

Democratic Primary 2020 Sentiment - Early Primary States

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Research Question

- How well can Twitter predicate candidate favorability compared to traditional polling in early democratic primary states?

Data Collection

- Sentiment of tweets over 11/23-11/25 time period mentioning candidate's presidential twitter name
- Most recent CNN "favorability" primary polls for in Iowa, New Hampshire, South Carolina, Nevada
- Will analyze twitter sentiment by looking at the non-stop words in the Harvard dictionary and giving these words a positive or negative sentiment and creating a score from this (Feuerriegel 2019)

Example Data

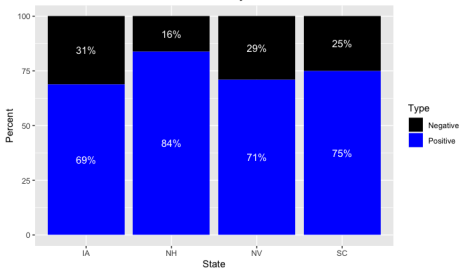
- Positive "Clean" Tweet
@BernieSanders: sunday nov 24th iowa team offically knocked 20 000 doors 48 hours 39 sounds good look forward elected president
Sentiment of 6 identifiable terms Using Dictionary=0.5 > 0 so positive tweet
- Count number of positive and negative tweets
- Between 75 and 889 tweets per candidate/state

- Combine ratio of very favorable and mostly favorable opinions in positive ones for polls

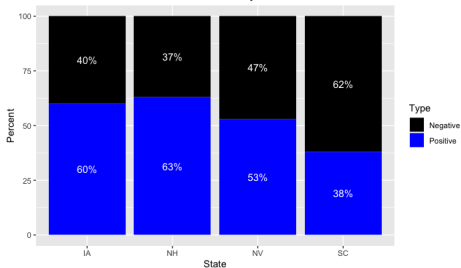
Among likely Democratic caucusgoers.		Fav	Unf	Very Favorable	Mostly Favorable	Mostly Unfavorable	Very Unfavorable	Not Sure
Julián Castro, former U.S. secretary of Housing and Urban Development	Nov-19	35	35	8	26	24	11	30
	Sep-19	35	36	5	30	24	12	29
	#Jan-19	33	13	7	27	10	4	53
	Mar-19	33	8	7	27	5	3	58
	Dec-18	27	10	6	21	7	3	63
John Delaney, former U.S. representative from Maryland	Nov-19	18	34	3	15	22	12	48
	Sep-19	17	34	3	14	23	11	49
	#Jan-19	27	18	6	21	13	5	55
	Mar-19	27	12	5	22	8	5	61
	Dec-18	25	11	6	19	7	4	64
John Delaney, U.S. congressman from Maryland	Nov-19	25	45	7	18	28	17	30
	Sep-19	26	31	6	20	21	10	43
	#Jan-19	23	21	5	18	11	9	57
	Mar-19	22	15	5	17	9	6	64
Tulsi Gabbard, U.S. representative from Hawaii	Nov-19	55	31	16	39	16	15	13
	Sep-19	63	24	23	40	15	9	13
	#Jan-19	63	13	31	32	8	5	23
	Mar-19	58	9	23	35	4	5	33
	Dec-18	49	10	19	29	6	4	41
Kamala Harris, U.S. senator from California	Nov-19	53	23	20	33	16	8	24
	Sep-19	52	22	17	36	16	6	26
	#Jan-19	44	18	12	32	14	4	38
	Mar-19	43	15	13	30	9	6	41
	Dec-18	38	8	16	22	5	3	54
Amy Klobuchar, U.S. senator from Minnesota	Nov-19	61	35	31	30	23	12	4
	Sep-19	58	36	26	33	24	13	5
	#Jan-19	70	25	32	37	17	8	5
	Mar-19	71	25	37	34	16	9	4
	Dec-18	74	22	43	31	12	10	4
Bernie Sanders, U.S. senator from Vermont	Nov-19	61	35	31	30	23	12	4
	Sep-19	58	36	26	33	24	13	5
	#Jan-19	70	25	32	37	17	8	5
	Mar-19	71	25	37	34	16	9	4
	Dec-18	74	22	43	31	12	10	4

Bernie Sanders and Elizabeth Warren Sentiments

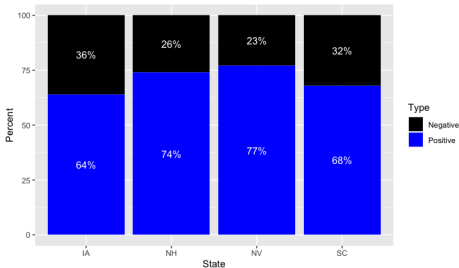
Twitter Sentiments of Bernie Sanders by State



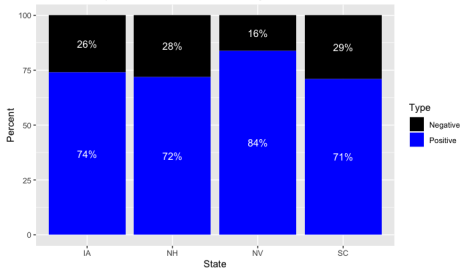
Twitter Sentiments of Elizabeth Warren by State



Poll-Based Opinions of Bernie Sanders by State

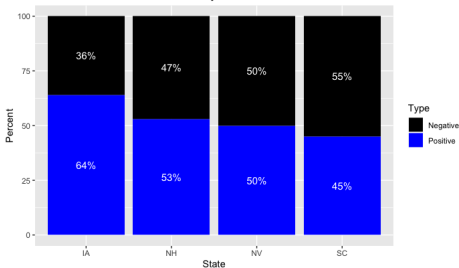


Poll-Based Opinions of Elizabeth Warren by State

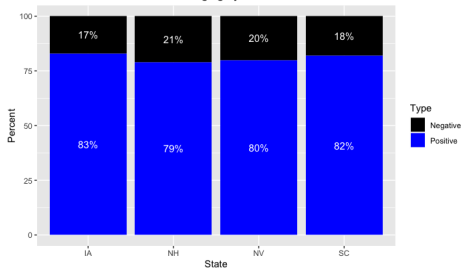


Joe Biden and Pete Buttigieg

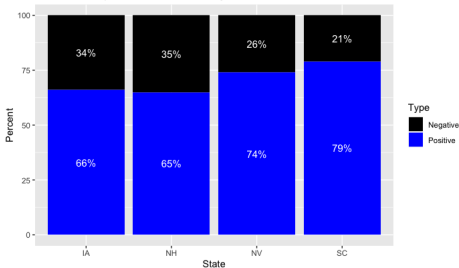
Twitter Sentiments of Joe Biden by State



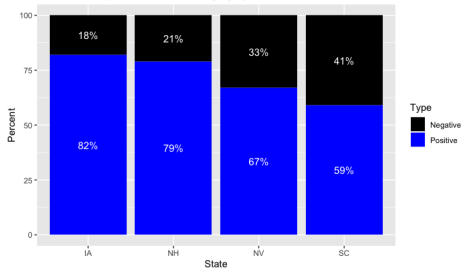
Twitter Sentiments of Pete Buttigieg by State



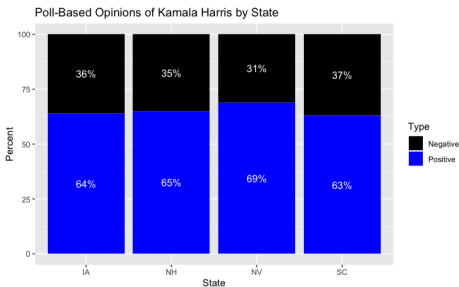
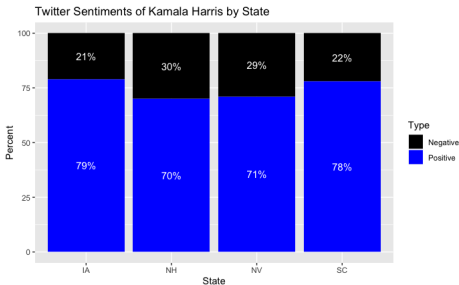
Poll-Based Opinions of Joe Biden by State



Poll-Based Opinions of Pete Buttigieg by State



Kamala Harris



- Data and polls were observed before Harris dropped out of the race
- Keep in mind that Twitter users tend to be more male and younger than your average voter

Conclusion

- Twitter polls were not consistently close to poll predictions for any state or candidate except for Bernie Sanders
- Twitter sentiments of Biden and Warren were generally lower on Twitter, while Buttigieg was higher and Bernie was consistent
- Interesting during this time period both Biden and Warren fell among polls, along with Buttigieg rising and Bernie being consistent. Only exception is Harris
- Both methods favorability across states stays consistent
- Small amount of data, but data seems to include at favorability trends during that time period, right after the November debates

References

- Burnap, Pete, et al. "140 characters to victory?: Using Twitter to predict the UK 2015 General Election." *Electoral Studies* 41 (2016): 230-233.
- Cody, Emily M., et al. "Public opinion polling with Twitter." *arXiv preprint arXiv:1608.02024* (2016).
- Feuerriegel, Stefan, et al. "SentimentAnalysis R Package." (2019).
- Saif, Hassan, et al. "Evaluation datasets for Twitter sentiment analysis: a survey and a new dataset, the STS-Gold." (2013).