

Identification of Person's Decision to Refuse Covid-19 Vaccination Based on Vaccine Safety Perception, Role of Social Media and Knowledge

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ABSTRACT

This study aims to determine the decision to vaccinate against COVID-19 seen from the perception of vaccine safety, the role of social media and knowledge. The object of this research is the people who live in DKI Jakarta. This research was conducted on 150 respondents using a quantitative descriptive approach. Data were collected and processed using the SEM method through PLS. The results of this study indicate that the perception of vaccine safety has a positive and significant influence on the COVID-19 vaccination decision. Meanwhile, the role of social media and knowledge has a negative and insignificant impact. Keywords: Security Perception, Knowledge, Role of Social Media, Personal Decision, COVID-19, Vaccination

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I. INTRODUCTION

The spread of the Corona virus that caused COVID-19 has had a tremendous impact on at least two scopes, namely actors (level of analysis) and aspects (aspects or issues). First, the spread of this virus has had a massive impact on every level of actors, ranging from individuals, communities, the wider society, companies or private parties, countries and even globally. Second, the disease outbreak and the spread of COVID-19 have clearly had an impact on various aspects of life, which are mainly health problems, as well as social, economic, and political aspects. So, it can be stated that this situation has given birth to security threats for humans (human security) as well as for the country (state security) and more broadly, global security. As a pandemic, COVID-19 has tested the resilience of humans and also countries in overcoming crisis situations. Not only faced with

threats to health issues that are the main focus, but the social and economic situation is also two things that are seriously affected (Deutsch, 2020).

In tackling COVID-19, the Government of Indonesia appealed to the public to do 3M, consist of Wearing Masks (Memakai Masker), Washing Hands (Mencuci Tangan) and Maintaining Distance (Menjaga Jarak). As a reinforcement of the basic strategy, four strategies have been made, including (Wibowo, 2020): 1) Mask movement. 2) Tracing. 3) Independent isolation education and preparation. 4) Hospital isolation carried out if self-isolation is not possible

But in fact, since the first case until February 10, 2021, the spread of COVID-19 in Indonesia has increased due to the lack of public awareness of implementing 3M, even though it is the main key in handling COVID-19. Nielsen and UNICEF worked together to conduct a survey to determine the level of public awareness in preventing COVID-19.

In addition to the implementation of the 3M policy, the Government of Indonesia rolled out the COVID-19 Vaccination program which is expected to be decisive in overcoming the pandemic contained in presidential regulation no. 99 of 2020 concerning Vaccine Procurement and Vaccination Implementation in order to overcome the COVID-19 Pandemic. The Food and Drug Administration as an organization representing the Government in implementing operational technical policies in the field of Drug and Food supervision in accordance with the provisions of laws and regulations in Indonesia, took policy steps by implementing emergency use authorization (EUA) or approval of use in emergencies for the COVID-19 Vaccine.

The basis for determining the type of vaccine in the implementation of COVID-19 vaccination in Indonesia is determined by the Government through the Decree of the Minister of Health Number HK.01.07 / MENKES / 9860 / 2020. The types of vaccines stipulated in the Government decree that can be used for vaccination implementation in Indonesia are vaccines produced by PT Biofarma (Persero), AstraZeneca, China National Pharmaceutical Group Corporation (Sinopharm), Moderna, Pfizer Inc. and BioNTech, and Sinovac Biotech Ltd. The government guarantees that the vaccine to be used is still in the stage of implementation of the third phase of clinical trials or has completed the third phase of clinical trials and ensured safety and effectiveness levels above those required, which is at least 50%.

The government has been vigorously campaigning for various policies in tackling COVID-19, but the spearhead of success in tackling COVID-19 is the high participation of the community. The pros and cons of any policy issued by the government are natural in a country based on democracy. However, some people's rejection of policies made by the government is suspected to be an obstacle in countering the spread

of COVID-19 in Indonesia, such as vaccination rejection.

The COVID-19 vaccination program in Indonesia has started in early 2021 as a government step to overcome the pandemic, but nevertheless the rejection of vaccination participation continues. The survey conducted during a webinar held by the Padjadjaran University Alumni Association for health workers regarding COVID-19 vaccine knowledge was obtained by 20% of health workers who were not willing to be given the COVID-19 vaccine. Various reasons were revealed behind the rejection, as many as 30% of health workers refused vaccination because they were unsure of the safety of the vaccine, 22% of health workers were pessimistic about the effectiveness of the vaccine, 12% were afraid of the side effects caused after vaccination, 13% of health workers did not believe in vaccination, 8% because of the halalness of the vaccine and the remaining 15% for other reasons. The survey involved health worker respondents spread across four teaching hospitals in Aceh, Bandung, Mataram and Ambon (Tempo.co, 2021).

Rejection of COVID-19 vaccination shows the still strong anti-vaccine phenomenon in Indonesia and also in the world in general. One of the reasons for the rejection of vaccines in Indonesia is concern about the permissibility of the ingredients of vaccine. Structural problems also prompted the emergence of this anti-vaccine movement. In addition, the lack of trust in the pharmaceutical industry is also an important factor that encourages the emergence of doubts about vaccines (vaccine hesitancy) and the anti-vaccine movement in general. According to Sociologist of Sebelas Maret University Surakarta Tri Kartono (2021), the rejection of COVID-19 vaccination in Indonesia is suspected because of the possibility that people do not want to be vaccinated because of the demonstration effect, which is to follow people around them.

The reasons for the rejection of COVID-19 vaccination that has been presented above are in line with research on vaccination refusals that have been widely done in order to find out the factors that influence a person to refuse vaccination activities, the findings in these studies are as follows: 1) Belief: Islamic Religion, because of the belief that vaccines are haram because they contain prohibited elements (Padmawati et al., 2019, Rivani et al., 2019, Sulistiyani et al., 2017, Syiroj et al., 2019). 2) Belief in natural immunity and belief in alternative therapies (Sulistiyani et al., 2017). 3) Concerns about vaccine safety: side effects and components of the vaccine (Syiroj et al., 2019, Yufika et al., 2020). 4) Issues of trust and misinformation: distrust of the government, trust in social networks, misinformation and lack of knowledge (Rivani et al., 2019). 5) Social demographics: low level of education, lack of knowledge, (Padmawati et al., 2019, Yufika et al., 2020).

Based on the above description, this article will explain the factors that influence a person to refuse COVID-19 vaccination based on research that has been done to people living in the DKI Jakarta area as a research object to analyze and test the influence of vaccine safety perceptions, the role of social media and knowledge of one's decision to refuse COVID-19 vaccination.

From the above factors, 55 people have been conducted online about the most influential factors for refusing COVID-19 vaccination. Of the 55 respondents who participated in the survey, 65.5% were willing to receive the vaccine while the remaining 35.5% rejected the vaccine.

Table 1. Pre-Survey Questioner

The Factors	Percentage (%)
Religion	26.3%
Confidence	52.6%
Alternative medicine	63.2%
Vaccine Safety Perception	89.5%
Sentiments to the Government	57.9%
Social Media	73.7%

Knowledge	73.7%
Vaccine Permitted (Halal)	47.4%
Perception	
Perception of the Benefits of Vaccines	73.7%

Source: Pre-Survey Questionnaire (2021)

The results of the pre-survey showed that vaccine safety perception factors, social media, knowledge and perception of vaccine benefits were selected by respondents as the dominant factors in influencing them to reject the COVID-19 vaccine.

HYPOTHESIS DEVELOPMENT

H1: Vaccine safety perception affects COVID-19 vaccination refusal decision

H2: The role of social media has an effect on the decision to refuse COVID-19 vaccination.

H3: Knowledge affects the decision to refuse COVID-19 vaccination.

II. RESEARCH METHODS

Research is carried out basically to find a truth and also solve the problem that is being studied. To achieve this goal, research must use appropriate methods and reveal with the purpose to be researched. This research is a causal relationship using descriptive research methods of quantitative research type with survey research. Survey research is research by collecting information from a sample by asking through questionnaires or interviews so that later describe various aspects of the population (Ahyar et al., 2020). The criteria for respondents who were sampled in this study were people living in the DKI Jakarta area who were eligible to receive the COVID-19 vaccine. In this study, a sample of 150 respondents who refused to receive the COVID-19 vaccine were taken. The number of samples used in this study refers to the Structural Equation Model (SEM) analysis method. In the SEM method according to

Bentler and Chou (1987) in Riadi (2018) the number of samples needed is at least 5 (five) times the number of indicator variables or the ratio of sample size to the number of parameters of 5: 1. The number of indicators in this study is 23 indicators.

III. RESULTS AND DISCUSSIONS

This study used a sample of 150 respondents who have characteristics as a community recipient of the COVID-19 vaccine in Jakarta. The respondent's profile will be explained by demographics based on gender, age, educational background and occupation.

Table 2. Respondent Profile

Gender	Total Respondents
Male	41
Female	109
Age	Total Respondents
18 to 25 years	31
26 to 35 years	79
36 to 45 years	23
46 to 55 years	12
56 to 65 years	5
> 35 years	0
Educational Background	Total Respondents
Senior High School	38
Associate Degree	18
Bachelor Degree	86
Master degree	8
others	0
Occupation	Total Respondents
College student	15
Employees	72
Self-employed	24
Civil servants/ BUMN/ TNI/ POLRI	2

Professional workers	5
Taking care of the household	32
others	0

Source: Data Processing Results (2021) Based on Table 2, respondents were dominated by millennials who are 26 to 35 years or respondents born in 1980 to 1997, female, undergraduate educated and have a job as a private employee

Table 3. Description of Vaccine Safety Perception

Indicators	Mean	Min	Max	Std. Dev
I feel anxious about the effects that will be caused by getting COVID-19 vaccination	4.01	1	5	1.27
I have the right and authority to refuse COVID-19 vaccination	4.22	1	5	1.17
I don't know the benefits/uses of COVID-19 vaccination yet	3.43	1	5	1.13
Knowing the consequences if I don't get COVID-19 vaccine	3.47	1	5	1.28
Feeling comfortable with my body's condition if I have not been given organisms through the COVID-19 vaccine	3.73	1	5	1.38
I believe COVID-19 vaccination has an invisible adverse effect	4.15	1	5	0.91

Based on Table 3, the statistics of the average description of values against questions regarding indicators of vaccine safety perception. The highest

value of 4.22, stated on the indicator has the right and authority to refuse COVID-19 vaccination. While the lowest value of 3.43 is on the indicator does not know the benefits / uses of COVID-19 vaccination.

Table 4. Social Media Description

Indicators	Mean	Min	Max	Std. Dev
Through social media I get the information such as benefits & side effects regarding COVID-19 vaccination	4.01	1	5	1.27
Explore every information about COVID-19 vaccination received through social media	3.73	1	5	1.38
Coming to the conclusion that information about COVID-19 vaccination circulating on social media is something that I think is less encouraging and the information is wrong.	4.15	1	5	0.91

Source: Data Processing Results (2021)

Based on Table 4, the average description statistics value to questions regarding social media perception indicators. The highest value of 3.73 is on the indicator of exploring every information about COVID-19 vaccination received through social media. While the lowest value of 3.56 is on the indicator through social media that get detail information such

as benefits & side effects regarding COVID-19 vaccination.

Table 5. Description of Knowledge

Indicators	Mean	Min	Max	Std. Dev
I have known about the dangers of coronavirus since it was first discovered.	3.61	1	5	1.12
I have understood the messages conveyed through mass media / social media about COVID-19 vaccination and the effects it will caused	3.39	1	5	1.43
I protect myself from exposure to the coronavirus through health protocols rather than having to fight the disease through COVID-19 vaccination.	3.59	1	5	1.22
I compare the good and bad impacts on myself if I refuse COVID-19 vaccination	3.05	1	5	1.30
I judge that refusing COVID-19 vaccination is the right decision	2.95	1	5	1.32
It's not a problem for me to refuse COVID-19 vaccination	3.01	1	5	1.12

Source: Data Processing Results (2021)

Based on Table 5, statistics the average description of the value against questions regarding knowledge indicators. The highest value of 3.61 is on the indicator of knowing about the dangers of the coronavirus since it was first discovered. While the lowest value of 2.95 is on the indicator assessing that refusing the COVID-19 vaccination is the right decision.

Table 6. Description of the Decision to Refuse Vaccination

Indicators	Mean	Min	Max	Std. Dev
There is a lack of information that I did not understand about COVID-19 until I decided to refuse vaccination	3.08	1	5	1.26
I tried alternative medicine to increase the body's resistance in fighting the virus instead of getting vaccinated against COVID-19	3.07	1	5	1.40
I started hanging out with people who refused COVID-19 vaccinations which was actually against government policy and society decisions in general.	2.80	1	5	1.31
I enjoy to gather with these people because it provides satisfaction and freedom of opinion regarding personal	3.37	1	5	1.21

health rights regulated by the applicable laws in Indonesia.

I think rejecting COVID-19 vaccination is more of an inner satisfaction and provides a pleasant experience than my disappointment with a government that cannot control the pandemic.

2.90	1	5	1.30
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I still receive every new information about the possible risk of exposure to the coronavirus due to refusing COVID-19 vaccination even though I ultimately ignored it.

2.82	1	5	1.28
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I am getting used to declaring rejection of COVID-19 vaccination in front of the public

3.28	1	5	1.30
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I don't care about other people's views on me for refusing COVID-19 vaccination and I think the rejection of it is the freedom to argue about everyone's health.

3.21	1	5	1.38
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Source: Data Processing Results (2021)

Based on Table 6, statistics the average description of scores against questions regarding indicators of decisions against vaccination. The highest value of 3.37 is on the indicator of enjoying to gather with the people because it provides satisfaction and freedom of opinion regarding personal health rights regulated by applicable laws in Indonesia. While the lowest value of 2.80 is on the indicator of starting to get along with

people who refuse COVID-19 vaccination which is actually contrary to government policies and decisions of society in general.

Furthermore, the influence between variables is analyzed using partial least square (PLS) analysis techniques. Based on the variable operational definition in this study, the vaccine safety perception and knowledge construct was measured by 6 indicators, then the social media construct was measured by 3 indicators, and the decision construct to reject vaccination was measured by 8 indicators. The results of the model estimate as a reference for testing hypotheses in this study can be seen in the following figure:

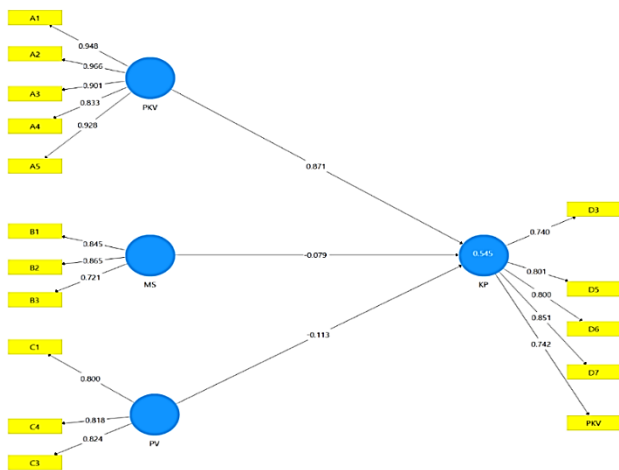


Figure 1. Estimated results of PLS Bootstrapping model

Based on Figure 1, the results of the estimated PLS model with the bootstrapping technique above, it can be seen that the PKV - KP path is significant because the p value is 0.05. The results of this direct influence significance test can be found in the following table:

Table 7. Partial Influence Testing Results

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
MS -> KP	-0.079	-0.073	0.097	0.819	0.413
PKV -> KP	0.871	0.865	0.083	10.547	0.000
PV -> KP	-0.113	-0.104	0.097	1.166	0.244

Source: Data Processing Results (2021)

Based on the results of the above hypothesis testing, the test results are obtained as follows: 1) PKV path → KP: Jalur which shows the relationship of vaccine safety perception influence on the decision to refuse vaccination, the p value obtained is 0.000 with a statistical T of 10.547 and a positive marked path coefficient of 0.871. Because the p value of the line < 0.05, T statistics > 1.96 and the coeffici path is marked positively, it can be concluded that the perception of vaccine safety has a positive and significant effect on the decision to refuse COVID-19 vaccination. 2) MS → KP lines: On a path that shows the relationship of social media influence on the decision to refuse vaccination, the p value obtained is 0.413 with a statistical T of 0.819 and a negatively marked path coefficient of 0.079. Because the p value of the > line 0.05, T statistics < 1.96 and the negatively marked path compesien can be concluded that social media has a negative and insignificant effect on the decision to refuse COVID-19 vaccination. 3) PV path → KP: On a path that shows the relationship of the influence of knowledge on the decision to refuse vaccination, the p value is 0.244 with a statistical T of 1.166 and a negative marked path coefficient of 0.113. Because the p value of the path > 0.05, T statistics < 1.96 and the negatively marked path coefficient, it can be concluded that knowledge has a negative and insignificant effect on the decision to refuse COVID-19 vaccination.

The hypothesis in this study was tested based on the results of pls analysis. Testing the hypothesis using an alpha value of 5% then the statistical value used is 1.96. So that the criteria of the P Value must be smaller than 0.05 and the T-statistical value must be greater than 1.96. The following is a summary of the results of hypothesis testing based on the results of PLS analysis that has been done in this study.

Table 8. Hypothesis Test Results

Hypothesis	Description	Coefficient Path	T Statistics (O/ST DEV)	P Values	Result
H1	Vaccine safety perceptions have an effect on the decision to refuse COVID-19 vaccination.	0,871	10,547	0,000	Hypothesis accepted
H2	Social media has an effect on the decision to refuse COVID-19 vaccination.	-0,079	0,819	0,413	Hypothesis rejected
H3	Knowledge affects the decision to refuse COVID-19 vaccination.	0,113	1,166	0,244	Hypothesis rejected

Source: Data Processing Results (2021)

H1: Vaccine safety perception has a positive and significant effect on the decision to reject the Covid-19 vaccine

The results of the vaccine safety perception hypothesis test for the decision to refuse the COVID-19 vaccination were obtained a p value of 0.000 and a statistical T of 10.547 with a positive marked path coefficient of 0.871. From these results, it was concluded that the perception of vaccine safety had a

positive and significant influence on the decision to refuse COVID-19 vaccination and hypothesis 1 was accepted.

This means that the higher the perception of vaccine safety to the decision to refuse COVID-19 vaccination, the higher the rejection made in administering the vaccine. Respondents felt that there was no guarantee from vaccination organizers that the vaccine provided could provide protection against transmission and immunity against COVID-19. The results of this study are in line with research conducted by Purnamiasari (2015) which stated that the perception of immunization safety has an influence on parents in refusing immunization in their children.

H2: The role of social media has a negative and insignificant effect on the decision to reject the Covid-19 vaccine

The results of the social media hypothesis test on the decision to refuse the COVID-19 vaccination were obtained a p value of 0.413 and a statistical T of 0.819 with a negative marked path coefficient of 0.079. From these results, it can be concluded that social media has a negative and insignificant effect on the decision to refuse COVID-19 vaccination and hypothesis 2 is rejected. This means that the higher the influence of social media obtained by respondents, the lower the decision to refuse COVID-19 vaccination.

Before information about the Covid-19 vaccine discourse was officially reported by the government, the tendency of hoax types was more to far-fetched or false news so that the types of hoaxes that appeared more varied, for instances, false content, fake content, manipulated content and misleading content. These issues can be detrimental to the government because with the presence of noise in the form of fake news, of course the socialization will be ineffective because the message conveyed cannot be understood as

expected. Yet, respondents were not affected by the information about vaccines that obtained through social media. It did not make respondents feel confident to refuse vaccinations. The results of this study are in line with research conducted by Al-Regaiey, et al (2021) which states that social media has a negative and insignificant effect on research on the influence of social media on parents' behavior on vaccination in their children.

H3: Knowledge has a negative and insignificant effect on the decision to reject the Covid-19 vaccine

The results of the knowledge hypothesis test on the decision to refuse the COVID-19 vaccination were obtained a p value of 0.244 and a statistical T of 1.166 with a negative marked path coefficient of 0.113. From these results, it can be concluded that knowledge has a negative and insignificant effect on the decision to refuse COVID-19 vaccination and hypothesis 2 is rejected.

This means that the higher the knowledge that respondents have, the lower the decision to refuse COVID-19 vaccination. Respondents have sufficient knowledge about vaccines and with that knowledge feel confident to vaccinate. The results of this study are in line with research conducted by Noorma, et al (2018) which stated that knowledge has a negative and insignificant effect on the research of factors related to parental rejection of measles rubella vaccine in the working area of lempake health center in North Samarinda subdistrict.

IV. CONCLUSION

The conclusions obtained from the results of this study are as follows: 1) Vaccine safety perception has a positive and significant effect on the decision to refuse COVID-19 vaccine. 2) Social media has a negative and insignificant effect on the decision to refuse COVID-19 vaccine. 3) Knowledge has a

negative and insignificant effect on the decision to refuse COVID-19 vaccine.

V. SUGGESTION

This research requires targeted and broader continuous research so that emerging weaknesses can be corrected and refined. Suggestions for academics who will conduct further research: 1) In the next researcher is expected to be able to examine the other factors than vaccine safety perception, social media, and knowledge such as factors in the author's presurvey (religious factors, perception of vaccine benefits, and confidence) or other factors that are not included in the author's pre-survey. 2) The Government is expected to be more active in providing information and education related to the Covid-19 vaccine to the public and clarification of unproven news that is widespread on social media and the surrounding community. Moreover, the society are be able to increase skepticism and sensitivity to various information, and be diligent in re-examining the various news received, as well as improving literacy especially digital literacy and become wiser person to understand the information from media and more critical in sorting the contents and be able to analyze it so that the vaccine program can be addressed effectively.

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