

Text as a Social Network Analysis Topography And Political Communication In Indonesia

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Article History:

Submitted: 23-02-2024

Accepted: 26-02-2024

Published: 08-03-2024

Keywords:

texts, social network analysis,
political communication

Brilliance: Research of

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ABSTRACT

Political communication has a central role in shaping public opinion and political dynamics in Indonesia. This research aims to investigate the role of text in the context of Social Network Analysis (SNA) and political communication in Indonesia. This research combines NLP (Natural Language Processing) text analysis with SNA to understand how texts related to politics can provide insight into the relationship between political figures, political issues, and society. The research methodology involves collecting text data from various sources, such as social media, online news, blogs, and political discussion forums. The text data is then processed, analyzed and modeled with SNA analysis tools and NLP algorithms to identify relationships and communication patterns in a political context. In addition, this research also considers how the sentiments in these texts can influence the dynamics of sociopolitical networks. It is hoped that the results of this research will provide a deeper understanding of how political texts can be used as a tool for SNA analysis, with a focus on the Indonesian context. The findings of this research can be useful for political researchers, communication practitioners, and political decision makers to understand the political dynamics that are developing in the digital era. Apart from that, this research also has implications in understanding how political issues and political figures are understood and perceived by the public in political communication in Indonesia.

INTRODUCTION

Word frequency analysis refers to a general technique used in sentiment analysis, especially to determine political communication. This involves counting the occurrences of words in a particular text or set of texts relating to political communication to identify which words are used most frequently. By analyzing word frequency, researchers and analysts can gain insight into the language and themes used in political communication as well as understand how different words or phrases can influence sentiment (Liu, 2012). In the context of political communication sentiment analysis, word frequency analysis may have several positions in research. In general, it serves as an identifier of the main topic; by analyzing word frequency, researchers can identify the topics or issues most frequently mentioned in political communication (Hidayatullah, 2014). This helps in understanding the main focus of political discussions and the concerns of society or political actors. Currently, sentiment analysis in the political situation in Indonesia has become a valuable tool for understanding public opinions, attitudes and emotions towards political figures, policies and events. This involves analyzing sentiments expressed in online discussions, social media posts, news articles, and other texts related to politics in Indonesia (Qiu, et al., 2012).

Word frequency analysis allows the identification of words that are strongly associated with positive or negative sentiment. Certain words may be used more often in positive or negative contexts, and this may reveal existing sentiments toward certain political figures, policies, or events (Murphy, et al. 2012). In an era of intense political discourse and increasing polarization, understanding the language used in political communication it is crucial to understand the dynamics of public opinion and the formation of ideological divisions. Sentiment analysis, one of the sub-fields of natural language processing (NLP), offers a powerful way to explore emotions and attitudes expressed in textual data (Konstantinas&Gintautas, 2017). Indonesia, with its vast cultural diversity, complex socio-political dynamics, and a flourishing digital landscape, presents a compelling case for investigating the role of text in shaping political discourse. As the world becomes increasingly interconnected through online platforms, understanding the textual fabric of social networks becomes crucial in comprehending the flow of information, the formation of public opinion, and the impact on political decision-making processes.

This study purposes to unravel the intricate layers of communication within Indonesian social networks, focusing on the textual elements that influence and are influenced by political conversations. Through the lens of social network analysis, we seek to map out the patterns, clusters, and influencers within these digital ecosystems. By examining the topography of text-based interactions, we aim to decipher the underlying structures that govern the



dissemination of political information, the formation of echo chambers, and the dynamics of public engagement.

Furthermore, this research acknowledges the evolving nature of political communication in the digital age and explores how text, as a medium, shapes and reflects the socio-political landscape in Indonesia. As the country grapples with a myriad of political challenges, ranging from regional diversity to issues of representation and governance, understanding the textual dimension of social networks becomes imperative for comprehending the pulse of Indonesian politics. Through a comprehensive analysis of text as a social network analysis topography, this study endeavors to contribute valuable insights to the broader discourse on political communication, shedding light on the unique features and challenges that characterize Indonesia's socio-political environment in the digital era.

LITERATURE REVIEW

Word frequency analysis refers to a general technique used in sentiment analysis, especially to determine political communication. This involves counting the occurrences of words in a particular text or set of texts relating to political communication to identify which words are used most frequently. By analyzing word frequency, researchers and analysts can gain insight into the language and themes used in political communication as well as understand how different words or phrases can influence sentiment (Liu, 2012). In the context of political communication sentiment analysis, word frequency analysis may have several positions in research. In general, it serves as an identifier of the main topic; by analyzing word frequency, researchers can identify the topics or issues most frequently mentioned in political communication (Hidayatullah, 2014). This helps in understanding the main focus of political discussions and the concerns of society or political actors. Currently, sentiment analysis in the political situation in Indonesia has become a valuable tool for understanding public opinions, attitudes and emotions towards political figures, policies and events. This involves analyzing sentiments expressed in online discussions, social media posts, news articles, and other texts related to politics in Indonesia (Qiu, et al., 2012).

Word frequency analysis allows the identification of words that are strongly associated with positive or negative sentiment. Certain words may be used more often in positive or negative contexts, and this may reveal existing sentiments toward certain political figures, policies, or events (Murphy, et al. 2012). In an era of intense political discourse and increasing polarization, understanding the language used in political communication; it is crucial to understand the dynamics of public opinion and the formation of ideological divisions. Sentiment analysis, one of the sub-fields of natural language processing (NLP), offers a powerful way to explore emotions and attitudes expressed in textual data (Konstantinas&Gintautas, 2017). Working with web browsing data in combination with survey records poses new challenges for social scientists, especially with respect to representation and measurement (Bosch & Revilla, 2021; Stier, Breuer, et al., 2020). Web browsing data, for example, can quickly amount to several thousand data points for just one individual. Often, there is no obvious and straightforward way how to condense them into measurements that can be used in the type of explanatory regression modeling or descriptive approaches commonly used in the social sciences. Social science research projects working with combined survey data and records of users' online activities employ approaches such as counting visits to categories of websites. For example, several studies analyze how users reach online news to investigate whether political attitudes explain online media usage patterns.

Typical research objectives are to investigate differences in socio-demographics and political preferences between visitors and non-visitors of certain categories of websites, such as alternative news websites (Guess, Nyhan, Reifler, et al., 2020), vaccination information websites (Guess, Nyhan, O'Keeffe, et al., 2020) and general health information websites (Bach & Wenz, 2020). Other studies examine ideological segregation in visits to polarized news media (Gentzkow & Shapiro, 2011) and selective exposure, populist attitudes and the consumption of various types of online news (Stier, Kirkizh, et al., 2020). Computational approaches enable us to handle a growing amount of user generated content, which is visual content in the context of Instagram. We propose to focus on text-integrated images and captions in order to apply computational text analysis methods, which are well established, and may serve as a bridge towards the computational analysis of visual media, which is yet a challenge. Overall, we want to explore the potential of computational approaches to discover and analyze visual social media content, with present work focusing on topic modeling as one possible candidate in the development of a workflow for computational visual content analysis.

METHOD

The use of qualitative methods in word frequency research as a sentiment analysis technique in political communication in Indonesia produces deeper context and meaning from the data analyzed. The research method for analyzing sentiment in political communication in Indonesia using word frequency as an analysis technique can be carried out in several steps. First, in text-based data research, it is necessary to collect initial data as the very first stage. The collection of political communication data to be analyzed can be text from the news, social media, political speeches, or other documents that are relevant to the topic you want to research. After data collection is carried out, a process is needed to clean the text data. This process cleans the data from irrelevant information or noise; such as links,



emojis, or special characters. The text used as training data or data source to be analyzed must be clean and ready to be processed; This process is called text mining (Han, et al., 2012).

The text mining process refers to a series of steps to extract valuable information from text data. It involves processing, analyzing and interpreting text data to uncover hidden patterns, trends and insights. In the process, data relevant to the objectives of this research were collected. This data is obtained from various sources, such as websites, text documents, social media, and databases. Then, data cleaning (data preprocessing) was also carried out. In this process, text data is often dirty and messy. The data cleaning stage involves steps such as removing special characters, converting all letters to lowercase, removing stop words, and extracting key words. Stemming or lemmatization techniques are used optimally to overcome word variations. The next stage is tokenization; namely breaking the text into words or tokens. This is necessary to calculate the frequency of words that will be used in sentiment analysis. Next is to calculate the frequency of each word in the dataset. By using simple software, it will produce word frequencies, which can then be interpreted in the context of sentiment analysis. These words can then be categorized into positive, negative, or neutral sentiment, or even using more complex sentiment analysis methods such as machine-based sentiment analysis. The data collection process is used as a basis for identifying sentiments or feelings contained in the text, such as positive, negative or neutral (Vijayarani, et al., 2015).

Apart from the stages above, the cultural and political context is also an element that helps in analysis. The Indonesian cultural and political context is very specific and also determining in analyzing sentiment. Some words or phrases may have special meanings or connotations in the Indonesian political context that need to be considered. The results of the analysis are visualized in the form of graphs and tables to facilitate understanding and readability. This helps to identify trends or patterns in political sentiment in Indonesia. The results of this analysis reveal positive or negative trends in political communication. The final step is to validate sentiment trends by comparing them with previous research or with the opinions of experts in the field of political communication.

RESULT

In word frequency analysis, this research identifies key words that appear most frequently in texts related to political figures in Indonesia. Some of the key words that often appear are "election," "political party," "corruption," "government," "policy," "economy," and the names of certain political figures such as "Prabowo Subianto," "Anies Baswedan", "Puan Maharani" and also "Ridwan Kamil" and "Ganjar Pranowo".

In SNA, this research maps the network of relationships between political figures in Indonesia. It was later found that there were some groups or communities in the network that were more likely to interact with each other. Some political figures have a central position in the network and have many connections with other figures, while others may be more isolated. The following is an example of social media network analysis using SNA from Drone Emprit.

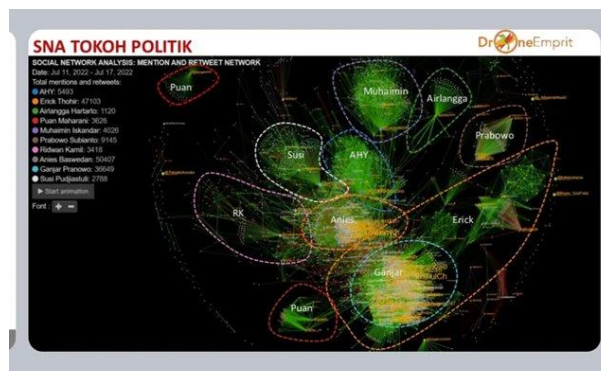


Figure 1. SNA map of political figures ahead of the election

Word frequency analysis can help in understanding the main topics or issues that are widely discussed in the Indonesian political context. For example, words such as “election” and also “corruption” that appear frequently can indicate important issues in political discussions. By combining word frequency analysis with SNA, it can be identified which political figures are most often mentioned or discussed in the texts analyzed. These figures may have significant influence in political discussions or within sociopolitical networks. Analysis of associations and emotions in political news using SNA can provide deep insight into how news influences perceptions and interactions between political entities in society. This can also help in understanding political dynamics and public responses to political news.

The following is an example of the results of analyzing the associations and emotions of several presidential candidates in Indonesia using the Drone Emprit software.

DISCUSSION

Ridwan Kamil (RK)

The trend related to Ridwan Kamil seems to continue to increase along with support from several spikes in discussion. Kang Emil's answer regarding netizens' complaints about fees at state schools was the driving force for the high level of discussion about Ridwan on November 16. RK's response to the Cianjur earthquake was the main driver of the discussion about Ridwan on November 21. Kang Emil's attitude of regretting the removal of identity labels for aid providers for Cianjur earthquake victims was also the impetus for the high level of discussion about Ridwan Kamil on November 27.

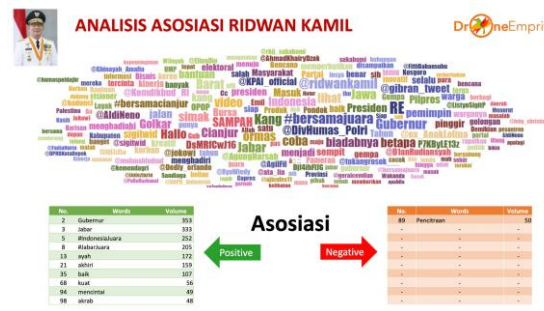


Figure 2. Association analysis

In analyzing the news about Ridwan Kamil, a number of articles or news stories were found that expressed positive sentiments towards him. This is related to achievements or policies that are considered positive by the media or the public. Some words associated with positive sentiment include "good", "loving" and "familiar". On the other hand, articles or news were also found that expressed negative sentiments towards Ridwan Kamil. This is related to controversy, controversial policies, or criticism of his actions as leader. Words associated with negative sentiment include "imaging", and this has quite a high frequency.

With SNA it is also possible to identify clustering or groups in a network that tend to interact with each other. Is there significant polarization or disagreement between these groups? Are there any figures who act as liaisons between these groups? These findings then provide insight into the main themes in political communication in Indonesia and the relationships between political figures in the context of these issues. This can provide useful insights for understanding political dynamics in Indonesia. The combination of word frequency analysis and SNA can provide deep insight into political communication and socio-political networks in Indonesia. It is a powerful tool for understanding how political issues are perceived and how political figures interact in political society.

The relationship between political communication and social media is very close and influences each other. Social media has significantly changed the landscape of political communications, enabling direct interaction between politicians, voters and citizens. Politicians use social media, such as Twitter, Facebook, Instagram, and other platforms, as a tool to communicate with their voters directly. They can share their thoughts, views and policies, as well as interact with citizens through posts, comments and direct messages. In this research, social media shows its function as an integral part of modern political campaigns. Politicians use these platforms to promote themselves, raise campaign funds, and organize events and volunteer campaigns. They can also use paid advertising on social media to reach voters more precisely based on demographic and interest data. Additionally, social media is a valuable data source for politicians and campaigns to monitor public opinion. They can track what voters are talking about, what they like or share, and gauge sentiment toward specific political issues. Moreover, social media allows politicians to respond quickly to developing events or crises, provide clarifications, or take necessary actions. However, this also means that mistakes or controversies can quickly go viral and cost politicians dearly. Social media increases public participation in politics. Citizens can easily follow politics, discuss political issues, and ask politicians questions. Political campaigns can also utilize social media to mobilize voters and encourage participation in elections. Social media has a big influence in shaping public opinion. Information, fake news and political narratives spread quickly on social media platforms. The relationship between social media and politics also raises ethical questions, including in terms of data privacy, surveillance, and the spread of false information. In all, social media has changed the way politics is conducted, making it more open, direct, and interactive. However, this also creates new challenges in managing information, maintaining integrity, and maintaining healthy political communication.

CONCLUSION

In this research, we conducted an in-depth analysis of the role of text in the context of Social Network Analysis (SNA) and political communication in Indonesia. The results of this research provide valuable insight into how politics-



related texts can be used as a tool for mapping socio-political networks. The research results show that political texts can be used to map the network of relationships between political figures, political parties, political issues and other political actors. Utilization of SNA analysis tools in combination with NLP algorithms allows us to effectively identify and visualize these networks. Sentiment analysis in political texts also plays an important role in understanding political communication. We found that positive, negative, or neutral sentiments in these texts can provide insight into the way political issues and political figures are perceived by society.

This research has particular relevance in the Indonesian context, which has unique political dynamics. Our findings suggest that understanding of political communication in Indonesia can be improved by utilizing text analysis and SNA. The results of this research have practical implications for political researchers, communication practitioners, and political decision makers. They can use the methods we developed to understand the evolving political dynamics of the digital era and design more effective communication strategies. Overall, this research makes an important contribution to understanding the relationship between text, SNA, and political communication in Indonesia. This encourages us to further utilize the potential of text data in the digital era to understand politics more deeply and contextually.

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