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# Integration of theory of planned behavior and health belief model for predicting the intention of COVID-19 vaccination: Empirical study in Indonesia

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**Abstract**

The COVID-19 pandemic hit many countries in the world, including Indonesia. The vaccination program for the entire population is one of the programs conducted in many countries to slow the rate of transmission of the virus, which is expected to support economic growth again. Acceptance of the COVID-19 vaccine then became one of the main aspects that needed to be researched to support government initiatives in distributing and providing vaccines to the public. Although studies have been conducted to predict people's intention to take vaccines, few studies have integrated variables based on the stimulus-organism-response (S-O-R) framework. This study aims to predict an individual's intention to get a COVID-19 vaccine. The research model was developed using the S-O-R framework by integrating variables from the Health Belief Model and Theory of Planned Behavior. Questionnaires were distributed using a judgmental sampling design with a total of 256 questionnaires collected. The reliability test was conducted first and then the data were analyzed using structural equations. The results showed that of the seven research hypotheses, there were two that were not supported. The unsupported hypotheses were the relationship between perceived benefits and trust and the relationship between perceived barriers and trust. Despite the efforts of many parties, including the government, in terms of campaigning for the importance of the COVID-19 vaccine, these findings show that the benefits of the COVID-19 vaccine are not the main aspect that affects public confidence. Also, the obstacle in getting the vaccine is not a significant factor.



## Introduction

COVID-19 is one of the main factors causing the economic crisis that has occurred in many countries. Since it first appeared in Wuhan, China in December 2019, it then spread rapidly to up to 178 countries (Yip & Perasso, 2021). The COVID-19 pandemic has had many effects on these countries, including Indonesia. Specifically, all sectors are affected, not only health. The economic sector has been seriously affected by the corona virus pandemic. The Central Statistics Agency

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announced that Indonesia's economic growth throughout 2020 had contracted minus 2.07 percent. This indicates that Indonesia is still stuck in a recession due to negative economic growth for three consecutive quarters (Librianty, 2021). Furthermore, restrictions on community mobility imposed by the government have an impact on business activities, which in turn, have an impact on the economy. In this regard, the government is trying to reduce this pandemic in many ways, one of which is by providing vaccines for the entire community.

The Indonesian government conducted the provision of vaccines through several stages. These stages were as follows. First, stage 1, with implementation time from January to April 2021, which was intended for support staff as well as students who were currently undergoing medical professional education working in Health Service Facilities. Stage 2 was also held from January-April 2021, aimed at public service officers and the elderly (≥ 60 years). Stage 3, with an implementation time from April 2021-March 2022, was aimed at vulnerable communities from geospatial, social, and economic aspects. Stage 4 with the implementation time also from April 2021-March 2022 was aimed at the community and other economic actors with a cluster approach according to the availability of vaccines (CNBC Indonesia, 2021).

However, resistance to vaccines emerged in the public. The problem of vaccines is halal or not, a major concern for Indonesian people who are Muslim. The Indonesian government then collaborated with the Indonesian Ulama Council to ensure that the vaccine given was halal and MUI then issued a fatwa that the COVID-19 vaccine was halal and holy (Turnip, 2021).

Even though the MUI issued the fatwa, it was not immediately that the whole community was willing to accept the vaccine. One survey conducted by the Indonesian Political Indicators Survey of 1,200 randomly selected respondents from all over Indonesia on 1–3 February 2021 showed that only 45.1 percent of the 22–25-year age group were willing to be vaccinated. Based on the survey, the three main reasons the group was not or was less willing to be vaccinated were concerns about vaccine side effects, the notion that vaccines were ineffective, and a feeling of not needing the vaccine because they were healthy (Anugerah, 2021).

To date, there is limited research that focuses on the effect of trust on intentions to obtain a Covid-19 vaccine, especially in the Indonesian context. Therefore, it is important to build a research model that explains the factors that contribute to the intention to obtain a COVID-19 vaccine. This article aimed to predict the factors associated with the intention to obtain a COVID-19 vaccine, focusing on the Indonesian context. The results of this study help to understand factors that influence a person's intention to get the COVID-19 vaccine. Understanding the factors that influence intentions is important so that policy makers (government) together with academics and practitioners can work on accelerating mass vaccination for citizens so that the COVID-19 pandemic can end soon.

## Literature Review

### *Indonesian Society's Perception of the COVID-19 Vaccination Program*

The mass vaccination program is one of the main ways to reduce the spread of COVID-19 cases in the world, including in Indonesia. Just like in other countries in the world, mass vaccination programs are not fully accepted by the public. This is because of public concerns about the side effects of the vaccine and the effectiveness of the vaccine. Not only that, the rejection of vaccines is also due to religious reasons, for example regarding whether the vaccine is halal or not.

A survey on public perception of the vaccination program was conducted to determine the level of public acceptance. A survey conducted from 19–30 September 2020 by the Indonesian government through the Ministry of Health in collaboration with UNICEF, WHO, and ITAGI (Indonesian Technical Advisory Group on Immunization) on 115,000 respondents in 34 provinces in Indonesia showed that 65 percent of the population was willing to get the COVID-19 vaccine (Putri, 2021). However, a survey conducted by the Saiful Mujani Research Centre (SMRC) conducted from 28 February-9 March 2021 on 1220 respondents in 34 provinces of Indonesia showed that only 46 percent of respondents were willing to be vaccinated (Widadio, 2021). Another survey institution, namely, the Indonesian Survey Institute (LSI), also conducted a survey of public perceptions of the vaccine program, which was carried out from June 20–25, 2021, on 1200 respondents in 34 provinces of Indonesia, showing that 84.9 percent of the people were willing to be vaccinated. Furthermore, the Charta Politica Institute also conducted a perception survey on vaccine receipts from 12–20 July 2021 for 1200 respondents in 34 provinces of Indonesia, showing that 72.4 percent were willing to get the vaccine. The results of these surveys indicate that the level of public acceptance of the vaccination program is still unstable (Tim Merdeka, 2021). This can be caused by

people's perceptions of the benefits of vaccines, beliefs, opinions of others, and other factors that can be represented through the integration of the Health Belief Model and Theory of Planned Behavior.

### *Stimulus-Organism-Response Framework*

Individual behavior can be understood by using a stimulus-organism-response (S-O-R) framework. This framework is the extension of the simple form of understanding people behavior through Input-Output (I-O) process (Jacoby, 2002). Through the S-O-R framework, it shows that individuals receive stimuli which are then processed internally before the individual acts. A stimulus is anything that can be accepted by the five senses of man. The stimulus can be in the form of what the individual can see, hear, feel, hold, and so on. Then, the organism is the individual who receives the stimulus. Based on Jacoby (2020), stimulus factors can be categorized as things that include all external stimuli such as brands, packages, prices, word-of-mouth communications, newspapers, and other external factors. This research applied media exposure and subjective norms as stimulus factors in the research model.

As the extended version of I-O process, the S-O-R framework shows that individuals are not black boxes whose internal processes are not understood. There are many factors in the individual as a factor which then processes the stimulus through cognitive, affective, and conative skills. The organisms can be categorized as knowledge, attitudes, intentions, values, personality, feelings, images, expectations, and so forth (Jacoby, 2002). This research applied perceived benefits, perceived barriers, perceived behavioral control, and trust as organism variables in the research model. All of these variables are internal factors that can direct people to take an action. This research applied intention to have vaccine as a representation of individual response. All research variables are explained as follows.

### *Health Belief Model and Theory of Planned Behavior (TPB)*

Behavioral theories in social science were applied as the foundation for predicting people behavior. Specifically, the Health Belief Model (HBM) together with the Theory of Planed Behavior (TPB) were applied in building a model with stimulus-organism-response framework to predict people's intentions to get the COVID-19 vaccine. HBM is a model that provides an idea of why someone is willing or unwilling to see health workers, get vaccines, and other health-related matters. This model focuses on the explanation of preventive health behavior (Maiman & Becker, 1974). Several studies applied HBM to predict vaccination acceptance (e.g., Chen et al., 2011; Cheney & John, 2013; Fall et al., 2018; Goruntla et al., 2021; Tsui et al., 2013).

One of the main variables in HBM is perception. The perception itself is represented in four variables, namely: perceived susceptibility, perceived severity, perceived benefits, and perceived barriers. Specifically, perceived susceptibility is related to the perception of the threat of disease that can befall a person. Furthermore, the perception of severity refers to the perception of the seriousness of a threat. Then, the perceived benefit is the perception of the benefits that will be obtained in an action while perceived barriers are considerations of obstacles that may be faced in taking an action. In addition to perception, HBM also includes a cue variable to function as a variable that can influence a person's behavior. Cues to action are events, people, or things that move people to change their behavior.

The Theory of Planned Behavior (TPB) is a theory based on the assumption that humans are rational beings in performing behavior. Specifically, a person's behavior is influenced by his intention to behave. Furthermore, there are three main factors that influence behavioral intentions: attitude toward behavior, subjective norms, and perceived behavioral control (Ajzen, 2006). This theory has been applied to predict a person's behavior in many contexts such as management (e.g., Carpenter & Reimers, 2005; Cheng & Chu, 2014; Cordano & Frieze, 2000; Sihombing & Pramono, 2021), entrepreneurship (e.g., Agung et al., 2021; Ilouga et al., 2014; Obschonka et al., 2015; Rauch & Hulsink, 2015; Sihombing & Handoko, 2021;), marketing (e.g., Fukukawa & Ennew, 2010; Nuttavuthisit & Thøgersen, 2017; Paul et al., 2016) and others.

This research model was built by integrating the Health Belief Model and Theory of Planned Behavior. Two types of perception in HBM (that is, perceive benefits and perceived barriers) were used and cues of action variable. Perceived susceptibility and perceived severity were not integrated in the model because these two variables were replaced by perceived behavioral control from the TPB. Furthermore, subjective norm and behavioral intention were also applied from the TPB. Attitude was not included because this study integrates HBM that focuses on individual perceptions. Trust was added in the model considering that from the phenomenon of receiving the COVID-19 vaccine, trust is one of the main things that concerns the public to want to receive the COVID-19 vaccine.

## Relationship between Variables and Hypothesis Development

*The relationship between media exposure and perception*

The HBM emphasizes that a person's willingness to change his health behavior is due to his perception of health. Thus, perception plays a key role in HBM. One thing that can affect perception is media exposure. Exposure to information from various media sources will affect the individual's perception of the benefits, barriers, and control over his behavior. The results showed that there was a positive relationship between media exposure (ME) and perceived benefits (PBF) (e.g., Jones et al., 2015). In other words, people will get a perception of the benefits that will be obtained from receiving vaccines by seeing and hearing a lot of news about the impact of COVID-19 on human health and life. Media exposure is a double-edged sword. On the one hand it can have a positive impact on society, but on the other hand, it can also make people worried (Garfin et al., 2020). Thus, there is positive relationship between media exposure and perceived barriers (PBR) (e.g., Li, 2018; Liu et al., 2020). This means that the higher media exposure to COVID-19, creates the public perception that they will experience obstacles to getting a vaccine. Media exposure also affects a person's perceived behavioral control. Media exposure will affect a person's control over his ability to respond to internal or external obstacles when performing behavior. The results of previous studies showed the effect of media exposure on perceived behavioral control (PBC) (e.g., Handayani & Prajogo, 2020; Lee, 2011). Then, it can be stated that:

H1: There is a positive relationship between ME and PBF

H2: There is a positive relationship between ME and PBR

H3: There is a positive relationship between ME and PBC

*The relationship between perception and trust*

Trust is one important psychological factor that influence human behavior. Perception is concerned with how people select, organize, and interpret the stimuli around them. Perception is also an individual's cognitive activity in detecting and interpreting all information from the environment in accordance with his experience. Thus, perception is one of the main components of trust formation. Research shows that there is a relationship between perception and trust (e.g., Alarcon et al., 2018; Birkenmeier & Sanséau, 2016; Foltz et al., 2016). Thus, the hypotheses that can be developed are as follows:

H4: There is a positive relationship between PBF and Trust

H5: There is a negative relationship between PBR and Trust

H6: There is a positive relationship between PBC and Trust

*The relationship between subjective norm and trust and behavioral intention*

As social beings, people influence a person's actions around them. The influence of the people around, especially the people who are considered important for the individual, influencing the individual to act or not act, is called subjective norm (Ajzen, 2006). The influence of the closest people also affects a person's level of trust. Trust refers to the willingness of one party to be vulnerable to the actions of another based on the expectation that the other party will perform certain actions that are important to the trustee. Furthermore, the condition of giving this trust is independent of the ability of either party to monitor or control the other party (Mayer et al., 1995). The urge to act or not act from people who are considered important to individuals affects a person's trust in something, for example getting the COVID-19 vaccine. Research shows that subjective norms (SN) are related to trust (e.g., Dewi & Ketut, 2020; Gong et al., 2019; Liu et al., 2019; Liu et al., 2021; Shahriar, 2014). Furthermore, subjective norm is one of the main predictors of behavioral intentions (Int). Research shows a positive relationship between subjective norms and behavioral intentions (e.g., Sihombing & Pramono, 2021; Zahid & Din, 2019). Thus, the research hypotheses can be stated as follows:

H7: There is a positive relationship between SN and Trust

H8: There is a positive relationship between SN and Int

*The relationship between trust and behavioral intention*

Trust is one of the important variables in many contexts, such as marketing, consumer behavior, human resources, management, and others. In relation to the context of getting the COVID-19 vaccine, trust is one of the main variables that influence a person's intention or action to get the COVID-19 vaccine (e.g., Latkin et al., 2021; Vergara et al., 2021). Furthermore, research indicates a positive relationship between trust and intention to behave (e.g., Fang et al., 2014; Foltz et al., 2016; Gefen et al., 2003; Kang & Hustvedt, 2014; Zahid & Din, 2019). Thus, the research hypothesis is as follows:

H9: There is a positive relationship between Trust and Int

## Research Model

Based on the previous discussion on the relationship between variables, the research model can be described as in Figure 1. This model consists of seven variables including two independent determinants of behavioral intention, namely, media exposure and subjective norms. The four mediating variables in this model are perceived benefits, perceived barriers, perceived behavioral control, and trust.

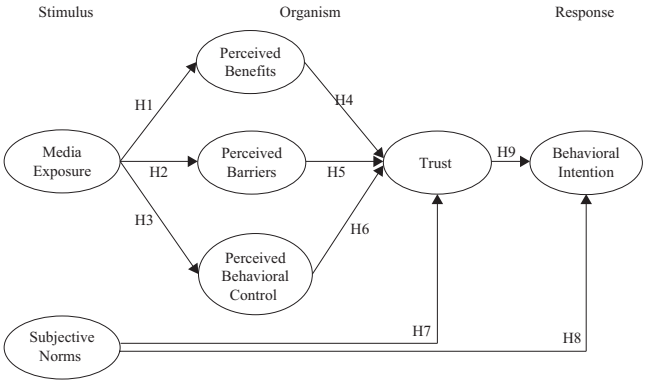


**Figure 1** Research Model
**Source:** Developed for this research (2021)

## Methodology

### *Time Horizon of Research*

This research is a correlational study that focuses on describing phenomena and testing hypotheses on the relationship between research variables. This study uses a cross-sectional time horizon where it only captures phenomena within the research period. This cross-sectional design is appropriate because this study only aimed to describe the current phenomenon of this research regarding the intention to conduct a COVID-19 vaccine. This research was conducted from April - May 2021 in Indonesia, where the acceleration of the COVID-19 vaccine is one of the crucial issues in Indonesia to reduce the increasing number of COVID-19 cases.

### *Sampling Design and Sample Size*

The sampling method applied in this study was purposive sampling. The two main criteria in this study were Indonesian citizens who had never received the COVID-19 vaccine and those aged between 18 to 59 years because it was the policy of the Indonesian Government that this age group be included in the first batch of COVID-19 mass vaccinations in Indonesia (BBC News Indonesia, 2021). Data were collected using a Google form, which was an online data collection considering the conditions of the COVID-19 pandemic in 2021, in which the movement of people was still restricted and where work, school, and many things were done at home. Two main filters were integrated in the online questionnaire. The two filter questions were: (1) whether you have received the COVID-19 vaccine; and (2) whether you are in the 18–59 age range. The questionnaire would close automatically if there was a "yes" answer to either of the filter questions.

The number of samples in this study were 256 respondents. This number is in accordance with the suggestion of Hair et al. (2019) that the determination of the number of samples by data analysis using structural equation modeling (SEM) can be based on the complexity of the model. The rule of thumb presented by Hair et al. (2019) was that a sample size of at least 150 is suitable for models with seven constructs or less and no constructs were under identified, which was appropriate for this research model.

### *Measurement*

The indicators of this study were derived from previous research (Appendix 1). Indicators for media exposure was based on Liu et al. (2020), Liu and Liu (2020), and Rivas et al. (2021). Furthermore, indicators for perceived benefits were based on Cheney and John (2013), whereas indicators for perceived barriers followed the study of Jones et al. (2015). Indicators for perceived behavioral control, subjective norms, and behavioral intention were adapted from Ajzen (2006). In addition, indicators of trust were based on Gefen et al. (2003), Kang and Hustvedt (2014), and Yulin et al. (2014).

### *Reliability and Validity Assessment*

Reliability is first assessed before validity analysis because reliability is a prerequisite for validity assessment (Hair et al., 2019). This research applied Cronbach's alpha and composite reliability for evaluating the reliability of each construct based on the suggestion by Bagozzi and Yi (1988). Construct validity was assessed by conducting convergent and discriminant validity tests. Convergent validity is done by using exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). Furthermore, average variance extracted (AVE) was used to assess discriminant validity.

### *Data Analysis*

In this study, factor-based covariance-based SEM (CB-SEM) was applied because CB SEM is appropriate when strong theories drive model development (Richter et al., 2016). Specifically, this research model is based on the theory of TPB and HBM in the stimulus-organism-response framework. A two-step SEM approach was applied to this study, namely: (1) assessing the measurement model (confirmatory factor analysis, CFA); and (2) the

structural model as suggested by Anderson and Gerbing (1988). The first step is to assess the measurement model using confirmatory factor analysis (CFA). Furthermore, only if CFA shows construct validity with a good fit, then assessing the structural model as the second step (Hair et al., 2017). Several model fit indices were used to examine the goodness-of-fit of the measurement and structural model: chi-square (CMIN) and degrees of freedom (df), comparative fit index (CFI), and root mean square error of approximation (RMSEA) as suggested by Hair et al. (2017).

## Results and Discussion

Of the 292 responses to the distributed online form questionnaires, 256 questionnaires could be processed further because the filter question when the respondents were about to fill out the questionnaire was whether they had taken the vaccine or not. Only respondents who answered that they had never been vaccinated could answer the questionnaire.

There was no gender dominance in this study. The difference between male and female respondents was only 1.6 percent, where the number of female respondents was only four more people (50.8%) than men (49.2%). More than two thirds of respondents (77.3%) were between 17–20 years old. However, all respondents (93.4%) were part of Generation Z, and were currently students. Table 1 summarizes demographic characteristics of the respondents.

Table 2 shows the results of descriptive statistical analysis for each item, which includes the mean, standard deviation, skewness, and kurtosis. The value of skewness and kurtosis for each item is between -2 and 2 for skewness and between -7 and 7 for kurtosis, which indicates the data distribution is close to normal distribution (Hahs-Vaughn, 2017).

The results of the reliability test using Cronbach's alpha showed that the value of Cronbach's alpha for the research variables was in the range of 0.700–0.882 (Table 3). Furthermore, the composite reliability value is in the range of 0.690–0.880, exceeding the 0.600-threshold suggested by Bagozzi and Yi (1988).

**Table 1** Demographic characteristics

| Characteristics | Number (percentage) |
|---|---|
| Gender | |
| Male | 126 (49.2%) |
| Female | 130 (50.8%) |
| Age | |
| 17–20 years | 198 (77.3%) |
| 21–24 years | 41 (16.0%) |
| >25 years | 17 (6.7%) |
| Generation | |
| Gen X (1965–1980) | 8 (3.1%) |
| Gen Y (1981–1995) | 9 (3.5%) |
| Gen Z (1996–2010) | 239 (93.4%) |
| Occupation | |
| Students | 232 (90.6%) |
| Private employees | 15 (5.9%) |
| Entrepreneur | 7 (2.7%) |
| Others | 2 (0.8%) |

**Tabel 2** Descriptive analysis

| Indicators | Mean | *SD* | Skewness | Kurtosis |
|---|---|---|---|---|
| ME1 | 3.980 | 0.883 | -1.029 | 1.587 |
| ME2 | 4.066 | 0.881 | -0.921 | 1.463 |
| ME3 | 4.078 | 0.757 | -0.949 | 2.166 |
| SN1 | 4.175 | 0.935 | -1.169 | 1.117 |
| SN2 | 3.980 | 0.918 | -0.636 | 0.021 |
| SN3 | 4.132 | 0.824 | -0.843 | 0.774 |
| PBF1 | 4.253 | 0.763 | -0.945 | 1.350 |
| PBF2 | 4.277 | 0.819 | -1.156 | 1.457 |
| PBF3 | 4.203 | 0.819 | -0.951 | 0.969 |
| PBR1 | 3.695 | 0.782 | -0.148 | 0.140 |
| PBR2 | 4.070 | 0.753 | -0.449 | 0.097 |
| PBC1 | 3.742 | 0.999 | -0.697 | 0.286 |
| PBC2 | 4.085 | 0.831 | -0.865 | 1.084 |
| PBC3 | 3.855 | 0.898 | -0.595 | 0.311 |
| Trust1 | 3.878 | 0.927 | -0.679 | 0.252 |
| Trust2 | 3.878 | 0.892 | -0.793 | 0.832 |
| Trust3 | 3.878 | 0.892 | -0.693 | 0.356 |
| Int1 | 4.113 | 0.893 | -1.055 | 1.202 |
| Int2 | 4.191 | 0.805 | -1.041 | 1.455 |
| Int3 | 3.933 | 0.932 | -0.744 | 0.446 |

**Table 3** Reliability and validity assessment

| Construct | Indicators | Standardized Regression Weight | Critical Ratio | AVE | Composite Reliability | Cronbach's Alpha |
|---|---|---|---|---|---|---|
| ME | ME1 | 0.781 | | | | |
| | ME2 | 0.766 | 10.620 | 0.556 | 0.789 | 0.790 |
| | ME3 | 0.686 | 9.880 | | | |
| SN | SN1 | 0.877 | | | | |
| | SN2 | 0.807 | 16.220 | 0.719 | 0.885 | 0.882 |
| | SN3 | 0.858 | 18.015 | | | |
| PBF | PBF1 | 0.880 | | | | |
| | PBF2 | 0.837 | 17.130 | 0.710 | 0.880 | 0.876 |
| | PBF3 | 0.809 | 16.093 | | | |
| PBR | PBR1 | 0.535 | | | | |
| | PBR2 | 0.974 | 3.268 | 0.617 | 0.749 | 0.686 |
| PBC | PBC1 | 0.816 | | | | |
| | PBC2 | 0.755 | 12.989 | 0.640 | 0.842 | 0.841 |
| | PBC3 | 0.828 | 14.639 | | | |
| Trust | Trust1 | 0.928 | | | | |
| | Trust2 | 0.924 | 24.927 | 0.794 | 0.920 | 0.919 |
| | Trust3 | 0.817 | 18.975 | | | |
| Int | Int1 | 0.825 | | | | |
| | Int2 | 0.914 | 17.966 | 0.714 | 0.882 | 0.883 |
| | Int3 | 0.791 | 14.652 | | | |

*Note:* ME: media exposure, SN: subjective norms, PBF: perceived benefits, PBR: perceived barriers, PBC: perceived behavioral control, Trust: trust, Int: Intention.

Construct validity is conducted by ensuring that the research indicators used reach convergent and discriminant validity. Exploratory factor analysis (EFA) was used to assess convergent validity (Hill & Hughes, 2007). Table 4 shows the EFA result, and the sufficiency and fitness of the sample were identified by KMO measure (KMO = .926) and Bartlett's test of sphericity ($\chi^2$ (190) = 3651,839, $p$ = .000). The results of the EFA analysis show that the indicators used in this research are grouped on their respective variables which are represented in components 1–7. The grouping of indicators on each variable shows that convergent validity is achieved.

**Table 4** Exploratory factor analysis

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| ME1 | | | | 0.787 | | | |
| ME2 | | | | 0.855 | | | |
| ME3 | | | | 0.733 | | | |
| SN1 | | | | | 0.646 | | |
| SN2 | | | | | 0.716 | | |
| SN3 | | | | | 0.693 | | |
| PBF1 | | 0.755 | | | | | |
| PBF2 | | 0.784 | | | | | |
| PBF3 | | 0.728 | | | | | |
| PBR1 | | | | | | | 0.870 |
| PBR2 | | | | | | | 0.838 |
| PBC1 | | | 0.663 | | | | |
| PBC2 | | | 0.768 | | | | |
| PBC3 | | | 0.732 | | | | |
| Trust1 | 0.784 | | | | | | |
| Trust2 | 0.784 | | | | | | |
| Trust3 | 0.761 | | | | | | |
| Int1 | | | | | | 0.714 | |
| Int2 | | | | | | 0.504 | |
| Int3 | | | | | | 0.749 | |

Construct validity was assessed by conducting convergent and discriminant validity tests. Convergent validity was assessed by EFA and confirmatory factor analysis (CFA) with the seven-factor model. Table 2 shows that all research indicators have critical ratio higher than +1.96 with $p$ value less than .05. In other words, all research indicators have statistically significant influence on the latent construct. Furthermore, results show that fit indices indicated a good fit for the seven-factor model (CMIN/DF = 1.700, CFI = 0.972, TLI = 0.963, RMSEA = 0.052). Furthermore, average variance extracted (AVE) was used to assess discriminant validity. Specifically, a square root of AVE for any two constructs is greater than the correlation estimates between these two constructs, representing discriminant validity (Table 5).

Research hypotheses were assessed using structural equation modeling (Table 6). The results of the analysis showed a good fit for the structural model (CMIN/DF = 1.471, CFI = 0.981, TLI = 0.975, RMSEA = 0.043).

## Discussion

The results of the analysis show that seven of the nine research hypotheses are supported. The Seven hypotheses related to a positive relationship were between: (1) media exposure and perceived benefits; (2) media exposure and perceived barriers; (3) media exposure and perceived behavioral control; (4) perceived benefits and trust; (5) subjective norms and trust; (6) subjective norms and intentions; and (7) trust and intention to get the COVID-19 vaccine. These seven supported hypotheses demonstrate the role of media exposure in influencing perceived benefits, perceived barriers, and perceived behavioral control. The role of the media, especially social media, influences many people's perceptions of things that happen in everyday life. With technology that continues to develop, social media have become a part of the lives of the many people who rely on information from such social media. The results of the analysis also show that perceived usefulness and subjective norms have a positive effect on trust. Trust then positively affects intentions to get a COVID-19 vaccine. In addition to trust, subjective norms also have a positive relationship with the intention to get the COVID-19 vaccine.

The results of the analysis also show that two research hypotheses are not supported. The two hypotheses are the effect of perceived barriers on trust and the effect of perceived behavioral control on trust. The perceived benefits in this study are related to the benefits obtained from the COVID-19 vaccine. Specifically, the benefits obtained from the COVID-19 vaccine are that it can help prevent the spread of disease to the closest people, can nourish the body, and is a wise thing to do. However, the results showed that there was no significant effect on the perceived benefits of trust. This can be explained because, in Indonesia, there are many reports of deaths of people exposed to COVID-19 even though they have received two vaccines. The news of the death of people who have

**Table 5** Discriminant validity

| | ME | SN | PBF | PBR | PBC | Trust | Int |
|---|---|---|---|---|---|---|---|
| ME | *0.745* | | | | | | |
| SN | 0.455 | *0.847* | | | | | |
| PBF | 0.443 | 0.720 | *0.842* | | | | |
| PBR | 0.255 | 0.242 | 0.210 | *0.785* | | | |
| PBC | 0.403 | 0.667 | 0.621 | 0.173 | *0.800* | | |
| Trust | 0.396 | 0.682 | 0.646 | 0.176 | 0.719 | *0.891* | |
| Int | 0.404 | 0.730 | 0.705 | 0.225 | 0.696 | 0.703 | *0.844* |

*Note:* the italic number is the square root of AVE.

**Table 6** Hypotheses testing

| Hypothesized Path | Standardized Regression Weight | Critical Ratio | $p$ | Results |
|---|---|---|---|---|
| H1 ME → PBF | 0.850 | 6.934 | .001 | Supported |
| H2 ME → PBR | 0.277 | 2.358 | .018 | Supported |
| H3 ME → PBC | 0.836 | 6.736 | .001 | Supported |
| H4 PBF → Trust | 0.236 | 2.330 | .020 | Supported |
| H5 PBR → Trust | -0.038 | -0.809 | .419 | Not Supported |
| H6 PBC → Trust | 0.230 | 1.448 | .148 | Not Supported |
| H7 SN → Trust | 0.390 | 2.771 | .006 | Supported |
| H8 SN → Int | 0.700 | 8.840 | .001 | Supported |
| H9 Trust → Int | 0.239 | 3.388 | .001 | Supported |

received this vaccine makes people doubt the benefits of the COVID-19 vaccine that they will get. In other words, there is no guarantee that a vaccine will keep everyone free from COVID-19. Doubts about the benefits of vaccines do not mean they reject the vaccine itself. MacDonald and the SAGE Working Group on Vaccine Hesitancy (2015) define vaccine hesitancy as a delay in accepting or refusing a vaccination despite vaccination services being available. The results of a survey conducted by *Lapor Covid* (in English, Report Covid) on 47,505 respondents in DKI Jakarta from April-May 2021 found that one in three DKI Jakarta residents was still worried about the COVID-19 vaccine outbreak. Specifically, there were three concerns expressed by respondents about the COVID-19 vaccine, namely, the halalness of the vaccine, the effectiveness of the vaccine, and the side effects of the vaccine itself. Furthermore, undecided respondents were not convinced that vaccines could really protect against COVID-19 infection (Prasasti, 2021).A survey conducted by the Ministry of Health of the Republic of Indonesia, WHO, NITAG, and UNICEF (2020) reported that 27.6 percent stated doubts about the COVID-19 vaccine. The report also states that the results should be interpreted with caution because people might have varying levels of confidence in the COVID-19 vaccine due to limited information about vaccine type, date of availability, and safety profile (The Ministry of Health, NITAG, UNICEF, & WHO, 2020).

Perceived barriers are the public's perception of the obstacles that will arise to do something, for example to get a vaccine. The results of this study also do not support the effect of perceived barriers on trust. This can be explained in that trust in the COVID-19 vaccine is the result of many factors that influence it, both internal (e.g., experiences, attitudes, etc.) and external (e.g., news from various media, interactions, social, etc.). In this study, perceived barriers relate to the possibility that a person will be exposed to other diseases when getting the vaccine, the service to get the vaccine is long, and the schedule of giving vaccines is not in accordance with the desired time. These may not be considered the main barriers to getting the vaccine, but they are important in relation to the health of the vaccine recipients themselves. In other words, a person who will get the vaccine must be in good health and not have health problems such as fever, have diseases related to the immune system, and so on. Not only that, false news about someone who is in their menstrual cycle cannot get the vaccine was also widely circulated in the community (Biananda, 2021; Pratiwi, 2021).

## Conclusion, Limitations, and Recommendation

The COVID-19 pandemic hit many countries around the world, including Indonesia. Many countries have been trying to speed up vaccination programs as an effort to reduce the transmission rate of COVID-19. Vaccination efforts in Indonesia also continue to be socialized and conducted in many cities in Indonesia. However, some people's hesitation to participate in the vaccination program prompted this research to be conducted. By using the stimulus-organism-response framework and integrating the Health Belief Model and Theory of Planned Behavior, this study predicts people's intentions to get the COVID-19 vaccine. The results showed that media exposure had a positive effect on perceived benefits, perceived barriers, and perceived behavioral control. Furthermore, perceived behavioral control and subjective norms also influence trust. The results also show that trust affects the intention to get the vaccine. However, there are two unsupported hypotheses, namely perceived benefits and perceived barriers that have no significant effect on trust.

The results of the research contribute to academics, especially in testing the integration of the Health Belief Model and Theory of Planned Behavior. Integration of theory is needed to use more appropriate and appropriate variables in predicting certain phenomena. The results of this study also provide input for policy makers that trust, and subjective norms are significant variables that directly affect a person's intention to get the COVID-19 vaccine. Thus, the Indonesian government needs to continue to maintain public trust in government programs, especially those related to mass COVID-19 vaccinations. Not only that, the role of many parties such as religious leaders, politicians, and many other parties (representing subjective norms) is needed to influence the acceptance of the COVID-19 vaccine for all Indonesian citizens. The results of this study also provide an overview for the public regarding the relevant factors that can predict the acceptance of the COVID-19 vaccine.

The research cannot be separated from several research limitations. First, this study is a cross-sectional study, which was only conducted at one time. Thus, the results of this study only describe the phenomenon at the time this research was conducted. In addition, this study uses a non-probability sampling design, so the results of this study cannot be generalized.

This study provides recommendations for further research. The first recommendation is that further research can reuse this research model both in the context of

Indonesia or other countries to see if there are similarities or differences in the results, then the comparison of the results of this study and further research can provide insight for knowledge. The second recommendation is that further research can also compare intentions for vaccines by using age groups determined by the Indonesian government (age groups 12–17, 18–59, and 60 years and over).

## Conflict of Interest

The author declares that there is no conflict of interest.

## References


Alarcon, G. M., Lyons, J. B., Christensen, J. C., Klosterman, S. L., Bowers, M. A., Ryan, T. J., …Wynne, K. T. (2018). The effect of propensity to trust and perceptions of trustworthiness on trust behaviorsi in Dyads. *Behavior Research Methods*, *50*, 1906–1920. https://doi.org/10.3758/s13428-017-0959-6

Agung, C., Loasari, F., Vinsensius, V., & Sihombing, S. O. (2021). Testing extended theory of planned behavior in predicting entrepreneurship intention: An empirical study. *Riset*, *3*(1), 433–448. https://doi.org/10.35212/riset.v3i1.78

Ajzen, I. (2006). *Constructing a theory of planned behavior questionnaire*. http://people.umass.edu/~aizen/pdf/tpb.measurement.pdf

Anderson, J. C. & Gerbing, D. W. (1988). Structural Equation Modeling in practice: A review and recommended two-step approach. *Psychological Bulletin, 103*(3), 411–423. https://doi.org/10.1037/0033-2909.103.3.411

Anugerah, P. (2021, February 23). *COVID-19: Dua survei menyebut banyak anak muda menolak vaksin, bagaimana meyakinkan mereka?* [Two surveys say many young people refuse vaccines, how to convince them?]. https://www.bbc.com/indonesia/indonesia-56150289

Bagozzi, R. P., and Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science*, *16*(1), 74–94. https://doi.org/10.1007/BF02723327

BBC News Indonesia (2021). *Vaksin: Kelompok usia 18–59 tahun didahulukan, bagaimana dengan lansia?* [Vaccines: 18–59 year olds come first, what about the elderly?]. https://www.bbc.com/indonesia/indonesia-55501864

Biananda, B. (2021). *Dapat suntikan vaksin COVID-19 saat menstruasi, amankah?* [Getting a COVID-19 vaccine during menstruation, is it safe??]. https://kesehatan.kontan.co.id/news/dapat-suntikan-vaksin-covid-19-saat-menstruasi-amankah

Birkenmeier, B.J., & Sanséau, P. (2016). The relationships between perceptions of supervisor, trust in supervisor and job performance: A study in the banking industry. *The Journal of Applied Business Research*, *32*(1), 161–172. https://doi.org/10.19030/jabr.v32i1.9530

Carpenter, T., & Reimers, J. (2005). Unethical and fraudulent financial reporting: Applying the theory of planned behavior. *Journal of Business Ethics*, *60*(2), 115–129. http://www.jstor.org/stable/25075254

Chen, M., Wang, R., Schneider, J. K., Tsai, C., Jiang, D. D., Hung, M. & Lin, L. (2011). Using the health belief model to understand caregiver factors influencing childhood influenza vaccinations. *Journal of Community Health Nursing*, *28*(1), 29–40. https://doi.org/10.1080/07370016.2011.539087

Cheng, P., & Chu, M. (2014). Behavioral factors affecting students' intentions to enroll in business ethics courses: A comparison of the theory of planned behavior and social cognitive theory using self-identity as a moderator. *Journal of Business Ethics*, *124*(1), 35–46. http://www.jstor.org/stable/24033213

Cheney, M. K., & John, R. (2013). Underutilization of influenza vaccine: A test of the health belief model. *Sage Open*, *3*(2), 1–12. https://doi.org/10.1177/2158244013484732

CNBC Indonesia (2021). *Ini 4 tahap & timeline prioritas penerima vaksin COVID-19 RI* [These are the 4 stages & timeline of priorities for RI COVID-19 vaccine recipients]. https://www.cnbcindonesia.com/news/20210104120914-4-213281/ini-4-tahap-timeline-prioritas-penerima-vaksin-covid-19-ri

Cordano, M., & Frieze, I. (2000). Pollution reduction preferences of U.S. environmental managers: Applying Ajzen's theory of planned behavior. *The Academy of Management Journal*, *43*(4), 627–641. https://doi.org/10.2307/1556358

Turnip, I.R.S. (2021). Kehalalan vaksin COVID-19 produksi Sinovac dalam fatwa MUI dan implementasi vaksinasinya pada tenaga kesehatan di puskesmas Tanjung Morawa, Deli Serdang (Perspektif Qawaidh Fiqhiyyah). *Al-Mashlahah: Jurnal Hukum Islam dan Pranata Sosial Islam*, *9*(01), 59–83. https://doi.org/10.30868/am.v9i01.1250

The Ministry of Health, NITAG, UNICEF, & WHO. (2020). *COVID-19 vaccine acceptance survey in Indonesia*. https://covid19.go.id/storage/app/media/Hasil%20Kajian/2020/November/vaccine-acceptance-survey-en-12-11-2020final.pdf

Dewi, R. P. L., & Ketut, R. (2020). The role of trust in mediating the effect of perceived risk and subjective norm on continuous usage intention on Gopay users in Denpasar. *Russian Journal of Agricultural and Socio-Economic Sciences*, *12*(108), 69–80. https://doi.org/10.18551/rjoas.2020-12.09

Fall, E., Izaute, M., & Chakroun-Baggioni, N. (2018). How can the health belief model and self-determination theory predict both influenza vaccination and vaccination intention? A longitudinal study among university students. *Psychology & health*, *33*(6), 746–764. https://doi.org/10.1080/08870446.2017.1401623

Fang, Y., Qureshi, I., Sun, H., McCole, P., Ramsey, E., & Lim, K. H. (2014). Trust, satisfaction and online repurchase intention: The moderating role of perceived effectiveness of E-commerce institutional mechanisms. *MIS Quarterly*, *38*(2), 407–427. https://doi.org/10.25300/MISQ/2014/38.2.04

Foltz, C. B., Newkirk, H. E., & Schwager, P. H. (2016). An empirical investigation of factors that influence individual behavior toward changing social networking security settings. *Journal of theoretical and applied electronic commerce research*, *11*(2), 1–15. https://doi.org/10.4067/S0718-18762016000200002

Fukukawa, K., & Ennew, C. (2010). What we believe is not always what we do: An empirical investigation into ethically questionable behavior in consumption. *Journal of Business Ethics*, 91, 49–60. http://www.jstor.org/stable/40929028

Garfin, D. R., Silver, R. C., & Holman, E. A. (2020). The novel coronavirus (COVID-2019) outbreak: Amplification of public health consequences by media exposure. *Health Psychology*, *39*(5), 355–357. https://doi.org/10.1037/hea0000875

Gefen, D., Karahanna, E., & Straub, D. W. (2003). Trust and TAM in online shopping: An integrated model. *MIS Quarterly*, 27(1), 51–90. https://doi.org/10.2307/30036519

Gong, Z., Han, Z., Li, X., Yu, C. & Reinhardt, J. D. (2019). Factors influencing the adoption of online health consultation services: The role of subjective norm, trust, perceived benefit, and offline habit. *Frontiers in Public Health*, *7*, 286. https://www.frontiersin.org/article/10.3389/fpubh.2019.00286

Goruntla, N., Chintamani, S. H., Bhanu, P., Samyuktha, S., Veerabhadrappa, K. V., Bhupalam, P., & Ramaiah, J. D. (2021). Predictors of acceptance and willingness to pay for the COVID-19 vaccine in the general public of India: A health belief model approach. *Asian Pacific Journal of Tropical Medicine*, *14(*4), 165–175. https://doi.org/10.4103/1995-7645.312512

Hair, J. F., Babin, B. J., & Krey, N. (2017): Covariance-based structural equation modeling in the journal of advertising: Review and recommendations. *Journal of Advertising*, *46*(1), 163–177. https://doi.org/10.1080/00913367.2017.1281777

Hahs-Vaughn, D. L. (2017). *Applied multivariate statistical concepts*. Routledge.

Hair, J., Black, B., Babin, B., & Anderson, R. (2019). *Multivariate data analysis* (8th ed.). Cengage.

Handayani, Y. C., & Prajogo, W. (2020). Gender as a moderator in the relationship between entrepreneurial media expose, ATB, SN, perceived behavioral control, and entrepreneurial. *International Journal of Innovation, Creativity and Change*, *12*(5), 226–237. http://repository.stieykpn.ac.id/867/

Hill, C. R., & Hughes, J. N. (2007). An examination of the convergent and discriminant validity of the strengths and difficulties questionnaire. *School Psychology Quarterly*, *22*(3), 380–406. https://doi.org/10.1037/1045-3830.22.3.380

Ilouga, S., Mouloungni, A., & Sahut, J. (2014). Entrepreneurial intention and career choices: The role of volition. *Small Business Economics*, *42*(4), 717–728. http://www.jstor.org/stable/43552957

Jacoby, J. (2002). Stimulus-organism-response reconsidered: An evolutionary step in modeling (consumer) behavior. *Journal of Consumer Psychology*, *12*(1), 51–57. https://doi.org/10.1207/S15327663JCP1201_05

Jones, C. L., Jensen, J. D., Scherr, C. L., Brown, N. R., Christy, K., & Weaver, J. (2015). The health belief model as an explanatory framework in communication research: Exploring parallel, serial, and moderated mediation. *Health communication*, *30*(6), 566–576. https://doi.org/10.1080/10410236.2013.873363

Kang, J., & Hustvedt, G. (2014). Building trust between consumers and corporations: The role of consumer perceptions of transparency and social responsibility. *Journal of Business Ethics*, *125*(2), 253–265. https://doi.org/10.1007/s10551-013-1916-7

Latkin, C. A., Dayton, L., Yi, G., Konstantopoulos, A., & Boodram, B. (2021). Trust in a COVID-19 vaccine in the U.S.: A social-ecological perspective. *Social science & medicine (1982)*, *270*, 113684. https://doi.org/10.1016/j.socscimed.2021.113684

Lee, K. (2011). Understanding Hong Kong adolescents' environmental intention: The roles of media exposure, subjective norm, and perceived behavioral control. *Applied Environmental Education & Communication*, *10*(2), 116–125. https://doi.org/10.1080/1533015X.2011.575733

Li, X. (2018). Media exposure, perceived efficacy, and protective behaviors in a public health emergency. *International Journal of Communication*, *12*, 2641–2660. http://ijoc.org/index.php/ijoc/article/view/8118

Librianty, A. (2021). *Setahun Corona Covid-19, begini kondisi ekonomi Indonesia* [A year of Corona Covid-19, this is Indonesia's economic condition]. https://www.liputan6.com/bisnis/read/4496337/setahun-corona-covid-19-begini-kondisi-ekonomi-indonesia

Liu, C. & Liu, Y. (2020). Media exposure and anxiety during COVID-19: The mediation effect of media vicarious traumatization. *International Journal of Environmental Research and Public Health*, *17*(13), 4720. https://doi.org/10.3390/ijerph17134720

Liu, Y., Gan, Y., Song, Y. & Liu, J, (2021). What influences the perceived trust of a voice-enabled smart home system: An empirical study (2021). *Sensors*, *21*(6), 2037. https://doi.org/10.3390/s21062037

Liu, L., Xie, J., Li, K., & Ji, S. (2020). Exploring how media influence preventive behavior and excessive preventive intention during the COVID-19 pandemic in China. *International Journal of Environmental Research and Public Health*, *17*(21), 7990. http://dx.doi.org/10.3390/ijerph17217990

Liu, Y., Cui, F., Su, X., & Du, X. (2019). How social support motivates trust and purchase intentions in mobile social commerce. *Review of Business Management, 21*(4), 839–860. https://doi.org/10.7819/rbgn.v21i5.4025

MacDonald, N. E., & SAGE Working Group on Vaccine Hesitancy. (2015). Vaccine hesitancy: Definition, scope, and determinants. *Vaccine*, *33*(34), 4161–4164. https://doi.org/10.1016/j.vaccine.2015.04.036

Maiman, L. A., & Becker, M. H. (1974). The health belief model: Origins and correlates in psychological theory. *Health Education Monographs*, *2*(4), 336–353. https://doi.org/10.1177/109019817400200404

Mayer, R. C., Davis, J. H., & Schoorman, F. D. (1995). An integrative model of organizational trust. *Academy of Management Review*, *20*(3), 709–734. https://doi.org/10.2307/258792

Nuttavuthisit, K., & Thøgersen, J. (2017). The importance of consumer trust for the emergence of a market for green products: The case of organic food. *Journal of Business Ethics*, *140*(2), 323–337. http://www.jstor.org/stable/44164265

Obschonka, M., Silbereisen, R., Cantner, U., & Goethner, M. (2015). Entrepreneurial self-identity: Predictors and effects within the theory of planned behavior framework. *Journal of Business and Psychology*, *30*(4), 773–794. http://www.jstor.org/stable/24634429

Paul, J., Modi, A., & Patel, J. (2016). Predicting green product consumption using theory of planned behavior and reasoned action. *Journal of retailing and consumer services*, *29*, 123–134. https://doi.org/10.1016/j.jretconser.2015.11.006

Prasasti, G.D. (2021). *Survei dari Lapor COVID dapati 3 kekhawatiran warga DKI Jakarta terkait vaksin COVID-19* [The survey from Lapor COVID found 3 concerns of DKI Jakarta residents regarding the COVID-19 vaccine]. https://www.liputan6.com/health/read/4581159/survei-dari-lapor-covid-dapati-3-kekhawatiran-warga-dki-jakarta-terkait-vaksin-covid-19

Pratiwi, R.S. (2021). *Bagaimana efek vaksin COVID-19 pada siklus menstruasi?* [How does the COVID-19 vaccine effect the menstrual cycle?]. https://lifestyle.kompas.com/read/2021/06/21/162523920/bagaimana-efek-vaksin-covid-19-pada-siklus-menstruasi?page=all

Putri, A. W. (2021). *Konten antivaksin bisa hambat vaksinasi COVID-19 di Indonesia* [Anti-vaccine content can inhibit COVID-19 vaccination in Indonesia]. https://tirto.id/konten-antivaksin-bisa-hambat-vaksinasi-covid-19-di-indonesia-f9C3

Rauch, A., & Hulsink, W. (2015). Putting entrepreneurship education where the intention to act lies: An investigation into the impact of entrepreneurship education on entrepreneurial behavior. *Academy of Management Learning & Education*, *14*(2), 187–204. http://www.jstor.org/stable/43697261

Richter, N. F., Sinkovicx, R. R., Ringle, C. M., & Schlagel, C. (2016). A critical look at the use of SEM in international business research. *International Marketing Review*, *33*(3), 376–404. https://doi.org/10.1108/IMR-04-2014-0418

Rivas, D. R. Z., Jaldin, M. L. L., Canavin, B. N., Escalante, L. F. P., Fernandez, A. M. C. A., & Ticona, J. P. A. (2021). Social media exposure, risk perception, preventive behaviors and attitudes during the COVID-19 epidemic in La Paz, Bolivia: A cross sectional study. *PLoS ONE*, *16*(1), e0245859. https://doi.org/10.1371/journal.pone.0245859

Shahriar, A. (2014). A model of factors affecting foreign brand trust. *Journal of Competitiveness*, *6*(3), 20–31. https://doi.org/10.7441/joc.2014.03.02

Sihombing, S. O., & Handoko, L. (2021). Extending the theory of planned behavior in predicting intention of international entrepreneurship: An empirical study in Indonesia. In H. D. Mulyaningsih (Eds.), *Proceedings of the 2nd International Conference on Inclusive Business in the Changing World (ICIB 2019)* (pp. 297–303), Jakarta, Indonesia. https://doi.org/10.5220/0008430502970303

Sihombing, S. O., & Pramono, R. (2021). The integration of social media to the Theory of Planned Behavior: A case study in Indonesia. *The Journal of Asian Finance, Economics and Business*, *8*(5), 445–454. https://doi.org/10.13106/jafeb.2021.vol8.no5.0445

Tim Merdeka (2021, August 14). *Survei Charta Politika: 72, 4% masyarakat bersedia menerima vaksinasi COVID-19* [Charta political survey: 72.4% of the public are willing to receive the Covid-19 vaccination]. https://www.merdeka.com/peristiwa/survei-charta-politika-724-masyarakat-bersedia-menerima-vaksinasi-covid-19.html

Tsui, H.Y., Lau, J.T.F., Lin, C. & Choi, K.C. (2013). Prevalence of seasonal influenza vaccination and associated factors in people with chronic diseases in Hong Kong. *Epidemiology and Infection*, *141*(2), 377–389. https://www.jstor.org/stable/23360683

Widadio, N.A. (2021). *Survei: Hanya 46% penduduk Indonesia yang bersedia divaksin COVID-19* [Survey: Only 46% of Indonesians are willing to be vaccinated against COVID-19]. https://www.aa.com.tr/id/nasional/survei-hanya-46-penduduk-indonesia-yang-bersedia-divaksin-covid-19/2184983

Vergara, R., Sarmiento, P., & Lagman, J. (2021). Building public trust: A response to COVID-19 vaccine hesitancy predicament. *Journal of public health (Oxford, England)*, *43*(2), e291–e292. https://doi.org/10.1093/pubmed/fdaa282

Yip, B. & Perasso, V. (2021). *Asal COVID-19: Apakah kita perlu tahu dari mana asal virus Corona ini?* [Origin of COVID-19: Do we need to know where did this Corona virus come from?]. https://www.bbc.com/indonesia/dunia-57590872

Fang, Y., Qureshi, I., Sun, H., McCole, P., Ramsey, E., & Lim, K. H. (2014). Trust, satisfaction, and online repurchase intention: The moderating role of perceived effectiveness of E-commerce Institutional mechanisms. *MIS Quarterly*, *38*(2), 407–428. https://doi.org/10.25300/MISQ/2014/38.2.04

Zahid, H., & Din, B. H. (2019). Determinants of intention to adopt E-government services in Pakistan: An imperative for sustainable development. *Resources*, *8*(3), 128. http://dx.doi.org/10.3390/resources8030128

## Appendix

**Appendix 1** List of adapted items

| Code | Item |
|---|---|
| ME1 | I read a lot of information related to COVID-19 on my social media. |
| ME2 | I use various media sources (television, radio, internet, etc.) to view/read news about COVID-19. |
| ME3 | I pay attention to information related to the prevention of COVID-19 infection. |
| SN1 | My parents agreed that I should get the COVID-19 vaccine immediately. |
| SN2 | My friends support me to get the COVID-19 vaccine soon. |
| SN3 | People who are important to me think that getting the COVID-19 vaccine is a good thing. |
| PBF1 | Getting the COVID-19 vaccine is a wise thing to do. |
| PBF2 | I will get the COVID-19 vaccine to prevent the spread of the disease to people close to me. |
| PBF3 | I will get the COVID-19 vaccine to stay healthy. |
| PBR1 | Getting the COVID-19 vaccine exposed me to other unnecessary health risks. |
| PBR2 | It is not easy to get the COVID-19 vaccine at the time I want it. |
| PBC1 | I am sure I will get a COVID-19 vaccine soon. |
| PBC2 | I have good health as a condition to get the COVID-19 vaccine. |
| PBC3 | I have information about the COVID-19 vaccine that supports my decision to get the vaccine. |
| Trust1 | Based on the information I got, the COVID-19 vaccine prepared by the government can be trusted. |
| Trust2 | I believe that the COVID-19 vaccine prepared by the government is of excellent quality. |
| Trust3 | In general, I have confidence in the government working to prepare vaccines for all levels of society. |
| Int1 | I intend to get a COVID-19 vaccine in the next few months. |
| Int2 | Given the opportunity, I intend to get a COVID-19 vaccine. |
| Int3 | Chances are I will get a COVID-19 vaccine in the next few months. |