COVID-19 Vaccination Intention in Indonesia: A Comprehensive Conceptual Model

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Abstract

This paper proposes a conceptual model that explains the determinants of vaccination intention. The conceptual model is developed based on the integration of Protection Motivation Theory (PMT), Theory of Planned Behavior (TPB), Conspiracy Theory (CT), Knowledge, Attitude/Beliefs, Practice Theory (KABP), Extended Parallel Process Model (EPPM) and Health Belief Model (HBM). This study consisted of five steps: literature review, gap-analysis, formulation of the conceptual model, expert validation, and pilot test of the model. This paper offers twenty-one propositions explaining the relationship between vaccination intention and the thirteen-predictor variables. The pilot test found sixty-seven indicators are valid and fourteen variables are reliable. This finding can be used as an initial overview before applying the proposed conceptual model on a larger scale in the Indonesian context.

Keywords
Vaccination, Intention, COVID-19, Conceptual Model, Pilot Test

1. Introduction
COVID-19 has killed more than 5,9 million people worldwide (WHO, 2022). Economic growth declined drastically (8%), and the unemployment rate increased by 3.22% (WorldBank, 2021). Schools were forced to close, and online teaching and learning process activities were conducted (UNESCO, 2021). This condition causes psychological problems, such as depression, poor concentration, and difficulty interacting to obtain proper learning (Selvaraj et al., 2021). Then the impact on the social sector, namely: domestic violence, increased anxiety, and the emergence of fear in the community (de Figueiredo et al., 2021). Those conditions similarly happen in the Indonesian context.

The Indonesian government carried out a vaccination program to overcome this problem. In the process, two problems arise—firstly, the problem of the COVID-19 virus variant and the type of vaccine. Recently, two doses of vaccines have been considered less effective for the Omicron; the latest COVID-19 variant and booster vaccination program was carried out (Covid-19 task force, 2021). Secondly, some people refuse to get vaccinated (Mesa-vieira et al., 2021). The survey results show that the level of acceptance of the Indonesian people towards vaccination remains low (64.8%); the remaining 27.6% hesitated to accept or refuse vaccination, and 7.6% refused to be vaccinated (Ministry of Health, 2021). The main reasons for these refusals include vaccine safety, effectiveness, fear of side effects, and

religious beliefs (Ministry of Health, 2021). Other reasons were norms, belief in conspiracy theories, hoaxes and spreading fear, and trust issues (Ministry of Health, 2021; Wirawan et al., 2021; Harapan et al., 2020). Public doubt or rejection is one of ten health risks that damage vaccination programs globally (Mir et al., 2021). Therefore, it is crucial to understand the elements and models that influence vaccination intentions.

Vaccination intention is an important topic in health behavior. During this pandemic, vaccination intention has received enough attention from the researcher. Many researchers have attempted to discuss factors that influence vaccination intention (Scrima et al., 2022; Anshari-Moghaddam et al., 2021; Wirawan et al., 2021; Mir et al., 2021; Chu and Liu, 2021; Burke et al., 2021; Đorđević et al., 2021; Hughes and Machan, 2021; Jin et al., 2021; Ruiz and Bell, 2021; Ogilvie et al., 2021; Handebo et al., 2021; Li et al., 2021; Shmueli, 2021). However, it has not comprehensively discussed the potential for integrating various behavioral theories, health behavior models, and other theories that accommodate problems according to unique contexts such as Indonesia. No research has been found for the Indonesian context that models the vaccination behavior of its people by integrating several behavioral models and other theories. The paper aims to propose a conceptual model to explain vaccination intention. Moreover, this conceptual model was developed by Protection Motivation Theory (PMT), Theory of Planned Behavior (TPB), Conspiracy Theory (CT), Knowledge, Attitude/Beliefs, Practice Theory (KABP), Extended Parallel Process Model (EPPM), and Health Belief Model (HBM).

2. Literature Review

2.1 Protection Motivation Theory (PMT)

Protection Motivation Theory (PMT) is a behavior theory that attempts to explain the impact of fear on behavior change (Rogers, 1975). Rogers (1975) proposed the magnitude of noxiousness, probability of occurrence, and the efficacy of a protective response as the three critical elements of a fear appeal. The PMT had two constructs: threat appraisal and coping appraisal, which lead to the intention of the goal (Rogers, 1975). Each construct had two variables: perceived severity and perceived susceptibility (threat appraisal) and perceived response efficacy and perceived self-efficacy (copying appraisal) (Rogers, 1975). Those variables influence the change in someone's behavior intention (Rogers, 1975).

2.2 Theory of Planned Behavior (TPB)

TPB is an improvement of Theory Reasoned Action (TRA), which has a flaw in dealing with activities over which persons have only partial volitional control by adding perceived behavior control into TRA as a third construct (Ajzen, 1991). The construct emphasizes the self-confidence of someone controlling his/her behavior due to his/her capabilities and resources (Ajzen, 1991). The original construct of TRA: attitude and subjective norm, are still used in TPB. Those variables assumed positively affect the behavior intention; the more positive attitude, subjective norm, and perceived behavioral control, the stronger someone's intention to perform a specific behavior (Ajzen, 1991).

2.3 Conspiracy Theory (CT)

CT as "attempts to explain the ultimate causes of significant social and political events and circumstances with claims of secret plots by two or more powerful actors" (Douglas, 2019). CT was usually associated with extraordinary events such as war, terrorism, genocide, or a pandemic (Silverstein, 2000; Goertzel, 2010; Douglas, 2021). Several conspiracy beliefs during the pandemic emerged, such as people believing that COVID-19 is a hoax (Ullah et al. 2021); the pandemic was planned by pharmaceutical corporations and government agencies (Allington et al. 2020); dan vaccination is an attempt to control the population by implanting microchips in the body of people (Jin et al., 2021). Specific conspiracy beliefs on vaccination are called vaccine conspiracy beliefs (Milošević Đorđević et al., 2021).

2.4 Knowledge, Attitude/Beliefs, Practice Theory (KAP)

KAP is a theory about health behavior with three successive processes: knowledge acquisition, attitude generation, and behavior formation (Kim et al., 1969). In KAP, knowledge acts as the foundation, while belief and attitude act as stimulators of behavior change (Fan et al., 2018; Wen et al., 2021). KAP survey was widely used in the health sector because it is considered simple and straightforward (Andrade et al., 2020). KAP was used to obtain the knowledge, beliefs, and practices of the population targeted in the survey (Andrade et al., 2020). Several studies used KAP (Wen, 2021; Fan et al., 2018).

2.5 Extended Parallel Process Model (EPPM)

EPPM is a theory about fear appeals initiated by Witte (1992). EPPM integrated the previous approach of danger control/fear control framework proposed (Witte, 1992). Witte (1992) proposed three ways or approaches: (a) explaining why fear appeals fail, (b) re-incorporating fear as a central variable, and (c) specifying the relationship between threat and efficacy in proportional forms. EPPM integrated the parallel process model (Beck and Frankel, 1981) and the left off PMT (Rogers, 1975). There are four constructs in EPPM, namely perceived self-efficacy, response efficacy, perceived susceptibility, and perceived severity (Witte, 1992). Witte (1992) claimed that the constructs affect attitude, intention, or behavior change.

2.6 Health Belief Model (HBM)

HBM is a model that attempts to explain health behavior (Rosenstock, 1974). Health behavior is defined as "any activity undertaken by a person believing himself to be healthy, to prevent disease or detect it in an asymptomatic stage" (Kasl and Cobb, 1966). The model explained how people decide the term of their health. HBM is often used to research how people use health services (Rosenstock, 1974). The model has four constructs: perceived susceptibility, perceived severity, perceived benefits, and perceived barriers **(**Kirscht, 1966). Those constructs are deemed to affect someone's health behavior (Luger, 2013).

3. Methods

The research methodology consists of five steps: literature review, gap-analysis, model conceptual formulation, expert validation for model finalization, and pilot test. The first step is a systematic literature review about vaccination intention in several large databases such as Scopus, ScienceDirect, Emerald Insight, Taylor and Francis, and Google Scholar. The search yielded forty-one research articles on vaccination behavior. The second step, gap analysis, was conducted to identify and determine research gaps related to vaccination intention. The third step is formulating a conceptual model conceptual of vaccination intention. The fourth step is expert validation to gain an academic assessment of the conceptual model and finalize the conceptual model. The last step is a pilot test used to evaluate the feasibility of the proposed model before it is used on a larger research scale (validity and reliability analysis).

4. The Proposed Conceptual Model and Propositions

The literature review results showed that the research distribution based on behavioral theories and models could be seen in Figures 1 and 2. Based on the literature review and analysis, we used five theories and the health belief model to propose the conceptual model of vaccination intention (Figure 3). The proposed model was validated by two experts on consumer behavior and health behavior using an elicitation questionnaire. The twenty-one propositions, 13 dependent variables, one independent variable, and 81 indicators were approved. The following sub-sections will describe the explanation of the constructs involved in the model and the argument of every construct relationship in the model.

4.1 Vaccination Intention (INT)

Intention can be defined as "indications of how hard people are willing to try of how much effort they are planning to exert, performing the behavior" (Ajzen, 1991). This construct captured the motivational factors influencing behavior (Ajzen, 1991). In the vaccination context, the intention is defined as "a person's readiness to receive the COVID-19 vaccine" (Handebo et al., 2021). Ajzen (1991) stated the general rule of intention: the stronger the desire to engage in a behavior, the more likely it will be carried out. INT has seven indicators (INT1 to INT7) refers to Mir et al. (2021) and Chu and Liu (2021).

4.2 Perceived Self-Efficacy (PSE)

Bandura (1997) defined PSE as "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments." Therefore, the emphasis of this construct is on the ability to perform the behavior. PMT viewed that PSE positively influenced the intention (Rogers, 1983). Maddux and Rogers (1983) specifically stated that self-efficacy directly affected intention. Some empirical studies have confirmed the positive impact of PSE on intention, such as Jin et al. (2021), Chu and Liu (2021), and Myers and Goodwin (2011). Thus, our conceptual model proposed that PSE positively influences vaccination intention. Four indicators measure PSE (PSE1 to PSE4) refers to Chu and Liu (2021), Jin et al. (2021), and Myers and Goodwin (2011).

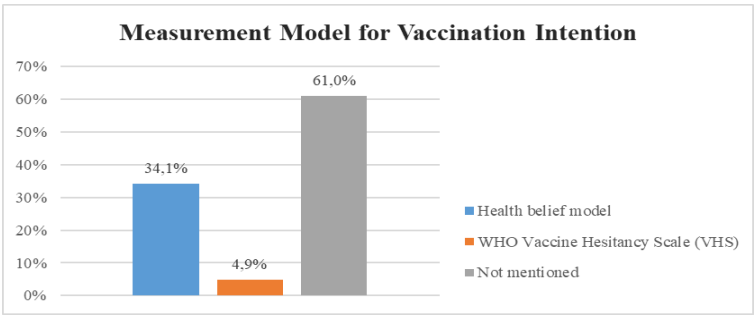

Figure 1. Existing Theories for Vaccination Intention Appeared in the Literature under Study

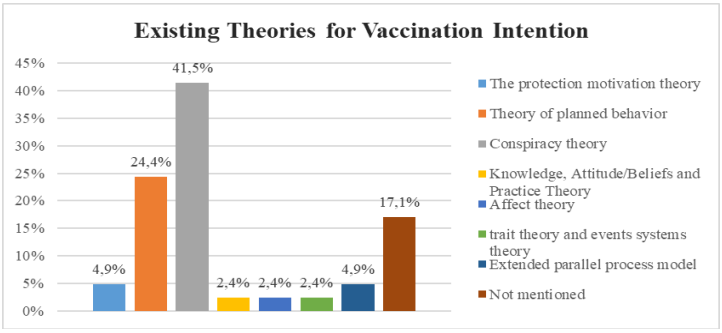

Figure 2. Measurement Model for Vaccination Intention Appeared in the Literature under Study

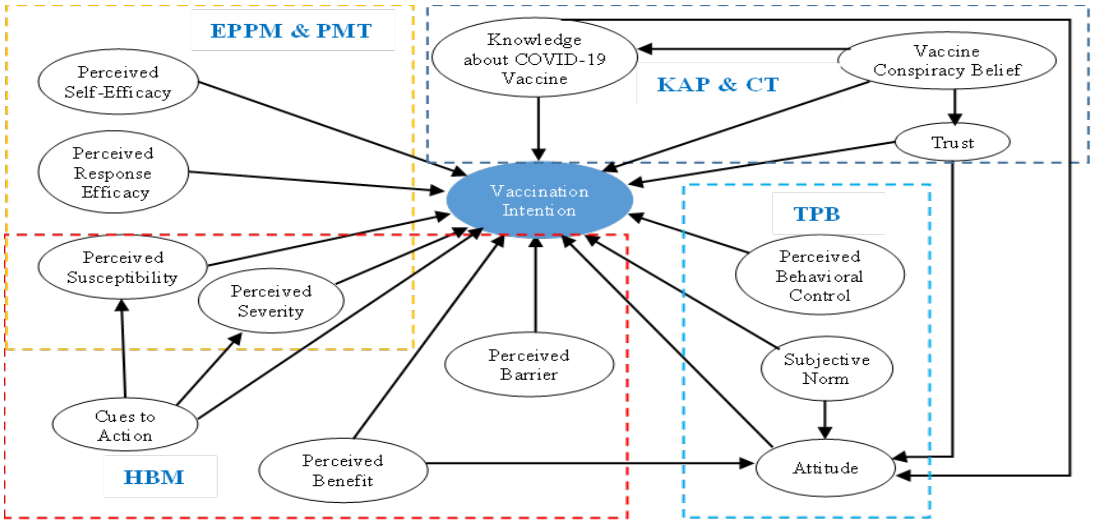

Figure 3. The proposed conceptual model of vaccination intention

4.3 Perceived Response Efficacy (PRE)

Luo et al. (2021) defined PRE as "[someone's] perception of the effectiveness of certain protective behaviors." PRE is one of the constructs in PMT that takes part as an element of coping appraisal (Rogers, 1975). Milne et al. (2000) found that the coping appraisal component was a valid predictor of health-related intention and behavior. The construct describes one's expectations of the effectiveness of the recommended behavior in eliminating threats (Rogers 1975; Rogers 1983). Some empirical studies have confirmed the positive impact of PRE on intention (Anshari-Moghaddam

et al., 2021; Li et al., 2021). Thus, our conceptual model proposed that PRE positively influences vaccination intention. PRE is measured by five indicators (PRE1 to PRE5) refers to Anshari-Moghadam et al. (2021) and Ling et al. (2019).

4.4 Perceived Susceptibility (PS)

Rosenstock (1974) defined perceived susceptibility as "[subjective perception or] subjective risks of contracting a condition." The combination of PS with other constructs (e.g., perceived severity can encourage someone to act or perform a behavior (Rosenstock, 1974). Some empirical studies have confirmed the positive impact of PS on intention (Handebo et al., 2021; Guidry et al., 2021). Thus, our conceptual model proposed that PS positively influences vaccination intention. PS has five indicators (PS1 to PS5) refers to Anshari-Moghadam et al. (2021), Chu and Liu (2021), Coe et al. (2021), Shmueli (2021), Wong et al. (2021), Myers and Goodwin (2011), Kabir et al. (2021), and Walker et al. (2021).

4.5 Perceived Severity (PSV)

PSV was defined as the magnitude of the significance of someone's belief on the seriousness of contracting something (e.g., disease) (Handebo et al., 2021; Sukeri et al., 2020). It can be assessed by the degree of excitement formed based on the results of a person's thinking about a disease or difficulty that he believes is a health condition given to him/her (Rosenstock, 1974). Shmueli (2021) described PSV as a predictor of intention. The stronger PSV, the stronger of intention (Shmueli, 2021). Some empirical studies have confirmed the positive impact of PSV on intention (Anshari-Moghaddam et al., 2021; Ruiz and Bell, 2021; Guidry et al., 2021; Shmueli, 2021). Thus, our conceptual model proposed that PSV positively influences vaccination intention. PSV is measured by five indicators (PSV1 to PSV5) refers to Wong et al. (2021), Chu and Liu (2021), Myers and Goodwin (2011), Kabir et al. (2021), Walker et al. (2021), and Anshari-Moghadam et al. (2021).

4.6 Cues to Action (CTA)

CTA is the inducement needed to trigger someone to accept recommended behavior (Handebo et al., 2021). Meillier et al. (1997) stated that CTA presumably arises from social influence, experiences, or fundamental alterations in the possibilities of change. The influence level of CTA on behavior, according to Rosenstock (1974), was varied depending on susceptibility and severity level. Some empirical studies have confirmed the positive impact of CTA on intention (Handebo et al., 2021; Walker et al., 2021). Then, according to Chu and Liu (2021), CTA was confirmed, affecting PS dan PSV. According to those explanations, we propose that CTA positively influences INT, PS, and PSV. CTA has two indicators (CTA1 to CTA2) refers to Kabir et al. (2021), Wong et al. (2021), Walker et al. (2021), and Shmuli et al. (2021)

4.7 Perceived Benefit (PBN)

PBN can be viewed as someone's belief that an action will mitigate or prevent from adverse consequences of a threat (e.g., disease) (Lee et al., 2020). The stronger PBN, the lower the perceived risk (Alhakamil and Slovic, 1994). Some empirical studies confirmed the positive impact of PBN on intention (Chu and Liu, 2021; Handebo et al., 2021; Walker et al., 2021). Then, according to Mir et al. (2021) and Handebo et al. (2021), PBN was proven to affect the attitude. According to those explanations, we propose two hypothetical relationships: PBN positively influences vaccination intention and attitude. PBN is measured by eight indicators (PBN1 to PBN8) refers to Mir et al. (2021), Walker et al. (2021), Kabir et al. (2021), Myers and Goodwin (2011), Chu and Liu (2021), Burke et al. (2021), Jin et al. (2021) and Shmueli (2021).

4.8 Perceived Barrier (PBR)

A simple definition of PBC can refer to the given definition by Handebo et al. (2021) as "a person's perception on the obstacles to receiving [something]." Lee et al. (2020) viewed PBC as a drawback or obstacle evaluation, including tangible or intangible of what someone would face when taking action. The previous explanation implies that PBR has a negative impact on someone's behavior. Some empirical studies stated that the higher the PBR, the weaker a person is in carrying out intention (Chu and Liu, 2021; Handebo et al., 2021; Guidry et al., 2021). Thus, our conceptual model proposed that PBR negatively influences vaccination intention. PBC has five indicators (PBC1 to PBC5) refers to Kabir et al. (2021), Wong et al. (2021), Walker et al. (2021), Myers and Goodwin (2011), Jin et al. (2021), Chu and Liu (2021), Coe et al. (2021), and Mir et al. (2021).

4.9 Attitude (ATT)

Fishben and Ajzen (1975) defined ATT as "learned predisposition to respond in a consistently favorable or unfavorable manner with respect to a given object." Then, Ajzen (1991) redefined attitude as "the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question," specifically for attitude toward the behavior. Fishbein and Ajzen (1975) stated that affective, cognitive, and belief are the component of attitude. In contrast, Asael (1995) stated that attitude elements were consumer beliefs, emotional responses, and expected behaviors. TPB considers attitude a positive determinant of intention (Ajzen, 1991). Several empirical studies have confirmed it (Ajzen, 1991; Mir et al., 2021; Chu and Liu, 2021; Guidry et al., 2021). Given this, our conceptual model proposed that attitude positively influences vaccination intention. ATT is measured by twelve indicators (ATT1 to ATT12) refers to Mir et al. (2021), Ogilvie et al. (2021), Guidry et al. (2021), and Chu and Liu (2021).

4.10 Subjective Norm (SN)

SN is a TPB construct that emphasizes the importance of social environment in determining whether or not to do specific behaviors (Ajzen, 1991). Amaro and Duarte (2015) stated that TPB viewed SN as a positive predictor of intention (Amaro dan Duarte, 2015). The more positive SN, the stronger intention (Ajzen, 1991). Some empirical studies have confirmed the relationship (Ajzen, 1991; Mir et al., 2021; Guidry et al., 2021). Then, according to Mir et al. (2021), SN was proven to affect attitude. Thus, our conceptual model proposed that subjective norm positively influences vaccination intention and attitude. SN has four indicators (SN1 to SN4) refers to Mir et al. (2021), Chu and Liu (2021), Myers and Goodwin (2011), and Shmueli (2021).

4.11 Perceived Behavioral Control (PBC)

Ajzen (1991) added perceived behavioral control as a construct into TRA. This construct helped explain the behavioral intention phenomenon of someone when someone has an ability, resources, or control over his/her behavior (Ajzen 1991). Ajzen (2002) divided this construct into two dimensions: self-efficacy and controllability (Ajzen, 2002). Based on TPB, PBC positively influences purchase intention (Ajzen, 1991). Some empirical studies revealed it (Amaro and Duarte, 2015; Ajzen, 1991). Hence, our conceptual model proposed that perceived behavioral control positively influences vaccination intention. PBC is measured by five indicators (PBC1 to PBC5) refers to Ogilivie et al. (2021), Shmueli (2021), and Myers and Gordwin (2011).

4.12 Trust (TR)

Roger et al. (1995) defined trust as "the willingness of a party [or someone] to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other part." Mayer et al. (1995) emphasized that trust is a person's desire to take risks. Trust plays a vital role in someone's decision-making (Majid and Ahmad, 2020) and reflects someone's positive attitude toward a product or something (Lii and Lee, 2012). Majid and Ahmad (2021) stated that some people receive vaccinations because of trust in the official government **(**Majid and Ahmad, 2020). Some empirical studies have confirmed the positive impact of TR on intention (Mir et al., 2021; Paredes et al., 2021) and attitude (Mir et al., 2021). Thus, our conceptual model proposed that trust positively influences vaccination intention and attitude. TR has eight indicators (TR1 to TR8) refers to Mir et al. (2021) and Burke et al. (2021).

4.13 Vaccination Conspiracy Belief (VCB)

Jolley and Douglas (2014) stated that conspiracy beliefs have a negative impact on health decisions such as vaccinations. Shapiro et al. (2016) emphasized that VCB is positively correlated with hesitancy to vaccination, lowering the vaccination intention. Some empirical studies have confirmed the effect (Milošević Đorđević et al., 2021; Scrima et al., 2022; Wirawan et al., 2021). Milošević Đorđević et al. (2021), Wirawan et al. (2021), and Jenning et al. (2021) emphasize that VCB is a strong predictor of trust. The stronger the VCB, the weaker the trust (Milošević Đorđević et al., 2021). Then, VCB is also considered to have a negative effect on knowledge about the COVID-19 vaccine (Milošević Đorđević et al., 2021). Thus, our conceptual model proposed that vaccine conspiracy beliefs negatively affect vaccination intention, trust, and knowledge about COVID-19 vaccine. VCB has four indicators (VCB1 to VCB4) refers to Burke et al. (2021); Milošević Đorđević et al. (2021), and Shapiro et al. (2016).

4.14 Knowledge about COVID-19 Vaccine (KN)

According to Handebo et al. (2021), knowledge about the COVID-19 vaccine can be defined as "participant's awareness about COVID-19 [vaccine]". The higher knowledge about COVID-19 vaccination was significantly associated with vaccination acceptance (Mohamed et al., 2021). Furthermore, some researchers have proved that KN

influences attitude (Reuben et al., 2021) and intention (Ruiz and Bell, 2021; Handebo et al., 2021). Hence, our conceptual model proposed that knowledge about COVID-19 vaccine positively influences vaccination intention and attitude. KN is measured by seven indicators (KN1 to KN7) refers to Mohamed et al. (2021) and Walker et al. (2021).

5. Result and Discussion

The pilot test was conducted based on the proposed model (figure 3) described previously in section 4. A self-administrated questionnaire was distributed among 30 samples consisting of 81 questions derived from indicators of each variable. The sample number refers to Keiser and Wassmer (1996), which stated that the minimum sample of the pilot test lies between 30 to 40. The sample was Indonesian people, 56.7% male, and 43.3% female, with various occupations such as student, labor, civil servant, lecturer, housewife, entrepreneur, and private sector employees. The range of sample age is between 13 to 64 years old so that it can represent various generations. The data were analyzed to evaluate the validity and reliability of pilot test data. Factor loading was used to evaluate indicator validity with a cut-off of 0.7 (Hair et al., 2017). Then, composite reliability (CR) and average variance extracted (AVE) were used to evaluate the construct validity and reliability. Variables were considered reliable if CR values > 0.70 and theAVE values > 0.5. (Hair et al., 2017). The result was showed in table 1.

Table 1. Validity and Reliability Analysis of Pilot Test

Variable	Indicator	Factor Loading	Validation	Initial Construct Validity and Reliability			Construct Validity and Reliability Improvement		
				CR	AVE	Reliability	CR	AVE	Reliability
PSE	PSE1	0,800	Valid	0.930	0.771	Reliable	0.930	0.771	Reliable
	PSE2	0,958	Valid						
	PSE3	0,962	Valid						
	PSE4	0,775	Valid						
PRE	PRE1	0,879	Valid	0.944	0.774	Reliable	0.944	0.774	Reliable
	PRE2	0,927	Valid						
	PRE3	0,933	Valid						
	PRE4	0,921	Valid						
	PRE5	0,720	Valid						
PS	PS1	0,801	Valid	0.927	0.719	Reliable	0.927	0.719	Reliable
	PS2	0,803	Valid						
	PS3	0,918	Valid						
	PS4	0,805	Valid						
	PS5	0,907	Valid						
PSV	PSV1	0,735	Valid	0.928	0.720	Reliable	0.928	0.720	Reliable
	PSV2	0,827	Valid						
	PSV3	0,885	Valid						
PSV	PSV4	0,882	Valid	0.928	0.720	Reliable	0.928	0.720	Reliable
	PSV5	0,906	Valid						
CTA	CTA1	0,998	Valid	0.705	0.583	Reliable	1	1	Reliable
	CTA2	0,413	Invalid						
PBN	PBN1	0,966	Valid	0.975	0.831	Reliable	0.975	0.831	Reliable
	PBN2	0,969	Valid						
	PBN3	0,956	Valid						
	PBN4	0,901	Valid						
	PBN5	0,840	Valid						
	PBN6	0,968	Valid						
	PBN7	0,839	Valid						
	PBN8	0,838	Valid						
PBR	PBR1	0,242	Invalid	0.792	0.472	Unreliable	0.891	0.732	Reliable
	PBR2	0,398	Invalid						
	PBR3	0,772	Valid						
	PBR4	0,855	Valid						
	PBR5	0,903	Valid						
ATT	ATT1	0,658	Invalid	0.964	0.693	Reliable	0.966	0.719	Reliable
	ATT2	0,804	Valid						
	ATT3	0,796	Valid						
	ATT4	0,870	Valid						
	ATT5	0,889	Valid						

	ATT6	0,829	Valid						
	ATT7	0,788	Valid						
	ATT8	0,892	Valid						
	ATT9	0,860	Valid						
	ATT10	0,816	Valid						

Table 2. Validity and Reliability Analysis of Pilot Test

Variable	Indicator	Factor Loading	Validation	Initial Construct Validity and Reliability			Construct Validity and Reliability Improvement		
				CR	AVE	Reliability	CR	AVE	Reliability
ATT	ATT11	0,882	Valid	0.964	0.693	Reliable	0.966	0.719	Reliable
	ATT12	0,876	Valid						
SN	SN1	0,898	Valid	0.955	0.841	Reliable	0.955	0.841	Reliable
	SN2	0,940	Valid						
	SN3	0,936	Valid						
	SN4	0,892	Valid						
PBC	PBC1	0,846	Valid	0.506	0.357	Unreliable	0.854	0.745	Reliable
	PBC2	0,624	Invalid						
	PBC3	-0,076	Invalid						
	PBC4	0,752	Valid						
	PBC5	-0,330	Invalid						
TR	TR1	0,751	Valid	0.975	0.828	Reliable	0.975	0.828	Reliable
	TR2	0,965	Valid						
	TR3	0,916	Valid						
	TR4	0,906	Valid						
	TR5	0,927	Valid						
	TR6	0,906	Valid						
	TR7	0,919	Valid						
	TR8	0,971	Valid						
VCB	VCB1	0,886	Valid	0.949	0.824	Reliable	0.949	0.824	Reliable
	VCB2	0,911	Valid						
	VCB3	0,957	Valid						
	VCB4	0,873	Valid						
KN	KN1	0,306	Invalid	0.756	0.347	Unreliable	0.953	0.910	Reliable
	KN2	0,361	Invalid						
	KN3	0,875	Valid						
	KN4	0,891	Valid						
	KN5	0,256	Invalid						
	KN6	0,606	Invalid						
	KN7	0,461	Invalid						
INT	INT1	0,970	Valid	0.917	0.645	Reliable	0.964	0.842	Reliable
	INT2	0,913	Valid						
	INT3	0,828	Valid						
	INT4	0,918	Valid						
	INT5	0,085	Invalid						
	INT6	0,930	Valid						
	INT7	0,584	Invalid						

Table 2 showed 14 invalid indicators based on factor loading cut off > 0.7, namely CTA2, PBR1, PBR2, ATT1, PBC2, PBC3, PBC5, KN1, KN2, KN5, KN6, KN7, INT5, and INT7. Then, the three constructs or variables were found unreliable, namely perceived barrier, perceived behavioral control, and knowledge about the COVID-19 vaccine. According to Hair et al. (2017), all of the invalid indicators should be removed from the indicators list to better the construct's validity and reliability. Table 2 showed that CR and AVE values fulfilled the requirement of construct validity and reliability after the treatment. All of the proposed variables are reliable. Based on table 2, the fourteen variables can be used in the model, and only 67 indicators were considered valid in the vaccination intention measurement model. The structural and measurement model are summarized in figure 4.

The indicators of perceived self-efficacy, perceived response efficacy, perceived susceptibility, perceived severity, perceived benefit, subjective norm, trust, and vaccine conspiracy belief were valid. Cues to action has only one valid indicator or unidimensional construct. Then, knowledge about the COVID-19 vaccine has two valid indicators (KN3

and KN4). The same condition happened in perceived behavioral control with two valid indicators (PBC1 and PBC4). Then, perceived behavior control has three valid indicators (PBR3, PBR4, and PBR5). Attitude only has one invalid indicator (ATT1), so the other 11 indicators can be used to measure the attitude construct. Furthermore, the independent variable (vaccination intention) only has five valid indicators that are INT1, INT2, INT3, INT4, and INT6. However, those indicators can be used to measure the vaccination intention variable.

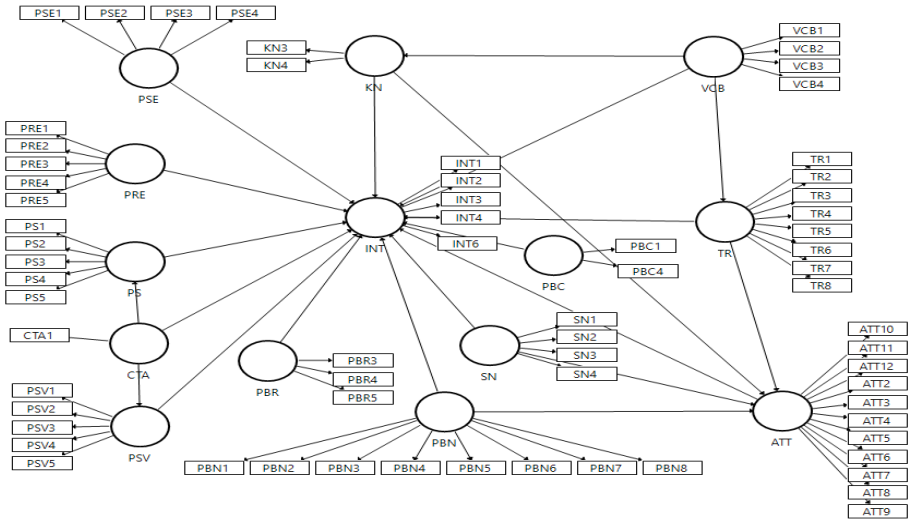

Figure 4 Structural and Measurement Model of Vaccination Intention

6. Conclusion

This paper has developed a conceptual model that can explain vaccination intention. This model offers twenty-one propositions; the thirteen propositions describe the direct influence of perceived self-efficacy, perceived response efficacy, perceived susceptibility, perceived severity, cues to action, perceived benefit, perceived barrier, attitude, subjective norm, perceived behavioral control, knowledge about the COVID-19 vaccine, vaccination conspiration belief, and trust toward vaccination intention. Then, eight propositions discussed the indirect effect of knowledge about the COVID-19 vaccine, trust, subjective norm, and perceived benefit through attitude. The conceptual model is a basic generic model that needs empirical research evidence. Therefore, the pilot study was conducted in the study as an initial overview of the model. The result shows that fourteen variables are reliable as a construct in the model, and 69 indicators are valid to measure each of the constructs it represents. This result can be used to measure the vaccination intention in a larger context, such as the Indonesian population. However, future research is required since the pilot test has limited ability to describe the real condition. In this case, we need to conduct empirical research to test the model on a larger scale, like in the Indonesian context. Other researchers can adapt and test the conceptual model in this paper for different cases that have similar problem characteristics, such as Indonesia, especially in the health behavior context. Indeed, the adjustment of the model may include the addition of antecedent, consequences, or even a moderator variable.

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