

Strength Map of Presidential Candidates 2019 in Indonesia Based on a NodeXL Analysis of Big Data from Twitter¹

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Abstract

Leading up to the 2019 presidential election in Indonesia, campaigns have emerged through social media, particularly Twitter, using various hashtags, such as #2019GantiPresiden (2019 Change President) and #TetapJokowi (Always Jokowi). This paper tries to understand the presidential candidates' power map in forming opinions and influencing voter behavior by analyzing Twitter from August 6, 2018 to September 15, 2018, just before the beginning of the official campaign period, by searching for the keyword "pemilihan presiden RI Tahun 2019" (RI presidential election in 2019). According to our NodeXL's analysis, there were 1,650 active Twitter users talking about the 2019 presidential election. The 1,650 Twitter users have formed a communication network of 46,750 relationships formed from messages in the form of tweets, comments, and retweets. Our analysis found that those mentioning "pilihan presiden 2019" form large communication networks around four clusters: one for each of the two candidates (Jokowi and Prabowo) and two for opinion leaders who are undecided about the election (Gus Mus and Mas Piyu). GusMus is a religious leader, as an official of the PBNU Rais Syuriah (an Islamic organization) and has a large following both on and off Twitter. "MasPiyu" is an unidentified Twitter user; he only has a large following on Twitter, but does not have support offline.

Keywords: presidential election, public opinion, communication network, Twitter, Indonesia, NodeXL

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Introduction

There are two pairs of candidates for the 2019 presidential election in Indonesia, namely Jokowi Widodo - Ma'ruf Amin and Prabowo-Sandiaga Uno. The 2019 presidential election is a re-match, which brings Jokowi's and Prabowo's rivalry back. In the presidential election in 2014, Jokowi got 53.15% of votes and Prabowo got 46.85%. Based on this vote, the 2019 presidential battle is still very competitive, because, based on the 2014 results, presidential candidate Probowo only needs an additional 7% points to win the election. Based on the survey results of the Lingkarsn Survei Indikator (LSI) released on August 21, 2018, Jokowi-Ma'ruf was leading with 52.2%, Prabowo-Sandiaga Uno had 29.5%, and 18.3% of respondents were undecided. In a competitive situation, each presidential candidate must make unique and interesting creations in order to get the attention of voters.

A new era in the political campaign process was marked by the use of social media as one of the political campaign media. Leading up to the 2019 presidential election, presidential campaigns have appeared through a variety of social media with various hashtags such as #2019GantiPresiden, which supports the Parobowo-Sandiaga Uno pair, and #2019TetapJokowi and #Jokowi2periode, which support the Jokowi-Ma'ruf Amin pair.

The total population of Indonesia is 265.4 million, with 130 million active social media users, a penetration rate of 49%. According to survey data, the social media platforms that are most used by Indonesians are YouTube (43%), Facebook (41%), Instagram (38%), and Twitter (27%) (Kemp, 2018).

The presidential election campaign is 7 months long, from September 23, 2018 to April 13, 2019. Social media was tested for its contribution in influencing the public in the period prior to the official campaign period. The presidential campaign, which is packaged in words, pictures, and audio-visual messages on social media, will be considered by voters as they determine their political choices.

The sets of @replies, @mentions, #hastags, and retweets make the Twitter user population networked in multiple ways. Together, a particular set of connections and all the individuals implicated in it form a network. There are at least as many networks in Twitter as there are features listed here, and each of these networks describes something different (Hansen, 2011).

Research Methods

This research describes the flow of information that forms a communication network between Twitter users just before the official start the presidential campaign period in

2018. We analyzed data on three levels: actors, groups (clusters), and the entire network. We used the software NodeXL Pro to map the actors, clusters, conversation content, and communication network systems of Twitter users who discuss the issue of the 2019 presidential election. This research is an exploratory type of research.

This research retrieved Twitter data by using the keyword "pemilihan presiden RI Tahun 2019" (RI presidential election in 2019). Data from August 6, 2018, to September 15, 2018 was selected. August 10, 2018 was the deadline for submitting the Republic of Indonesia presidential candidate pairs to the General Election Commission. Based on big data downloaded from Twitter, researchers conducted conversational analysis and analyzed communication networks formed on Twitter.

Results

Structure of Twitter User Communication Networks

Communication networks on Twitter are formed between users due to tweets, comments, and retweets from messages with the keyword "pemilihan presiden Tahun 2019." The form of Twitter users' communication networks as a whole can be seen in Figure 1.



Figure 1 Communication Network Structure of Twitter Users who use the keyword pemilihan presiden Tahun 2019

The network includes 1,650 users, forming 46,750 unique communication links between Twitter users. This size of this network is very large, which causes the communication network between users not to be too tight. The size of the network structure in a group is related to the number of network members. Small networks are

more cohesive than large networks. The structure of relations between actors also differs between networks with small and large sizes (Carolan, 2013). This shows that users do not know each other and also that, at the time our data was collected, the issue of the Indonesian president was less interesting than other issues, such as the 2018 Asian Games, which were hosted in Indonesia during our data collection period. For example, tweets about the Asian Games received a response from 45.03% of users in our study, while a tweet related to the presidential election ("hundreds of students moving to the palace") received a response from 20.18% of the Twitter users included in our analysis.

The study also identified the "density" of communication networks between Twitter users. Density is the ratio of the number of relationships in the network to the number that might appear. Density shows the intensity of the relationship between Twitter users in communicating. Low-density networks are characterized by a lack of interaction between Twitter users (Eriyanto, 2014). A degree of density of 1 would mean that all users are connected. Overall, the density of the communication network of Twitter users in this study is 0.039620707. This figure shows that the communication network formed between Twitter users is categorized as low, and illustrates that there are relatively few relationships being built in this communication network. Group analysis shows that the network density of the Prabowo group is stronger than the Jokowi group. This shows that Twitter members in Prabowo's group are more loyal than Jokowi's group of Twitter users.

Cluster

We also analyzed the integration between Twitter users through the cluster approach or click. It shows that clusters are formed on a network of 97 Twitter users. Twitter users are divided into 4 major groups, namely: the Jokowi cluster, the Gus Mus cluster, the Mas Piyu cluster, and the Prabowo cluster. Gus Mus is Kiai Haji Ahmad Mustofa Bisri, who is often referred to as Gus Mus (born in Rembang, Central Java, August 10, 1944; age 74 years). He is the caretaker of the Raudlatut Thalibin Islamic Boarding School, Leteh, Rembang and is an official of the PBNU Rais Syuriah. He is a kiai who has influence in Indonesia, especially in the Nadhatul Ulama group (the largest Islamic organization in Indonesia). This is different from the Twitter user known as MasPiyu. MasPiyu is a Twitter user name only. He only has a large following on the Twitter network, but outside of Twitter, he does not have followers.

Of the 4 large cluster groups, 2 clusters support one of the presidential candidates and the other 2 clusters are undecided groups based around an opinion leader. Twitter users who have one thing in common with Jokowi will be in the Jokowi cluster, and Twitter users who have similarities with Prabowo will be in the Prabowo cluster. Twitter users who

have no similarities with Jokowi and Prabowo will be in either the Gus Mus or MasPiyu cluster.

Clusters formed outside the Jokowi and Prabowo clusters are neutral clusters. Neutral clusters do not side with presidential candidate Jokowi or Prabowo but form groups that have not made political choices. Judging from the number of Twitter users, the Jokowi cluster is 27.03% of the total users. The next most popular clusters are the Gus Mus cluster (23.81%), the MasPiyu cluster (21.09%), and the last is the Prabowo cluster (13.33%). This suggests that 59.64% of Twitter users discussing the Indonesian elections have not decided to side with one of the presidential candidates. Judging from the compactness of each cluster, the Prabowo cluster has a score of 0.207 and the Jokowi cluster has a compactness of 0.019. This difference in numbers indicates that the Prabowo cluster is more compact than the Jokowi cluster.

In addition, Prabowo's cluster includes more influential people than the Jokowi cluster. This quality of the Prabowo cluster is seen from people close to Prabowo who have large sphere of influence, such as Fahri Hamzah, Fadli Zon, Susilo Bambang Yudhoyono. These important people have great potential to influence undecided voters (Figure 2).

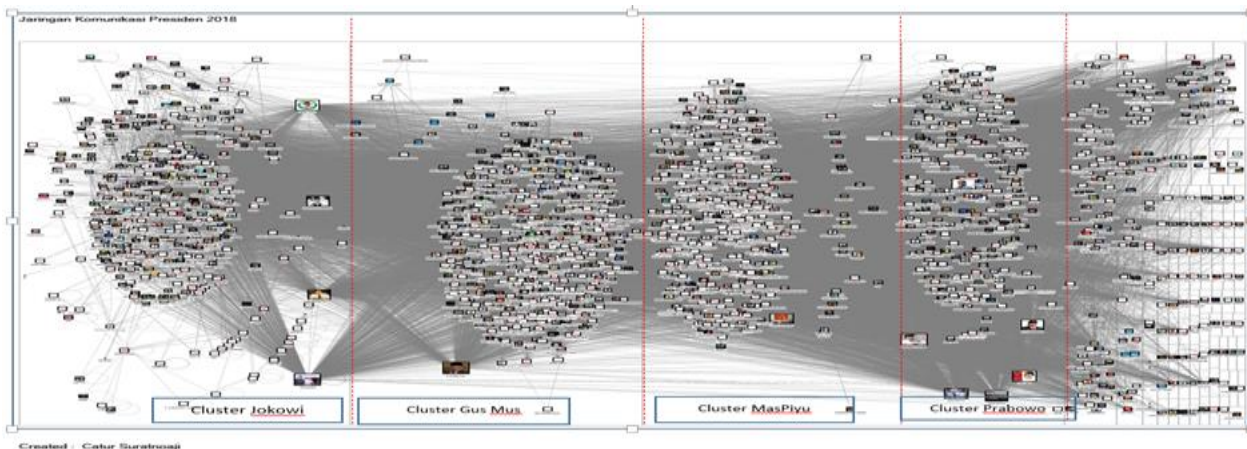


Figure 2 Twitter Users' Communication Network Based on Clusters

Actor Analysis

In the structure of the communication network of Twitter users, there are some prominent people on the Twitter network such as Jokowi, Mahfud MD, Prabowo, Fahri Hamzah, Fadli Zon, Gus Mus, MasPiyu, and Ridwan Kamil. These people were contacted more frequently than others by other Twitter users. In the NodeXL software analysis, Jokowi became one of the highest-ranking social media celebrities with a score of 872 degrees, while Prabowo became a second social media celebrity with a score of 699. Gus

Mus and MasPiyu appear to have the role of connecting various clusters. Gus Mus is a religious and cultural figure. He is neutral about the 2019 presidential election. In real terms, Gus Mus has a large mass that has great potential to be used in the 2019 presidential election, while Mas Piyu's influence is only online. The actor analysis can be seen in Figure 3.

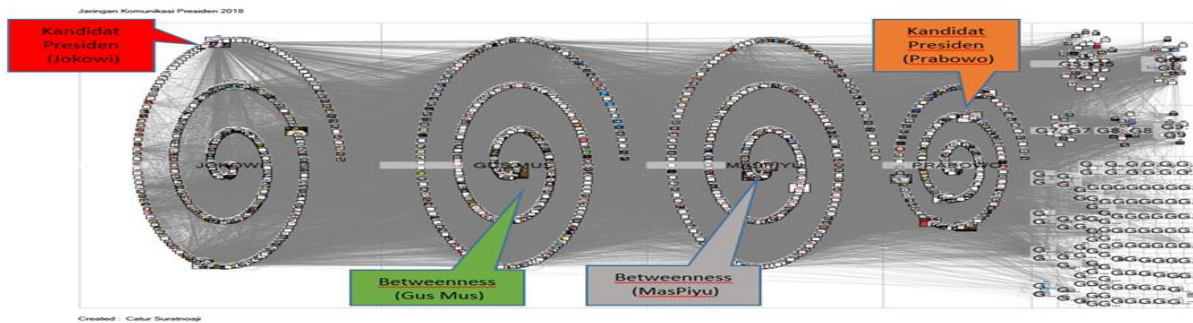


Figure 3 User Communication Networks Based on Actors

Conversation Analysis of Twitter Users

Based on NodeXL's analysis, the most talked about message (top tweet) from the Twitter user communication network came from a Jokowi hashtag that delivered a message (seen in Figure 4), which can be translated as: "According to Thomas Bach (President of the International Olympic Committee), the most impressive success of the 2018 Asian Games was the Indonesians themselves because of the great combination of friendliness and efficiency. With that, Indonesia can host the 2032 Olympics."

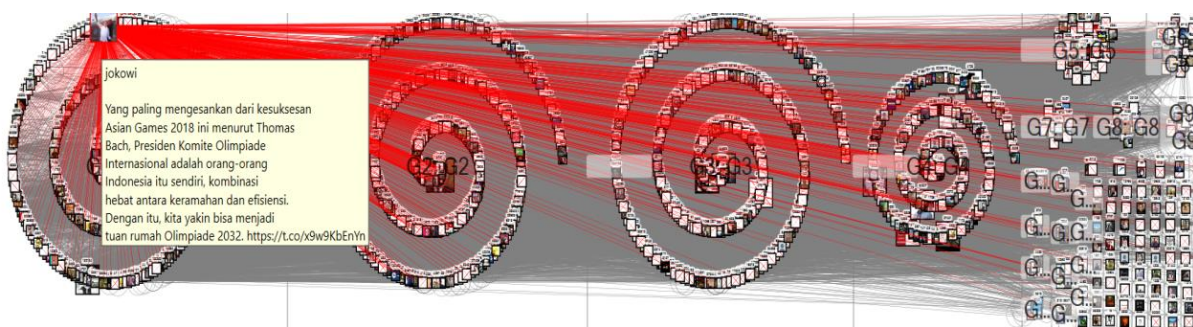


Figure 4 User Communication Networks Based on Tweet

The tweet became a trending topic in the communication network because it got responses from other Twitter users. The response to tweets is not always positive; it can also be negative. The direction of responses to Jokowi's Tweet is mainly positive, although a small portion is negative. This shows the success or achievements of the actors in the group

and also tended to highlight the failure of the performance of other groups.

Each "cluster" uses information dissemination that aims to strengthen the group members. There is a tendency for messages to be spread to highlight the achievements of group members or highlight the other group's failures. For example, based on the NodeXL analysis, which admittedly may not perfectly interpret Indonesian text, in the Jokowi cluster, Jokowi's tweet about the success of the Asian Games was sent and received a positive response from 28.36% (468) and a negative response from 16.67% (275) of the 1,650 total Twitter users included in our analysis. A tweet from a member of the Prabowo cluster about "hundreds of students moving to the palace" received a positive response from 220 users (13.33%) and a negative response from 113 users (6.8%).

Conclusion

The results of our analysis show that issues regarding the presidential choice of 2019 on Twitter have elicited various kinds of responses from Twitter users. Responses in the form of tweets, replies, mentions, and retweets set up communication networks between Twitter users. Some Twitter users actively discuss the issue of the presidential election, but the relationship between users is not too close. Twitter users are divided into four large clusters, namely: the Jokowi cluster, the Gus Mus Cluster, the Mas Piyu Cluster, and the Prabowo Cluster. The Jokowi and Prabowo clusters are the 2019 presidential candidate clusters, while the Gus Mus and Mas Piyu clusters are Twitter user clusters based around opinion leaders who have not decided whom to vote for. Clusters that have not yet decided which presidential candidate to support are larger than the Jokowi and Prabowo clusters. Communication networks in the Prabowo cluster are denser than the Jokowi cluster. In addition, the Prabowo cluster includes more opinion leaders. The top tweet is Jokowi's tweet about the 2018 Asian Games.

It is still too early to use the results of analysis of Twitter user communication networks as a reference in predicting the 2019 presidential election winner. To provide maximum results in predicting the results of the 2019 presidential election, Twitter media analysis must be carried out continuously from now until the end of the 2019 presidential election. In addition, analysis of communication networks on Twitter alone is not enough; it should be combined with analysis of communication networks on Facebook, Youtube, and Instagram.

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