Boston Retail Industry Analysis

Presented by Group 6

Pavan Kumar Padamati

Emmanuel Jonathan Yalla

Rucha Patil

Surojit Sasmal

Our Agenda

Discussion topics for today

01
Our Focus

02
Dataset

03
Analysis

04
Recommendation

Our Focus

Retail Industry	Reason of choice	Objectives
• **Grocery Stores** • **Clothing Stores** 	1. Economic indicator because consumer spending drives economy 2. Increased Bankruptcy filings and closing of locations 3. Threat from growing ecommerce 4. Clothing lies within top 10 POIs in Boston	1. Analysis of customer visit patterns with respect to economic trends 2. Identifying the biases with external sources 3. In depth analysis of individual branch locations

About Dataset

Data Preparation

1. Merged the Patterns on the Places dataset using placekey
2. Filtered :
   - Top category to clothing and groceries
   - Grouped by Location names and street address
3. Picked top 1 brand based on number of POIs - Validated for biases based on external sources for our further analysis

Data Limitations

1. Multiple POIs, same location
2. Lack of customer information
3. Duplicate customer visits due to multiple devices
4. Ambiguous dwell time interpretation

Clothing Store Analysis 🏪

Banana Republic - 200 state street

Highlights:

- Zara has highest customer traffic of 1580 with only 1 POI, followed by H&M with 1006 and Banana Republic with 780
- Banana republic and Gap has two stores each with traffic of 780 and 116 respectively
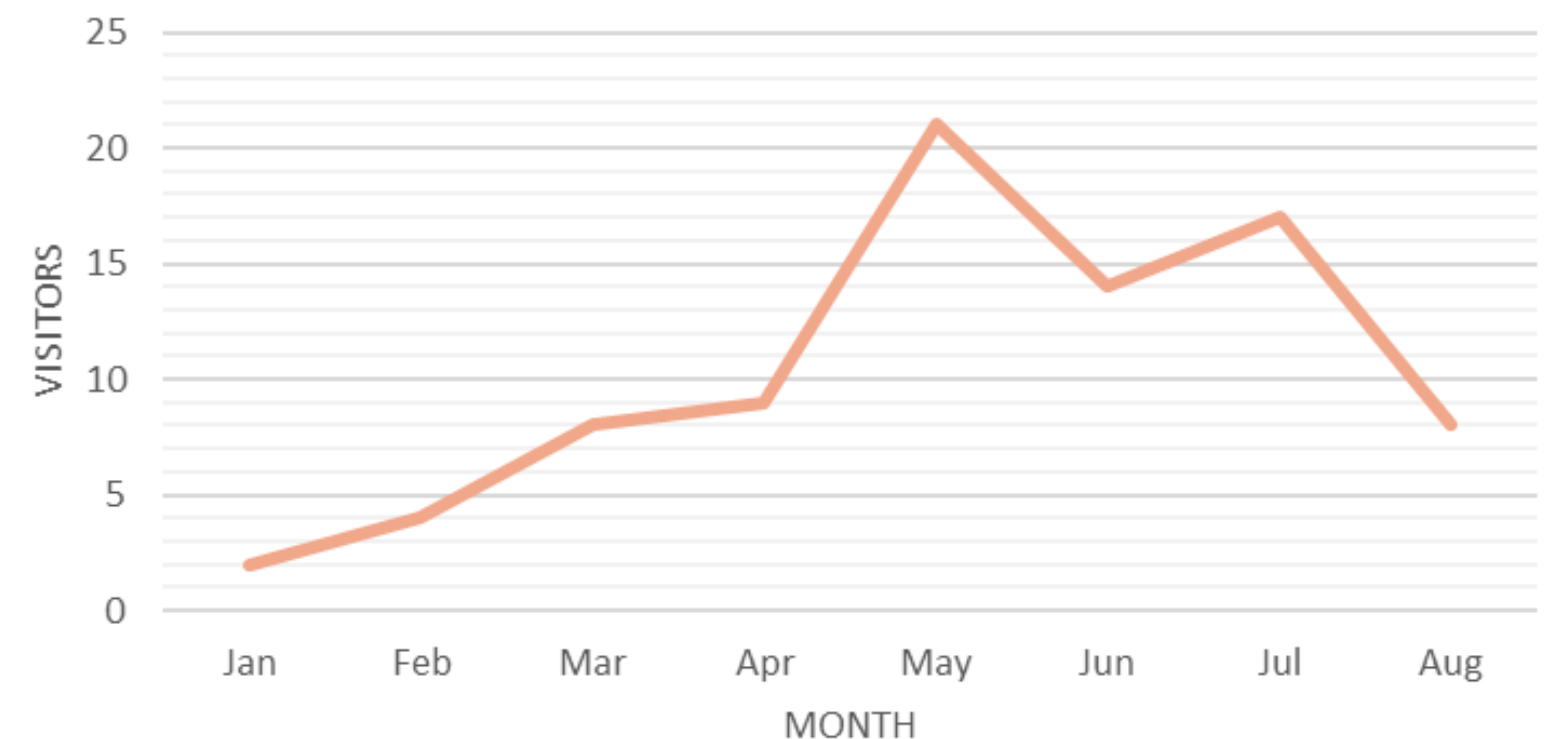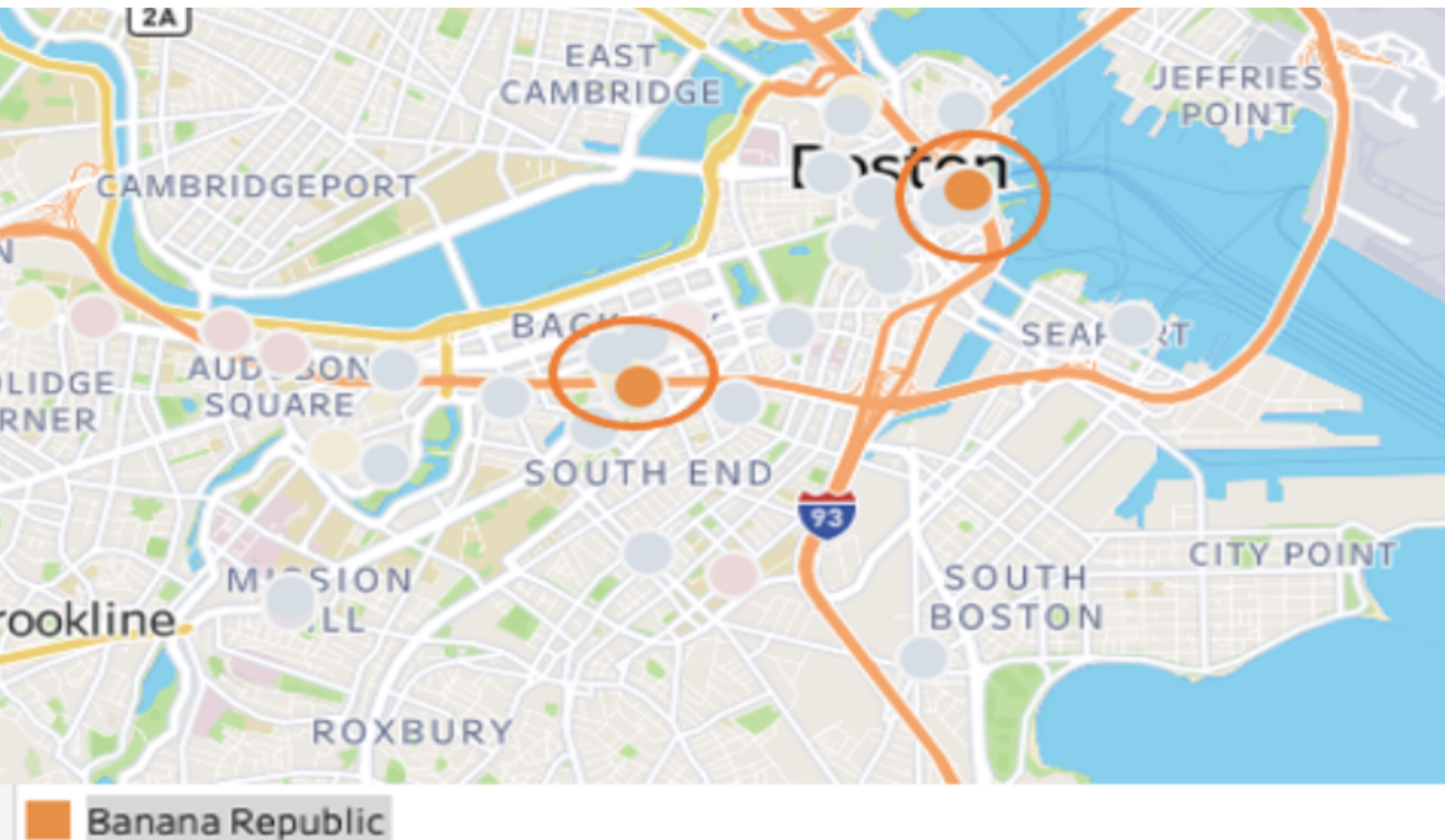
Gap - 200 state street

- Further we have found POI 200 state street B 10 of Banana Republic has the highest number of visitors of 661, while 100 Huntington ave has only 54 visits

Clothing Store Analysis 🏪

Banana Republic

Limitations

- Victoria's Secret has 3 POI's as per the dataset. However data is 200% bias as there is only 1 in Boston

- 100Huntington Ave has 20 unique categories under same parent placekey, where the visiting patern is random

- While analysing the dataset we saw that the visiting of Primark was not accurate as it shares same placekey location with Roche Brothers which is a grocery store
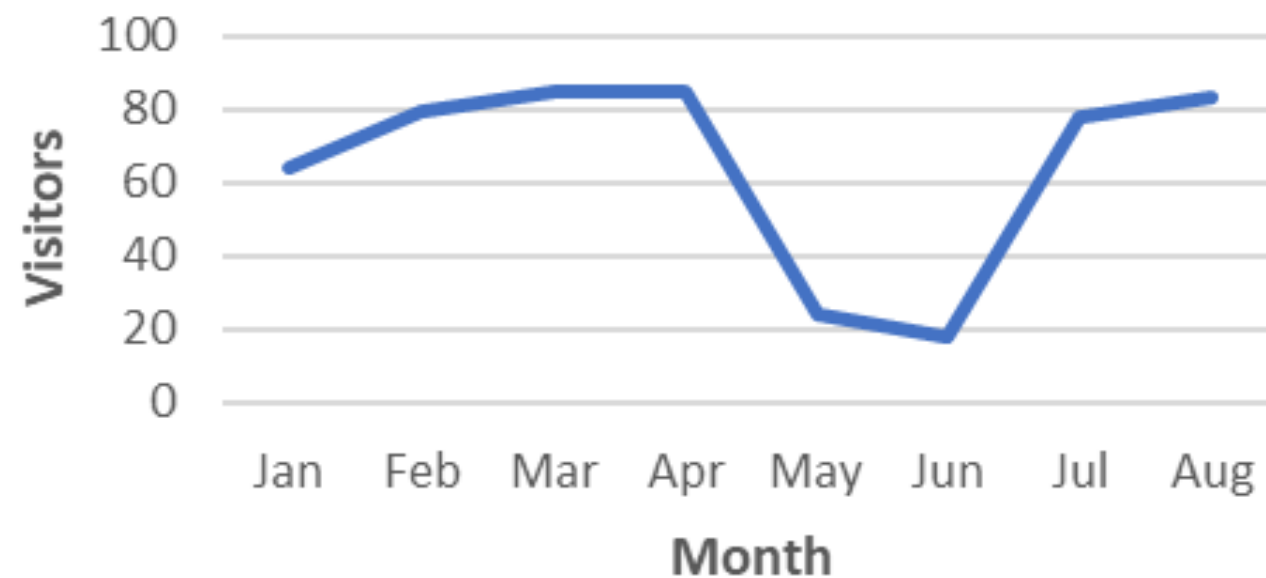
- No Macys?

Grocery Store Analysis

7 Eleven - 8 Park st
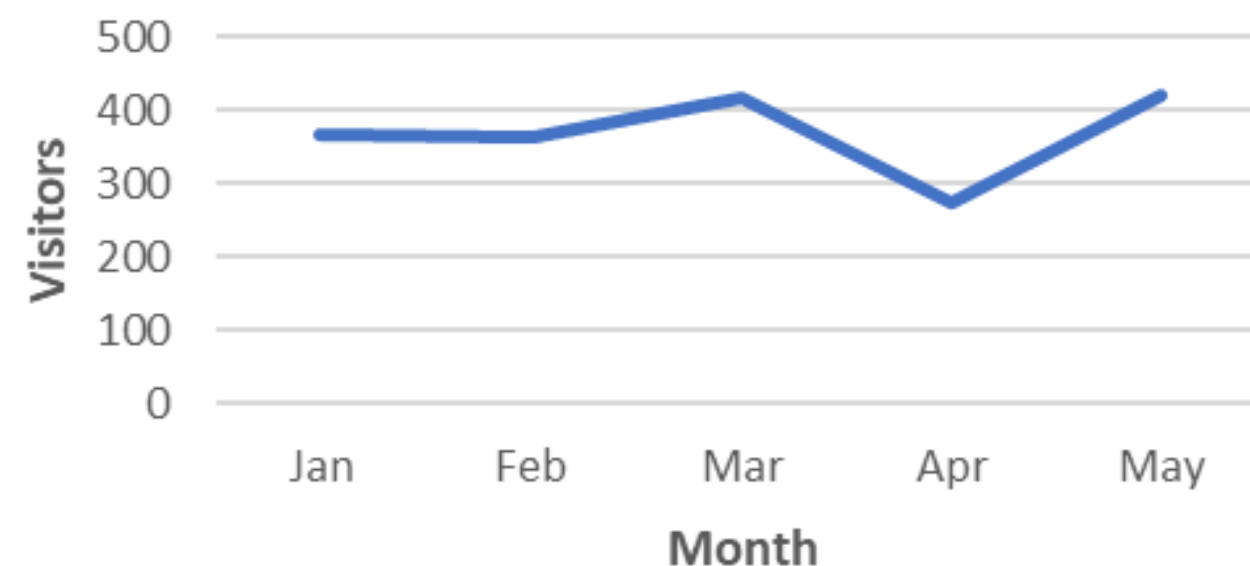

City Convenience - 700 Albany st

Highlights:

- 7 Eleven has 20 stores in Boston area and City Convenience has 4 stores

- Customer traffic in total of 8 months was 3257 for 7 Eleven and 2532 for City Convenience

- Top Store for 7 Eleven is 8 Park Plz with highest 516 visits while 700 Albany St had 1849 visits for City Convenience Standalone .

Grocery Store Analysis 🏪

Limitations:

- 7 Eleven's 342 Hanover St had 1 visit that to only in the month of March'22
- We found that it shared with another realtors category Western Union. Realtors category is the highest in the dataset
- Data is baised as customer visit would have been for another category which not captured here.
- Validated with Google the data is 75% accurate and traffic is just 28% more compared to City Convenience though they have more branches
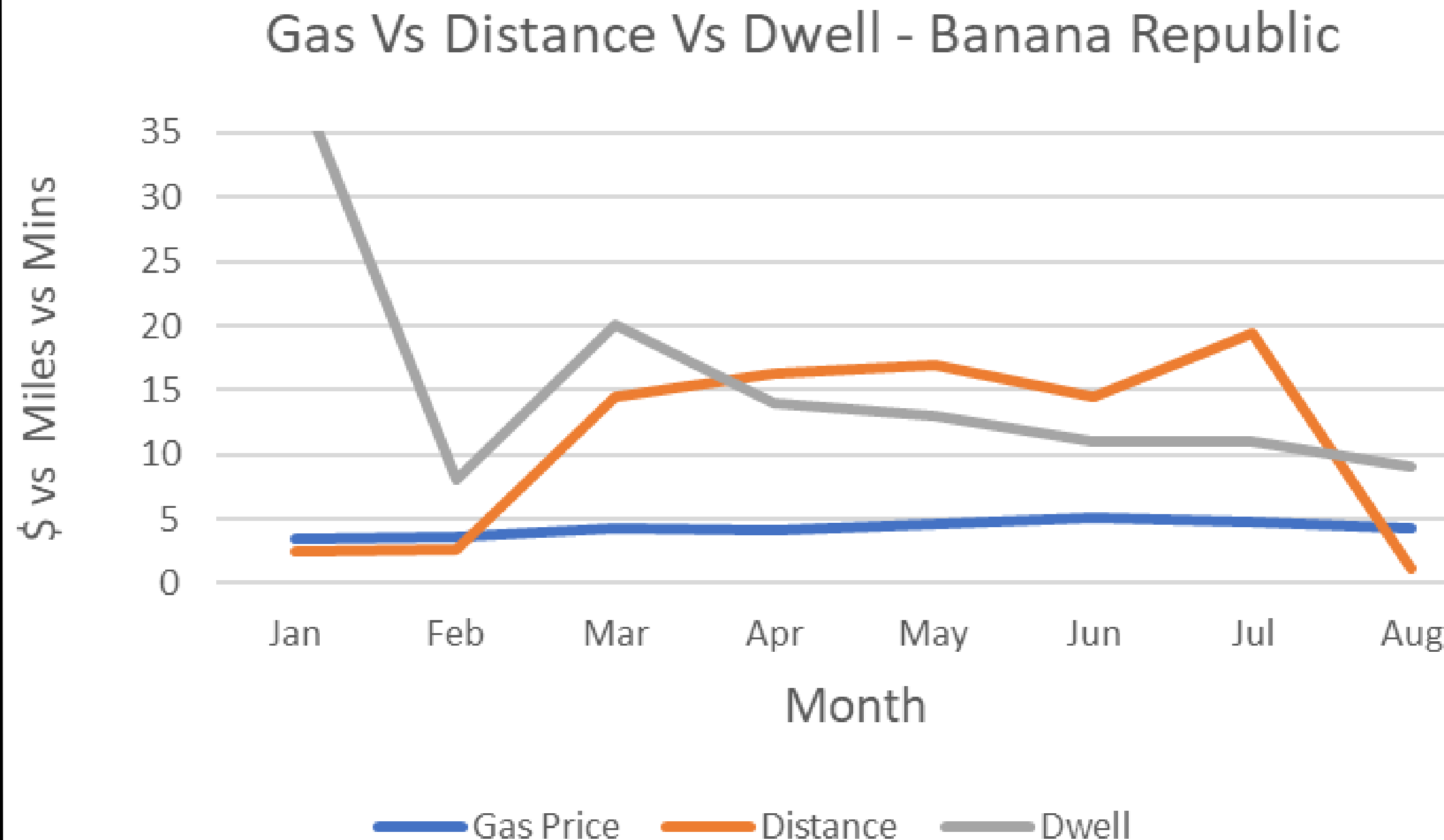

■ 7-Eleven   ■ City Convenience
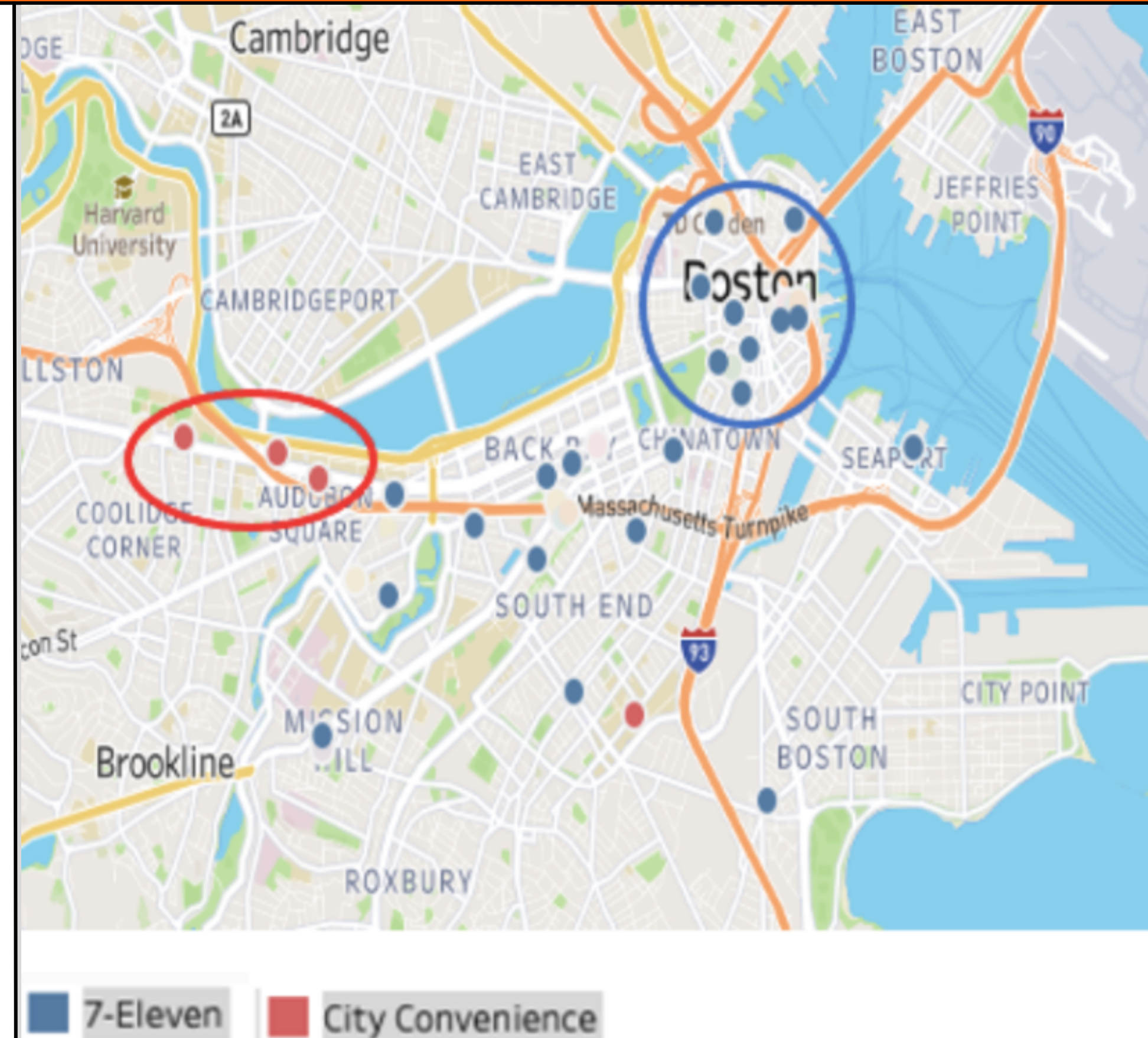
Customer Preferences -Grocery
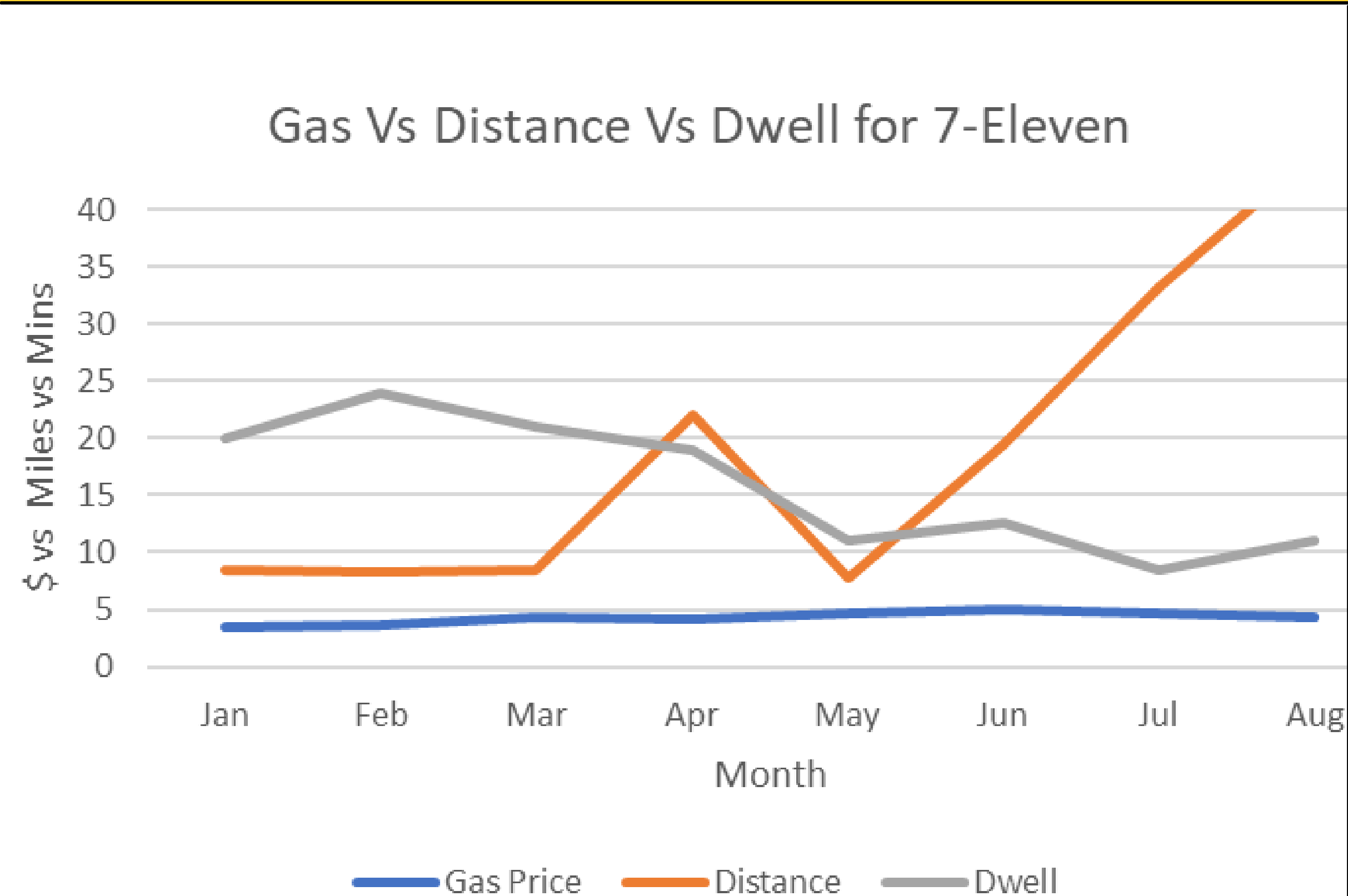
Gas Vs Distance Vs Dwell for 7-Eleven

- Though the gas prices are increasing in may to June, customers travelled more distance to purchase grocery.

- Dwell time has reduced gradually from 20-25mins to around 10mins.

- Customers are not willing to spend more time. Further analysis is required to come to concrete conclusions

Customer Preferences -Clothing

- Though the gas prices are increasing in may to June, customers travelled more distance to purchase clothing.

- This is less in comparison to the retail stores.

- Dwell time has reduced gradually from 35mins to around 10mins.

- Customers are not willing to spend more time. Further analysis is required to come to concrete conclusions
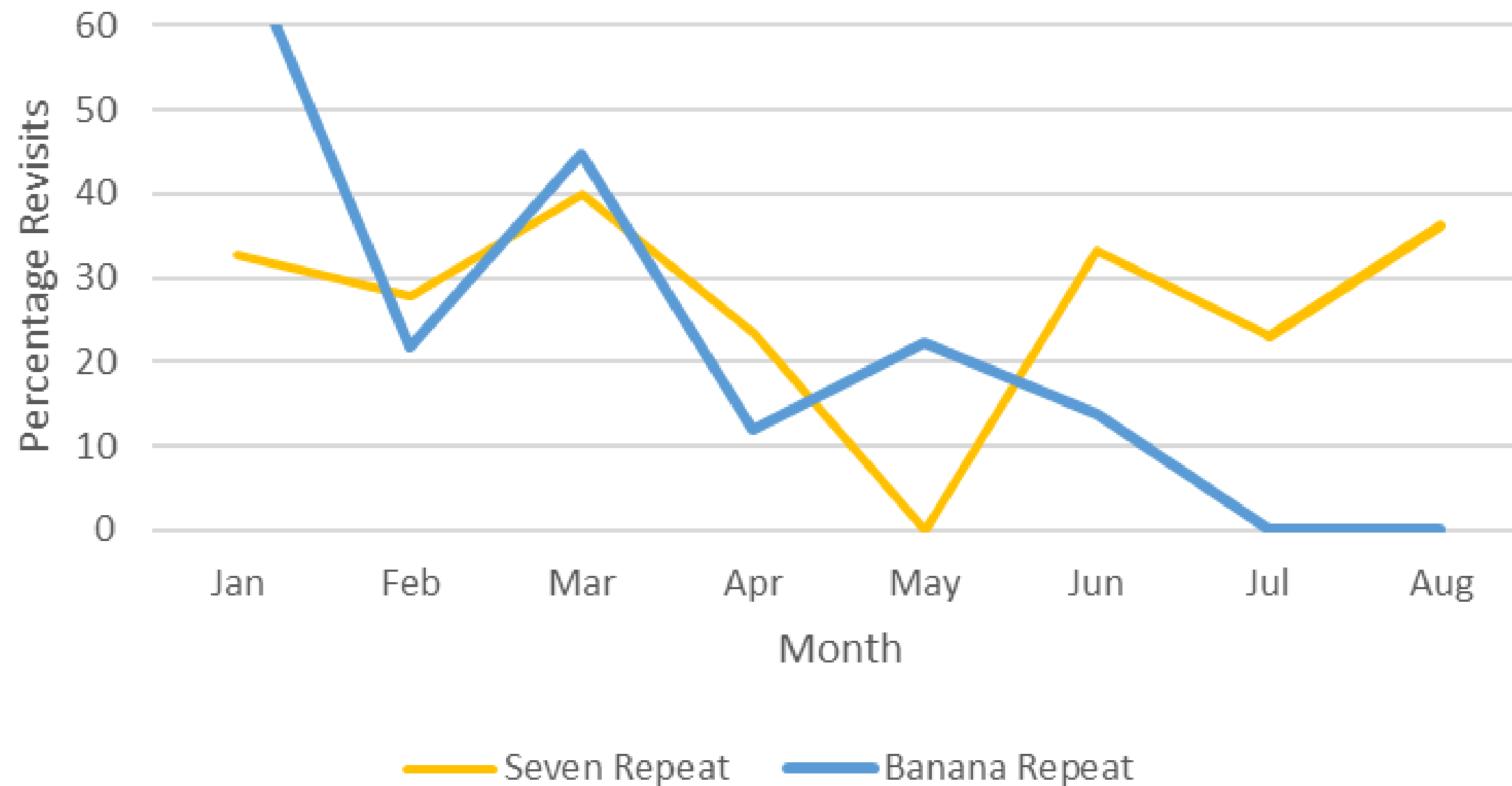

Gas Vs Distance Vs Dwell - Banana Republic

Customer Revisit Patterns 🧑‍🛍️

Customer Revisit Patterns

(Chart: x-axis "Month" — Jan, Feb, Mar, Apr, May, Jun, Jul, Aug; y-axis "Percentage Revisits" — 0 to 60; legend: Seven Repeat, Banana Repeat)
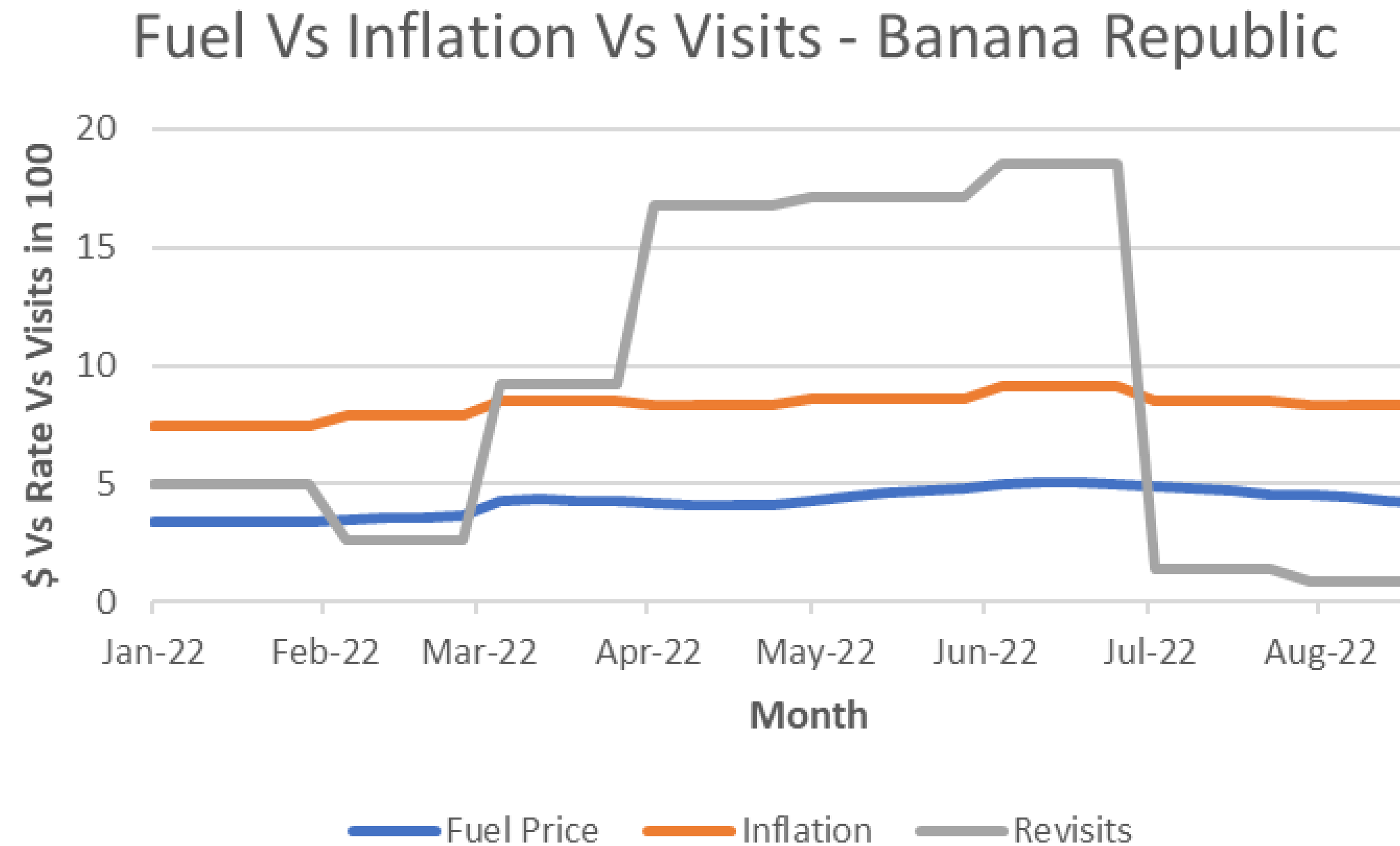
- Considering the economic impact and changes in inflation rates customer purchase patterns are analyzed

- Customers are regularly purchasing groceries

- In month of June, we see drastic change in customer of groceries

- Clothing purchases are preferred at the start of the year and reduced gradually.
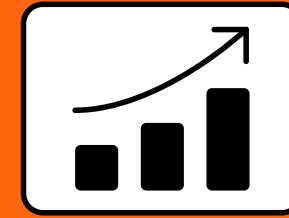
Economic Impact 📈

- It could be inferred that customers were willing to spend more on Clothing rather than on Groceries

- In July, the inflation hit its peak of 9.1% Feds also raised the rate from 1.75% to 2.50% the month of June to July

- It can be interpreted that customers would have reduced their expenditure and shifted to cheaper sources for clothing
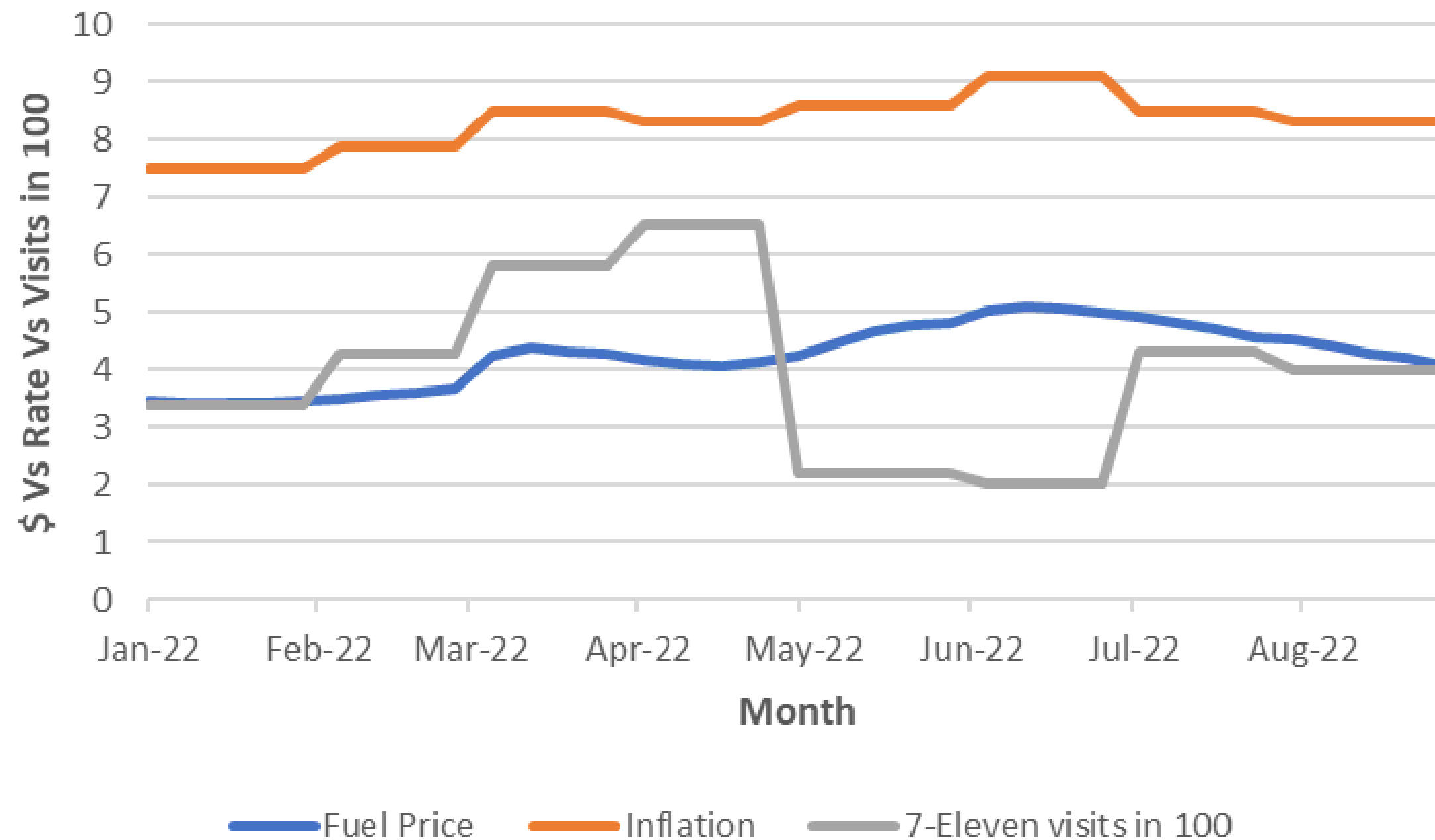
Fuel Vs Inflation Vs Visits - Banana Republic

Line chart titled "Fuel Vs Inflation Vs Visits - Banana Republic" with Y-axis labeled "$ Vs Rate Vs Visits in 100" (0 to 20) and X-axis labeled "Month" (Jan-22 to Aug-22). Legend: Fuel Price, Inflation, Revisits.

Economic Impact 📊

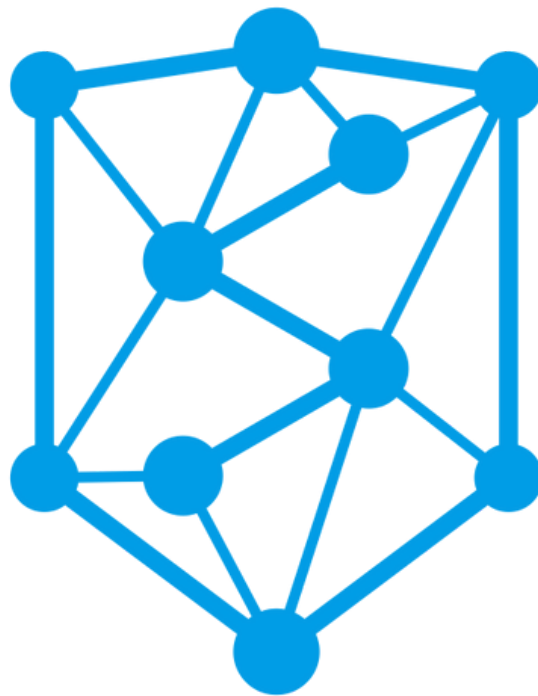

Fuel Vs Inflation Vs Visits - 7 Eleven

- Gas prices kept dropping from its peak in June from $5.02 and customers traffic to grocery stores increased

- The months May, June and July experienced drastic changes in customer traffic trend.

Challenges

SAFE GRAPH

- Anomalies were found in the monthly patterns for certain store locations - found they are under the same POI of stores in other category which we did not select. (Banana Huntington)

- Miss classification of a clothing store in patterns dataset - "Shoshan Fine arts -1889 visits" which has same placekey of other categories/locations in which we chose the one exisiting in places dataset to remove the dataset discrepancy

- Missing data in City Convenience store , we found that it was closed.

- The placekeys were not unique so we had to carefully examine and choose avoiding overlaps/biases

Recommendation 👍

- City Convenience to increase its traffic should open one more POI near 8 Park Plaza

- Banana Republic should move its 100 Huntington Ave store to Newbury street to increase its traffic as Zara and H&M are dominating with only one store in Boston area

Thank you
for your time!