

University of Texas at Dallas
EPPS 6356 Data Visualization
Data Visualization Project Proposal

The #AlevelResults Case: Visualizing Social Networks and Text Mining on Twitter Data

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Fall 2020

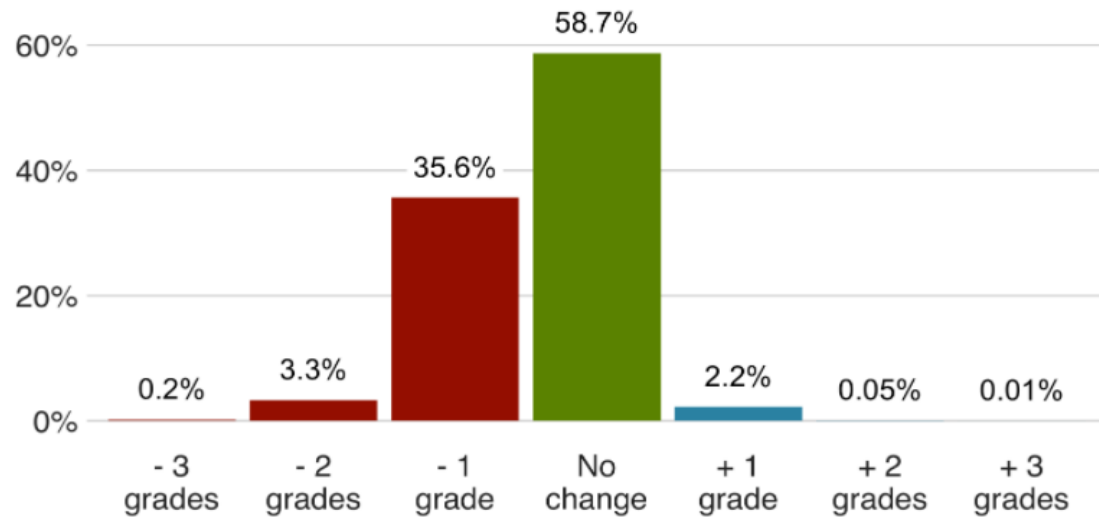
Context of the research questions:

The *#AlevelResults* case

- **A-level exams:** exams that are taken annually in the UK by young people to determine which university they can aspire to.
- **COVID-19 pandemic.**
- **High school teachers were asked** (1) to give a predicted grade for their pupils and then (2) rank them within their class.
- Posteriorly, (3) an **algorithm** (named "Ofqual") was expected to adjust and standardize results at the national level.

More than a third of A-level results in England downgraded

Percentage of results changed by...



Source: Ofqual

BBC

Results by 9/13/2020

- Ofqual's algorithm **reduced 39.1%** of the estimated grades and **increased 2.26%** compared to the teachers' predictions.

Context of the research questions:

The *#AlevelResults* case

- Results favored students who were enrolled in better schools even if their grades were worse, compared to those in schools with historically worse performance.
- **Private schools vs Public schools.**
- Impact on **future educational life**: conditions access to higher education institutions & limits opportunities for social mobility.

Media response...

BACKCHANNEL BUSINESS CULTURE GEAR IDEAS SCIENCE SECURITY

SIGN IN

An Algorithm Determined UK Students' Grades. Chaos Ensued

This year's A-Levels, the high-stakes exams taken in high school, were canceled due to the pandemic. The alternative only exacerbated existing inequities.



Sign in

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A-levels: Over a third of NI results lower than estimated grades

13 August 2020

A-levels: Anger over 'unfair' results this year

By Sean Coughlan, Katherine Sellgren, Judith Burns
BBC News family and education

13 August 2020

Coronavirus pandemic



Autumn term chaos feared over exam resits and appeals

Teachers warn that new pupils may be neglected as schools and colleges take action in wake of the A-level algorithm debacle

This year's A-level results are a fiasco - but the system was already broken

Dan Davies

Coronavirus has shown the fragility of grading pupils and exposed problems with the entire examination process

A-levels: 'Dreams ruined by an algorithm'

13 August 2020

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Do the maths: why England's A-level grading system is unfair

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'Punishment by statistics': the father who foresaw A-level algorithm flaws



**On Twitter
trending topic...**

#AlevelResults

Why study the case:

*Public opinion has spoken out about **results**
considered **biased** coming from **evaluations**
driven by **algorithms** in **educational**
settings.*



General objective

To explore data from Twitter with the hashtag `#AlevelResults` in order to produce visualizations about the social network and about the content of the published tweets.

Specific questions

- How has the reaction around #AlevelResults on Twitter developed in **time**?
- From which **geographic** locations did users participate?
- What is the **influential network** or sub-community that most participates in the discussion (tweets with responses and interactions)?
- Who are the **top users** involved in the discussion around #AlevelResults on Twitter?
- What **feelings** are associated with the texts published in the tweets?

Data

78,839 tweets have been downloaded **from** 8/14/2020 **to** 9/2/2020 (when the last tweet about the topic was recorded) using as a criterion the hashtag **#AlevelResults**.

Variables:

• *Id_str* • *From_user* • *Text* • *Created_at* • *Time* •
In_reply_to_user_id_str • *In_reply_to_screen_name* •
From_user_id_str • *In_reply_to_status_id_str* • *Profile_image_url* •
User_followers_count • *User_friends_count* • *User_location*



General charts to initially
explore data (ggplot2)



Social Network Analysis



Text Mining (Sentiment
Analysis)

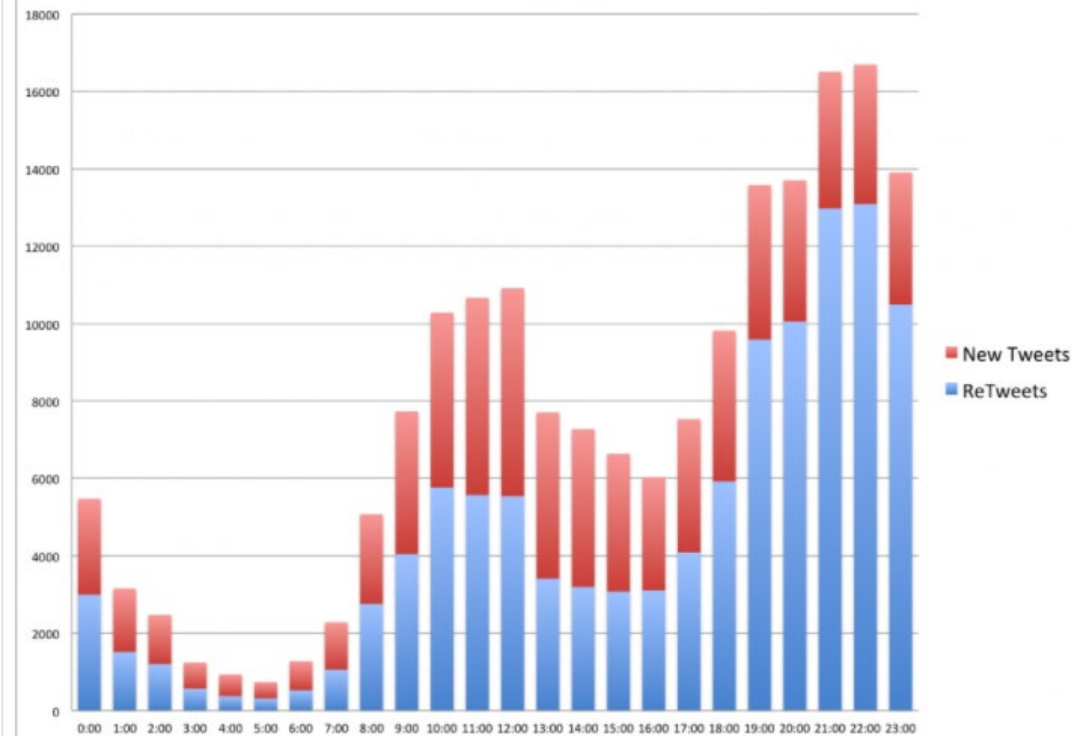
**Visualization
method(s)**

Tesla Stock Moves on Musk's Tweets



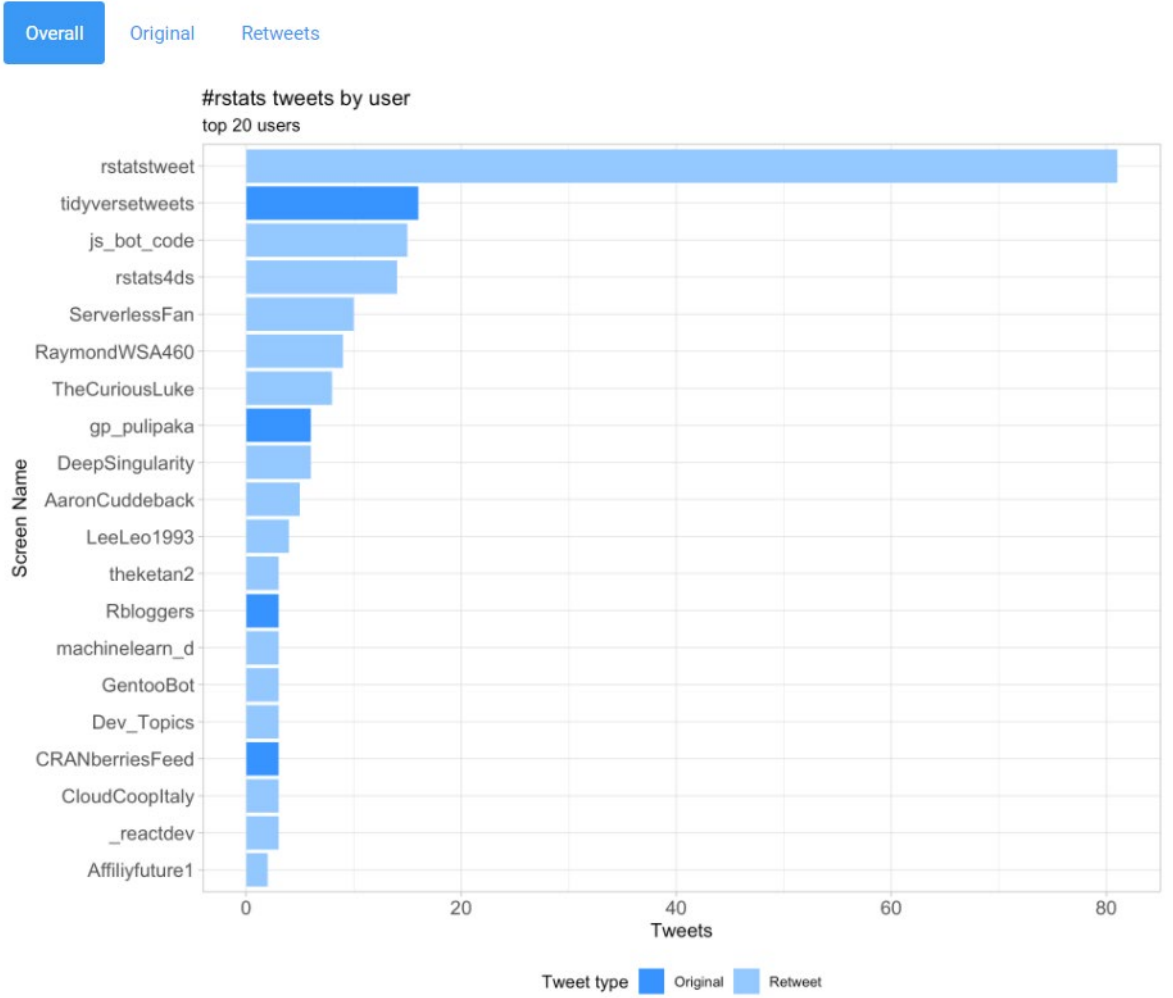
Source: Yahoo Finance, WIRED research • [Get the data](#) • Created with Datawrapper

Tweets mentioning Trayvon 3/20/2012

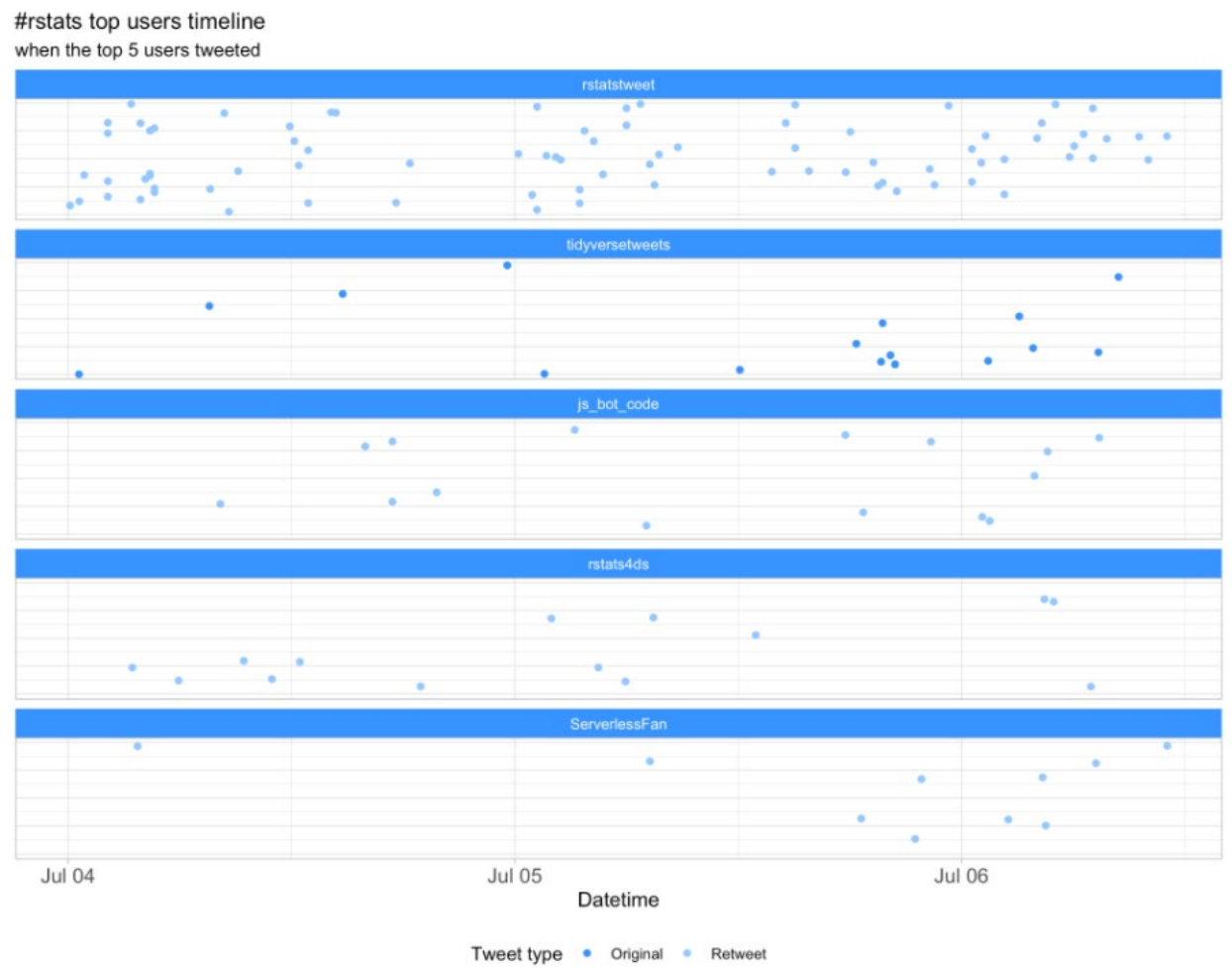


Source: <https://www.socialseer.com/2012/03/21/twitter-reacts-to-the-trayvon-martin-shooting/>

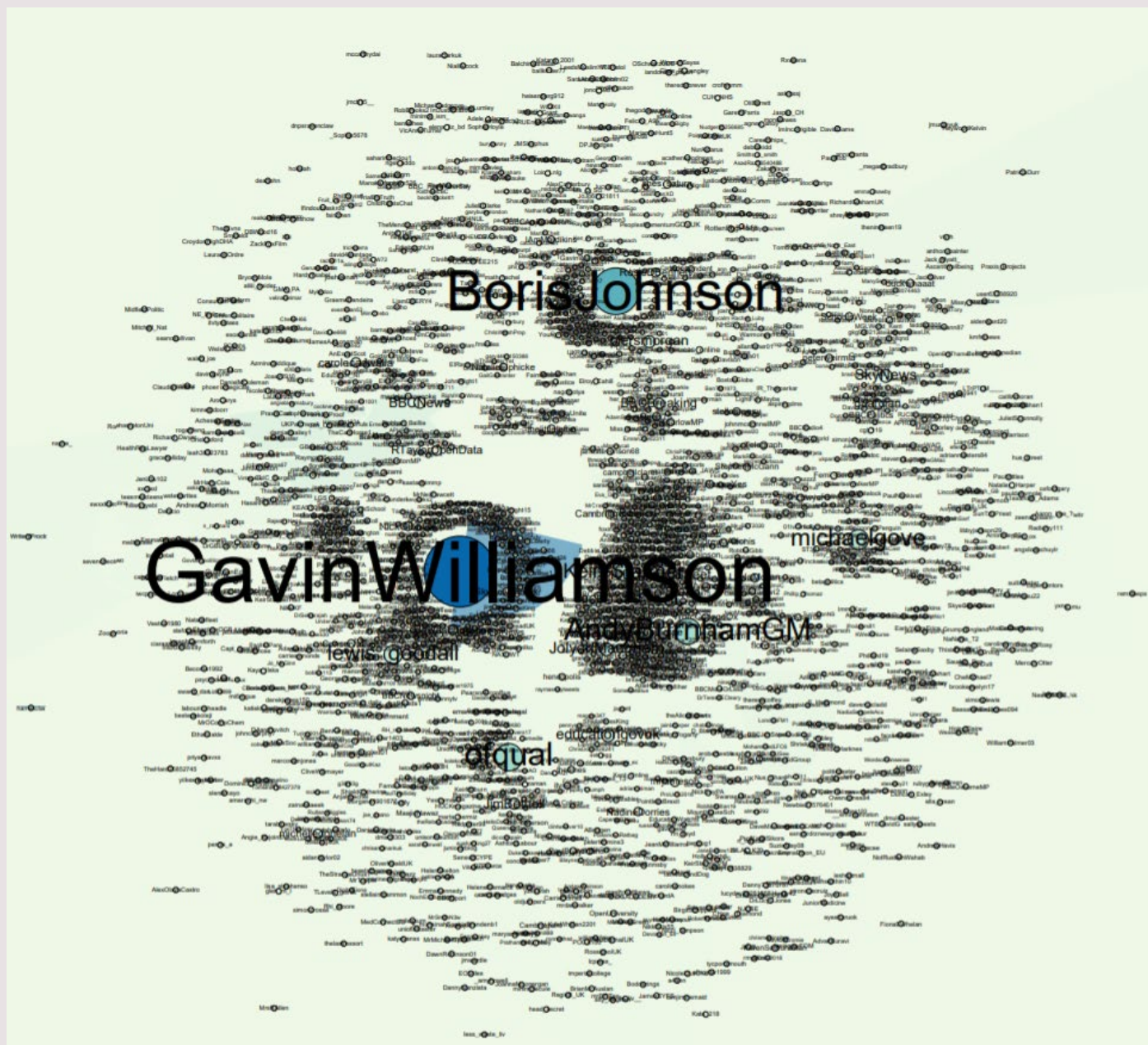
2.1 Top tweeters



2.3 Top tweeters timeline



Source: <https://lazappi.github.io/clamour-example/EXAMPLE.html>

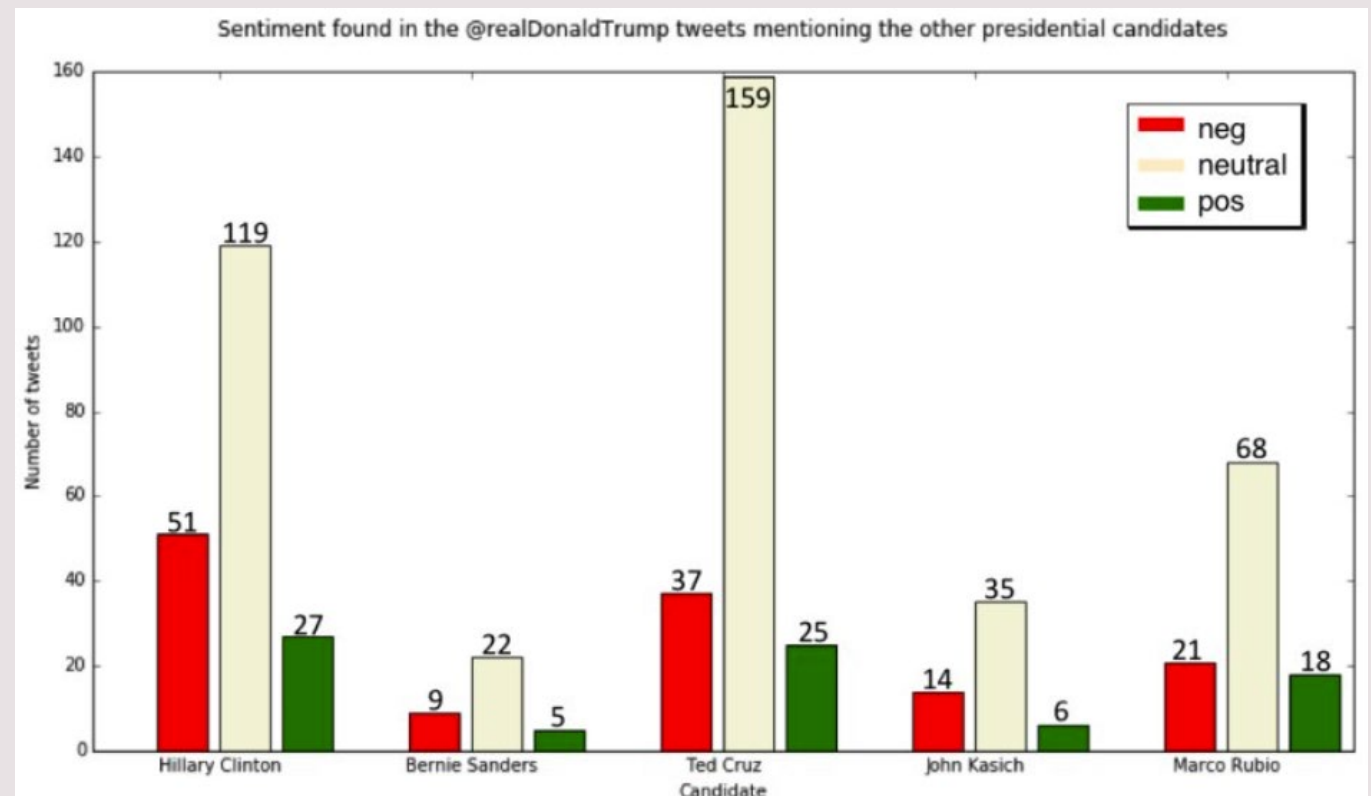


negative



positive

Source: Silge & Robinson (2017)

Source: Quentin Simms

<https://www.kdnuggets.com/2016/06/politics-analytics-trump-clinton-sanders-twitter-sentiment.html>

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Thank you
