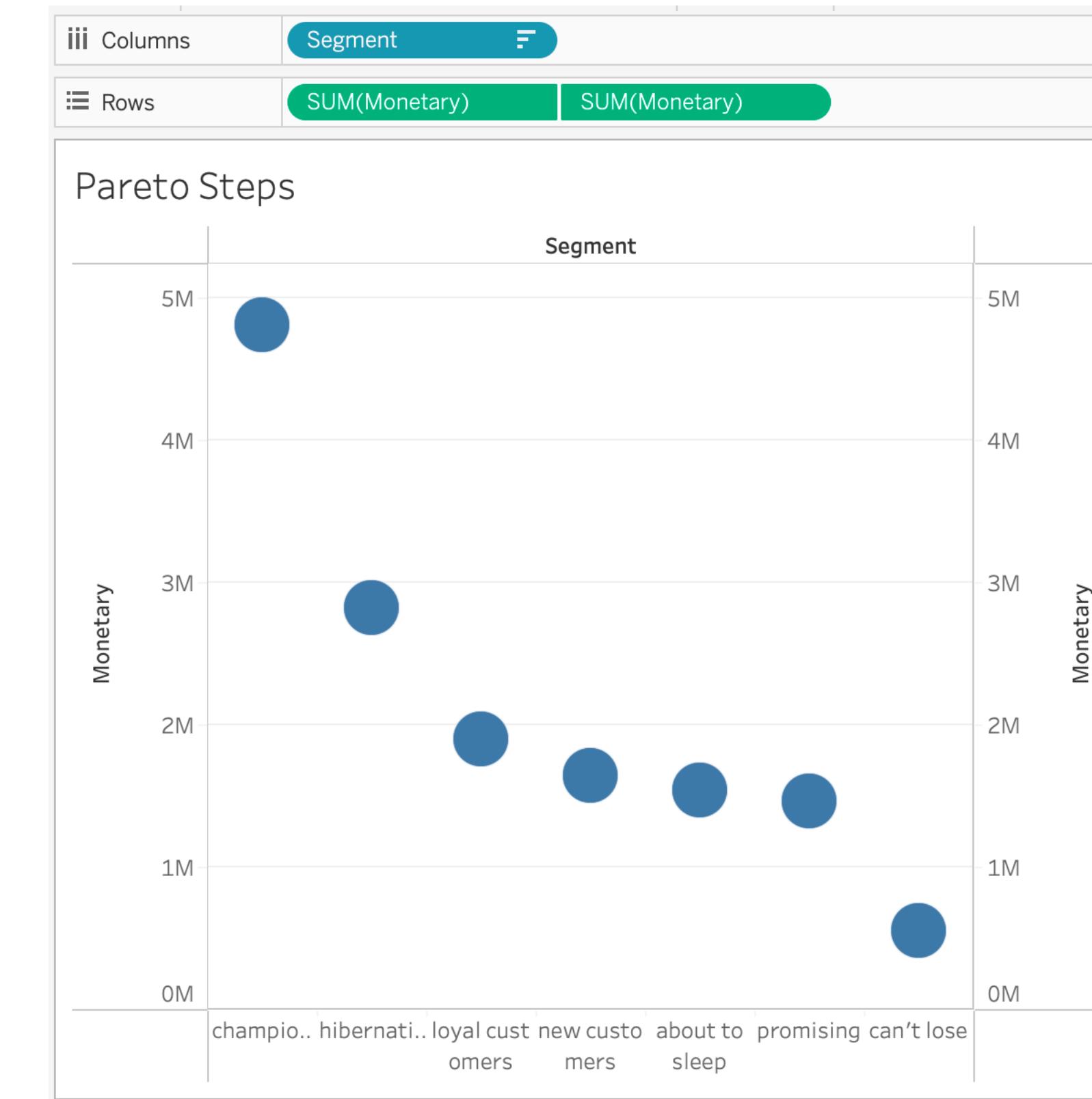
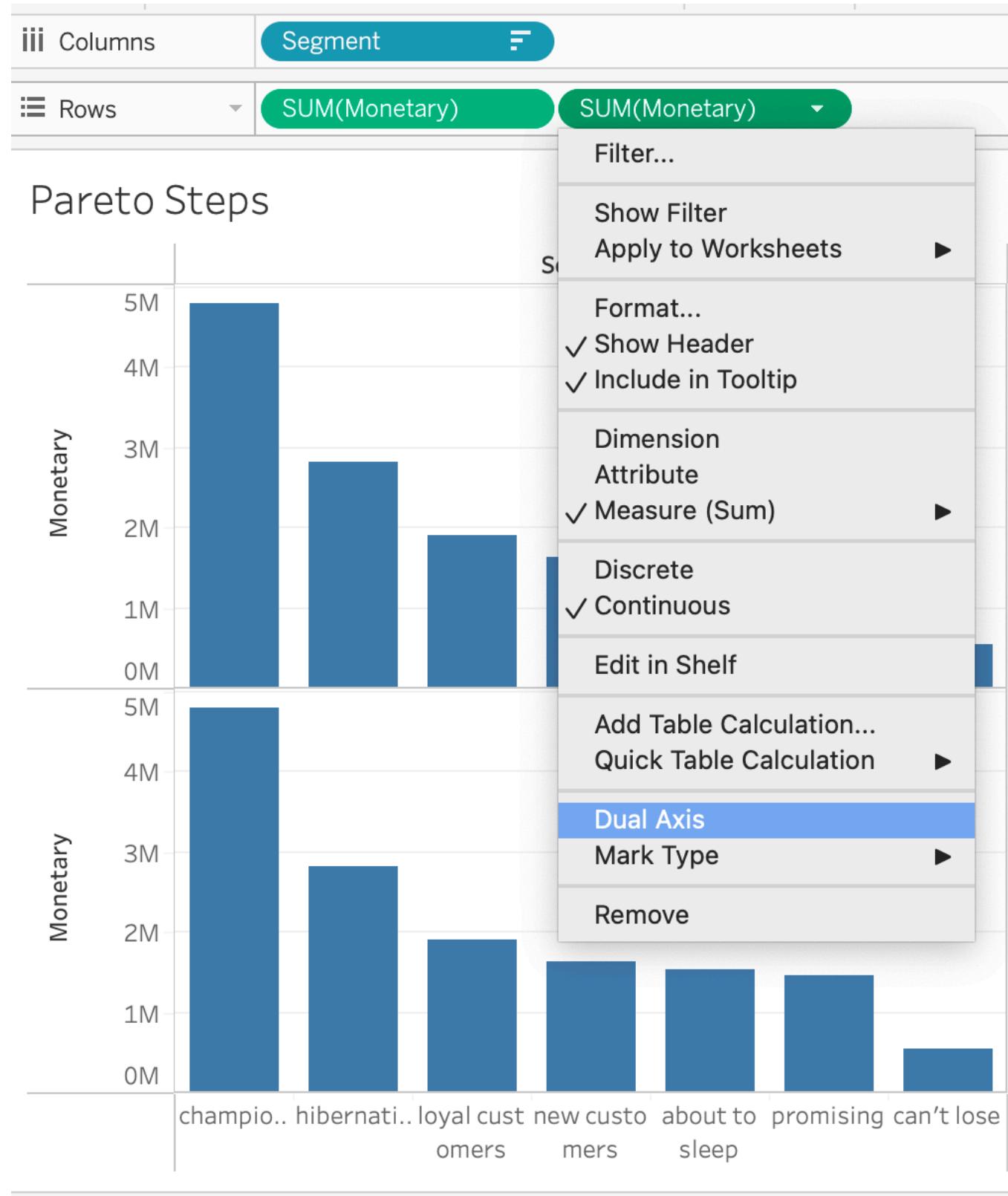


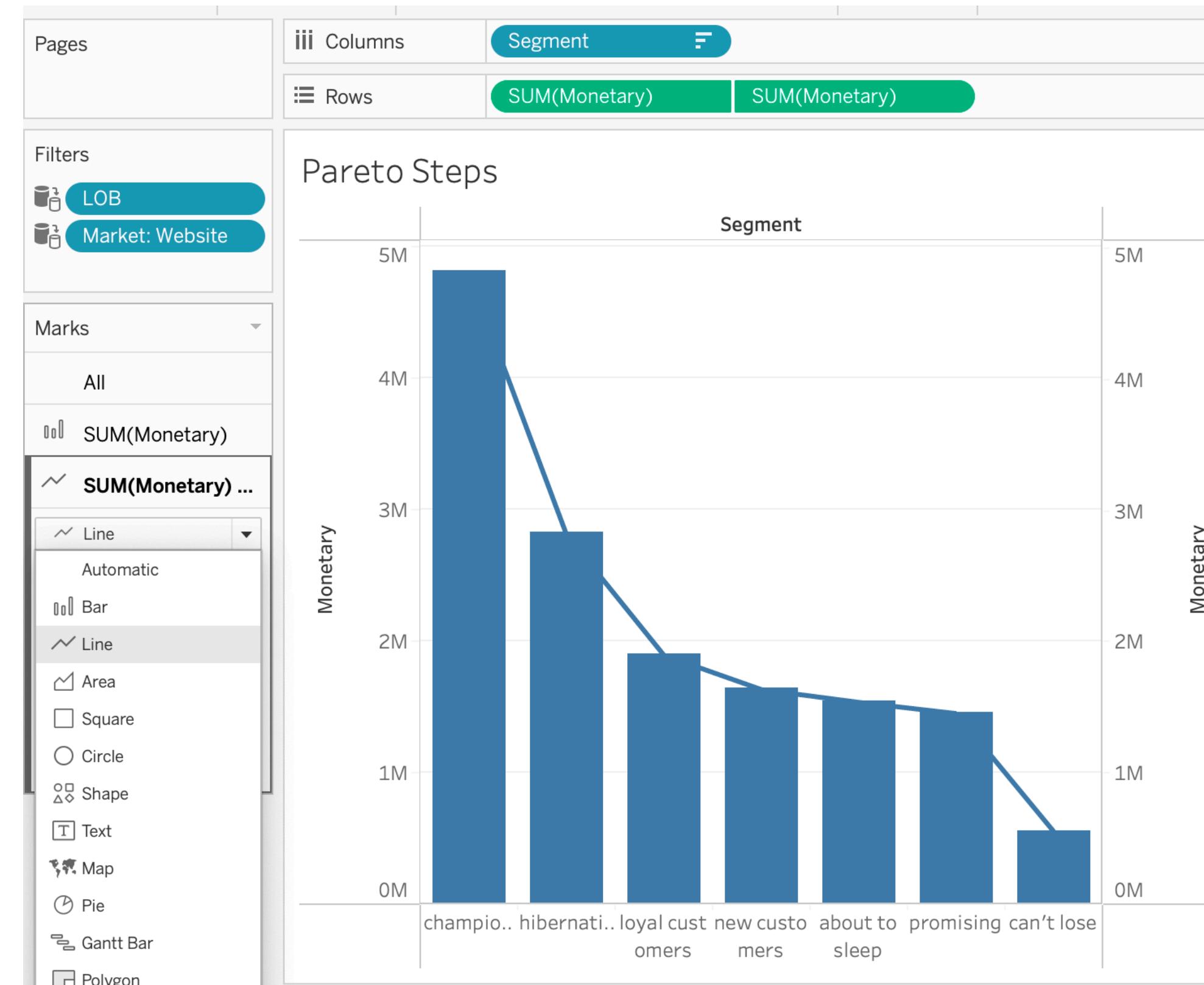
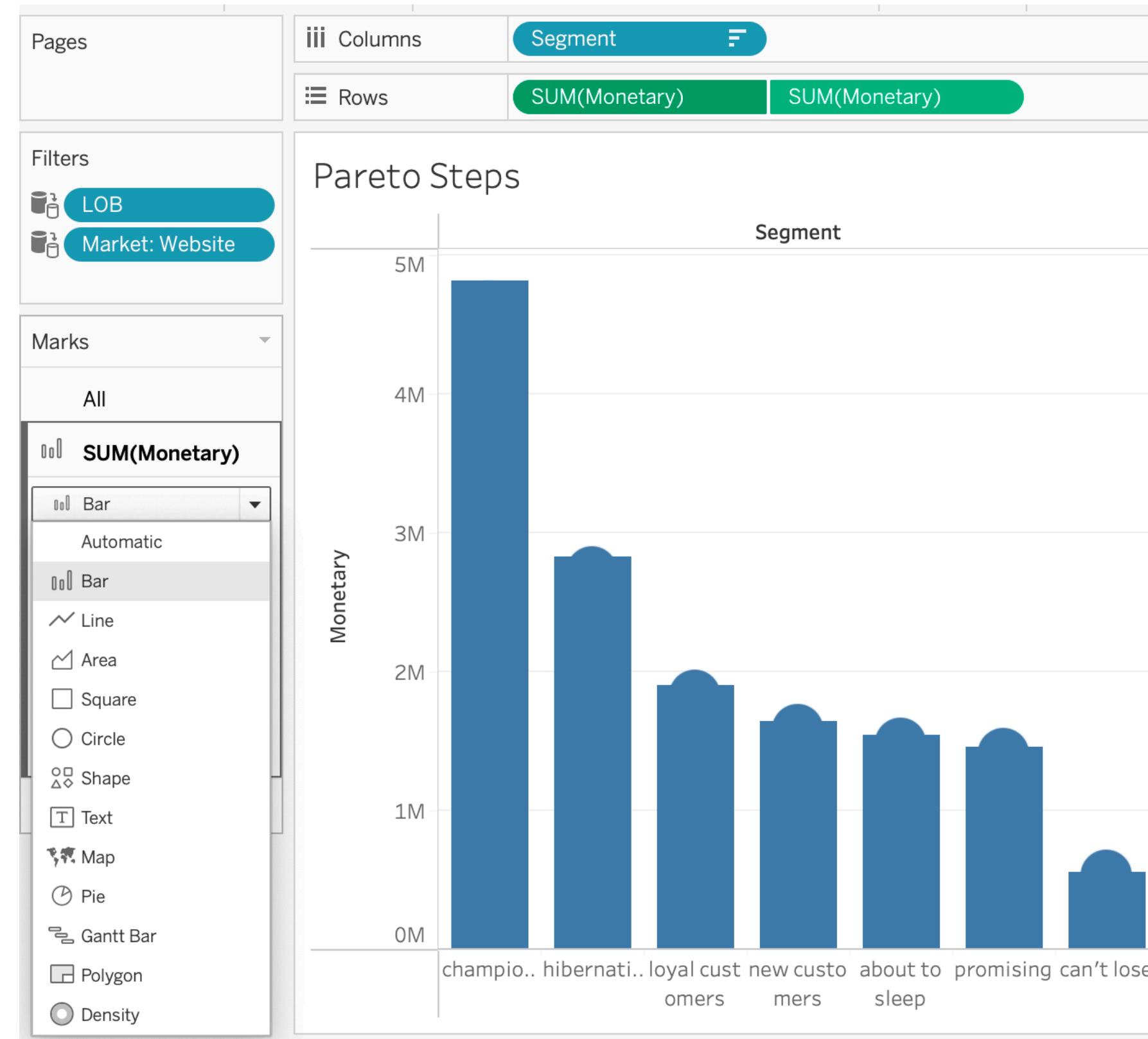
Table Calculations - Dual Axis Pareto



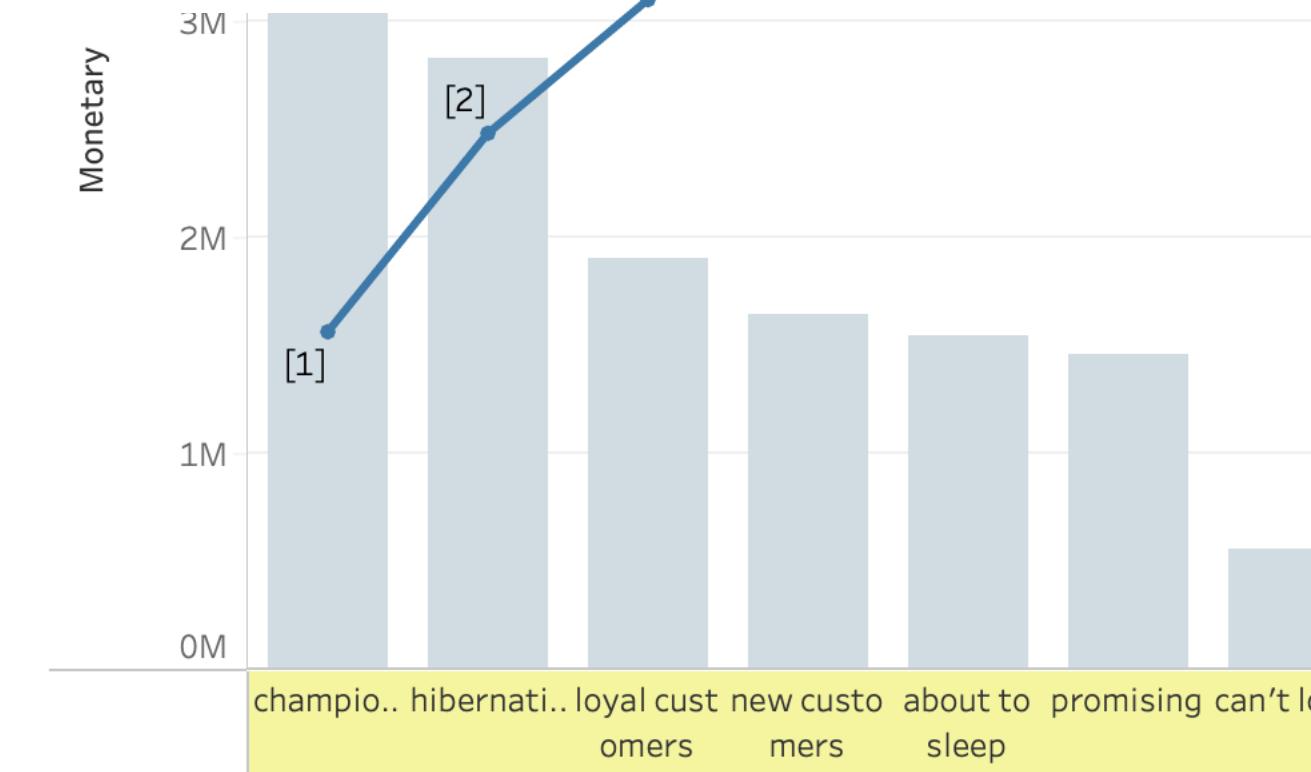
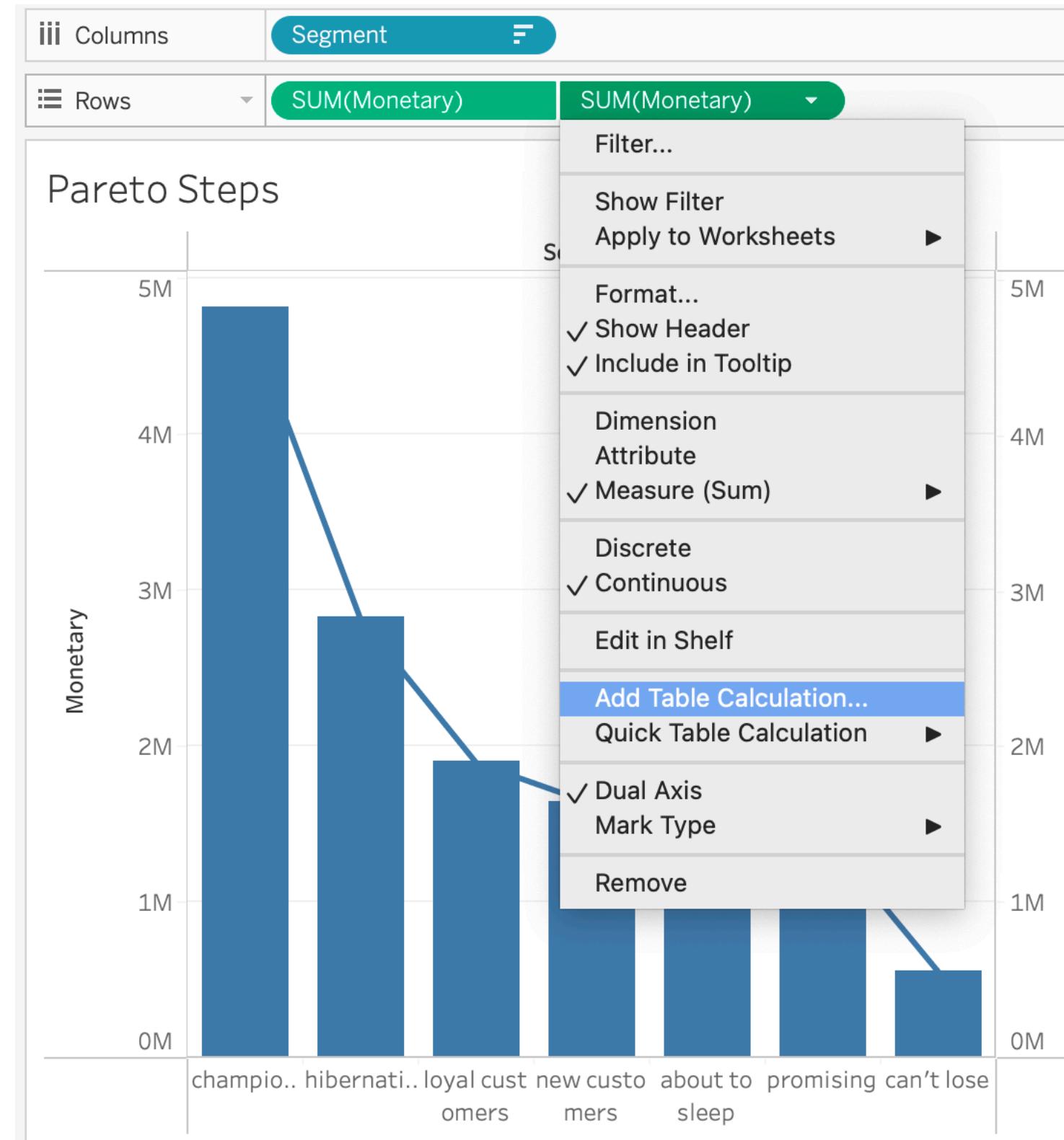




3. Add Monetary a second time and then select “dual axis”



4. Change one chart to bar and the other to line in the marks section



5. Table Calculation running total with secondary percent of total

Table Calculation
% of Total Running Sum of Monetary

Primary Calculation Type

Running Total

Sum

Secondary Calculation Type

Percent of Total

Compute total across all pages

Compute Using

Table (across)

Cell

Specific Dimensions

Segment

Restarting every

Compute Using

Table (across)

Table (down)

Table

Cell

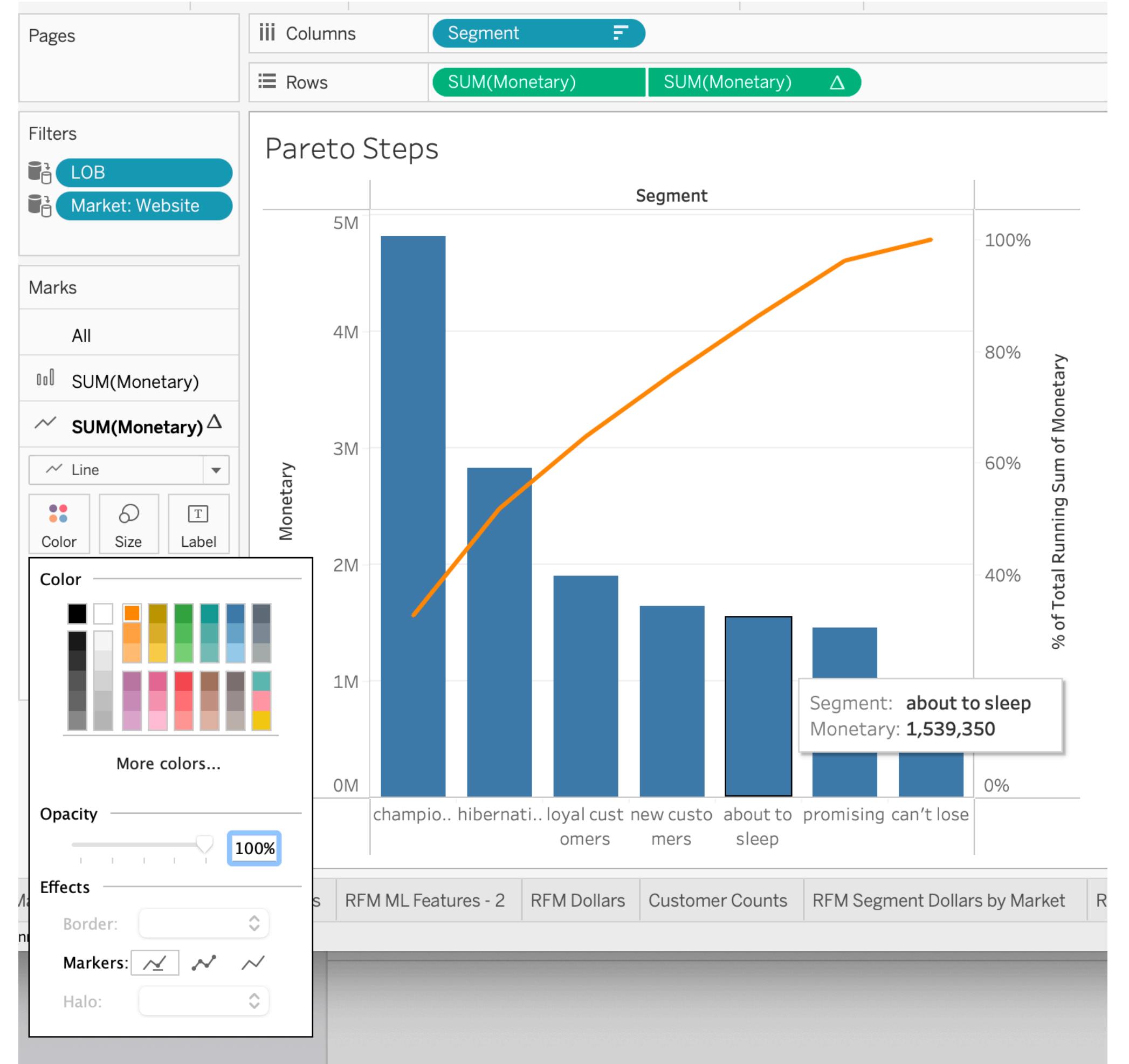
Specific Dimensions

Segment

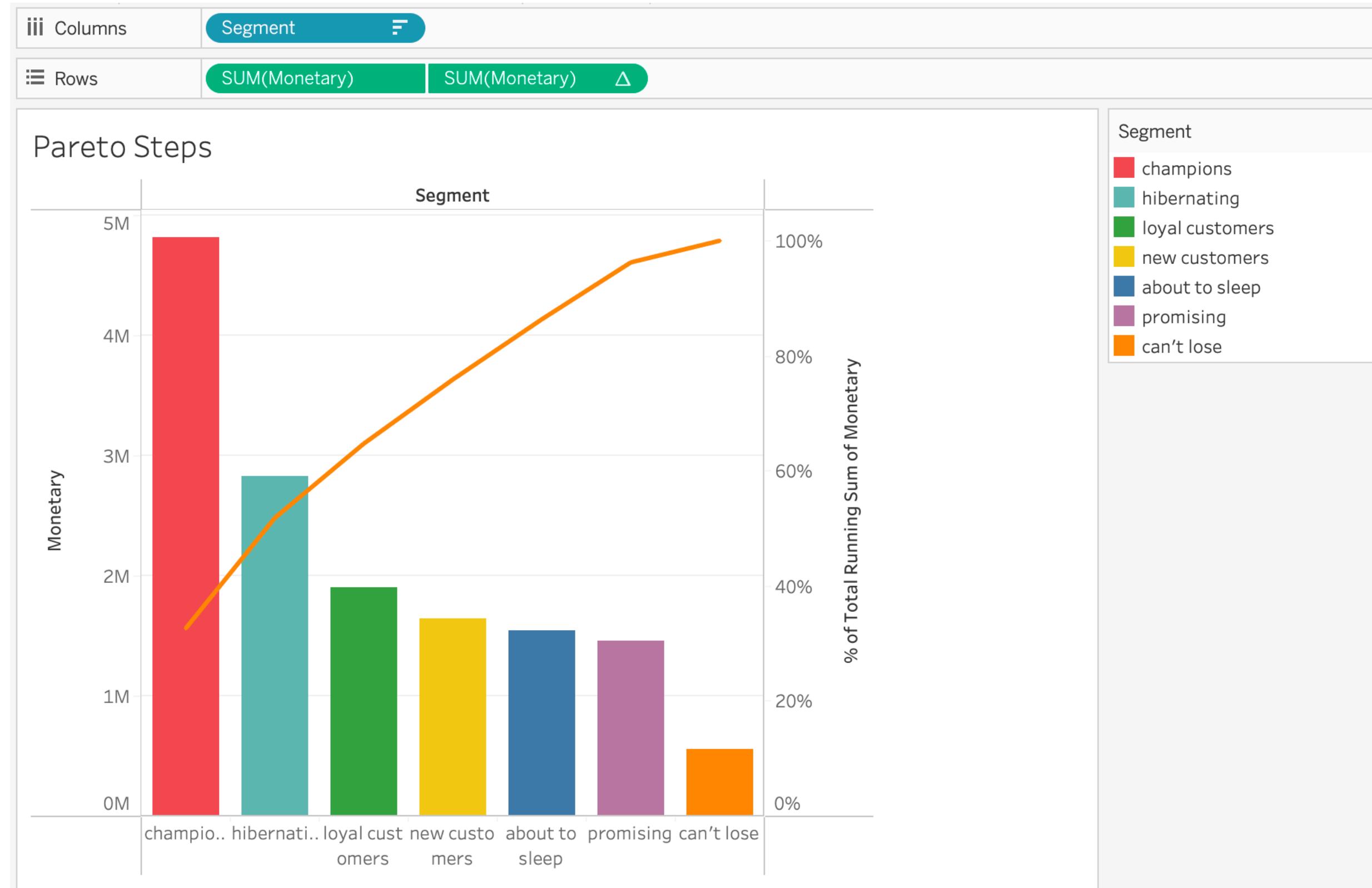
At the level

Add secondary calculation

Show calculation assistance



6. Color line chart to liking



7. Color bar chart by dragging to color on marks