

# Tweeting the Japanese General Election of 2014 – A First Look

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## Abstract

The December 2014 election was a digital political milestone in Japan: political parties and politicians became free to campaign online for the first time in a general election. After the 2012 general election the Liberal Democratic Party (LDP) pushed through a much-demanded and long-anticipated revision to the Public Offices Election Law, creating specific legal provisions allowing for previously banned online campaigning activities common in other democracies. One of those activities is the unrestricted use of Twitter, a popular social media platform among Japanese politicians. This paper provides a first look at an original database of more than 50,000 tweets from over 675 accounts of candidates, incumbent politicians, and parties gathered during the 10 days of the official election campaign period. Focus is given to initial descriptive analysis of the accounts, behavior, tweet content, and networks of the users in the database, thereby providing a pathway for future work.

## Introduction

The Internet seems to have an ever increasing omnipresence in our daily lives. This is no less true for our political lives—people from all walks of life use Internet-based communication and information technology to promote their own personal agendas. One area within this sphere that has gained prominence is use of the Internet in electoral campaigns, most notably exemplified by Barack Obama’s successful online drives to raise both money and votes during his 2008 (and 2012) U.S. presidential campaigns. In fact, the use of online electoral campaigning is rapidly popularizing across the globe. Further, with this popularization has come a corresponding increase in research into such digital campaigning activities (Howard and Chadwick 2009).

This paper presents an exploratory analysis, centered within the realm of online campaigning, and utilizing a new and unique dataset of online communication during an election period in a nation understudied by Western scholars. Specifically, the dataset captures online behavior of candidates and national incumbent politicians during the 2014 General Election in Japan on the Twitter social network platform.

The paper will provide background to this Japanese election, online campaigning in general, and Twitter. It will then move to detail various approaches employed, including data collection procedures and analysis of social media data. We will follow by providing preliminary

exploratory results, and finish with suggestions on how we might use this dataset for more future research.

## **Background – Japan 2014 General Election**

The December 2014 Japanese general election was an anomaly on multiple dimensions. First and foremost, it was a snap election. Originally anticipated to be held sometime in 2016, the election was announced suddenly in November 2014 after Japanese Prime Minister Shinzo Abe gave into mounting pressures from various political forces, and held just one month later (Fackler 2014; Hough 2014).

On the campaign front, however, this election became the first general election in which online campaigning was legal. In 2013, the Japanese National Diet approved a legal change, modifying notoriously strict electoral campaigning regulations. As in many advanced democracies, Japanese politicians had been utilizing the Internet for communications purposes going back into the 1990s; however, the bureaucratic interpretation of the campaigning law was such that unlike most other advanced democracies during official election campaign periods, the Internet could not be used. With the 2013 legal revision, politicians and parties were given largely free reign over online political communications (Williams 2015; Williams and Miller 2015).

Three months after the legal revision, there was an election for the Upper House of Japanese parliament, and the media was abuzz over potential implication of the Internet on elections. However, the election was only covered half of the seats in that chamber and there was no chance of national leadership change, thereby being perceived by voters as relatively inconsequential. As such, little interest was given to electoral campaigns, including online activity. Further, the diffusion of policy changes often requires time, so the temporal proximity of the election to the legal change actually meant there was not adequate time for both voters and candidates to truly embrace the new freedoms at hand. 2014, therefore, marked the first chance to see how online campaigning played out in full across the Japanese nation (Williams 2015; Williams and Miller 2015).

## **Background – Online Campaigning**

Campaigning online typically takes on one of two main forms, Web 1.0 and Web 2.0. Web 1.0 consists of older Internet technologies, more generally associated with the 1990s and early 2000s, such as websites and emails. Web 2.0 consists of more recent social media technologies, like Facebook and Twitter (Jackson and Lilleker 2009). In Japan, Line is another presently popular social media platform (Statista 2015; Williams and Miller 2015). Web 2.0 also consists of other technologies such video streaming services like YouTube and, in Japan, *NicoNicoDouga*.

Web 1.0 technologies are generally considered to facilitate unilateral direct communication—that is, they work well for broadcasting and disseminating information. Web 2.0 technologies, on the other hand, are thought to be better for creating multi-directional and interactive communication. This is not to say that Web 1.0 technologies cannot be used for conversations, or that Web 2.0 technologies will not be used for unilateral communication. In fact, the term Web 1.5 has been dubbed by political communication scholars to refer to politicians who use Web 2.0 technologies as if Web 1.0 technologies (Jackson and Lilleker 2009).

Regardless, properties of the technologies allow each to potentially serve their own unique purposes within campaigns. Among Web 2.0 tools, Facebook provides a more private and controllable environment for communication, while Twitter—as will be discussed in detail below—is more public in its nature.

It is worth noting that at present, this technological discussion is a constantly evolving issue. New technologies and services continually replace or overtake old ones. Further, there is already discussion of Web 3.0 and even Web 4.0 (Aghaei 2012). How these come into fruition will certainly provide new opportunities in political communication.

## Background – Twitter

Started in 2006, Twitter is a social network platform that has gained worldwide popularity for its open, short-message format. The basic premise of Twitter is the ability to send out a short, 140-character message instantly to individuals or groups of people of any size, regardless of your real-life connection to them (Boyd, Golder, and Lotan 2010). As of 2015, Twitter boasted more than 300 million active users and 500 million daily tweets (Twitter 2015).

Within Japan, Twitter also quickly gained popularity, and as of the end of 2014 was the most widely used social media platform (Statista 2015). Worldwide, one set of statistics places Japan as the 11th in active number of user (Cheng, Evans, and Singh 2014), while another lists it as 2nd when narrowing to active Twitter users who also tweet (i.e. post content) (Richter 2015). One reason Twitter is so popular in Japan is that Twitter is very mobile friendly, and Japan has a high mobile phone adoption rate (Wagner 2013). Another aspect that makes Twitter uniquely appealing in Japan is that the Japanese writing system allows for around three times as much information to be conveyed within the 140 character limit. Further, unlike English, the more complex the idea being discussed, the less character space that is required to express it (Miller 2015).

Worldwide, Twitter has gained traction, particularly in the realm of political communication, as evidenced from the use of Twitter by U.S. President Barack Obama, protesters in the Arab spring, and more. In Japan, Internet-savvy politicians started using Twitter well prior to the lift of the legal ban on such Internet tools for campaigning purposes (Williams 2015). It has been asserted that politicians first jumped on the Twitter bandwagon after the 2009 general election, inspired by the success that Obama was having with the platform (Matsuura 2010, 671). While politicians are not the most popular (followed) tweeters in Japan—only one politician, Osaka Mayor Toru Hashimoto, breaks the top 25 most popular Twitter users based on number of followers (Socialbakers 2015)—many politicians undoubtedly still see it as a potentially useful communication platform. Prior to the 2014 election, nearly 50 percent of members of the Japanese parliament had Twitter accounts, and during election campaign period 45 percent of candidates held accounts (Williams 2015).

## Approaches of Prior Work

While a tweet may seem simple on the surface—a message text and a user who sent it—there are many components laying under the surface that researchers can utilize in a variety of ways. Some of the components are directly observable in Twitter data or meta-data, and other indirect components require some computational analysis to infer. We categorize prior work and our analysis into four basic categories: *account-centered*, *behavior-centered*, *content-centered*, and *network-centered*. From these four approaches to data analysis, both individually and

combined, we explore a number of questions in digital political communication. Before presenting our own exploratory work, we review some of the prior work in this field of study.

### **Account-centered Components and Related Research**

Account-centered components of Twitter include information on when an account was created, who created the account, how active the account is over the course of its lifetime, the number of people the account currently is following, and the number of people currently following the account. These components are typically more direct.

Looking at adoption patterns of Twitter among politicians has been one area of interest using account centered variables, particularly in the early days of Twitter—pre-2010. Studies have seen a variety of results for why politicians begin using Twitter, for example political ideology—progressive candidates in the EU were found to be earlier adopters (Vergeer, Hermans, and Sams 2013), while conservatives were in the U.S. (Peterson 2012). Research has also found adoption as a result of normalization in the use of Twitter in campaigning practices (Vergeer and Hermans 2013).

Some researchers have found interest in understanding general activity of politicians' Twitter accounts over the lifetime of those accounts (Larsson 2014; Feng Chi and Yang 2011). Grant et al. (2010) find Australian politicians tweet more often as a whole than the average Australian Twitter user, while Adi, Erickson, and Lilleker (2014) find the members of the British House of Lords tweet at similar frequency as other British users. Studies may look at differences between groups involving politicians, as above, or between individuals (Conway, Kenski, and Wang 2013; Christensen 2013).

Researchers have expanded the scope of the political actors beyond just politicians and candidates. For instance, Larsson and Moe (2012) combine basic user data with background research on individual Twitter users and network analysis to determine who are behind the most active users in regard to the Swedish 2010 national election—mainly establish actors, but also a limited number of non-elite, and even anonymous, users.

Finally, account-centered information has been used in part to help compare online and offline activities, resulting in such findings as those who are politically active online are the same ones active offline (Bekafigo and McBride 2013). Studies have also shown potential benefits of online use in the offline setting, both financially for campaigns (Hong 2013) and electoral in the voting booth (Kruikemeier 2014).

### **Behavior-centered Components and Related Research**

Behavior-centered components related to behavioral patterns of the account user, such as daily activity or seasonality patterns in when tweets are posted, or the general geolocations of where tweets are being posted from. These components are typically more indirect as they require aggregate data across time and location.

Research using behavior-centered components sometimes focuses on Twitter use within a day; Ausserhofer and Maireder (2013, 309) find that Austrian Twitter users engaging in political participation (politicians, journalist, pundits, and citizens) “conform to the pattern of ‘broadcast by day, chat by night’.” Other times the research focus is between days. Aragón et al. (2013) find Twitter activity among Spanish politicians increases on days with notable events, such as televised debates or the actual election day, as does Graham et al. (2013) with British ones. Extending the time frame slightly longer, Conway et al. (2013) find the daily number of tweets from 2012 Republican presidential candidates dwindled off as the campaign progressed.

Looking at other behavioral patterns among political-oriented actors is rare, but not unheard of; Conover et al. (2012) use self-reported locations from user profiles in combination with Tweet volumes to see analyze which states have more or less tweets than anticipated for their respective region. Bruns and Highfield (2013) find politicians and parties in a Australian regional election could not influence the overall electoral debate on Twitter, regardless of the strategies used for campaigning on the platform

## Content-centered Components and Related Research

Content-centered components focus heavily on the actual text of the tweet. This may be information on the message itself, but also other information that is able to be incorporated, including links or hashtags—user generated markers beginning with the pound sign (#) which help place a tweet in a topical category (ex. #news, #vote, #election, and so forth).

Unsurprisingly, the majority of electoral-oriented research using Twitter is related to the content of the tweet. One of the biggest questions in electoral campaign research is how politicians use the service to reach constituents. There is a long standing debate about whether the Internet will improve democracy, so researchers often frame a dichotomy of whether a tweet from a politician is just broadcasting and acting as another form of self-promotion, or whether the tweet has the intention of creating interaction between users and, hence, helping democracy by creating a closer connection between politicians and their constituents. Many studies have indicated broadcasting and self-promotion is most common (Golbeck, Grimes, and Rogers 2010; Aragón et al. 2013; Sobaci and Karkin 2013), though this is not a truism (Broersma and Graham 2012).

Of course interest in content goes beyond the activity of electoral candidates and elected politicians. For instance, some research has been done on non-elected politicians (Adi, Erickson, and Lilleker 2014; Renz and Sullivan 2013), other research has been centered on non-politicians (Ausserhofer and Maireder 2013; Bruns and Burgess 2011; Bruns and Highfield 2013; Sandoval-Almazan 2015).

Researchers also focus on the topics of discussion. For example, Sæbø (2011) distills an eight category typology for tweets for politicians, further providing a general who, what, where, where, and why for each of these categories. Similarly, Graham et al. (2013) create a multilayer typology of tweets of candidates, starting with four general tweet types, then 14 functions for the tweet, and finally 19 topics of the tweet. However, research in this area need not be categorical in nature, particularly when looking focusing on a limited number of users (Aharony 2012). Such research may also extend into research in highly technical realms such as sentiment analysis, where the aim is to determine attitudes and feelings of users as portrayed in their tweets (Dang-Xuan et al. 2013).

Finally, some studies provide general insight into how some features of Twitter are utilized in general. These features include retweets (Boyd, Golder, and Lotan 2010), hashtags (Small 2011), and URLs (Moe and Larsson 2013).

It is worth noting that content analysis with Twitter data is sometimes done manually and other times with computerized methods. If the research is looking at a small subset of users, manual methods can provide the most in depth and accurate results. For example, Frame and Brachotte (2015) look at the contents of tweets by just five French politicians. However, even despite the limited size of any one tweet, some researchers have chosen to manually code tens of thousands of tweets (Golbeck, Grimes, and Rogers 2010; Small 2011; Graham et al. 2013; Adi, Erickson, and Lilleker 2014); this is surely a laboriously intensive task. At the same time,

computerized methods are available and may be more efficient though less in depth. Some examples of studies using computerized methods include Conover et al. (2012), who analyze 312,560 tweets, and Bruns and Burgess (2011, 40), who look at 415,009 tweets. Of course there is always room to combine manual and automated methods (Kruikemeier 2014).

## Network-centered Components and Related Research

Network-centered components relate to the social network between accounts, and are generated indirectly through a variety of interactions. These includes specific linkages on which accounts are following which accounts, but also includes which accounts mention which accounts—mention is an action done by using the At-sign (@) to call out another specific user account (ex. @barackobama [U.S. President Barack Obama], @t\_ishin [Toru Hashimoto, a Japanese politician popular on Twitter], and so forth).

Relating to electoral activity, networked-centered components are typically used to find who politicians are networked to, or to find out more generally how the most active politically-oriented Twitter users interconnect. In the former, for example, Aragón et al. (2013) find that there is balkanization among Spanish politicians on Twitter. In the latter, by combining networks with hashtags, Conover et al. (2012) were able to separate out two distinct groups of users during the 2010 U.S. midterm election, one right-leaning and one left-leaning. Also, Ausserhofer and Maireder (2013) find that Austrian Twitter users who had professional backgrounds relating to politics tend form relatively closed subnetworks amongst themselves, with little connection to ordinary citizens. This type of analysis can be taken further by combining the results with evidence on other types of networks, such as networks formed by homepages and blogs (Hsu and Park 2012).

## Data Collection

The data set for this exploratory study is a piece of a larger dataset relating to politicians and candidates during the 2014 Japanese general election (Williams 2015). Specifically we focus on electoral candidates and incumbent members of the Japanese parliament during the electoral campaign period that was held from December 3 to December 13 (Japanese Standard Time) immediately prior to the election on the 14th. Before the beginning of the official campaign period, the Twitter accounts for all members of the Japanese parliament were collated from the Mainichi Shimbun's Digital National Diet Member Directory (Mainichi Shimbun 2014) and then checked for missing entries. This account enumeration strategy provides a well-defined population of users of interest, and then identifies their online presence. In this way it helps to avoid bias from using Twitter itself to identify users to study.

Once the population of interest has been defined we utilize the Twitter Application Programming Interface (API) to collect and archive data. Using a set of custom scripts, we query the API to capture the basic account information, a variable amount of previously posted tweets (dependent on API limitations), and all new tweets posted. Data is queried on a regular basis for each account so that data collection occurs continually over time. Data collection continued throughout the election period for all known candidates in the election.

We then repeated the above process during the election campaign period for all candidates once social media data became available on the Asahi Shimbun Election Candidate Database (Asahi Shimbun 2014).

In addition to the Twitter account and tweet information, we also collected from the same sources some basic biographical and electoral information on each politician and candidate, such as age, sex, region of representation, party affiliation, and electoral position held or sought.

## Application of Methods and Initial Analyses

The dataset we possess provides chances to analyze from all four components described above, though we cannot address all of topics already noted because our data is limited to just the politicians. Below we provide some potential questions of interest and some preliminary analyses that could start to answer those questions.

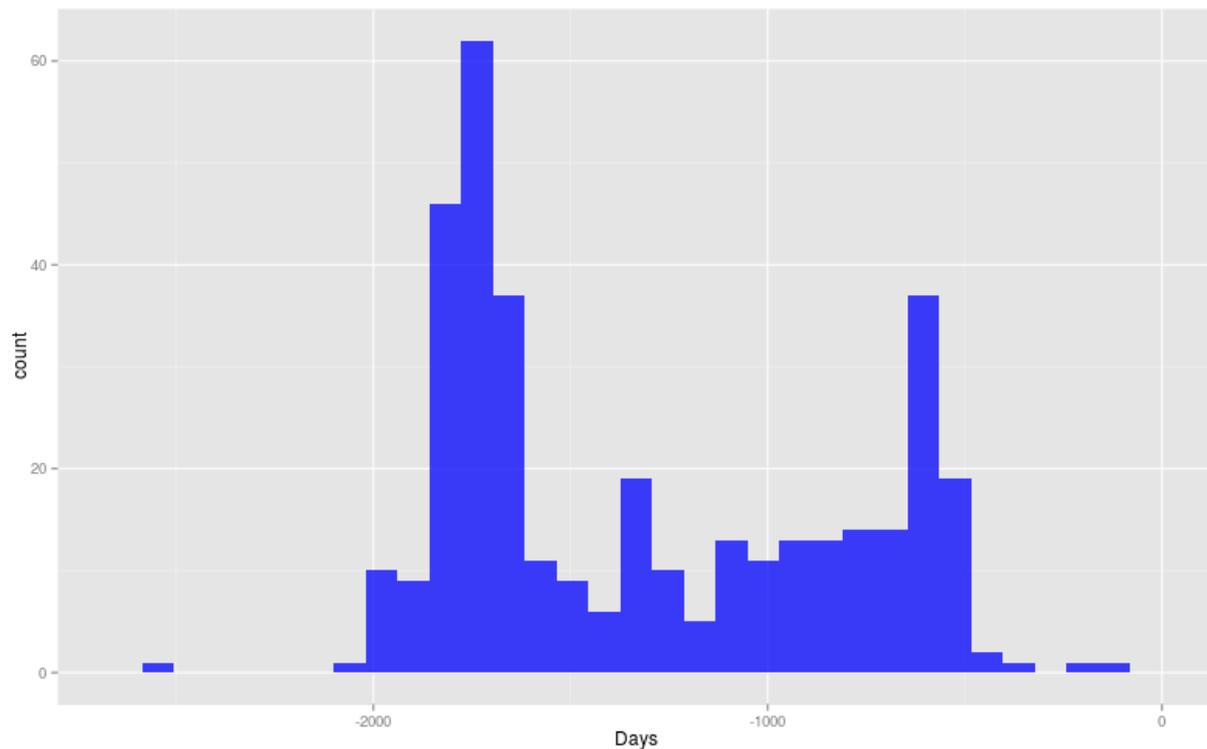
### Preliminary Results: Account-centered Analysis

There are two general questions that stick out in the literature that seem both important and appropriate for the dataset using account-centered components:

- What patterns of adoption can be seen among candidates in the elections when comparing party, incumbency, age, and so forth?
- What patterns of overall usage can be seen among candidates in the elections when comparing party, incumbency, age, and so forth?

To begin to explore adoption, we consider the “age” of each account in our dataset, as seen in *Figure A: Age of Accounts*. While we have not yet cut adoption by user features, such as party affiliation, the figure provides us with a distribution of the accounts by date of creation for all users in the database. We can see two notable spikes, one at around 500 to 600 days prior to the “zero” date of December 14, 2015—that is, April to August of 2013. The other peak is about 1,600 to 1,800 days prior to the zero date—or, the first half of 2010. This indicates that there was a group of earlier adapters in a wave of popularity in 2010, which corresponding to assertions of Matsuura (2010). A second wave of popularity in 2013 corresponds well with the period between legal revision of the electoral campaigning law and the summer 2013 Upper House election.

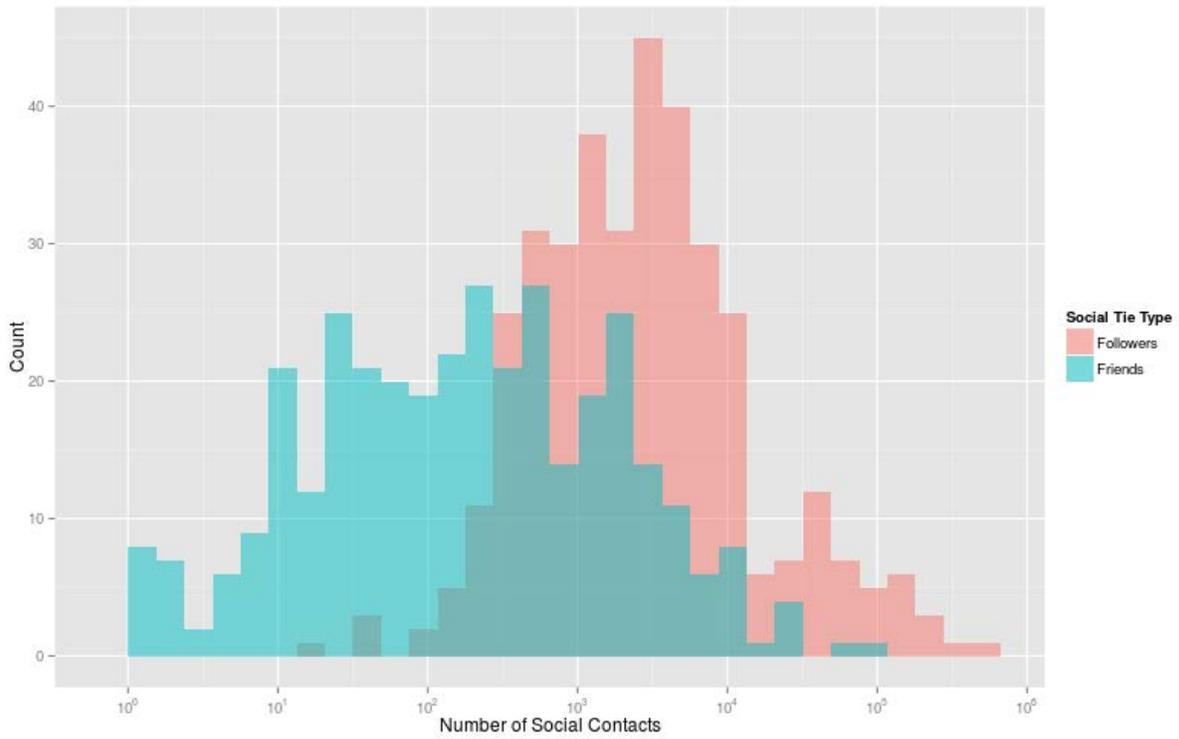
Figure A: Age of Accounts



*This graph shows the distribution of accounts based on age. The number of accounts in any given time block is represented on the vertical axis, while the age is represented on the horizontal with the farther left the older the account. (Day 0 is December 14, 2014—election day). (Source: Authors' Calculations).*

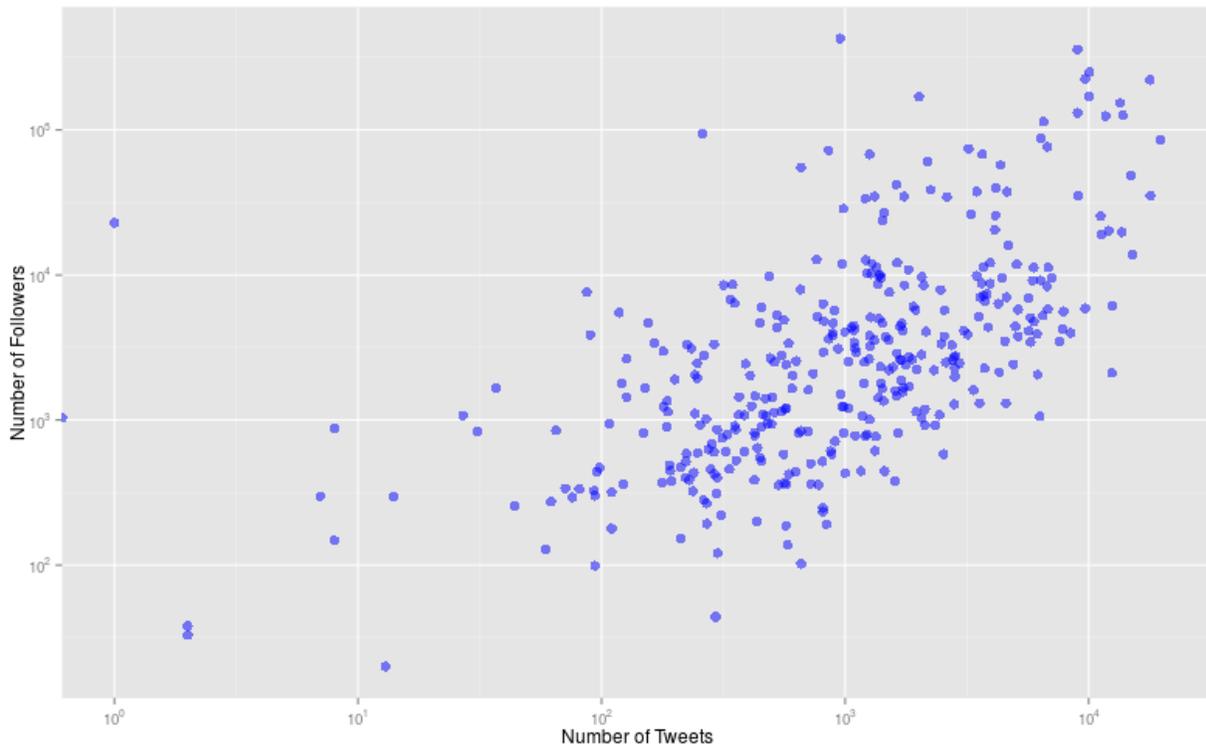
Next, we describe the accounts in terms of the embeddedness within the platform by looking at average numbers of social ties, as seen in *Figure B: Distribution of Count of Friends and Followers*. We also explore how these ties might be related to activity, as seen in *Figure B: Followers to Tweets*. Figure B provides a distribution of the number of friends and followers any given account may have. What is most clear is that the accounts tend to have in the tens to hundreds of friends, while having in the hundreds to thousands of followers. This may indicate that the candidates and politicians in our dataset prefer to have their voices heard by others than they prefer to hear others voices. Figure C plots the number of followers each user has to the number of tweets they have made over the lifetime of the account. It is visually obvious that the number of tweets generally correlates positively to the number of followers. Speculatively, this may mean that the more a politician tweets, the greater the online reputation they build, which in turn could lead increased electoral success.

Figure C: Distribution of Count of Friends and Followers



*This graph shows the distribution of the number of friends and followers for all accounts in the dataset. The number of accounts in any given numerical block is represented on the vertical axis, while the numerical count is represented on the horizontal, increasing from left to right on a power-of-10 scale. Light blue represents the number of friends, pink represents the number of followers, and dark blue represents the crossover. (Source: Authors' Calculations).*

Figure D: Followers to Tweets



This figure shows the number of followers (vertical axis) to the number of tweets (horizontal axis). The horizontal axis is constructed on a power-of-10 scale. (Source: Authors' Calculations).

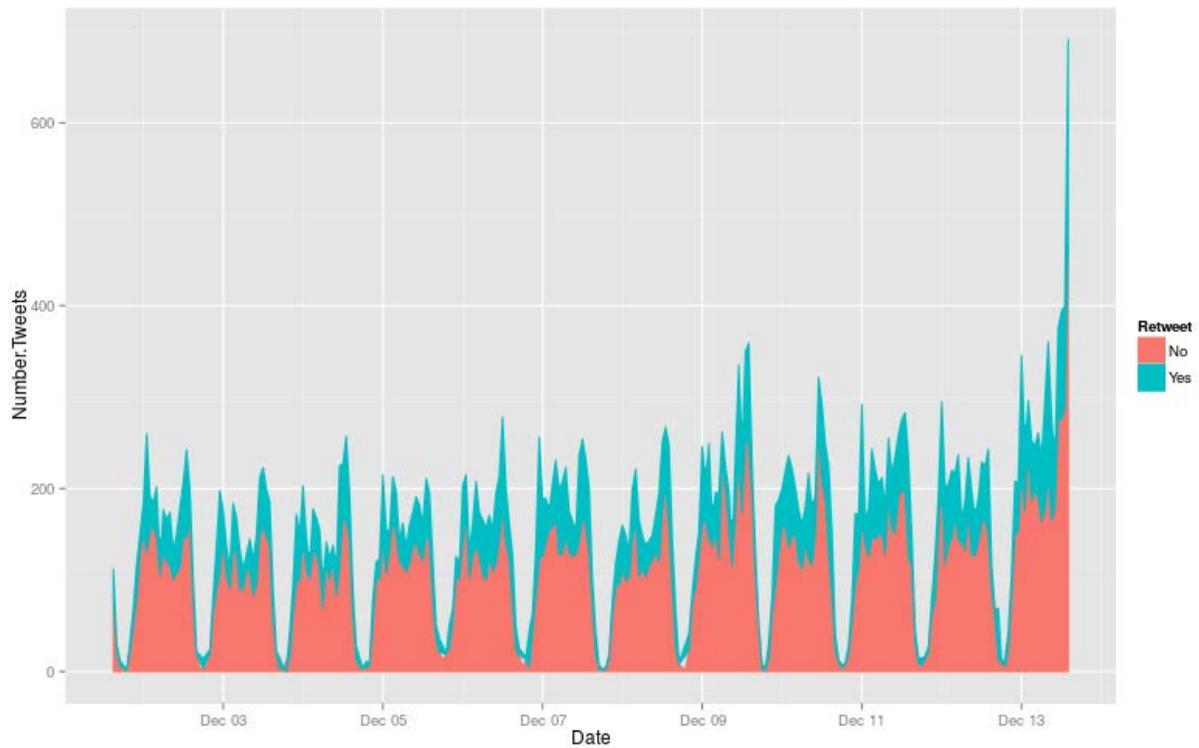
### Preliminary Results: Behavior-centered Analysis

Account-centered analysis gives a general view into the properties and characteristics of our study population, however many questions of interest center about user behavior. We explore these questions here. For example:

- What patterns can be seen in overall volumes of tweets per day during the campaign period?

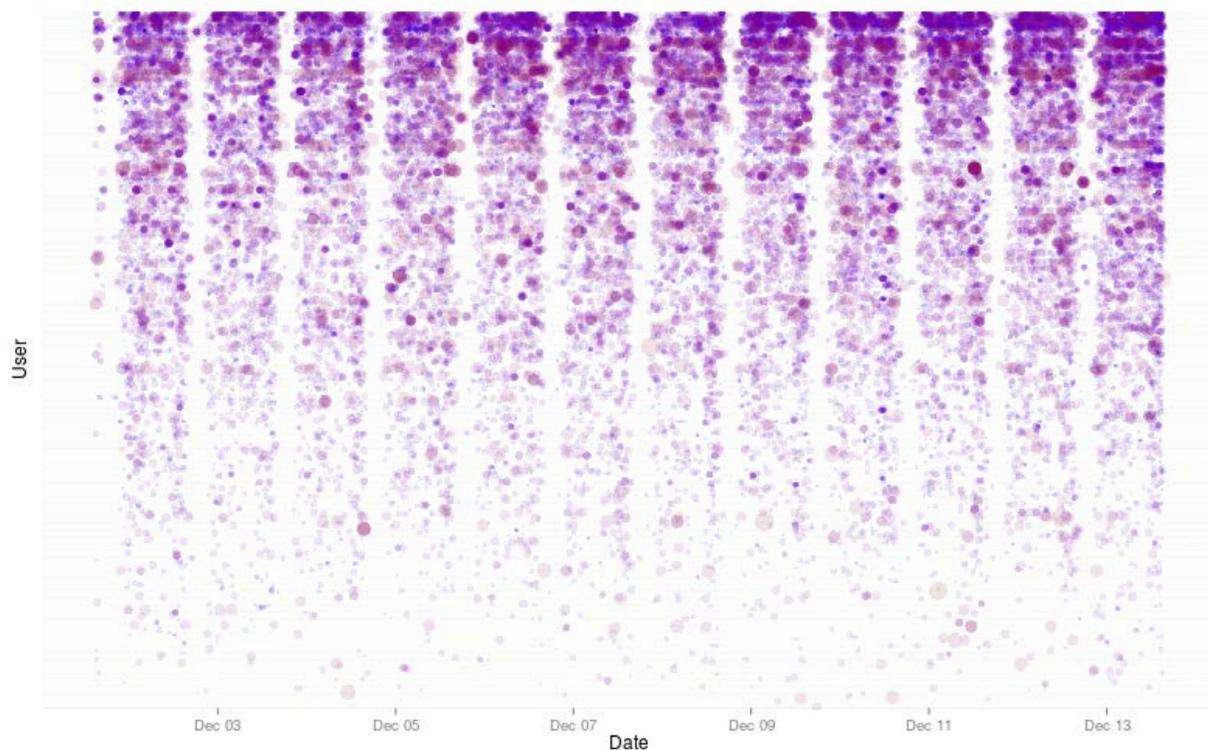
*Figure D: Number of Tweets over the Election Campaign Period* and *Figure E: User Tweeting Pattern over the Election Campaign Period* provide some initial analysis of behavior. Figure D shows us the volume of tweets at any given period of time during the election campaign period (December 3 to December 13 JST). Notably, we can see the regular ebbs of activity during the nighttime hours when most people are presumably sleeping. We also see a heavy increase in activity on the day before the election, likely as candidates make their last pleas for votes. Figure E provides visual evidence of each accounts tweeting pattern during the election campaign period (December 3 to December 13 JST). Each user is represented on a horizontal line, with the heavier Twitter users at the top. As with Figure D, we can see the regular ebbs of activity during the nighttime hours when most people are presumably sleeping. Based on some of the larger dots in the lower regions of the figure, we also can find some user that tweet less regularly, but still reaction from followers.

Figure E: Number of Tweets over the Election Campaign Period



*This figure shows the distribution of the number of tweets (vertical axis) over time during the official election campaign period (horizontal axis). Note that the time on the horizontal axis is given in Coordinated Universal Time (UTC), which is 9 hours behind Japanese Standard Time (JST). The red (bottom) color represents the volume of original tweets, while the blue (top) color represents the volume of retweets by all of the users in the dataset (Source: Authors' Calculations).*

Figure F: User Tweeting Pattern over the Election Campaign Period



This figure shows the number of tweets for any given user account over time during the official election campaign period. Any given horizontal line on the vertical axis represents a user. Each dot is a tweet, with the size of the dot showing the number of retweets. The horizontal axis indicates the date and time. Note that the time on the horizontal axis is given in Coordinated Universal Time (UTC), which is 9 hours behind Japanese Standard Time (JST). (Source: Authors' Calculations).

### Preliminary Results: Content-centered Analysis

Next, we move from user-centered questions to content-related questions. We focus briefly here on two important points:

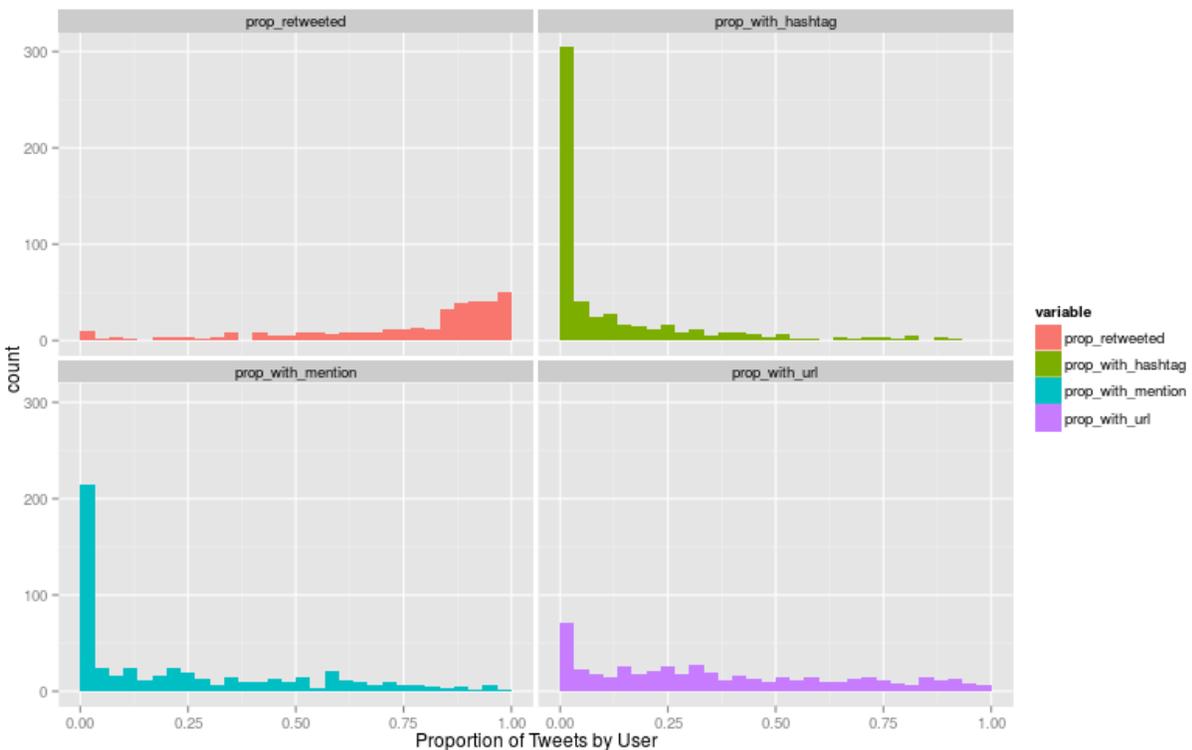
- Are Japanese politicians and candidates broadcasting or interacting during the campaign period, as seen in the breakdown of types of messages being sent out (i.e. retweet, reply, neither)?
- What are the general topical focuses of the tweets?

The first question can begin to be answered with *Figure F: Proportion of User Tweets by Content* and *Table 1: Top 10 Tweets by Retweet Count*. Figure F provides an indication of how users use the basic tweet functions of retweeting, using hashtags, using @mentions, and using URLs. We can see there is a portion of users who do almost exclusively retweets. We can also see that there are a number of users who forego the use of hashtags and @mentions. The use of URLs is fairly sporadic. The excessively high volume of retweets as a proportion of all tweets for some users, and the lack of the use of the @mention function would indicate that users in our database are just broadcasting.

Then, Table 1 provides a manual content analysis of the ten most retweeted tweets by users in the database during the election campaign period. Specifically, the top tweet was one by the LDP's party account, followed by five tweets by current Prime Minister Abe Shinzo and one by former Prime Minister Naoto Kan. Abe Shinzo's tweets were largely broadcasting information about where he was and what he was eating at the time. The final four tweets come from rightwing candidates, both of whom failed to get elected. This one sample of tweets points to broadcasting over interacting. However, it could reasonably be assumed that broadcast message would be retweeted more than conversations, so we certainly cannot make judgements on the entire sample from this sample.

The second question can start to be answered briefly with Table 1, pointing to a heavy emphasis on campaign-related activities and not substantive policy issues. For example, five tweets in the top ten belong to Prime Minister Abe, who in four cases was simply describing where he was on the campaign trail and what local food he was getting. Again, this sample is likely not representative.

**Figure F: Proportion of User Tweets by Content**



*The figure shows four charts. On each chart, the horizontal axis shows what proportion of all tweets for any given user of each the type of tweet in the chart represents. The vertical axis shows the number of users at any given proportion. The top left chart shows tweets that are retweets, the top right chart shows tweets that use hashtags, the bottom left chart shows tweets that use the @mention function, and the bottom right chart shows tweets that include URLs. (Source: Authors' Calculations).*

**Table 1: Top 10 Tweets by Retweet Count**

User Name	Time of Tweet	Number of Retweets	User Occupation	User Party	Function of Tweet	Topic of Tweet
jimin_koho	12/5/2014 1:14	7724	Political Party	LDP	Campaign Promotion	Business and Economy
AbeShinzo	12/2/2014 6:09	6994	Prime Minister	LDP	Campaign Trail	Other
AbeShinzo	12/5/2014 11:27	4325	Prime Minister	LDP	Campaign Trail	Other
AbeShinzo	12/6/2014 12:59	3897	Prime Minister	LDP	Campaign Trail	Other
NaotoKan	12/12/2014 11:44	3358	Former Prime Minister	DPJ	Campaign Trail	Campaign and Party Affairs
AbeShinzo	12/10/2014 13:29	2351	Prime Minister	LDP	Campaign Trail	Other
AbeShinzo	12/12/2014 1:12	1804	Prime Minister	LDP	Campaign Trail	Campaign and Party Affairs
toshio_tamogami	12/7/2014 9:31	1735	Candidate	Shinseidai	Campaign Trail	Education
toshio_tamogami	12/9/2014 20:58	1651	Candidate	Shinseidai	Call to Vote	Campaign and Party Affairs
toshio_tamogami	12/1/2014 21:26	1631	Candidate	Shinseidai	Position Taking / Own Stance	Campaign and Party Affairs
miosugita	12/10/2014 14:14	1620	Candidate	Shinseidai	Campaign Trail	Campaign and Party Affairs

*This table provides a breakdown of the top 10 tweets. The categorization for function and topic attempts to follow Graham et al. (2013) categorization scheme. All tweets were in Japanese. (Source: Authors' Calculations).*

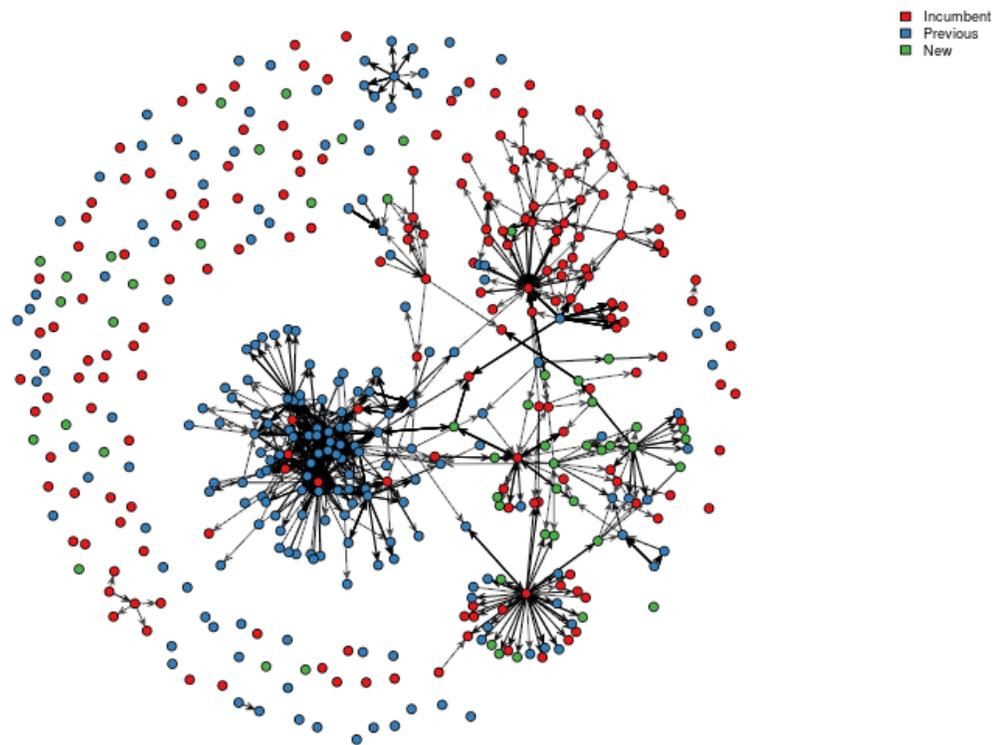
## Preliminary Results: Network-centered Analysis

Another area that has been less studied in prior work is to consider a relational perspective looking at the social network among study participants. In particular we look at the following questions:

- How can the overall structure of the interaction online among users be quantified?
- Are interactions structured along party lines? And does this match with prior work?

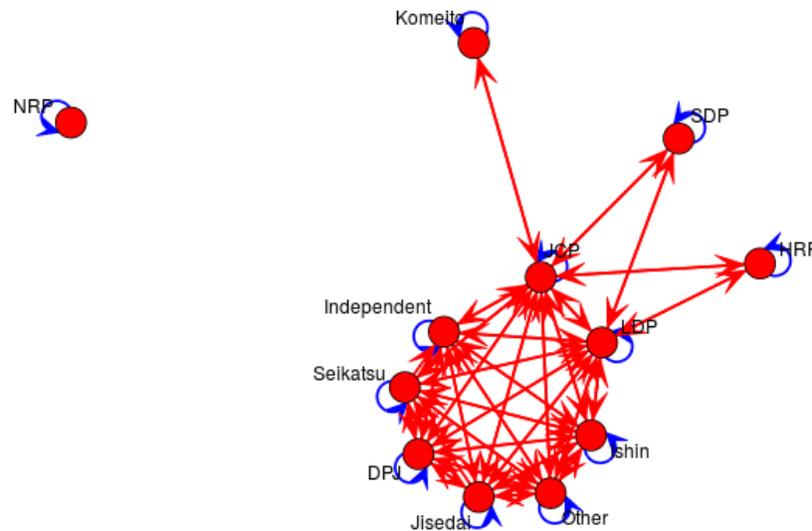
These questions can start to be answered with *Figure G: Candidate Networks* and *Figure H: Network of Party Blocks*. Figure G provides us with a snapshot of the connections between users based on mentions. We can see a number of accounts that are linking to each other, and a number that do not. Within the accounts that link together, we can see multiple central accounts. The network also seems to display a core-periphery structure where some individuals occupy more central roles while others have more peripheral ones. Figure H shows how individuals are connected both within a party and across party affiliations. We can that users from different parties are connected with each other. The LDP (Japan's ruling party) has the most centrality. Komeito, SDP and NRP are not heavily connected with other parties. Blue ties represent significantly high interaction, while red ties represent significantly low interaction. We see strong tendency within party interactions, and very few cross-party interactions.

Figure G: Candidate Networks



*In this figure, each node is a user. Red nodes are incumbents, green nodes are new candidates, and blue nodes are former politicians. Lines represent connections between users based on mentions. (Source: Authors' Calculations).*

Figure G: Network of Party Blocks



*This figure provides a reduced indication how candidates in the election, when grouped by party, follow each other. Nodes indicate all users in any given party and lines indicate a connection between the parties. Arrows show the directionality of the connection. Blue ties represent significantly high interaction, while red ties represent significantly low interaction (Source: Authors' Calculations).*

## Conclusion (Moving Forth)

In this exploratory analyses we have present a first look at a unique database of online electoral-oriented activity. We provided both background into the use of the Internet for political activity in general, as well in the case specific instance of Japanese elections. We then gave a brief overview on existing analyses with similar data to that of our dataset, as broken down into four broad categories of analysis and further by specific questions of interest. Finally, we indicated some initial questions that are both important and our data seems most appropriately able to answer, along with some samples of actual analysis.

Moving forth, we intend to both refine the research questions and the specific analyses undertaken, with the underlying goal of providing answers to questions that will be of interest to the broadest community. In doing so, we hope to provide more nuanced details using the dataset as broken down with greater external variables. We will dig into the Japanese-language aspect, and begin employing automated content analysis methods. Further, we aim find methods of presentation that are both visually appealing and analytically interpretable.

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