1. Introduction

President Donald Trump (“Trump”) has transformed the social media usage of the presidency with his Twitter presence. He is known not only for the impassioned content of his tweets but also for the frequency. Much of the existing analysis on his Twitter use has focused on the contents of his tweets, such as the subject matter,[[1]](#footnote-1) tone,[[2]](#footnote-2) and coincidence[[3]](#footnote-3) with topics raised in other news outlets. Comparatively less has been written about the “metadata” of his tweets, notably the amount of time elapsing between them. When to expect the next Twitter outburst is a frequent topic of speculation among presidential observers, and a better understanding of this frequency is needed. In this study, we aim to determine the time elapsed between twitter outbursts (“tweet storms”) and how his behavior may have changed after he won the election.

We pulled our data directly from Trump’s Twitter feed.[[4]](#footnote-4) We used only original tweets, not retweets, from one year prior to the election to one year after the election. We defined tweet storms as a series of three or more tweets occurring within a 1,000 second span, or approximately 16 minutes. We then classified these tweets as one tweet storm, occurring at their mean time. This mean tweet storm time comprises our data, , and is classified as “pre-election” or “post-election” based on whether it occurred before or after midnight on November 9, 2016.

The remainder of this report is organized as follows: Section 2 discusses the methods used in analyzing Trump’s tweet storms. Section 3 describes **INSERT RESULTS STATEMENT**. Section 4 describes **INSERT DISCUSSION STATEMENT**.

1. Methods

We assume that Trump’s tweet storms, , are iid Weibull with parameters and , and thus our likelihood has the form

We select the noninformative joint prior for our parameters, thus

Thus, our full posterior distribution is

This posterior results in a full conditional for of

and a full conditional for of

In addition to using the Weibull distribution, we also used a Log Normal distribution, assuming that the tweet storms, , are iid with parameters and . Our likelihood has the form

We select the conjugate prior for each of our parameters

and ,

leading to our full posterior distribution of

This posterior results in a full conditional for of

and a full conditional for of

Finally, we used a Gamma distribution to analyze the iid tweet storms, , with parameters and , resulting in a likelihood of the form

We select the joint conjugate prior for our parameters

resulting to our full posterior distribution of

This posterior leads to the full conditional for of

and the full conditional for of the form

1. Results

In the results section, you present the results of your analysis. This section should contain statements of the results of the models and may also include tables or figures if relevant. If a figure or table is included, they must be labeled and referred to as Table 1 and Figure 1 in the text. Here we just describe what we see in the analysis. If we conducted a sensitivity analysis and varied our priors or likelihoods, we also comment on those results here.

1. Discussion

The discussion section is where you interpret the results of the analysis in context and offer conclusions along with possible limitations of the analysis. This section does not necessarily have to be very long, but you should be sure to properly wrap up the report.

1. Appendix A (should be code)
2. Appendix B (only if we need the space, for model derivations) – I figure here we could put the work for each of our models, sound good?

**GAMMA**

**LOG NORMAL**

1. Buzzfeed News, “All The President’s Tweets — And Every Lawmaker’s Too”, Jan 23 2018, <https://www.buzzfeed.com/peteraldhous/trump-twitter-wars>. [↑](#footnote-ref-1)
2. Variance Explained (blog), “Text analysis of Trump's tweets confirms he writes only the (angrier) Android half”, Aug 9 2016, <http://varianceexplained.org/r/trump-tweets/>. [↑](#footnote-ref-2)
3. Politico, “I’ve Studied the Trump-Fox Feedback Loop for Months. It’s Crazier Than You Think”, Jan 5 2018,

   <https://www.politico.com/magazine/story/2018/01/05/trump-media-feedback-loop-216248>. [↑](#footnote-ref-3)
4. https://twitter.com/realDonaldTrump. [↑](#footnote-ref-4)