ANALYZING SOCIAL MEDIA NETWORK FOR STUDENTS IN PRESIDENTIAL ELECTION 2019 WITH NODEXL

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Abstract. Twitter is widely used in digital political campaigns. Twitter as a social media that is useful for building networks and even connecting political participants with the community. Indonesia will get a demographic bonus starting next year until 2030. The number of productive ages that will become a demographic bonus if not recognized correctly can be a problem. The election organizer must seize this opportunity for the benefit of voter participation. This study aims to describe the network structure of students in the 2019 presidential election. The first debate was held on January 17, 2019 as a starting point for data retrieval on Twitter social media. This study uses data sources derived from Twitter talks from 17 January 2019 to 20 August 2019 with keywords "#pilpres2019 OR #mahasiswa since: 2019-01-17". The data obtained were analyzed by the communication network analysis method using NodeXL software. Our Analysis found that Top Influencer is @jokowi, as well as Top, Mentioned also @jokowi while Top Tweeters @okezonenews and Top Replied-To @hasmi_bakhtiar. Jokowi is incumbent running for re-election with Ma’ruf Amin (Senior Muslim Cleric) as his running mate against Prabowo Subianto (a former general) and Sandiaga Uno as his running mate (former vice governor). This shows that the more concentrated in the millennial generation in this case students are presidential candidates @jokowi. @okezonenews, the official twitter account of okezone.com (MNC Media Group). Hasmi Bakhtiar (@hasmi_bakhtiar) is a graduate student at the University of Lille in France from Indonesia who often criticizes the Jokowi government.

Keywords: election, students, social network analysis, nodexl

INTRODUCTION

The Indonesian people will soon get a demographic bonus. This demographic bonus starts next year and peaks in 2030 where the number of productive age groups far exceeds the unproductive age group. Indonesia is predicted to get a demographic bonus from 2020 to 2030 in the future. Described in that year the number of productive population will reach 70 percent (aged 15-64 years) while the rest are the non-productive population that is aged under 15 years and above 64 years. The picture is that during the demographic bonus, the majority...
of Indonesia's population will be dominated by productive age groups, which certainly can be a driving force for the progress of our nation in various fields, developed countries such as Japan, Canada or Scandinavian countries are no longer productive because their productive age groups continue to shrink. (Yuswohady, 2017) There is 87.44 percent of youth with cellular ownership and 93.02 percent using it during the last three months. The highest youth internet penetration rate is in the age group 16-18 years, which is 78.90 percent, followed by the age group 19-24 years at 77.26 percent and the age group 25-30 years at 66.20 percent. (BPS, 2018)

The picture of next year until 2030, on the one hand, becomes a blessing if we are able to manage this potential but it will be a big problem if it is not prepared from now on. Today we live in the digital era, the era of network society where the internet connects our daily activities. Various trends emerge in our daily lives ranging from online shopping trends, social media trends to digital political trends. The big thing that must be empowered with the right study. Indonesia in 2019 held the first general elections simultaneously, in addition to electing the president and vice president and electing people's representatives. In 2019 millennial generation is faced with presidential and legislative choices, even in various sources, it is illustrated that the key to electoral winners is in the younger generation, especially the millennial generation.

LITERATURE REVIEW

In the past 10 years in various parts of the world there have been several studies that illustrate that social media-based data analysis methods are said to replace traditional polls and surveys with the affordability and speed of time collected and their accuracy. Some researchers argue that social media has potential uses as an indicator of political opinion and can even be compared with offline surveys. Research conducted by Brendan O'Connor, Ramnath Balasubramanyan, Bryan R. Routledge and Noah A. Smith analyzed several surveys of consumer confidence and political opinions during the period 2008 to 2009 on Twitter social media that there was accuracy so that it was concluded that through social media analysis can as a substitute and also a complement of traditional polling. (O'Connor et al., 2010) Research from Joseph DiGrazia, Karissa McKelvey, Johan Bollen and Fabio Rojas entitled "More Tweets, More Votes: Social Media as a Quantitative Indicator of Political Behavior" in 2010 and 2012 in the United States found that reliable data on political behavior can be extracted from the media social. (DiGrazia et al., 2013) Jin-ah Kwak's research (2018) titled "Analyzing Public Opinion with Social Media Data during Election Periods: A Selective Literature Review" describes that there have been many studies that apply social media-based data analysis methods and some even argue if this method can replace the opinion polls traditional. It can be concluded from this research that social media data can be taken advantage of identifying public agendas and measuring interest and useful in capturing public opinion in the future. (Kwak & Cho, 2018)
Students often use the internet for social media. They are dynamic and are always overwhelmed with curiosity as they are very familiar with technology and tend to be idealistic. They tend to get the latest information through social media. Students are interested in politics but don't want to go directly to online bickering and fret with confusing information, especially on the internet related to politics. (Arianto, 2018) Castells believes that the new social networks are very efficient because they are very good at managing complexity, they are very dynamic and innovative and are able to quickly adapt to changing social conditions. (Castells, 2010) Political participation is an active effort to contribute to political life. The development of communication technology brings a different nuance, especially in the context of social media where political participation can be seen through participating in disseminating political information or giving comments related to politics. From Strength map of Presidential candidates 2019 in Indonesia based on a NodeXL Analysis of Big Data from Twitter that Twitter has 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. (Suratnoaji et al., 2018) One of the political legislation in the 2019 Presidential Election is #pilpres2019 as political representation and #mahasiswa as a millennial generation representation.

The sets of @replies, @mentions, #hashtags, 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 et al., 2011)

METHODOLOGY

The SNA method and technique were chosen because this method can provide a picture or visualization to the smallest relationship that occurs only in one individual with one other individual in the network, this SNA method can also be used to find nodes, communities, and informal hierarchies that have the most influence big in the network. Communication networks are based on two main things, namely actors and relations. It can be simply defined as a set of actors who have relations with other actors in certain types of relations. Communication network analysis looks at micro-non-macro phenomena and aims to describe the communication structure and position of an actor in the communication structure. (Eriyanto, 2014) This research describes the flow of information that forms a communication network among #pilpres2019 or #mahasiswa. Data analyzed on
three levels: actors, clusters and the entire network. We used NodeXL Pro to map the actors, clusters, and communication network system among #pilpres2019 or #mahasiswa. NodeXL Pro is a general-purpose network analysis application that supports network overview, discovery, and exploration. NodeXL is powerful for analysis and network visualization. The first debate was held on January 17, 2019 as a starting point for data retrieval on Twitter social media. This research retrieved data from Twitter from 2019-01-17 until 2019-08-20 with keywords #pilpres2019 OR #mahasiswa using “#pilpres2019 OR #mahasiswa since: 2019-01-17”.

RESULT AND DISCUSSION

Clusters
In entire network, there are 21 clusters where 3 large clusters (vertices above 100) 5 are medium clusters (vertices greater than 50) and 13 small clusters (less than 50). Cluster identification in the top 10 clusters includes:

Cluster 1 with the hashtags related to the #gemapembebasan, #khilafah, #gemapembebasanmalangraya, #indonesian, #islamic. This cluster, if seen from the relation between actors and hashtags, is identical to the Khilafah struggle activities.
Cluster 2 with related hashtags #jokowi, #jokowidodo, #2019tetapjokowi. This cluster, if seen from the relation between actors and hashtag, is identical with activities supporting ballot number 01.
Cluster 3 with related hashtags #unsullied, #gameofthrones, #kuliah, #skripsi. This cluster, if seen from the relation between actors and hashtags, is identical to games, films and online shopping.
Cluster 4 with related hashtags #skripsi, #thesis, #bimbinganskripsi. This cluster, if seen from the relation between actors and hashtags, is identical to academic activities such as final project work.
Cluster 5 with related hashtags #jumatberkah, #indonesia, #lf1. This cluster if seen by the relation between actors and the hashtags is identical to sports activities.
Cluster 6 with related hashtags #mahasiswa, #mahasiswa, #mahasiswa, #pmii, #pmiichannel, #mahasiswa. This cluster is seen when
the relation between actors and the hashtags is identical to the activities of Islamic student organizations related to PMII.

Figure 1. Twitter users Communication Network Based on Clusters

**Actors**

In this entire network there are 10 Top Influencers @jokowi, @detikcom, @prettygoodthings, @gpmalangraya, @kompascom, @yeahmahasiswa, @ometv17, @madeandi, @youtube and @tvonenews while top hastags are: #mahasiswa, #pilpres2019, #jokowi, #khilafah, #gemapembebasan, #indonesia, #jokowidodo, #gemapembebasanmalangraya and #kuliah.

Figure 2. Top Influencers

Top replied-to are on accounts: @hasmi_bakhtiar, @khlasa_insani, @dzoemient12, @sazrirashandy, @paramadina, @yeahmahasiswa, @fawrynashr, @detikcom and @kpu_id. Top mentioned are on accounts:@jokowi, @gpmalangraya, @business, @pmiichannel_and @detikhot. Top Tweeters are on accounts: @okezonenews, @detikcom, @sectest9, @kompascom and @bisniscom.
The results of actor-level analysis, the @jokowi account is a top influencer and top mentioned means to dominate in this network.

Figure 3. Top Replied-To, Top Mentioned and Top Tweeters

Entire Networks

The graph represents a network of 915 Twitter users whose recent tweets contained "#pilpres2019 OR #mahasiswa since:2019-01-17", or who were replied to or mentioned in those tweets, taken from a data set limited to a maximum of 18,000 tweets. Additional tweets that were mentioned in this data set were also collected from prior time periods. These tweets may expand the complete time period of the data. There is an edge for each friend relationship. There is an edge for each "replies-to" relationship in a tweet, an edge for each "mentions" relationship in a tweet, and a self-loop edge for each tweet that is not a "replies-to" or "mentions". The graph is directed. The graph's vertices were grouped by cluster using the Clauset-Newman-Moore cluster algorithm. The graph was layout using the Harel-Koren Fast Multiscale layout algorithm. Unique Edges : 3520 Edges With Duplicates : 1107 Total Edges : 4627 Number of Edge Types : 5 Tweet : 559 Follows : 3188 Retweet : 591 Mentions : 261 Replies to : 28 Self-Loops : 569 Reciprocated Vertex Pair Ratio : 0.0788308237378211 Reciprocated Edge Ratio : 0.146141215106732 Connected Components : 81 Single-Vertex Connected Components : 73 Maximum Vertices in a Connected Component : 820 Maximum Edges in a Connected Component : 4471 Maximum Geodesic Distance (Diameter) : 9 Average Geodesic Distance : 3.258584 Graph Density : 0.0043691932417405 Modularity : 0.344139 NodeXL Version : 1.0.1.419. Top hashtags mahasiswa 596, pilpres2019 225, Jokowi 127, khilafah 106, gemapembebasan 89, Indonesian 88, Islamic 87, gemapembebasanmalangraya 86, Jokowidodo 76 and kuliah 74.
The presence of the Internet gave rise to variants of the practice of political communication, one of which was cyber democracy. (Prajarto et al., 2018) The hashtag is a word preceded by a hashtag symbol (#) which is commonly used to mark certain topics that are considered important. Hashtags become a trend if discussed by many netizens. Hashtags are also used to represent certain groups such as #mahasiswa represent groups of students while #pilpres2019 represents political groups in 2019 symbolizing the participation of millennials (students) in their political participation. Communication via Twitter and its relations provides an illustration of political participation in the digital age. The results of this study found that when the two hashtags were used as keywords in a search in NodeXL Pro software, a network was found that covered them. It was found that students in their political participation joined in specialization groups such as the group that voiced the Khilafah, a support group of one of the candidate pairs, gamers, a study group, and even a pornography fan group. Many things can be explored from the results of this study. With Social Network Analysis we can simply click to go to the actor's account with the calculated values and attributes of the actor. Even researchers can cross-check through online interviews.

At the actors level, it can be seen that the account of one of the presidential candidates, @jokowi, is the top influencer with the biggest degree and being the top mentioned, meaning that it is influential and has become a reference and below is online media. The account @jokowi means that it has the power to influence this network. It is interesting in this study that there are no accounts of other presidential candidates namely @prabowo or his representative @sandiuno as if to illustrate that they do not play in the millennial generation of students consistent with the “Emak-Emak” group.

At the clusters level, in 3 large cluster only 1 clearly supported the presidential candidates, gamely group 2 with related hashtags #jokowi, #jokowidodo, #2019tetapjokowi but the compactness is the lowest compared to 2 other large groups. Group 1 has 219 vertices with a graph density of 0.025, group 2 has 208 vertices with a graph density of 0.014, and group 3 has 110 vertices with a
graph density of 0.015. In group 1 and 3 there are no hashtags that are relevant to presidential or vice presidential candidate number 2 such as #prabowo or #prabowosandi. This illustrates that only presidential candidates with number 1 entered the student network and political participation in the 2019 presidential election.

At the entire networks level, the graph represents a network of 915 Twitter users whose recent tweets contained "#pilpres2019 OR #mahasiswa since:2019-01-17", or who were replied to or mentioned in those tweets, taken from a data set limited to a maximum of 18,000 tweets. The network was obtained from Twitter on Thursday, 22 August 2019 at 04:46 UTC. The tweets in the network were tweeted from Thursday, 17 January 2019 at 10:01 UTC to Tuesday, 20 August 2019 at 18:25 UTC. Additional tweets that were mentioned in this data set were also collected from prior time periods. These tweets may expand the complete time period of the data. There is an edge for each friend relationship. There is an edge for each "replies-to" relationship in a tweet, an edge for each "mentions" relationship in a tweet, and a self-loop edge for each tweet that is not a "replies-to" or "mentions". The graph is directed. The graph's vertices were grouped by cluster using the Clauset-Newman-Moore cluster algorithm. The graph was layout using the Harel-Koren Fast Multiscale layout algorithm. The edge colors are based on edge weight values. The edge widths are based on edge weight values. The edge opacities are based on edge weight values. The vertex sizes are based on followers values. Top 10 Vertices, Ranked by Betweenness Centrality: Jokowi, detikcom, prettygoodthings, gpmalangraya, kompascom, yeahmahasiswa, ometv17, madeandi, youtube, and tvonenews.

This research can still be explored again by qualitative methods, for example by analyzing conversations using Netnography or others. Understanding the digital participation of the millennial generation provides a picture of the current that can be the basis for further political activities that supposedly 2024 will be far more competitive. Political participation is closely related to political awareness where the higher the political awareness of the community, the greater the level of participation and again political participation is an indicator of community concern.

CONCLUSION

The purpose of this study is to identify influential actors, groups formed and complete networks related to students and the 2019 presidential election. Social Network Analysis can detect social networking subgroups with special characteristics. The findings of the social networking subgroups are expected to help illustrate student groups participating in politics in the 2019 presidential election. Influential actors show that the more concentrated in the millennial generation in this case students are presidential candidates @jokowi supported by the media @okezonenews as top tweeters, official twitter account of okezone.com (MNC Media Group). Hary Tanoesoedibjo is the owner of MNC group in political
history starting from Nasdem in 2011-2013, then Hanura 2013-2014. In 2015, formed his own party called Perindo. Perindo is one of the parties in the 2019 presidential election carrying Jokowi as a presidential candidate. Only Top Replied-To @hasmi_bakhtiar (Hasmi Bakhtiar) is a graduate student at the University of Lille in France from Indonesia who often criticizes the Jokowi government. In 3 large clusters, only 1 was clearly supported in sequence number 1, ie cluster 2 while clusters 1 and 3 did not explicitly support one of the candidate pairs.

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BIODATA

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REFERENCE


