

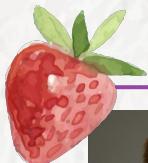
# Walgreens X NW

Assortment Comparison for Emerging  
Superfood Product Trends



# MEET THE NU TEAM

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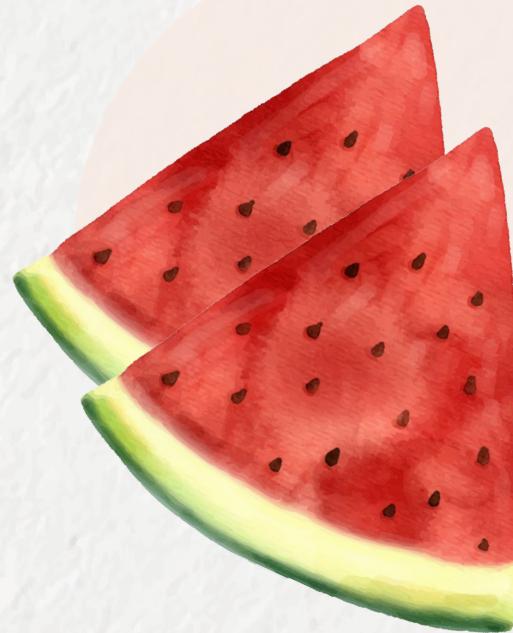


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# TABLE OF CONTENTS

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1. Business Problem
2. Objectives
3. Approach
4. Results
5. Recommendation
6. Q&A



# 01

## BUSINESS PROBLEM



## BUSINESS PROBLEM AREA

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Product mix assortment and selection is a complicated process. **Identifying trending products** early and positioning them correctly is critical to success

**Superfoods** is a growing product area with a **9.2% CAGR**. The global market is expected to reach USD 214.95 billion by 2027. It is important for Walgreens to identify trending superfood products in order to capture the market share as the product category grows



# 02

## OBJECTIVES



# BUSINESS OBJECTIVES

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Compare Walgreens product assortment for superfoods to the trending products in the market:

1. How does the product assortment differ
2. What are the top performing products over the years
3. What opportunities exist for Walgreens to close the superfood product gap among competitors
4. What products are trending in the market



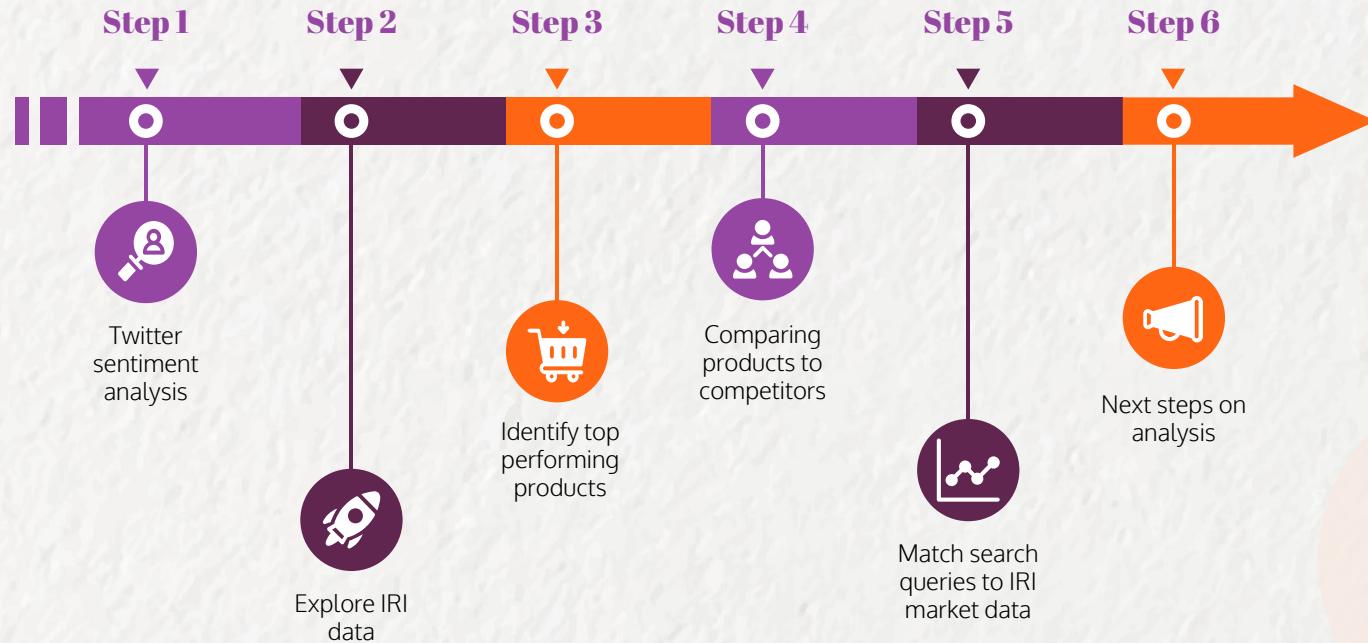
# 03

## OUR APPROACH



# STRATEGY

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# 04-A

## TWITTER RESULTS



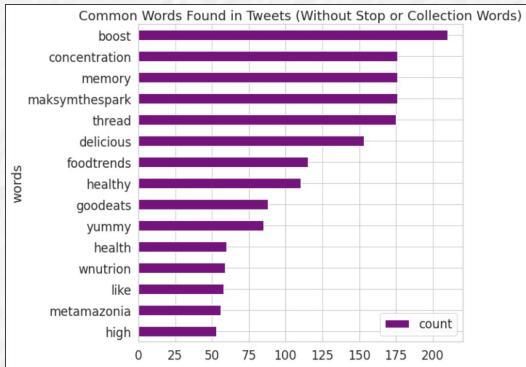
# TWITTER ANALYSIS

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1. Scrape Twitter data
2. Generated bigrams based on the words occurring together frequently

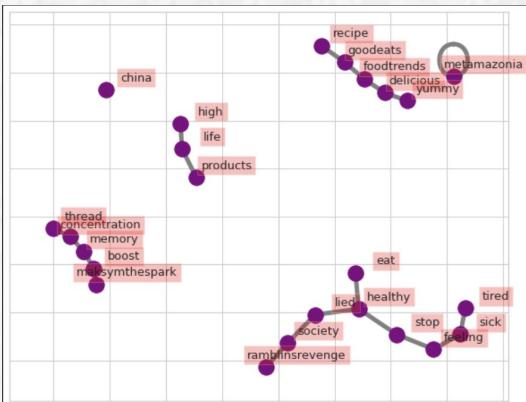


# INSIGHTS



## Most common words found in tweets for hashtag #superfoods

Words commonly associated with super food are more related to their sentiment (benefits or taste) rather than a particular type of food



## Network of words that occurred together in these tweets

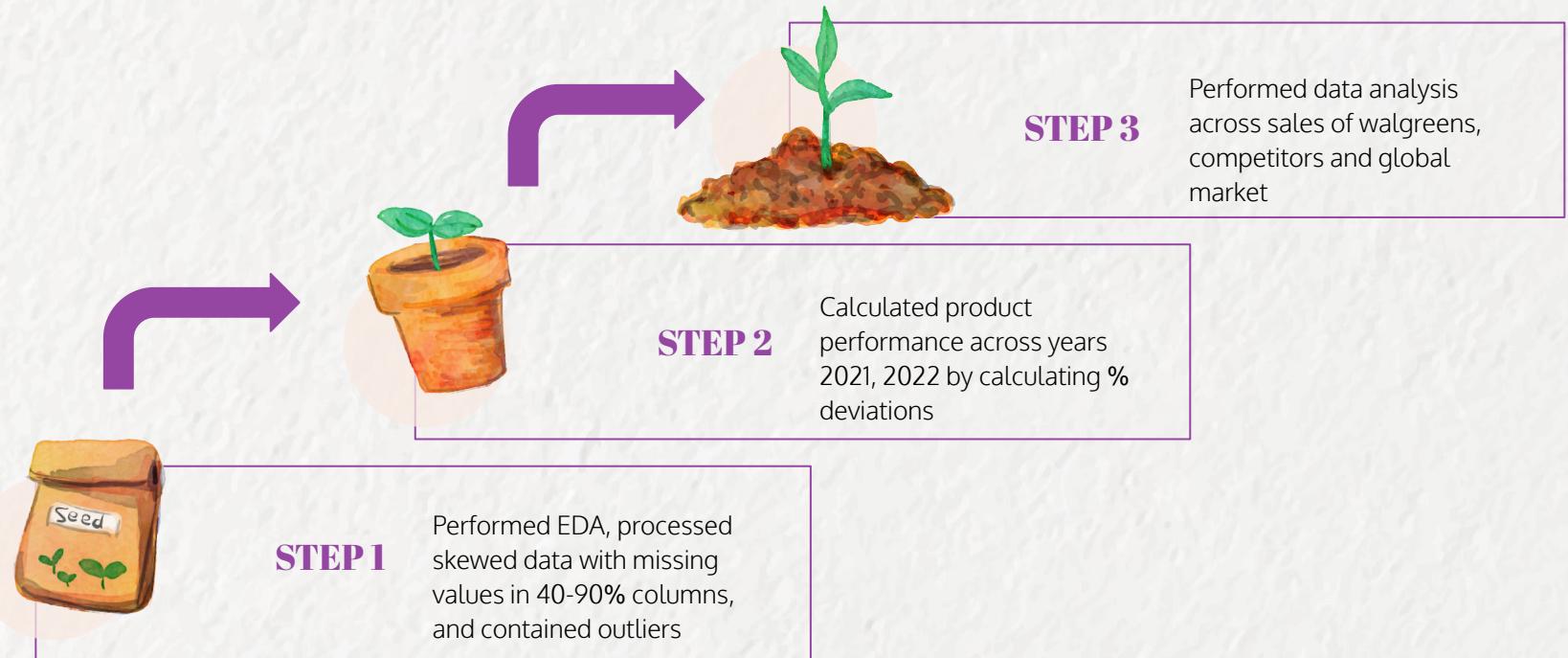
Overall it is seen words related to health are occurring frequently

# 04-B

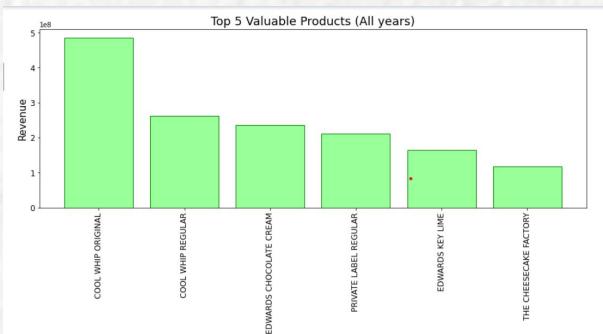
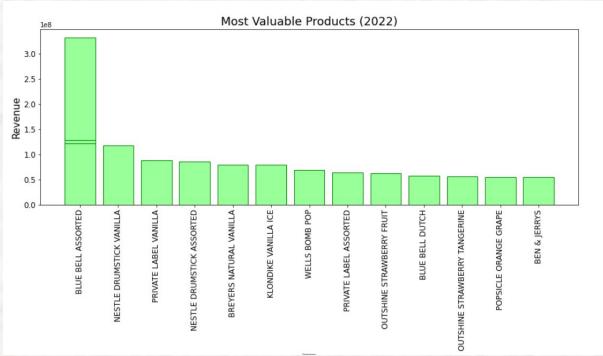
## IRI RESULTS



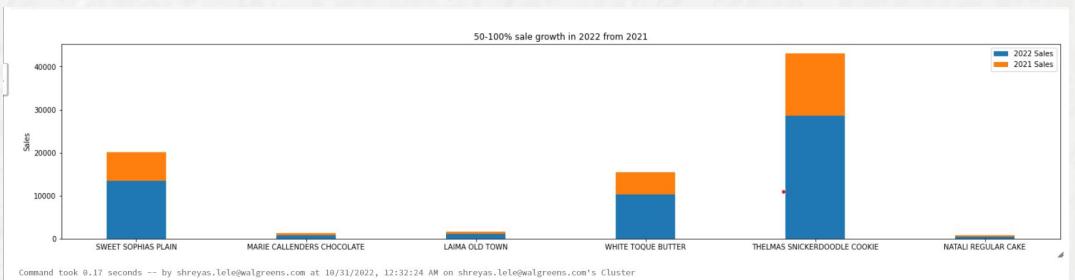
# IRI DATA APPROACH



# INITIAL ANALYSIS



	prd	mulo_sal_2020	mulo_sal_2021	mulo_sal_2022	prd_short	%change_2022	%change_2021
243	BLUE BELL ASSORTED ICE CREAM PLASTIC TUB FROZEN	364382328.0	329060958.0	331896913.0	BLUE BELL ASSORTED	1.0	-1
242	BLUE BELL ASSORTED ICE CREAM PLASTIC TUB FROZEN	113762360.0	112198318.0	126142829.0	BLUE BELL ASSORTED	14.0	-
244	BLUE BELL ASSORTED ICE CREAM PLASTIC TUB FROZEN	116138319.0	110817457.0	121319041.0	BLUE BELL ASSORTED	9.0	-
3832	NESTLE DRUMSTICK VANILLA ICE CREAM SUNDAE NOVELTY	8788554.0	101499554.0	117821367.0	NESTLE DRUMSTICK VANILLA	16.0	1
5389	PRIVATE LABEL VANILLA ICE CREAM NOVELTY SANDWICH	9838995.0	83127173.0	88808617.0	PRIVATE LABEL VANILLA	7.0	-1
3801	NESTLE DRUMSTICK ASSORTED ICE CREAM SUNDAE NOVELTY	69988981.0	82281959.0	85539027.0	NESTLE DRUMSTICK ASSORTED	4.0	1
602	BREYERS NATURAL VANILLA ICE CREAM SCROUND FROZEN	82830458.0	80770169.0	79292369.0	BREYERS NATURAL VANILLA	-2.0	-
3075	KLONDIKE VANILLA ICE CREAM NOVELTY BAR FROZEN	64898348.0	64392898.0	79055988.0	KLONDIKE VANILLA ICE	23.0	-
6302	WELLS BOMB POP CHERRY LIME & BLUE RASPBERRY IC	51611341.0	56059007.0	69001634.0	WELLS BOMB POP	23.0	-
4542	PRIVATE LABEL ASSORTED ICE CREAM NOVELTY CONE	56951847.0	57494832.0	64130198.0	PRIVATE LABEL ASSORTED	12.0	-
4099	OUTSHINE STRAWBERRY FRUIT JUICE NOVELTY BAR & CR	45002699.0	48492332.0	62117237.0	OUTSHINE STRAWBERRY FRUIT	28.0	-
257	BLUE BELL DUTCH CHOCOLATE & HOMEMADE VANILLA ICE	45953382.0	51268811.0	57186347.0	BLUE BELL DUTCH	12.0	1
4103	OUTSHINE STRAWBERRY TANGERINE RASPBERRY FRUIT JUIC	30438009.0	43042980.0	56021182.0	OUTSHINE STRAWBERRY TANGERINE	30.0	4
4461	POPSICLE ORANGE GRAPE & CHERRY ICE POP NOVELTY	37242415.0	37232085.0	54977077.0	POPSICLE ORANGE GRAPE	48.0	-
140	BEN & JERRYS CHERRY GARCIA ICE CREAM ROUND CAR	51758222.0	55272928.0	54916462.0	BEN & JERRYS	-1.0	-



# HIGH GROWTH PRODUCTS

**Product with sales  
more than the median  
value**

Out[64] :

	maj_brn_nme	mulo_sal_2022
218	ALL TWIN CUPS LLC	2.000000e+00
435	THREE TWINS ICE CREAM	8.000000e+00
275	DEEBEES ORGANICS	9.000000e+00
344	MCCONNELLS	9.000000e+00
455	YOPLAIT	9.000000e+00
...	...	...
243	BEN & JERRYS	6.746615e+08
249	BREYERS	7.059932e+08
245	BLUE BELL	7.952708e+08
304	HAAGEN DAZS	9.947744e+08
403	PRIVATE LABEL	1.310916e+09

457 rows × 2 columns

## INSIGHTS FROM ANALYSIS

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### Learnings:

- Social media results can be valuable to understand the sentiment around product buckets. Observing an increase in mentions of keywords is valuable to understand growing sentiment around the product group informing product positioning
- To be able to predict products that are going to trend over time we can look to previous products sales trends and apply them to product mixes. We also look to users search queries to see increasing searches for specific product groups

**04-C**

## **SEARCH QUERY MATCHING**



# SEARCH QUERY APPROACH

## Matching Search queries to IRI data by relevance

### ASSUMPTION:

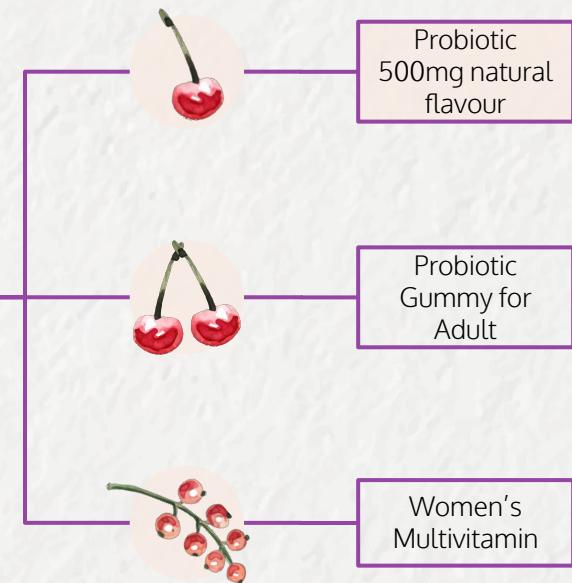
Search term can relate to one/more items

### CHALLENGES FACED

1. Search data preprocessing
2. Memory error - Due to comparison of 2M search queries \* 10k of IRI data

**INPUT**  
Search query  
(probiotics gummies)

**OUTPUT**  
Relevant products in IRI by relevance score: (Probiotic 500mg natural flavour)



95

85

30

# SIMILARITY- FUZZY MATCH

- Fuzzy match is an approximate string-matching technique to match similar data.
- The results show queries raised by customer with the corresponding product match and the degree of similarity with a similarity score out of 100.

	prd_lst	fuzzy match	similarity score
9	Tinted moisturizer	lindi facial moisturizer serum box	56
8	loreal mascara	loreal make up remover	53
13	Shea moisture curl enhancing	nivea facial moisturizer cream plastic container	51
67	gillette men razor	albolene make up remover	50
18	cerave acne	cerave soap bar ct box	50
...	...	...	...
35	Drink	origins well off make up remover	21
87	Doeny	albolene make up remover	19
68	Moochi	cetaphil soap bar ct box	18
90	gua	cetaphil regular soap bar ct box	16
54	Sit	basis soap bar ct box	15

# SIMILARITY- COSINE

- The method incorporated usage of n-grams (in our case 3) to create 3 character sub-words in user comments and product name over which cosine similarity is calculated.
- Cosine similarity is a vectorized way of finding similarity between two words or sub-words and is shown in our table using the similarity column.
- Overall, for our case, we see that fuzzy match could provide better matches than cosine similarity but this can be improved by experimenting with different number of n-grams.

	comments	product	similairty
45	Head & Shoulders Classic Clean Anti-Dandruff Paraben Free Shampoo	dhc facial cleanser lotion plastic bottle in box shelf stable	0.355165
82	Alka-Seltzer Plus Severe Cold and Flu Day and Night Powder Berry	dhc facial cleanser lotion plastic bottle in box shelf stable	0.354783
21	icy hot	anti age treatment age treatment serum plastic bottle pump in box	0.324974
83	Alka-Seltzer Plus Severe Cold and Flu Day and Night Powder Berry	absolute new york fresh aloe facial cleanser tissue resealable pouch shelf stable	0.315862
84	Alka-Seltzer Plus Severe Cold and Flu Day and Night Powder Berry	eucerin redness relief facial moisturizer cream natural licotone sensitive box	0.311388
85	Alka-Seltzer Plus Severe Cold and Flu Day and Night Powder Berry	acure welcome to skin wellness facial moisturizer cream cica argan oil all type plastic tube in box	0.311367
86	Alka-Seltzer Plus Severe Cold and Flu Day and Night Powder Berry	diamond wipes facial cleanser wipe plastic packet shelf stable	0.309775
87	Alka-Seltzer Plus Severe Cold and Flu Day and Night Powder Berry	first aid beauty facial moisturizer cream oil free sensitive plastic bottle pump	0.307078
55	manual blood pressure monitors	dhc facial cleanser lotion plastic bottle in box shelf stable	0.300404
46	Head & Shoulders Classic Clean Anti-Dandruff Paraben Free Shampoo	bliss makeup melt facial cleanser jelly plastic bottle shelf stable	0.297240

		<b>Text_A</b>	<b>Text_B</b>	<b>Cosine</b>
321		anti age treatment age treatment serum plasti...	treacemm leave in treatment	0.455229
1321		anti age treatment age treatment serum plasti...	treacemm leave in treatment	0.455229
7688		buf puf singles regular facial cleanser sponge...	olay gentle facial cleansing cloth	0.435194
8685		wishes facial cleanser foam plastic tube shel...	Olay cleansr face wash	0.441367
9240		wishes facial moisturizer serum dropper bottle	Loreal triple moisturizer	0.441942
...		...	...	...
93692		ahava time to clear facial cleanser mud plasti...	olay facial cleansing clothe	0.405442
95879		ahava time to smooth dark spot corrector age t...	dark spot Corrector	0.438397
96321		ahava time to smooth wrinkle treatment age tre...	treacemm leave in treatment	0.466321
97321		ahava dead sea osmoter moisturizing anti age t...	treacemm leave in treatment	0.420517
98321		ahava time to smooth anti age treatment eye cr...	treacemm leave in treatment	0.430265

64 rows × 3 columns

# JACCARD

In this method, we try to calculate similarity by drawing a venn diagram over the root words.  
Repeated words do not affect the result as in the case of cosine similarity  
For our case, jaccard similarity produces poor results when compared to fuzzy

out[42]:

		Text_A	Text_B	Jaccard
18688		reshma facial cleanser clay plastic bottle in ...	olay gentle facial cleansing cloth	0.315068
37795		skinmedica facial moisturizer cream plastic jar	crystal moisturizer li	0.301887
38240		skinmedica facial moisturizer cream plastic tu...	Loreal triple moisturizer	0.327273
39240		skinmedica facial moisturizer cream plastic tu...	Loreal triple moisturizer	0.327273

05

## RECOMMENDATIONS



# RECOMMENDATIONS

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Evaluating Results:

- Revenue is not the only consideration - there is also *profit*
- Walgreens must also keep in mind its relationships with existing vendors that provide potentially competing products
- Merely replicating the assortment of competitors might ignore products that Walgreens is uniquely positioned to sell versus its competitors



# RECOMMENDATIONS

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## Scaling and Automating:

- This type of analysis can be automated and expanded using more compute resources
- Running code dynamically on IRI and search data can identify assortment gaps
- One possible iteration would be a dashboard that incorporates this data, as well as associated costs and potential profit, to enable Walgreens to make assortment decisions



# Q & A



THANK YOU

