

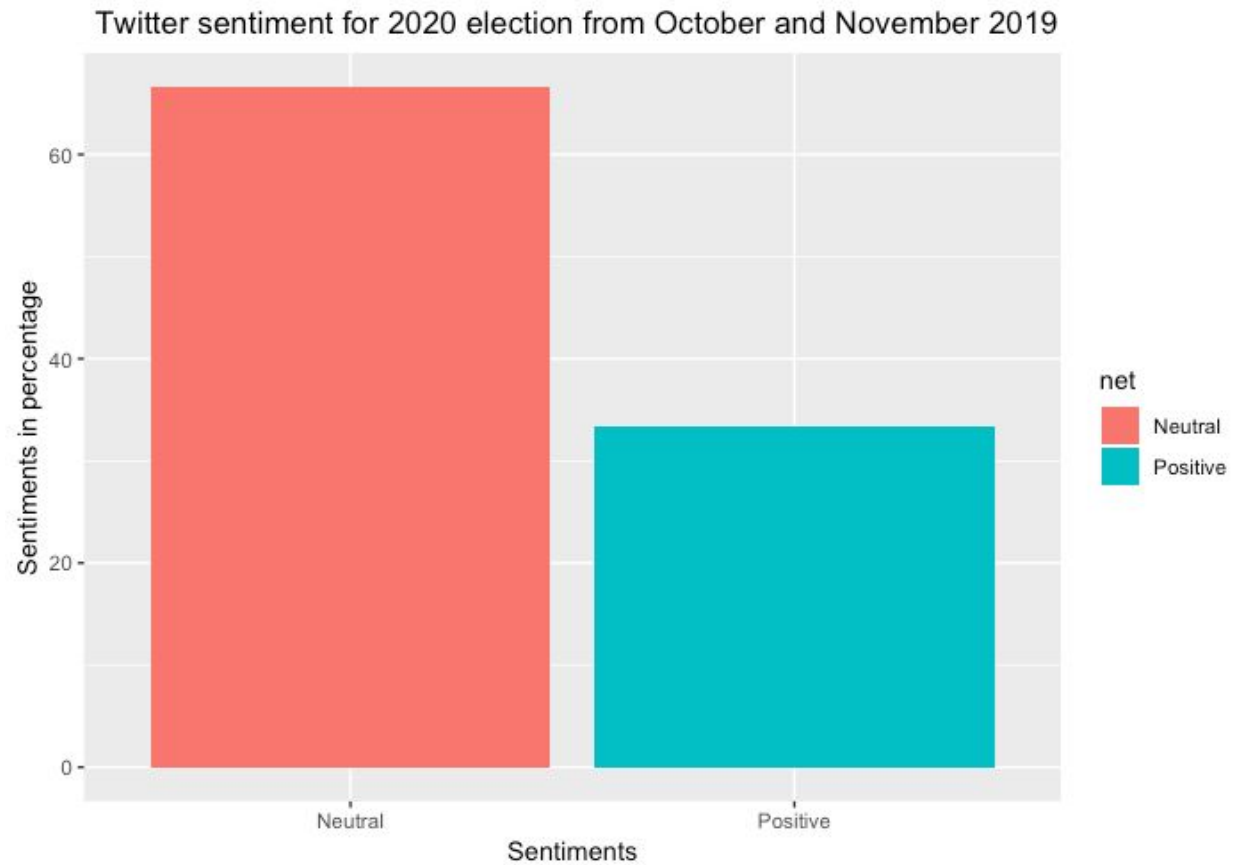
Twitter Sentiment Analysis with R

Goal: With the 2020 Election approaching, this project aims to perform sentiment analysis to have an overview of people's attitude toward the election. The lexical analysis that we utilize can be used to predict the sentiment of tweets and subsequently express the opinion graphically through data visualization.

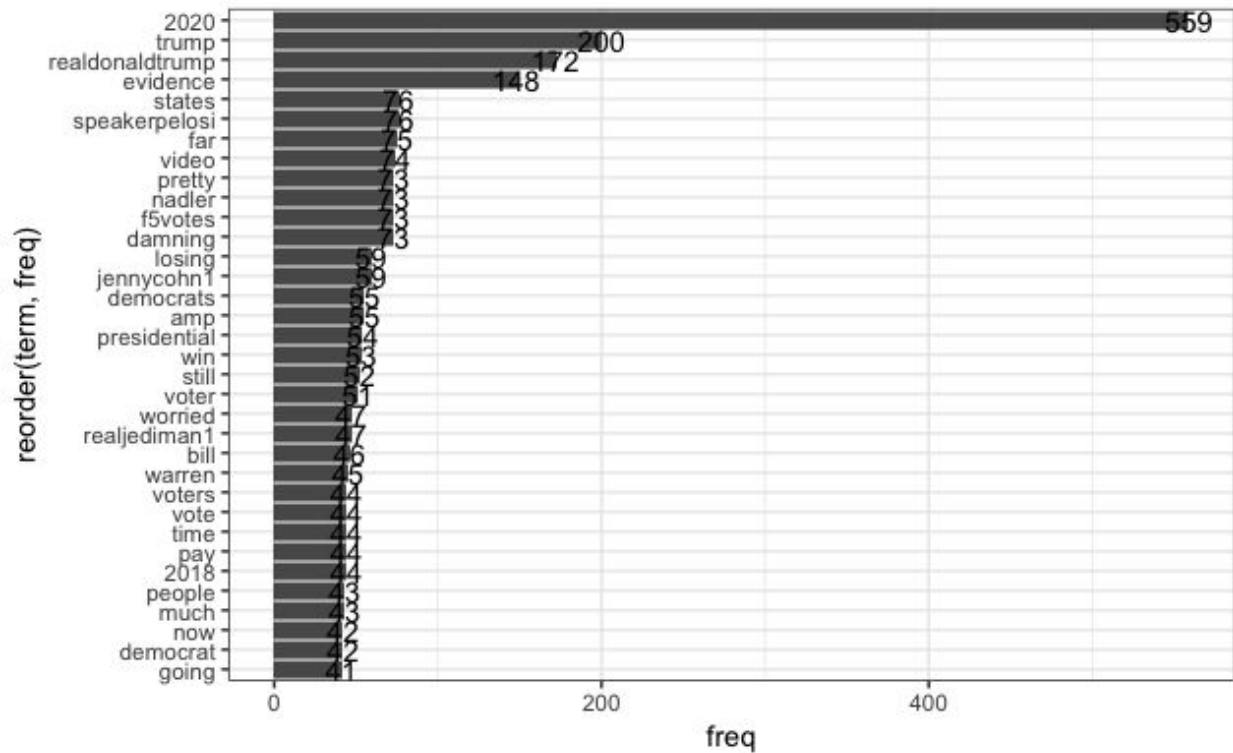
Flow of Data Analysis:

1. Twitter Authentication
 - Create Twitter application
 - Used twitterR to provide an interface to the Twitter web API
 - Create twitter authenticated credential object, It is done using consumer key and consumer secret, access token, access secret.
2. Text Extraction from Twitter
 - Select tweets that we want to research by using the keyword "2020 election."
3. Data Cleaning
 - Remove emotions, URLs, punctuations, stop words and extra white spaces
 - Convert tweets to lower case
4. Database Loading
 - Load the database containing positive and negative words into R. This is used for Lexical Analysis, where the words in the tweets are compared with the words in the database and the sentiment is predicted.
 - Add extra words into the database based on the context we are studying.
5. Lexical Analysis
 - By comparing uni-grams to the pre-loaded word database, tweets are assigned sentiment scores - positive, negative or neutral and overall score is calculated.
 - Calculate sentiment scores
 - Display the proportion of various sentiments (positive, negative and neutral)
6. Data Visualization

Visualization Excerpts



Observation: It's shown in the graph that negative sentiment is missing. Meanwhile, Neutral: Positive = 2: 1. We imply that most people on Twitter do not hold negative attitude toward 2020 election.



Observation: This graph shows what people tweets most on the topic of 2020 election. Besides “2020”, the top three most frequently words appear in tweets are “trump”, “realdonaldtrump” and “evidence.” We also observe that a number of names/users such as Jenny Cohn, speakerpelosi, f5vites and RealJediman. To have further understanding, it’s necessary to research on these people.

