Is Social Media the Top Priority for Seeking and Sharing Information About COVID-19 Among Indonesian Students?

RACHMAT KRIYANTONO
Brawijaya University, Indonesia

AZAHAR KASIM
Universiti Utara Malaysia

REZA SAFITRI
ISMA ADILA
ARIF BUDI PRASETYA
NUFIAN FEBRIANI
WAYAN WEDA ASMARA DEWI
AHMAD MUWAFIK SALEH
MOCH FAUZIE SAID
Brawijaya University, Indonesia

ABSTRACT

This study evaluates whether social media plays a role as the main source of information and, at the same time, as information sharing. Research on information-seeking behaviour, information needs, and information sharing has received increasing attention from various scientific communities since COVID-19 was declared a global epidemic. However, efforts have not been made to compare the capabilities of digital and interpersonal channels in both aspects of seeking and sharing information in Indonesia. Among the siege of information sources, identifying the primary sources of information used by students is important if the government is to intervene in health policies to overcome the pandemic. With an online survey conducted on 624 students, this study revealed that social media, which appears to be dominant as a source of COVID-19 information, cannot influence the behaviour of sharing information with others. The ETA correlation test confirms no correlation between the information source and information sharing behaviour. Indonesian students are moved to pass on information from interpersonal communication. In the two-stage communication model, individuals obtain information from the media and then discuss the information with others, which emerged in the conventional era and is still valid in today's digital era. The issue of trust is still inherent in social media, which makes it difficult to confirm the information on social media to be shared with others. The study explains that although communication technology has developed into the digital era, it does not necessarily eliminate the role of conventional technology.

Keywords: *COVID-19 information seeking and sharing, health communication, interpersonal communication, social media, two-stage communication.*

INTRODUCTION

The world has faced the COVID-19 outbreak, which was eventually declared a global epidemic by WHO in 2020 (Djalante, 2020; McMillan, 2020). The health crisis extends into a multi-dimensional problem in which the economy and industry stagnate, tourism is disrupted, and all human life aspects are changing because social interactions are limited through distancing policies and lockdowns to break the chain of spreading this virulent virus. All sectors have

adjusted to survive and continue throughout COVID-19 (Cucinotta & Vanelli, 2020; Duyen et al., 2022; Yu et al., 2020).

The COVID-19 outbreak has also impacted higher education (Mackert et al., 2020). In 2020, around 107 countries officially closed all higher education institutions and activities, such as lectures, workshops, and conferences (Sia & Adamu, 2020). Indonesia has also locked down all universities and is forced to implement a full online learning system even though the infrastructure is not ready, such as the problem of internet networks in rural areas (Abidah et al., 2020). However, in 2022, the policy termination cannot be determined. COVID-19 is even more unpredictable after mutating into three new viruses that spread more quickly (Euler, 2020). Besides, Indonesia has the largest number of COVID-19 sufferers in Southeast Asia, so handling the pandemic is more challenging (Chua, 2021; Nurbaiti, 2020).

Since declaring COVID-19 a national pandemic in March 2020, the Indonesian Government has implemented large-scale social restrictions, such as work-from-home, school-from-home policies, and restrictions on religious, social and trade activities (Abidah et al., 2020). Important information related to the development of the COVID-19 case is regularly issued by the spokesperson of the COVID-19 national task force through various platforms, both traditional media, digital media, and social media. However, the Indonesian Government's management of health information related to COVID-19 drew harsh criticism from various parties due to disharmony of coordination between government agencies and communication still not fully implementing a one-gate system, causing various versions of information. Various criticisms prompted the President to replace the Minister of Health. It triggers public distrust of the Indonesian Government regarding the handling of COVID-19 (Prayudi & Sagita, 2021).

One of the groups of people affected by the COVID-19 pandemic is university students (Abidah et al., 2020). Based on data from the Ministry of Research, Technology and Higher Education, Indonesia had at least 7.3 million university students in 2019-2020. Online learning systems are not as simple as moving face-to-face content to online platforms, so students and lecturers adapt to life during a pandemic. Changing the learning method from face-to-face communication in class to online learning has led to changes in students' attitudes, so universities need to implement communication strategies with parents and student mentors (McMillan, 2020). In addition to increasing mortality and changing learning system, several studies in Indonesia and other countries prove that Covid-19 has caused many students to experience mental disorders, such as stress, depression, insomnia, and isolation (Arif, 2020; Hasanah et al., 2020; Islam et al., 2020; Sunjaya et al., 2020; Wiedemann & Dorl, 2020).

Interestingly, the main factor that causes mental disorders during the pandemic is communication, which covers lack of information, excessive information, information uncertainty, and miscommunication about the virus (Chen et al., 2020; Fadli et al., 2020; Gao et al., 2020; Islam et al., 2020). As a communication platform, social media has facilitated the sharing of information quickly but also gives a bad impression to the public because it is a channel for spreading slander and wrong and inappropriate information (Umor & Ismail, 2022).

Hence, this current study aims to explore how information-seeking behaviour, information needs, and information sharing about COVID-19 among students in terms of social media usage. More specifically, the authors formulate the following research questions:

a. Is social media the top priority for information-seeking and sharing about Covid-19 among Indonesian students?
b. What is the correlation between information-seeking sources/channels and information sharing about Covid-19 among Indonesian students?

This study examines whether the presence of social media, as part of the development of communication technology, automatically replaces communication models in the conventional era. The study also contributes as a basis for university policy to design an effective health communication strategy related to COVID-19 based on information-seeking behaviour, information needs, and information sharing behaviour among students.

LITERATURE REVIEW AND FORMULATING HYPOTHESIS
Health Communication and Information-Seeking Behaviour
Communication problems can arise from using social media as a platform for disseminating pandemic information quickly, easily, inexpensively, and multi-user manner (González-Padilla & Tortolero-Blanco, 2020). Social media has become essential for disseminating health information during a pandemic, and the number of healthcare professionals and organisations using social media platforms has grown in recent years. However, the advantages and disadvantages of using social media for health education and outreach, both prior to and during the pandemic, remain a prevalent topic of discussion (Wong et al., 2020). The problem that arises is the number of hoaxes or false information through social media due to the characteristics of social media being fast and easy to access (Al-Zaman, 2020). The Minister of Communication and Information of the Republic of Indonesia announced that 2,020 hoaxes were blocked at the end of 2020 (Elfira, 2020).

That is why other research illustrates that COVID-19 also impacts the need to increase the role of health communication for university management to supply sufficient and credible information (Mackert et al., 2020; Riley et al., 2020). Furthermore, it is crucial for universities in Indonesia to conduct health communication to help students avoid mental health issues and seamlessly participate in lectures. That is because individuals require timely and comprehensive information to comprehend the current COVID-19 spread across the country (Djalante et al., 2020). As a society, students need information about COVID-19 (Mackert et al., 2020; Susanto, 2020). Timely, correct, and up-to-date information about COVID-19 should be the top priority to reduce virus transmission. The lack of information or knowledge about COVID-19 can make students susceptible to contracting the virus (Hashim et al., 2020).

The main means of information an organisation provides, including universities, which becomes the main reference for stakeholders to seek information about the organisation is the organisation's website (Halim et al., 2015). Previous research in China has proven that websites are also believed to be a source of credible health information about Covid-19 compared to the news and social media (Lu et al., 2021). Therefore, the authors consider that universities in Indonesia should optimise their websites as a channel for providing health information related to the pandemic.

Several studies have echoed that the success of a health communication strategy is highly dependent on adapting it to the needs of the audience. For example, Wiedemann and Dorl (2020) argue about the need to understand audiences, whether they are the type of individuals who need to be directed or adults who can make the right decisions when receiving information. The results of a focus group discussion conducted among academics concluded

the need for a communication strategy based on empathy and understanding of how stressful and challenging the situation is for the audience. Therefore, providing a feeling of security is a top priority (Mackert et al., 2020). Noar and Austin (2020) suggest that the audience must easily understand communication messages, and messages must be adjusted to the audience's characteristics to avoid miscommunication. Similarly, Riley et al. (2020) introduce an entertainment-education campaign strategy that focuses on storytelling, a model suitable for the socio-demographic and psychographic characteristics of the message target.

In a nutshell, the audience's characteristics include the students' information-seeking behaviour about COVID-19 as part of their field of experience. Information-seeking behaviour consists of acquiring information and information used to satisfy the information needs for learning or problem-solving (Lekic, 2020; Majid & Kassim, 2000; Thani & Hashim, 2011; Yap et al., 2020). Most of the time, information seeking can be done on physical and digital information sources, known as conventional and virtual spaces, even though information seeking has been relatively shifted towards the latter (Lekic et al., 2020).

Social Media as an Information Channel
In today's digital era, Indonesia is ranked third as Asia's largest internet user country (Moore, 2020), and most internet users are young people, including students (Nurhayati, 2020). Indonesia's internet users increased by 14.6 per cent to 196 million last year from 171 million in 2018 (Eloksari, 2020). "The use of social media is becoming the norm among young adults" (Mohammed, Ibrahim, & Yunus, 2021, p. 230). Hence, the large number of internet users makes online features an essential channel for finding information. This is reinforced by previous research, proving that online health information-seeking behaviour has become prevalent in individuals aged 18-24 (Waters et al., 2011). Students are millennials and media-literate people who need speed, use technology, consume digital media, and are often exposed to and depend on internet technology to share experiences that have implications for their social interactions (Laksmi, 2018; Supratman & Wahyudin, 2017). In this context, students have many sources of information about COVID-19, such as their university website, mass media, or social networking sites.

Despite research in several countries has found that social networking sites or social media are important channels to find information about COVID-19, little is known about the use of university websites and social networking sites regarding information-seeking behaviours among university students in Indonesia (Hashim et al., 2020; Yu et al., 2020). Therefore, this current study aims to explore information-seeking behaviour, information needs, and dissemination of information about COVID-19 among students.

As a form of internet communication, social media has been equipped with features that allow users to interact in a personal and two-way manner. The internet has combined personal face-to-face and mass communication forms (Hinson, 2018). Social media is a platform for building social relations and disseminating information, increasing people's awareness of certain problems (Boukes, 2019). Social media is also increasingly being used as a source of vaccination data, an online social endorsement, and a powerful communication tool to improve vaccination. Social media has become a driving force for the COVID-19 vaccination programme because informative social media campaigns have provided people with a great resource to share (Chadwick et al., 2021).

On the other hand, the two-stage communication model that emerged in the 1960s states that one-way communication using mass media is more effective in disseminating information that can reach many people so that awareness is awakened. Two-way communication influences attitudes and behaviour (Littlejohn et al., 2017). In this current study, the boundaries of these attitudes and behaviours include the level of trust in information and the desire and behaviour to disseminate the information. It can be concluded that social media is considered capable of being a channel for providing information that is equipped with facilities for easily disseminating information. On the other hand, face-to-face communication is also considered effective in disseminating information because it is more personal. Therefore, it is interesting to reveal whether social media is still the main channel for seeking information to meet the students' information needs about COVID-19 and whether the students also share the information they obtain from social media.

Coupled with the fact that communication in the era of the COVID-19 pandemic is mostly done online due to restrictions on physical interaction and the increasing number of students using the internet in Indonesia, the authors formulate the following research hypotheses:

H_1: Social media is still the main channel for seeking information to meet information needs about COVID-19, and the students also share the information they obtain from social media.
H_2: There is a strong correlation between the source/channel of information and the information sharing behaviour about COVID-19.

METHODOLOGY

The authors conducted a quantitative approach with online surveys with open and closed questions. The questionnaire was written on Google Forms. This link was sent to lecturers to be relayed to their students at several universities in Indonesia, i.e. Brawijaya University in Malang City, State University of Malang, Telkom University in Bandung City, Merdeka University in Malang City, Padjajaran University in Bandung City, Widya Mandala University in Surabaya City, Airlangga University in Surabaya City, Trunojoyo University in Bangkalan City, Dr Soetomo University in Surabaya, Islamic Univerity of Malang, Mulawarman University in Samarinda City, and North Sumatera University in Medan City. This study applied a sampling selection technique based on the ease and accessibility of obtaining data (convenience sampling) (Kriyantono, 2020) to adapt to Covid-19 pandemic conditions. After being deployed for two months, from December 2020 to January 2021, 624 respondents (235 and 389 females) were willing to fill out and send questionnaires to the authors.

The questionnaires incorporated the dimensions of information-seeking behaviour from several previous studies, such as Kwanya and Nyariki (2019); Majid and Kassim (2000); Thani and Hashim (2011); and Yap et al. (2020), which were associated with the context of the COVID-19 pandemic. The dimensions of information-seeking behaviour have been used in several studies to measure reliability, and this current study also replicates the use of measuring tools in different contexts. The three dimensions of information-seeking behaviour were the choice of information sources or channels about COVID-19, information needs about COVID-19, and sharing information about COVID-19. Regarding the main sources of information about COVID-19, respondents were given multiple choices with one answer. The answer options were social media, online media, mass media, university websites, and

family/friends. For the information-sharing dimension, the questionnaire consisted of a 4-point scale from 3 (very often) to 0 (never).

The collected data from closed questions were analysed using descriptive statistics to evaluate the choice of information sources or channels about COVID-19 and sharing information about COVID-19. The collected data were analysed descriptively by presenting each dimension's mean scores and percentages. The nature of the correlation between the variable choice of sources or channels of information about COVID-19 and information sharing behaviour is also evaluated by applying the Eta Formula. This formula measures the correlation between nominal and interval variables (Kriyantono, 2020). The nature of the correlation is measured to deepen, confirm, and evaluate the significance of the results of the data description. The open-ended questionnaire contained questions about the type of COVID-19 information needed by the respondents (i.e., the student's information needs). The respondents were welcome to write answers freely. The qualitative data were coded into categories based on the propensity of the answers and converted into a percentage measure.

RESULTS AND DISCUSSION

a. Social Media as the Top Priority Source of Information

The pandemic makes the need for information increase rapidly. When a disaster occurs, communication arises because of the need to reduce uncertainty. Information containing correct facts is necessary for dealing with disasters (Sari et al., 2021). The data shows that various health information channels have been accessed by students. The findings affirm the previous research that "Health information can be sought from various sources which may include interpersonal interactions (e.g., family members), electronic media such as the television, printed media and the internet" (Mazlan et al., 2021, p. 419).

The students selected social media as their main source of information in seeking information about COVID-19 (50.16%). The students also selected mass media (TV, newspapers, and radio) in second place, followed by online media channels and friends and families. Finally, the students placed the university website in the last place (Table 1).

Table 1: Source of information about COVID-19

Information sources	Respondents	
	Frequency	Percentage (%)
Social media	313	50.16
Mass media	144	23.07
Online media	110	17.63
University website	28	4.49
Friends and families	29	4.65
Total	624	100

The data in Table 1 also confirms previous research that social media has become a primary source for its users, thereby increasing the frequency of the use of social media significantly (González-Padilla & Tortolero-Blanco, 2020; Laksmi, 2018; Supratman & Wahyudin, 2017; Yu et al., 2020). "Social media is currently a significant source of health and medical information." (Benis et al., 2021, p. 1) because it has a speed in disseminating information about care, personal protective equipment, and medical resource arrangements that cover a wide area, both regionally, nationally and internationally (González-Padilla & Tortolero-Blanco, 2020). The potential of social media for social interaction today focuses on

features and the dimensions of human and social relationships. Social media can combine mass and interpersonal communication equally well to create a sense of attachment between users by adding a humanist aspect of personal interaction to mass communication (Picard, 2015).

The internet makes information easily accessible from multiple sources and platforms, increasingly reaching diverse populations worldwide. It is not surprising that social media is currently a source and dissemination of information related to COVID-19 among students worldwide, for example, in China (Wong, 2020), Malaysia (Hashim et al., 2020), etc. This study still strengthens previous research that Indonesian students also tend to choose internet social media as a source of information retrieval; however, this study portrays differences between platforms. Although both are internet-based communication channels, the university's website is not chosen by many respondents as a source of information about COVID-19. The respondents seem to prefer user-generated content-based platforms represented by social media. It links to the fact that prior to the Covid-19 pandemic, much previous research confirmed that social media plays a major role in developing widely available medical or health knowledge (Zhou et al., 2018).

It is linked to Samy et al.'s (2020) work that the government has made Twitter, Instagram, and TikTok the official channels that regularly publish the government's latest statistics and suggestions and ask the public to disseminate and implement them. In the Indonesian context, the authors also reveal that information about COVID-19 from the government is also re-disseminated by individuals through conventional mass media and new media, with a lighter and more concise delivery because it is more widely spread through these two types of media, most of the targets are young people. One of the advantages of internet communication is the provision of visual infographics that can make it easier for people to understand, compared to just written text. For example, infographics are shared through social media, and within days infographics appeared in more than ten languages (González-Padilla & Tortolero-Blanco, 2020).

Indeed, the dissemination of information through social media can be fast and wide-reaching. Individuals can find various information via the internet, including social media. This current study also confirms that social media has become the main source of seeking information about COVID-19. Previous research has also proven that the socialisation of information about pandemics has been carried out through social media. The internet plays an important role in conveying health information to individuals who have difficulties in mobility (Mazlan et al., 2021). It is worth noting that information about COVID-19 on social media has been re-disseminated by individuals through their social media platforms or made summaries of information by several alternative media. However, previous research does not reveal whether it is automatically shared with others or not shortly after reading the information and whether information from social media is also the main information that is shared (González-Padilla & Tortolero-Blanco, 2020; Wong, 2020). It appears to be an exciting finding in this present study.

b. Is Social Media Top Priority to Share Information?
Table 2 reveals that it is not automatic that the most widely used sources of information are also sources of information sharing. This current study shows that information about COVID-19 obtained from social media is not directly shared with other people using social media or other channels. Information sharing is the process of relaying to others and receiving

information from the giver to impact the other person's world image and create a shared compatible working and understanding of the world (Savolainen, 2017).

Table 2: Information sharing behaviour

Sources of information sharing	Level	Number of Respondents	Scores	Percentage (%)
Social media	Never	68	0	21.72
	Rarely	176	176	56.23
	Often	52	104	16.61
	Very Often	17	51	5.43
		313	331	100
	Mean-score		1.057	
Online media	Never	36	0	32.72
	Rarely	52	52	47.27
	Often	18	36	16.36
	Very Often	4	12	3.65
		110	100	100
	Mean-score		0.909	
Mass media	Never	34	0	23.61
	Rarely	84	84	58.33
	Often	22	44	15.27
	Very Often	4	12	2.77
		144	140	100
	Mean-score		0.97	
University website	Never	4	0	12.5
	Rarely	7	7	37.5
	Often	7	14	12.5
	Very Often	10	30	37.5
		28	51	100
	Mean-score		1.82	
Friends & Family	Never	6	0	20.68
	Rarely	9	9	31.03
	Often	6	12	20.68
	Very Often	8	24	27.61
		29	45	100
	Mean-score		1.551	

Social media was recognised by 50.16% of students as the main source of information about COVID-19, showing that only 5.43% of students often admit to sharing information from social media. Most students (56.23%) stated that they rarely share information from social media, and those who admit to never sharing information about COVID-19 are quite a lot (21.72%). The mean score of social media as a source of information sharing is only 1.057.

Online media and mass media experienced lower results. As a source of information about COVID-19, mass media is chosen by 23.07% of students (rank 2) and online media is chosen by 17.63% of students (rank 3) (see Table 1). Only 3.77% of students (M=0.909) admitted to making online media their main source of information and sharing it. In contrast, those who claim to make mass media their main source of information and share information are only 2.65% (M=0.97).

On the other hand, students who chose the university website and interpersonal channels (family or friends) as the main sources of information about COVID-19 were the ones who shared the most information they got from these two sources. Even though the university website is the least selected channel/source of information (chosen by 4.49%) (Table 1), there

are 37.5% of students claim to have chosen the university website and shared information from that website (M=1.82). Furthermore, although only 4.65% of students choose friends and families as a source of information (Table 1), 27.61% of students admitted to sharing information from that source (M=1.551). It can be concluded that the less frequently selected sources of information are, the more often information about COVID-19 is shared from these sources/channels.

Thus, this current study's first hypothesis (H_1) is not supported. Social media, indeed, is the top-priority source of information about COVID-19. However, social media is not the top priority for sharing information about COVID-19. On the other hand, websites that are not the top priority source of information about COVID-19 have turned out to be the top priority source for sharing information about Covid-19 with others.

Adopting the findings of Benis et al. (2021), the low use of social media as a channel for sharing information about COVID-19 is related to compliance with Covid-19 information on social media. Although social media is a significant channel for health and medical information, it does not automatically affect user compliance with the information it contains. Benis et al. (2021) proved that information on social media should have specific targets based on sociodemographic factors and personalisation of social media to increase influenza vaccination rates and adherence to other vaccines, including COVID-19. Communication on social media has a very broad scope for many people freely (Kuźniar & Szopiński, 2016). In this case, the university website has the advantage of having a clear target, i.e., the students, and having personal proximity because students always want to know the latest information about COVID-19 related to academic activities at their university.

In addition, it seems that the students realised that in addition to being useful in increasing knowledge quickly and widely, social media has the potential to contain informational content that cannot be justified. Academics say there is still debate about the benefits of social media (Wong et al., 2020) and debate whether social media can be trusted or not (Håkansson & Witmer, 2015). The biggest problem with social media is the circulation of disinformation or hoaxes (Buchanan, 2020). Buchanan detailed disinformation, including "the deliberate creation and sharing of false and/or manipulated information intended to deceive and mislead audiences, either to cause harm or for political, personal or financial gain" (Buchanan, 2020, p. 1). In Indonesia, hoaxes impact communities through social media (Krisdyan, 2019).

The results confirm that the characteristics of the internet that are very fast in spreading information and uncontrolled can result in the dissemination of invalid or unproven information, including the comment column feature, which can provide the potential to add confusing information from other audience arguments (Samy et al., 2020). Even though social media has an important role as a forum for disseminating COVID-19 information, selecting information must still be carried out to avoid misunderstanding and mistakenly receiving messages. However, not all information on social media is categorised as quality because everyone is free to write and post information or create news. It is called information decentralisation, which can affect the accuracy of information (Krisdyan, 2019; Kriyantono et al., 2017).

The small percentage of students who share information about COVID-19 from social media means that student trust in information on social media is very low. Some literature, such as Puntnam (1993) and Uslaner (2004), expressed scepticism about the positive relationship between social media and trust. Although most research states that social media

positively impacts trust, at least distrust is difficult to detect because it is a transient property in network relationships (Håkansson & Witmer, 2015).

This trust seems to have led many students to share information from families and friends because communication and social connections are more personal. Personal communication is vital because trust is built on reciprocity learned from direct interaction and collaboration with others (Puntnam, 1993). It is linked to Lee et al.'s (2011) work in China that internet communication cannot predict the quality of life while face-to-face communication with friends and family members can. Furthermore, reciprocal personal face-to-face communication allows better exchange of ideas. It provides a great opportunity to confirm the correctness of information to avoid misleading information (Franky & Budiman, 2019).

The authors argue that although social media is equipped with various technological features that can synergise mass communication and personal communication, such as being interactive, reaching many people, or sharing content, it has not been able to replace the emotional aspects of personal communication completely. "The use of the internet for interpersonal communication is not the same as face-to-face communication in enhancing the quality of life" (Lee et al., 2011, p. 386). This situation also occurs in the learning process. Aguilera-Hermida (2020) proves that students prefer face-to-face interaction despite admitting that technology improves cognitive abilities and academic performance. This also applies to information retrieval because learning is information retrieval (Mills et al., 2014).

Lee et al. conducted the research in four cities in China that have strong ties as a society. Like the Chinese, Indonesians are still familiar with a culture of togetherness and social friendship; two-way reciprocal communication is vital (Littlejohn et al., 2017; Kriyantono & McKenna, 2017), including in determining the quality of information. In Indonesia, face-to-face communication with family, relatives, and friends has become a tradition passed down from generation to generation. A culture of "*cangkrukan*" (informal conversation involving two or more people) reflects the importance of being together. If there is someone who has life problems, his/her friends will be happy to help each other, which is known as the concept of "*gotong-royong*" (working together voluntarily to solve common problems). In the end, it gives rise to local wisdom "*mangan gak mangan sing penting ngumpul*" (Gathering is very important, with or without food), which means that gathering and being united is very important as a unified bond in dealing with problems. Face-to-face personal communication can bring togetherness because of the building of trust that becomes the glue that binds individuals (Kriyantono & McKenna, 2017).

The presence of communication technology is not rejected. In response, the tendency to communicate directly in two directions is considered a more effective form of communication, including confirming information obtained on social media. A positive relationship between social media and trust, mediated by choice to use social media to build social connections and perceived information overload, is inversely associated with interpersonal trust (Håkansson & Witmer, 2015). Moreover, health information relates to the safety of the human-life, so individuals choose to act more carefully. Vermeir et al. (2015) reveal that face-to-face communication is very important for obtaining comprehensive information through a full conversation. In face-to-face communication, the participants hear what is being said. They can see the body language and facial expressions that provide key information to understand the meaning behind the words better. In general, communication on social media is dominated by written communication, and Vermeir et al. (2015) reveal that

written communication leads to inefficiencies in communication between healthcare professionals and patients.

The need for face-to-face communication in the midst of social media exposure is also due to the need for the presence of opinion leaders. As trust in the news media and social media shrinks and fears of disinformation, individuals need to find ways to access and assess reliable and trustworthy information (Dubois et al., 2020). In this current study, face-to-face communication can persuade, while mass communication can build awareness (Littlejohn, Foss, & Oetzel 2017). Social media is indeed able to combine one-way mass communication and face-to-face communication (Hinson, 2018) and can serve as an information exchange (Mohamad, 2022). However, the number of hoaxes that are widely spread on social media and direct physical contact makes the level of trust in information on social media still low. According to Dubois et al., even though individuals do not believe in information on social media, there continues to be a meaningful exchange and sharing of content in the online community on social media, and this exchange relies on trust not only between users and the platform but also between the various users involved on that platform. Mazlan et al. (2021) reveal a positive correlation between trust on the internet and e-health. Although Dubois et al.'s research was carried out related to political information, the current study proves that the role of opinion leaders or personal communication is also very important for information about COVID-19 because it is related to life safety and the interests of the global community. Adopting Turcotte et al. (2015), the authors argue that students will choose people, friends, or family who can assess and disseminate information as a reference for these students to share information.

This current study also confirms that the presence of opinion leaders, in addition to digital media, is considered more effective. The previous research reveals that the interpersonal habit of seeking and disseminating information has many roots among college students. Based on the characteristics of learners in the 21st century, the students are categorised as a group that is highly dependent on technology and digital media in their daily lives (Meşe & Aydın, 2019). So, it can be said that personal communication effectively convinces students to share information with others.

Many information-sharing behaviours on personal information sources show that the quality of social relations greatly influences information sharing. According to Steijn & Schouten (2013), relationship development mainly occurs among acquaintances and friends. Furthermore, this relationship moved to social media, which affects relationships in a distinct fashion as acquaintances and friends gain access to public self-disclosures that might normally only be reserved for close friends and family. The result of this previous research is in line with the current study's findings that students' relationships and self-disclosure with friends and family are considered more trustworthy than social media for sharing information about COVID-19.

This current study proves that the development of digital technology does not completely degrade the two-stage communication model in the 1960s, when the era of conventional media, such as television, newspapers, or radio, was still developing. Several communication studies on the effects of media in that era have resulted in findings that public attitudes and behaviour are more easily influenced through face-to-face communication with opinion leaders or through a two-step flow model, namely from mass media to personal communication (Littlejohn et al., 2017). Based on this two-step flow model, it can be concluded that social media is not powerful in spreading messages to the students, like

needles injecting drugs into the human body. However, the students are active entities in determining messages according to their needs and actively deciding whether to spread them or not.

c. The Correlation Test

The correlation test is conducted on two question variables: the most chosen source/channel of information (social media) and the least preferred source/channel (University website). Both are also channels that can combine mass communication and interpersonal communication skills. Table 1 shows that 313 respondents admitted to using social media as their top priority channel to seek information, and 28 respondents have used the website as the leading priority source or channel to find information about COVID-19.

Table 3: Correlation test

Source of information	Level	Respondents	$(Y1)^2$	$(Y2)^2$
Social media	Never	68	4.624	-
	Rarely	176	30.976	-
	Often	52	2.704	-
	Very often	17	289	-
Total		**313**	**38.593**	
University website	Never	4	-	16
	Rarely	7	-	49
	Often	7	-	49
	Very often	10	-	100
Total		**28**		**214**

Y1 = Social Media

Y2 = University Website

$$\bar{Y}_1 = \frac{313}{4}$$

$$= 78,25$$

$$\bar{Y}_2 = \frac{28}{4}$$

$$= 7$$

$$\bar{Y}_T = \frac{313 + 28}{8}$$

$$= \frac{341}{8}$$

$$= 42,625$$

$$\Sigma Y_T^2 = \Sigma Y_1^2 + \Sigma Y_2^2$$

$$= 38593 + 214$$

$$= 38807$$

$$N = \sqrt{1 - \frac{\sum Y_T^2 - (n_1)(\overline{y_1})^2 - (n_2)(\overline{Y_2})^2}{\sum Y_T^2 - (n_1 + n_2)(\overline{Y_T})^2}}$$

$$= \sqrt{1 - \frac{38.807 - (4)(78,25)^2 - (4)(7)^2}{38.807 - (8)(42,625)^2}}$$

$$= \sqrt{1 - \frac{38.807 - 24.492,25 - 196}{38.807 - 1.816,890625}}$$

$$= \sqrt{1 - \frac{14.118,75}{37.620,109375}}$$

$$= 0,625$$

$$\text{F count} = \frac{n^2 (N-K)}{(1-n^2)(K-1)}$$

$$= \frac{0,625^2 (8-2)}{(1- 0,625^2)(2-)}$$

$$= 3,846$$

F Table 0,05

df top (K-1) = 2-1 =1

df below (N-K) =8-2 = 6

F count (3,846) < F Table (5,99)

It means the independent variables are not simultaneously correlated with the dependent variable. Therefore, the second hypothesis (H_2) is not established. Therefore, the ETA correlation test results confirm that people seeking information from the top priority channel do not automatically share information obtained from that channel.

d. The Information Needs and the Role of the University Website

The authors also argue that the issue of trust allows the percentage of students to share information from university websites to be relatively high. This current study strengthens previous research that the website is a source that is considered credible because it is the main communication tool between organisations and the public (Halim et al., 2015; Lu et al., 2021). However, the author's belief that universities should improve the quality of their websites has been proven by the large number of students who search for information about Covid-19 on university websites.

Through open-ended questions about "what kind of information do you need regarding COVID-19?" 624 students had written their answers, and the authors coded them into several categories to present the percentage. The information needs to encourage students to seek information (Yap et al., 2020). The impacts of a pandemic on humanity, i.e., the number of sick, recovered, and dead victims, are the type of information most students need. Because the respondents are students, many are also looking for information about the academic process or lectures (12.82%), including information about providing internet data packages (1.76%). Other information needs include information on disease recognition, symptoms, and spread (18.42%), vaccines and treatment (9.45%), and strategies to overcome the pandemic (9.61%).

This seems to be related to the high information sharing on university websites (Table 2). Because it is related to academic information during the pandemic, students share the information they get from the university website. The need for information can make someone look for information. A person will intensively pay attention to the selected topic in seeking information. They actively seek information to deepen knowledge and understanding of a particular issue with unlimited and unstructured efforts and make planned efforts to obtain specific information. These information-seeking processes cause a high level of information sharing from the website and a high tendency of interpersonal communication behaviour, as shown in Table 2.

However, the low number of students who use the university website as a source of information (Table 1) is possible because this academic information is related to policies at universities and national policies from the ministry of education. Students most likely obtain the latter from other sources, such as social media, online media, or mass media.

Finally, there are so many choices of information resource platforms in the community. Among the siege of various sources of information ranging from traditional media to new media, identifying the main sources of information is one of the important keys if the government wants to make policy interventions to overcome the pandemic. It is possible for every organisation to experience a crisis, so an effective crisis communication strategy is needed, including the website (Kriyantono & McKenna, 2019). Website managers must adopt the principles of presenting dialogical and interactive information in an effort to build reciprocal two-way communication. Two-way reciprocal communication is the key to successful communication management (Kriyantono et al., 2022).

CONCLUSION

This study affirms that social media is still the main choice for seeking information among university students. However, it proves that a communication channel is not automatically selected as a source of information and a channel for sharing information. In fact, this study confirms a possible negative relationship that the less frequently selected information sources are, the more often information about Covid-19 is transmitted from that source. Social media is the top priority as a place to find information. However, students tend to base information on personal communication to share information. This finding is confirmed by the ETA correlation test that there is no simultaneous correlation, and as a result, the hypotheses are not supported.

The issue of trust seems to be still attached to social media, as has been found in many previous studies. Although social media is a combination of one-way and two-way communication, it has not been able to replace the role of face-to-face personal communication related to confirming the correctness of the information. The data of this study prove that students share much information from interactions with friends and family as a personal communication channel. It is also possible to conclude that developing more advanced technologies does not necessarily replace the former technologies but is more complementary. New digital technologies make it possible to broaden the range of communication. As a result, it has a more cognitive impact on COVID-19, and personal face-to-face communication has proven to be even more effective at influencing information-sharing attitudes and behaviours.

This study also provides recommendations to university website managers to improve the quality of website services. University websites have a high level of trust among students. Therefore, it is necessary to adopt interactive and dialogical principles in delivering information on websites, including interpersonal communication.

This study is limited to describing only the percentage of information-seeking behaviours, information needs, and information sharing and has not yet explored in-depth data about the motives of information-seeking behaviour, including satisfaction after obtaining information. Therefore, the authors recommend conducting qualitative research with in-depth interviews or focus group discussions that focus on exploring these motives to enrich the current study results with descriptive verification data. Qualitative research is also applied to offer comparative information behaviour models based on types of channels. These models can be evidence to strengthen the results of this current research that although they are complementary, each channel has its characteristics that other media cannot effectively adopt.

In addition, although a correlation test has been carried out between sharing information and sources of information, to deepen the results, it is recommended to test a correlation among other variables, such as genders, socio-demographics or motives of information-seeking.

BIODATA

Rachmat Kriyantono is a Professor in Public Relations Science, Dept of Communication, Universitas Brawijaya, Malang, Indonesia. His field of research are public relations, marketing communication, and media studies. Email: rachmat_kr@ub.ac.id

Azahar Kasim is a Senior lecturer at School of Multimedia Technology and Communication, College of Arts and Sciences, Universiti Utara Malaysia. specializing in the area of Communication and Media Technology (Journalism). Email: w_azahar@uum.edu.my

Reza Safitri is a Senior Lecturer in Media Studies, Dept of Communication, Universitas Brawijaya. Her field of research are media studies, new media, and agricultural extension communication. Email: reza.fp@ub.ac.id

Isma Adila is a Senior Lecturer in Media Studies, Dept of Communication, Universitas Brawijaya. Her field of research are media studies, new media, and communication. Email: ismaadila@ub.ac.id

Arif Budi Prasetya is a Senior Lecturer in Media Studies, Dept of Communication, Universitas Brawijaya. His field of research are media studies and cultural semiotics, new media, and communication. Email: arif.budiprasetya@gmail.com

Nufian Febriani is a Senior Lecturer in Strategic Communication, Dept of Communication, Universitas Brawijaya. Her field of research are strategic communication, new media, and environmental communication. Email: nufian.febriani@gmail.com

Wayan Weda Asmara Dewi is a Senior Lecturer in Strategic Communication, Dept of Communication, Universitas Brawijaya. Her field of research are new media, communication science, marketing communication, and environmental communication. Email: wedaasmaradewi@gmail.com

Ahmad Muwafik Saleh is a Senior Lecturer in public relations science, Dept of Communication, Universitas Brawijaya. His field of research are strategic communication, new media, public service communication, and prophetic communication. Email: muwafik@ub.ac.id

Moch Fauzie Said is a Senior Lecturer in Political Studies, Dept of Politic, Universitas Brawijaya. His field of research are political communication and public policy. Email: mfauziesaid@ub.ac.id

REFERENCES

Abidah, A., Hidaayatullaah, A. N., Simamora, R. M., Fehabutar, D., & Mutakinati, L. (2020). The impact of Covid-19 to Indonesian education and its relation to the Philosophy of "Merdeka Belajar". *Studies in Philosophy of Science and Education*, *1*(1), 38-49. https://doi.org/10.46627/sipose.v1i1.9

Aguilera-Hermida, A. P. (2020). College students' use and acceptance of emergency online learning due to COVID-19. *International Journal of Educational Research Open*, *1*, 100011. https://doi.org/10.1016/j.ijedro.2020.100011

Al-Zaman, S. (2020). COVID-19-Related social media fake news in India. *Journalism and Media, 2*, 110-114. https://doi.org/10.3390/journalmedia2010007

Arif, M. (2020). What is the estimated cost of depression due to the Covid-19 pandemic? *Universitas Padjadjaran (UNPAD).* https://www.unpad.ac.id/en/2020/07/what-is-the-estimated-cost-of-depression-due-to-the-covid-19-pandemic/

Benis, A., Khodos, A., Ran, S., Levner, E., & Ashkenazi, S. (2021). Social media engagement and influenza vaccination during the COVID-19 pandemic: Cross-sectional survey study. *Journal of Medical Internet Research*, *23*(3), 1–15. https://doi.org/10.2196/25977

Boukes, M. (2019). Social network sites and acquiring current affairs knowledge: The impact of Twitter and Facebook usage on learning about the news. *Journal of Information Technology and Politics*, *16*(1), 36-51. https://doi.org/ggh34w

Buchanan, T. (2020). Why do people spread false information online? The effects of message and viewer characteristics on self-reported likelihood of sharing social media disinformation. *PLoS ONE*, *15*(10), e0239666. https://doi.org/gh4dww

Chen, I. H., Chen, C. Y., Pakpour, A. H., Griffiths, M. D., & Lin, C. Y. (2020). Internet-related behaviors and psychological dis-tress among school children during COVID-19 school suspension. *Journal of the American Academy of Child and Adolescent Psychiatry, 59*(10), 1099-1102. https://doi.org/10.1016/j.jaac.2020.06.007

Chadwick, A., Kaiser, J., Vaccari, C., Freeman, D., Lambe, S., Loe, B. S., … & Ross, A. R. N. (2021). Online social endorsement and Covid-19 vaccine hesitancy in the United Kingdom. *Social Media+ Society*, *7*(2). https://doi.org/10.1177/20563051211008817

Chua, Y. T. (2021). Covid pandemic in South East Asian: The numbers. *Reporting Asean*. https://www.reportingasean.net/covid-19-cases-southeast-asia/

Cucinotta, D., & Vanelli, M. (2020). WHO declares Covid-19 a pandemic. *Acta Biomed*, *91*(1), 157-160. https://doi.org/10.23750/abm.v91i1.9397

Djalante, R., Lassa, J., Setiamarga, D., Sudjatma, A., Indrawan, M., Haryanto, B., ... & Warsilah, H. (2020). Review and analysis of current responses to COVID-19 in Indonesia: Period of January to March 2020. *Progress in Disaster Science, 6*, 100091. https://doi.org/10.1016/j.pdisas.2020.100091

Dubois, E., Minaeian, S., Paquet-Labelle, A., & Beaudry, S. (2020). Who to trust on social media: How opinion leaders and seekers avoid disinformation and echo chambers. *Social Media+Society, 6*(2), 1-13. https://doi.org/10.1177/2056305120913993

Duyen, L. T., Nguyen, H., Dao, S., Thu, P. A., Diu, D. T., & Nga, N. T. T. (2022). *Covid-19 pandemic and CSR activities in Vietnam - The case of catering providers* (Conference paper). Conference of Covid-19 Global Challenges - The Economic and Financial Dimensions, Dublin, Republic of Ireland, 17-18th January 2022. Disrupting Thinking. https://www.researchgate.net/publication/357899910_Covid-19_pandemic_and_CSR_activities_in_Vietnam_-The_case_of_catering_providers

Elfira, T. C. (Oct 19, 2020). Kominfo will clean up COVID-19 hoaxes on social media. *VOI*. https://voi.id/en/technology/17204/kominfo-will-clean-up-covid-19-hoaxes-on-social-media

Eloksari, E. A. (2020, Nov 11). Indonesian internet users hit 196 million, still concentrated in Java: APJII survey. *The Jakarta Post.* https://www.thejakartapost.com/news/2020/11/11/indonesian-internet-users-hit-196-million-still-concentrated-in-java-apjii-survey.html

Euler, M. (2020). Which countries have reported new variants of COVID-19? *Al-Jazeera*. https://www.aljazeera.com/news/2020/12/31/which-countries-have-reported-new-variants-of-covid-19

Fadli, Safruddin, Ahmad, A. S., Sumbara., & Baharuddin, R. (2020). Faktor yang mempengaruhi kecemasan pada tenaga kesehatan dalam upaya pencegahan Covid-19. *Jurnal Pendidikan Keperawatan Indonesia*, *6*(1), 57-65. https://doi.org/j2vh

Krisdyan, E. P. (2019). HOAX impact to community through social media Indonesia. *Cakrawala, 19*(1), 121-125. https://ejournal.bsi.ac.id/ejurnal/index.php/cakrawala/about/editorialPolicies#focusAndScope

Franky, & Budiman, T. (2019). *Socialization on how to deal with hoax information to junior high school students in Oebelo Village, Kupang Tengah – East Nusa Tenggara* (Conference paper). International Conference on Environmental Awareness for Sustainable Development in conjunction with International Conference on Challenge and Opportunities Sustainable Environmental Development, ICEASD & ICCOSED 2019, 1-2 April 2019, Kendari, Indonesia http://dx.doi.org/10.4108/eai.1-4-2019.2287233

Gao, J., Zheng, P., Jia, Y., Chen, H., Mao, Y., Chen, S., ... & Dai, J. (2020). Mental health problems and social media expo-sureduring COVID-19 outbreak. *PLoS ONE*, *15*(4), e0231924. https://doi.org/10.1371/journal.pone.0231924

González-Padilla, D. A., & Tortolero-Blanco, L. (2020). Social media influence in the COVID-19 Pandemic. *International Brazilian Journal of Urology, 46*(1). https://doi.org/fg7p

Håkansson, P., & Witmer, H. (2015). Social media and trust — A systematic literature review. *Journal of Business and Economics, 6*(3), 517-524. https://doi.org/10.15341/jbe(2155-7950)/03.06.2015/010

Halim, N. A., Basiruddin, R., & Ali, N. R. M. (2015). Measuring the extent of investor relations on the web: A multidimensional approach. *Procedia Economics and Finance*, *31*, 714-721. https://doi.org/10.1016/S2212-5671(15)01160-0

Hasanah, U., Fitri, N. L., Supardi, S., & Livana, P. H. (2020). Depression among college students due to the Covid-19 pademic. *Jurnal Keperawatan Jiwa, 8*(4), 421-424. https://doi.org/10.26714/jkj.8.4.2020.421-424

Hashim, S., Abdullah, N. S., Paimin, A. N., & Muda, W. H. N. W. (2020). Students' intention to share information via social media: A case study of Covid-19 pandemic. *Indonesian Journal of Science & Technology, 5*(2), 236-245. https://doi.org/gn8x9x

Hinson, R. E., Kosiba, J. P. B., Odoom, R., & Gyampo, R. E. (2019). Dialogic features of brand South Africa's website and tourists' intentions to visit. *European Business Review*, *31*(5), 568-584. https://doi.org/10.1108/EBR-12-2016-0168

Islam, A., Barna, S. D., Raihan, H., Khan, N. A., & Hossain, T. (2020). Depression and anxiety among university students during the COVID-19 pandemic in Bangladesh: A web-based cross-sectional survey. *PLoS ONE, 15*(8), e0238162. https://doi.org/fjqb

Kriyantono, R., Ida, R., Tawakkal, G. T. I., & Safitri, R. (2022). Not just about representative: When democracy needs females and their competency to run Indonesian government public relations to management level. *Heliyon, 8*(1), e08714. https://doi.org/j2v3

Kriyantono, R. (2020). *Teknik praktis riset komunikasi: Kuantitatif dan kualitatif*. Jakarta: Prenada Media.

Kriyantono, R., & McKenna, B. (2019). Crisis response vs crisis cluster: A test of situational crisis communication theory on crisis with two crisis clusters in Indonesian public relations. *Jurnal Komunikasi: Malaysian Journal of Communication, 35*(1), 222-236. https://doi.org/10.17576/JKMJC-2019-3501-15

Kriyantono, R., Destrity, N. A., Amrullah, A. A., & Rakhmawati, F. Y. (2017). Management of public relations for supporting the anti-corruption national program in Indonesia. *International Journal of Applied Business & Economic Research*, 15(20), 293–303.

Kriyantono, R., & McKenna, B. (2017). Developing a culturally-relevant public relations theory for Indonesia. *Jurnal Komunikasi: Malaysian Journal of Communication*, 33(1), 1–16. https://doi.org/10.17576/JKMJC-2017-3301-01

Kuźniar, W., & Szopiński, W. (2016). The use of social media by local government units to communicate with stakeholders. *Nierówności Społeczne a Wzrost Gospodarczy*, 45(1), 247–254. https://doi.org/10.15584/nsawg.2016.1.25

Kwanya, T., & Nyariki, P. (2019). Information seeking behaviour of private school student in Kenya. *Journal of Library and Information Science, 9*(1), 40-53.

Laksmi, A. W. (2018). Information behaviour of beginner voters facing election 2019 at SMAN 103 Jakarta. *EduLib: Journal of Library and Information Science, 9*(2), 116-127. https://ejournal.upi.edu/index.php/edulib/article/view/15232

Lee, P. S. N, et al. (2011). Internet communication versus face-to-face interaction in quality of life. *Social Indicators Research*, 100(3), 375-389. https://doi.org/cbh9j4

Lekic, D., Rivière, A. L., & Ihadjadene, M. (2020). Information behaviour of top managers of telecommunications network units in the context of the digital transformation of the organisation. *Information Research*, 25(4), 1-19. https://doi.org/10.47989/irpaper884

Littlejohn, S. W., Foss, K. A., & Oetzel, J. G. (2017). *Theories of human communication*. Waveland Press.

Lu, L., Liu, J., Yuan, C., Burns, K., Lu, E., & Li, D. (2021). Source trust and Covid-19 information sharing: The mediating roles of emotions and beliefs about saring. *Health Education & Behavior*, 48(2), 132-139. https://doi.org/10.1177/1090198120984760

Mackert, M., Table, B., Yang, J., Bouchacourt, L., Woods, J. M., Bernhardt, J. M., & Wagner, J. H. (2020). Applying best practices from health communication to support a university's response to COVID-19. *Health Communication, 35*(14), 1750-1753. https://doi.org/10.1080/10410236.2020.1839204

Majid, S., & Kassim, G. M. (2000). Information seeking behaviour of International Islamic University of Malaysia Law Faculty members. *Malaysian Journal of Library & Information Science, 5*(2), 1-17. https://mjlis.um.edu.my/article/view/6832

Mazlan, A., Adzharuddin, N. A., Zobidah, S., & Tamam, O. (2021). Online health information seeking behavior of non-communicable disease (NCD) among government employees in Putrajaya Malaysia. *Jurnal Komunikasi: Malaysian Journal of Communication, 37*(1), 419-433. https://doi.org/10.17576/JKMJC-2021-3701-24

McMillan, S. J. (2020). COVID-19 and strategic communication with parents and guardians of college students, *Cogent Social Sciences*, *6*(1), 1843836. https://doi.org/gnzfwq

Meşe, C., & Aydın, G. S. (2019). The use of social networks among university students. *Educational Research and Reviews, 14*(6), 190-199. https://doi.org/gf5fr9

Mills, L. A., Knezek, G., and Khaddage, F. (2014). Information seeking, information sharing, and going mobile: Three bridges to informal learning. *Computer in Human Behavior*, *32*, 324-334. https://doi.org/10.1016/j.chb.2013.08.008

Mohamad, N. (2022). Understanding the mediating effects of technology factor on social media acceptance among budget accommodations. *Jurnal Komunikasi: Malaysian Journal of Communication, 38*(1), 221-239. https://doi.org/j2v5

Mohammed, M. T. S., Ibrahim, F., Yunus, N. (2021). Exploring the relationship of social media usage and multitasking of social media on self-efficacy and academic performance. *Jurnal Komunikasi: Malaysian Journal of Communication, 37*(1), 227-243. https://doi.org/10.17576/JKMJC-2021-3701-13

Moore, M. (2020). Countries with the biggest share of internet users in Asia as of May 2020, by country. *Statista*. https://www.statista.com/statistics/272358/distribution-of-internet-users-in-asia-pacific-by-country/

Noar, S. M., & Austin, L. (2020). (Mis) communicating about COVID-19: Insights from health and crisis Communication. *Health Communication*, *35*(20), 1735-1739. https://doi.org/10.1080/10410236.2020.1838093

Nurbaiti, A. (2020, June 17). Indonesia becomes country with most confirmed COVID-19 cases in Southeast Asia. *The Jakarta Post.* https://www.thejakartapost.com/news/2020/06/17/indonesia-becomes-country-with-most-confirmed-covid-19-cases-in-southeast-asia.html

Nurhayati, H. (2020). Breakdown of social media* users by age and gender in Indonesia as of 2020. *Statista*. https://www.statista.com/statistics/997297/indonesia-breakdown-social-media-users-age-gender/

Picard, R. G. (2015). The humanisation of media? Social media and the reformation of communication. *Communication Research and Practice*, *1*(1), 32-41. https://doi.org/10.1080/22041451.2015.1042421

Prayudi, P., & Sagita, V. A. (2021). News construction of COVID's crisis management of indonesian government through Detik.com. *Jurnal Ilmu Komunikasi, 19*(1), 93-107. https://doi.org/10.31315/jik.v19i1.4503

Putnam R. D. (1993). *Making democracy work: Civic traditions in modern Italy*. Princeton, New Jersey: Princeton University Press.

Riley, A. M., Sangalang, A., Critchlow, E., Brown, N., Mitra, R., & Nesme, B. C. (2020). Entertainment-education campaigns and COVID-19: How three global organisations adapted the health communication strategy for pandemic response and takeaways for the future. *Health Communication*, *36*(1), 42-49. https://doi.org/gj3b5b

Samy, M., Abdelmalak, R., Ahmed, A., & Kelada, M. (2020). Social media as a source of medical information during COVID-19. *Medical Education Online*, *25*(1), 1791467. https://doi.org/10.1080/10872981.2020.1791467

Sari, R. N. C., Kriyantono, R., & Prianti, D. D. (2021). Pre-disaster communication on online news portal Tribunnews March 2020. *Advances in Social Sciences Research Journal, 8*(7). 240-250. https://doi.org/10.14738/assrj.87.10522

Savolainen, R. 2017. Information sharing and knowledge sharing as communicative activities. *Information Research*, *22*(3). http://informationr.net/ir/22-3/paper767.html

Sia, J.K.-M. & Adamu, A. (2020). Facing the unknown: Pandemic and higher education in Malaysia. *Asian Education and Development Studies*, ahead-of-print, 2046-3162. https://doi.org/10.1108/AEDS-05-2020-0114

Steijn, W. M. P., & Schouten, A. (2013). Information sharing and relationships on social networking sites. *Cyberpsychology, Behavior, and Social Networking, 16*(8), 582-587. https://doi.org/10.1089/cyber.2012.0392

Sunjaya, D., Herawati, D., & Siregar, A. Y. M. (2020). Depressive, anxiety, and burnout symptoms on health care personnel at a month after COVID-19 outbreak in Indonesia. *BMC Public Health, 21*(1), 227-235. https://doi.org/10.1186/s12889-021-10299-6

Supratman, L. P., & Wahyudin, A. (2017). Digital media literacy to higher students in Indonesia. *International Journal of English Literature and Social Sciences*, *2*(5), 51-58. https://dx.doi.org/10.24001/ijels.2.5.7

Susanto, I. (2020, March 28). Di tengah pandemi, masyarakat butuh panduan informasi yang jelas. *Kompas.id*. https://www.kompas.id/baca/kesehatan/2020/03/28/di-tengah-pandemi-masyarakat-butuh-panduan-informasi-yang-jelas/

Thani, R. A., & Hashim, L. (2011). Information needs and information seeking behaviors of social science graduate students in Malaysian public universities. *International Journal of Business and Social Science, 2*(4), 137-143. https://www.ijbssnet.com/journals/Vol._2_No._4;_March_2011/16.pdf

Turcotte, J., York, C., Irving, J., Scholl, R. M., Pingree, R. J. (2015). News recommendations from social media opinion leaders: Effects on media trust and information seeking. *Journal of Computer-Mediated Communication, 20*(5), 520–535. https://doi.org/f767vd

Umor, N., & Ismail, A. (2022). Berita COVID-19: suatu analisis kritikan pedas netizen di Facebook. *Jurnal Komunikasi: Malaysian Journal of Communication, 38*(1), 270-283. https://doi.org/10.17576/JKMJC-2022-3801-15

Uslaner E. M. (2004). Trust, civic engagement, and the internet. *Political Communication*, *21*, 223-242. https://doi.org/10.1080/10584600490443895

Vermeir, P., Vandijck, D., Degroote, S., Peleman, R., Verhaeghe, R., Mortier, E., ... & Vogelaers, D. (2015). Communication in healthcare: A narrative review of the literature and practical recommendations. *International Journal of Clinical Practice, 69*(11), 1257–1267. https://doi.org/10.1111/ijcp.12686

Waters, R. D., Canfield, R. R., Foster, J. M., Hardy, E. E. (2011). Applying the dialogic theory to social networking sites: Examining how university health centers convey health messages on Facebook. *Journal of Social Marketing, 1*(3), 211-227. https://doi.org/10.1108/20426761111170713

Wiedemann, P. M., & Dorl, W. (2020). Be alarmed: Some reflections about the COVID-19 risk communication in Germany. *Journal of Risk Research*, *23*(7-8), 1-12. https://doi.org/10.1080/13669877.2020.1825984

Wong, A., Ho, S., Olusanya, O., Antonini, M. V., and Lyness, D. 2020. The use of social media and online communications in times of pandemic COVID-19. *Journal of the Intensive Care Society*, *22*(3), 255-260. https://doi.org/10.1177/1751143720966280

Yap, C. S., Tiew, F. N. H., Ngadan, A. A., & Ho, P. L. 2020. Information needs and information seeking behaviour of rural dwellers in Sarawak, Malaysia. *Malaysian Journal of Library & Information Science, 25*(2), 77-94. https://doi.org/10.22452/mjlis.vol25no2.5

Yu, M., Li, Z., Yu, Z., He, J., & Zhou, J. (2020). Communication related health crisis on social media: a case of COVID-19 outbreak. *Current Issues in Tourism*, 24(19), 2699-2705. https://doi.org/10.1080/13683500.2020.1752632

Yulia, H. (2021). Online learning to prevent the spread of pandemic Corona virus in Indonesia. *English Teaching Journal*, *11*(1), 48-56. https://doi.org/10.26877/eternal.v11i1.6068

Zhou, L., Zhang, D., Yang, C., & Wang, Y. (2018). Harnessing social media for health information management. *Electronic Commerce Research and Applications, 27*, 139-151. https://doi.org/10.1016/j.elerap.2017.12.003