




Background

- This is a slide deck I did for a separate assessment. I analyzed data from a mobile app for reviewing plant-based products (food, clothing, restaurants).
- A dataset that comprises product reviews aggregated from the mobile app was provided.
- Dataset variables:
 - reviewText, reviewBrand, brandCategory, country, reviewDate, likesCount, commentsCount
- Objectives:
 - Extract 2-3 interesting insights
 - Present findings to a non-technical audience

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Analysis of product review data from Herbist



Content

- Overview of data
- Veganism related trends and Herbist's outreach
- The impact of #hashtags
- Polarity of reviews and commonly used words

Overview of Data

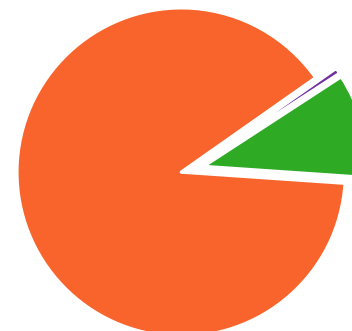
5000 product reviews

Over the course of **3 months** (Jan – Mar 2021)

On **2684** unique brands

Spanning **3 categories**:

Food
89.2%
(4458)



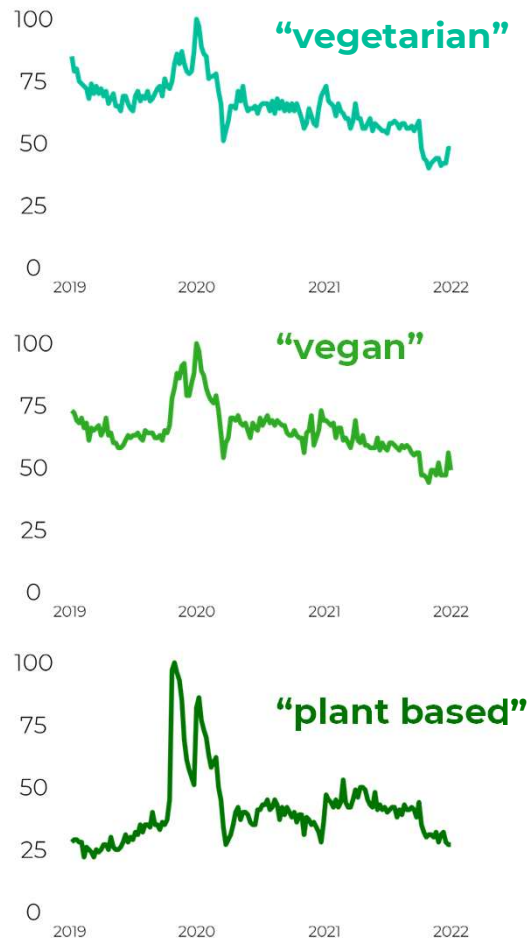
Apparel
0.6%
(29)

Health & Beauty
10.3%
(513)

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1. Veganism related trends and Herbist's outreach

Veganism trends



Worldwide Google search trends (2019-2021)

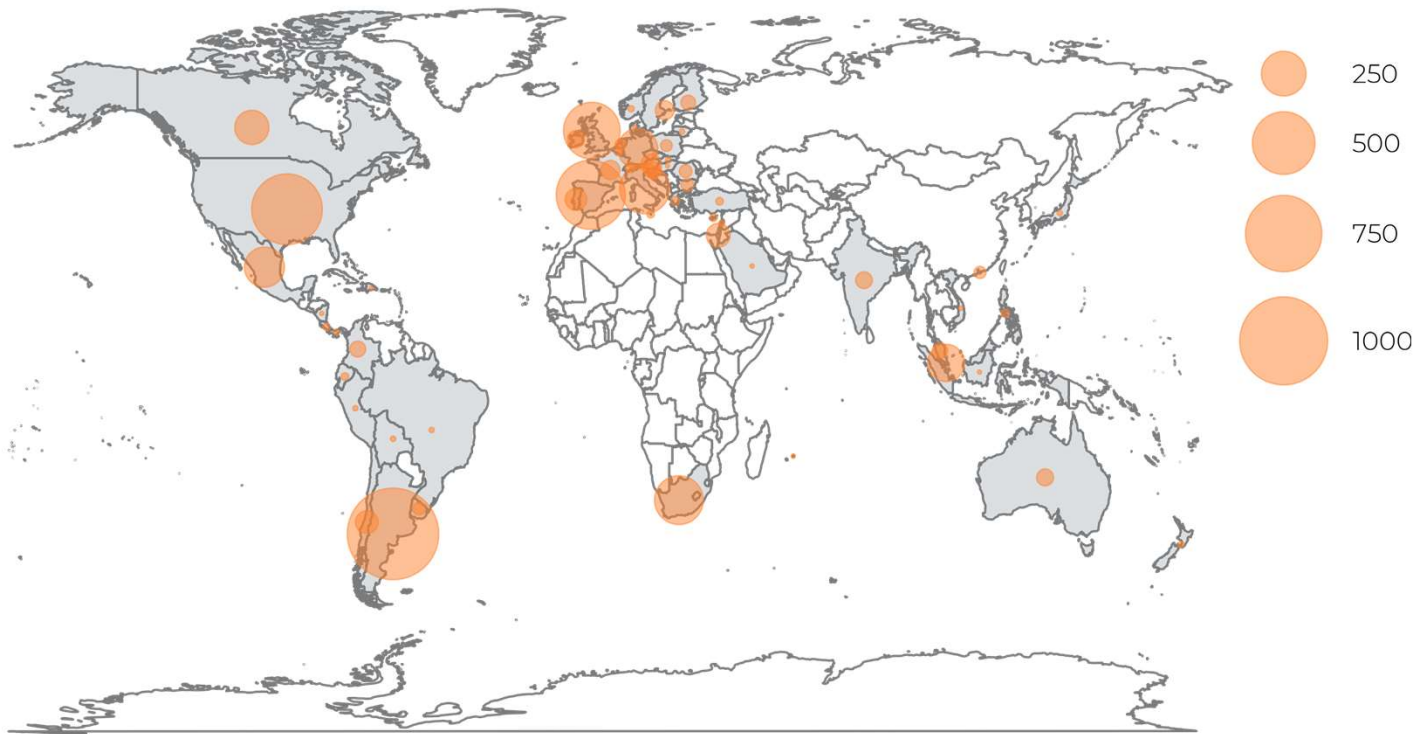
- Interest in "vegetarian", "vegan" and "plant based" seems to be on the decline.
- However, there have been several related breakout search terms as veganism becomes more commonplace in today's society.
 - E.g., Vegan burgers from fast food chains

Countries with high search volumes:

"vegetarian"	SG, NZ, AU, UK, IE
"vegan"	UK, AU, NZ, CA, IE
"plant based"	NZ, AU, US, CA, SG

Despite higher search volumes, presence of **Herbist** in **AU**, **NZ** and **IE** remain low.

Herbist's Reach



Greyed areas indicate countries which **Herbist** have reached

Orange circles illustrate the number of reviews from a country

Top 5 countries using **Herbist**

	Country	Reviews
1	Argentina	1084
2	USA	641
3	Spain	613
4	UK	408
5	Italy	316

Herbist has reached a total of **58** countries.

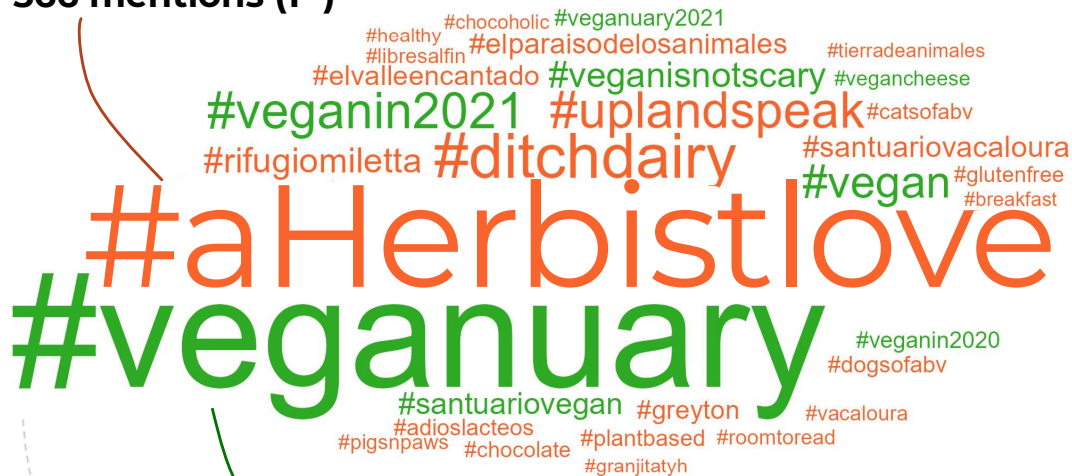
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2. The impact of #hashtags

Wordcloud of the top 30 #hashtags

9/35 hashtags contain the word **vegan**

566 mentions (1st)



554 mentions (2nd)

#ditchdiary
#uplandsspeak
#veganin2021

89 mentions (3rd)
58 mentions (4th)
58 mentions (4th)

- **1544 (31%)** reviews have at least one hashtag
- **512** unique hashtags
- Reviews with hashtags garner more likes and comments!

With vs Without

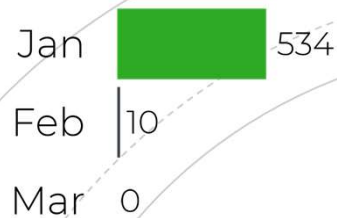
Mean likes: **3.65** vs **9.11**

Mean comments: **0.19** vs **0.77**

Hashtags boost engagement!

A closer look at #veganuary

No. of reviews with #veganuary



No. of reviews



544 mentions

98% of the mentions were in January as **#veganuary** encourages people to follow a vegan lifestyle for the month of January.

Total number of reviews in January is higher than the subsequent two months! This is likely due to **#veganuary**

Top words associated with #veganuary

like, good, taste, vegan, love, flavo(u)r, great, product, buy, delicious, chocolate, sweet, eat, bit price, try, think, brand, texture, nice, super, time, find

Trending events/hashtags increases activity on **Herbist**.
Encouraging these trends will allow **Herbist** to reach more people!



3. Polarity of reviews and commonly used words

Note:

~**50%** of the reviews were in another language
and were translated to English before analysis

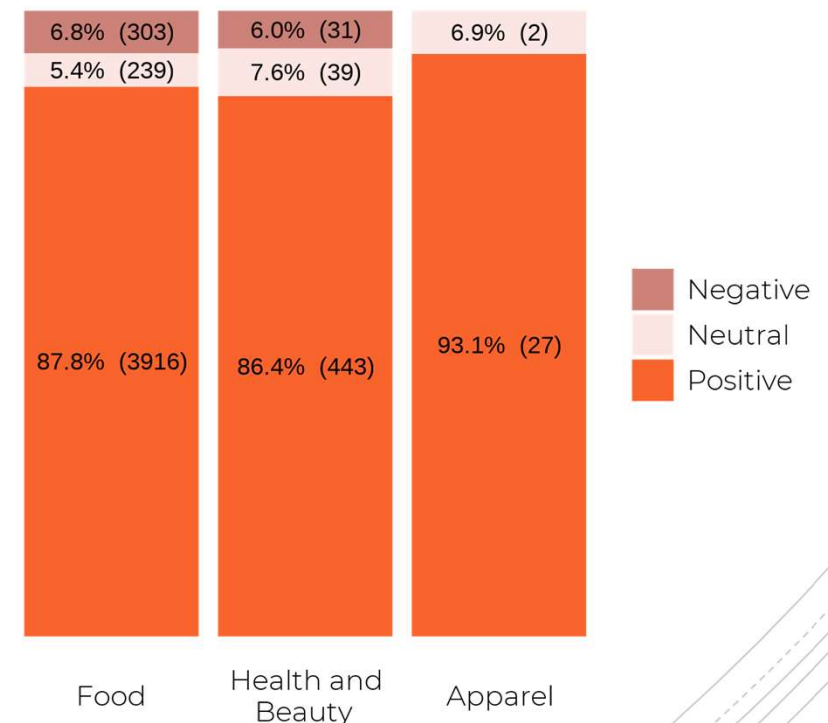
Polarity of reviews

Sentiment analysis is conducted using spaCyTextBlob in Python

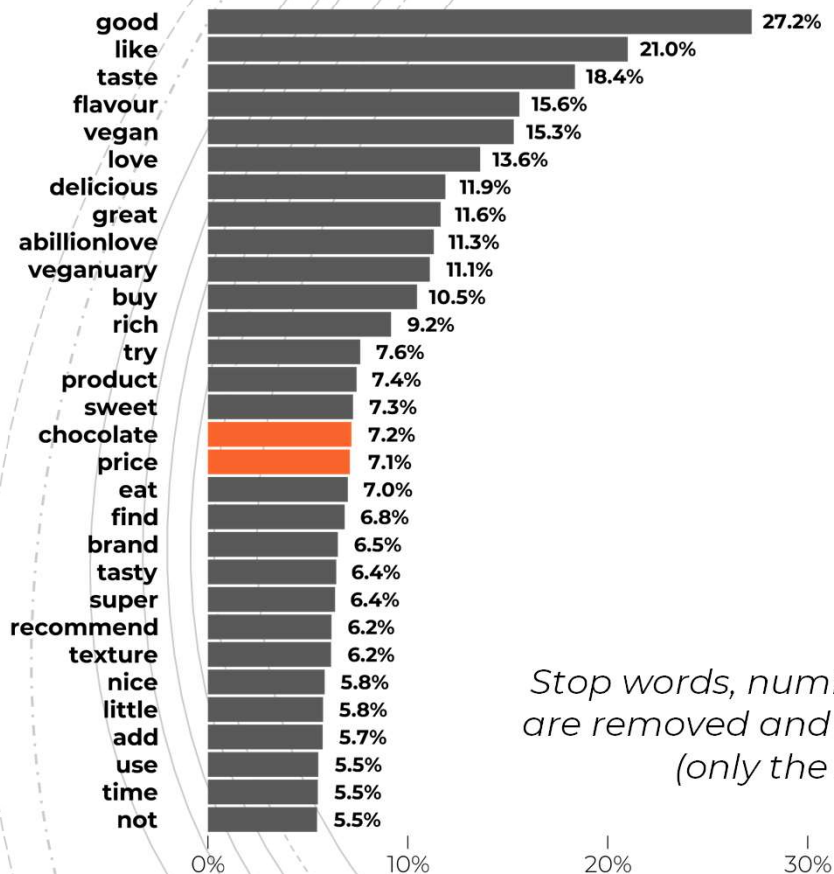
- Polarity of reviews range from: **-1 (negative) to +1 (positive)**
- Majority (**93.3%**) of the reviews are positive. **334/5000 (6.7%)** reviews have a negative polarity.
- Negative reviews have a mean polarity of **-0.173**. Positive reviews have a mean polarity of **0.408**.
- Polarity of reviews do not vary much across the different categories.

Most reviews are positive.
The negative reviews are only mildly negative.

Polarity of reviews (N = 5000) across categories



Top 30 words present in reviews



Top 30 words present in reviews (N = 5000)

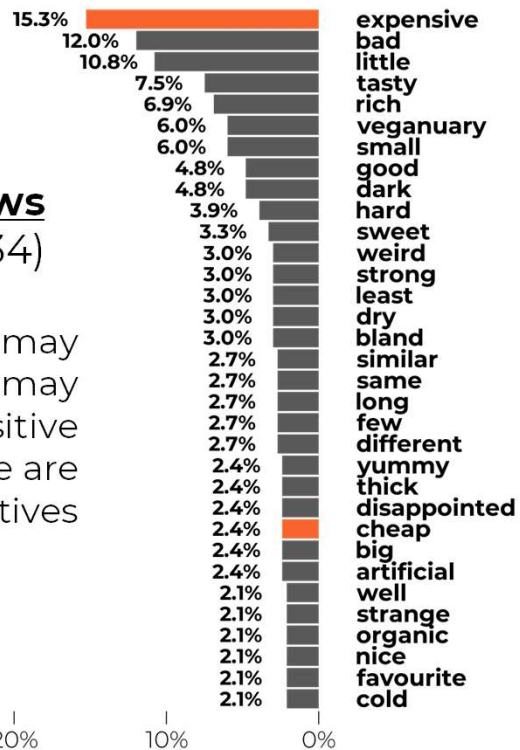
- Most words are positive.
- **“chocolate”** is the only food item that made the list!
- Words relating to price come up often (see next slide)

Stop words, numbers and punctuations are removed and the text is lemmatized (only the root word is extracted)

Top 30 adjectives present in reviews

Negative reviews

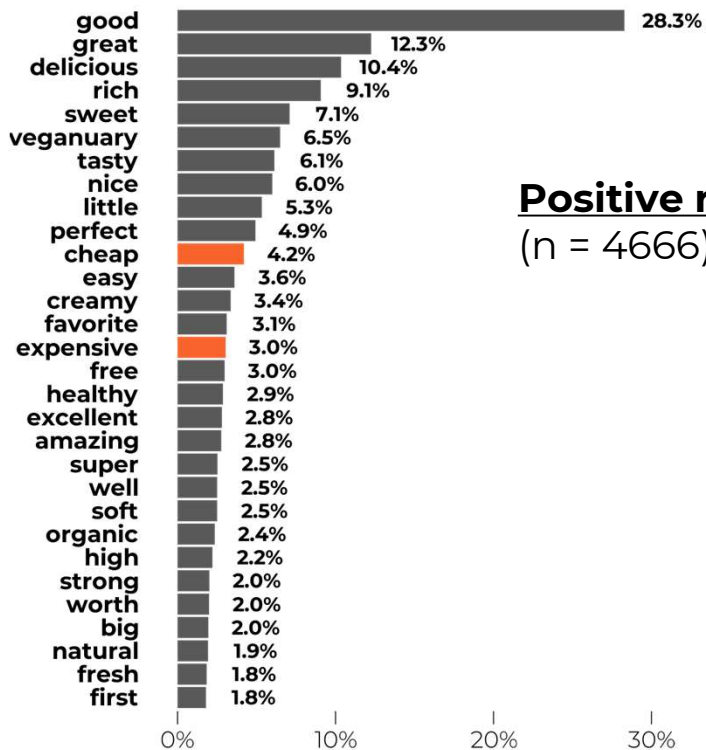
(n = 334)



Though overall sentiment may be negative, the review may also contain positive descriptions hence there are still some positive adjectives

Positive reviews

(n = 4666)



Price is often brought up in reviews: **'price'** (earlier graph), **'cheap'**, **'expensive'**

Suggested improvements: (1) Encourage reviewers to share item prices by adding a 'price' field;
(2) Allow filtering based on prices



Thank you!