PREDICTING ELECTIONS WITH TWITTER:

What 140 Characters Reveal about Political Sentiment

Sarah Bennett

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Study used text analysis tool LIWC to investigate a corpus of tweets referencing the 2009 German federal election, investigating the following:

- · Does Twitter function as a forum for political discussion?
- · Does sentiment expressed in participating tweets provide accurate representation of public sentiment towards parties/politicians?
- · Can findings be used to predict the result of an election (and potential coalitions)?

METHODOLOGY

- 104,303 tweets, all containing a mention of prominent parties or politicians. All tweets compiled into one sample of text which was translated into English.

- Text automatically translated into English from German, introducing a possibility for errors - which the authors do not address.

· Q1 - LIWC categorised words into dimensions based on psychological categories, for example "maybe" and "guess" in "tentativeness" dimension (pg. 3).

· Authors examined:

1. % of users who directly referenced another user using the symbol.
2. Number of links retweeted and number of retweets as a percentage of all tweets.
3. Spread of posts across users: small number of posters responsible for large number of tweets, or contribution largely equal from all users.

· How similar is sentiment expressed in tweets to that expressed in real life, and does it correlate with placement of policies on political spectrum?

· Initially analysed by direct comparison of occurrences of LIWC categories.

- Q2 - Distance measure to analyse similarity between politicians/parties, with $d_{i,p}$ being the figure for politician p, in dimension i - lower value of d, more similarity :

$$d = \sum_{d=1}^{n_d} \frac{|d_{i,p} - \left(\sum_{p=1}^{n_p} \right)/n_p|}{n_d}/12 \qquad (1)$$

- Looked at number of tweets compared to success of party in election. Used Mean Absoluter Error of forecast accuracy. Compared results with traditional polls.

- Relations between parties - CDU and CSU major parties in the election, with Angela Merkel as incumbent (CDU) having declared desire for coalition between the two -
- % tweets about political party in relation to % votes for said party in election, also share(CDU, CSU) represents share of observed joint mentions of two parties, relative frequency (f):

$$f = \frac{share(CDU, CSU)}{\left[P(CDU|CSU) + P(CSU|CDU)\right]/2}$$

RESULTS

- 10% of tweets were direct messages, in consistence with previous research. Sadly the authors neglect a discussion of the implications of this beyond a vague mention that this demonstrates Twitter is used for discussion.

- Links retweeted - (57% of all retweets) and retweets (19.1%) much more common than expected.
- People posting > 21 tweets comprised 44.3 % , of which half posted > 80 times. This is both unsurprising, and perhaps limits ability to infer too much from Tweets- a vocal minority?

- Positive categories of words occurred more frequently than negative. Also, number of tweets correlated positively with vote share. Interestingly, previous research (Jansen and Koop, 2005) found the opposite to be true.

- The more extreme a politician's policies, the more of both positive and negative dimensions are associated with them. How would these findings play out in the UK, given a much less predictable election?

- Overly simplistic approach? - authors state that number of tweets is related to success of a party, taking this on face value.

- Issue - 'lost in translation'?- only consider grammar and do not seem concerned about accurate translation of the terms themselves

- Large number of posts composed by small number of users.

· This election was fairly predictable, the public sentiment was positive and fairly undivided on the whole - not always the case, wider sample of elections needed

· How about where parties on the extremes of left or right receive more attention due to divisive policies but ultimately this is not reflected in votes?

CONCLUSION

Despite its issues, the paper is one of the most influential in social media sentiment analysis.

· Perhaps given its status as one of the earlier forays into analysis of Tweets in order to aggregate and analyse sentiment, albeit it a perhaps flawed manner.

Any questions?