

Predicting the sharing and reception of COVID-19-related information on social media

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ABSTRACT

In a health crisis, social media is one of the primary means of disseminating and receiving information. Nevertheless, questions remain regarding what facilitates individual engagement in sharing or receiving information in the context of COVID-19, specifically for the Indonesian context. Analysis of a questionnaire survey among 255 from the random population of Indonesian showed that sharing information is predicted by gender and education. There was no significant relationship between social-demographic and receiving information. For psychosocial characteristics, personal risk perception predicted receiving information, while sharing information was predicted by societal risk perception. Societal risk perception and self-efficacy interacted with each other to predict the sharing of COVID-19-related information. One of the findings indicated a socio-cultural feature through which is considered to play an important role in personal and societal risk perception when sharing or expressing information. Given the benefits of social media communication during this pandemic, this study suggested that governments and policymakers should pay closer attention to a local community that is more effective in keeping everyone safe. Unfortunately, on another side, social media provides less information about narratives, storytelling, and empathy to maintain public trust.

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1. INTRODUCTION

March 2020, three months after the emergence of COVID-19 in China, the Indonesia government officially declared that there were patients who were positively infected with COVID-19 and then declared a health emergency on March 31 [1]. A few weeks before, on March 12, WHO declared that COVID-19 was a pandemic. It means that the level of susceptibility and severity of this virus has increased significantly and is continuing globally. The official statement of the Government and the World Health Organization (WHO) made the people to be significantly desperate. In addition, failure of government communication to anticipate and provide accurate and timely information to the public worsened the situation. The provided information led to the increased usage of social media as the source of sharing and receiving COVID-19-related information. Social media such as WhatsApp, Line, and Tweeter have been bombarded with the information regardless of whether the information is correct or not, based on scientific research or not [2]–[4]. People tried to gain wider access to COVID-19-related information. They utilized social media communication to interact with others. The intensity of the risk of health-related communication and the confusing information gave rise to the expression that people are dying of receiving COVID-19 information, not because diseases they were suffering [5].

The seeking for accurate and reliable health information is a necessity in an uncertain situation. Psychologically, the need is based on the perceived risk as an effect of susceptibility and severity [6]. People would seek as much information as possible related to COVID-19 disease. People expected that the Government would be transparent about the effects of this infectious disease. As the author observed, before the official statement about the outbreak of COVID-19, the ministry of health seemed to underestimate the impact of COVID-19 disease. When COVID-19 began to spread, people's trust in the Government decreased. Trust is critically important during a health crisis, which is characterized by scientific uncertainty [2], [3]. Public trust based on a perception of government competence, care, and openness may lead people to underestimate risks and reduce their belief in the need to take individual action for avoiding the risks [7]. Explicitly, Balong and McCosmas stated that creating effective transparency is to 'make a personal message' [8]. Particularly during such a tumultuous event, narratives, storytelling, and empathy can go a long way toward boosting transparency and retaining confidence.

Meanwhile, risk perception is also influenced by demographic factors. Demographic factors such as age, health condition, education, and gender have been widely observed as supporting health information-seeking behavior. Although serving as control variables, female participants tended to report a higher level of the emotional dimension of perceived risk characteristics [9]. Other studies showed that marital status and health literacy affect the search for online health information [10]. The relationship between socio-demographic factors (age, education, working experience) and information seeking was found significant in some researches [11]–[13]. Thus, this study aims to predict potential factors influencing the sharing and receiving the COVID-19 related information on social media in Indonesia context.

Social media is not just a tool to acquire and share information. In an epidemic crisis, social media has become an essential tool for spreading risk information. Everyone can participate in providing information, not limited to the policymaker or the Government [3]. Unfortunately, natures of information characteristics are vary depending on user' behavior. As stated by Johnson *et al.* [14], social media' characteristics and users' behavior entangled in cultural factors which are socially constructed in risk-related issues. These raised issues such as: who should be trusted? Are the opinions of the experts worth considered a worth value? In such a situation, alternative or traditional methods of treatment emerged on social media as a form of 'resistance' against a lot of confusing opinions on scientific results.

Engaging in active and interactive online expressive behavior can encourage people to participate in dialogical and dynamic processes of public involvement. Theoretically, it is not surprising that the reception of information through social media is an important factor in the dissemination of information. Empirical researches showed that consuming news within social media increases dissemination, discussion, and information sharing [15]. Since traditional mass communication is only consisted of one-way, top-down and sender-centered communications, the dissemination is understandable. Meanwhile, social media provide two-way communication so that users can share information and ideas. The research conducted by [3] stated that reposted messages and information transmitters amplified online users' responses, especially to health emergency information.

Some available reports relating to social media showed that since the COVID-19 outbreak, the use of social media as a means of communication increased significantly. However, the increase of social media usage was also in line with the increasingly widespread circulation of confusing information. Recent research showed that false information gets more tweets but gets fewer retweets than science-based evidence or fact-checking tweets, and science-based evidence and fact-checking tweets get more interaction than plain facts [2]. The study pointed out the trends in information reception and sharing on social media that social media users can provide an answer to the measures needed to control any info-demic.

Through the psychometric paradigm, the study of the risk dimensions being conveyed in two media showed that as news coverage of a disease grows, people might begin to realize the condition's prevalence and severity among other people [16]. The research showed that the reception of information, specifically related to dreadfulness, catastrophic potential, uncertainty, and unfamiliarity, plays a vital role in the formation of public trust and opinion. An extensive research conducted by Paek and Hove confirmed the prior research that people are more open to information regarding risk factors that include a cognitive component [9]. While coverage in the entertainment media was not only positively connected with the cognitive dimension, it also contributed the emotional dimension.

According to Week and Holbert, the reception of information can occur as the content is interesting, helpful, or emotionally arousing [15]. As observed by Balong and McComas, during COVID-19, the amount to which a communicator shares an audience's values and would act similarly to them in a comparable situation can be communicated through narrative and storytelling [8]. Thus, useful information should focus not only on what protective action to take, but also on a clear explanation regarding the nature of the crisis [17].

This study uses the comprehensive model of information seekin (CMIS) [10], [15] as a theoretical model to explain the potential predictors of expressing and receiving information about infectious disease, COVID-19 on social media. The key variables in this model were derived from an individual's existing

information base, an individual's need for recurring programmed information seeking, and Johnson's model of Media Exposure and Appraisal [14]. This model has been used to gain insights into cancer patients' online information seeking behaviors in order to generate reports on how demographics, disease-related factors, and psychosocial needs affect cancer patients' online information seeking behaviors [11]. In other words, the CMIS identifies three components that include antecedent factors (e.g., demographics, illness experience, salience, needs and beliefs), information carrier factors, and information-seeking behaviors. Using the CMIS framework as a guide, this study considers two types of potential antecedents to information seeking: demographics and psychosocial factors.

Within the CMIS, demographic antecedent factors predict information seeking. Earlier research suggested that demographics factors such as education and years worked determined the behavior of information seeking. The research conducted by Han *et al.* on the breast cancer patients showed that education plays an important role in online information seeking with less educated women using more interactive service [11]. A similar finding also showed that education could be positively related to the utility of the internet for illness-related information, albeit to a relatively small degree [13].

Meanwhile, in the framework of situational's theory, Avery showed that adolescents are more active in seeking information during a health crisis through the internet than the older people [12]. However, it should be added that the finding indicated financial barriers to seeking health information. More young individuals are seeking information from a source with less restricted access, such as the local public health department, due to their lack of access to private health care providers. The age effect showed a significant relationship to health information seeking in the Hispanic community [10]. Given the findings discussed above, the first research questions were proposed: How do socio-demographic factors predict sharing and receiving COVID-19-related information on social media?

Psychosocial factors are regarded to be key predictors of preventative health behaviors such as information seeking in times of health crisis. In the framework of the CMIS model, we focus on risk perception and self-efficacy. Tyler and Cook distinguished risk perception into personal-risk and societal-risk perception [16], [17]. Personal-risk perception relates to the respondent's opinions about his or her own assessed risk of being a victim. Meanwhile, societal risk perception relates to residents' perceptions of the larger community and their situation in regard to a social issue. Self-efficacy is the belief in self-capacity to drive one's motivation.

The research conducted on cancer patients showed that psychosocial vulnerability may have lowered women's confidence in their ability to find and apply appropriate knowledge to their cancer problems, encouraging them to rely more on experts. Those who have low scores were more likely to use interactive services as a means to get information about the health of their cancer [11]. According to a recent study, the level of efficacy has a crucial impact in predicting how information is expressed and received on social networking sites during a pandemic [5]. When efficacy is high, risk perception is closely linked to information seeking. Individuals try to be actively engaged in seeking useful information and to help them emotionally. Those who are seeking more information to have solutions to particular problems also tend to spread it to others. Interacting with others in an exchange of information is not only to help and entertain them, but also the need for social interaction, the need to be accurate, and the need to feel good about oneself [18], [19]. Sharing knowledge can comfort people that their attitudes or ideas are correct, as well as help people clarify their opinions and sort out their perspectives on media content [20].

Trust is a crucial component of what binds society together, particularly during times of crisis [7]. Based on the scale developed by [21], more recent studies have even shown that the nature of public information on infectious disease affects people's stress and fear due to COVID-19 [22]. As noted by Balong and McComas, this 'fog of pandemic,' punctuated by rapidly evolving knowledge and mixed messages, raises important trust-related questions [8]. Trust can determine how serious and transmissible a disease is considered, as well as readiness to use remedies including physical distance and information seeking activity. The recent review outlines that transparency of information from the Government in the delivery of scientific results on COVID-19 becomes a strategic step in building well-communicated information. Unfortunately, a deluge of media coverage, government briefings, and interpersonal discussions has inundated the public with conflicting messages. With the given finding discussed, the second research questions are proposed: How do psychosocial factors predict sharing and receiving COVID-19-related information on social media?

2. RESEARCH METHOD

2.1. Participants and procedure

Data were collected from an online survey from May 8 to June 5, 2020. For lacking the support of an official institution, 500 respondents with nationally representative demographic characteristics were supposed to be surveyed. The questionnaire was distributed via social media platforms such as WhatsApp and Line. In regard to this, Slovin's sampling method was used in determining minimum number of samples required for the analysis.

Using a 95% confidence interval and a margin of error of 0.05, the method proposed a minimum of 223 samples [23], [24]. The data consists of age, gender, health status, education, and employment. The authors did not include the experience with respiratory experience and monthly household income for a practical reason. The socio-demographic of the respondents are shown in Table 1.

Table 1. Socio-demographic characteristics of participants (n=255)*

Characteristics	Participants	
	n	%
Age		
15 – 20	145	64.44
21 – 25	19	8.44
26 – 30	12	5.33
31 – 35	9	4.00
36 - 40	8	3.56
> 40	32	14.22
Gender		
Female	88	39.11
Male	137	60.89
Perceived health status		
Very poor	0	0
Poor	3	1.33
Moderate	49	21.78
Good	109	48.44
Very good	64	28.44
Education		
High school	132	58.67
undergraduate	43	19.11
Graduate/master	38	16.89
postgraduate/doctoral	12	5.33
Employment		
Government employees	37	16.44
Non-governmental employees	29	12.89
Not working	159	70.67

Note:* Number and percentages based on cases with valid responses

2.2. Measures

Participants were asked how frequently they had shared information about COVID-19 on social media and had seen or heard about COVID-19 on social media in the previous 30 days, which was used to gauge how well COVID-19-related material was received. Responses were based on a 5-point scale (1=never to 5=very often) [15], [21].

Personal-level and societal-level risk perceptions were measured using four items adapted from previous research [5] on a 5-point scale (1=strongly disagree to 5=strongly agree). Self-efficacy for COVID-19 was assessed with four items adapted from [25] on a 5-point scale (1=strongly disagree to 5=strongly agree). Respondents were asked to indicate how much they had felt the following statement when they thought COVID-19 in the past 30 days. Trust in Government was assessed with five items adapted from [25] on a 5-point scale (1=strongly disagree to 5=strongly agree). Trust in news media was measured using three items drawn from [5] on a 5-point scale (1=strongly disagree to 5=strongly agree). Table 2 presents the descriptive statistics of mean, standard deviation, reliability and validity for the items and scales of expression, reception, and psychosocial variables used in the current study.

Table 2. The descriptive statistics for mean, standard deviation, reliability, and validity of items

	M	SD	Reliability*
Sharing information (1 items)	2.08	1.02	
Receiving information (1 items)	3.12	1.26	
Personal-level risk perceptions (4 items)	16.14	2.70	0.58
Societal-level risk perceptions (4 items)	17.80	2.15	0.68
Self-efficacy for COVID-19 (4 items)	15.46	2.56	0.69
Trust in government (5 items)	16.44	3.19	0.79
Trust in news media (3 items)	9.48	2.14	0.80

Note: *=reliability item based on Cronbach's alpha

**=validity item based on Kaiser-Meyer-Olkin Measure of Sampling Adequacy

2.3. Data analysis

A regression hierarchy was performed to address the research questions above [26]. The first regression hierarchy used the sharing of information as the dependent variable. The second regression hierarchy used the reception of information as the dependent variable. Each regression model had socio-demographic variables in the first block, psychosocial factors in the second block, and the two-intersection term: personal-level risk perception and self-efficacy, societal-level risk perception and self-efficacy in the third block. To prevent possible multicollinearity differences between the interaction term and its components, each of the interaction terms was constructed by multiplying the centred values of the major effect variables [15], [22].

3. RESULTS AND DISCUSSION

3.1. Results

Relating to socio-demographic factors and sharing COVID-19-related information, the results showed that females are more likely to share COVID-19-related information. The higher the level of education, the more the respondents share COVID-19-related information. Meanwhile, none of the socio-demographic factors showed a significant relationship with receiving information on infectious disease.

Regarding the designed research questions on psychosocial factors, people with higher societal-level risk perception were more likely to share COVID-19 related information. However, personal level risk perception showed a non-significant relationship with sharing information. Conversely, those with higher personal-level risk perceptions were more likely to receive information on COVID-19. The results are shown in Table 3.

Table 3. The coefficient of hierarchical regression analyses (n=225)

	Share information Coeff.	Receive information Coeff.
Block 1		
Age	-0.23	-0.08
Gender ^a	-0.14**	-0.07
Perceived health status	-0.01	-0.04
Education	0.30*	-0.05
Job	-0.18	-0.08
Incremental R ² (%)	8.5**	0.7
Block 2		
Personal-level risk perception	-0.05	0.16**
Societal-level risk perception	0.16*	-0.10
Self-efficacy	0.11	0.07
Trust in government	0.11	-0.01
Trust in media social	0.03	0.1
Incremental R ² (%)	13.9***	4.5
Block 3		
Societal-level risk perception x self-efficacy	-0.03	-0.22**
Personal-level risk perception x self-efficacy	-0.03	0.12
Incremental R ² (%)	14.2***	7.0**
Total R ²	36.6***	12.2**

Note: Displayed values refer to the standardized regression coefficient

*p<.1, **p<.05, ***p<.001

^aWe coded female=0 and male=1

For the interaction effects between risk perceptions and self-efficacy on the share of COVID19-related information, we had no evidence to state: i) the relationship between personal risk perception x self-efficacy and ii) societal risk perception x self-efficacy. For the interaction effects between risk perception and self-efficacy on the reception of COVID19-related information, we found an interaction between societal risk perception and self-efficacy. As shown in Figure 1, low societal-level risk perception was associated with information reception substantially more strongly in those with high self-efficacy than in those with low self-efficacy. However, the reception of COVID19-related information tended to be decreased for those with high self-efficacy when they perceived high societal-level risk perception. In section discussion, the author seeks to shed some light on this relationship.

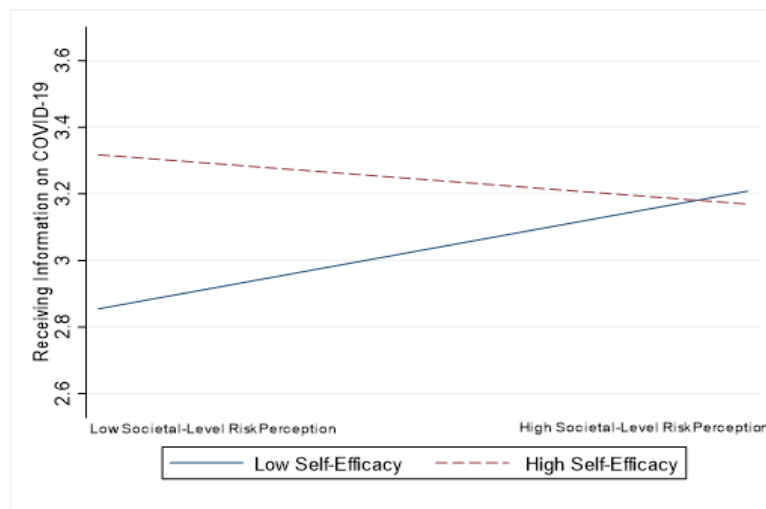


Figure 1. Interaction effects between self-efficacy and societal risk perception

3.2. Discussion

The findings based on the results, in most, were contrary to the findings of some research. First, the female was the most predictive social determinant of sharing COVID19-related information. While the previous research did not show the significant relationship for gender factor, the result was contrary to Week and Holbert [15] regarding social media activity. They showed that female is one of the significant predictors for reception and friending in social media activity. Although their result stated that both reception and friending were highly predictive of dissemination of news within social media, this finding has no evidence to state that information reception can increase sharing and receiving information because of the non-significant relationship between genders and receiving information. Also, this finding cannot be said to confirm the findings of Han *et al.* [11], where the subject of research was breast cancer patients. This result is affirmative to what was stated by Giritli Nygren [27]. In the framework of feminism theory, Giritli Nygren *cs* argued that Gender is a dynamic construct that describes societal power dynamics, shapes people's lives in fundamental and often contradictory ways, and causes both conflict and change. In this sense, risk can be viewed as a societal (family, red) organizing element with the potential to influence individual attitudes and behaviors. For this study, this power is played by female by expressing risk-related information where it is closely linked to the socially processes done through social media communication. It means that female perceive COVID-19 riskier than male.

Second, education showed a significant relationship with sharing information about COVID-19. The higher the level of education, the more they are sharing COVID-19-related information on social media. The findings, on one side, confirmed the result that education correlates positively with the use of the internet for illness-related information [13]. However, on another side, this findings were in contrary to Han *cs* [11]. They found that less-educated women use more interactive services and ask an expert to express their personal experiences. It may be associated with a more comfortable sharing of their experience with professionals and experts. In this case, the ability to understand the cognitive dimension of perceived risk seems to play an important role for educated people. Obviously, they expect that information sharing via social media can be effective in decreasing uncertainty. If so, the statement is in line with the findings of Paek and Hove [9]. They found that genre media influences the cognitive and emotional dimensions of risk characteristics (between news media and entertainment media exposure). In other words, genre media gives different influences on people with different levels of education. Indeed, their research suggested that highly educated people tend to use news media rather than entertainment media as a source of information in sharing and express information in social media. Perhaps, the cognitive dimension of risk characteristics on social media could be understood by highly educated people than by lowly educated people.

Third, the finding showed that personal-level risk perception positively has a strong relationship with receiving information. This finding confirmed that the need for information plays an important role in receiving information on social media [25]. Further, Huurne *cs* added that it is likely feeling dissatisfied with the information about the COVID-19 issue is more important and become a driving motivation to receive information. The feeling dissatisfied was portrayed in our social phenomenon when information about traditional treatment has emerged on the social media platform, regardless of scientific-based results or not, as the alternative way for COVID-19 disease. In particular, the findings of a positive relationship between

personal-level risk perception and information reception seems to reaffirm the slogan, that people become dying not because of their illness, but because the information received.

In the framework of planned behavior's theory, the received-information from social media hopefully may be associated with an increased response efficacy to reduce perceived risk on infectious disease, COVID-19 [28]. This relationship, unfortunately, did not apply to the self-efficacy measure. Two possible explanations come to mind for this finding. First, the lower reliability of self-efficacy means that actual relationships may not have been detected. Second, the received information from social media did not adequately cover the nature of characteristic information. For the last, although contrary to the current findings, research on cross-national H1N1 risk showed that exposure to online media is positively correlated with societal risk perception. However, contrary to the given explanation, the author holds with the finding that the nature of the combined effects of interpersonal and mass communication on social media makes the penetration of new media, as well as the information communicated in them, more apparent and harder to resist for each individual [29].

Meanwhile, societal-level risk perception is positively and significantly correlated with sharing information. Those with higher societal-level risk perception were more likely to post information about COVID-19. Consistent with the prior finding, social media amplified social risk by portraying the emergency of H7N9 as a deadly disease. Strong emphasis on societal risk was expected to reduce the possible impact on oneself regardless of the information transmitter's credibility [3]. The finding is quite attention-grabbing because there has never been the direct experience of an epidemic situation which occurred like the H1N1 case in China [29]. Several previous studies showed a different result that societal-level risk perception has a significant effect on receiving information, not on sharing or expressing information. The reasonable explanation for this result is as follows.

Based on the protection motivation theory, individuals naturally try to avoid the undesirable thing, specifically when it threatens them. Here, it is COVID-19 disease. But 'how do I convey this threat to the public that this disease is dangerous for my family and me?' The perceived threat is 'lifted' to a higher level, namely the society, by cognitively appraising a depicted event as noxious and likely to occur, for example, on social media status. It was done by showing the magnitude of noxiousness of a depicted threat, probability of occurrence, and the efficacy of a given response [30]. It means that by using a broader risk context, individuals expected that people (friends and neighbors) could come to an understanding of COVID-19 impact. The purpose of the 'lifting' is not because individuals feel that others need more attention but aim to protect themselves and their families by actively posting information on social media [31]. In Indonesian context, the protective motivation entangles with a cultural factor, which is *sungkan*. *Sungkan* becomes a benchmark in a social context when someone wants to express themselves directly (for example, opinions, and arguments) on social media [32]. The attitude is the social belief system that articulates the ability to control oneself and, at the same time, is also a sign of one's maturity in society [33], [34].

Lastly, the interaction between risk perception and self-efficacy needs further attention. Derived from the predictions of the extended parallel process model (EPPM), Rimal *et al.* suggested and promoted the risk perception attitude (RPA) framework for a health campaign. They identified four attitudinal groups: responsive (high risk, high efficacy), avoidance (high risk, low efficacy), proactive (low risk, high efficacy), and indifference (low risk, low efficacy) [6]. Applying this framework to the findings, responsive attitude is less likely to receive information. Those who had avoidance attitude were more likely to receive COVID-19-related information. These current findings are not consistent with the previous studies [1], [15], showing that when efficacy is low, risk perception exhibits a major impact on the reception of information. Conversely, when efficacy is high, risk perception is weakly related to receiving information. These findings reaffirm the 'defensive pessimism' mechanism [7], stating that in the face of high levels of uncertainty, it is the government's job to examine and prepare for undesirable situations. Its opposite goal is to increase risk perceptions and public concern so that people are more likely to adopt risk management behavior.

When social media amplified the risk perception which inflates the salience of risk characteristics such as dreadfulness, catastrophic potential, uncertainty, and unfamiliarity [16], individuals are likely to experience conflicting motivations and lead to the inconsistency between their own beliefs and information provided by social media. These findings indicated that those with high self-efficacy were less likely to receive information. It may be associated with the high public non-compliance and individual responsibility to adopt the health recommendations of the government [7]. Indeed, in the process of collecting data, the author observed the medics protest on people's behavior who underestimates the effect of COVID-19. As Giritli and Olofsson stated very well, the individual focus in epidemiological risk self-management assumes that everyone has the same ability to protect themselves and that being responsible in respect to COVID-19 does not expose people to additional hazards, which is comparable to the risk society [35]. Implicitly, from social media coverage, it seems that populism gains its resurgence [36].

Although these findings can give insights into the importance of social media especially in time of health crisis, this research is not without limitations. First, because this study was not funded by any institution and was first carried out in the Indonesian context, the author hopes that in the future, similar research can be carried out on a broader scale, including the measured variables. The future research must include populations from outside Java Island. Second, longitudinal studies are needed to provide a thorough grasp of the links between predictors and communication behaviors. Finally, because the use of a single-item scale may result in a lack of reliability and validity as well as the need for large sample size, the author suggest in future research comprehensive methods are preferable because individual, social, and cultural entangle each other, specifically in Indonesia context.

4. CONCLUSION

Individuals are more likely to experience conflicting motivations and inconsistency between their own beliefs and information provided by social media when risk perception is amplified by social media. These findings suggested that those who have a high level of self-efficacy are less likely to receive information. It could be linked to the high rate of public non-compliance and individual responsibility to follow the government's health guidelines. The individual focus in epidemiological risk self-management assumes that everyone has the same ability to protect themselves and that being responsible in respect to COVID-19 should not expose people to additional hazards, which is comparable to the risk society.

The practical implications are as follows. First, this epidemic is unprecedented in this society. Generally, the people always cope with natural disasters due to country's geographical position. The outbreak of COVID-19 provides challenges on how to make the transparent and effective communication. Given the benefits of social media communication during an emerging epidemic, this study suggests that governments and policymakers should pay closer attention to social phenomenon. It is necessary because social phenomenon such as religion debates are getting more attention on social media coverage than news about COVID-19 disease. Second, many incidents in which medical explanations are opposed to socio-religious factors. It eventually leads to indifference due to the government's inability to enforce rules strictly. The authors suggest that in this case, religious institutions and government should appear more to discuss social problems and the impact of COVID-19 disease.

It might be of paradox of trust that an interdict has been used as a tool to blame Government instead of supporting the policy. The growing paradigm of society concerning governmental policies of COVID-19 tends not to be regarded moral obligation while it aims at preventing spread of COVID-19. It means that, ethically speaking, those policies have a purpose to keep everyone safe. However, people seek to find a meaning which can strengthen their life apart from the risk at stake as shown by some violations against an interdict of the Government on mudik for celebrating Eid with family. Here, the authors found that social media provides less information about narratives, storytelling, and empathy to maintain public trust.




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APPENDIX

Variables used in the study.

Personal-level risk perceptions (4 items)

1. The problem of COVID-19 is important to me.
2. I am worried that I would be affected by COVID-19.
3. It is likely that I would be affected by COVID-19.
4. I have felt risk from COVID-19

Societal-level risk perceptions (4 items)

1. The problem of COVID-19 is important to Indonesian.
2. I am worried that Indonesian would be affected by COVID-19.
3. It is likely that Indonesian would be affected by COVID-19.
4. Indonesian have felt risk from COVID-19

Self-efficacy for COVID-19 (4 items)

1. I can avoid COVID-19 infection.
2. I can figure out how to avoid COVID-19 infection.
3. I can recover even if I contract COVID-19.
4. I am fully informed about COVID-19.

Trust in government (5 items)

1. I trust government to protect people from COVID-19.
2. Government officials cared about minimizing COVID-19 infection.
3. Government provided sufficient information about COVID-19.
4. I believe the government reports on COVID-19 would be true.
5. I distrust the government responses to the COVID-19 outbreak.

Trust in news media (3 items)

1. News media provided accurate information about COVID-19.
2. News media provided sufficient information about COVID-19.
3. I believe the news media reports on COVID-19 would be true.

NOTE: For detailed information please visit

<https://drive.google.com/file/d/1vVZw0ZoCPZwUdlChyDqNTJH0sAdUOfyc/view?usp=sharing>