Project #GetWellPlan

By #TeamDataExperience

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Walmart

Agenda

Background

Problem statement

Methodology

Key findings & insights (EDA, Model & Sentiment Analysis)

Recommendations

Conclusion

Limitations & Future Explorations

Walmart was ranked LAST for supermarkets in the 2020 American Customer Satisfaction Index Retail and Consumer Shipping Report.

RETAIL | EARNINGS REPORT

Walmart Stock Is Falling on Earnings Miss, Muted Outlook

By Teresa Rivas   Feb. 18, 2021 9:18 am ET

ad placements for the retail giant. The memo makes several blunt assessments about the uphill battle Walmart faces to hold onto its once-dominant retail market position, including in the US grocery industry, where the company has long been No. 1 in sales.

"Grocery, the growth engine of the business, is losing share rapidly," one slide reads. "More than ever, Walmart shopper[s] are choosing the competition," the slide continues, alongside logos of competitors like Publix, Target, and Albertsons as well as stats showing increasing customer traffic at those chains and a decline at Walmart.

"Walmart is not first and preferred," another slide about the grocery business says. "Must elevate quality assortment + value!"

AMERICAN CUSTOMER SATISFACTION INDEX: SUPERMARKETS

COMPANY	2019	2020	% CHANGE
Supermarkets	**78**	**76**	**-2.6%**
Trader Joe's	84	84	0%
Costco	83	82	-1%
H-E-B	84	82	-2%
Publix	83	82	-1%
Wegmans	84	82	-2%
Aldi	83	80	-4%
Sam's Club (Walmart)	80	80	0%
BJ's Wholesale Club	82	78	-5%
Hy-Vee	78	78	0%
Target	79	77	-3%
Whole Foods (Amazon)	79	77	-3%
Kroger	79	76	-4%
Meijer	78	76	-3%
ShopRite	80	76	-5%
Ahold Delhaize	77	75	-3%
All Others	79	75	-5%
Save-A-Lot	75	74	-1%
Southeastern Grocers	76	73	-4%
Giant Eagle	76	72	-5%
Albertsons Companies	75	71	-5%
Walmart	73	71	-3%

0-100 Scale

Problem Statement

How it started

To **move up the ranks in ACSI 2021**, the Executive Management has requested for a thorough review of the existing customer journey at Walmart, brand image of Walmart, and aspects that need to be addressed to improve the customer experience and satisfaction level.

Stakeholders

Primary:
Walmart Corporate

Secondary:
Walmart Consumers

Objectives

Primary:
To enhance our understanding of Walmart's **social media image** on Reddit, in comparison to Costco, to introduce strategy for improvement.

Secondary:
To identify positive and negative feedback from Reddit users regarding both supermarkets, where **positive** feedback will continue to be reinforced and adopted while **negative** feedback can be addressed and prevented.

Walmart

Methodology

Wal-Mart
r/walmart

Fulfilling Your Bulk Needs Since 1983
r/Costco

Data Scraping — 01

Data Cleaning — 02

EDA & Insights — 03

04 — **Pre-processing & Modelling**

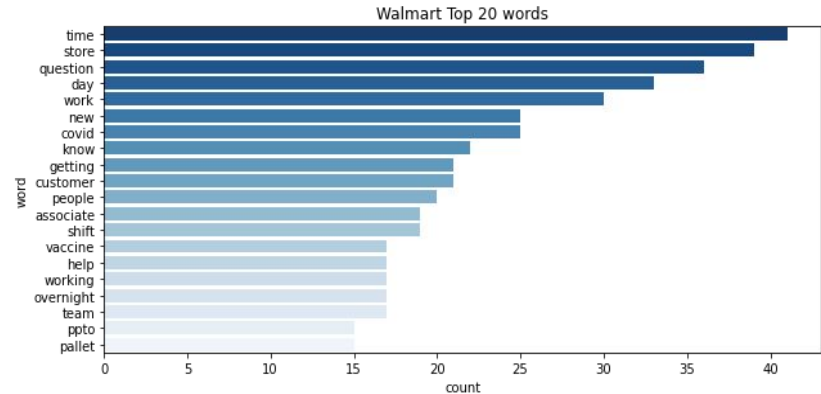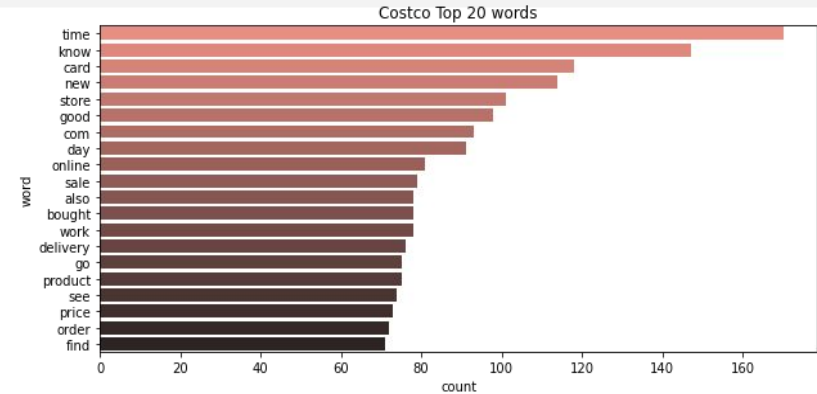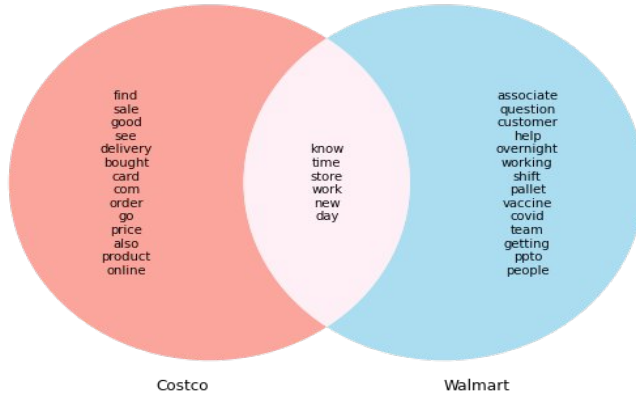05 — **Sentiment Analysis**

06 — **Business Recommendation**

Initial findings from commonly occurring words

- The top words that commonly appear include:
  - Costco: find, sale, good, see, delivery, bought, card, corn, order.
  - Walmart: associate, question, customer, help, overnight, working.
- These words commonly appear in both Costco and Walmart:
  - know, time, store, work, new, day
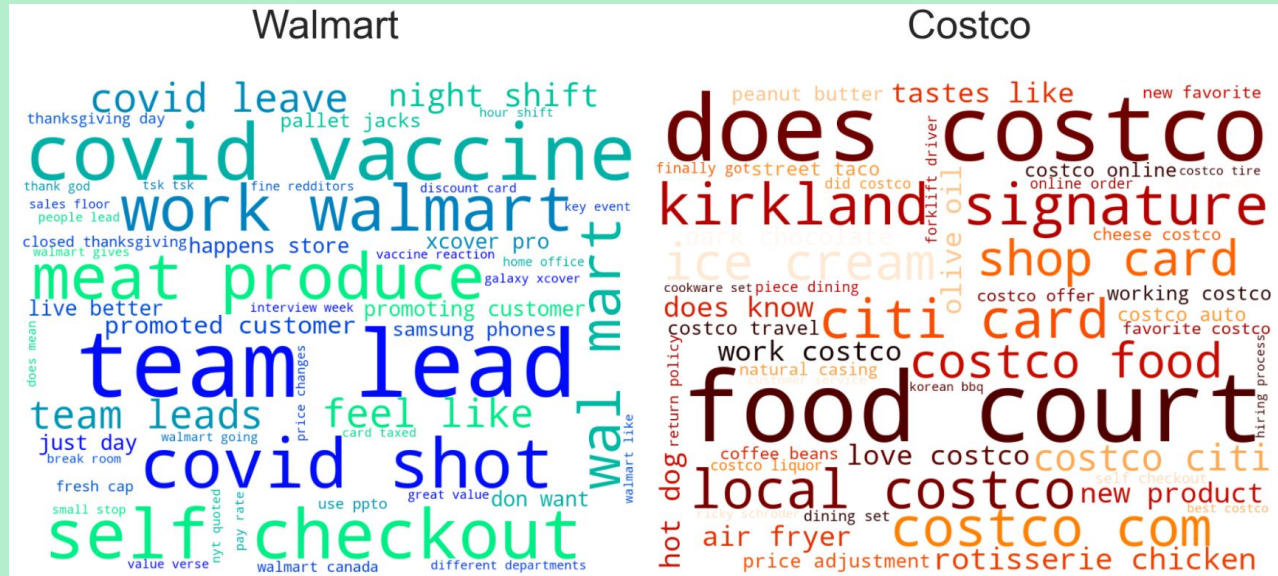

Word Comparsion

Costco: find, sale, good, see, delivery, bought, card, com, order, go, price, also, product, online

know, time, store, work, new, day

Walmart: associate, question, customer, help, overnight, working, shift, pallet, vaccine, covid, team, getting, ppto, people

Costco   Walmart

Costco Top 20 words

Walmart Top 20 words

Visualizing commonly occurring words

Walmart

Team lead?

Covid vaccine?

Covid shot?

Food court?

Kirkland signature?

Citi card?

Walmart

Finding the most optimal model

Our baseline accuracy is 51.2%.

Vectorizer	Models	Measurement
Count Vectorizer	Logistic Regression ✔	Accuracy Score
Tfidf Vectorizer ✔	Random Forest	F1 Score
	K Nearest Neighbors	ROC-AUC Score ✔

Fine-tuning our selected model further

Receiver operating characteristic

GridSearchCV (area = 0.93)

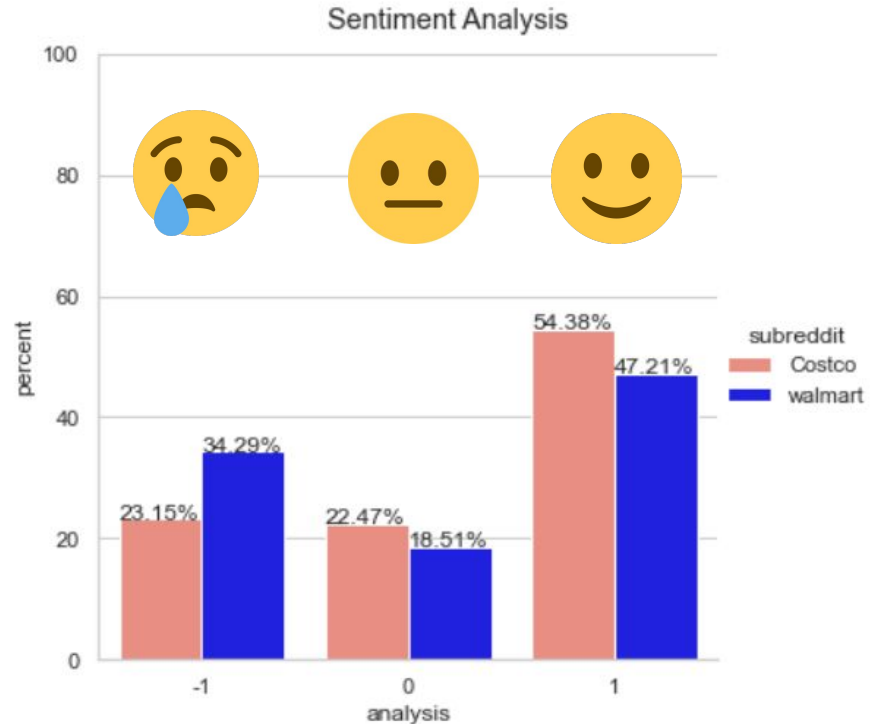Top 20 words in determining whether a post is for Walmart or Costco
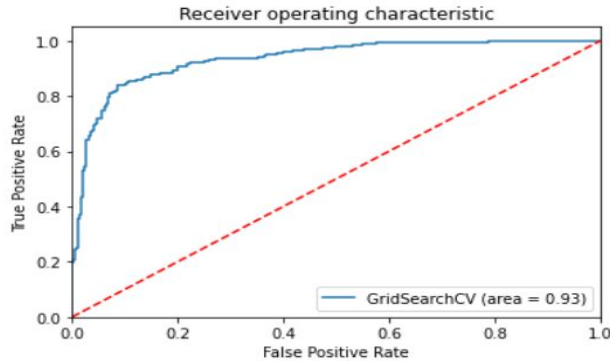
- We further fine-tuned our selected combination of **Tfidf Vectorizer and Logistic Regression** using GridSearchCV to obtain the best parameters.

- We obtained an accuracy score of 85.6%, which is 31% better than baseline, and ROC-AUC score of 93% on the test data set.
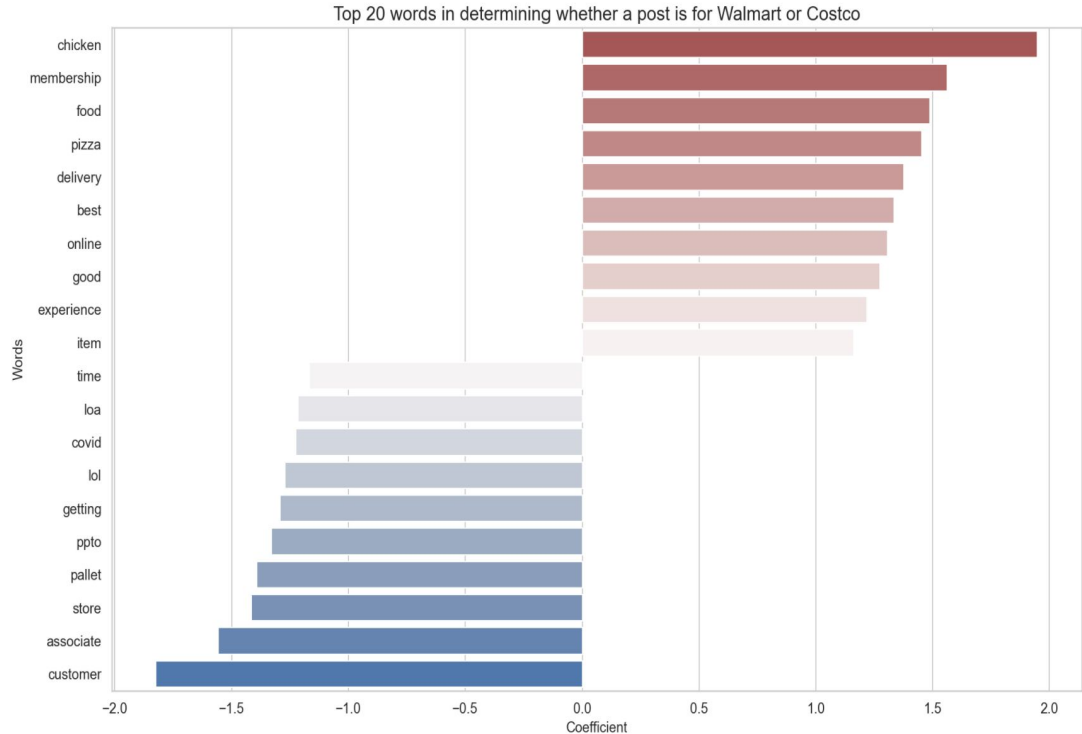
Recall the sentiment of our employees...

- We observe a greater proportion of positive posts in Costco, as compared to Walmart.

- We also notice a strikingly higher number of negative posts in Walmart, as compared to Costco.

Let's look into the top words for Walmart

Walmart

Top occurring word	Negative (−1)	Positive (+1)
'customer'	worst type of customer in ogp doesn't check in doesn't call when they get here if we're not busy i usually make them sit there for a couple minute	gotta love our customer
'associate'	hypersensitive team lead worry no one like them so they repeatedly f*** over the associate who actually respected them	ha your store raised the pay to an hour for the stocker and ogp associate like mine did
'store'	my deli department at my store is missing basically every cleaning tool we should have a per the diagram on the wall i've received zero training who to contact to fix the problem	today was my last day at my store since i'm moving on to a better position and me and my manager said a tearful goodbye it's hard saying bye to great manager coworkers i'm still sad about it
'covid'	how does calling off the day after you get a covid shot work my co worker said he wa not pointed and that it wa paid for i'm already at point with no time available so i don't want to get fired	another round of covid bonus

Observations:

- Associates have taken to Reddit to voice their frustrations about the customers' behaviour.
- Associates are not enjoying the current working hours and structure, citing reasons like working during public holidays and having team leads that are irresponsible.
- In spite of the rants, initiatives like raising the pay for associates and having COVID-19 bonus do keep them satisfied and willing to work for Walmart.

Let's look into the top words for Costco

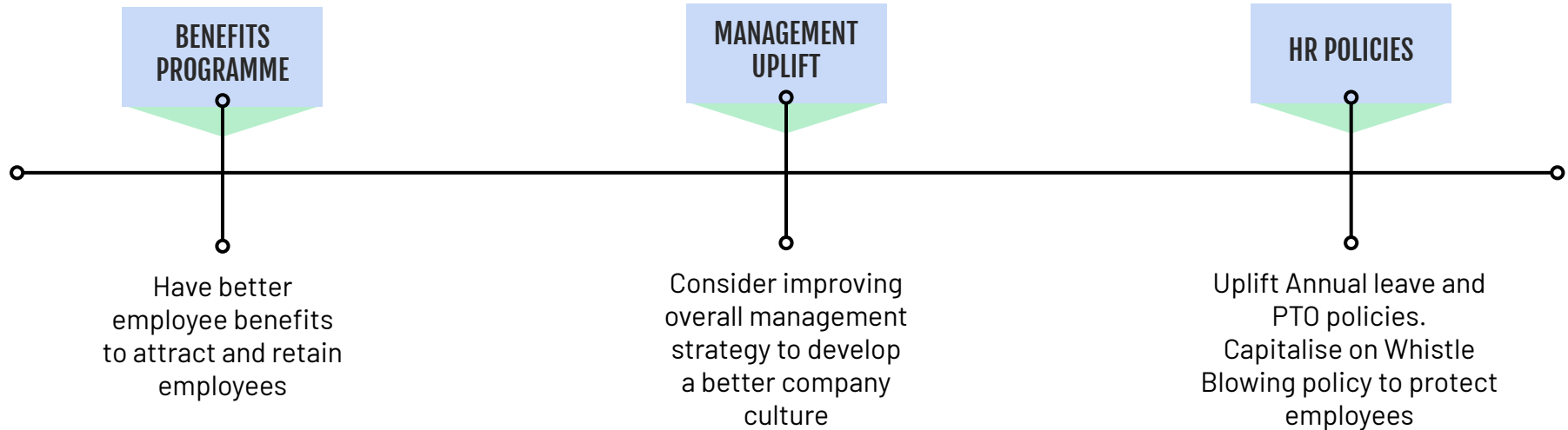| Top occurring word	Negative (−1)	Positive (+1)
'chicken'	woody harrelson expose shocking treatment of costco chicken	i m not a big frozen food person but these bacon wrapped chicken breast are soooo good bonus pic of the rest of my haul
'membership'	–	doe costco have a virtual membership card like sam s club like we re you can add it to your iphone wallet
'food'	–	used a nordicware griddle from costco on my solo stove ranger wa searching for something just like that to cook over my solo stove didn t want a grate to prevent food grease from falling into the stove i waited until the wood fire burnt down into hot coal chicken wa amazing did burger too
'delivery'	anyone else have any bad experience with tv delivery through costco	looking for a treadmill doe costco offer free delivery and assembly

Observations:

- Customers enjoy the food sold at Costco, specifically frozen food that provide convenience when working from home.
- There are queries regarding the Costco membership, their requirements and perks.
- Overall, there are fewer negative posts containing the top words for Costco, as compared to those of Walmart, though there are occasional complaints about the inefficient delivery services.

Recommendations

Primary stakeholders: **WALMART CORPORATE – EMPLOYEES**

(because happy employees make happy customers, leading to positive improvements to Walmart's brand image ☺)

BENEFITS PROGRAMME

Have better employee benefits to attract and retain employees

MANAGEMENT UPLIFT

Consider improving overall management strategy to develop a better company culture

HR POLICIES

Uplift Annual leave and PTO policies. Capitalise on Whistle Blowing policy to protect employees

Recommendations

Secondary stakeholders: **WALMART CONSUMERS**

(because happy customers keep us going everyday 😊)

PROMOTIONS	HOUSE BRANDS	FOOD COURTS
To offer better deals and more Sales to attract customers	To develop a House Brand similar to Costco's Kirkland Signature to increase brand loyalty	To potentially develop 'hot food' stations or food courts that consumers enjoy
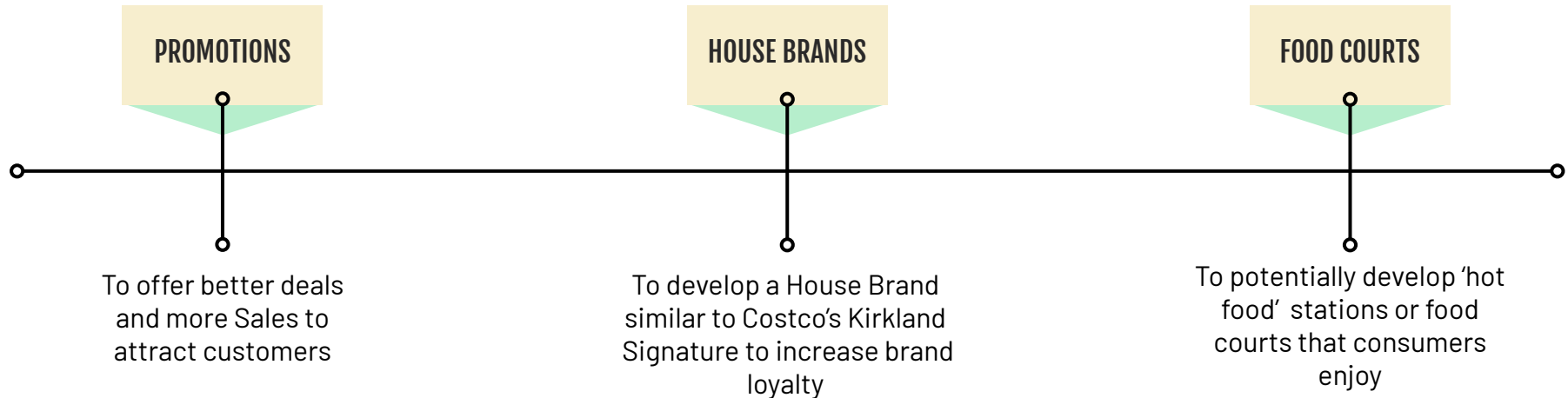
Conclusion

Problem Statement & Objectives	1) To enhance our understanding of Walmart's social media image on Reddit, in comparison to Costco, so as to introduce strategy for improvement. 2) To identify positive and negative feedback from Reddit users regarding both supermarkets, where positive feedback will continue to be reinforced and adopted while negative feedback can be addressed and prevented.

Choice of Model:

Tfidf Vectorizer and Logistic Regression

Accuracy score: 85.6%

ROC–AUC score: 93%

Sentiment Analysis

Recommendations (for Employees):
- Have better benefits to attract and retain employees
- Improve overall management strategy to develop a better company culture
- Uplift Annual leave and PTO policies, and capitalise on Whistle Blowing policy to protect employees

Recommendations (for Customers):
- To offer better deals and more sales
- To develop a House Brand similar to Costco's Kirkland Signature to increase brand loyalty
- To potentially develop 'hot food' stations or food courts that consumers enjoy

Limitations & Future Explorations

Limitations

1. Access to real-time data extraction
   a. As users are constantly sharing new posts on Reddit, it is crucial that we can extract the latest posts to understand how users' impression of the supermarkets have changed overtime.

Future explorations

1. Comparing more subreddit posts of supermarkets in USA to Walmart (Eg. Trader Joe's, Aldi etc.)
2. Instead of just looking into the title & selftext of each subreddit post, we can also look into the comments and upvotes in each post.

APPENDIX

Our baseline accuracy is 51.2%.

	Accuracy Score	F1 Score	AUC Score
Logistic Regression	85%	86%	93%
Random Forest	81%	81%	90%
K Nearest Neighbors	71%	72%	76%