THE EFFECT OF TRUST OF VACCINES ON SECOND BOOSTER VACCINATION INTENTION IN JAKARTA

BY

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Abstract
This study examines the factors that influence the intention of the people of Jakarta to carry out the second booster vaccination. This study uses 5 (five) variables including: trust of vaccines, fear of Covid-19, vaccine risk perception, vaccine hesitancy, and second booster vaccination intention. This study uses a quantitative model with data collection using an online questionnaire and with the criteria of respondents being all Jakarta residents who have done the first booster vaccination. Data collection was carried out in November 2022. The number of respondents in this study were 297 people consisting of 171 men and 126 women. The results obtained from this study are that there is an effect of trust of vaccines on fear of Covid-19, fear of Covid-19 on vaccine hesitancy, trust of vaccines on vaccine risk perception, fear of Covid-19 on vaccine risk perception, trust of vaccines on vaccine hesitancy, vaccine risk perception on second booster vaccination intention, vaccine hesitancy on second booster vaccination intention, and trust of vaccines on second booster vaccination.

Keywords: trust of vaccines, fear of Covid-19, vaccine risk perception, vaccine hesitancy, and second booster vaccination intention.

INTRODUCTION

It was unimaginable that the world would experience the horrific Coronavirus Disease 2019 (Covid-19). This disease has attacked 234 countries, including Indonesia. Data (*Www.Covid.Go.Id*, n.d.), The government's official website regarding Covid-19 states that as of October 20, 2022, there were 623,000,396 cases of Covid-19 in the world, and 6,550,033 people died. Meanwhile, there were 6,464,962 cases in Indonesia, and 158,380 people died.

The hundreds of millions of victims due to Covid-19 seem to be ending soon. According to World Health Organization (WHO), Covid-19, which has occurred since 2019, is already showing signs of ending. The same thing was conveyed by President Joko Widodo. According to him, it is likely that the Covid-19 pandemic in Indonesia will end soon (Linda Hasibuan, 2022).

However, Professor of Microbiology at the Faculty of Medicine, University of Indonesia, Prof. Dr. Amin Slendro emphasized that monitoring of the conditions of the Covid-19 pandemic must still be carried out. This is because, even though the pandemic status has been revoked later, the community is not completely free from the risk of the emergence of Covid-19 derivatives (Linda Hasibuan, 2022).

Quoting Science Alert, researchers from Washington State University in the US said a new virus had emerged and more worrying was its immunity to monoclonal antibodies and serum which was induced in recipients of the Covid-19 vaccine. In other words, this new type of virus (Khosta-2 virus) cannot be neutralized by currently available vaccines and drugs (Linda Hasibuan, 2022).

Facing the mutation of the Covid-19 virus, the government has implemented a national vaccination program. The goals and benefits are: (1) Stimulating the Immune System, (2) Reducing the Risk of Transmission, (3) Reducing the Severe Impact of the Virus, (4) Achieving Herd Immunity (*Program Vaksin*, 2021)

According to the Indonesian Ministry of Health, vaccines can reduce the risk of being infected with Covid-19, as well as reduce treatment and death for health workers. This study was conducted on 71,455 health workers in DKI Jakarta including nurses, midwives, doctors, technicians, and other general staff during the January-June 2021 period

Table 1.
National Vaccination Data

Vaccines	Number of Doses	Percentage	Description
First	205.125.007	87,41%	Health Workers, Seniors, Public Officials, General Public, Age 6-17
Second	171.852.490	73,23%	
Third	64.942.521	27,67%	
Fourth	664.533	45,24%	Health Workers
Total	**442.584.551**		

Source: Indonesian Ministry of Health, 28 October 2022.

When looking at the data, the first and second vaccines in table 1.2 were very enthusiastic, but from the third dose, they started to decrease. While the fourth dose is only intended for health workers. In this regard, many studies have only conducted vaccine intention, or only two variables (fear of Covid-19 and vaccine intention), but not many studies have conducted five variables at once, especially concerning trust of vaccines, vaccine risk perception, fear of Covid-19. 19, vaccine hesitancy, vaccine intention with the second booster vaccine case. Therefore, this research wants to know people's behavior towards the second booster vaccine.

LITERATURE REVIEW

1. Trust of Vaccines
The word 'trust' has been given many definitions in the healthcare literature. In essence, according to Larson et al., (2018), trust becomes important when there is an implicit imbalance of power due to a high degree of information asymmetry, in which individuals who believe accept a vulnerable position in relation to those they trust.

2. Fear of Covid-19
Fear is an adaptive emotion that functions to mobilize energy to deal with potential threats. However, when fear is not well calibrated with actual threats, it can become maladaptive (Mertens et al., 2020).

3. Vaccine Risk Perception
Risk perception can be defined as individual differences in how to process information and react to risky events (Slovic et al., 2013). It is important for health behavior and is critical for making decisions regarding the reduction of certain health threats (Gratt, 1987). According to him, risk perception consists of two dimensions, which concern the probability and severity of the consequences associated with an event. Then, according to (Karlsson et al., 2021) individuals who consider Covid-19 to have a greater risk of being involved more in prevention efforts, such as washing hands and keeping a distance. Those with higher disease risk perception index (consisting of multiple risk measures) report

more frequently that they will receive a vaccine against Covid-19.

4. Vaccine Hesitancy
According to Willis et al., (2021), fear of infection with COVID-19 is an important factor that forms doubts about the COVID-19 vaccine. According to MacDonald et al., (2015), vaccine hesitancy refers to delays in receiving or refusing vaccinations even though vaccination services are available. Vaccine hesitancy is complex and context-specific, varying by time, place, and vaccine.

5. Vaccine Intention
According to Karlsson et al., (2021), Vaccine intention or intention to do a vaccine has a high value when they believe that the vaccine is safe. People also perceive higher vaccination intentions when they perceive the disease as more severe than those who perceive Covid-19 as a mild disease. Therefore, Covid-19 can have adverse health consequences for those who are infected, it can also positively affect vaccine uptake even though the magnitude of the effect may be smaller. Meanwhile, Vaccine intention, according to Karlsson et al., (2021), when people believe in the safety of vaccines there is an intention to do the vaccine.

Hypothesis
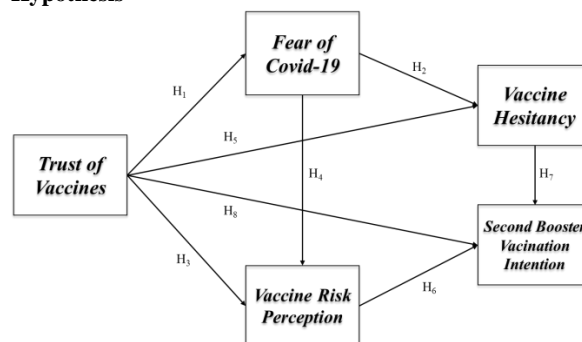
Picture. 1. Theoretical Framework of the Research Model
Source: Data processed by researchers (2022)
From the theoretical framework of Figure 1, the following eight hypotheses will be tested:
H_1: There is a significant influence between trust of vaccines and fear of Covid-19.
H_2: There is a significant influence between fear of Covid-19 and vaccine hesitancy.
H_3: There is a significant effect of trust of vaccines on vaccine risk perception.
H_4: There is a significant effect of fear of Covid-19 on vaccine risk perception.
H_5: There is a significant effect of trust of vaccines on vaccine hesitancy.
H_6: There is a significant effect between vaccine risk perception and second booster vaccination intention.
H_7: There is a significant effect between vaccine hesitancy and second booster vaccination intention.
H_8: significant effect of trust of vaccines on second booster vaccination intention.

RESEARCH METHODS

1. Population and Sample

The sampling technique uses non-probability sampling (a technique that does not provide equal opportunities/opportunities for each element) with a purposive sampling technique (researchers never know whether the respondents selected represent the population), with a minimum sample of 200 people who have had vaccine booster 1 or have been vaccinated three times. Then the other criteria are gender, age, employment status, marital status, educational status, domicile in Jakarta.

Data collection in this study used a questionnaire survey via the Google form and distributed online via social media, such as Twitter, Facebook, Instagram, and private massage (WhatsApp) in areas in Jakarta. This researcher also uses a six-point Likert scale measurement, by measuring the attitudes, opinions, and perceptions of the respondents.

According to Kriyantono, (2014), a Likert scale of 1–6 is usually used to measure a person's attitude towards an object in research. Doubtful choices are eliminated because they have multiple meanings and there is a tendency for someone to choose an answer in the middle or hesitate because they cannot provide an answer.

The research uses instrument validity by using exploratory factor analysis to determine the level of validity of an indicator. According to (Suhud et al., 2020) an indicator with a loading factor value above 0.4 can be interpreted as a valid indicator, and the reliability of the research instrument uses a Cronbach alpha value above 0.40. The validity and reliability tests were tested using SPSS 22 software. This study used the structural equation model test (SEM) using AMOS 22 software. Of a total of 314 respondents, 17 respondents did not meet the requirements set by the researchers, so 297 respondents fulfilled the requirements.

Table 2.

Profile Responden

Profile Resposden		Frequency	Percent
Sex	Male	171	57.6%
	Famale	126	42.4%
Age	17 - 20	24	8.1%
	21 - 30	143	48.1%
	31 - 40	86	29.0%
	41 - 50	31	10.4%
	51 - 60	13	4.4%
Working_Status	Not yet working	56	18.9%
	Working	209	70.4%
	Own business	29	9.8%
	pension	3	1.0%
Marital_Status	Not married yet	132	44.4%
	married	155	52.2%
	Divorced	9	3.0%
	partner died	1	0.3%
Education	< senior High School	6	2.0%
	senior High School	92	31.0%
	Bachelor	162	54.5%
	Postgraduate	37	12.5%
Total		297	100%

Source: Data processed by researchers (2022)

The table above shows that 297 respondents met the criteria to fill out the questionnaire that was distributed online through multiple choices so that respondents could choose more than one answer.

RESULTS

In the following, there is a validates and reliability test which states that all indicators are declared valid because they are above a loading factor of 0.40 (Suhud et al., 2020).

Table 3.
Validity and Reliability Test Results

Variabel		Loading Factor's		Cronbach's Alpha
		Dimensions 1	Dimensions 2	
Trust of Covid-19 (ToV)				0.935
ToV1	I trust the health care provider orhealth worker for the second booster vaccine.	0.917		
ToV2	I trust the public health institution/Ministry of Health in organizing the second booster vaccination.	0.917		
ToV4	I believe in the pharmaceutical company that produces the second boostervaccine.	0.898		
ToV3	I believe the politicians/officials concerned can help procure the second booster vaccination.	0.873		
ToV5	I believe the second booster vaccine is	0.850		

	important to reduce or eliminate Covid-19.			
	Average	0.891		
Fear of Covid-19 **(FoC)**				0.876
FoC4	Many people underestimate thisdisease so that it causes some people to worry, including me.	0.875		
FoC1	The Covid-19 case made me fear that one day I would die.	0.869		
FoC2	When I watch news and stories aboutCovid-19 on social media, I get nervous or anxious.	0.864		
FoC3	People panicking over Covid-19 will depress the economic situation and will create their own disaster.	0.773		
FoC5	I'm worried that people who don'tfollow health protocol rules will make other people sick.	0.693		
	Average	0.814		
Vaccine Risk Perception **(VRP)**				0.752
VRP1	I am very concerned about the possible serious side effects that asecond booster vaccine might have.	0.851		
VRP2	Compared to before the start of the vaccination campaign, from today I am much more worried about the possible side effects of the second booster vaccine.	0.830		
VRP4	I think all those who follow quarantine and follow health protocols lower their risk of getting Covid-19.	0.650		
VRP5	Overall, I believe that everyone I careabout (for example, grandparents) is at risk of infection and illness due tothe outbreak of the Covid-19 virus.	0.650		
VRP3	Avoiding the risk of Covid-19 is more important by getting vaccinated, thantaking care of my chronic health problems.	0.501		
	Average	0.696		
Vaccine Hesitancy **(VH)**				0.882
VH2	I was hesitant to do a second booster vaccine because pharmaceutical companies covered up the dangers of vaccines.	0.927		
VH3	I'm hesitant to do a second booster vaccine because the government is tryingto cover up the link between the vaccine and autism.	0.880		
VH1	I was hesitant to do a second booster vaccine, because vaccine safety datais often fabricated.	0.865		
VH5	The second booster vaccine doubts canbe influenced by the government's distrust during the pandemic.	0.735		

VH4	I have a belief that age, gender, and income can influence people to hesitate to do a second booster vaccine.	0.702		
	Average	0.821		
Second Booster Vaccine Intention (VI)				0.681
VI1	The second booster vaccination is important to protect me and my family.	0.936		
VI2	The second booster vaccination is in line with my religious beliefs.	0.900		
VI4	When I thought about getting vaccinated with the second booster, I weigh the benefits and risksto make the best possible decision.		0.800	
VI3	I don't want a second booster vaccine because I don't want to have any side effect.		0.789	
VI5	It is important for me to fully understand the topic of the second booster vaccination before I get vaccinated.		0.710	
	Average	0.918	0.766	

Source: Data processed by researchers (2022)

After the initial SEM testing, modification of the indicators on the variables was carried out to obtain the appropriate goodness of fit results as shown in the following figure
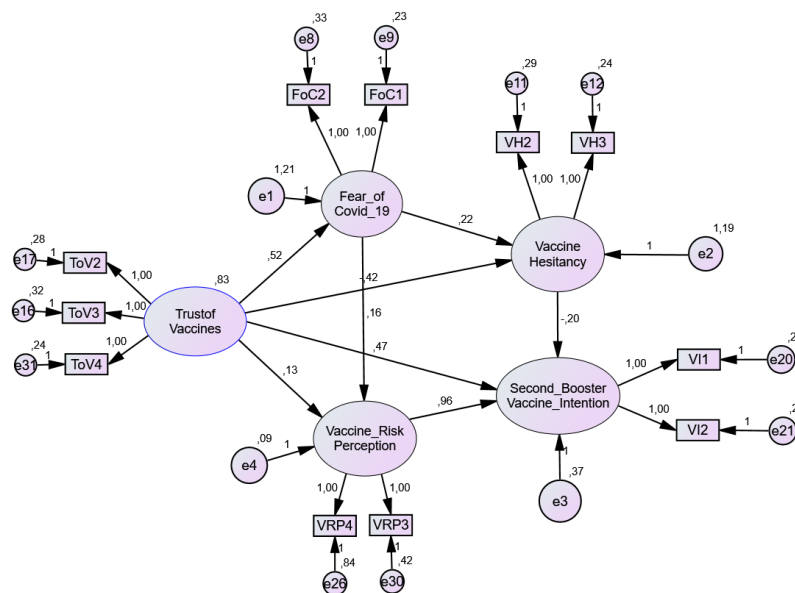

Figure 2. SEM Goodness of Fit results
Source: Data processed by researchers (2022)

Based on the modified AMOS model analysis, the goodness of fit model was obtained as shown in Figure 4.1. these modifications obtained CMIN/DF results that were in accordance with the requirements of the fit model, P value> 0.05 and CMIN/DF ≤ 2.00. This can be explained by the following table.

Table 4.
Goodness of Fit Analysis Test Results

Goodness of Fit Indices	Limit Value	value	The decision
Absolut Fit Measure			
Probability	≥ 0,05	0.069	*Good fit*
CMIN/DF	≤ 2,00	1.341	*Good fit*

RMSEA	≤ 0,08	0.034	*Good Fit*
GFI	≥ 0,90	0.966	*Good Fit*
Incremental Fit Measure			
AGFI	≥ 0,90	0.947	*Good Fit*
CFI	≥ 0,95	0.992	*Good Fit*
TLI	≥ 0,95	0,990	*Good Fit*
NFI	≥ 0,90	0,971	*Good Fit*
Parsimonious Fit Measure			
PNFI	≥ 0,60	0,741	*Good Fit*
PGFI	≥ 0,60	0,615	*Good Fit*

Source: Data processed by researchers (2022)

Table 4. has shown results that are in accordance with the requirements of the fit model, P value ≥ 0.05 which is 0.069, then and CMIN/DF ≤ 2.00 which is 1.341. Then the results of other tests also gave the same results, namely that the desired fit model had been achieved, namely the RMSEA value of 0.034, the GFI value result of 0.966, the AGFI value result of 0.947, the TLI value result of 0.992, the NFI value result of 0.971, the CFI value result of 0.992, the resulting PNFI value was 0.741, and the resulting PGFI value was 0.615.

In modifying the Goodness of Fit so that the P value ≥ 0.05, and CMIN/DF ≤ 2.00, additional research variables are needed. In modifying the Goodness of Fit so that the P value ≥ 0.05, and CMIN/DF ≤ 2.00, additional research variables are needed. There are 8 (eight) hypotheses, namely trust of vaccines for fear of Covid, fear of Covid-19 for vaccine hesitancy, trust of vaccines for vaccine risk perception, fear of Covid-19 for vaccine risk perception, trust of vaccines for vaccine hesitancy, vaccine risk perception on second booster vaccination intention, vaccine hesitancy on second booster vaccination intention, and trust of vaccines on second booster vaccination intention. The following details the results of developing the research hypothesis in each of these variables.

Table 5.
Hypothesis Test Results

Hypothesis				Estimate	S.E.	C.R.	P	Results
H1	FoC	<---	ToV	0,520	0,079	6,606	***	Accepted
H2	VH	<---	FoV	0,224	0,065	3,433	***	Accepted
H3	VRP	<---	ToV	0,135	0,045	2,976	,003	Accepted
H4	VRP	<---	FoC	0,163	0,033	4,906	***	Accepted
H5	VH	<---	ToV	-0,420	0,086	-4,863	***	Accepted
H6	VI	<---	VRP	0,958	0,255	3,759	***	Accepted
H7	VI	<---	VH	-0,205	0,043	-4,739	***	Accepted
H8	VI	<---	ToV	0,471	0,086	5,493	***	Accepted

Source: Data processed by researchers (2022)

Table 5 shows the results of hypothesis testing. The requirements criteria are accepted from the hypothetical CR value > 1.960 Suhud et al., (2020). Here's the explanation:

H_1: there is a positive and significant relationship between trust of vaccines and fear of Covid-19 to do the second booster vaccination. with a value of cr < 1.96 (6.606).

H_2: there is a positive and significant relationship between fear of Covid-19 and vaccine hesitancy for carrying out the second booster vaccination. with a value of cr <1.96 (3,433).

H_3: there is a positive and significant relationship between the trust of vaccines and the vaccine risk perception for carrying

out the second booster vaccination. with a value of cr < 1.96 (2,976).

H_4: there is a positive and significant relationship between fear of Covid-19 and vaccine risk perception for carrying out the second booster vaccination. with a value of cr < 1.96 (4,906).

H_5: there is a negative and significant relationship between trust of vaccines and vaccine hesitancy for carrying out the second booster vaccination. with a value of cr < 1.96 (-4,863).

H_6: There is a positive and significant relationship between vaccine risk perception and second booster vaccination

intention to do second booster vaccination. with a value of cr < 1.96 (3,759).

H_7: there is a negative and significant relationship between vaccine hesitancy and second booster vaccination intention to do a second booster vaccination. with a value of cr < 1.96 (-4,739).

H_8: There is a positive and significant relationship between trust of vaccines and second booster vaccination intention to do second booster vaccination. with a value of cr < 1.96 (5,493).

DISCUSSION

The first hypothesis is that the people of Jakarta as the respondents in this study believe that vaccines are good for health. Trust can become anxious and cause fear if the people of Jakarta don't want to follow the health protocol and don't want to vaccinate properly. Trust and fear are closely related to people willing to vaccinate and follow health protocols.

The second hypothesis is that the people of Jakarta as respondents in this study are worried that many people think that people who do not comply with health protocols will result in contracting the Covid-19 virus. Even if they don't follow the health protocol, the respondent also has no doubts that it is the independence of pharmaceutical companies to provide true data. Finally, people do not hesitate to vaccinate. Fear and doubt became the key to whether the respondent wanted or not to vaccinate later.

The third hypothesis is that the people of Jakarta as the respondents in this study believe that vaccines are good for health. Trust can pose a risk if the people of Jakarta don't believe that Covid-19 exists, and don't believe it will hurt their closest family. Trust and perceived risk are related to the success of the national vaccination program to tackle the Covid-19 virus.

The fourth hypothesis is that the people of Jakarta as respondents in this study are worried that many people think that people who do not comply with health protocols will result in contracting the Covid-19 virus. In fact, if we don't follow the health protocol, respondents believe that the people closest to us, the people we care about can be at risk of contracting the virus. Fear and perception of the risk of being infected with the virus are related to each other.

The fifth hypothesis, although the trust in health workers who serve the second booster vaccination is good, this trust has a cause-and-effect relationship that will cause doubts to vaccinate. The public has more trust in vaccination services, and this trust does not necessarily raise doubts about the intention of the vaccine. Finally, people are hesitant and reluctant to vaccinate. Trust and doubt are the keys to whether the respondent wants to vaccinate or not.

The sixth hypothesis, the people of Jakarta as respondents in this study believe that people who are loved by respondents will one day be infected with the Covid-19 virus. The hypothesis in the two variables of vaccine risk perception and second booster vaccination intention has a relationship or

relationship with one another. In this study, people especially those they care about know they will be infected with the Covid-19 virus, and then they have the intention to vaccinate.

The seventh hypothesis is that the people of Jakarta as respondents in this study have doubts about the health services provided by pharmaceutical companies regarding correct information about the treatment of the Covid-19 virus through vaccination. However, doubts about health services do not necessarily affect them to have the intention to vaccinate. According to this study, hesitation has a negative and significant effect on people's intention to vaccinate.

The eighth hypothesis, the people of Jakarta as the respondents in this study believe that the vaccination organizers are doing a very good job, but the people also want to know the main topic of why the vaccination is being carried out. They trust healthcare providers, and they have the intention to vaccinate. However, they really want to know what the main topic of vaccination is. In conclusion, there is a relationship between good trust in health providers and the intention and purpose of carrying out vaccinations.

CONCLUSION

Based on the results of the discussion in this study, it can be concluded that there are 8 (eight) hypotheses that are accepted, namely that there is an effect of trust of vaccines on fear of Covid-19, fear of Covid-19 on vaccine hesitancy, trust of vaccines on vaccine risk perception, fear of Covid-19 to vaccine risk perception, trust of vaccines to vaccine hesitancy, vaccine risk perception to second booster vaccination intention, vaccine hesitancy to second booster vacination intention, and trust of vaccines to second booster vaccination.

The hypothesis that most people accept is that vaccines are good for health. Trust can become anxious and cause fear if people don't want to follow the health protocol. The public is worried or afraid that many people will not comply with health protocols, which will result in the spread of the Covid-19 virus. If you still ignore health protocols, plus the public also doesn't trust pharmaceutical companies, it will raise doubts about getting vaccinated. People also believe that vaccines are good for health. The community also believes that the people closest to them will also be at risk of being infected with Covid-19 so that the desire to know the purpose of the vaccine is high so they can vaccinate. Meanwhile, most of the hypotheses that were rejected realized that people believed vaccines were good for health. But they doubted this belief made them not vaccinate. people are worried or afraid that many people will not comply with health protocols, and this will result in the spread of the Covid-19 virus. Even so, they don't necessarily have the intention to vaccinate before they really know the main purpose of vaccination. The public has doubts about pharmaceutical companies providing open information. However, doubts about health services do not necessarily affect them to have the intention to vaccinate.

RECOMMENDATION

The following are some recommendations made by the government, pharmaceutical companies, health workers and

community leaders, etc.:

a. Information Services. The government, pharmaceutical companies, health workers and community leaders, etc. can provide socialization to the public about the importance of vaccination. Because, based on the data available in this study, the public does not fully understand the dangers of the Covid-19 virus and the benefits of the national vaccination program.

b. Vaccine availability. The government must be able to provide sufficient stock of vaccines for the people of Indonesia. Because, according to table 1.2, the number of people who have not done the vaccine, especially the second booster vaccine, is very large.

c. Vaccination Program. It is hoped that the vaccination program carried out by the government will not stop. Besides preventing the transmission of the Covid-19 virus, it also empowers vaccines produced by the nation's children.

d. Mass test. The government should not stop carrying out mass checks through mass tests. So that people who are infected with Covid-19 do not infect others.

e. Vigilance. Even though the government has eliminated the PPKM (Implementation of Restrictions on Community Activities) program, vigilance must continue to be increased. This is because there are still many other countries that have experienced a surge in Covid-19 cases because a new variant has attacked the country. Therefore, vigilance is important so that we are ready to face if a new variant enters Indonesia.

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