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Analysing the Twitter social media network in voicing opinions on money loundering issue in Indonesia

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Abstract

This study aims to examine the Twitter social media network concerning the money laundering issue involving the Indonesian Ministry of Finance. The primary goal is identifying and highlighting the individuals or entities significantly influencing online discussions. Further, the study looks at the intricacies of public perception and communication about this pressing issue within the Ministry. The study gathered and analyzed Twitter data using social network analysis methodologies, consisting of 6742 nodes and 744 edges. The findings demonstrate ten actors exhibit the most prominent clusters, whereas five exhibit the maximum links. The significance of the Twitter user was @seeksixsuck, who highlights the importance of religious people in ongoing conversations. This research study enhances the social media environment's comprehension of money laundering within the Ministry of Finance, providing insights into the interconnected relationships and individuals influencing the ongoing conversation. The study's findings provide significant value in facilitating public engagement initiatives and promoting a more knowledgeable and engaged population in the ongoing battle against money laundering.

Introduction

Social media networks have notably altered the dynamics of online discourse regarding various issues, especially political and social topics. The discourse on social media frequently entails conflict, evident in the examination of comments on political posts, where language serves to articulate polarized viewpoints, aligning with van Dijk's socio-cognitive framework of positive-self and negative-other polarization (Frolence Rutechura, 2018). The polarization is exacerbated by social media's role in linking online interactions to offline relationships, which may inhibit offline discussions due to the constant awareness of the opinions and activities of social connections (Alfarizy & Arianto, 2024). The impact of social media on democratization is evident in public discussions, where ordinary citizens engage in discourse on persistent social issues, such as personnel shortages in various sectors,

underscoring the role of social media in shaping the public sphere (Judina & Riazantseva, 2024; Tasente, 2023).

Online political participation is affected by the size and diversity of social networks. Larger networks and weak-tie discussions enhance engagement; however, discussions among like-minded individuals show a stronger positive correlation with participation compared to those involving differing opinions (Gaisbauer et al. 2020)we show that through the interplay of the two network representations, it is possible to investigate which opinion groups on the platform primarily shape public opinion, and which ones remain silent to a disproportionate degree. The method is employed to observe public debate about two events: The Saxon state elections and violent riots on New Year's Eve of 2019 in the city of Leipzig. We show that in both cases, (i. Political discussions on platforms such as Facebook typically feature a majority endorsing the group's stance, while a minority voices dissent. Although instances of uncivil behavior occur, the majority of discussions maintain a civil tone (Hampton, Shin, & Lu, 2017; Krzyzanowski & Tucker, 2018). The function of language in social media is essential for expressing political ideologies and practices, indicating the necessity for a cross-disciplinary approach to comprehend these dynamics (Aditiawarman, Mantoro, & Ibrahim 2023). Moreover, social media facilitates communication and enables communities to identify issues, particularly in advocacy contexts where groups emerge around shared concerns rather than pre-designed messages (Gunawan et al. 2023; Sari, Setiawan, & Jandevi 2023). The processes of organization on social media, including information sharing and collective action, are influenced by networked interactions, which offer both opportunities and challenges for engagement (Lina et al., 2024). Social media networks function as a dynamic platform for discussion, engagement, and issue creation, illustrating the complex interplay between online and offline interactions and the diverse nature of public discourse.

Social media plays a pivotal role in influencing political discourse and collective awareness. These platforms function as essential venues for public scrutiny and accountability, especially regarding governance and institutional misconduct. This is particularly apparent in discussions regarding financial scandals, including the money laundering cases involving the Indonesian Ministry of Finance. Money laundering has been endemic in many government institutions around the globe for decades, with adverse effects on public trust, economic development, and societal well-being. Unfortunately, this issue has also affected the Indonesian Ministry of Finance (Kementerian Keuangan). In recent years, startling revelations about money laundering cases within the Ministry have arisen, tarnishing the government's reputation and leaving a lasting mark on the community's collective perception. IDR 349 trillion, or approximately USD 23.267 billion, has been linked to corrupt practices in one particularly egregious incident (Rachman, 2023). According to Sri Mulyani, the Minister of Finance, 964 employees of the Ministry were suspected of having improper assets, and 16 cases were under investigation by the Commission of Corruption Eradication (BBCNewsIndonesia, 2023). This alarming number illustrates the magnitude of the problem and highlights the imperative need for a thorough analysis and intervention.

The extent of money laundering within the Ministry of Finance has eroded public confidence in the government's ability to manage financial matters and created a negative perception among the community. The misappropriation of such a substantial amount of public funds demonstrates a flagrant disregard for the welfare of Indonesian citizens and has caused widespread discontent and disappointment. Beyond mere financial losses, this money laundering scandal has contributed to a growing skepticism of government institutions and their ability to manage public resources effectively (Diepenmaat, 2021;

Imanpour, 2017)the money laundering concept will be explored. Attention will be paid to the historical background and the functional description of money laundering. Also, the effects of money laundering and the need to tackle this phenomenon will be briefly discussed. From there the focus will shift to the second perspective, the combat of money laundering. The international legal framework for the repression and the prevention of money laundering will be described in general. With that, the existing network in place to fight money laundering will be revealed. Furthermore, attention will be paid to Dutch initiatives to improve the existing network and to create new networks. These are among other aimed at a better cooperation between government bodies and private parties. In time these initiatives might be a valuable contribution to the international fight against money laundering.",",note":"DOI: 10.1007/978-3-030-81484-7_7",",page":"115-130",",title":"(The Fight Against.

Analyzing the communication network on social media platforms such as Twitter is essential to understand public perception of the money laundering issue within the Ministry of Finance. The term "communication network" pertains to the interwoven framework of relationships and exchanges among individuals within social media (Kim et al., 2020; Aditiawarman et al., 2023; Utami, Safitri, & Kuncoroyakti, 2021). These platforms function as virtual spaces where individuals can convey opinions, share information, and discuss government affairs (Lin, 2022). The Twitter communication network on the issue of money laundering at the Ministry of Finance can be analyzed to gain valuable insight into how money laundering issues have been amplified, discussed, and disseminated within the community, ultimately shaping public sentiment. Twitter, a widely utilized microblogging platform, has significantly influenced and altered how individuals obtain information from individuals or entities of their interest. On the social media platform Twitter, individuals can disseminate concise messages, known as tweets, to inform their followers about their thoughts, ongoing activities, and immediate environment. Furthermore, individuals can communicate by responding to or sharing other users' tweets (Wang et al., 2020). Thus, the research problem of this paper is

This study delves into the Ministry of Finance's communication network on Twitter, concentrating specifically on the institution's extensive money laundering, which totals IDR 349 trillion or $23.267 billion. By analyzing the dynamics of interactions, sentiments, and influential users within this network, we hope to cast light on money laundering's profound effect on public perceptions and the government's image. Through this analysis, we hope to contribute to a deeper understanding of the complex relationship between money laundering, public opinion, and the Ministry of Finance and to provide valuable insights for policymakers and stakeholders attempting to address these pressing issues.

Recent research has demonstrated a growing interest in analyzing social media communication networks, particularly Twitter, to gain insight into public opinion, political discourse, and the dynamics of information dissemination. Social network analysis (SNA) on Twitter and other social media platforms has become an essential instrument for diverse study fields, especially in public health, business analytics, and social behavior studies (LaCasse & Lunday, 2023)this research models user interactions on Twitter as a weighted, directed network. Topic modeling through Latent Dirichlet Allocation identifies the topics of discussion in Tweets, which this study uses to induce a directed multilayer network wherein users (in one layer. A systematic evaluation indicated that 69% of social network analysis research concentrates on Twitter, demonstrating considerable applications in public health during the COVID-19 epidemic, while underscoring ethical problems in data utilization (Gardasevic et al., 2024). Furthermore, the research on social media analytics (SMA) indicates that Twitter is mostly employed for stakeholder engagement and performance

enhancement across many sectors, with a significant dependence on categorization and regression methodologies (Rathore, Kar, & Ilavarasan, 2017; Permana et al., 2021). Moreover, studies on online social behavior delineate essential traits of participants, communications, and networks, highlighting Twitter's significance in scholarly investigations (Amalia & Abadi, 2024). Spatiotemporal analysis of Twitter data constitute a relatively unexamined domain, providing insights into geographical processes (Sinaga et al., 2024). Finally, the assessment of reputation and impact in online social networks, especially on Twitter, has been comprehensively analyzed, highlighting the intricacies of user interactions and data interpretation (Al-Yazidi et al., 2020). These works collectively demonstrate the diverse applications and persistent challenges of social network analysis in social media research.

Although there is an expanding corpus of literature utilizing social network analysis (SNA) on Twitter data in fields like public health, business analytics, and social behavior (Gardasevic et al,. 2024; Yu et al., 2021), a considerable research gap persists regarding the dynamics of online discourse related to politically sensitive issues, especially concerning financial scandals involving government institutions in developing nations. Although prior research has primarily concentrated on stakeholder engagement, performance indicators, and overarching social behavior patterns (Santoso, Rinjany, & Bafadhal, 2020), there exists a paucity of empirical studies examining how prominent individuals construct public narratives in instances of purported corruption or misbehavior within governmental ministries. The application of Social Network Analysis to delineate influence, pinpoint significant opinion leaders, and examine discourse structures in these situations is still inadequately developed.

This study aims to address this gap by examining the Twitter network associated with the money laundering case involving the Indonesian Ministry of Finance. This research is innovative due to its contextual significance regarding governance and transparency in Southeast Asia, as well as its methodological contribution through the application of Social Network Analysis (SNA) to elucidate influence patterns, actor centrality, and information diffusion within a politically charged digital landscape. The central research problem, therefore, lies in uncovering how social media—beyond just reflecting opinion—actively shapes public perception, engagement, and the legitimacy of state institutions through digital interactions.

Theories that elucidate social media networks are diverse, integrating insights from multiple disciplines to comprehend the intricate interactions and frameworks present within these platforms (Han, 2023)and some studies have focused on the role of interaction topics from the perspective of private engagement. Little research has been done on the impact of affect control embedded in social networks. The emotion-first nature of social media and the rise of affect control theory mean that this perspective deserves attention. Methods This study examined 634 WeChat users by means of an online survey on variables related to social media use, such as social network size, interaction frequency, users' evaluation of network members, and personal topic involvement, and then tested the influencing mode of these variables on people's perceived social support through chain mediation analysis using Model 80 of the process in spss. Results (1. A notable theory is signed network embedding, which accounts for positive and negative social media connections. This approach highlights the distinct properties and added value of negative links, offering a deeper understanding of social dynamics and interactions in these networks (Wijayanto et al., 2024). Another theoretical framework is network media logic, which examines how social media platforms alter political communication by integrating ideals, commercial imperatives, and technological affordances, distinguishing them from traditional mass media logics (Kim et al., 2020). The Nodexl application offers insights into

social media networks by identifying six primary types of network patterns that emerge as self-organised structures, serving as a practical tool for visualising and analysing these networks (Smith 2014).

In order to explain conversational dynamics and the spread of misinformation, theories also look at network patterns in social media, such as the sending and receiving of information on sites like Twitter (Namugera, Wesonga, & Jehopio, 2019; Permana et al., 2021). Lastly, the network structure of investment-focused social media shows how these networks are scale-free and how subnetworks based on shared interests, like stock selection and investment performance, have emerged, illuminating the complex motivations behind network formation (Clausing, 2022). When taken as a whole, theories offer a comprehensive explanation of social media networks, emphasizing the importance of both structural and functional elements in the study of these online spaces.

The authors divide this study into four parts. Following the introduction, the authors outlines the methodologies used in this research to acquire and evaluate the findings given and examined in the same section. The third section presents result and discussion on the analysis result of network analysis. The last section of this article's conclusion concisely summarizes the research results.

Method

This study takes a broad look at the Twitter conversation surrounding the money laundering scandal at Indonesia's Ministry of Finance, using social network analysis (SNA) as its main approach. The analysis focuses on the overall structure of the network, which includes over 6,700 users (nodes) and their interactions (edges). While the study identifies key individuals at the micro level, such as influential Twitter accounts, its main strength lies in how it maps the big picture—the patterns of engagement, the density of the discussions, and how various users and communities are connected. This then places the level of analysis at the macro level with the goal to understand how discourse circulates across a large digital space.

Social network analysis (SNA) effectively examines social systems' structure, relationships, and dynamics. It provides a comprehensive framework for comprehending how individuals and entities within a network interact, communicate, and exert influence over one another (Adniati, Irwansyah, & Awanis, 2023; Utami, Safitri, & Kuncoroyakti, 2021). This research adopts Netlytic as its social network analytical tool. It is a web-based software platform that enables researchers to capture, analyze, and visualize social media data (Adniati et al. 2023; Alfarizy & Arianto, 2024).

Data acquisition is the initial stage in conducting a social network analysis with Netlytic. This study use Netlytic to collect tweets containing relevant keywords or hashtags about the money laundering scandal at the Ministry of Finance. This data collection procedure specifies keywords, including "kemenkeu, TPPU, korupsi, pajak" from March to April 2023. The period was when the money laundering issue surfaced due to the disclosure of the issue by the Coordinating Minister for Politics, Law, and Human Rights.

The next stage is data preprocessing. Netlytic removes duplicate or extraneous tweets, filters out retweets or promotional content, and extracts crucial metadata, including usernames, mentions, and hashtags. By employing these preprocessing procedures, researchers can ensure that the data for the subsequent network analysis are accurate and relevant. It includes measures like density, which turned out to be very low (0.000111), showing that although many users were involved, most interactions were not deeply interconnected. The diameter of the network (6) suggests that messages don't have to

travel far to reach any user—meaning the network is relatively compact. Other measures, like reciprocity (0.000841), indicate that most conversations were one-sided, with users sharing content without much back-and-forth. The centralization score (0.429) points to a moderately decentralized network where influence is distributed rather than controlled by a single account. These metrics together provide a clear sense of how the issue resonated widely but not necessarily deeply in terms of user-to-user interaction.

What makes the study particularly interesting is its breakdown of how individual accounts function within the network. Terms like indegree and outdegree are explained through real examples. For instance, the account @seeksixsuck had a very high indegree, meaning many other users mentioned or interacted with them—but with an outdegree of zero, this user wasn't engaging back, highlighting a passive but influential presence. This kind of account can be seen as a magnet for public attention. While the study briefly mentions concepts like betweenness and closeness centrality, it would benefit from a more detailed explanation of how these metrics reflect influence—such as how closeness to a centrality value of 1.0 suggests an actor is highly influential because they are well-positioned to spread information quickly.

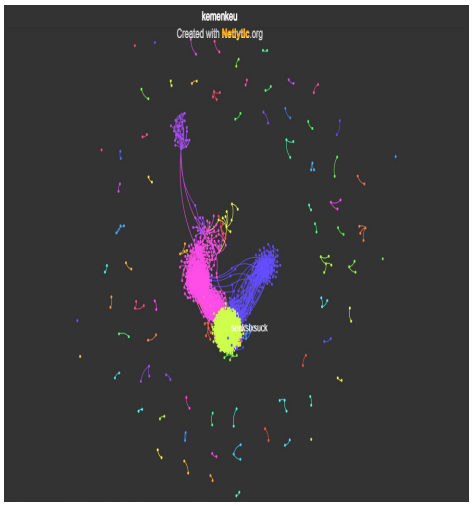
The final stage is the analysis and visualization of the network. Netlytic generates visual representations of the Twitter network, highlighting user interactions. Network metrics such as centrality, connectivity, and community detection algorithms can identify influential users, measure information flow, and identify subgroups or communities within a network. Combining the network analysis findings with the case under investigation allows this study to gain insight into the key actors, influential voices, and overall communication dynamics within the Twitter network surrounding the Ministry of Finance money laundering scandal. This research offers valuable insights into governance and public accountability in Indonesia, while also contextualizing the impact of digital platforms like Twitter on public discourse regarding financial scandals.

Result and Discussion

Network Structure and Participation

This section examines the comprehensive Twitter network framework about the money laundering issue at the Indonesian Ministry of Finance, emphasizing network size, density, interactivity, and participant participation. It encompasses the quantity of nodes and edges, network characteristics like width, density, centralization, and modularity, and elucidates how these elements mirror communication patterns and public engagement.

Based on a dataset containing 6742 nodes and 744 edges, as shown in Graphic 1, a critical analysis of the social network about money laundering at the Indonesian Ministry of Finance reveals significant insights into the public's perception of the issue. The large number of nodes indicates a high level of participation and engagement in the network, indicating a pervasive concern and interest in money laundering cases. The presence of 744 edges indicates numerous connections and interactions between individuals who communicate and share information about money laundering. The higher the edge value shows more conversations about the Ministry of Finance on Twitter social media. The resulting amount can be said to be quite large. This indicates that the topic of money laundering at the Ministry of Finance gained close attention and created an extensive communication network.



Graphic 1 Visualization of communication network #Kemenkeu on Twitter

The mention of 6742 nodes indicates the number of participants in the network, indicating a significant level of engagement and interest in money laundering. Nodes are actors involved in conversations on social media Twitter with the keyword #kemenkeu during the period under study. The greater the number of nodes, the more disparate opinions and perspectives will likely be represented in the network. Therefore, the analysis can provide a comprehensive view of public opinion regarding money laundering.

The network density, calculated as the ratio of actual connections (edges) to possible connections, indicates the network's interconnectivity and information transmission. A high density suggests a robust interchange of information and ideas regarding money laundering at the Ministry of Finance, indicating that the topic has attracted considerable public attention and discussion. This level of participation demonstrates a collective awareness and desire to combat money laundering and hold accountable those responsible.

These findings align with the findings from the Adakami issue on Twitter, where interactions were spontaneous and disorganized, devoid of dominant actors (Alfarizy & Arianto, 2024). The network's diameter and average path length offer insights into communication efficiency, with reduced values signifying more direct communication pathways (Sari & Kurniati, 2022). By analyzing the network's structure, metrics such as centrality, betweenness, and proximity can shed light on the network's leading actors and their influence. Identifying influential nodes (users) can aid in comprehending information dissemination and opinion formation dynamics. Users with high centrality measures, such as a high degree of connectivity or a high betweenness centrality, may wield considerable sway over the formation of public opinion. Researchers can understand the prevalent public sentiment regarding money laundering at the Ministry of Finance by analyzing the content and sentiments expressed in tweets.

Investigating the network's subgroups or communities can reveal diverse opinions and perspectives. Distinct communities of users can form, each representing a unique narrative or perspective on the money laundering issue. Comprehension of these subgroups can provide a nuanced comprehension of how public perception varies within the network, considering factors like political affiliations, ideologies, and personal experiences.

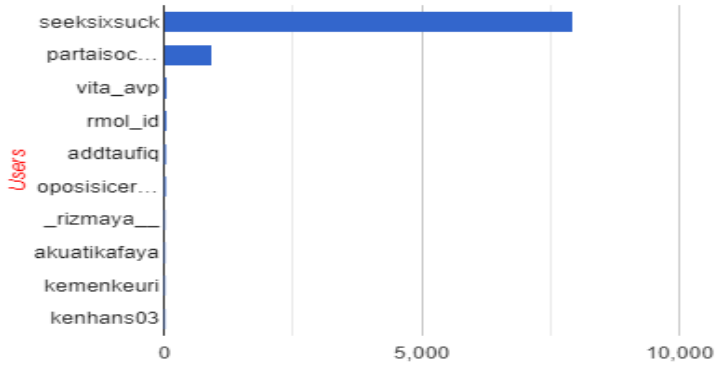
The critical analysis of the social network concerning money laundering at the Indonesian Ministry of Finance, based on a dataset containing 6742 nodes and 744 edges, provides valuable insight into the public's perception of the issue. It emphasizes the broad public interest and engagement, the level of information flow and interconnectivity, and

the potential influence of key actors on public opinion. These findings is in line with the research conducted by Alhassan (2024) that says actors play a crucial role in controlling and sharing information within the network. By analyzing the network structure and content, this study identifies the dominant narratives, opinions, and perspectives which can inform efforts to combat money laundering, restore public trust, and implement effective reforms within the Ministry of Finance.

Actor Clustering

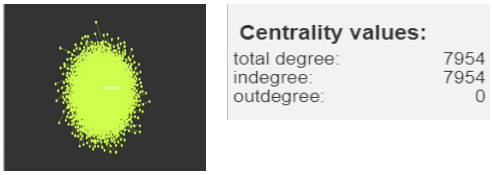
This section examines the most significant participants in the network and their contributions to molding public conversation. It provides comprehensive insights into the prominent Twitter accounts that constitute large clusters, including @seeksixsuck, @ PartaiSocmed, and others. Their centrality metrics, modes of interaction, and possible impact on public perception are rigorously assessed.

Graphic 2 emphasizes the presence of ten actors who constitute the most significant number of clusters in social network analysis. This finding suggests that these actors significantly influence discussions and interactions at the Indonesian Ministry of Finance regarding money laundering. To gain a deeper comprehension of their influence, it is essential to critically analyze the nature of these clusters and the specific contributions of these actors. This analysis may entail examining the content and tone of their tweets and their interaction with other users within their respective clusters. By examining these specifics, this study can distinguish these actors' potential impact and reach on the public's perception of the money laundering issue.



Graphic 2. Clusters in the network

The identified actor with the most significant number of clusters is a Twitter user with the account @seeksicksux. The prominence of this user in terms of cluster formation indicates a high level of participation and influence within the network.

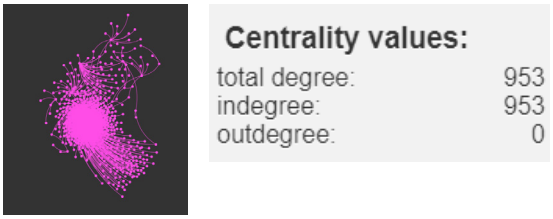


Graphic 3. Account with the most significant number of clusters in the network

The @seeksixsuck Twitter account has joined social media since 2020 and has 37 thousand followers, and follows a total of 612. This account is known to be a high-ranking Indonesian Islamic religious organization Nahdlatul Ulama or NU official. In addition, this leading actor is the father of David Ozora, a victim of abuse by a tax official's son. The

results of Centrality values show a total degree of 7954, which means that the @seeksixsuck account is carrying out activities related to another Twitter account up to 983 times. This number can be considered quite significant, considering that @seeksixsuck's followers reach tens of thousands and have been verified by Twitter. The in-degree result shows a number of 7954, which means that the @seeksixsuck account is an active actor in the network, as other accounts have contacted it.

Meanwhile, outdegree is used to measure the actor who contacts the most. The outdegree result on the @seeksixsuck account shows 0, which means that the leading actor is passive, as it did not contact any accounts. It can be said that the personal connection between this account and the victim of abuse by a tax official's son adds emotional depth to the discussions surrounding money laundering and its impact on individuals' lives.

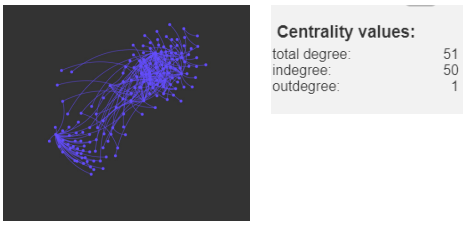


Graphic 4. Cluster 2 is @PartaiSocmed account in the #Pajak communication network

The second largest cluster is an account with the username @PartaiSocmed. @ PartaiSocmed is a Twitter account that has been active since 2012. This account has 455.5 thousand followers and follows 3246. The results of the Centrality values account @ PartaiSocmed yield a total of 953 degrees with 953 indegrees and 0 outdegrees. This means that this account is only contacted by other actors 953 times without contacting other actors at all, which means this actor is classified as passive. The @PartaiSocmed account contains tweets about the world of Indonesian politics. This account is managed by someone using anonymity. @PartaiSocmed became the second largest group after several tweets about the Ministry of Finance, which were busy on Twitter. One is a tweet about a customs official whose wealth is suspected to be out of the ordinary. Apart from that, this account also tweeted about criticism of the Ministry of Finance for Sri Mulyani. This could imply a unidirectional communication style or a tendency to disseminate information rather than engage in two-way discussions. Given the large following, this account has the potential to influence public perception and discourse on money laundering issues, warranting further examination of the content and messaging it shares.

Graphic 5. Tweet by the second cluster on Twitter in the #Kemenkeu communications network

In addition, the Twitter account with the alias @vita_avp represents the third significant cluster. The image below displays the third significant cluster and its centrality values.

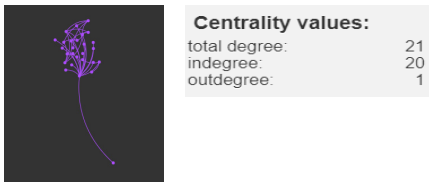


Graphic 6. The third significant cluster of communication networks on Twitter related #Kemenkeu

Since 2018, the Twitter account @vita_avt has been active. This account has 23,700 followers and follows 9045 accounts. This actor's Centrality values comprise 51 degrees, with an indegree of 50 and an outdegree of 1. This actor is passive because he only contacted other actors once while receiving 50 contacts from other actors. This Twitter account contains political commentary from Indonesia. Because the Twitter bio incorporates the account name @yadianto, this account is also associated with the account @yadianto.

This suggests that the @vita_avp account receives considerable engagement from other users but might not actively engage in reciprocal interactions. Understanding the content and messaging shared by this account could provide insights into the topics and issues it focuses on and how it contributes to discussions on money laundering and related matters. This account represents the third largest category of his Ministry of Finance-related tweets:

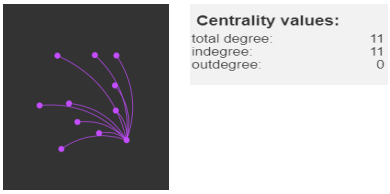
> *Kejahatan korupsi dalam dunia birokrasi adalah tindak kejahatan terstruktur dan sistematis. Saling terkait satu dg yang lain jadi tidak mungkin dilakukan secara perorangan, maka sangat mungkin banyak yang terlibat di dalamnya.*
>
> *In the realm of bureaucracy, money laundering is a structured and systematic offense. It is impossible to do it individually because they are interconnected, so many individuals are likely involved.*



Graphic 7. The fourth significant cluster of communication networks on Twitter related #Kemenkeu

The fourth largest cluster contains the Twitter account @kemenkeuri. This actor has 806,500 followers and 68 followers in total. Since 2012, the @kemenkeuri account has been using Twitter. The Indonesian Ministry of Finance, also known as the Ministry of Finance of the Republic of Indonesia, is a government ministry responsible for state finances and wealth. In 2012, the Indonesian Ministry of Finance joined the information-sharing platform Twitter. The results of the Centrality values reveal a total degree of 21, indicating that this actor engaged in Twitter-related activities 21 times. The indegree results indicate that this actor is a prominent actor in the network, as he is in contact with numerous other accounts. Outdegree is used to determine the actor with the most contacts. The @ Kemenkeuri account's outdegree results only display the number 1, indicating that the primary protagonist is passive because he only contacts one account. The @Kemenkeuri account has the fourth largest cluster due to numerous mentions of corrupt government

practices by other accounts. Thus, this account attempts to balance the mention with more positive tweets.

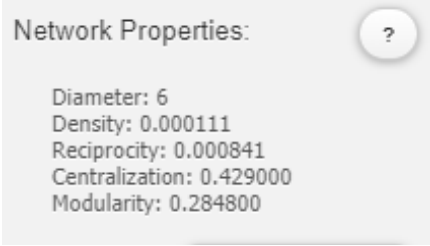


Graphic 7. The fifth significant cluster of communication networks on Twitter related #Kemenkeu

Twitter user @Metro_TV has a cluster that ranks fifth in size. The actor follows 32 people and has 11 million followers. Twitter has had the @Metro_TV account since 2008. An Indonesian private news network is called Metro TV. PT Media Televisi Indonesia was the original name of MetroTV. According to the centrality values, there are 11 degrees overall, all represented by the indegree. The fact that an actor has no outdergrees indicates that he or she is passive. While @Metro_TV did not contact anyone, other actors in the network did. Thanks to its tweet on the Indonesian Ministry of Finance regarding news on financial cases that are now surging in Indonesia, @Metro_TV rose to become the fifth-largest group.

Including these official narratives in considerable clusters draws attention to the importance of media outlets and government organizations in molding the public discourse over money laundering. It may be possible to gain insight into these accounts' role in promoting transparency, accountability, and public awareness by analyzing the content and method they adopted when discussing money laundering-related topics.

In sum, the critical examination of the findings of the social network analysis reveals the role significant actors play in shaping conversations connected to money laundering within the Indonesian Ministry of Finance. These notable actors include religious figures, political entities, and media outlets. These findings are in line with findings of Amalia dan Abadi (2024) and Han's (2023) research on social network. The participation of high-ranking officials from influential organizations demonstrates how important it is to address the issue of money laundering in the context of the larger society as a whole. In addition, the dynamics of public perception and debate concerning money laundering in Indonesia can be better understood by analyzing different players' communication styles and patterns of content dissemination. To better understand the potential impact and influence of these accounts in the ongoing efforts to combat money laundering and promote good governance in the country, additional research into these accounts' content and interaction methods can contribute.



Graphic 8. Network Properties on the communication network #Kemenkeu

The image above displays the results of *Network Properties* on the Ministry of Finance's issue communication network on Twitter. The *diameter* is the first network analysis property. The diameter determines the most significant distance between two actors in a network or the greatest distance between two actors that can communicate in a network. This metric

represents the extent of the network by tallying the number of nodes (actors) required to traverse the network from one end to the other. In this investigation, the diameter is six, indicating that the maximum distance between two actors in a network is six steps. This maximum distance is relatively short. This diameter measurement can define whether network actors tend to concentrate or disperse. The diameter measurement resulted in a score of 6, indicating that the distance between actors in the #kemenkeu network is small, facilitating interaction between actors.

Network density is the next Network Property. Density or network density is the ratio of the number of connections in a network to the number of possible linkages. Density indicates the intensity of communication between network members. A network with a high density has members interacting with one another, whereas a network with a low density has members who interact minimally. The density or network density research results indicate a value of 0.000111, close to 0. Network density analysis can determine the intensity of communication between network actors. A dense (cohesive) network is one in which members interact with one another. The utmost density value is 1, which indicates optimal network density. In other words, despite the large number of nodes and edges, the intensity of interaction between actors in this communication network is very low. The established communication network can be characterized as fragile or low-density. This suggests that the relationships between network actors are not intensive. This is possible because, when including the #Kemenkeu isolate, actors are only mentioned one to two times. The lack of feedback or responses from the contacted actors also contributes to the low network density.

Furthermore, there is *reciprocity*, the proportion of bonds that show two-way communication (reciprocal ties) or the presence of interactions or relationships in the total number of existing bonds. Reciprocity is measured by the number of reciprocal bonds relative to the total number of bonds in the network (not all possible) (Butts, 2020). Higher scores indicate many participants have two-way conversations, while low reciprocal values indicate many one-sided conversations, so there is little reciprocal conversation. The reciprocity result shows 0.000841, which means that the interaction in this network is shallow (but still exists), and there are many one-way conversations. Just writing tweets.

Next is *centralization,* which measures the average degree of centrality of all nodes in the network. When a network has a high centralization value close to 1, it indicates that several main participating actors dominate the flow of information in the network. Networks with low centralization measurements close to 0 are considered decentralized, where information flows more freely between many actors. In this study, centralization shows a result of 0.429000. This indicates that the value is low because it is closer to 0. It shows that in a network on Twitter with the #Ministry of Finance issue, not only one account has a big influence/dominate on the hashtag, but more information flows to many accounts.

The last Network Properties result is *modularity* which is used to determine modularity. Modularity helps determine whether the clusters found represent different communities in the network. Higher modularity scores indicate clear divisions between communities as represented by clusters. A low modularity value, usually less than 0.5, indicates that the clusters found will overlap more; networks are more likely to consist of a core group of nodes. In this study, a modularity of 0.284800 was obtained. This means that in the network, they gather together in a stack, and more than one member uses the hashtag. Modularity determines the clusters found in the hashtag that represent different communities in a network. Low modularity values are usually less than 0.5. This means that the clusters found by netlytic will cluster together (stacked together), and the network is more likely to be seen from a group that dominates.

Centrality metrics, including degree and betweenness centrality, are crucial for detecting influencers within networks, since they reveal individuals capable of efficiently disseminating information and linking dissimilar groups (Felix Gaisbauer et al., 2020; Xin Gong et al., 2023)we show that through the interplay of the two network representations, it is possible to investigate which opinion groups on the platform primarily shape public opinion, and which ones remain silent to a disproportionate degree. The method is employed to observe public debate about two events: The Saxon state elections and violent riots on New Year's Eve of 2019 in the city of Leipzig. We show that in both cases, (i. Moreover, community detection techniques reveal that user clusters can be established based on their interactions, which can substantially affect public perception and information dissemination during pivotal events such as the pandemic (Santosa et al., 2023). Therefore, grasping these dynamics is essential for understanding the formation of public debate on social media platforms.

Sentiment Analysis

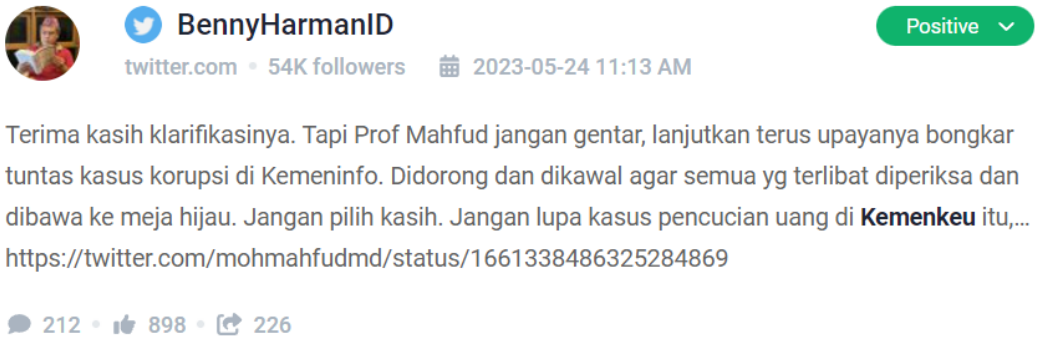
Further analysis, the sentiment analysis process uses the Multilingual Sentiment algorithm in classifying sentiment classes or called polarity. The sentiment class has three levels, positive, neutral, and negative, using the term compound as the total score of the sentiment results (Prayudi, Susilo, & Florestiyanto, 2023). In the sentiment results above, yellow indicates positive, green indicates neutral, and blue indicates negative sentiments. The sentiment analysis results of the #kemenkeu communication network on Twitter can be seen in Table 1. The sentiment analysis results were positive, negative, and neutral.

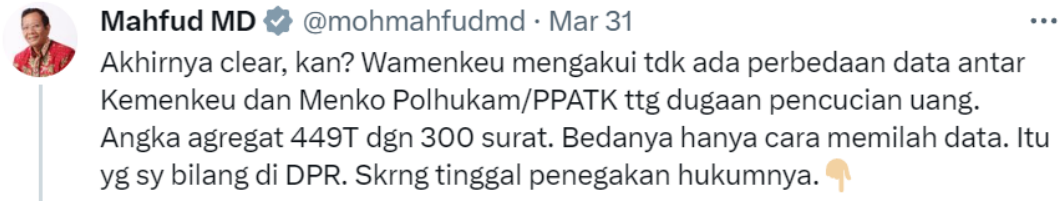
Table 1. Sentiment analysis on communication network #Kemenkeu

Mentions	Positive	Neutral	Negative
8,469	3,451	1,079	3,966

The data presented on mentions and sentiment distribution within the dataset provides valuable insight into the public's engagement with and attitude toward the topic of interest. The prevalence of 8,469 mentions indicates significant discussion and interest in the subject. This high number of mentions suggests that the topic is significant to the Twitter community and has likely generated significant interest and participation.

The distribution of emotions across mentions demonstrates an intriguing pattern. The fact that 3,451 mentions are categorized as positive indicates that Twitter users have substantial support, approval, or contentment regarding the topic. Understanding the reasons for the positive sentiment is crucial, as it may disclose positive aspects, achievements, or solutions related to the topic that can be highlighted or leveraged to increase positive engagement. Below are examples of tweets categorized as positive.

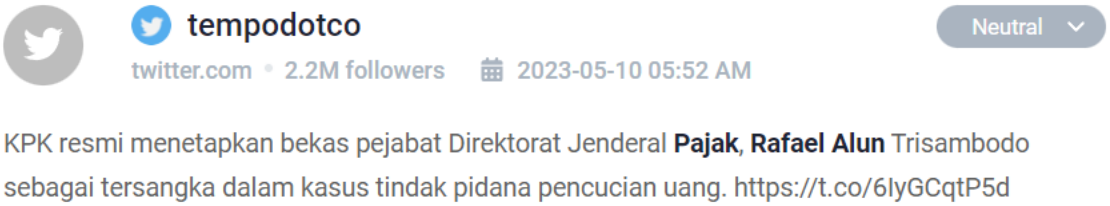


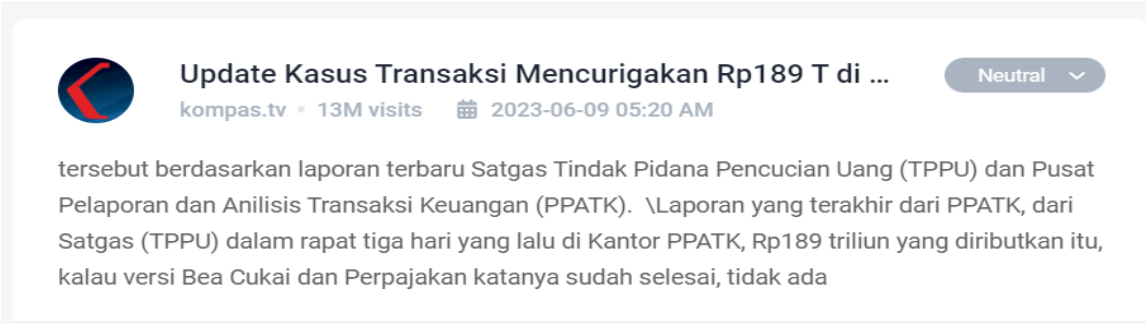


This positive sentiment indicates that the topic is well-received and consistent with the interests and values of some Twitter users.

Conversely, 3,966 instances of negative references signify a significant degree of discontent, critique, or dissatisfaction. The expression of a negative emotion pertains to money laundering and money laundering within the Ministry of Finance, which have persisted since 2009, unbeknownst to the Minister of Finance. Therefore, it is apparent that individuals utilizing Twitter express a sense of disillusionment and advocate for a more earnest approach from the administration. The current government tends to employ diversionary tactics to deflect criticism from the people regarding specific topics. This was also evident in the study by Prayudi, Fatonah & Fahira (2021) where during Covid-19 the government tended to cover issue with another issue when particular issue is under society criticism. Below are examples of tweets characterized as negative.

In addition, the prevalence of 1,079 neutral mentions necessitates critical analysis. Neutral tweets may contain factual information, general observations, or opinions that are neither explicitly positive nor negative. In this case, the tweets received a neutral sentiment from Twitter users due to their portrayal of the actions performed by the Corruption Eradication Commission in apprehending a Ministry of Finance official implicated in money laundering.





In sum, the critical analysis of mentions and sentiment distribution data yields significant insights regarding public engagement and attitude toward the topic. The high number of mentions indicates significant Twitter user interest and engagement. Positive sentiments emphasize approval and support, whereas negative sentiments highlight areas of concern and potential difficulties.

Graphic 9. Word Cloud on comunication network #Kemenkeu

Furthermore, the results of word cloud research found some vocabularies related to tax issues where the frequency of occurrence is quite frequent. The more often a vocabulary appears, the bigger it will be. The color in the word cloud does not affect the research results but only as a sweetener to make it look more attractive. The word cloud results on the #Ministry of Finance communication network can be seen in the image above. This study took the top 5 words often appearing on the #Kemenkeu communication network.

Weight	Word
500	Kemenkeu
307	kemenkeu
234	yg
138	2
119	TPPU
82	@mohmahfudmd
80	Satgas
78	@PartaiSocmed
76	T
75	Mahfud
71	349
66	ya
62	aja
57	Pajak
51	gak
51	ga
50	transaksi
48	Rp
46	MD
45	nya
45	pejak
40	triliun
38	Pak
38	uang
38	Keuangan
37	dugaan

Graphic 10. The number of words that often appear in the analysis of communication networks #Kemenkeu

The image above shows the word cloud results, which is equipped with the number of times the word appears. The top 5 words that often appear are “kemenkeu” which appears 500 times, “TPPU” appears 119 times, @mohamahfudmd appears 82 times, “Satgas”

appears 80 times, and "@PartaiSocmed" appears 78 times. The appearance of the frequency of words on the word cloud shows harmony with the topics discussed by netizens on social media Twitter. This means that the topic #kemenkeu has great engagement with Indonesian people, especially in cyberspace. The emergence of #Kemenkeu has significantly impacted people's lives.

In sum, this sentiment landscape highlights the tenuous trust between the public and the Ministry of Finance, particularly when past misconduct reemerges with considerable financial consequences. This finding relates to the research findings from Zulkarnain, Hilalludin, and Suny's (2024) research that emphasizes the widespread nature of corruption, affecting the executive, legislative, and judicial branches, as well as central and regional governments, has led to a significant erosion of public trust in governmental institutions . The increase in negative sentiment corresponds with views of institutional opacity and the government's purported use of diversionary tactics, a phenomenon noted in previous crises. The recurrence of specific terms such as "TPPU" (money laundering), "@PartaiSocmed," and "@mohmahfudmd" in the word cloud highlights the tendency of netizens to center their discussions on political figures, oversight entities, and symbols of governmental authority.

The sentiment analysis indicates that Twitter has become a significant platform for digital accountability, where public sentiment reflects both outrage and a call for reform. The findings highlight that the Ministry of Finance's reputational capital is significantly dependent on transparency, proactive communication, and authentic reform initiatives in addressing corruption allegations.

Conclusion

This study examines Twitter's role as a venue for public discourse regarding the money laundering crisis associated with Indonesia's Ministry of Finance. The researchers employed Social Network Analysis (SNA) with Netlytic to examine 6,742 nodes and 744 edges, facilitating the mapping of engagement, identification of influential individuals, and classification of sentiments. Key results show that public involvement was extensive but scattered, with little reciprocity and density suggesting mostly one-way contacts. Among the influential players were religious leaders, anonymous political commentators, and media outlets; the most central was @seeksixsuck, whose legitimacy depends on personal experiences connected to the controversy. Negative sentiment (3,966 out of 8,469 mentions) predominated in the sentiment analysis, which indicated strong public dissatisfaction and mistrust of the Ministry. Word cloud research highlighted consistent phrases like "TPPU," "Satgas," and numbers like @mohmahfudmd, suggesting concentrated concentration on political control and corruption.

Despite the fact that the study efficiently maps influence and mood within the Twitter discourse, it does have certain drawbacks. The analysis is limited to Twitter, excluding conversation on other prominent platforms such as Instagram, Facebook, and YouTube, where alternative user demographics and narratives may emerge. Sentiment analysis is also constrained to a fundamental polarity (positive, neutral, negative) and does not provide deeper emotional nuance or context-specific interpretations of sarcasm, irony, or culturally nuanced language. While passive influential players were identified (e.g., high indegree with zero outdegree), the study did not examine the qualitative influence of their content or assess their legitimacy and authenticity.

For further research, it is suggested a longitudinal and cross-sectional study of multiple social media sites to understand changes in public discourse and identify

differences in participation level and stories pu blished. In addition, the use of advanced systems of natural language processing (NLP) could enhance the understanding of public opinion through better public sentiment and emotion analysis. A detailed analysis of the motivations and the trustworthiness of the key social media influencers is worthwhile, particularly in relation to how online influence translates into action, such as legislative changes or shifts in public behavior.

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