



Factors Affecting Intention to Get COVID-19 Vaccination Among Thai People

Pongsakorn Limna¹
Supaprawat Siripipatthanakul², Bordin Phayaprom³
Asia eLearning Management Center, Singapore

Sutithep Siripipattanakul⁴
Kasetsart University, Thailand

palmlimna@gmail.com¹ (Corresponding Author);
ake@aemcenter.com.sg;² alex@aemcenter.com.sg;³ fedustt@ku.ac.th⁴

ABSTRACT

This study identifies factors affecting Thai people's intention to get COVID-19 vaccination. The intention to get COVID-19 vaccination was explained by factors; fear and infectability of COVID-19, perceived behavioural control, and subjective norm. The mediator was the attitude. The research model was analyzed from a stratified random sampling of three-hundred and eighty-seven (387) respondents in Thailand. The collected data were analysed using the PLS-SEM program (ADANCO 2.2.1) and SPSS-version 27. The results reveal that most respondents intended to get vaccinated. Fear and perceived infectability of COVID-19, perceived behavioural control, subjective norm indirect effect on the intention to get COVID-19 vaccination through mediating effect of attitude. The recommendation is to increase perceptions through attitude because it is strongly associated with getting COVID-19 vaccination among Thai people. The contribution could benefit healthcare providers to implement Thai perceptions and increase their willingness to get COVID-19 vaccinated through these factors.

Keywords: *Fear and Perceived Infectability, Perceived Behavioral Control, Subjective Norm, Attitude, Intention, COVID-19, Vaccination*

1. INTRODUCTION

1.1. Background of the Research

Many countries continue to face a life-threatening viral pandemic. Thus, in response to the COVID-19 pandemic, all countries in the world have tightened movement restrictions. More than half of the world's population is subjected to strict forms of social isolation, with more than 90 countries in lockdown to combat the COVID-19 pandemic (Di Domenico et al., 2020; Douglas et al., 2020; Fraser et al., 2021). According to Fraser et al. (2021), Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2), the virus that causes COVID-19, has generated over 98

million confirmed cases and 2.2 million deaths since January 2020. Although the most recent respiratory viral pandemic swept the globe only a decade ago, science's operation and response to current events have undergone a paradigm shift in the decade since. The scientific community responded quickly to the COVID-19 pandemic, publishing over 125,000 COVID-19-related scientific articles, more than 30,000 of which were hosted by preprint servers, within ten months of the first confirmed case (Fraser et al., 2021). One of the most effective methods to control spreading the coronavirus 2019 (COVID-19) infection rate is to ensure widespread COVID-19 vaccination. It is critical to instill trust in the COVID-19 vaccine, as perceived safety and efficacy were strongly related to vaccine intention (Soares et al., 2021; Yahaghi et al., 2021). The beginning of the COVID-19 vaccination was a ray of hope for restoring everyday life. They did spark discussion about vaccination apprehension, as the success of a vaccination program depends on population uptake (MacDonald, 2015; Soares et al., 2021). Soares et al. (2021) suggested that various factors contribute to COVID-19 vaccine hesitancy. It is critical to emphasise providing information that the public perceives as clear and understandable through multiple channels. Vaccination intention may also be higher than vaccine uptake. Vaccine intention and hesitancy are constantly monitored and evaluated to change strategies as needed. Targeted information should be released by trusted individuals, which may differ depending on the population (Soares et al., 2021). Therefore, factors affecting people's intention to get the COVID-19 vaccination are a critical topic to study.

1.2. Problem Statement

The effectiveness of Thailand's COVID-19 vaccination strategy was obtained from the Ministry of Public Health of Thailand. The policy resulted in the lowest number of cumulative infections and deaths and was the most cost-effective scenario (Suphanchaimat et al., 2020). One of the most efficient ways to control the high COVID-19 infection rate is to increase global COVID-19 vaccination coverage (Yahaghi et al., 2021). Thais received two doses of the COVID-19 vaccine beginning in April. Booster shots of other vaccines have been issued in several countries due to concerns about resistance to the Delta COVID-19 variant. So far, only 21% of the estimated 72 million people in the country have been fully vaccinated (Bangkok Post, 2021). Bangkok Post (2021) reported in February that most people are satisfied with the government's handling of the second wave of the COVID-19 pandemic. Still, nearly a quarter of the population will not seek vaccination. It is crucial and beneficial to understand individuals' intention to get COVID-19 vaccinated (Yahaghi et al., 2021). Some studies support the influencing factors of intention to get vaccination were fear and perceived infectability of COVID-19, perceived behavioural control, subjective norm, and attitude (Yahaghi et al., 2021; Ullah et al., 2021). Still, few studies identify the mediating effect of attitude between these factors and intention to get the COVID-19 vaccination. This study gives more understanding of the relationship that could help healthcare providers manipulate the COVID-19 pandemic through attitude and perceptions.

1.3. Research Objective

This study identifies the mediating effect of attitude between factors and the intention to get COVID-19 vaccination in Thailand. It may be beneficial for healthcare providers to implement the COVID-19 vaccination perceptions among Thai people and increase their willingness to get COVID-19 vaccinated through these factors. Consequently, the intention to get COVID-19 vaccinated will be increased.

1.4. Research Question

What are the main factors affecting the intention to get COVID-19 vaccination of Thai people?

2. LITERATURE REVIEW

2.1. COVID-19 Situation

According to the World Health Organization (WHO), the COVID-19 pandemic began in Wuhan, China, in December 2019. It spread to over 200 countries and territories by the end of April 2020, resulting in over two million confirmed cases and over 150,000 confirmed deaths (WHO, 2020). All possibilities were plausible, except for people hiding in their homes for fear of contracting the disease, which was extremely unlikely. People panicked as the lockdown was imposed. The focus has shifted to providing food and caring for their health and family. It depends on the level of COVID-19 impact in each country and country-specific situations and capacity (Jadoo, 2020). Governments worldwide implemented varying levels of intervention, such as travel restrictions and lockdown, to stem the spread of the highly contagious virus. The lockdown, which restricted people's movement and shut down businesses and industrial establishments, was first imposed on January 23, 2020, in the Chinese city of Wuhan, where the first case of this deadly virus was reported and was later followed by other countries (Jing 2020).

On January 13, 2020, WHO and Thailand reported that a Wuhan resident who travelled to Bangkok on January 8, 2020, tested positive for the SARS-CoV-2 virus. It was the first COVID-19 case discovered outside of China. Fourteen more patients were detected in Chinese travellers over the next few weeks before Thailand's first non-imported, locally transmitted COVID-19 case was reported on January 31. Patients continued to rise in February and March, with many being linked to super spreading events such as an indoor Thai boxing match and gatherings at downtown bars. By the end of March, 60 of Thailand's 77 provinces had reported cases, indicating that the epidemic was widespread (WHO, 2020). As a result of the COVID-19 outbreak, Thailand has faced significant challenges (Srichannil, 2020). Bangkok Post (2021) reported that Thailand is preparing for life with COVID-19 later in 2021, with preliminary plans being drawn up to unwind some restrictions and reopen its borders to vaccinated visitors even as new cases hover around 20,000 per day. Also, Thailand's National Communicable Disease Committee approved a shift in the country's strategy to "learning to live with COVID-19," recognising the virus's endemic nature. Srichannil (2020) stated that Thailand appears to be medically prepared to deal with emerging infectious diseases. Srichannil (2020) also recommended that Thailand use the current pandemic as an opportunity to develop innovative and context-appropriate strategies for improving mental health systems, services, and practices, thereby contributing to the psychological well-being of the population during the COVID-19 pandemic and beyond.

WHO (2020) stated that the global discourse and campaigns for COVID-19 mass vaccination had captured the attention of the public. The vaccine is thought to be the ultimate weapon in combating COVID-19 and halting outbreaks worldwide, paving the way for the next steps in fighting the pandemic beyond non-pharmaceutical interventions (NPI). In short, the vaccination is instantly becoming a critical intervention in the ongoing COVID-19 pandemic (Bono et al., 2021). COVID-19 vaccine efficacy was defined by the World Health Organization (2020) as three parts: reducing susceptibility, reducing transmission from infected individuals (i.e., reduced infectivity), and reducing severity. As vaccines are distributed worldwide, there is some debate about who should be vaccinated first. The US Centers for Disease Control and Prevention recommended that frontline healthcare workers and vulnerable groups, such as those aged 60 and older and those with certain medical conditions, be prioritised (Persad et al., 2020).

Thailand's first wave of Coronavirus Disease 2019 (COVID-19) was between March and May 2020, the second wave since December 2020, and the third wave since April 2021 (Bangkok

Post, 2021; Suphanchaimat et al., 2021). The country's leading migrant-receiving province, Samut Sakhon, took the brunt of the damage in the second wave. As a result, the Thai Ministry of Public Health (MOPH) was now considering launching vaccination campaigns in conjunction with active face finding (ACF) in the epidemic area (Suphanchaimat et al., 2021a). With the belief that vaccination could be the endgame for the COVID-19 pandemic, and against the backdrop of an increase in COVID-19 cases in Thailand, an important policy question was posed (Suphanchaimat et al., 2021b). According to Viwattanakulvanid (2020), ChAdOx1 nCoV-19, mRNA-1273, Ad5-nCOV, and BNT162b1 are four potential vaccine candidates for July 2020. On Prince Mahidol day, the Thai government has launched a new national COVID-19 vaccination campaign to administer up to one million doses per day to those receiving their first, second, or booster shot (Wipatayotin, 2021).

2.2. Factors Affecting Intention to Get COVID-19 Vaccination

2.2.1 The Theory of Planned Behavior (TPB)

The theory of planned behaviour (TPB) was proposed in 1980 and was known as the theory of reasoned action to predict an individual's intention to engage in a behaviour at a specific time and place. The theory was intended to explain all behaviours over which people have control. The critical aspect of this theory is behavioural intent. Behavioural intentions are related to the attitude and behaviour that will result in the expected outcome and the subjective assessment of the risks and benefits of that outcome (LaMorte, 2019). The prevalence and factors are associated with the behavioural intention to receive self-financed or free COVID-19 vaccinations among Chinese factory workers who returned to work during the pandemic. The effects of sociodemographic, COVID-19 vaccination perceptions, social media exposure to COVID-19 vaccination information, and COVID-19 preventive measures are implemented by individuals and factories. It was discovered that factory workers in China reported a high behavioural intention to get vaccinated against COVID-19. The theory of planned behaviour (TPB) is a valuable framework for guiding the development of future COVID-19 vaccination campaigns in this group (Zhang et al., 2020). Chinese university students' behavioural intentions to receive free and self-paid COVID-19 vaccinations (BICV-F and BICV-SP) are assessed. It was found that the frequency of passive social media exposure and peer discussions about COVID-19 vaccination were positively related to the level of perceived information sufficiency of COVID-19 immunisation, which could lead to an increase in both free and self-paid COVID-19 vaccination intentions (Lou et al., 2021).

2.2.2. Subjective Norm

Subjective norms are a person's beliefs about what significant social others think about anyone engaging in a particular behaviour and whether they would approve of it (Smelser & Baltes, 2001). Subjective norms reveal individuals' beliefs about how their reference groups will perceive them if they engage in a particular behaviour (Al-Swidi et al., 2014). Subjective norms exclusively focus on significant others as the reference group and engaging in the target behaviour is based on the opinion and approval of significant others. Subjective norms in the current study refer to the extent to which people's willingness to take the COVID-19 is influenced by whether their significant social others approve of them taking the vaccine. As a result, people's intent to take COVID-19 vaccines would be predicted by subjective norms (Husain et al., 2021). The people's willingness to receive COVID-19 vaccines and some psychological factors are related to vaccination. Using the theory of planned behaviour (TPB) as a theoretical framework, TPB's key constructs (attitudes, subjective norms, and perceived behavioural control) would explain people's intention to receive COVID-19 vaccines. It revealed that subjective norms received a high score. A positive and

significant relationship was discovered between subjective norms and COVID-19 vaccine uptake intention. Subjective norms were also discovered to be a significant predictor of vaccine intention (Husain et al., 2021).

2.2.3. Attitude

The person's attitude refers to the extent to which someone has a favourable or unfavourable evaluation of the behaviour of interest. It entails considering the consequences of performing that specific behaviour – whether positive or negative for the person (Baron & Branscombe, 2017). One of the critical aspects of the theory of planned behaviour (TPB) is the attitude toward the COVID-19 vaccine. As a result, it determines whether people have a positive or negative attitude toward the available COVID-19 vaccines, as the attitude can predict the intention to receive the vaccine (Husain et al., 2021). While vaccine hesitancy is not a new issue, it has become more pronounced with the new COVID-19 vaccines and is a barrier to resolving the crisis. Even those who would generally trust vaccines and experts prefer to wait for more information. It was confirmed that a positive attitude toward vaccination is a significant factor in getting vaccinated against COVID-19 (Petračić et al., 2021).

2.2.4. Perceived Behavioral Control

The theory of planned behaviour has emerged as one of the most important and widely used conceptual frameworks for studying human behaviour (Ajzen, 2001). Perceived behavioural control (PBC) refers to a person's perception of the ease or difficulty of performing the target behaviour and any limitations that may prevent the behaviour from being completed. In other words, it refers to how much control the person expects or perceives someone has over the intended behaviour (Britt & Englebert, 2018; Smelser & Baltes, 2001). An individual with a high perceived level of behavioural control will exert more tremendous effort in carrying out the intended behaviour. Thus, the PBC would predict the intent to receive COVID-19 vaccines (Husain et al., 2021). The theory of planned behaviour (attitudes, subjective norms, and perceived behavioural control) are related to COVID-19 relevant behavioural intentions and behaviours. The theory of planned behaviour (TPB) or theory of reasoned action (TRA) with "Covid" or "pandemic" in APA PsycINFO and PubMed. PsyArXiv and Google Scholar also were used to search for unpublished manuscripts. It was discovered that among the variables, PBC had the strongest overall correlations with both intentions and behaviours, implying that increasing the perceived efficacy of protective actions is crucial for behaviour and behavioural intentions (Fischer & Karl, 2020).

2.2.5. Fear and Perceived Infectability of COVID-19

The COVID-19 anxiety and fear of infection control practices among Thai healthcare workers were investigated. All analyses were performed using SPSS, version 19 software. Most healthcare personnel were overcome with fear and anxiety of COVID-19. The uncertainty about the transmission mode is asymptomatic patients' infectivity. It may have caused significant stress in the healthcare personnel who care for known or suspected COVID-19 patients (Apisarnthanarak et al., 2021). Uncertain intolerance, depression, anxiety, and stress as mediators in the relationship between fear of COVID-19 and positivity. The data were collected from 960 participants through an online questionnaire. The t-test for independent samples, one-way analysis of variance (ANOVA), and Pearson's correlation analysis was performed. The intolerance of uncertainty, depression, anxiety, and stress was a mediator in the relationship between COVID-19 fear and positivity (Bakiolu et al., 2020). Moreover, Ullah et al. (2021) and Yahaghi et al. (2021) confirmed

that fear of COVID 19 and the perceived infectibility of COVID 19 would be significant reasons to get vaccinated against COVID-19.

2.3. Intention to Get COVID-19 Vaccination

Behavioural intention is the motivational factor that influences a given behaviour. The stronger the intention to perform the behaviour, the more likely the behaviour will be performed (LaMorte, 2019). Behavioural intentions are influenced by the likelihood that the behaviour will result in the expected outcome and the subjective assessment of the risks and benefits of that outcome. The behavioural intention was cost-sensitive, and most participants agreed on the proposed market rate (Zhang et al., 2020). People's perceptions, attitudes, and vaccination intentions were influenced by online information, and COVID-19 vaccination-related information on social media may indeed be critical in shaping the public's intention to vaccinate (Luo et al., 2021; Yang & Myrick, 2020). In addition to social media influences, peer discussion may influence individuals' intention to vaccinate against COVID-19, as it is another primary source of information and social influences that occurs both online and offline (Luo et al., 2021; Southwell & Yzer, 2007). Furthermore, communicating with friends increased motivation for vaccination. Peer discussion that includes negative attitudes toward vaccines, on the other hand, may reduce the intention to vaccinate (Teo et al., 2019). According to a survey conducted in the United States, 38% of the general population indicated that the opinions of their family and friends would influence their COVID-19 vaccination decisions (Reiter et al., 2020). Peer communication may help establish social norms that increase vaccination intentions (Larson et al., 2014). It was discovered that trust in official sources of information, such as experts and public health institutions, is positively associated with getting COVID-19 vaccinations. However, trust in alternative sources and mistrust of the government reduce the likelihood that a person will agree to vaccination (Petravi et al., 2021). It revealed that the theory of planned behaviour (TPB) combined with fear of COVID19 and perceived COVID-19 infectability could be used to design effective programs to improve COVID-19 vaccination. The recommendation of improving the attitude and subjective norms constructed in the theory of planned behaviour (TPB). TPB is significantly associated with getting COVID-19 vaccinated (Yahaghi et al., 2021).

2.4. Research Hypothesis Development

The relationship between fear and perceived infectability of COVID 19, attitude, subjective norm, perceived behavioural control, and intention to get COVID-19 vaccination. Yahaghi et al. (2021) proved the psychological constructs that significantly explained individuals' intention to get COVID-19 vaccinated using the extended TPB. It confirmed that fear and perceived infectability of COVID 19 have a significant impact on attitudes toward COVID-19 vaccination. Ullah et al. (2021) concluded that fear and perceived infectability of COVID 19 would provide positive reasons to vaccinate, implying that readable information about the incidence and prevalence of COVID-19 would be required to assist individuals in linking the information to themselves. The TPB combined with COVID-19 fear and perceived infectability can be used to design effective programs to increase COVID-19 vaccination uptake among the Iranian population. (Ullah et al., 2021; Yahaghi et al., 2021).

H1: Fear and perceived infectability of COVID 19 significantly affect attitude.

Dalila et al. (2020) proved a specific actual behaviour model with personal value as a mediator to determine the use of environmentally friendly food packaging (EFFP) among food

hawkers. The model was created using data collected from local food hawkers. Structural equation modelling was employed. A finding revealed that the PBC significantly affects the attitude towards the actual behaviour of the food hawkers to use EFP. Ullah et al. (2021) concluded that perceived behavioural control would provide positive reasons to uptake the COVID-19 vaccine. Yahaghi et al. (2021) also confirmed that perceived behavioural control would offer valid reasons to get COVID-19 vaccinated, inferring that improved perceived behavioural control may further increase these individuals' intention to get COVID-19 vaccinated. Besides, it confirmed that perceived behavioural control directly impacts both attitude and intention (Chetioui et al., 2020). Thus, perceived behavioural control significantly affects attitudes (Chetioui et al., 2020; Dalila et al., 2020; Ullah et al., 2021; Yahaghi et al., 2021).

H2: Perceived behavioural control significantly affects attitude.

Al-Swidi et al. (2014) proved the applicability of the theory of planned behaviour (TPB) focused on measuring the direct and moderating effects of subjective norms on attitude, perceived behavioural control, and purchasing intention in the context of buying organic food. The proposed model was tested using the structural equation modelling (SEM) approach. According to the findings, subjective norms positively affect attitudes toward purchasing organic food (Al-Swidi et al., 2014). The subjective norm would provide positive reasons to vaccinate, indicating that health providers should provide more evidence regarding the safety and effectiveness of COVID-19 vaccines and emphasise the benefits to individuals and the population (Ullah et al., 2021). The importance of improving the subjective norm construct in the theory of planned behaviour (TPB) and subjective norms are expected to positively correlate with attitudes (Chetioui et al., 2020; Yahaghi et al., 2021). Thus, subjective norms significantly affect attitudes (Al-Swidi et al., 2014; Chetioui et al., 2020; Ullah et al., 2021; Yahaghi et al., 2021).

H3: Subjective norm significantly affects attitude.

Pogue et al. (2020) proved attitudes toward and barriers to vaccination with a potential COVID-19 vaccine. A survey corporation distributed a survey to 316 people across the United States. Structural equation modelling (SEM) investigated the relationships between several factors and attitudes toward likely COVID-19 vaccination were investigated using structural equation modelling (SEM). A finding confirmed that attitude significantly impacts a potential COVID-19 vaccine and intends to receive COVID-19 vaccination (Pogue et al., 2020). Besides, attitudes significantly influence individuals' intentions (Chetioui et al., 2020). Yahaghi et al. (2021) confirmed that attitude was significantly related to intention to get COVID-19 vaccinated and recommended that healthcare providers advocate the beneficial effects of COVID-19 vaccination by improving the attitude construct in the theory of planned behaviour. Ullah et al. (2021) also confirmed that the attitude positively affects the intention to uptake the COVID-19 vaccine. Thus, attitude significantly affects the intention to get COVID-19 vaccination (Chetioui et al., 2020; Pogue et al., 2020; Ullah et al., 2021; Yahaghi et al., 2021).

H4: Attitude significantly affects intention to get COVID-19 vaccination.

Thaker & Ganchoudhuri (2021) used a longitudinal study based on the theory of planned behaviour (TPB) framework to prove the changing intentions to get a COVID-19 vaccine in New Zealand. The study's findings showed that the link between attitudes and efficacy beliefs persists

over time. Simultaneously, prior intentions play a significant role in future decision-making processes regarding receiving or refusing a COVID-19 vaccine. Ullah et al. (2021) revealed a relation between attitude, perceived infectability, subjective norms, perceived behavioural control, and fear of COVID-19. Also, the degree of perceived infectability can be reflected in an individual's attitude and decision to vaccinate (Ullah et al., 2021). Yahaghi et al. (2021) also proved that attitude was found to be significantly associated with a willingness to get COVID-19 vaccinated. Thus, attitude is a significant mediator between factors (Fear and perceived infectability of COVID-19, perceived behavioural control, subjective norm intention) and intention to get COVID-19 vaccination (Thaker & Ganchoudhuri, 2021; Ullah et al., 2021; Yahaghi et al., 2021).

H5: Attitude is a significant mediator between factors (Fear and perceived infectability of COVID-19, perceived behavioural control, subjective norm intention) and intention to get COVID-19 vaccination.

2.5 Conceptual Framework

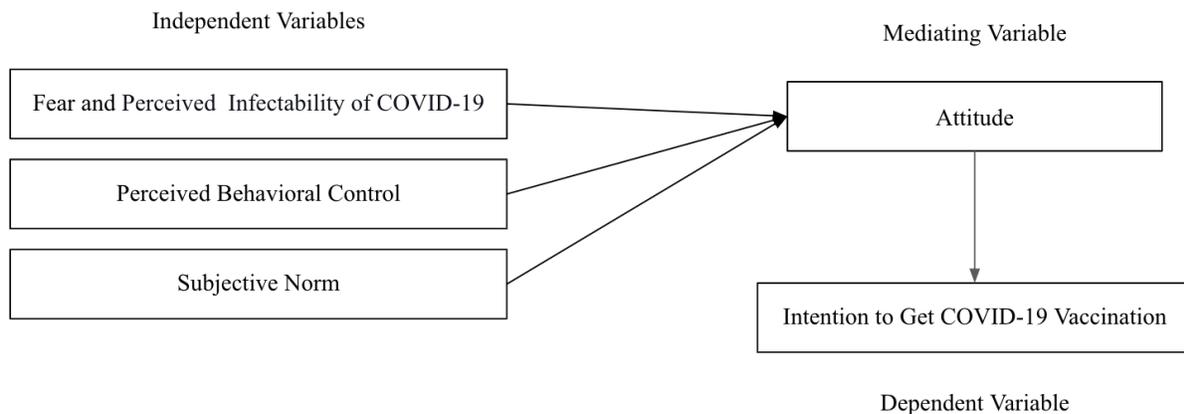


Figure 1: Conceptual Framework

3. RESEARCH METHODOLOGY

3.1. Research Method

In this study, closed-end questionnaires (Likert's Rating Scale) were used to collect data. The questionnaire items were created by the researchers based on previous research. The measurement instruments' dependability and validity were evaluated. It is critical to recognise that validity refers to how well an instrument measures the concept that the researcher is attempting to measure (Zikmund, 2003). The main variables in this study were all measured using a five-point Likert Scale, with the following classifications: strongly agree with a value of 5, agree with a value of 4, neutral with a value of 3, disagree with a value of 2, and strongly disagree with a value of 1. The demographics of the respondents were derived from the study conducted by Siripipatthanakul & Vui (2021). The questionnaire items were based on Yahaghi et al. (2021) and Ullah et al. (2021).

3.2. Population and Sample

The population of the study's target population is unknown. A typical survey has a 95 per cent confidence level (Zikmund, 2003). According to collect data, a minimum of 385 cases at $p=0.5$ must be collected using stratified random sampling with a sample error of 5% and a precision level of 95%. The total number of participants in the study was 387.

3.3. Data Collection

The researchers collected the data using self-administered questionnaires and employed stratified random sampling from five regions of Thailand (Northern, Eastern, North Eastern, Central and Southern-Western). Before distributing online questionnaires, the researchers explained the study's objective to the respondents and solicited their participation.

3.4. Data Analysis

The SPSS 27 program was used to analyse the collected data. The demographic characteristics of the respondents were investigated using descriptive statistics (frequency and percentage). Each variable and its questionnaire items were calculated using mean analysis and standard deviation. The Cronbach's Alpha reliability test was used to determine the reliability of the data. The validity test was carried out using factor analysis. The completed data were analysed using a Partial Least Square Structural Equation Model (PLS-SEM) to test the hypotheses.

4. RESULTS

Three hundred eighty-seven (387) respondents in Thailand completed questionnaires that were coded and analysed. The nominal and interval data from the questionnaires were analysed using the SPSS version 27 program. PLS-SEM was used to examine the hypotheses. The results revealed that most respondents were female (61.8%), ranging between 18 and 25 years old (36.4%), single (68.5%), held a bachelor's degree (59.2%), and earned between 10,000 and 20,000 baht for monthly income (30%). Additionally, most respondents received the COVID-19 vaccination (92.5%).

4.1. PLS-SEM Results

Table 1: Construct Operationalization

Construct	Type of Outer Model	Number of Indicators	Predefined Reliability
Perceived Behavioral Control	Latent Variable (Mode A)	3	1.0000
Subjective Norm	Latent Variable (Mode A)	2	1.0000
Attitude	Latent Variable (Mode A)	3	1.0000
Fear and Perceived Infectability of COVID-19	Latent Variable (Mode A)	8	1.0000
Intention to Get COVID-19 Vaccination	Latent Variable (Mode A)	2	1.0000

Table 2: Item loadings, Cronbach's Alpha and Average Variance Extracted (n=387)

Items	Factor Loadings	Cronbach's Alpha	Average Variance Extracted (AVE)
-------	-----------------	------------------	----------------------------------

Fear and Perceived Infectibility of COVID-19	0.9237	0.6541
I am afraid of COVID-19.	0.7825	
I am afraid of losing my life because of COVID-19.	0.7877	
Watching news and stories about COVID-19 on social media makes me nervous.	0.8764	
Thinking about getting COVID-19 makes me worried and uncomfortable.	0.8630	
Thinking about getting COVID-19 makes me nervous and concerned.	0.8668	
I will get COVID-19 from a patient who is going around me.	0.8070	
It is possible to get COVID-19 if people around me are sick.	0.7488	
I am likely to catch COVID-19 if I am in the risk region.	0.7239	
Perceived Behavioral Control over COVID-19 Vaccination	0.7731	0.6856
Whether or not I get COVID-19 vaccination is entirely up to me.	0.7634	
I have the time and opportunities to get the COVID-19 vaccination.	0.8589	
I can get COVID-19 vaccination by myself or with my family's or friend's help.	0.8581	
Subjective Norm	0.8089	0.8390
People essential to me would want me to get COVID-19 vaccination.	0.9046	
People essential to me think I should get COVID-19 vaccination.	0.9272	
Attitude	0.9182	0.8596
It is good to get COVID-19 vaccination.	0.9070	
It is desirable to get COVID-19 vaccination.	0.9432	
It is essential and valuable to get COVID-19 vaccination.	0.9308	
Intention to Get COVID-19 Vaccination	0.9132	0.9201
I have a willingness to get COVID-19 vaccination.	0.9616	
I want to get COVID-19 vaccination.	0.9568	

Table 3: Overall Modal

The Goodness of Model Fit

Saturated Model	SRMR=0.0562
Estimated Model	SRMR=0.0563

Table 4: Total Effects Inference (n=387)

Effect	Original Coefficient	Standard Bootstrap Results					Percentile Bootstrap Quantiles			
		Mean Value	Standard Error	T-Value	P-Value (2-Sided)	P-Value (1-Sided)	0.5%	2.5%	97.5%	99.5%
PBC -> AT	0.1060	0.1116	0.0621	1.7056	0.0884	0.0442	-0.0417	-0.0032	0.2333	0.2732
PBC -> IG	0.0962	0.1008	0.0560	1.7191	0.0859	0.0430	-0.0353	-0.0030	0.2113	0.2460
SN -> AT	0.5746	0.5653	0.0684	8.3985	0.0000	0.0000	0.3725	0.4218	0.6850	0.7227
SN -> IG	0.5216	0.5118	0.0676	7.7197	0.0000	0.0000	0.3275	0.3745	0.6393	0.6705
AT -> IG	0.9079	0.9043	0.0199	45.5419	0.0000	0.0000	0.8452	0.8598	0.9368	0.9438
FPI -> AT	0.1342	0.1397	0.0608	2.2062	0.0276	0.0138	-0.0172	0.0191	0.2643	0.2996
FPI -> IG	0.1219	0.1261	0.0547	2.2300	0.0260	0.0130	-0.0161	0.0177	0.2395	0.2685

Fear and perceived infectability of COVID-19 can predict attitude at Beta = 0.134; $p < 0.05$ (Two tails at $p=0.0276$ and one tail at $p=0.0138$). Perceived behavioral control significantly influences attitude at Beta= 0.1060, $p < 0.05$ (one tail at $p=0.0430$). Subjective norm significantly influences attitude at Beta=0.5746, $p < 0.001$ (Two tails at $p=0.000$ and one tail at $p=0.000$). Attitude significantly influences the intention to get COVID-19 vaccinated at $p < 0.001$ (Two tails at $p=0.000$ and one tail at $p=0.000$). Finally, all factors can predict intention to get COVID-19 vaccinated by about 82.43% ($R^2=0.8243$).

4.2. Summary of Hypothesis Testing

Table 5: Summary of Hypothesis Testing

Hypotheses	Results	Actions
H1: Fear and perceived infectability of COVID-19 significantly affect attitude.	$\beta=0.134$ at $p < 0.05$	Supported
H2: Perceived behavioural control significantly affects attitude.	$\beta=0.106$ at $p < 0.05$	Supported
H3: Subjective norms significantly affect attitude.	$\beta=0.575$ at $p < 0.001$	Supported

H4: Attitude significantly affects intention to get COVID-19 vaccination.	$\beta=0.908$ at $p < 0.001$	Supported
H5: Attitude is a significant mediator between factors (Fear and perceived infectibility of COVID-19, perceived behavioural control, subjective norm intention) and intention to get COVID-19 vaccination.	$R^2=0.477$ $R^2=0.824$ at $p < 0.05$	Supported

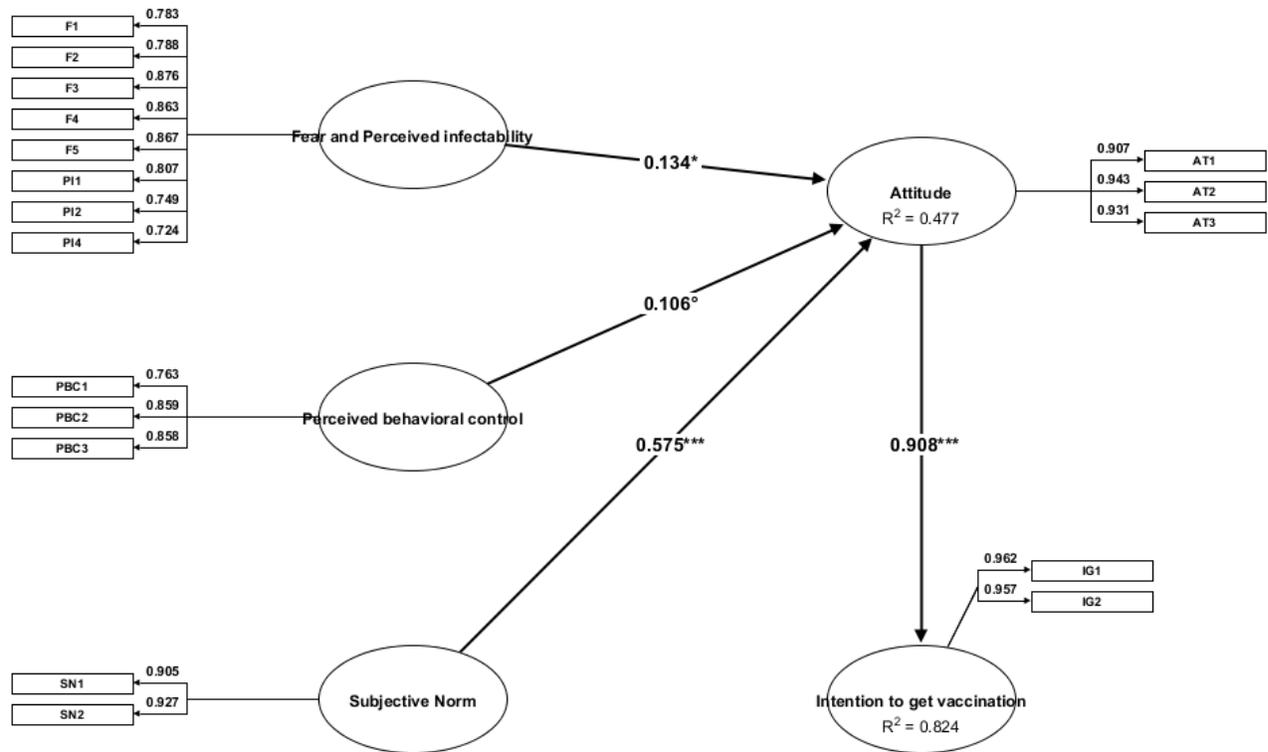


Figure 2: PLS-Structural Equation Model of the Study

5. DISCUSSION AND CONCLUSION

5.1. Discussion

The study’s objective was mainly to investigate factors affecting the intention to get COVID-19 vaccination in Thailand. The PLS-SEM model confirmed the proposed conceptual framework. Fear and perceived infectibility of COVID-19 significantly impact attitude because most people are afraid of getting infected with COVID-19. The results supported the previous studies of Ullah et al. (2021) and Yahaghi et al. (2021) that the theory of planned behaviour (TPB) combined with fear of COVID19 and perceived COVID-19 infectability can be used to design effective programs to improve COVID-19 vaccination. Subjective norms significantly affect attitude. The results supported the previous studies of Larson et al. (2014), Luo et al. (2021), Reiter et al. (2020), and Southwell & Yzer (2007) that family, friends, and social media influencers may help to establish social norms that increase vaccination intentions. Attitude significantly affects the intention to get COVID-19 vaccination. The results supported the previous studies of Luo et al. (2021) and Yang & Myrick (2020) that people's perceptions, attitudes, and vaccination intentions were influenced

by online information, and COVID-19 vaccination-related information on social media may indeed be critical in shaping the public's intention to vaccinate. The results supported the previous study of Yahaghi et al. (2021) that the intention to get vaccinated against COVID-19 was found to be significantly related to attitude. Perceived behavioural control significantly affects attitude because most people have resources, time, and opportunities to get COVID-19 vaccination. The results supported the previous study of Yahaghi et al. (2021) that improving perceived behavioural control may further increase the intention to get COVID-19 vaccinated because perceived behavioural control was associated with intention to get COVID-19 vaccinated. Attitude is a significant mediator between factors (Fear and perceived infectibility of COVID-19, perceived behavioural control, subjective norm intention) and intention to get COVID-19 vaccination because most people are willing to get COVID-19 vaccination. The results supported the previous studies of Ullah et al. (2021) and Yahaghi et al. (2021) that enhancing the attitude and subjective norms constructs in the theory of planned behaviour (TPB) may increase the intention to get COVID-19 vaccinated because they were found to be significantly associated with getting COVID-19 vaccinated.

5.2. Conclusion

The findings show that most respondents intended to get vaccinated. Fear and perceived infectibility of COVID-19; perceived behavioural control; and subjective norm indirectly affects the intention to receive COVID-19 vaccination through a mediating effect of attitude. Attitude directly influence Thai people to get COVID-19 vaccination. Therefore, healthcare providers should pay attention to these factors. The intention to get the COVID-19 vaccination can be explained by fear and perceived infectibility of COVID-19, perceived behavioural control, and subjective norm. These factors indirectly affect the intention to receive the COVID-19 vaccination through a mediating effect attitude.

5.3. Research Implication

The contribution could benefit healthcare providers in Thailand to implement Thai perceptions and increase their willingness to get COVID-19 vaccinated through these factors. The recommendation is to improve attitudes because they are strongly linked to receiving COVID-19 vaccination among Thais.

5.4. Theoretical Implication

This study can expand the current literature on the COVID-19 pandemic in the academic context, which is currently lacking. The findings of this study will help academics develop their research by including other potential factors related to the pandemic's impact. Besides, the questionnaires from this study can be used to guide them in conducting additional COVID-19 research.

5.5. Limitations and Recommendations

The nature of this study is a self-administered questionnaire. Qualitative research, such as interviews and focus groups could provide more insight into future research. Furthermore, the study did not examine barriers to vaccinating against COVID-19 in Thailand. As a result, it is unclear whether any significant factors may prevent Thai people from receiving COVID-19 vaccinations. Thus, future research is required to investigate the barriers to COVID-19 vaccination. The relationship between sociodemographic factors in age groups and health conditions to be vaccinated against COVID-19 among Thai people should be considered. Moreover, men were more likely than women to be vaccinated. Respondents who had more than three health conditions

were less likely to get vaccinated than those who did not have any health conditions. People at a higher risk of developing health problems had the lowest vaccine intention of any age group. The number of health conditions influenced vaccine intention in the older age group, and the main reason for vaccine hesitancy was the possibility of harmful side effects from a COVID-19 vaccine (Boon-Itt et al., 2021). Thus, the researchers should consider demographic factors as the independent variables in further study.

REFERENCES

- Ajzen, I. (2001). Nature and Operation of Attitudes. *Annual Review of Psychology*, 52(1), 27-58.
- Al-Swidi, A., Huque, S. M. R., Hafeez, M. H., & Shariff, M. N. M. (2014). The role of subjective norms in the theory of planned behaviour in the context of organic food consumption. *British Food Journal*.
- Apisarntharak, A., Apisarntharak, P., Siripraparat, C., Saengaram, P., Leeprechanon, N., & Weber, D. J. (2020). Impact of Anxiety and Fear for COVID-19 Toward Infection Control Practices Among Thai Healthcare Workers. *Infection Control & Hospital Epidemiology*, 41(9), 1093-1094.
- Bakioğlu, F., Korkmaz, O., & Ercan, H. (2020). Fear of COVID-19 and Positivity: Mediating Role of Intolerance of Uncertainty, Depression, Anxiety, and Stress. *International Journal of Mental Health and Addiction*, 1-14.
- Bangkok Post. (2021). Almost 25% of Thais Don't Want Vaccination: Poll. Retrieved from <https://www.bangkokpost.com/thailand/general/2063979/>.
- Bangkok Post. (2021). Anutin Approves Alternative Covid Vaccination Method to Stretch Supplies. Retrieved from <https://www.bangkokpost.com/thailand/general/2184871/>.
- Bangkok Post. (2021). Thailand to shift strategy to 'learning to live with Covid-19'. Retrieved from <https://www.bangkokpost.com/thailand/general/2169923/>.
- Baron, R.A. & Branscombe, N.R. (2017). *Social Psychology*. 14th Global Edition. Essex: Pearson Education Limited. Bono.
- Pengpid, S., Hasan, M. T., ... & Colebunders, R. (2021). Factors affecting COVID-19 vaccine acceptance: An international survey among Low-and Middle-Income Countries. *Vaccines*, 9(5), 515.
- Boon-Itt, S., Rompho, N., Jiarnkamolchurn, S., & Skunkan, Y. (2021). Interaction between age and health conditions in the intention to be vaccinated against COVID-19 in Thailand. *Human Vaccines & Immunotherapeutics*, 1-7.
- Britt, R. K., & Englebort, A. M. (2018). Behavioural determinants for vaccine acceptability among rurally located college students. *Health Psychology and Behavioral Medicine*, 6(1), 262-276.
- Chetioui, Y., Benlafqih, H., & Lebdaoui, H. (2020). How fashion influencers contribute to consumers' purchase intention. *Journal of Fashion Marketing and Management: An International Journal*.
- Dalila, D., Latif, H., Jaafar, N., Aziz, I., & Afthanorhan, A. (2020). The mediating effect of personal values on the relationships between attitudes, subjective norms, perceived behavioural control and intention to use. *Management Science Letters*, 10(1), 153-162.
- Di Domenico, L., Pullano, G., Sabbatini, C. E., Boëlle, P. Y., & Colizza, V. (2020). Impact of Lockdown on COVID-19 Epidemic in Île-de-France and Possible Exit Strategies.

- BMC Medicine, 18(1), 1-13.
- Douglas, M., Katikireddi, S. V., Taulbut, M., McKee, M., & McCartney, G. (2020). Mitigating the wider health effects of covid-19 pandemic response. *Bmj*, 369.
- Fischer, R., & Karl, J. A. (2020). Predicting Behavioral Intentions to Prevent or Mitigate COVID-19: A Cross-Cultural Meta-Analysis of Attitudes, Norms, and Perceived Behavioural Control Effects. *Social Psychological and Personality Science*, 19485506211019844.
- Fraser, N., Brierley, L., Dey, G., Polka, J. K., Pálffy, M., Nanni, F., & Coates, J. A. (2021). Preprinting the COVID-19 pandemic. *BioRxiv*, 2020-05.
- Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European business review*.
- Husain, F., Shah Nawaz, M. G., Khan, N. H., Parveen, H., & Savani, K. (2021). Intention to get COVID-19 vaccines: Exploring the role of attitudes, subjective norms, perceived behavioural control, belief in COVID-19 misinformation, and vaccine confidence in Northern India. *Human Vaccines & Immunotherapeutics*, 1-13.
- Jadoo, S. A. A. (2020). COVID-19 pandemic is a worldwide typical biopsychosocial crisis. *Journal of Ideas in Health*, 3(2), 152-154.
- Jing, G. (2020). Diary of a Life in Locked-Down Wuhan. *BBC NEWS*. Retrieved from <https://www.bbc.com/news/world-asia-china-51276656>.
- LaMorte, W. W. (2019). *Behavioural Change Models: The Theory of Planned Behavior*. Boston University School of Public Health.
- Larson, H. J., Jarrett, C., Eckersberger, E., Smith, D. M., & Paterson, P. (2014). Understanding vaccine hesitancy around vaccines and vaccination from a global perspective: a systematic review of published literature, 2007–2012. *Vaccine*, 32(19), 2150-2159.
- Luo, S., Xin, M., Wang, S., Zhao, J., Zhang, G., Li, L., ... & Lau, J. T. F. (2021). Behavioral intention of receiving COVID-19 vaccination, social media exposures, and peer discussions in China. *Epidemiology & Infection*, 1-33.
- MacDonald, N. E. (2015). SAGE Working Group on Vaccine Hesitancy. Vaccine hesitancy: definition, scope and determinants. *Vaccine*, 33(34), 4161-4.
- Pavlov, G., Maydeu-Olivares, A., & Shi, D. (2021). Using the standardized root mean squared residual (SRMR) to assess exact fit in structural equation models. *Educational and Psychological Measurement*, 81(1), 110-130.
- Persad, G., Peek, M. E., & Emanuel, E. J. (2020). Fairly prioritizing groups for access to COVID-19 vaccines. *Jama*, 324(16), 1601-1602.
- Petravić, L., Arh, R., Gabrovec, T., Jazbec, L., Rupčić, N., Starešinič, N., ... & Slavec, A. (2021). Factors affecting attitudes towards COVID-19 vaccination: An online survey in Slovenia. *Vaccines*, 9(3), 247.
- Pogue, K., Jensen, J. L., Stancil, C. K., Ferguson, D. G., Hughes, S. J., Mello, E. J., ... & Poole, B. D. (2020). Influences on attitudes regarding potential COVID-19 vaccination in the United States. *Vaccines*, 8(4), 582.
- Reiter, P. L., Pennell, M. L., & Katz, M. L. (2020). Acceptability of a COVID-19 vaccine among adults in the United States: How many people would get vaccinated?. *Vaccine*, 38(42), 6500-6507.
- Siripipatthanakul, S. & Vui, C. N. (2021). Dental practice-related factors and patient loyalty in dental clinics, Laem Chabang, Thailand: The mediating role of patient satisfaction. *International Journal of Behavioral Analytics*, 1(2), 1–17.

- Smelser, N. J., & Baltes, P. B. (Eds.). (2001). *International encyclopedia of the social & behavioural sciences* (Vol. 11). Amsterdam: Elsevier.
- Soares, P., Rocha, J. V., Moniz, M., Gama, A., Laires, P. A., Pedro, A. R., ... & Nunes, C. (2021). Factors associated with COVID-19 vaccine hesitancy. *Vaccines*, 9(3), 300.
- Southwell, B. G., & Yzer, M. C. (2007). The roles of interpersonal communication in mass media campaigns. *Annals of the International Communication Association*, 31(1), 420-462.
- Srichannil, C. (2020). The COVID-19 pandemic and Thailand: A psychologist's viewpoint. *Psychological Trauma: Theory, Research, Practice, and Policy*, 12(5), 485.
- Suphanchaimat, R., Nittayasoot, N., Thammawijaya, P., Teekasap, P., & Ungchusak, K (2021a). Predicted impact of vaccination and active case finding measures to control the epidemic of Coronavirus Disease 2019 (COVID-19) in a migrant-populated area in Thailand.
- Suphanchaimat, R., Tuangratananon, T., Rajatanavin, N., Phaiyaron, M., Jaruwanno, W., & Uansri, S. (2021b). Prioritization of the Target Population for Coronavirus Disease 2019 (COVID-19) Vaccination Program in Thailand. *International journal of environmental research and public health*, 18(20), 10803.
- Teo, L. M., Smith, H. E., Lwin, M. O., & Tang, W. E. (2019). Attitudes and perception of influenza vaccines among older people in Singapore: A qualitative study. *Vaccine*, 37(44), 6665-6672.
- Thaker, J., & Ganchoudhuri, S. (2021). The Role of Attitudes, Norms, and Efficacy on Shifting COVID-19 Vaccine Intentions: A Longitudinal Study of COVID-19 Vaccination Intentions in New Zealand. *Vaccines*, 9(10), 1132.
- Ullah, I., Lin, C. Y., Malik, N. I., Wu, T. Y., Araban, M., Griffiths, M. D., & Pakpour, A. H. (2021). Factors affecting Pakistani young adults' intentions to uptake COVID-19 vaccination: An extension of the theory of planned behavior. *Brain and Behavior*, e2370.
- Viwattanakulvanid, P. (2021). Ten Commonly Asked Questions about Covid-19 and Lessons Learned from Thailand. *Journal of Health Research*.
- Wipatayotin, A. (2021). New drive to give 1M doses per day. *Bangkok Post*. Retrieved from <https://www.bangkokpost.com/thailand/general/2187275/>.
- World Health Organization. (2020). *Novel Coronavirus (2019-nCoV) Situation Report –1*.
- World Health Organization. (2020). *COVID-19: WHO's Action in Countries – September*.
- World Health Organization. (2020). *COVID-19 Vaccines*.
- World Health Organization. (2020). *WHO Target Product Profiles for COVID-19 Vaccines*.
- Yahaghi, R., Ahmadizade, S., Fotuhi, R., Taherkhani, E., Ranjbaran, M., Buchali, Z., ... & Pakpour, A. H. (2021). Fear of COVID-19 and Perceived COVID-19 Infectability Supplement Theory of Planned Behavior to Explain Iranians' Intention to Get COVID-19 Vaccinated. *Vaccines*, 9(7), 684.
- Yang, G., & Myrick, J. G. (2020). Online media use and HPV vaccination intentions in mainland China: integrating marketing and communication perspectives to improve public health. *Health education research*, 35(2), 110-122.
- Zhang, K. C., Fang, Y., Cao, H., Chen, H., Hu, T., Chen, Y., ... & Wang, Z. (2021). Behavioural intention to receive a covid-19 vaccination among Chinese factory workers: a cross-sectional online survey. *Journal of medical Internet research*, 23(3), e24673.
- Zikmund, W.G. (2003). *Business Research Methods* 2nd ed. Chicago. The Dryden Press.