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Social Network Analysis on Youtube Comments: A Case Study of the 2024 Presidential Candidate Debate (December 12, 2023) Metro TV)

Putri Shalsa Bil Balqis
Universitas Telkom, Indonesia
Email: putrishalsabilb@student.telkomuniversity.ac.id

ABSTRACT

This research examines the dynamics of the social network within YouTube comments during the 2024 Presidential Candidate Debate broadcast by Metro TV on December 12, 2023. As digital platforms like YouTube become central to political discourse, understanding public engagement through comments provides insight into communication networks and opinion formation. The study aims to identify the network structure, key influential actors, and patterns of interaction using Social Network Analysis (SNA). A qualitative case study approach was employed, with data analyzed via Gephi to measure centrality metrics: degree centrality, betweenness centrality, and closeness centrality. Findings revealed that the account @abdurrahmanmisbah1531 exhibited the highest degree centrality (118 connections), indicating its dominant role in information dissemination within the network. The account @DahmanHarahap-ot5yx functioned as a bridge between actors, albeit with low betweenness centrality, suggesting a decentralized network structure. Closeness centrality analysis showed that only 984 actors were highly interconnected, while 11,393 remained passive, highlighting fragmented participation. This research underscores the utility of SNA in mapping online political engagement and reveals the predominance of a few active users amidst widespread passivity. These findings contribute to the understanding of digital public spheres and the role of social media in shaping political communication.

KEYWORDS *Social network analysis, debate, communication, Youtube*

INTRODUCTION

In the digital era, social media and online video platforms such as *YouTube* have become the main forums for people to voice their opinions, express themselves, and participate in various discussions, including in political contexts. By voicing their opinions on social media, these opinions become part of a *communication network*. Rogers (1981) explained that a *communication network* is a network consisting of individuals who are interconnected due to the presence of patterned communication currents (Scott, 2017; Borgatti et al., 2018; Anam & Bratawisnu, 2021; Utami, 2018; Hidayat, 2019; Tsur & Rappoport, 2015). *Communication networks* also provide a clear picture of who communicates with whom in the social environment. Thus, within the *communication network*, *interpersonal communication* is formed, connecting communicators and recipients who are linked around certain topics (Rogers and Kincaid).

YouTube not only provides video content such as news and political news, but also serves as a forum for users to interact with each other using features such as the *comment section*. One of the most important moments in the political context is the *presidential debate*, the main event where the candidates' visions, missions, and plans are announced to the public (Katz et al., 2020; Graham et al., 2016; Kalsnes, 2019; Bruns & Highfield, 2016; Jungherr, 2016; Freelon, 2020). On December 12, 2023, Metro TV held a *presidential candidate debate* for the 2024 Presidential Election. The debate is intended as the main stage for presidential

candidates to compete and express their opinions to gain public support (Bruns et al., 2017; Anam & Kartino, 2021; Tufekci, 2014; Park et al., 2022; Conover et al., 2011; Himelboim et al., 2017). As the intensity of political debate increases, it is important to understand how people engage in political debate through cyberspace, particularly on the *YouTube* platform (Munger, 2020; Al-Rawi, 2020; Kaiser & Rauchfleisch, 2019; Boyd & Ellison, 2017; Papacharissi, 2015; Vaccari & Chadwick, 2020).

Previous research has shown that *YouTube* comments provide an overview of *social networks* in society regarding certain political issues. Therefore, the analysis of *YouTube* social media comments during the presidential candidate debate provides valuable insights into the dynamics of social interaction that occurs, with the focus of this research on the *YouTube* commentary of the 2024 Presidential Candidate Debate (December 12, 2023) by Metro TV. In recent years, social media platforms like *YouTube* have become pivotal spaces for political discourse, enabling users to engage in real-time discussions during significant events such as presidential debates. Previous studies have explored the role of social media in political communication, with a focus on sentiment analysis, user behavior, and the spread of misinformation. For instance, research by Anam (2021) and Kartino et al. (2021) utilized *Social Network Analysis* (*SNA*) to examine interactions on Twitter and other platforms, highlighting the centrality of key actors in information dissemination. However, these studies often overlooked the unique dynamics of *YouTube*'s comment sections, where threaded conversations create intricate networks of interaction. This gap in the literature underscores the need for a deeper investigation into how these networks form and function during high-stakes political events, such as presidential debates (Burggraaf & Trilling, 2022; Shapiro & Park, 2020; Rieder et al., 2020; Boyd, 2019; Skoric et al., 2016; You, 2021).

Despite the growing body of research on digital political engagement, few studies have specifically analyzed the structural patterns of *communication networks* within *YouTube* comments. Existing works, such as those by Bratawisnu (2018) and Utami (2018), have focused on broader social media interactions or group communication networks, leaving *YouTube*'s unique ecosystem underexplored. The absence of detailed *SNA* applications in this context represents a significant research gap, as *YouTube*'s combination of video content and threaded comments creates distinct opportunities for network formation. By addressing this gap, the current study aims to provide a more nuanced understanding of how users interact and influence one another in politically charged environments, offering insights that are not captured by platforms like Twitter or Facebook.

The novelty of this research lies in its focused application of *SNA* to *YouTube* comments during a live presidential debate, a setting that combines real-time engagement with polarized political discourse. Unlike previous studies that examined static or aggregated data, this study captures the dynamic nature of user interactions as they unfold during a high-profile event. By employing *Gephi* to visualize and analyze centrality metrics—*degree*, *betweenness*, and *closeness*—the research identifies not only influential actors but also the underlying structure of the network. This approach reveals how information flows and clusters within the comment section, shedding light on the mechanisms that shape public opinion in digital spaces. Such granular analysis is critical for understanding the role of *YouTube* as a platform for democratic participation and debate.

The benefits of this research extend beyond academic contributions, offering practical implications for policymakers, media analysts, and social media platforms. By mapping the *communication networks* of *YouTube* comments, the study provides actionable insights into how political narratives emerge and spread online. For instance, identifying key influencers and bridging actors can help stakeholders design strategies to foster more inclusive and informed discussions. Additionally, the findings can inform platform algorithms to mitigate *echo chambers* and promote healthier online discourse. For researchers, the study sets a precedent for applying *SNA* to *YouTube*'s unique comment-based interactions, opening avenues for future investigations into other live events or comparative analyses across platforms.

Through this study, we aim to answer important questions such as: What is the *social network* structure of *YouTube* comments during the presidential debate on Metro TV? By examining social interaction related to presidential debates on *YouTube* more deeply, this research is expected to contribute to understanding the dynamics that occur and public participation in online political debates, as well as their impact on the formation of public opinion leading up to the 2024 presidential election.

METHOD

In this study, the *Social Network Analysis* (*SNA*) method is employed, utilizing a descriptive qualitative approach with a case study design. The qualitative approach is chosen to enable an in-depth exploration of the phenomenon, focusing on the unique characteristics and context of interactions within YouTube comments during the 2024 presidential debate broadcast by Metro TV. According to Stake (1994), the case study method aims to uncover the peculiarities or uniqueness inherent in the phenomenon being studied. This approach allows the researcher to concentrate on the background and interactions with the environment, groups, and institutions, making it suitable for discussing actual and distinctive phenomena.

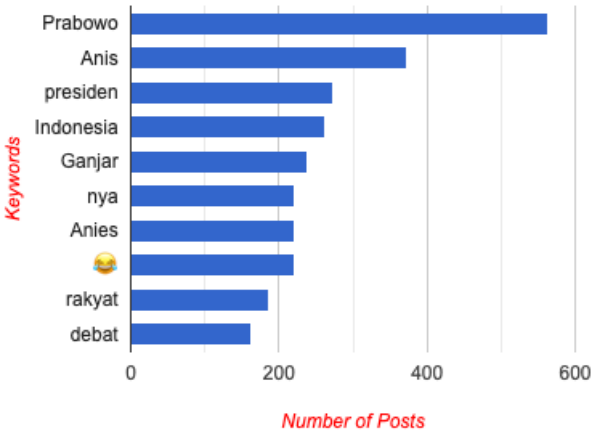
SNA is applied as the primary analytical method to model the communication networks present in the data. Specifically, SNA is used to analyze the social network formed by YouTube comments related to the 2024 presidential debate broadcast by Metro TV. This approach helps describe the structure, identify influential actors, and reveal interaction patterns within the online discussion network.

RESULTS AND DISCUSSION

In the analysis of social networks on the Youtube comments of the 2024 Presidential Candidate Debate (December 12, 2023) Metro TV. The analysis is carried out by looking at actors or nodes in the existing communication network. This is in line with (Scott. 2000) stating that communication networks are formed due to the media and interactions that occur. In the Metro TV Debate Youtube commentary (December 12, 2023), it was found that there were 13049 nodes with 5460 edges. With an account that is an actor, namely @abdurrahmanmisbah1531. With the presence of actors in a communication network, the social structure becomes the focus of the analysis, so that SNA provides an overview of patterns formed through relationships between chords or nodes (Anam, 2021

Picture 1. Visual Communication Network in Comments of the 2024 Presidential Candidate Debate Youtube Metro TV

In addition to influential actors, in this study there are also words that often appear in Metro TV's Youtube commentary on the 2024 Presidential Candidate Debate (December 12, 2023). Of the words that often appear, Prabowo with a total of 563 words accompanied by comments with the word Anis. So that public sentiment here gave rise to the word Prabowo in the comments on the presidential debate broadcast.



Picture 2. Words Often Used in Comments at the 2024 Presidential Debate Metro TV

From the data that has been obtained, it is analyzed using the social network analysis method and the data is analyzed through Gephi. So that the pattern of communication networks in determining centrality, namely degree centrality, betweenness centrality, and closeness centrality.

Degree centrality

In degree centrality, there is a measurement of the number of connections owned by an actor. In this study, the highest degree of centrality was found in the @abdurrahmanmisbah1531 account. In other words, the @abdurrahmanmisbah1531 account here has the most connections in the comments on the Metro TV presidential debate.

Tabel 1. *Degree centrality*

Label	*Degree centrality*
@abdurrahmanmisbah1531	118
@umarsaidffa491	111
@muhamadjahudin5394	85
@unungfachrur412	84

Betweenness centrality

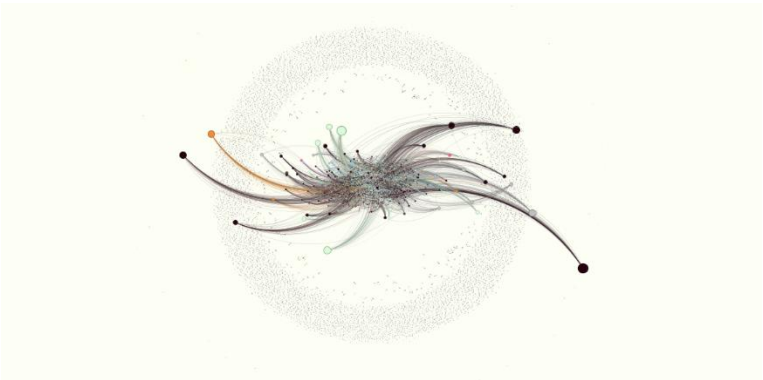
Betweenness centrality is a way of showing nodes that have a role as a link between actors. If you look at the comments on the Youtube live streaming of the 2024 Presidential Candidate Debate (December 12, 2023) Metro TV, there is an account that is a link with other actors. The following is a table of data obtained after being analyzed with Gephi.

Tabel 2. *Betweenness centrality*

Label	*Betweeness centrality*
@DahmanHarahap-ot5yx	0,000003
@boobooid3595	0,000001
@Abeljualiandra-or2wx	0,000001
@samsuddinsamsuddin7609	0,000001

Closeness centrality

In *closeness centrality*, it discusses the number of nodes that are known by other nodes. If the node has a value of 1, then it is known to the other nodes. The following is a visualization of closeness centrality in figure 3 below.



Picture 3. Visualisasi Closeness centrality

In determining the closeness centrality will give rise to network patterns, so that the network pattern will show and describe nodes that are related to other nodes.

Tabel 2. *Closeness centrality*

Total	*Closeness centrality*
984	1.0
672	0.2-0.9
11393	0.0

Table 2 shows that there are 984 actors who have closeness with other actors. Meanwhile, at 0.2-0.9 with a total of 672 actors, they are actors who do not have too closeness to other actors in the comments of the 2024 presidential debate on Metro TV. Finally, nodes with a closeness centrality level of 0 indicate that they are nodes that are not interconnected in the network that is formed.

Scott (2000) explained that communication networks are an individual or group device with several forms of media and interactions that occur. This has happened in the research that has been carried out which gives an idea that there is a communication network that occurs in the comments of the 2024 presidential candidate debate on Youtube Metro TV. In the results section that has shown the results of the analysis using Gephi, the author gets data that the account that is an actor in the social network is @abdurrahmanmisbah1531. With the presence of actors in a communication network, the social structure becomes the focus of the analysis, so that SNA provides an overview of patterns formed through relationships between chords or nodes (Anam, 2021)

In addition to discussing the social networks that occurred in the Youtube commentary of the 2024 Presidential Candidate Debate (December 12, 2023) on Metro TV. From the data that has been obtained, it is analyzed using the social network analysis method and the data is analyzed through Gephi. So that the pattern of communication networks in determining centrality, namely degree centrality, betweenness centrality, and closeness centrality. This has been explained by Anam (2021) Where social network analysis will provide an overview of the patterns formed through relationships between actors or nodes.

This is also supported by Kartino et al (2021) who explain that social network analysis is a method for polarizing interactions and disseminating information in society. In the research that was carried out, there was a degree of centrality where the actors in this study were @abdurrahmanmisbah1531. The account became an actor because it had the most connections in disseminating information in the comment column.

After that, there is a betweenness centrality that becomes the link between actors in the comment column. The small *centrality betweenness* value across the account indicates that the comment network on these impressions has become less structured. In other words, most accounts don't rely on one or more accounts to connect. But the @DahmanHarahap-ot5yx account has little influence compared to other accounts in forming connections between *actors*. This is supported by Utami (2018) in network communication, actors will be formed which are a response to the adaptation that occurs so that they can merge into the network.

Finally, there is closeness centrality in the 2024 Presidential Debate commentary network, Metro TV shows that only a small number of actors are very active and connected to the entire network (984 actors). Most actors tend to be passive or have limited participation in debates. This pattern suggests that the network is interacting but not fully integrated or consolidated.

CONCLUSION

This study employed *Social Network Analysis* (*SNA*) using *Gephi* to map communication patterns in the YouTube comment section during the 2024 Presidential Debate hosted by Metro TV. The analysis of centrality measures indicated that the account @abdurrahmanmisbah1531 was the most influential in disseminating information (degree centrality), while @DahmanHarahap-ot5yx acted as a connector within the network despite the overall lack of centralization (betweenness centrality). Notably, only 984 users were actively and efficiently linked, whereas the majority—11,393 actors—remained on the periphery with limited engagement (closeness centrality), highlighting a fragmented network with predominantly passive participants. These findings underscore the effectiveness of SNA in revealing patterns of communication and information flow within digital communities. For future research, it is recommended to conduct longitudinal studies to observe how these networks evolve over time, compare network structures across different social media platforms, and integrate mixed-methods approaches—such as combining SNA with sentiment or content analysis—to better understand the relationship between network roles and communicative strategies. Further exploration into the influence of algorithmic recommendations and cross-cultural comparisons could also provide deeper insights into the dynamics of digital political engagement.

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