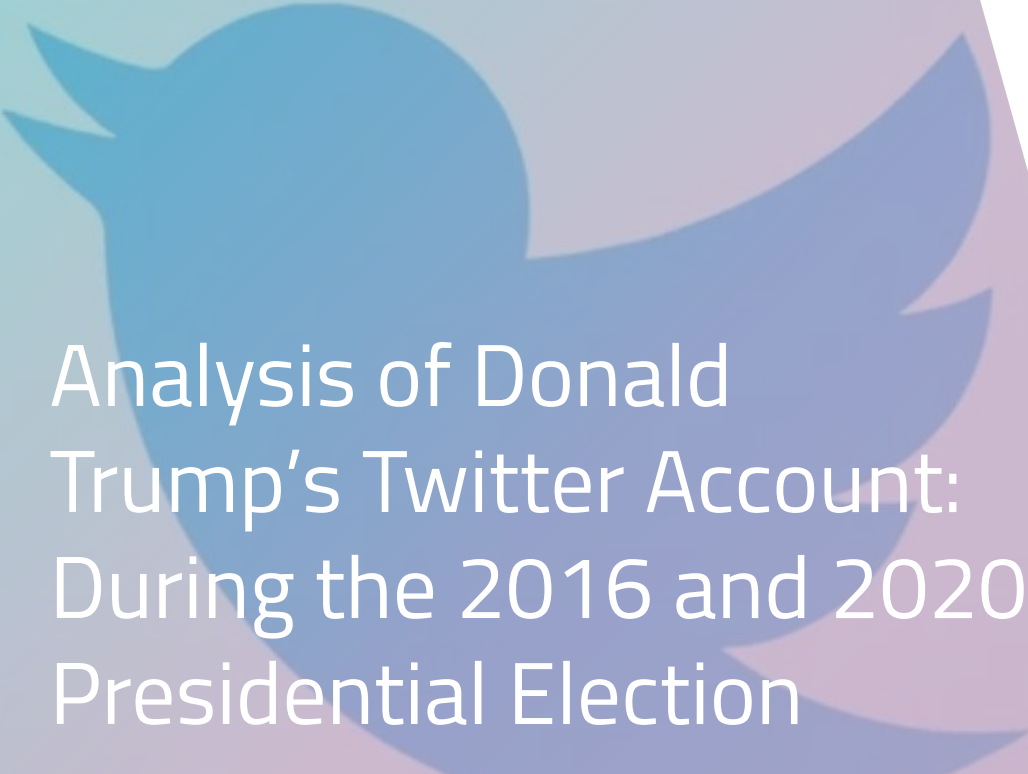"He needs to tweet like we need to eat."
-Kellyanne Conway, former Senior Counselor

Analysis of Donald Trump's Twitter Account: During the 2016 and 2020 Presidential Election

Rachel Regberg

Dataset

Gathered from Trump Twitter Archive (@realDonaldTrump)

- 2016 dataset contains 4,225 tweets

- 2020 (up to October 24th) dataset contains 10,263 tweets
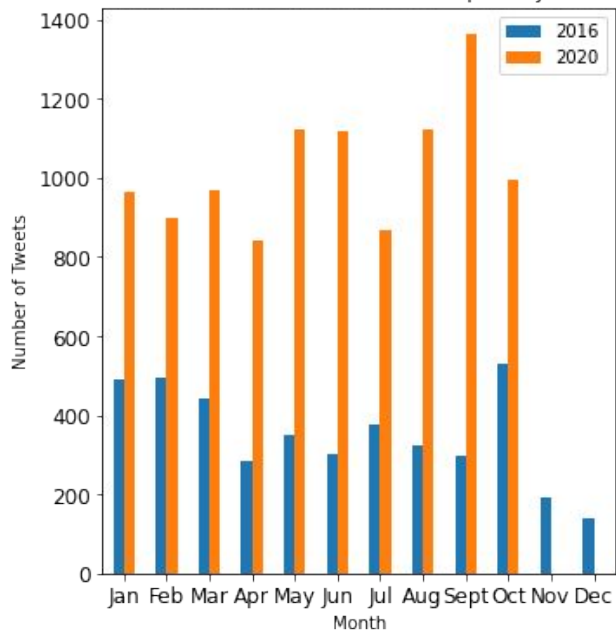
Original Variables

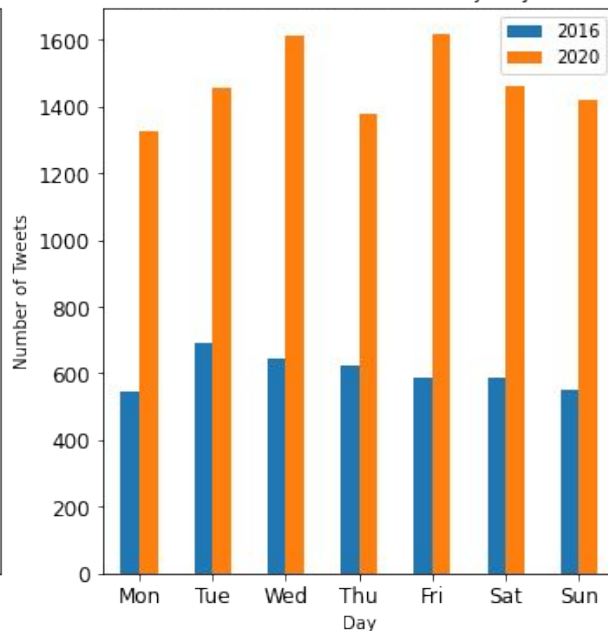| Variable	Data Type	Definition
source	Object(text)	The platform used to post the tweet
id_str	Int64	Identifying number for the tweet
text	Object (text)	The text of the tweet
created_at	Object (datetime)	The date and time the tweet was posted
retweet_count	Int64 (Number)	How many times the tweet was retweeted
favorite_count	Int64 (Number)	How many times the tweet was favorited
is_retweet	bool (True/False)	If the tweet was a retweet

Calculated Variables

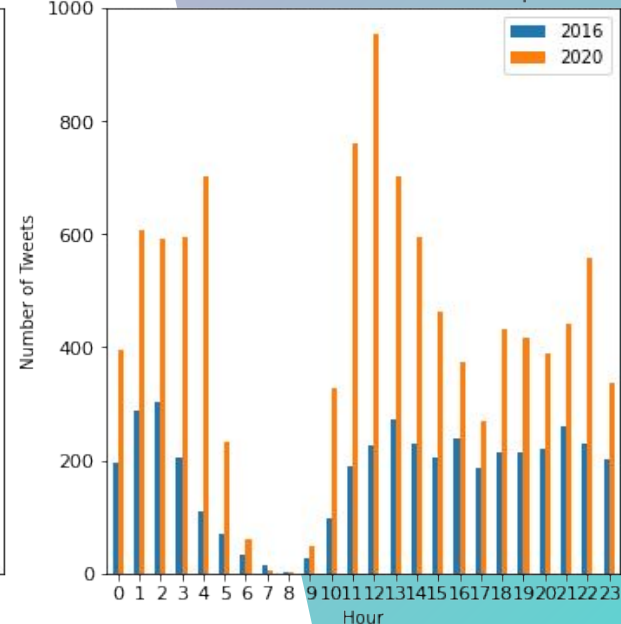| Variable	Data Type	Definition
Image	bool (True/False)	If the tweet contained an image or not
clean_text	Object (text	Cleaned text of the tweet
mentioned	Object (text)	The handle of who was mentioned
hashtags	Object (text)	The text of the hashtag(s)
character_len	Int64 (Number)	Character length of tweet
word_count	Int64 (Number)	Word count of tweet
tweet_year	Int64 (Number)	The year of the tweet
blob_polarity	Int64 (Number)	TextBlob polarity score
blob_subjectivity	Int64 (Number)	TextBlob subjectivity score
TextBlob	Object (text)	TextBlob Sentiment
TextBlob_Subjectivity	Object (text)	TextBlob Subjectivity
neg	Int64 (Number)	Vader negative score
neu	Int64 (Number)	Vader neutral score
pos	Int64 (Number)	Vader compound score
compound	Int64 (Number)	Vader compound score
VADER	Object (text)	Vader Sentiment
Topic_LDA	Int64 (Number)	LDA Topic
Topic_NMF	Int64 (Number)	NMF Topic

2016 & 2020 Total Number of Tweets per day of Month

2016 & 2020 - Total Number of Tweets by Day of the Week

2016 & 2020 - Total Number of Tweets per Hour

Month

2016 → average 325 tweets per month
- ↑ October: 530 tweets
- ↓ December: 138 tweets

2020 → average 1,026 tweets per month
- ↑ September: 1,363 tweets
- ↓ April: 840 tweets

Week

2016 → average 81 tweets per week
- ↑ Tuesday: 692 tweets
- ↓ Monday: 546 tweets

2020 → average 197 tweets per week
- ↑ Friday: 1,616 tweets
- ↓ Monday: 1,324 tweets

Day

2016 → average 12 tweets per day

2020 → average 28 tweets per day

Hour

2016 →
↑ 2:00AM ↓ 8:00AM

2020 →
↑ 12:00PM ↓ 8:00AM

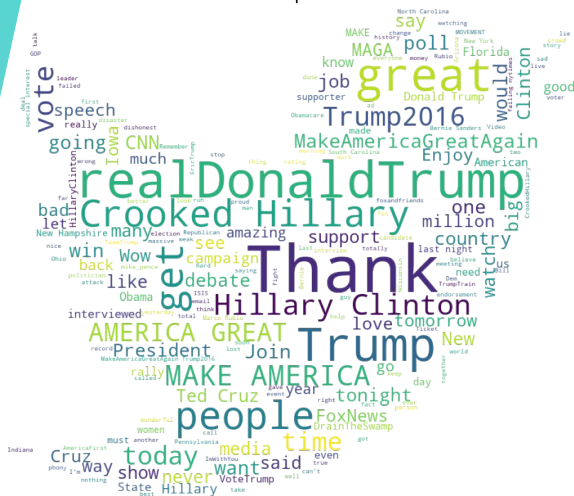## Time Series

2016
4,225 tweets

2020 (Oct. 24)
10,263 tweets

Consistently tweets less on Monday and at 8:00AM.

Majority of tweets occur during "off" hours when Trump is without his advisors.
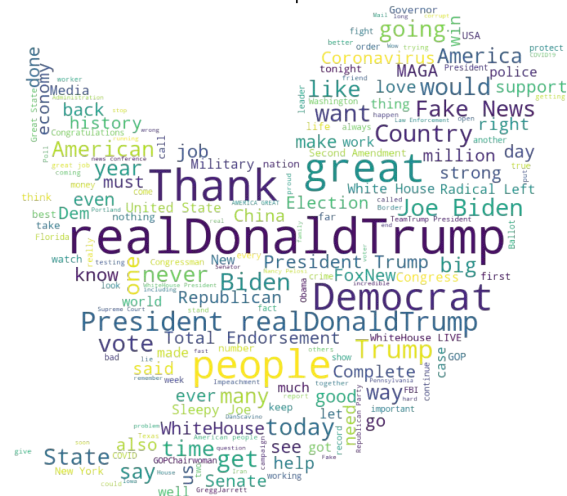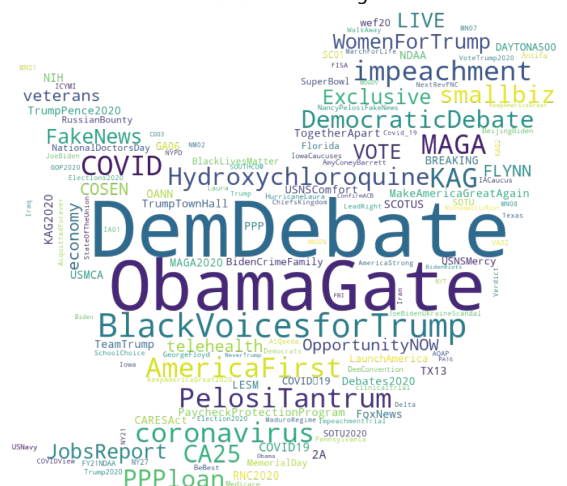
Frequent Words & Phrases

2016 - Frequent Words

2020 - Frequent Words

2016 - Hashtags

2020 - Hashtags

Frequent Words & Phrases

The majority of words and N-Grams, relate to the presidential elections.

Coronavirus only appears in the top 10 hashtags. It is #24 most frequently used word with a count of 327.

Frequent Words

2016-Top 10 Frequent Words

	word	count
0	thank	641
1	great	606
2	hillary	492
3	trump	472
4	realdonaldtrump	398

2020-Top 10 Frequent Words

	word	count
0	realdonaldtrump	1425
1	president	1139
2	great	1121
3	trump	906
4	biden	771

Hashtags

2016-Hashtags

	hashtag	count
0	#Trump2016	274
1	#MakeAmericaGreatAgain	262
2	#MAGA	88
3	#AmericaFirst	79
4	#DrainTheSwamp	73

2020-Hashtags

	hashtag	count
0	#MAGA	192
1	#COVID19	66
2	#KAG2020	48
3	#2A	36
4	#coronavirus	30

N-Grams

2016-Top 10 Bigrams

	N-Gram	count
0	('crooked', 'hillary')	209
1	('hillary', 'clinton')	186
2	('make', 'america')	184
3	('america', 'great')	152
4	('ted', 'cruz')	99

2020-Top 10 Bigrams

	N-Gram	count
0	('president', 'realdonaldtrump')	376
1	('joe', 'biden')	296
2	('fake', 'news')	289
3	('president', 'trump')	211
4	('complete', 'total')	189

2016-Top 10 Trigrams

	N-Gram	count
0	('make', 'america', 'great')	149
1	('crooked', 'hillary', 'clinton')	80
2	('make', 'america', 'safe')	31
3	('let', 'make', 'america')	29
4	('goofy', 'elizabeth', 'warren')	22

2020-Top 10 Trigrams

	N-Gram	count
0	('complete', 'total', 'endorsement')	180
1	('teamtrump', 'president', 'realdonaldtrump')	93
2	('whitehouse', 'president', 'realdonaldtrump')	76
3	('whitehouse', 'live', 'president')	68
4	('live', 'president', 'realdonaldtrump')	64

Retweets

Mentions

Retweets & Mentions

2016
4% retweets
  TeamTrump (30 times)
30% mentions*
  realDonaldTrump (324 times)

2020 (Oct. 24)
52% retweets
  realDonaldTrump (502 times)
10% mentions*
  FoxNews (165 times)

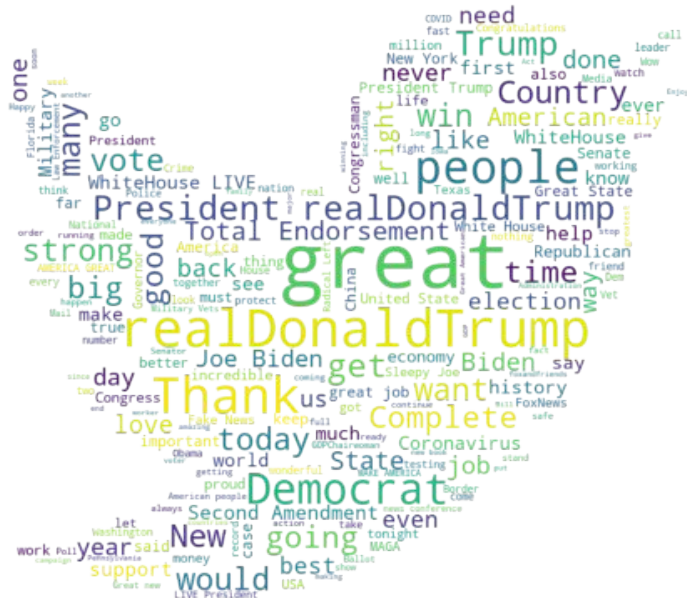Overall Trump retweets (505) and mentions (324) himself the most.

*Mentions exclude retweets

Sentiment Analysis

NLP method that determines whether specified text is positive or negative.
1. Tokenize input into its component sentences or words.
2. Identify and tag each token with a part-of-speech component.
3. Assign a sentiment score from -1 to 1.
4. Return score and optional scores such as compound score, and subjectivity.

Sentiment Analysis

TextBlob
- Analyses text as a whole
- Polarity score

VADER
Valence Aware Dictionary and sEntiment Reasoner
- Attuned to social media.
- Does not require training because constructed from lexicon.
- Punctuation, capitalization, degree modifiers, conjunctions

2016

TextBlob→
48% positive
20% negative
32% neutral

VADER→
56% positive
27% negative
17% neutral

2020

TextBlob→
45% positive
19% negative
36% neutral

VADER→
47% positive
27% negative
26% neutral

Comparison

2016 →
1,561 positive
625 negative
484 neutral

2020 →
3,260 positive
1,318 negative
1,920 neutral

TextBlob→
Positive: 0.01 to 1.0
Neutral: 0
Negative: -0.01 to -1.0

Subjectivity classifies fact vs opinion
Higher subjectivity score = opinion

VADER→
Classified into 4 categories and sentiment is decided from compound score.
Positive: compound score >= 0.05
Neutral: compound score > -0.05 & < 0.05
Negative: compound score <= -0.5