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EXPLORING COVID-19 SURVIVOR PERCEPTION TOWARD GOVERNMENT'S POLICIES IN RESPONDING TO COVID-19

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ABSTRACT

Effective strategies could be generated by understand the problem through system thinking. Besides curing Covid-19, the government needs to formulate good risk communication to their society thus the society could accept the right message and act the right response. Before formulating the good risk communication, it is important to understand the society and their perception toward the pandemic. The understanding of perception is necessary to the balance response between risk and response. The exploration through Causal Loop Diagram (CLD) can show the structure of given system and help to capture a mental model. This study aims to develop CLD model of risk perception toward government attempts in handling Covid-19, so the government can formulate the strategies by proposing suggestion based in risk perception of society.

1 INTRODUCTION

The Covid-19 outbreak has triggered many countries around the world to formulate strategies to fight this virus. In March 2020, the World Health Organization (WHO) declared Covid-19 to be a pandemic. This Covid-19 pandemic has challenged aspects such as economic, medical, and public health infrastructure. Therefore, various actions were formulated rapidly by the government or policy maker of each countries as the response of this pandemic (Singhal 2020). The policies made by the government work when the government can work hand in hand with the society. Since this pandemic was new and the vaccines yet to be created, the delivery of right information and handling action of this virus was needed. The government should ensure society accepts the right message through risk communication. Risk communication has a role to overcome the gap of knowledge between the government and society.

Understanding and cooperation from society can be achieving through risk communication as a primary tool (Rogers and Pearce 2013). Before formulating the good risk communication, formulating the risk communication should be upon understanding of likely behaviors and risk perceptions. Understanding of public perception toward risk event is necessary. By understanding the society's perception and their tolerance level of risk during risk event, it can help the government to formulate the effective and efficient strategies to handling Covid-19.

The reciprocal action between behavior and risk perception of society can impact the ability of government to respond to this risk event. The respond toward risk event of society members can be over-act, under-act, or mixed response to government attempts, and these forms of response can drive national security to be threatened (Rogers and Pearce 2013). The risk perception of individual can be influenced by their knowledge, experience, and belief (Kouabenan 2009). This pandemic has lasted for two years and

many people have been affected. Some people can survive and some do not. For survivor, the experience of being exposed to Covid-19 affects their perspective on the risks posed.

Effective strategies could be generated by understand the problem through system thinking (Sahin et al. 2020). System dynamic helps the study to explore the character of the problem. Formulating the strategies toward human response is easier when we could describe their mental model. Nevertheless, human response regarding to risk event is difficult to model. Exploration through Causal Loop Diagram (CLD) can show the structure of given system and help to capture the mental model of object. This study aims to develop CLD model of risk perception toward government attempts in handling Covid-19, so it can help government to formulate strategies by proposing suggestion based in risk perception of society. By using CLD, this research focuses to depict the complexity interaction that occurs between the risk perception and government policies in handling Covid-19.

2 RELATED WORK

During the emerging of Covid-19,studies related to formulating of strategies to overcome the pandemic was conduct, such as risk communication strategy by Malecky et al. (2020) and formulating the dynamic of virus and response of the society by using mathematical model by Ogunrinde et al. (2021). The studies related to response exploration during pandemic Covid-19 were carried out by Bradley et al. (2020), Bruine de Bruin and Bennet (2020), Ogurinde et al. (2021), and Shiina et al. (2020). The purpose of mapping of perception of public will help the government to determine the appropriate strategies to each group of society, so the intervention from government can be easily accepted. The classification of public perception were done with various methods. Bruine de Bruin and Bennet (2020) and Shinna et al. (2020) were suing cross sectional study to classify the response of public, while Bradley et al. (2020) was propose CLD model to depict causal relation amongst components in society in responding to the threat of Covid-19.

Kiss et al. (2020) study propose the factor which influence risk perception was explore through Factor Analysis (FA), this study emphasize cultural theory could predict the risk perception of society. In other words, we could predict the perception of society toward risk event base on the history of those in society. While another study related to perception of certain group of society that has been done by Ng and Rayner (2010) by using Situational Judgement Test (SJT) proposed cultural theory has explain about 5-10% variance that influence risk perception.

In Indonesia where the study was conduct, researches related to risk communication and risk perception during pandemic Covid-19 were conduct with qualitative analysis such depth interview (unus and Mahendra 2021), message centered approach (Abdullah 2020), and public service was done by Lestari et al. (2020). Nevertheless, the suggestion and findings toward risk perception of the problem could be enriched with a model to figure out the relation amongst the factors. Zhang et al. (2017) did research related to lay people in chemical toward accident in chemical factory by using System Dynamic. The CLD model proposed in the study helps understand the system so that the government which related in that area has the same image of problem in the system. So that we develop CLD model to understand the risk perception of Covid-19 survivor.

Some related works formulating the strategies through mathematical modeling, while CLD used to model the system in society such as economic, health, and infrastructure. In our study we model the mental model of human response to risk event of pandemic Covid-19. While mental model of human response regarding risk event is difficult to model. We use CLD because it has an ability to capture the structure of system. This study is focused to depict complexity interactions which occur between risk perception and government policies in handling Covid-19 through perspective of survivor of Covid-19. The model of risk perception toward governments attempts of handling Covid-19 has aim to help government to formulate appropriate strategies.

3 METHOD AND MODEL DEVELOPMENT

3.1 Participants

The participants chosen for the study complies with certain criteria. To capture the perceptions of survivor of Covid-19, they must have survived Covid-19 in the last six months. It has aim to keep their memories of the situation when they had Covid-19. Participant's age was between 20-39 years old, this range is chosen since the number of cases were dominated by this age range. To avoid the gap knowledge among the participants, they must having finished bachelor's degree and had familiarity with causal loop application.

This study was qualitative and the participants have high similarity so that we had sufficient sample data size (Mason 2010). There were three participants with an average age 26 and standard deviation 2.268. for discussion process. The participants daily activities included study at home and helping their families business at home. During the data collection they were in healthy condition. This small group discussion with high similarity will help to determine the response of group toward their demographic.

3.2 Method

The study conduct the initial model development by gathering information from existing media and literature review to determine variable factors that will applied in model, it is limited to compliance of public during Covid-19 pandemic, government's attempts to respond Covid-19. It is generates causal loop diagram (see Figure 1). However, to test whether the model is useful model testing is conduct to validate the causal loop diagram. This model testing process done by conducting Focus Group Discussion (FGD). The discussion conduct through an online platform. The aims of FGD is to capture the insight of participants. The participants discussed the changes of the Causal Loop Diagram with the specific purpose to develop model of risk perception of government's attempts such as Communities Activities Restriction Enforcement. They have to revised the initial model by adding, remove, or change some variables proposed by the modeler was not represent their perception but not over the model boundary diagram. The discussion lasted for around 90 minutes. Then we analyzed the differences between initial model and result from FGD.

3.3 Model Development

The initial model was develop, so the participants discussed the causative factor and relations amongst factors. Figure 1 shows the initial model that from literature review. In loop R1 there are Risk Experience, Public Perceived Risk, Actual Information Release, Covid-19 Education variables and exogenous variables namely Positive Experience. The Risk Experience is when a person feels consciously about the risk of Covid-19. It can be obtained from their own experience such as confirmed positive for Covid-19 or they feel the risk is real because they well informed about Covid-19 risk through Covid-19 Education. The Risk Experience of person can influence how Public Perceived Risk. When the Public Perceived Risk become worst, it would be influence Actual Information Release, e.g., the government of Indonesia had time to remove death rate from Covid-19 handling indicator since the government reputed this indicator will cause the panic among society. Actual Information Release will influence how the Covid-19 Education should be delivered.

In loop B1 the variable Public Perceived Risk be in between loop R1 and B1. The Public Perceived Risk would increase how was Public Performance of Protective Behaviors, when the public feel the risk is high so they will tighten their protective behaviors. The Public Performance of Protective Behavior will influence how the Government's Policies related to Covid-19 released. At the time when public show careless performance of protective behavior the government would tighten their action such as mask. In order to make the Government's Policies work well, the government should consider strategies the public will obey them, this is how Government's Policies should engage with the public. This Engagement with Public will increased the Information Seeking Rate because the citizen tend to aware about government's statement, it will be influence Media Interest and its Accessibility. When the Engagement with Public works well it would increase the Citizen Compliance, then the Citizen Compliance would decrease the Risk of

Transmission per Interpersonal Contact yet when the Risk of Transmission per Interpersonal Contact is high it is expected to increase the number of Citizen Compliance. The Risk of Transmission per Interpersonal Contact is high because the citizen neglects the health protocols, the Number of Cases Detected is increase. This would influence how people Perceived Number of Infectious People and it would affect how Public Perceived Risk.

The Public Perceived Risk is influenced by Public Outrage. The Public Outrage can be happened because the public has been influenced by Misinformation and fake news. They could be influenced by fake news because they could not distinguish the fact or fake, it can be caused by their Literacy Level, Socio-Culture, and Knowledge. The Knowledge of the spread of infection and quarantine protocols during the Covid-19 pandemic will affect Risk of Transmission per Interpersonal Contact.

The Citizen Compliance was influenced by Trust Judgement, and Quarantine Duration. The citizen will obey policies when they trust the authorities, so it is associated with Trust Judgement and Accountability of Authorities. The Citizen Compliance also influenced by Quarantine Duration, the longer the duration of quarantine it will affect the compliance. This Quarantine duration also influenced by Public Interest, the more Public Interest such as mobility of work the Quarantine. The intensity of mobility could increase because of nature of Livelihood of people. So it was believed as one of factor that can increase the spread of virus.

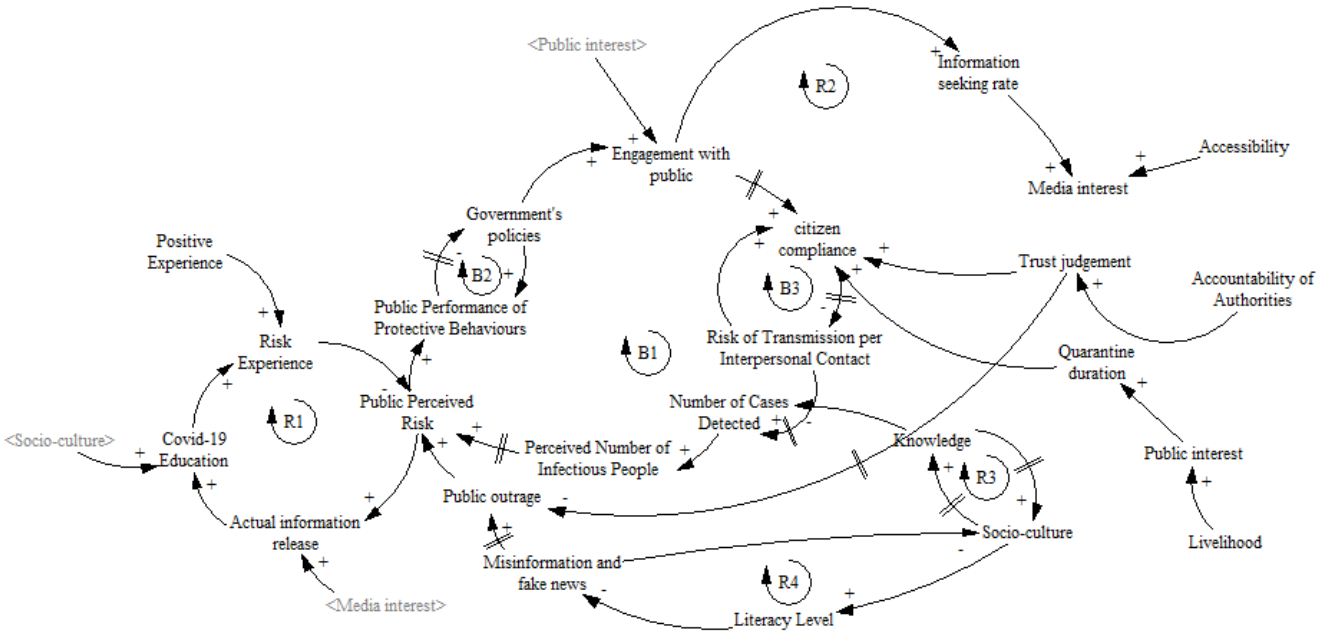

Figure 1: Initial CLD model.

4 CURRENT PERCEPTION OF COVID-19 SURVIVOR

The result of FGD with survivor of Covid-19 generates new model. In Figure 2, the result from FGD was shown with blue color. There were four additional variables such as 'Media hoax interest', 'Hoax news information released', 'Credible account', and 'Non-Credible Account'. In addition, there were several amendments of arrow properties. In loop R1 causal relationship between the Covid-19 Education variable-Experiencing the risk that was originally positively related, this group agreed to change it to (-). Likewise for the relationship between the positive confirmed experience variables. It also adds a loop, namely loop B4.

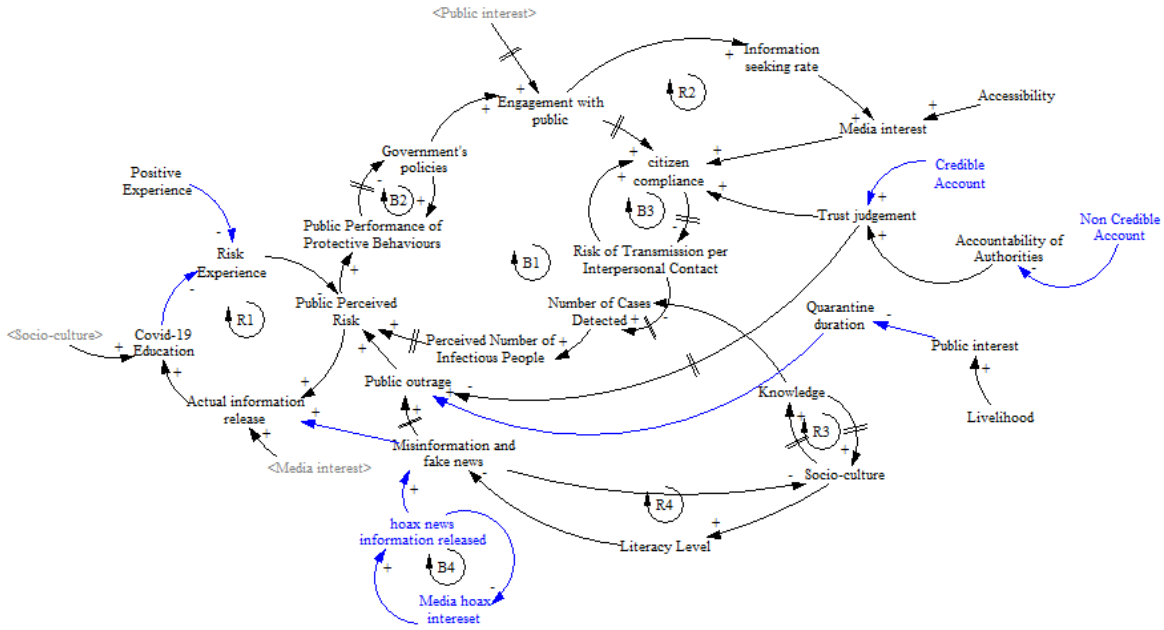

Figure 2: Model result from FGD.

Based on result model from FGD. There are some counterintuitive results. As an example, the modeler presume this group would like to be protesting the government of handling Covid-19 by made changes in loop B1, they will disagree toward Public Performance of Protective Behaviors is related to Government's policies in terms of Covid-19 handling. This government's policies were related to mask raid, the duration of quarantine, restrictions of society activities in public area etc. However, the participants were agreed, the stricter the government regulations, the more people will obey.

First the modeler presume the Quarantine Duration would affect the Risk of Transmission per interpersonal Contact directly. The duration of quarantine is believed to reduce the risk of transmission (Webster et al., 2020). In this study the quarantine duration refers to the duration district quarantine or in Indonesian was called '*karantina wilayah'*, so the duration of individual quarantine was not considered in this study. However, based on the results of the FGD the participants raised that Quarantine Duration will influence the Public Outrage directly. While the Public Outrage will increase community perception about Covid-19 risk or in other words is Public Perceived Risk. The public outrage in this model means the

negative response of public in Indonesia such as the rejection of suspect to live in their area, the rejection to follow Covid-19 funeral protocols. In the initial model the modeler believed the more 'Covid-19 Education' exposure, the more people could realize about the risk that haunts them. Yet in discussion the participants result that the more Covid-19 Education exposure, the less people that experience the risk. The Covid-19 Education refers to media and method to inform the society about Covid-19 such as the use of social media platform to deliver official information from government related to Covid-19 preventive action.

The result of CLD model generates that this group aware about the role of media in controlling, this CLD model generate new loop namely B4 where Hoax News Information Released had feedback relation with Media Hoax interest. The 'Media Hoax Interest' mean the spread of hoax of information through social media, the interest is to spread the propaganda.

4.1 How to Manage Misinformation?

From result model in Figure 2 and the initial model in Figure 1 we could identify the additional variables in model after FGD was shown by blue color. In risk communication management, the management of misinformation was important. The behavior of information management was evident in media involvement and the ability of people to manage it. The participants were concerned how to manage the information. This aspect was amplified by the additional of variables such as 'Hoax news information released' and 'Media hoax interest', this group agreed there were another factor which influenced 'Misinformation and fake news'. This group opine that 'Misinformation and fake news' was exacerbated by 'Hoax media'. Meanwhile in initial model Misinformation and Fake-news influenced by Literacy Level of people.

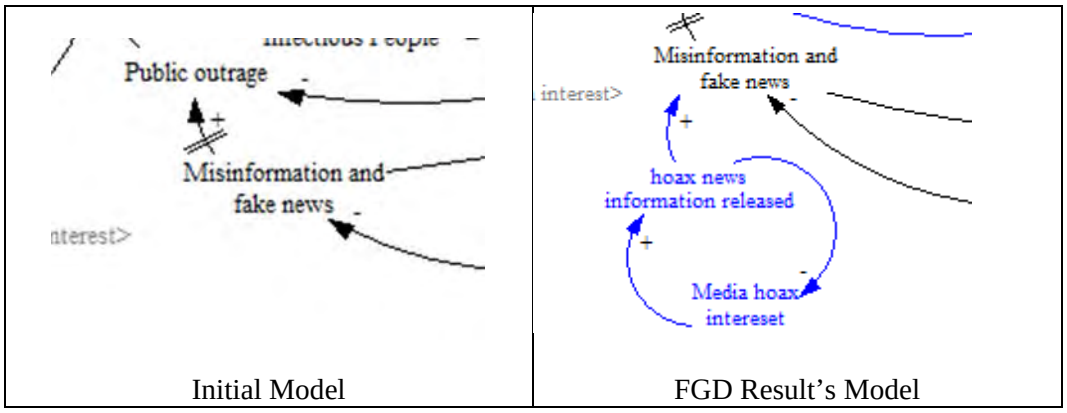

Figure 3: The different initial model and FGD's result to manage misinformation.

4.2 How the Credibility Maintained?

Another important aspect in risk communication is trust. If trust was loss, it will be hard for government and public to work together. The trust aspect was related to credibility of entity. From Figure 4 we could see there were two additional variables which related to 'Trust judgement' namely 'Credible Account' and 'Non-Credible Account'. Meanwhile the credibility account was not discussed yet in initial model.

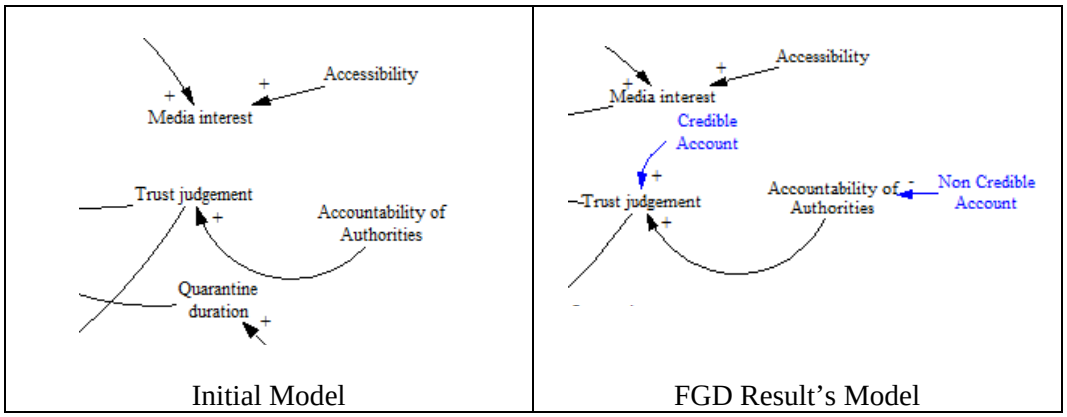

Figure 4: How credibility maintained in group of Covid-19 survivor and initial model.

5 CONCLUSION

For the conclusion, the purpose of this paper is to understand the picture of risk perception of Covid-19 survivor toward the government's policies in handling Covid-19 by using Causal Loop Diagram. The causal loop diagram of perception of survivor of Covid-19 shows the judgement of trust of media is influenced by the credibility of account. The survivors perceive the interest of public will decreasing the quarantine duration; the exposure of misinformation and fake news is influenced by hoax media and their interest, and perceive experience was influence their actions. The experience of after caught by Covid-19 has contribution to them to enhance their compliance toward government suggestion in terms of handling Covid-19. In responding to Covid-19, the government should bring media controlling changes to control misinformation and determination of public restrictions.

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