



# **Bambang Irawan**

Department of Public Administration, Mulawarman University, Indonesia (email: bambang.irawan@fisip.unmul.ac.id)

#### **Mohammad Jafar Loilatu**

Jusuf Kalla School of Government, Universitas Muhammadiyah Yogyakarta, Indonesia

#### Paisal Akbar

Department of Islamic Politic-Political Science, Universitas Muhammadiyah Yogyakarta, Indonesia

## Rizky Reynaldi

Department of Public Administration, Mulawarman University, Indonesia

Submitted: 16 May 2022, Revised: 13 August 2022, Accepted: 15 August 2022

Irawan, Bambang is a senior lecturer at the Department of Public Administration at Mulawarman University. His research interest is in public administration, public policy, and e-government. He obtained his master's and doctorate from Brawijaya University in the Department of Public Administration.

# Loilatu, Mohammad Jafar

is a researcher at Jusuf Kalla School of Government Universitas Muhammadiyah Yogyakarta and part-time lecturer at the Department of Government Studies Universitas Muhammadiyah Malang. His research interest is in policy design and urban governance.

Akbar, Paisal is a Doctoral student at the Department of Political Science, Politic Islam Universitas Muhammadiyah Yogyakarta. His research interest is in political communication and e-government. Paisal Akbar graduated from Department of Government Studies Mulawarman University and master from Universitas Muhammadiyah Yogyakarta.

Reynaldi, Rizky is a master's student at Public Administration, Mulawarman University. His research interest is in public administration and public organization.

Policy & Governance Review ISSN 2580-4820 Vol. 6, Issue 3, pp. 229-246 DOI: https://doi.org/10.30589/pgr.v6i3.596

# An Exploration Respond of COVID-19 Policy through Social Media in Indonesia

#### **Abstract**

This paper explores public responses through social media to the COVID-19 policy in Indonesia; public response to the COVID-19 policy shows that information about COVID-19 is sourced from crowd sources, thus creating misinformation on health information. To answer the research purpose, this research uses NodeXL to explore policy responses through social media Twitter; data collection was carried out from 3-25 July 2021. The result shows the public response to the COVID1-19 policy in Indonesia through topic distribution on social media Twitter. From these findings, 10 topics on social media became public responses to COVID-19 policies. This topic addresses the public's response to the COVID-19 condition in Indonesia and the policies taken by the government. We classify these topics based on the characteristics of public responses that indicate certain conditions such as vaccine policies, medical device crises, hoax information, collaboration, and political conditions. However, this research has limitations on access to the data taken. Therefore, further research can explore the function of social media in post-COVID-19 policies.

#### **Keywords:**

COVID-19 Policy; Public Response; Social Media; Hashtag; COVID-19

#### Introduction

The COVID-19 policy in Indonesia is one step toward reducing the spread of COVID-19. Besides this policy, Indonesia has also taken several policies as prevention efforts such as social restrictions, testing, and

tracing. Within two years of COVID-19 in Indonesia, the daily number of cases was very high. This prompted the government to take unpopular policies, one of which was to require vaccinations for the community with predetermined categories.

According to Nugraha et al. (2021), vaccination is a step to suppress the number of COVID-19 in the second wave, even though simultaneously, understanding of the importance of vaccines in society is still low (Widjaja et al., 2021). Thus, the government must encourage the acceleration of vaccination and provide an understanding of the importance of vaccines in society.

Arifin & Anas (2021) revealed that although the government has provided free vaccines in public places, the vaccination achievement rate is still low. In April 2021, only 35% of the total population had vaccinations in Indonesia. One reason is that an anti-vaccine movement is being campaigned through social media (Khadafi et al., 2022). Another problem is the uncertainty of government policies, so the vaccination program does not reach its target (Capano et al., 2020). Understanding vaccination and government policies that change as one factor that achieve vaccination in Indonesia are relatively low from the government's daily target.

COVID-19 responses in Indonesia have received mixed reactions, primarily through social media Twitter. Indonesia has the highest number of social media users globally; based on a report by APJII, Indonesia is ranked fifth globally with 196.7 million users, with the highest social media users on Twitter. Areas on the island of Java dominate the distribution by region. During COVID-19, information on COVID-19 responses has received various positive and negative reactions. According to Martínez-Rojas et al. (2018), the function of social media is a form of expression. It is a source of information from the government or other social media users (Eriksson & Olsson, 2016). Besides, social media is a communication tool to build social cohesion and create virtual solidarity.

The public's response to COVID-19 policy is expressed through social media; the reaction to COVID-19 forms a form of communication that makes the information popular (S. Park et al., 2021). Information became popular because

social media was transformed into an effective tool to filter and provide information (Lachlan et al., 2016). In this way, social media functions are diverse and able to map all situations and illnesses that occur so that social media can be used as a communication tool, service, mitigation, and risk communication (Belso-Martínez et al., 2020; Chair et al., 2019; Harrigan et al., 2020; Osman, 2019). COVID-19 creates public perceptions of the disease, whether its variety, impact, or transmission (Dryhurst et al., 2020); sociocultural communities encourage people to give perceptions of the COVID-19 outbreak (Purnomo et al., 2021).

Scholars have classified infodemic on social media in many paradigms, yet we state this study's boundary with current studies. We place these limits on the function of social media as a medium to respond to government policies. We recognize that previous studies have explained the concept of the role of social media in infodemic, such as Wajahat Hussain (2020) argues that social media play an essential role in sharing information and Twitter is omitted (Gabarron et al., 2021). Moreover, H. W. Park et al. (2020) using this tool can easily build communication between social media users, communication can show users' emotional expressions about current conditions (W. Y. S. Chou & Budenz, 2020), and sharing of incorrect information is possible (Islam et al., 2020; Leng et al., 2021; Su et al., 2021). Haupt et al.,(2021) refer to this as a user characteristic based on information content conveyed via social media. Meanwhile, social media is being used to explain the current state of COVID-19. 19 (Eriksson & Olsson, 2016; Jovanovic & Van Leeuwen, 2018; Schwarz, 2012; Shahi et al., 2021; Steffens et al., 2019; Tarai et al., 2015).

The function of social media is clarified in the preceding explanation of its function and existing studies by focusing on information delivery. However, there is still a lack of description of social media's function as a tool for responding

to policies, particularly COVID-19. Based on this explanation, we can conclude some limitations need to be addressed in the functions and categories of social media, which is why this study proposes a quaternary function.

#### Social Media and Infodemic COVID-19

Eysenbach (2002) has characterized the criteria of health information; Eisenbach's view of health information becomes very important because of human needs to deal with certain conditions. Therefore, the quality of information can affect humans. (Eysenbach et al., 2002). According to him, information quickly obtained contains all, whether true or false, so understanding is needed to filter information (Eysenbach, 2002). The study is developing with rapid changes in communication and technology simultaneously as health crises are also occurring worldwide. Baines & Elliott (2020) infodemic functions to fight hoaxes because misinformation is ignored, so it becomes a justification. Rathore & Farooq (2020) call it an information overload problem so that the quality of information becomes poor due to information coming from various sources (Eysenbach et al., 2002).

In the current condition, social media is one of the easily accessible sources of information (Odlum & Yoon, 2015); it provides information quickly but can also be in fake information (Fernández-Torres et al., 2021); WHO has designed an information and communication management model during the COVID-19 period to provide understanding to the public about COVID-19 and steps to handle it. (WHO, 2021a), this design is a guide to map communication on the internet about COVID-19(WHO, 2021a). In another view, COVID-19 information can be spread quickly through social media (Petersen & Gerken, 2021), and information can be categorized through word grouping and hashtags. Thus, the content becomes popular information, even (Rosenberg et al., 2020) assuming that social media also has a function to filter information.

Misinformation is a multidimensional concept that describes contemporary situations with rapid information (Freiling et al., 2021). Social media has become one forum for disseminating information to describe current conditions. Recently, scholar has categorized the concept of infodemic using social media; social media function as a communication tool during COVID-19 have different functions, such as communication and coordination tools (Machmud et al., 2021), risk communication(S. Park et al., 2021), medical news (HW Park et al., 2020), misinformation(Islam et al., 2020), discussion of COVID-19 policies through social media (Haupt et al., 2021; Irawan, 2022), or assess the need for testing the information submitted. Consequently, social media users can also counter fake information (Rosenberg et al., 2020), this information becomes meaningful and needed in these conditions (Baines & Elliott, 2020).

Social media furnish information and understanding to the public about the current situation and how to handle it (Charrad et al., 2019). The platform, which provides an interactive space, allows the government to understand the public's response quickly and with high accuracy (Beni-hssane, 2017); public sentiment can be appropriately managed (Kumar Singh & Kumar Verma, 2020). This article contributes to developing the concept of social media and infodemic and explains how communication patterns that occur on social media describe the condition of society during the COVID-19 crisis. Using this assumption, we assess whether this research impacts the development of social media and infodemic studies to explain the public's response through social media.

#### Method

This study uses qualitative methods; This approach aims to explore public responses to vaccine policies through social media. To be able to parse the formulation of the problem in

research, this study uses the NodeXL tool. This is a qualitative analysis tool; in a qualitative approach, it can be called Qualitative Data Analysis (QDA), QDA as a technique to analyze text and content through social media, or qualitative data analysis tool to facilitate the analysis of textual, to a limited extent, and visualization (Silver & Lewins, 2007). Functionally NodeXL streams data from social media Twitter with the period determined in this study. NodeXL works as a data collection tool that functions in this research method (Hansen, Shneiderman, and Smith, 2011). Data streaming was carried out on July 3-25, coinciding with the government's vaccination policy. The popular topics were simplified by determining topics related to the current situation with relevant keywords such as a vaccine, COVID-19, policy, solidarity, crisis, hoax, politics, and masks. After collecting data, NodeXL also functions to organize data in text and graphics (Lipschultz, 2017), the data collection process goes through a process as shown in figure 1, using (Dunne's 2012) method to analyze data.

#### **Results**

## **Topic Distribution**

This study show how public respond to COVID-19 policy, we classify the category of public response to COVID-19 policies in Indonesia, the topic shows the form and character of the public response to COVID-19 policies, figure 2 shows the highs issues on social media during 3-25 July 2021. Public responses through social media show several categories of issues that coincide during COVID-19; these findings categorize ten forms of community response to COVID-19 in Indonesia. The findings indicate that public responses vary; in one topic, several derivative issues exist. Meanwhile, the public responses on social media do not show the issue with the highest score because it coincides with other issues, such as political topics, generally found in every social media topic.

Figure 2 depicts data mining results using NodeXL to determine keywords relevant to the COVID-19 policy response in Indonesia, revealing several dominant topics such as politics, policy,

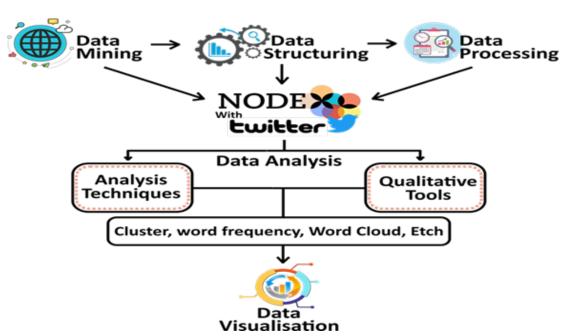
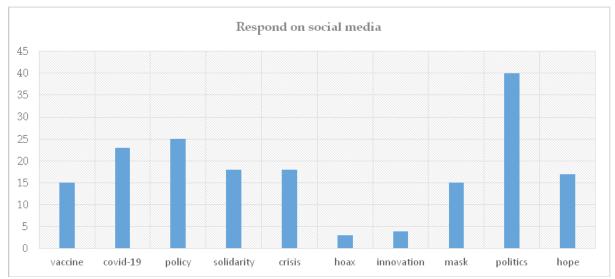


Figure 1.
Steps analysis using NodeXL

Source: Dunne (2012)

Figure 2.
Topic distribution



Source: processed by Author

COVID-19, solidarity, crisis, and vaccine. The distribution of these topics reflects the current state of COVID-19 management in Indonesia, which is dealing with a medical device crisis, vaccine implementation, COVID-19 policies, political conditions, community solidarity, and hoax information. The findings of this study describe the public's reaction to COVID-19 and how the government handles the pandemic's ten topics. Each topic category also describes how the conditions for dealing with COVID-19 are conducted by the government and the situation experienced by the community. Further descriptions of the 10 distribution topics are explained in the hashtag section.

# **Hashtag by Issues**

Hashtag as a category of information popularized by using several keywords used simultaneously; during the policy period for implementing community activities, the large-scale social restriction policy became an issue responded to by the Indonesian people, simultaneously handling COVID-19 was also presented with several problems. Therefore, the

findings below show the categories of information during the COVID-19 period in Indonesia.

#### Vaccine

The vaccine category consists of several hashtags, and the hashtag vaccine explains the slow and uneven distribution of vaccines in Indonesia. In addition, the ability of the vaccines carried out also does not reach the target within a few days. These hashtags consist of; #vaccinecovid-19, #nationalvaccine, #vaccine, #fightcovid19, #newnormal. Figure 3 topic01 vaccine category has different hashtags, but the topic01 category is relevant to the conditions in Indonesia.

#### Covid-19

Hashtag with a high number on figure 3 topic02 #stayathome, #fightcovid, #newnormal, and #wearingmask. This topic explains the situation during COVID-19 in Indonesia. #stayathome #fightcovid is the hashtag with the highest number of hashtags. The two hashtags have been consistent over the last few months, including when the number of COVID-19

rose in 2020. In addition, hashtags such as #starfromvillage, #washhand, #wearingmask, and #socialdistancing relate to health protocols to prevent the spread of COVID-19.

# Policy

The community's response to the COVID-19 handling policy in Indonesia is diverse, and the hashtag is in figure 3 topic03. The hashtag highlights the Indonesian government's policy in dealing covid with large-scale social restrictions applied to areas with high additional cases. These hashtags include #emergcnyppkm, #ppkmmicro, #ppkm. In the context of the hashtag calling the community to vaccinate and collaborate with the government in dealing with COVID-19, the offensive stage categories are #vaccine, #citycollaboration, and #newnormal.

# Solidarity

The community's solidarity movements to handle COVID-19 in Indonesia are diverse. The forms of this movement include providing social assistance, medicine, and direct financial assistance to communities affected by COVID-19. Hashtag on topic04 such as; #risejakarta, #dealingwithcovid, #wargabantuwarga, #jogjarise, #letsvaccine, and #indonesiarisecovering. The solidarity movement is shown as a joint condition of the Indonesian people against the COVID-19 condition, which has not yet been resolved. This crisis prompted the community to carry out social movements to overcome the shortage of medical equipment in several areas such as Jakarta, Yogyakarta, Central Java, and West Java.

# Crisis

The characteristic hashtag indicates an emergency caused by new cases, death rates, oxygen scarcity, and policies. The crisis also explained solidarity, which are hashtags carried out simultaneously as a social response and solidarity movement. Figure 3, topics05 #protecjakarta,

#oxygen, #vaccine, #risejakarta, #oxygenjogja, #selfisolation, #staysafe. The hashtags between these have similarities with topic04. Both are simultaneously on social media, meaning that Twitter social media users in Indonesia respond to two issues simultaneously.

#### Hoax

Misinformation occurs in a fast time; amid the addition of COVID-19 cases in Indonesia, hoaxes and fake news are pretty severe problems; these severe problems are not being responded to with solid counter issues by the government, hashtags such as #trunbackhoax, #cofonavirusfacts, #thinksmart, #digitalliteracy, #education, #disinformation, #tacklefakenews, #bewarehoax, and #stopfakenews. Thus, the hashtag consists of counter-fake news, but the counter is not balanced with hoaxes on social media. Therefore, hoaxes are still a severe problem during the COVID-19 period.

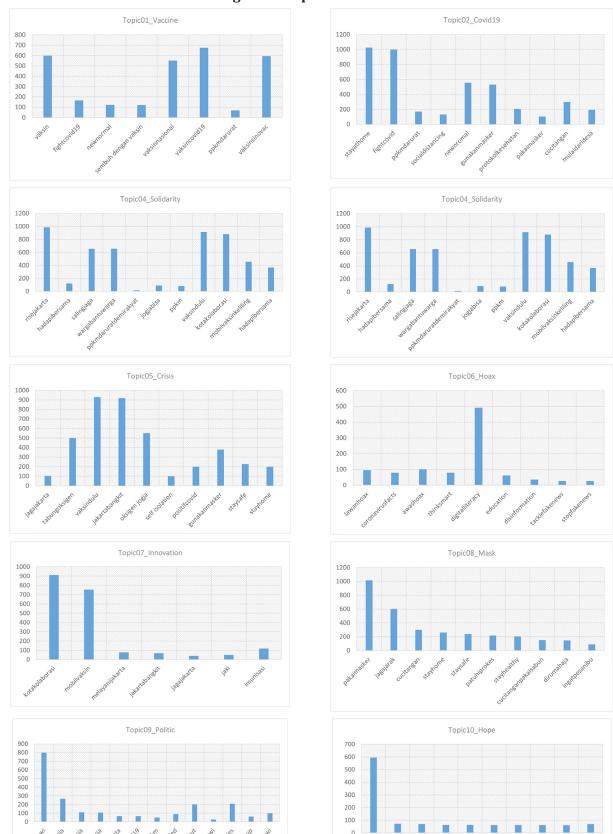
# Innovation

The Indonesian government had made a crucial decision in dealing with COVID-19, but thus, the decision did not effectively bring down COVID-19 in Indonesia. To overcome COVID-19, governments such as Jakarta and Yogyakarta have initiated innovations to reduce the number of cases in Indonesia through health services. This hashtag is low and is initiated by government institutions. The hashtag in figure 3, topic07 #citycollaboration, #vacciencar, #jakartaservices, #jaki, #immunization.

# Mask

Wearing masks is the main problem in transmitting COVID-19. The desire to use masks is still low, so daily cases increase. Topic08 describes hashtags on mask issues such as #wearingmask, #socialdistancing, #washhand, #stayhome, #staysafe, and others. See figure 3, topic08, and it is a recommendation for the public to always

Figure 3. Hashtags of 10 topics on social media



Source: processed by Author

maintain health by wearing masks, washing hands, staying at home, and keeping a safe distance. This hashtag is also a campaign by the government to understand the dangers that arise if they ignore health protocols.

#### **Politics**

Indonesia's changing political conditions are based on the policies and character of leaders, one of the hashtags topics that are often discussed on social media. Topic09 is the personal response of social media users to Jokowi as head of government and support for the government in dealing with COVID-19. The hashtags #jokowi, #keepfightingindonesia, #buildindonesia, #impeachpresidentfailed, #presidentwhenwillyouresign, #mrpresidentgiveup and #webelievejokowi. This hashtag increased when Jokowi, as president, was considered not to have maximized all his resources to overcome COVID-19. This hashtag is negative as a political response seeking to reduce government trust.

# Hope

Among the many interactions on social media, one interaction that drives the handling of

COVID-19 in Indonesia is the hashtag hope, figure 3, topic10 such as #indonesirise, #togetherwiner, #healthprotocol, # ministryofhealth. There are the same issues with every use of hashtags for Twitter social media users among the previous hashtags. In hashtags, some issues are not consistently conveyed by Twitter users; the number of hashtags is not too high. Some topics in the three hashtags follow one central issue of the topic itself.

#### **Relevant Content Information of COVID-19**

We investigated the information content on social media to read Twitter user interactions during the large-scale social restriction policy. Based on the analysis results for one month of implementing the large-scale social restriction policy, the visualization can be seen in Figure 4. We looked at the content approach to divide interactions on social media. Between Figures 3 and 5, the number of hashtags shows a difference between the hashtags used and the information on social media Twitter.

Topic 01 in figure 5 describes the variants distributed by the Indonesian government on cloud tipic01 consisting of (national vaccine, Astra Zeneca, and Moderna) words that often appear



Figure 4. Conversation by cities in Indonesia

Source: Drone Emprit (2020)

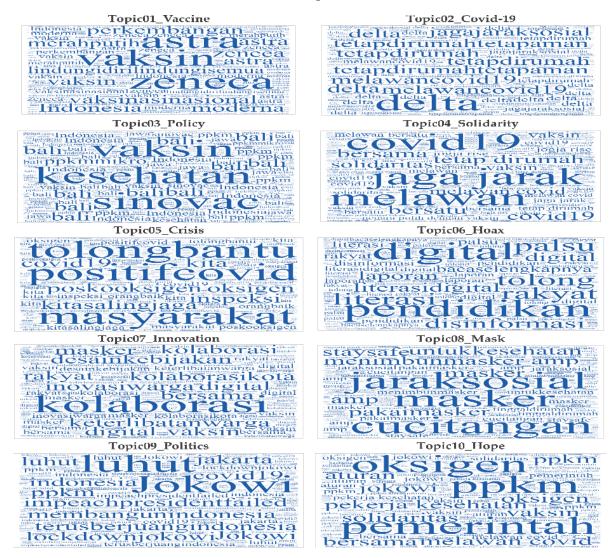
in social media conversations are based on the Indonesian government's vaccination policy. One such policy is developing an independent vaccine, but the vaccine is considered ineffective because the standard differs from the vaccine developed by countries such as America and China. Topic02 COVID-19, this topic follows outreach efforts to implement health protocols by advising to keep distance, stay at home, use masks, and other health protocols. Topic03 policy explains the large-scale social restriction and vaccination policies, but both are hesitant and ineffective in reducing Indonesia's COVID-19 number. A largescale social restriction policy is considered not to have decreased the number of COVID-19 because the government still provides exceptions; besides, the policy is inconsistent and not accompanied by a high number of vaccination responses. At the end of July 2021, vaccinations and large-scale social restriction policy are still running, but the decline in COVID-19 has not been significant.

Topic04 solidarity is an interaction built to encourage the government to deal with covid. Besides that, this topic is relevant to the Topic05 crisis, a condition characterized by creating strong community solidarity and supporting one another to deal with COVID-19. Topic06 hoax consists of the words disinformation, digital literacy, and education. The content attempts to answer misinformation received by the public. Tpoci07 innovation is dominant in collaboration. Collaboration is a strategic step for the government and NGOs such as Muhammadiyah, Nahdlatul Ulama, community groups, and other health institutions to encourage the government to overcome COVID-19 cases. Topic08 mask follows the recommendation to maintain health protocols and the hashtag in figure 3. Topic09 politics, several strategic actors such as President Jokowi, Minister Luhut Binsar Pandjaitan, and Governor Anies Basweden become political conversations. The third governor is often discussed because they are strategical with the government and have high determination in policymaking. Topic 10, hope for Indonesian health workers who have not received work incentives from the government, interactions on social media also talk about reasonable efforts for health workers as street services.

Figures 3 and 5 both explain how the response of Twitter users in Indonesia during the implementation of the large-scale social restriction policy, the results of mapping based on hashtags and content show several issues and problems that occur in Indonesia. Implementing the large-scale social restriction policy does not reduce a significant decline in COVID-19 cases but creates sentiment toward the government, as in topic09 figures 3 and 5. Figure 5 is a visualization of 10 topics during June 2021, as seen from the implementation of the large-scale social restriction policy.

However, Indonesian social media is not only enlivened by regional but also international issues. This is based on Indonesia's handling of COVID-19, which was sluggish in responding at the time (Drone Emprit, 2020a). The COVID-19 response in Indonesia received a response due to not paying attention to the impact of the crisis (Zulfaroh, 2021). Figure 5 above divides information into ten subjects, indicating that many conversations on social media Twitter respond to government measures dealing with COVID-19. The word cloud in this discovery also responds to the WHO's reaction to countries experiencing a medical device scarcity (WHO, 2021b). The study discovered that informative content on social media is generally hostile toward the government, as evidenced by hashtags (jokowi, luhut, and impeachment). Ismail Fahmi conveyed the same finding via Drone Emprit (Drone Emprit, 2021a). Furthermore, Indonesian social media users believe COVID-19 is a global conspiracy (Drone Emprit, 2020b).

Figure 5. Visualization of ten topics on social media



Source: Processed by author using NodeXL Pro

### **Discussion**

These findings show that social media users' responses to COVID-19 policy are divided into ten topics; the topics are mapped based on the categories of information discussed on Twitter. The function of social media is not related to human activities; as social media is one of the media that must be owned (Kosasih, 2016), social media is open-source information that provides later access for users to provide information (Kaplan & Haenlein, 2010; Näkki et al., 2011; Song & Lee, 2016). COVID-19 in Indonesia, social media users, especially on Twitter, have responded to the Indonesian government's changing policies.

These policy changes have created public reactions on Twitter. Its development as a primary communication tool will react to the policy accepted by the government. Batara et al. (2018) social media can change policies by creating responses on social media. Based on its function and events, social media has become a primary source of information to respond to public issues (Witanto, Lim, and Atiquzzaman, 2018).

Crowdsourcing information describes an issue and discussion on social media (Chen et al., 2020). We read about the policy issue of creating interaction on Twitter. The interaction responded to the slow handling of COVID-19, which resulted

in a crisis condition. The characteristic condition in Indonesia is based on factors such as the government's ability to handle COVID-19, the availability of vaccines, government social assistance, policies, and the resulting social impacts (Odlum and Yoon 2015). The hashtag category in this study comes with another issue, so the hashtag becomes famous in one issue. This is shown in the popular hashtag in the research findings, meaning that social media users popularize information by using various hashtags.

Interaction on social media can be read based on content information, and content shows issues that often arise on topics 01-10. Based on the content analysis results, each topic has its dominant issue, such as vaccine on topic01, social distancing topic02, large-scale social restriction policy topic03, solidarity and vaccine topic04, health workers on topic05, and others, as shown in figure 4. There are other issues in each topic. The rapid exchange of information forms dominant issues based on the character of the information and the conditions that occur. According to Szmuda et al. (2020), as an information tool, social media forms the information character of each user. Therefore its function as a communication medium depends on user behavior.

According to Eysenbach's (2002) views on health information, public response as an action that describes the condition of COVID-19, in addition to the COVID-19 response on social media, Twitter demonstrates the quality of information that can affect users (Eysenbach et al., 2002). We show several categories of COVID-19 responses in Indonesia, such as topic4, topic05, and topic10. These three topics demonstrate information that can affect society by fostering social solidarity. Furthermore, it also serves as a filter for information (Baines & Elliott, 2020); social media, in addition to serving as a form of media for disseminating information, also serves as a filter for information; distribution of topic06 explains the two functions of social media, as a

source of hoaxes and as a filter for information. However, the government is taking action, Rathore and Farooq, (2020) to avoid information overload and improve the quality of information (Eysenbach et al., 2002).

We categorize this information into crisis conditions that shape communication patterns on social media in various ways. Thus, information becomes very intense and discussed on social media (Odlum and Yoon 2015). In a crisis, information can come from anywhere, but not all information has the truth; in our analysis, the information conveyed on social media also tends to be a hoax, Chou et al. (2017). The information conveyed through the media tends to be like claims to form new opinions on COVID-19 responses. The claim forms from two perspectives; the communication pattern shows the dominant issue conveyed by the high number of edges. The political aspect of interaction tends to be harmful, and the hashtag on topic09 shows this. According to Kashyap and Nahapetian (2014), the sentiment on social media is caused by the inability to provide the desired service. In the case of COVID-19, the government cannot provide full service other than that. Inappropriate policies create this sentiment. Based on the hashtag category, topic09 is negative.

This study confirms Drone Emprit's findings that the primary issues mentioned during the implementation of government programs, such as vaccines, COVID-19 characteristics, and politics, include vaccines, COVID-19 characteristics, and politics. Drone Emprit's social network analysis confirmed the four topics (Drone Emprit, 2020d, 2020c, 2021b, 2021a). This is different as (H. W. Park et al., 2020) claim that the information disseminated throughout COVID-19 is health information; in this case, it is most obviously not. Indonesian Twitter accounts show increased thoughts and emotions of dissatisfaction with the government (W. Y. S. Chou & Budenz, 2020), particularly in response to paid vaccinations

(Harapan et al., 2020). Twitter is supposed to be a tool for testing information (Rosenberg et al., 2020); its function is performed by the government to combat fake news and hoaxes, see topics06; On the other hand, handling actions as an effort to show the ability to handle COVID-19 (López-Rabadán, 2022), this effort can be seen from the topic06.

This research also highlights that the community has not maximally supported the government's handling of COVID-19 through mass media. In early July, the increase in COVID-19 cases caused the government to experience a crisis, especially in medical devices. The community supported this condition through social media by providing medical equipment assistance such as hospitals and self-isolating patients. These movements campaign on social media to encourage other communities to overcome the COVID-19 outbreak. Therefore, according to Saleh et al. (2021), the information conveyed on one side brings positive change and understanding to the public about infodemic (Ahmed et al., 2020). The visualization in figure 5 is an interaction built on Twitter social media. The interaction is an expression based on topic01-10. Eriksson and Olsson (2016) claimed that an expression is a form of cohesion on social media, although, on specific topics, it is negative. Based on the grouping of social media functions as a communication tool, communication is mutual communication built on issues. Yoon et al. (2020), from the social network during the pandemic, showed a response to the situation. Therefore social media became a forum for interaction (Ahmed et al., 2019), sharing information, and forming a public opinion (Paul et al., 2014).

The researcher should emphasize that this research has limited access to Twitter data. However, to enhance the data and arguments, this research uses the Drone Emprit report to confirm each other. The interaction on social media can change quickly and therefore is uncertain. At the

end of the analysis paragraph, this research also examines the function of social media during COVID-19 in Indonesia by referring to previous studies that the function of the social media function of Twitter in Indonesia is used. It is not uncommon for adverse responses to build an opinion on public issues. However, Twitter's social media function can be used to develop social stability, so the COVID-19 issue is a worry for the community and the government.

Last, this article confirms the article's purpose to discover the function of social media in understanding the public's response to an issue. From the analysis, we argue that social media platform as multidimensional information to draw the COVID-19, and from that function of social media serves as a tool to understand the nature of information and public issues, from the perspective (M. Park et al., 2020; S. Park et al., 2021; Petersen & Gerken, 2021; Yang et al., 2021) about COVID-19 discourse. This article confirms the view about social media functions on social media, Twitter, and the hashtag, but some studies have not analyzed how the public responds. The research findings also illustrate the public's response to COVID-19 policies in Indonesia, which simultaneously occurred several conditions that caused COVID-19 in Indonesia to increase rapidly. However, this research has limitations in describing the public's response which lies in the amount of data and the time of data collection. As such, we can highlight the function of social media as a tool to respond to policies. Haupt et al. (2021) assess that the response can be seen from the characteristics of the information that social media users convey.

#### **Conclusions**

Based on research analysis, the research highlights how the public responds to COVID-19 policies. From the findings of our study, we conclude that the public's response to COVID-19 is influenced by the characteristics of social media

users and current conditions. The character of social media users shows several responses, such as topics of solidarity, crisis, hope, and innovation. In contrast, responses to COVID-19 policies are seen on topics such as vaccines, policy, masks, and politics. Besides the information on specific topics that determine the pattern of interaction on social media that can influence other social media users, the data on this finding lies in the topic of hoaxes which explains the steps to filter out hoax information. From the distribution of topics 01-10, social media Twitter has become a multidimensional tool that describes the condition of COVID-19 and the public's response. This article cannot describe the response of social media users during the COVID-19 period because there are limitations on using data, so further research can see how the public responds after handling COVID-19 in 2021 and 2022.

#### References

- Ahmed, W., Bath, P. A., Sbaffi, L., & Demartini, G. (2019). Novel insights into views towards H1N1 during the 2009 Pandemic: a thematic analysis of Twitter data. *Health Information and Libraries Journal*, *36*(1), 60–72. https://doi.org/10.1111/hir.12247
- Ahmed, W., Seguí, F. L., Vidal-Alaball, J., & Katz, M. S. (2020). COVID-19 and the "Film Your Hospital" conspiracy theory: Social network analysis of Twitter data. *Journal of Medical Internet Research*, 22(10). https://doi.org/10.2196/22374
- Arifin, B., & Anas, T. (2021). Lessons learned from COVID-19 vaccination in Indonesia: experiences, challenges, and opportunities. *Human Vaccines and Immunotherapeutics*, 17(11), 3898–3906. https://doi.org/10.1080/21645515.2021.1975450
- Baines, D., & Elliott, R. J. R. (2020). *Defining misinformation , disinformation and malinformation: An urgent need for clarity during the COVID-19 infodemic* (pp. 1–23).

- Batara, E., Nurmandi, A., Warsito, T., & Pribadi, U. (2018). Are government employees adopting local e-government transformation?: The need for having the right attitude, facilitating conditions and performance expectations. *Transforming Government: People, Process and Policy*, 11(3), 343–376.
- Belso-Martínez, J. A., Mas-Tur, A., Sánchez, M., & López-Sánchez, M. J. (2020). The COVID-19 response system and collective social service provision. Strategic network dimensions and proximity considerations. *Service Business*, *14*(3), 387–411. https://doi.org/10.1007/s11628-020-00421-w
- Beni-hssane, A. (2017). ScienceDirect Analyzing Social Media through Big Data using InfoSphere BigInsights and Apache Flume. *Procedia Computer Science*, 113, 280–285. https://doi.org/10.1016/j.procs.2017.08.299
- Capano, G., Howlett, M., Jarvis, D. S. L., Ramesh, M., & Goyal, N. (2020). Mobilizing Policy (In) Capacity to Fight COVID-19: Understanding Variations in State Responses. *Policy and Society*, *39*(3), 285–308. https://doi.org/10.1080/14494035.2020.1787628
- Chair, S., Charrad, M., & Ben Saoud, N. B. (2019). Towards A Social Media-Based Framework for Disaster Communication. *Procedia Computer Science*, *164*, 271–278. https://doi.org/10.1016/j.procs.2019.12.183
- Charrad, M., Bellamine, N., & Saoud, B. (2019).

  ScienceDirect ScienceDirect Towards
  A Social Media-Based Framework for
  Disaster Towards A Social Media-Based
  Framework for Disaster Communication
  Communication. *Procedia Computer Science*,
  164, 271–278. https://doi.org/10.1016/j.
  procs.2019.12.183
- Chen, E., Lerman, K., & Ferrara, E. (2020). Tracking social media discourse about the COVID-19 pandemic: Development of a public coronavirus Twitter data set. *JMIR Public*

- Health and Surveillance, 6(2). https://doi.org/10.2196/19273
- Chou, W. S., Sciences, P., Cancer, N., Oh, A., Sciences, P., Cancer, N., Klein, W. M. P., Sciences, P., & Cancer, N. (2017). The Persistence and Peril of Misinformation. *American Scientist*, 105(6), 372. https://doi.org/10.1511/2017.105.6.372
- Chou, W. Y. S., & Budenz, A. (2020). Considering Emotion in COVID-19 Vaccine Communication: Addressing Vaccine Hesitancy and Fostering Vaccine Confidence. Health Communication, 35(14), 1718–1722. https://doi.org/10.1080/10410236.2020.1838096
- Drone Emprit. (2020a). *Corona Virus*. DE Report. https://pers.droneemprit.id/corona-virus/
- Drone Emprit. (2020b). *KONSPIRASI #COVID19*. DE Report. https://pers.droneemprit.id/konspirasi-covid19/
- Drone Emprit. (2020c). *Rumah Sakit Terjepit*. DE Report. https://pers.droneemprit.id/rumah-sakit-terjepit/
- Drone Emprit. (2020d). *Stigma Terhadap Tenaga Kesehatan*. DE Report. https://pers. droneemprit.id/stigma-terhadap-tenaga-kesehatan/
- Drone Emprit. (2021a). *Demo Tolak PPKM dan Tagar-tagar Turunkan Presiden*. DE Report. https://pers.droneemprit.id/demo-tolak-ppkm-dan-tagar-tagar-turunkan-presiden/
- Drone Emprit. (2021b). *Kampanye Stop Berita Covid-19*. DE Report. https://pers. droneemprit.id/kampanye-stop-beritacovid/
- Dryhurst, S., Schneider, C. R., Kerr, J., Freeman, A. L. J., Recchia, G., van der Bles, A. M., Spiegelhalter, D., & van der Linden, S. (2020). Risk perceptions of COVID-19 around the world. *Journal of Risk Research*, 23(7–8), 994–1006. https://doi.org/10.1080/13669877.2020.1758193

- Dunne, C. (2012). Charting Collections of Connections in Social Media: Creating Visualizations with NodeXL. *The Proceedings of the 13th Annual International Conference on Digital Government Research*, *4*, 332–339. https://doi.org/10.1109/CSE.2009.120
- Eriksson, M., & Olsson, E. K. (2016). Facebook and Twitter in Crisis Communication: A Comparative Study of Crisis Communication Professionals and Citizens. *Journal of Contingencies and Crisis Management*, 24(4), 198–208. https://doi.org/10.1111/1468-5973.12116
- Eysenbach, G. (2002). Infodemiology: The Epidemiology of (Mis) information. 9343(02), 763-765.
- Eysenbach, G., Powell, J., Kuss, O., & Sa, E. R. (2002). Empirical studies assessing the quality of health information for consumers on the World Wide Web: A systematic review. *Journal of the American Medical Association*, 287(20), 2691–2700. https://doi.org/10.1001/jama.287.20.2691
- Fernández-Torres, M. J., Almansa-Martínez, A., & Chamizo-Sánchez, R. (2021). Infodemic and fake news in spain during the COVID-19 pandemic. International Journal of Environmental Research and Public Health, 18(4), 1–13. https://doi.org/10.3390/ijerph18041781
- Freiling, I., Krause, N. M., Scheufele, D. A., & Brossard, D. (2021). Believing and sharing misinformation, fact-checks, and accurate information on social media: The role of anxiety during COVID-19.

  New Media and Society. https://doi.org/10.1177/14614448211011451
- Gabarron, E., Oyeyemi, S. O., & Wynn, R. (2021).
  Covid-19-related misinformation on social media: A systematic review. *Bulletin of the World Health Organization*, 99(6), 455-463A. https://doi.org/10.2471/BLT.20.276782

- Hansen, D. L., Shneiderman, B., & Smith, M. A. (2011). Getting Started with NodeXL, Layout, Visual Design, and Labeling. *Analyzing Social Media Networks with NodeXL*, 53–67. https://doi.org/10.1016/b978-0-12-382229-1.00004-7
- Harapan, H., Wagner, A. L., Yufika, A., Winardi, W., Anwar, S., Gan, A. K., Setiawan, A. M., Rajamoorthy, Y., Sofyan, H., Vo, T. Q., Hadisoemarto, P. F., Müller, R., Groneberg, D. A., & Mudatsir, M. (2020). Willingness-to-pay for a COVID-19 vaccine and its associated determinants in Indonesia. *Human Vaccines and Immunotherapeutics*, 16(12), 3074–3080. https://doi.org/10.1080/21645515.2020.1819741
- Harrigan, P., Miles, M. P., Fang, Y., & Roy, S. K. (2020). The role of social media in the engagement and information processes of social CRM. *International Journal of Information Management*, *54*(October 2019), 102151. https://doi.org/10.1016/j.ijinfomgt.2020.102151
- Haupt, M. R., Jinich-Diamant, A., Li, J., Nali, M., & Mackey, T. K. (2021). Characterizing twitter user topics and communication network dynamics of the "Liberate" movement during COVID-19 using unsupervised machine learning and social network analysis. *Online Social Networks and Media, 21*(July 2020), 100114. https://doi.org/10.1016/j. osnem.2020.100114
- Irawan, B. (2022). Policies for controlling the covid-19 pandemic through social media communications by the East Kalimantan provincial government. *International Journal of Communication and Society*, 4(1), 125–136.
- Islam, A. K. M. N., Laato, S., Talukder, S., & Sutinen, E. (2020). Misinformation sharing and social media fatigue during COVID-19: An affordance and cognitive load perspective. *Technological Forecasting and Social*

- *Change*, *159*(July), 120201. https://doi.org/10.1016/j.techfore.2020.120201
- Jovanovic, D., & Van Leeuwen, T. (2018). Multimodal dialogue on social media. *Social Semiotics*, 28(5), 683–699. https://doi.org/10.1080/10350330.2018.1504732
- Kaplan, A. M., & Haenlein, M. (2010). Users of the world, unite! The challenges and opportunities of Social Media. *Business Horizons*, *53*(1), 59–68. https://doi.org/10.1016/j.bushor.2009.09.003
- Kashyap, R., & Nahapetian, A. (2014). *Tweet Analysis for User Health Monitoring*. 348–351. https://doi.org/10.4108/icst.mobihealth.2014.257537
- Khadafi, R., Nurmandi, A., Qodir, Z., & Misran. (2022). Hashtag as a new weapon to resist the COVID-19 vaccination policy: a qualitative study of the anti-vaccine movement in Brazil, USA, and Indonesia. *Human Vaccines and Immunotherapeutics*, 18(1). https://doi.org/10.1080/2164551 5.2022.2042135
- Kosasih, I. (2016). Peran Media Sosial Facebook dan Twitter Dalam Membangun Komunikasi (Persepsi dan Motifasi Masyarakat Jejaring Sosial Dalam Pergaulan). Lembaran Masyarakat: Jurnal Pengembangan Masyarakat Islam, 2(1), 29-42. https://doi.org/10.1017/CB09781107415324.004
- Kumar Singh, R., & Kumar Verma, H. (2020).

  Effective Parallel Processing Social Media
  Analytics Framework. *Journal of King Saud University Computer and Information Sciences*, xxxx. https://doi.org/10.1016/j.
  jksuci.2020.04.019
- Lachlan, K. A., Spence, P. R., Lin, X., Najarian, K., & Del Greco, M. (2016). Social media and crisis management: CERC, search strategies, and Twitter content. *Computers in Human Behavior*, *54*, 647–652. https://doi.org/10.1016/j.chb.2015.05.027

- Leng, Y., Zhai, Y., Sun, S., Wu, Y., Selzer, J., Strover, S., Zhang, H., Chen, A., & Ding, Y. (2021). Misinformation during the COVID-19 outbreak in China: Cultural, social and political entanglements. *IEEE Transactions on Big Data*, 7(1), 69–80. https://doi.org/10.1109/TBDATA.2021.3055758
- Lipschultz, J. H. (2017). Organizations, HR, CSR, and Their Social Networks: "Sustainability" on Twitter. *Corporate Social Responsibility, Sustainability, and Ethical Public Relations*, 35–52. https://doi.org/10.1108/978-1-78714-585-620181002
- López-Rabadán, P. (2022). Framing studies evolution in the social media era. Digital advancement and reorientation of the research agenda. *Social Sciences*, *11*(1). https://doi.org/10.3390/socsci11010009
- Machmud, M., Irawan, B., Karinda, K., Susilo, J., & Salahudin, . (2021). Analysis of the Intensity of Communication and Coordination of Government Officials on Twitter Social Media during the Covid-19 Handling in Indonesia. *Academic Journal of Interdisciplinary Studies*, 10(3), 319. https://doi.org/10.36941/ajis-2021-0087
- Martínez-Rojas, M., Pardo-Ferreira, M. del C., & Rubio-Romero, J. C. (2018). Twitter as a tool for the management and analysis of emergency situations: A systematic literature review. *International Journal of Information Management*, 43(April), 196–208. https://doi.org/10.1016/j.ijinfomgt.2018.07.008
- Näkki, P., Bäck, A., Ropponen, T., Kronqvist, J., Hintikka, K. A., Harju, A., Pöyhtäri, R., & Kola, P. (2011). Social media for citizen participation report on the somus project. In *VTT Publications* (Issue 755).
- Nugraha, R. R., Miranda, A. V., Ahmadi, A., & Lucero-Prisno, D. E. (2021). Accelerating Indonesian COVID-19 vaccination rollout: a critical task amid the second wave. *Tropical*

- *Medicine and Health, 49*(1). https://doi. org/10.1186/s41182-021-00367-3
- Odlum, M., & Yoon, S. (2015). What can we learn about the Ebola outbreak from tweets? *American Journal of Infection Control*, 43(6), 563–571. https://doi.org/10.1016/j.ajic.2015.02.023
- Osman, A. M. S. (2019). A novel big data analytics framework for smart cities. Future Generation Computer Systems, 91, 620–633. https://doi.org/10.1016/j. future.2018.06.046
- Park, H. W., Park, S., & Chong, M. (2020). Conversations and medical news frames on twitter: Infodemiological study on COVID-19 in South Korea. *Journal of Medical Internet Research*, 22(5). https://doi.org/10.2196/18897
- Park, M., Cook, A. R., Lim, J. T., Sun, Y., & Dickens, B. L. (2020). A Systematic Review of COVID-19 Epidemiology Based on Current Evidence. *Journal of Clinical Medicine*, 9(4), 967. https://doi.org/10.3390/jcm9040967
- Park, S., Han, S., Kim, J., Molaie, M. M., Vu, H. D., Singh, K., Han, J., Lee, W., & Cha, M. (2021). COVID-19 discourse on twitter in four asian countries: Case study of risk communication. *Journal of Medical Internet Research*, 23(3), 1–17. https://doi.org/10.2196/23272
- Paul, M. J., Dredze, M., & Broniatowski, D. (2014). Twitter Improves Influenza Forecasting. *PLoS Currents, October 2014*. https://doi.org/10.1371/currents.outbreaks.90b9ed 0f59bae4ccaa683a39865d9117
- Petersen, K., & Gerken, J. M. (2021). #Covid-19: An exploratory investigation of hashtag usage on Twitter. *Health Policy*, *125*(4), 541–547. https://doi.org/10.1016/j. healthpol.2021.01.001
- Purnomo, E. P., Loilatu, M. J., Nurmandi, A., Salahudin, Qodir, Z., Sihidi, I. T., & Lutfi, M. (2021). How Public Transportation Use Social Media Platform during Covid-19:

- Study on Jakarta Public Transportations' Twitter Accounts? *Webology*, 18(1), 1–19. https://doi.org/10.14704/WEB/V18I1/WEB18001
- Rathore, F. A., & Farooq, F. (2020). Information overload and infodemic in the COVID-19 pandemic. *Journal of the Pakistan Medical Association*, 70(5), S162–S165. https://doi.org/10.5455/JPMA.38
- Rosenberg, H., Syed, S., & Rezaie, S. (2020). The Twitter pandemic: The critical role of Twitter in the dissemination of medical information and misinformation during the COVID-19 pandemic. *Canadian Journal of Emergency Medicine*, 22(4), 418–421. https://doi.org/10.1017/cem.2020.361
- Saleh, S. N., Lehmann, C. U., McDonald, S. A., Basit, M. A., & Medford, R. J. (2021). Understanding public perception of coronavirus disease 2019 (COVID-19) social distancing on Twitter. In *Infection Control and Hospital Epidemiology* (Vol. 42, Issue 2, pp. 131–138). https://doi.org/10.1017/ice.2020.406
- Schroeder, R. (2014). Big Data and the brave new world of social media research. *Big Data and Society*, 1(2), 1–11. https://doi.org/10.1177/2053951714563194
- Schwarz, A. (2012). How publics use social media to respond to blame games in crisis communication: The Love Parade tragedy in Duisburg 2010. *Public Relations Review,* 38(3), 430–437. https://doi.org/10.1016/j. pubrev.2012.01.009
- Shahi, G. K., Dirkson, A., & Majchrzak, T. A. (2021). An exploratory study of COVID-19 misinformation on Twitter. *Online Social Networks and Media*, 22(September 2020), 100104. https://doi.org/10.1016/j.osnem.2020.100104
- Silver, C., & Lewins, A. (2007). QDA Miner 3 . 2 ( with WordStat & Simstat ) Distinguishing features and functions. *Database*, *2*.

- Song, C., & Lee, J. (2016). Citizens Use of Social Media in Government, Perceived Transparency, and Trust in Government. *Public Performance and Management Review*, *39*(2), 430–453. https://doi.org/10.1080/15309576.2015.1108798
- Steffens, M. S., Dunn, A. G., Wiley, K. E., & Leask, J. (2019). How organisations promoting vaccination respond to misinformation on social media: a qualitative investigation. *BMC Public Health*, *19*(1), 1–12. https://doi.org/10.1186/s12889-019-7659-3
- Su, Y., Venkat, A., Yadav, Y., Puglisi, L. B., & Fodeh, S. J. (2021). Twitter-based analysis reveals differential COVID-19 concerns across areas with socioeconomic disparities. *Computers in Biology and Medicine*, 132(March). https://doi.org/10.1016/j.compbiomed.2021.104336
- Szmuda, T., Ali, S., Özdemir, C., Syed, M. T., Singh, A., Hetzger, T. V., Rosvall, P., Fedorow, K., Alkhater, A., Majlöf, A., Albrahim, M., Alquraya, E., Dunquwah, R. Al, Al-Hakeem, Z., Almohisin, E., Alradhi, M., Zydowicz, W. M., Müller, C., Egeland, A., ... Kieronska, S. (2020). Datasets and future research suggestions concerning SARS-CoV-2. *European Journal of Translational and Clinical Medicine*, 3(2), 80–85. https://doi.org/10.31373/ejtcm/124734
- Tarai, J., Finau, G., Kant, R., & Titifanue, J. (2015). Fiji Flag Change: Social Media Responds. https://openresearch-repository.anu.edu. au/bitstream/1885/142860/1/ib2015.42\_ tarai\_finau\_et\_al.pdf
- Wajahat Hussain. (2020). Role of Social Media in COVID-19 Pandemic. *The International Journal of Frontier Sciences*, *4*(2), 59–60. https://doi.org/10.37978/tijfs.v4i2.144
- WHO. (2021a). An overview of infodemic management during COVID-19. In *Who* (Issue May). https://www.who.int/healthtopics/infodemic#tab=tab\_1

- WHO. (2021b). COVID-19 Episode #33 Medical oxygen (pp. 1-3). WHO. https://www.who.int/emergencies/diseases/novel-coronavirus-2019/media-resources/science-in-5/episode-33---medical-oxygen?gclid=CjwKCAiAgvKQBhBbEiwAaPQw3AVIYLEE6tJWXPhOx4jxpilT4F9FkkL6j5HzfinQGw28USX6YNErrRoCcQEQAvD\_BwE
- Widjaja, G., Zahari, M., Hastuti, P., Nugraha, A. R., & Kusumawaty, I. (2021). Understanding COVID-19 vaccination program among Indonesian public: A challenge and hope for government. *International Journal of Health Sciences*, *5*(3), 212–223. https://doi.org/10.53730/ijhs.v5n3.1429
- Witanto, J. N., Lim, H., & Atiquzzaman, M. (2018). Smart government framework with geocrowdsourcing and social media analysis. *Future Generation Computer Systems*, 89, 1–9. https://doi.org/10.1016/j.future.2018.06.019

- Yang, K. C., Pierri, F., Hui, P. M., Axelrod, D., Torres-Lugo, C., Bryden, J., & Menczer, F. (2021). The COVID-19 Infodemic: Twitter versus Facebook. *Big Data and Society*, 8(1). https://doi.org/10.1177/20539517211013861
- Yoon, S., Odlum, M., Broadwell, P., Davis, N., Cho, H., Deng, N., Patrao, M., Schauer, D., Bales, M. E., & Alcantara, C. (2020). Application of social network analysis of COVID-19 elated tweets mentioning cannabis and opioids to gain insights for drug abuse research. *Studies in Health Technology and Informatics*, 272(June), 5–8. https://doi.org/10.3233/SHTI200479
- Zulfaroh, A. N. (2021). Media Asing Soroti
  Penanganan Corona di Indonesia,
  Epidemiolog Harus Jadi Evaluasi. Kompas.
  Com. https://www.kompas.com/tren/
  read/2021/07/30/153000765/mediaasing-soroti-penanganan-coronadi-indonesia-epidemiolog--harusjadi?page=all