# Pfizer BioNTech Vaccine Twitter Analysis

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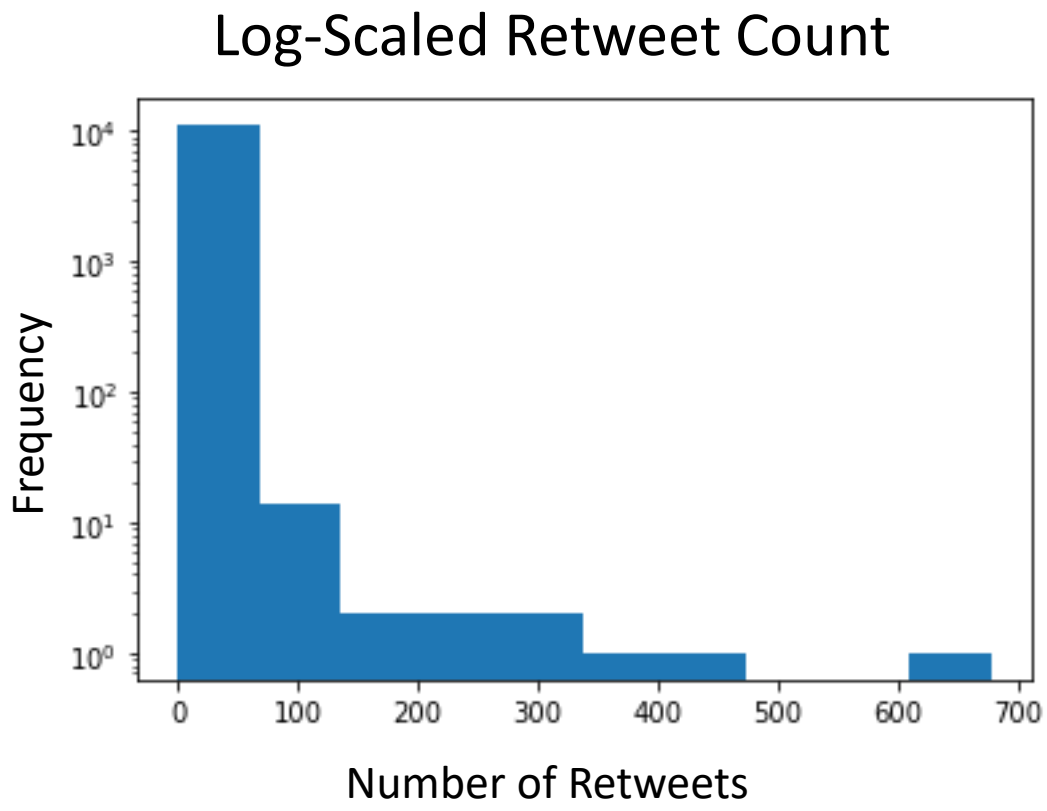
# Introduction

- The polarization of opinions about vaccination has become more evident than ever
- Ease of access of communication provided by Twitter
- Suitability for natural language processing

# Data

- 10,000+ recent tweets about Pfizer BioNTech covid vaccine
- Collected using #PfizerBioNTech hashtag
- Tweet data include: text, user information, date, verification status
- Retweets distribution



# Anatomy of a Tweet

User: “Marketing dude, tech geek, heavy metal & '80s music junkie. Fascinated by meteorology and all things in the cloud. Opinions are my own.”

Text: “While the world has been on the wrong side of history this year, hopefully, the biggest vaccination effort we've ever known will put us back on the right one #covid19 #supplychain #logistics #vaccine #unitedstates #pandemic #pfizerbiontech”

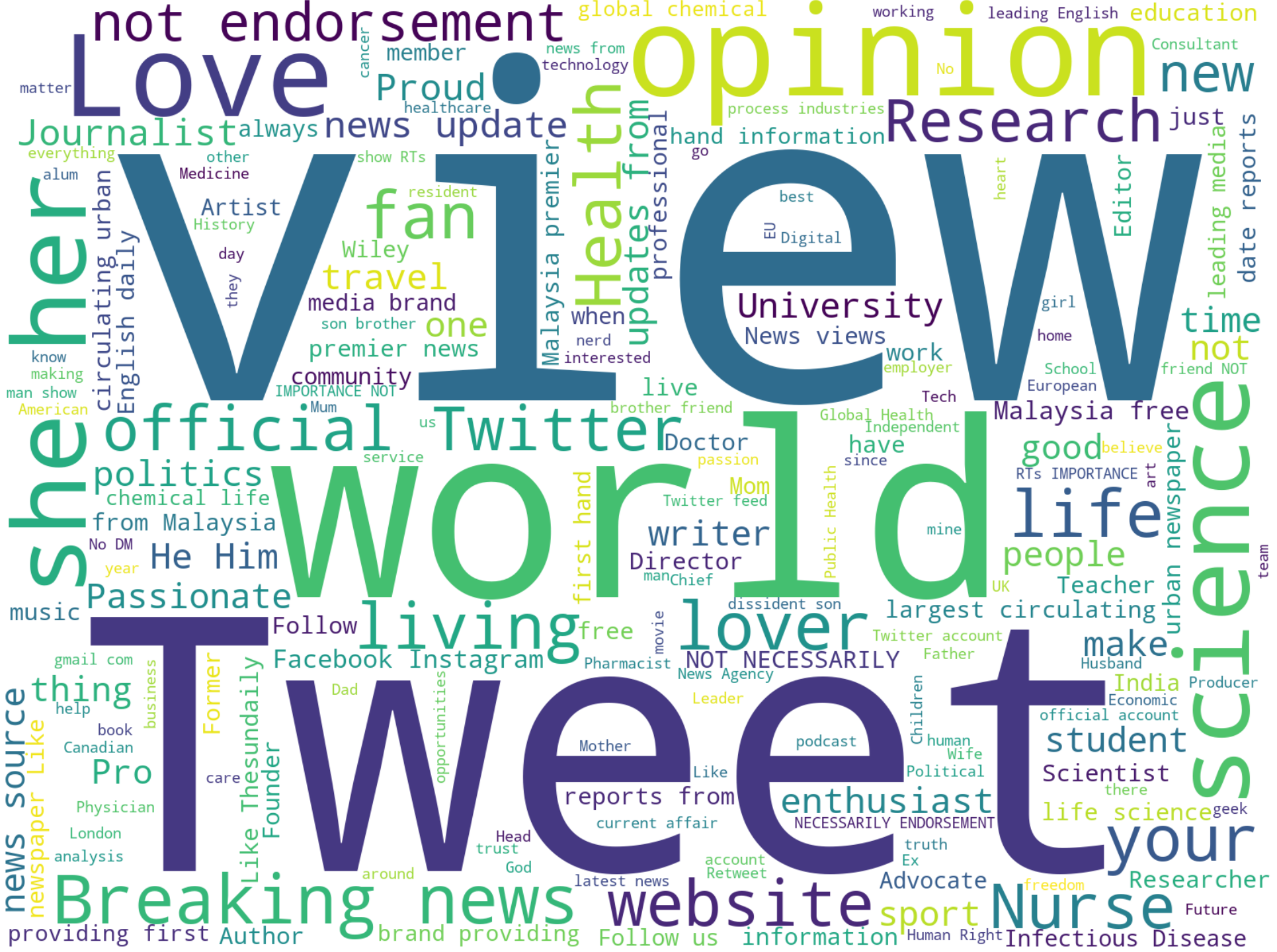
| | |
|---|---|
| id | 1338158543359250433 |
| user_name | Albert Fong |
| user_location | San Francisco, CA |
| user_description | Marketing dude, tech geek, heavy metal & '80s ... |
| user_created | 2009-09-21 15:27:30 |
| user_followers | 834 |
| user_friends | 666 |
| user_favourites | 178 |
| user_verified | False |
| date | 2020-12-13 16:27:13 |
| text | While the world has been on the wrong side of ... |
| hashtags | NaN |
| source | Twitter Web App |
| retweets | 1 |
| favorites | 1 |
| is_retweet | False |

# Methodology

Tfidf Vectorizer on user description and text

NMF topic modeling

Sentiment Intensity Analyzer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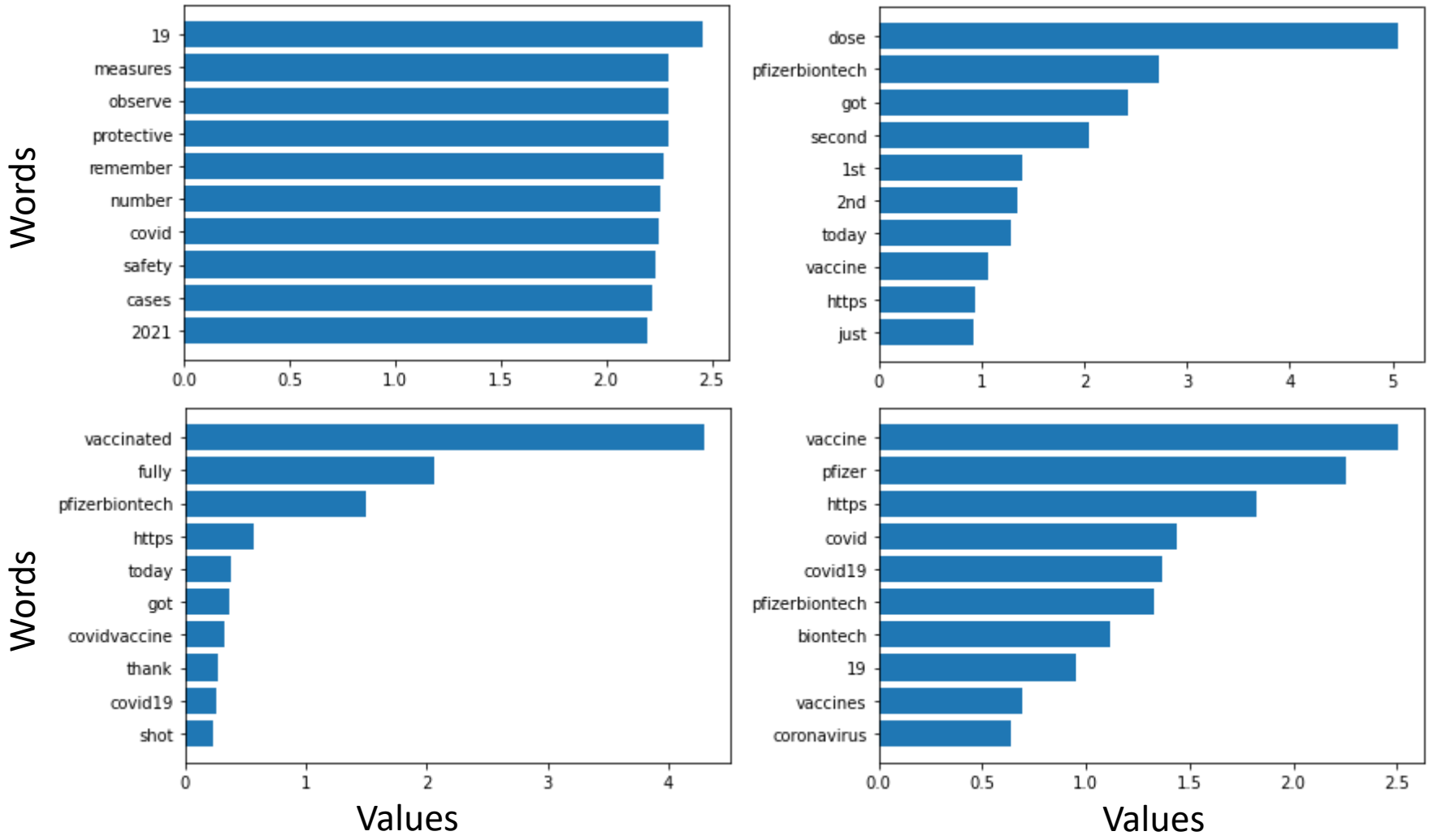
# Topic Modeling



# Sentiment Analysis

- Text: While the world has been on the wrong side of history this year, hopefully, the biggest vaccination effort we've ever known will put us back on the right one #covid19 #supplychain #logistics #vaccine #unitedstates #pandemic #pfizerbiontech

Sentiment Scores

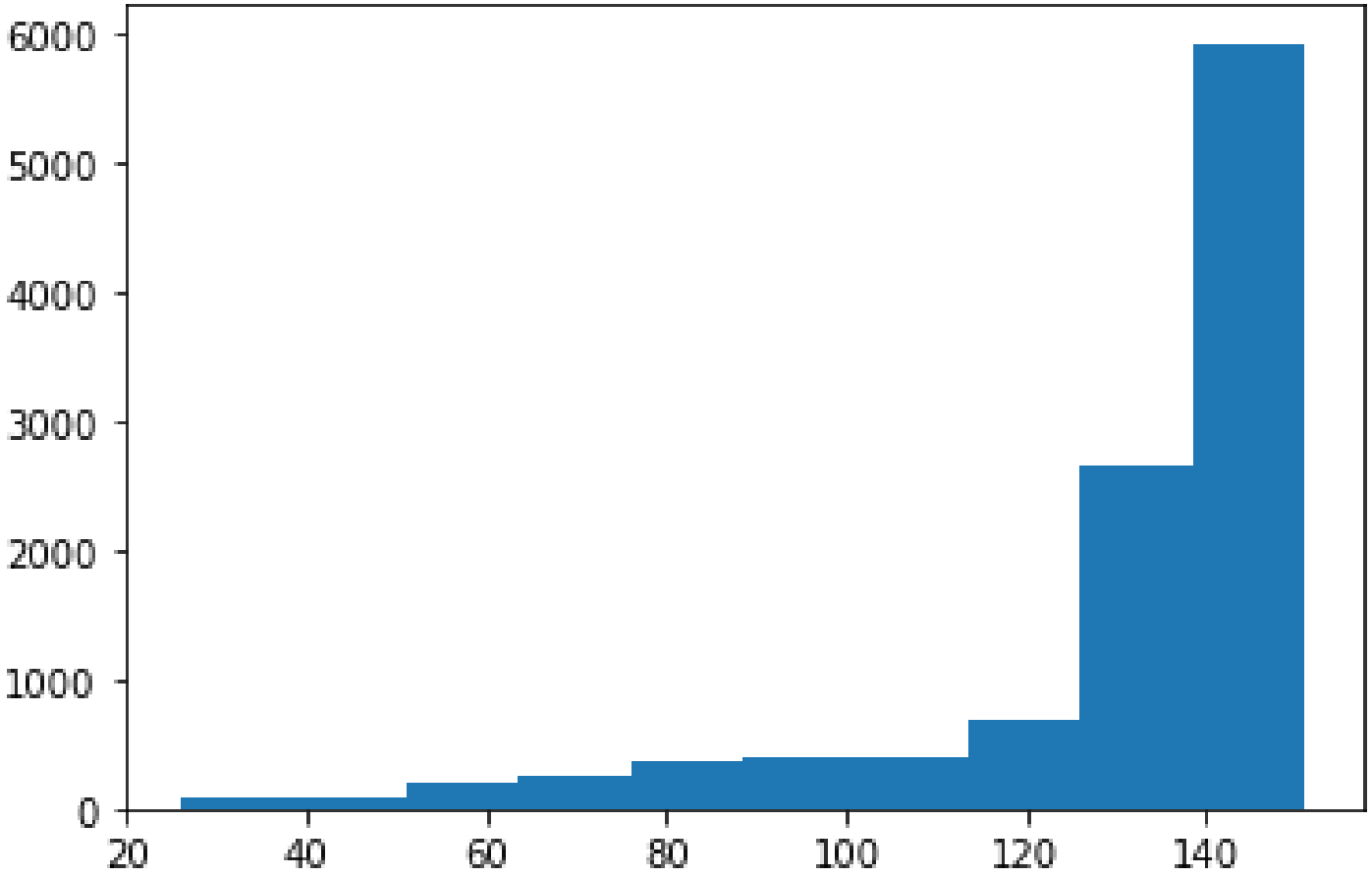
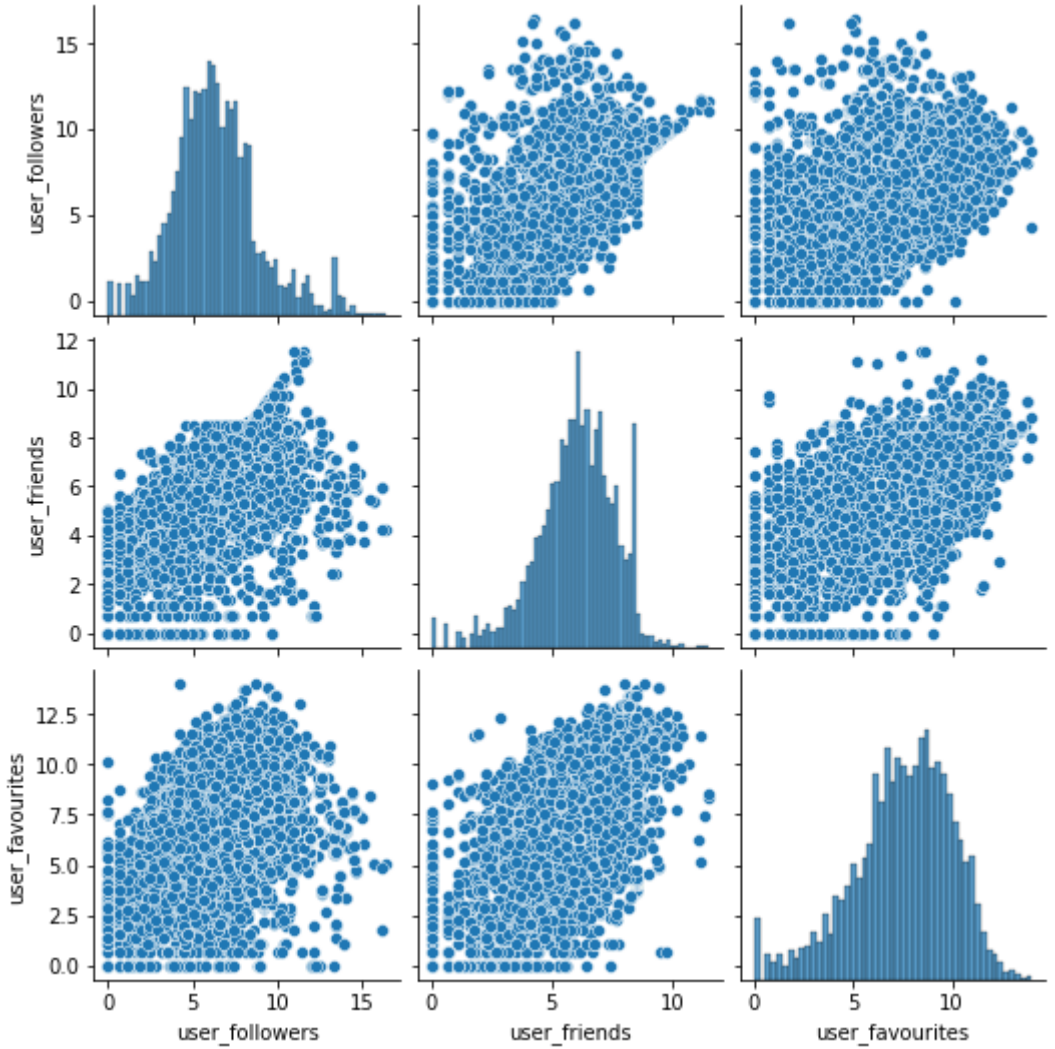
| | Negative | Neutral | Positive | Compound |
|---|---|---|---|---|
| 1 tweet | 0.125 | 0.766 | 0.109 | -0.1027 |
| 1,000 tweets | 0.052 | 0.832 | 0.117 | 1.0 |

# Conclusions

- Diversity of Twitter users
- Topic overlap due to subject specificity
- Vaccine tweets tend to be positive

# Appendix

# Tweet length histogram



# User info pair plot