

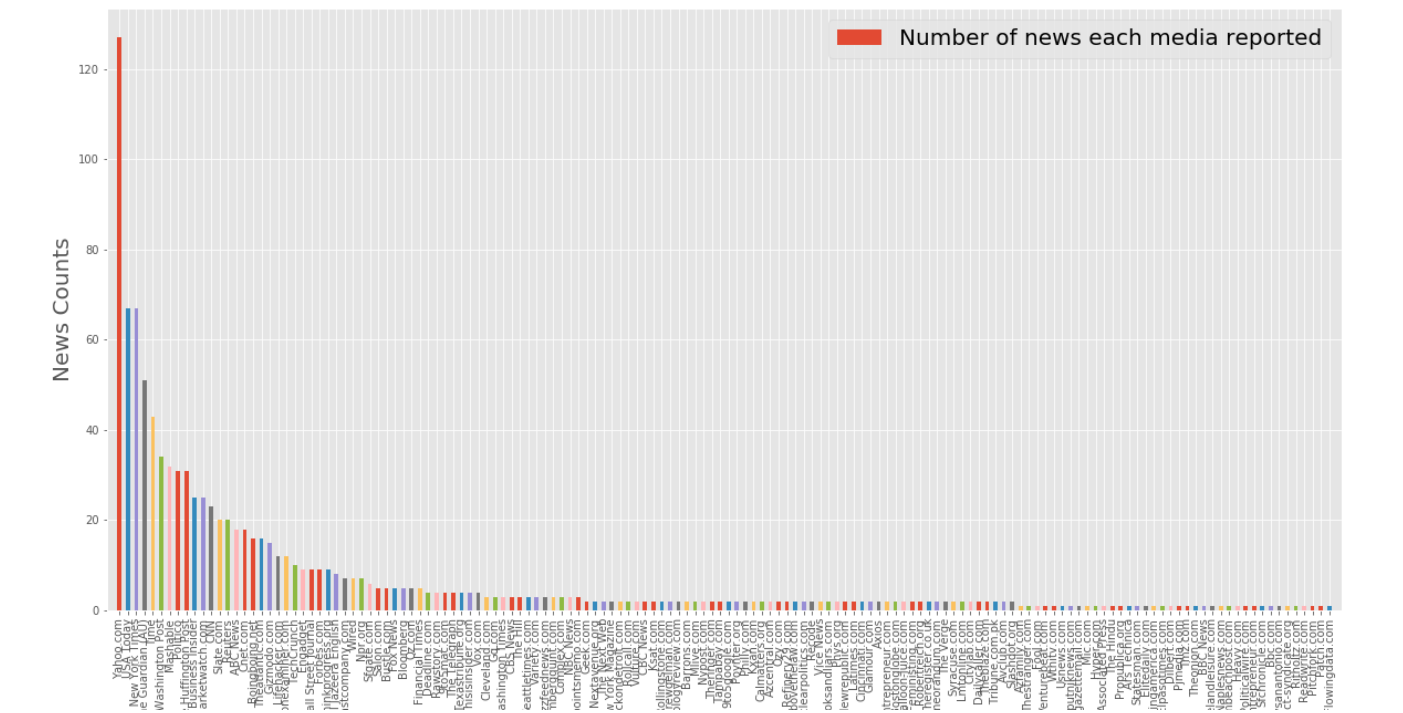
Midterm Election News Mining

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News of “ *midterm election*”

Over 146 news agencies, over 1,020 news articles from 2018-09-28 to 2018-11-07

News fetched from *newsapi*



Top 20 active media

```
In [19]: df_media[0:20]
```

Out[19]:	Yahoo.com	127
	USA Today	67
	The New York Times	67
	The Guardian (AU)	67
	Time	67
	The Washington Post	67
	Mashable	51
	The Huffington Post	51
	Politico	51
	Business Insider	51
	Marketwatch.com	51
	CNN	51
	Slate.com	51
	Reuters	51
	ABC News	51
	Cnet.com	51
	Theatlantic.com	51
	Boingboing.net	51
	Gizmodo.com	51
	Lifehacker.com	51
	Name: source, dtype: int64	51

146 media reported 1,020 news

Top 20 news agencies reported 691 news articles

News Sentimental analysis: Title vs Description

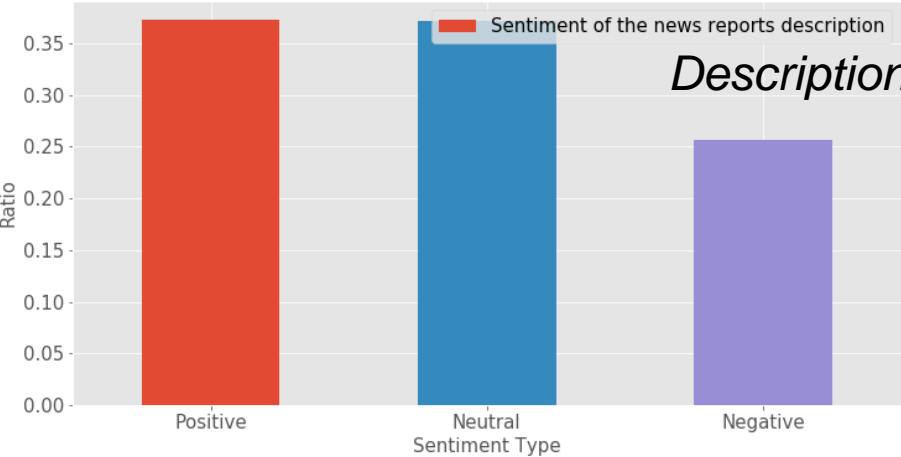
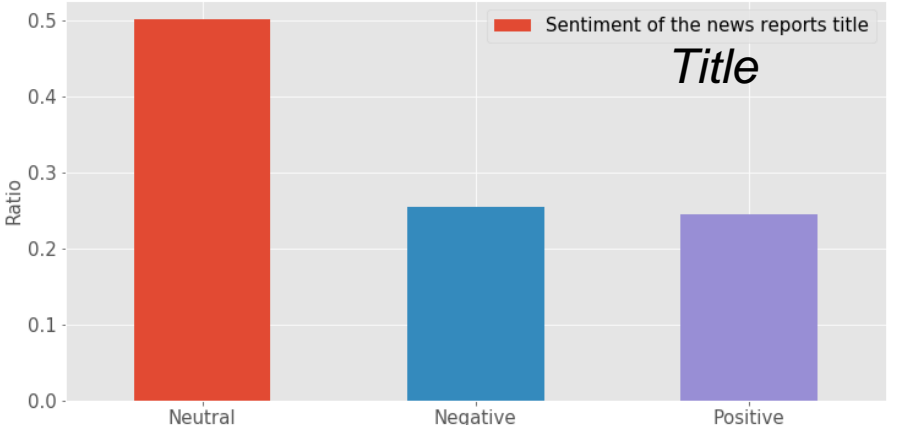
Use NLTK's built-in *Vader Sentiment Analyzer* to categorize the news title/description, then the polarity scores method is used to evaluate the sentiment.

- Positive (+1): score > 0.2
- Neutral (0): -0.2 <= score <= 0.2
- Negative (-1): score <-0.2

```
In [44]: df_show.head(10)
```

```
Out [44]:
```

	title	description	source	title polar_score	description polar_score
0	Why Trump Is Absent From His Own TV Ad	A video still taken from the ad, which feature...	Engadget	0.0	1.0
1	Health-Care Companies Pour \$46.7 Million Into ...	Of the money given by health-care political ac...	The New York Times	0.0	0.0
2	Most Americans are not confident election syst...	Americans are confident local poll workers wil...	The Washington Post	0.0	0.0
3	Outside the Box: President Trump wants you and...	The president fans the flames of fear and ange...	Time	0.0	-1.0
4	Why topical Halloween costumes are frightening...	Dressing as 'Brexit', 'Trump' or even the 'dea...	ABC News	-1.0	0.0
5	Midterm elections 2018: Former President Barac...	Obama's visit coincides with questions with al...	USA Today	0.0	0.0
6	Republican congressman: time to 'body-slam' De...	Remarks by Jody Hice come after Trump praised ...	USA Today	1.0	0.0
7	Capitol Report: Midterm campaigns barrel forwa...	The contentious midterm campaign has barreled ...	Recode	-1.0	-1.0
8	Angela Merkel Will Reportedly Quit Party Leade...	Angela Merkel told her conservative party on M...	Yahoo.com	0.0	1.0
9	Stacey Abrams: The Deep South woman vying to m...	CNN Stacey Abrams: The Deep South woman vying ...	Theregister.co.uk	0.0	-1.0



Top 20 in positive reports

Top 20 in negative reports

```
pos_freq.most_common(20) neg_freq.most_common(20)
```

```
[('midterm', 156), ('election', 140), ('trump', 114), ('elections', 114), ('president', 74), ('democrats', 60), ('washington', 47), ('post', 47), ('news', 46), ('donald', 45), ('day', 45), ('get', 43), ('voters', 43), ('vote', 43), ('new', 41), ('tuesday', 41), ('party', 39), ('democratic', 38), ('people', 37), ('house', 34)]
```

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[('midterm', 122), ('election', 92), ('elections', 81), ('trump', 78), ('president', 45), ('donald', 44), ('voters', 39), ('voting', 37), ('campaign', 34), ('us', 29), ('state', 29), ('u', 28), ('political', 28), ('new', 27), ('republicans', 26), ('2018', 26), ('voter', 26), ('tuesday', 25), ('stocks', 25), ('washington', 24)]
```

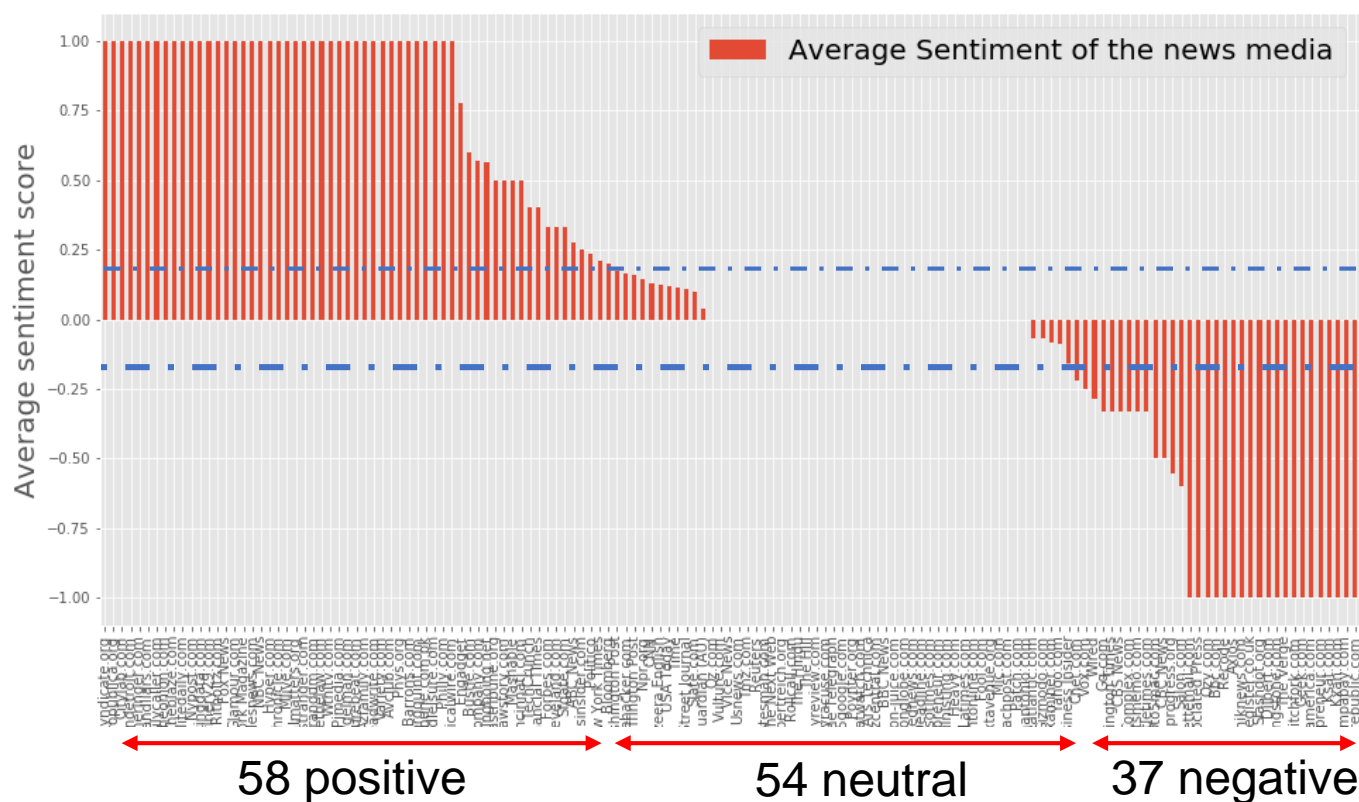
VS

democrats

republicans

Sentiment Analysis of News agencies

Average polarity scores of each news agency



title polar_score	
source	
Yahoo.com	-0.062992
USA Today	0.119403
The New York Times	0.029851
The Guardian (AU)	-0.117647
Time	0.023256
The Washington Post	0.117647
Mashable	-0.093750
The Huffington Post	0.032258
Politico	0.033333
Business Insider	-0.160000
Marketwatch.com	0.240000
CNN	-0.130435
Slate.com	0.200000
Reuters	-0.250000
ABC News	-0.111111
Cnet.com	-0.444444
Theatlantic.com	-0.266667
Boingboing.net	-0.187500
Gizmodo.com	-0.466667
Lifehacker.com	0.333333

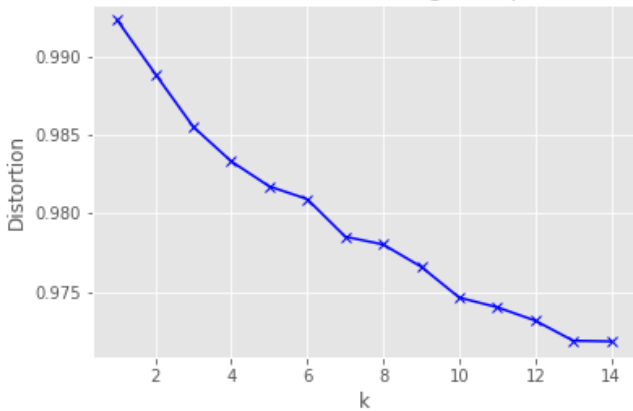
14/20 are neutral
Mean sentiment score: -0.058
Standard deviation: 0.210

description polar_score	
source	
Yahoo.com	-0.086614
USA Today	0.119403
The New York Times	0.208955
The Guardian (AU)	0.039216
Time	0.116279
The Washington Post	0.176471
Mashable	0.500000
The Huffington Post	0.161290
Politico	0.233333
Business Insider	-0.160000
Marketwatch.com	0.000000
CNN	0.130435
Slate.com	0.100000
Reuters	0.000000
ABC News	0.277778
Cnet.com	-0.222222
Theatlantic.com	-0.066667
Boingboing.net	0.562500
Gizmodo.com	-0.066667
Lifehacker.com	0.166667

14/20 are neutral
Mean sentiment score: 0.109
Standard deviation: 0.196

K-means Clustering and Keywords

The Elbow Method showing the optimal k



N_cluster=5

- 0: election, political, 2016, midterms, facebook, state, 2018, media, social
- 1: kavanaugh, brett, court, supreme, confirmation, nomination, nominee, judge, trump
- 2: midterm, vote, elections, voting, people, early, texas, election, 2018
- 3: trump, president, donald, washington, campaign, midterm, post, election, elections
- 4: democrats, midterm, news, new, house, elections, election, party, republicans

N_cluster=10

- 0: house, senate, said, republicans, control, battle, midterm, democrats, elections
- 1: election, midterm, vote, november, polls, trump, americans, day, voters
- 2: democratic, midterms, groups, key, republican, russian, role, money, 2020
- 3: washington, post, examiner, trump, midterm, democrats, elections, president, republicans
- 4: president, trump, donald, campaign, midterm, elections, rally, vice, immigration
- 5: voting, early, midterm, million, texas, states, elections, machines, turnout
- 6: kavanaugh, brett, supreme, court, nomination, nominee, confirmation, judge, washington
- 7: political, democrats, elections, midterm, gop, party, election, women, vote
- 8: new, news, york, poll, times, midterm, elections, election, today
- 9: 2018, voter, midterm, election, elections, georgia, just, vote, turnout

N_cluster=13

- 0: house, don, white, senate, trump, election, republicans, counsel, left
- 1: election, midterm, democrats, news, elections, control, congress, day, new
- 2: georgia, democratic, candidate, kemp, state, abrams, brian, secretary, campaign
- 3: election, midterm, 2018, security, results, national, just, comes, night
- 4: president, trump, donald, midterm, campaign, elections, rally, republicans, election
- 5: today, opinion, usa, asked, good, bring, politics, elections, huffpost
- 6: vote, elections, midterm, 2018, party, voters, month, upcoming, midterms
- 7: border, migrants, caravan, central, american, president, trump, donald, mexico
- 8: kavanaugh, brett, supreme, court, confirmation, nominee, nomination, judge, trump
- 9: texas, obama, cruz, ted, beto, rourke, austin, barack, people
- 10: news, fox, conservative, support, florida, governor, election, bid, gop
- 11: washington, post, midterm, examiner, democrats, elections, trump, president, government
- 12: york, times, new, elections, midterm, facebook, russian, november, states