Addressing the Impact of COVID-19 and Non-Pharmaceutical for Perception Tourism Using Frequentist PLS-SEMs

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Abstract

The pandemic Covid-19 has been changing tourist behavior to visit a tourism destination. This study aims to investigate tourist' visit intention after Covid-19 pandemic period in Indonesia by addressing the Covid-19 phenomenon, health consciousness and theory planned behavior framework. To answer hypotheses in this study, Confirmatory Factor Analysis-Structure Equation Model is used with quantitative approach. The research model is examined by SEM-PLS, using SmartPLS-3 software to analyze research framework. The results show that Covid-19 perception had not significantly impacted attitude, subjective norm, perceived behavioral control and intention. However, the perception of Covid-19 has a significant impact on non-pharmaceutical intervention, which in turn delivers a significant impact on attitude, subjective norm, perceived behavior control and visit intention. The hypothesis presumes that attitude, subjective norm, and perceived behavior control all have significant impact on intention to visit. In contrast, variable of health consciousness works less impact on intention to visit. This study makes significant contribution to the tourism literature by considering health issue and tourist visit behavior after Covid-19 period in Indonesia.

1- Introduction

Since the early May of 2020, Covid-19 has put an indenture to the economic wholeness in Indonesia due to the large-scale imposition of restriction regulations. Without exception, tourism has been under the sway of the imposition [1, 2]. In this period, the Covid-19 pandemic is making a negative impact to economy, especially in tourism sector with the decrease tourist arrival down to 78%, resulting in US$ 1.2 trillion income loss and 120 million un-employments. Tourism sector has been playing important role in global employment and contribution to GDP in some countries [3]. However, Covid-19 has reduced great number of tourists since its outbreak, a result of which has greatly damaged the income of tourism industry and changed the behavior of tourist [4–6].

The pandemic Covid-19 has been delivering great impacts to all of countries over the world and Indonesia is no exception. Based on the data [7], the cases were confirmed around 4.174.216, and around 139,415 confirmed deaths.

According to the Indonesia travel agent association, the tourism sector has seen 90% drop in sales, with possible loss of US$245 due to withdrawals [8]. In airline industry, flights arrival and departures were also down by more than 95% compared to the previous year or in 2019 [9]. Hotel sector has been impacted by Covid-19 because the availability rate was only 19.7% in June 2020 compared to 52.3% in the previous year (2019) in same month [8]. All of the facts indicated that tourism and hospitality industry have received serious impact of Covid-19. Also, the pandemic has affected the local tourist visit intention; tourists would rather stay put than going out to take the risk of being infected by Covid-19.

However, tourists are rarely aware that their decision to cancel their visit would set off a sequence of events involving the government, hotel services, restaurant operations, the tourism business, and others. This study classifies the perceived health caused by Covid-19, which has set up a barrier in the world, keeping tourists from embarking traveling of any kinds. For example, if people planning to go to a specific location believe Covid-19 poses a health risk, such as secondary ailments like fever and cough, they may decide to postpone their trip [10]. In the pandemic era, tourists would reduce health risk in travelling when personal non-pharmaceutical intervention (NPI) is their priority concern.

The individual non-pharmaceutical intervention, which includes pandemic awareness, healthy lifestyle practices, social distance, and pre- and post-trip health checks, has risen to the top of the priority list since it is the most effective approach to avoid transmitting the virus while visiting [11]. In this regard, NPI may create the opportunity for international or domestic tourism to effectively ease up the tourism risk when antivirals and vaccinations are still developed in the lab, painstakingly [12]. In this regard, this research predicts how NPI can give a positive message to tourists' traveling intention in Covid-19 period based on the Theory of Planned Behavior (TPB).

Many experts in tourism, social psychology, and consumer behavior think that perceived risk factors will eventually alter particular intention in decision-making or attractiveness to visit a destination [6, 13, 14]. The aim of this study is addressing the impact of Covid-19 and non-pharmaceutical intervention by applying the Theory of Planned Behavior to visit a destination in post-pandemic period of Indonesia. The Indonesian domestic tourists' intention to travel is also examined since TPB is a useful frame work to predict tourists' intention and behaviors, even their initial decision to visit a destination [15–17]. In addition, this study also will provide comprehensive information on tourists' visit intention and the current study will enhance the theoretical framework in tourism industry, as well as provide an examining of health consciousness during and post pandemic Covid-19.

As said, we also address the variable of perception of Covid-19 in intention to visit a destination in pandemic Covid-19 period and non-pharmaceutical intervention. Then, we perform the health consciousness on intention to visit. Therefore, the study contributes to build concept and framework that explain the decision of local tourists to visit a destination in post-pandemic Covid-19 period based on the idea of risk and public health. Two major points are being provided by this paper: one is that an insight is given to local tourists to consider the risk and health factor who want to visit a destination in post Covid-19 in Indonesia; the other is that relevant knowledge of Covid-19 is useful to policy maker or the government when considering the non-pharmaceutical as vital prevention to avoid the spread of risk Covid-19 while travelling. The aims of this study are: 1) to address the impact of Covid-19 through the Theory of Planned behavior (TPB) construct toward visit intention; 2) to find out the impact role of public health (non-pharmaceutical intervention and health consciousness) toward visit intention through Theory of Planned Behavior constructs. This empirical analysis can help the stakeholders and the government to make policy about visiting destination in Indonesia during the pandemic Covid-19. However, in the context of Covid-19, academics and researchers have not adequately investigated the adoption of TPB and health sectors such as non-pharmaceutical intervention and health consciousness toward visit intention following pandemic. Filling this research gap will provide insight and contributions about the intention to visit a destination using behavior theory in the Covid-19 pandemic era, and the current study is conducted as part of the contribution to theoretical improvement in tourism sectors related to health post Covid-19 pandemic.

The study's structure is as follows. Section 2 relates literature review and hypotheses development from the concept of risk perception of Covid-19, TPB theory, NPI (non-pharmaceutical intervention) and health consciousness. Section 3 details with methodology, data collection procedures and questionnaire development. Section 4 discusses present data analysis, results, discussion. Section 5 explains the conclusion, recommendation and future direction. References are given in the last section in this study.

2- Literature Review and Hypotheses Development

The World Health Organization (WHO) declared in 2019 that the pandemic virus H1NI has been elevated to the sixth level due to an increase in the number of affected people worldwide [12]. According to St. Michael's Hospital, epidemics spread quickly by air transportation, such as airplanes, because the airline may convey a big number of people from one location to another at the same time. In the instance of Covid-19, more than fifty airline companies have cancelled flights from and to nations such as China, Italy, Australia, Russia, and the United States since early February 2020, and these governments have also issued travel warnings at the same time [18]. Tourists have what is known as consumer perception, which contains their comprehension of information, method, behavior, and matter. [12].

The consumer's or tourist's view of the disease and its repercussions have forced a new routine in the tourism sector as the epidemic has gotten more serious and governments have had to adjust to quarantine and adapt lockdown measures.

Some researchers have already shown that tourists' perceived risk while travelling determines their attitude and influences their behavioral intention [19, 20]. Also, risk perception reveals that risk perception works a considerable influence upon the subjective norm and perceived behavioral control [21]. Generally, lower risk levels lead to positive attitudes and increase levels of confidence in themselves, consequent upon which their family or friends will show positive attitudes toward the desired behavior, and increase perceptions of their own ability to perform the desired action [22].

2-1- The Relationship Between Perception of COVID-19, Attitude, Subjective Norm, Perceive Behavioural Control, Non-Pharmaceutical Intervention and Intention to Visit

NPI is the practices to sharpen tourists' perception of risk of Covid-19 before or after travel to a destination in pandemic era [23]. In 2009, perception of H1N1 had an impact on non-pharmaceutical intervention [14]. Another study also shows that NPI such as wearing a face mask, keeping social distancing and practicing life hygiene are the ways in preventing the spread of disease. Malaysians attempt to prevent symptoms like cough, runny nose, fever, and other illnesses that a high number of packed pilgrims may have by requiring them to wear masks and adjust NPI at Mecca. [24]. It can be concluded that the risk perception of Covid-19 has a direct affect to tourists who plan to visit a local destination using NPI to protect themselves from Covid-19. Based on these considerations, the following hypotheses are developed:

H1: Perception of Covid-19 significantly affects attitude;

H2: Perception of Covid-19 significantly affects subjective norm;

H3: Perception of Covid-19 significantly affects perceived behavioral control;

H4: Perception of Covid-19 significantly affects non-pharmaceutical intervention;

H5: Perception of Covid-19 significantly affects intention to travel.

2-2- The Relationship between Non-pharmaceutical Intervention, Attitude, Subjective Norm, Perceive Behavioral Control and Intention to Visit

*S*ocial distancing, living at home or working from home, self-quarantine, and travel prohibitions are examples of health-protection practices that have had a serious effect on tourism. The tourism business has traditionally been one of the most vulnerable sectors that need special attention, and it is imperative that it becomes more robust to threats such as terrorism, earthquakes, Ebola, SARS, and Zika [19]. The pandemic, on the other hand, has started a full-scale assault on people's lives, since the fundamental aspect of this pandemic is that it has had a massive worldwide impact, resulting in global recessions and depressions [25].

NPI is one of the treatments that use preventative strategies and systems to keep people safe from disease. [26]. Physical or social separation, personal quarantine, continuous health monitoring, and hygiene monitoring are all examples of NPI [27]. Keeping a safe distance during a pandemic can help prevent the virus from spreading. Working from home, shutting public spaces such as schools, markets, stadiums, and theaters, avoiding big gatherings, decreasing access to public transit, and diminishing human interaction are all examples of social distancing. Handwashing with soap, wearing a mask, and protecting one's own face with hands when coughing are all examples of hygiene precautions [28]. Some methods can apply to reduce the influence of the risk pandemic Covid-19 are personal protection, quarantine and contact tracking [29].

Risk perception will affect tourists' intention to travel [30]. Risk perception is closely related to unclarity, worry and fear in tourists [31]. Tourists' thoughts are constantly fully engaged with the notion of peace, security, and stability in any scenario while making the decision to visit a specific area. Global health risks are one element that can have a direct impact on visitors' attitudes and activities. A study [32] points out that Covid-19 is expected to have an influence on Chinese visitors' consumption patterns, given the rising popularity of free and autonomous travel, luxury travel, and well-being tourism. If the estimate is valid, worldwide tourism will be impacted.

However, tourists' perceptions of risk might influence their travel decisions [33]. A study from (Reisinger & Mavondo, 2005) [10] reports that the risk is "the cognitive possibility of being exposed to risks and hazards." Tourists may choose to alter their trip plans and behavior if they sense the potential risk. As a result, Covid-19 may influence visitors' travel decisions, according to this research. Tourists who choose to travel abroad despite being warned about the possibility of contracting a pandemic should take extra measures [10]. Based on [12], tourists can use some NPI ways to reduce the probability of infection: keeping oneself with updates of pandemic, strengthening personal hygiene during travel, keeping a safe distance from questionable persons and situations, as well as adhering to social distancing conventions.

Measuring the temperature of people at hotel entrances, wearing mask in public places, having a special health care unit for emergencies, using disposable equipment, informing tourists constantly about the pandemic and using NPI can help continue tourists' intention to visit their desired destinations. In short, tourists will make decision about their trip based on non-pharmaceutical intervention knowledge. The followings are developed hypotheses based on the explanation of relationship among NPI, attitude, subjective norm and perceived behavioral control.

H6: Non-Pharmaceutical Intervention significantly affects attitude;

H7: Non-Pharmaceutical Intervention significantly affects Subjective Norm;

H8: Non-Pharmaceutical Intervention significantly affects perceive behavioral control;

H9: Non-Pharmaceutical intervention significantly affects intention to visit.

2-3- Theory of Planned Behaviour and Intention to Visit

TPB is a sociopsychology theory that is used to anticipate human intention and behavior. Theory Reasoned Action is the basis of this theory (TRA) by Ajzen (1977) [34]. The fundamental element in TRA is a person's attitude and subjective norm which influence behavior intention and, in turn, actual behavior. As a result, in the TPB theory, Attitude, Subjective Norm, and Perceived Behavioral Control are the major subjects used to explain the behavioral intention [35, 36].

On the one hand, the intention process is separated into two main points: attitude toward behavior and subjective norm, while on the other hand, non-volitional processes view behavior control as the most important aspect [37, 38]. In the TPB paradigm, behavior intention is the major proximate of absolute behavior/action [17, 39]; and in the TPB model, intention is an element of the attitude toward behavior, subjective norm, and perceived behavior control [40]. To put it another way, volitional and non-volitional factors combine to form an individual's purpose [39, 41]. Theory reaction action, on the other hand, is the desire or ready to predict people's behavior [35, 36, 40]. The desire or choice of tourists to visit a location is influenced by their attitude and behavior [40, 42, 43]. It signifies that the attitude expresses a broad personal opinion regarding a certain behavior, either positively or negatively [35, 38]. Tourists' critical attitudes toward conduct intention are referred to as subjective norms [41, 44]. This suggests that Subjective Norms are a personal idea used in a social environment to motivate people to behave or not act in certain situations [36, 39].

Furthermore, one of the major variables of behavioral control is the intention of visitors [42]. This is a non-volitional element that relates to a person's assessment of their capacity to behave in a certain activity [38]. Attitude, Subjective Norms, Perceived Behavioral Control, and Intention are all part of the TPB hypothesis, which has been tested and expanded to tourist and consumer behavior research [42, 44, 45]. Research by Ajzen (1991) [37] demonstrates that TPB's theory is experimentally validated, in which a favorable attitude toward the action, perceived social pressure, and perceived capacity to take action all have a beneficial influence on a customer's behavioral intention. Three factors like attitude, subjective norm, and perceive behavioral control of Theory Planned Behavioral (TPB) are expected to have a substantial influence on the assessment of tourists' desire to visit a destination using specific types of literature. The hypotheses are:

H10: Attitude variable has impact on tourists' visit intention post Covid-19 pandemic;

H11: Subjective norm variable has impact on tourists' visit post-Covid-19 pandemic;

H12: Perceive behavioral control variable has impact on tourists' visit intention post-covid pandemic.

2-4- Health Consciousness and Intention to Visit

Most theories claim that health consciousness is linked to disease prevention motivation or primary conduct to enhance health [46]. Furthermore, health consciousness refers to one's readiness to live a healthy lifestyle [47, 48]. Thus, in terms of healthy behavior and health self-consciousness, health consciousness refers to care about one's health and quality of life [46, 49]. According to certain research, one's health consciousness is linked to one's interest in healthy foods [50, 51]. As a result, health-conscious consumers would evaluate food quality while purchasing meals [52, 53]. Health consciousness relates to people's awareness of their own health, their concern with health, and their care for their own personal health [54]. During the Covid-19 pandemic, health-conscious travelers are acutely aware of the significance of maintaining good health while traveling; as a result, they will adopt health-promoting attitudes and practices to safeguard their health. To prevent the spread of the Covid-19 virus, health awareness is critical in the tourism sector.

According to several studies, persons with a high level of health consciousness are more likely to choose a better lifestyle [55, 56]. Other studies have emphasized the importance of health consciousness in health behaviors such as purchasing healthy foods and seeking medical service [57, 58]. Simply said, travelers with a better degree of health

awareness are more ready to participate in activities. Tourists with a poor degree of health knowledge, on the other hand, will find it impossible to visit a place during Covid-19 pandemic. As a result, it would be beneficial to investigate if this variable has an influence on the intention to visit a place in and after Covid-19 epidemic. The following hypothesis is offered based on the above literature:

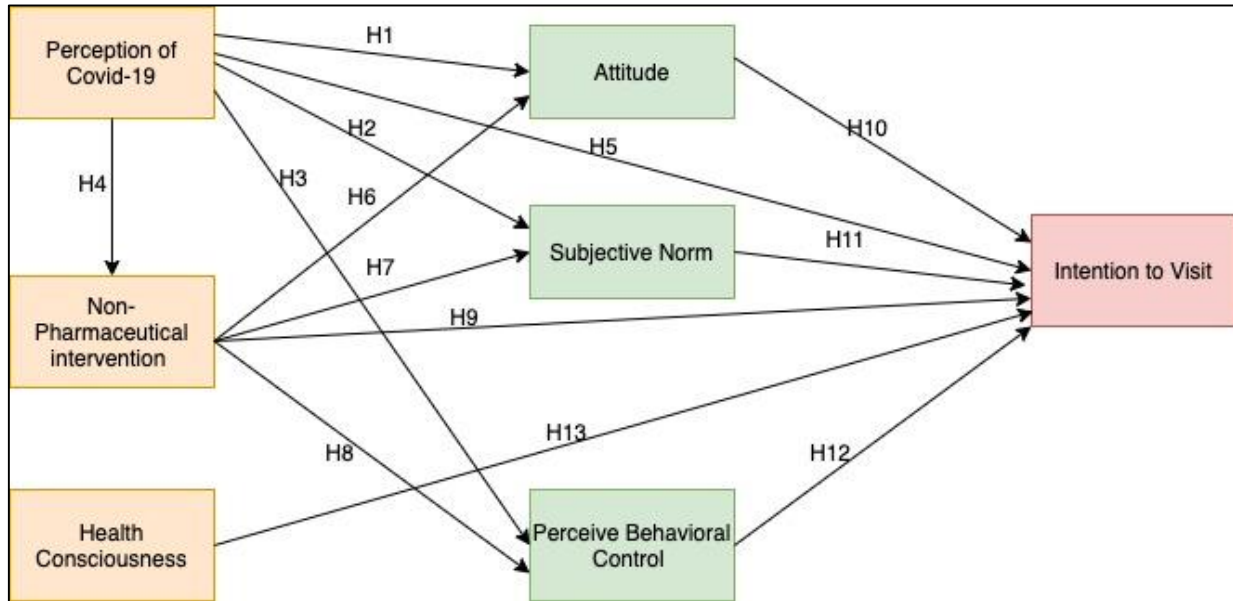**H13:** Health consciousness significantly affects intention to travel.

Figure 1. Research Framework.

3- Method

3-1- Step Construction of Frequentist PLS-SEMs

In Equation 1 the number of latent variables is represented as p, and the latent path number toward latent variables is represented as q. The constant variables in PLS-SEM are represented by β_ji and β_j0. The latent variable is described as η, and the error of the structural model as ζ. The PLS-SEM approach for the structural model is assumed by [59, 60]. In line with this, the expected value of the equation is obtained as follows:

$$\eta_j = \beta_{j0} + \sum_{i \neq j}(\beta_{ji}\eta_i) + \zeta_j \tag{1}$$

$$E(\eta_j \mid \forall \eta_i) = \beta_{j0} + \sum_{i \neq j}(\beta_{ji}\eta_i) \tag{2}$$

In Equations 1 and 2 we assume $cov(\eta_i, \xi_j) = 0$, this indicates that exogenous latent variables have no relationship with each other and structural model errors. The measurement formula in the frequentist PLS-SEMs model is described in Equation 3:

$$y_k = \lambda_{kj\,o} + \lambda_{kj}\,\eta_j + \varepsilon_k \tag{3}$$

Manifest variables are assumed to have one latent variable and are grouped into separate blocks. Each manifest variable is assumed to belong to only one latent variable. Because the weight of the latent variable is not known, standardization is needed in order to avoid scale [61–63]. These latent variables are assumed to have the same scale of variance as one. The expected value of the equation is as follows:

$$E(\eta_j \mid \eta_j) = \lambda_{kj\,o} + \lambda_{kj}\,\eta_j \tag{4}$$

The expected value in the Equation 4 cov $(\varepsilon_k \mid \eta_j) = 0$, means the measurement model error is not correlated with the latent variables in the same block. If the equation is substituted into the Equation 5, then we can get the Equation 6, 7, and 8, respectively.

$$y_k = \lambda_{kj\,0} + \lambda_{kj}\,(\beta_{j0} + \sum_{i \neq j}(\beta_{ji}\eta_i) + \zeta_j) + \varepsilon_k \tag{5}$$

$$y_k = \lambda^*_{kj\,0} + \lambda_{kj}\,(\sum_{i \neq j}(\beta_{ji}\eta_i)) + \varepsilon^*_k \tag{6}$$

$$\lambda_{kj0}^{*} = \lambda_{kj0} + \lambda_{kj} \beta_{j0} \tag{7}$$

$$\varepsilon_{k}^{*} = \lambda_{kj} \zeta_j + \varepsilon_k \tag{8}$$

This equation was introduced by Wold (1982) [64] as a substitute for the latent variable or abbreviated as SELV (Substitutive Elimination of the Latent Variable). The description of SELV relates the manifest variables to the endogenous latent variables by means of a structural model within each block of the manifest variables.

$$E(\theta) = \begin{bmatrix} \Sigma_{yy}(\theta) & \Sigma_{yx}(\theta) \\ \Sigma_{xy}(\theta) & \Sigma_{xx}(\theta) \end{bmatrix} \tag{9}$$

$$E(\theta) = \begin{bmatrix} \Lambda_y (1-B)^{-1} [\Gamma\Phi\Gamma' + \Psi](1-B)^{-1'}\Lambda_y' + \Theta_\varepsilon & \Lambda_y(1-B)^{-1} \Gamma\Phi\Lambda_x' \\ \Lambda_y \Gamma\Phi\Gamma'(1-B)^{-1'}\Lambda_y' & \Lambda_x\Phi\Lambda_x' + \Theta_\delta \end{bmatrix} \tag{10}$$

$$E(\theta) = \text{Cov}\begin{pmatrix} Y \\ X \end{pmatrix} = \begin{bmatrix} Cov(Y,Y) & Cov(Y,X) \\ Cov(X,Y) & Cov(X,X) \end{bmatrix} = \begin{bmatrix} \sum_{\substack{yy \\ (pxp)}}(\theta) & \sum_{\substack{yx \\ (pxq)}}(\theta) \\ \sum_{\substack{xy \\ qxp}}(\theta) & \sum_{\substack{xx \\ (qxq)}}(\theta) \end{bmatrix} \tag{11}$$

We may consider, $\sum_{yy}(\theta)$ as a covariance matrix y;

$$\sum_{yy}(\theta)$$

$$\sum_{yy}(\theta) = Cov(Y,Y) = E(YY')$$

$$\sum_{yy}(\theta) = E\left[\left(\Lambda_y\eta + \varepsilon\right) \ \left(\Lambda_y\eta + \varepsilon\right)'\right] \tag{12}$$

$$\sum_{yy}(\theta) = \Lambda_y E(\eta\eta')\Lambda_y' + 0 + 0 + \Theta_\delta$$

$E(\eta\eta')$ can be obtained in advance by changing η din reduced form. The reduced form of the simultaneous equation is the form of the endogenous variable expressed as the function of the exogenous variable and the error variable only. The reduction form of $\eta = B\eta + \Gamma\xi + \zeta$ are as follows:

$$\eta = B\eta + \Gamma\xi + \zeta$$

$$\eta - B\eta = \Gamma\xi + \zeta$$

$$(1-B)\eta = \Gamma\xi + \zeta \tag{13}$$

$$(1-B)\eta = \Gamma\xi + \zeta$$

$$\eta = (1-B)^{-1}\Gamma\xi + (1-B)^{-1}\zeta$$

Towards Equation 13 is the reduced form of the equation $\eta = B\eta + \Gamma\xi + \zeta$, thus we get Equation 14 $E(\eta\eta') = E[((I-B)^{-1}\Gamma\xi + (I-B)^{-1}\zeta)((I-B)^{-1}\Gamma\xi + (I-B)^{-1}\zeta)']$;

$$= (I-B)^{-1}\Gamma E(\xi\xi')\Gamma'(I-B)^{-1'} + (I-B)^{-1}E(\zeta\zeta')(I-B)^{-1'}$$

$$= (I-B)^{-1}\Gamma\Phi\Gamma(\xi\xi')(I-B)^{-1'} + (I-B)^{-1}\Gamma'\Psi(I-B)^{-1'} \tag{14}$$

$$= (I-B)^{-1}[\Gamma\Phi\Gamma' + \Psi](I-B)^{-1'}$$

3-2- Data Collection Procedure and Questionnaire Development

The participants in this study are Indonesian visitors who desire to visit a local destination in the post Covid-19 outbreak in Indonesia. The data for this study are collected using an online survey. An online survey is employed in the travel and hospitality industry since it is more efficient [65–67], particularly when the global pandemic COVID-19. In this case, an online survey is a far more effective way of gathering information. The data are gathered between November 2020 and February 2021. An online survey questionnaire is provided to potential visitors selected at random via social media, and the questionnaire is shared publicly with people who are interested in visiting a local tourism destination.

Local tourists who will visit a local location in the post-pandemic Covid-19 era in Indonesia are the respondents in this study. A total of 308 people took part in the survey. Some questions were adapted from various sources in order to make this study practicable. TPB constructions adopt the factors from this study. In this study, purposive sampling is utilized to look at who wants to visit a local destination in Indonesia. The Covid-19 perception is adapted from [12], non-pharmaceutical intervention variable developed from [68], Attitude variable adapted from [69, 70], Subjective Norm variable developed from [69, 71], Perceive behavioral control variable adapted from [69–71], visit intention

variable adapted from [69, 71], health consciousness/health variable risk developed from [73]. Because the respondents in this study are Indonesian tourists, the questionnaire is written in both English and Indonesian. In this study, the scales from prior studies are used, with a Likert-type scale and seven scales (Scale 1: Strongly Disagree, and Scale 7: Strongly Agree).

3-3- Data Analysis

SPSS and Smart PLS software are used in this study to analyze the data and test the hypotheses, as well as to assess the validity and reliability of the questionnaires. Gender, education, background, age, and other descriptive statuses of respondents are covered. PLS-SEM is used to seek for latent patterns in data and to learn more about the relationships between variables [74]. Confirmatory Factor Analysis is applied to test the validity and reliability construct [75], and to assess the measuring scale that has been constructed using the three criteria. First, latent variable composite reliability (CR) should not be less than 0.7 [76]. Then, to assess the value of convergence validity, average variance extracted (AVE) is employed with the value should 0.5 [77]. Finally, confirmatory factor analysis is used to measure factor loading with the value equally 0.7 [76, 78].

4- Result and Discussion

4-1- Respondent Characteristics

The general information of the respondents in this study is explained by their characteristics. The data reveal that male and female respondents are 40 percent and 60 percent, respectively, with 56 percent of the respondents being between the ages of 18 and 24. Senior high school is the most common educational background among respondents, representing approximately 40 percent. The monthly income of the respondents is less than IDR 1.000.000, or 54%. Being student is the occupation of 54 percent of the respondents. The characteristic of respondents is explained in Table 1.

Table 1. Demographic respondent profile (n=308)

Variable	Responses	Frequency	Per cent
Gender	Male	124	40.3
	Female	184	59.7
Age (year)	18-24	172	55.8
	25-34	102	33.1
	35-44	22	7.1
	45-54	10	3.2
	More than 55	2	.6
Education	Senior High School	122	39.6
	Bachelor	111	36.0
	Master	66	21.4
	Doctor	9	2.9
Income Monthly (IDR)	Less than IDR 1.000.000	167	54.2
	IDR 1.000.000-5.000.000	102	33.1
	IDR 5.000.000-10.000.000	28	9.1
	IDR 10.000.000-15.000.000	5	1.6
	more than IDR 15.000.000	6	1.9
Occupation	Student	167	54.2
	Full-time job	56	18.2
	Part-time job	31	10.1
	Businessman	13	4.2
	Household keeping	10	3.2
	Professional	31	10.1

4-2- Validity and Reliability

To assess the value of validity and reliability in this study, composite reliability is employed. There are three indicators to assess the reliability of each item. The value of factor loading based on the suggestion should be more than .50 [79]. Value of composite reliability (CR) should be reach more than 0.70 [80], and the value of Cronbach's alpha, it suggests more than 0.70 [76, 77] and the Average Variance Extracted (AVE) value should be more than 0.50 [77]. The AVE of each potential variable must be larger than 0.50 to be considered the convergent validity, and the test standard of the square root of AVE must be greater than 0.70 to be considered discriminant validity. The Composite

Reliability of this study has a threshold of value of 0.70, and all constructs are greater than .70, indicating that the items in this study are internally reliable. Table 2 summarizes these data. We look at both convergent and discriminant validity to confirm that latent variables are valid. The first, convergent validity, is determined by looking at the average value extracted (AVE) score as well as the loading Factors of each indicator associated to construct. To determine the factor loading, confirmatory factor analysis is used. The AVE value varied from 0.614 to 0.912 is much better than normal values of 0.50. The factor loading ranges from 0.701 to 0.972, indicating that all variables are compatible with convergent validity.

The AVE root of the individual potential variable is used in this study to examine the discriminating validity, which should be greater than the common variate correlations of other potential variables and models, as proposed by Chin (1998) [81]. Furthermore, experts recommend that the AVE root test standard be at least equal to or greater than 0.70. Experts also propose that the AVE root test standard be at least equal to, and preferably more than 0.70 [82]. In this research, the root of AVE value is at least 0.70. The square root of the AVE for each concept is compared to the inter construct correlation to determine discriminant validity. The discriminant validity is satisfied when all of the diagonal elements, which are the square root AVE, surpass the inter construct correlations. Table 3 describes discriminant validity.

Table 2. The Construct and item measurement of Factor Loading, AVE, CR and CA.

Construct and Item Measurement	Factor Loading	AVE	CR	Cronbach Alpha	
Perception of Covid-19					
1. Traveling is risky due to Covid-19.	0.708				
2. Covid-19 is a frightening sickness.	0.871				Eliminate Question: I have a lot of knowledge on Covid-19.
3. Covid-19 is a more hazardous pandemic than SARS or avian influenza.	0.798	0.611	0.886	0.840	
4. I'm terrified about the Covid-19 sickness.	0.814				
5. People in my immediate vicinity appear to be avoiding travel owing to Covid-19.	0.705				
Non-Pharmaceutical intervention					
1. Before traveling to another destination, I shall examine the information regarding Covid-19 on the government's website.	0.721				
2. Before traveling to another location, I will create a first aid pack for Covid-19.	0.778				Remove the inquiry: Before traveling, I will study and confirm the Covid-19 precautions with the hospital physicians or Covid-19 health centre.
3. When traveling, I shall wash my hands regularly.	0.820	0.625	0.921	0.899	
4. While traveling, I shall refrain from touching my eyes, nose, or mouth.	0.781				
5. I'll maintain my distance while traveling.	0.849				
6. I'll be wearing a mask a lot when traveling.	0.749				
7. After I return from my trip, I shall control myself and avoid meeting new people for a time.	0.826				
Attitude					
1. When the Covid-19 epidemic is finished, I plan to visit to a local destination that I have previously selected.	0.881				
2. When the Covid-19 epidemic is over, my friends and I want to travel to a local place that they had initially planned to visit.	0.901	0.721	0.885	0.806	
3. When the Covid-19 epidemic is finished, most of my close friends advise that I visit a nearby attraction.	0.758				
Subjective Norm					
1. When the Covid-19 pandemic is finished, I plan to visit to a local destination that I have already picked.	0.883				
2. When the Covid-19 pandemic is over, my friends and I intend to travel to a local place that they had initially planned to visit.	0.880	0.768	0.909	0.849	
3. When the Covid-19 pandemic is finished, most of my close friends advise me to visit a nearby attraction.	0.866				
Perceive Behavioural Control					
1. When the pandemic Covid-19 is finished, I will have time and possibilities to visit a nearby place that I had planned to visit previously.	0.814				
2. When the Covid-19 epidemic is finished, I will have the resources and capacity to travel to a local place that I had planned to visit.	0.775	0.689	0.898	0.850	

3. Once the Covid-19 epidemic is finished, I am optimistic that I will be able to visit a nearby place that I had planned to visit.	0.887			
4. When the Covid-19 epidemic is finished, I will be allowed to travel to a local place that I have already picked.	0.839			
Visit Intention				
1. After the Covid-19 pandemic is ended, in the future, I plan to visit a local destination.	0.938			
2. Once this epidemic of Covid-19 has passed, in the future I am looking forward to seeing a local attraction	0.937	0.898	0.963	0.943
3. After this pandemic Covid-19 has passed, I intend to travel to a nearby place.	0.967			
Health consciousness/ Risk perceive (health Risk)				Remove the Inquiries: I do not believe that traveling will hurt me during pandemic COVID-19, and I believe that traveling will be safe for me if I follow the health regimen.
1. Nowadays, my health is more essential to me than vacation	0.856	0.773	0.872	0.709
2. My health is very important to me	0.902			

Table 3. Discriminant validity.

	AVE	CR	CA	1.	2.	3.	4.	5.	6.	7.
1.Attitude	0.721	0.885	0.806	**0.849**						
2.Health Consciousness	0.773	0.872	0.709	0.070	**0.879**					
3.Intention to Visit	0.898	0.963	0.943	0.577	0.190	**0.947**				
4.Non-Pharmaceutical Intervention	0.625	0.921	0.899	0.178	0.470	0.435	**0.790**			
5.Perceive Behavioural Control	0.689	0.898	0.850	0.583	0.169	0.772	0.356	**0.830**		
6.Perception of Covid-19	0.611	0.886	0.840	0.062	0.463	0.264	0.563	0.204	**0.782**	
7.Subjective Norm	0.768	0.909	0.849	0.659	0.110	0.681	0.338	0.709	0.161	**0.876**

Note: AVE: Average Variance Extracted CR= Composite Reliability, CA= Cronbach Alpha. The average variance was extracted from the square average variance extracted.

4-3- Capability Index

The R values, which are the percentage of the variance of the outer variables that further explain the inner variables, demonstrate the research model's prediction power. In terms of causal relationship analysis (of developed model), it is dependent on whether the standardized route coefficient approaches statistical significance, as well as the explanatory ability of the R square determination model [77, 83]. Table 4 shows the capability of each variable to explain the research model.

Table 4. Explanatory Capability.

Variable	R Square
Attitude	0.034
Intention to Visit	0.665
NPI	0.317
Perceive Behavioural Control	0.127
Subjective Norm	0.115

Table 4 shows the research model from outer variable that further explains the estimated inner model. As shown in table 5, as a consequence of the findings, we can assume that the R square variable of intention to visit has a value of 0.665 or 66.5%, which explains the model. Variable Non-Pharmaceuticals Intervention is 0.317 or 31.7%, which also explains the model. Variable attitude explains the model by 0.034 or 3,4%, variable subjective explains the model by 0.115 or 11.5% and variable perceive behavioral control explains the model by 0.127 or 12.7% in this study. Table 5 shows the proposed model that explains the goodness of fit (SRMR = 0.06, NFI 0.80, X^2 = 1158.245).

Table 5. Goodness of Fit.

Indicators	X^2	NFI	SRMR
Cut-off for Good Fit	Close to 0	≥ 0.80	≤ 0.08
Criteria Model	1158.245	0.80	0.06

4-4- Hypothesis Testing

The hypothesis is rejected since the findings demonstrates that perception of Covid-19 has no significant influence on attitude (H1: = -0.056, t = 0.788). In the same way, the perception of Covid-19 has no effect on subjective norm (H2: = -0.042, t =0.612). As a result, this theory is rejected. Similarly, variable perception of Covid-19 has no effect on perceived behavioral control (H3: =0.005, t = 0.064) and is rejected. The variable impression of Covid-19, on the other hand, has a significant impact on variable non-pharmaceutical intervention (H4: = 0.563, t = 11.865) or is accepted. The variable non-pharmaceutical intervention has a substantial influence on perceived behavioral control or is accepted (H8: = 0.353, t = 4.553), and the variable non-pharmaceutical intervention has a significant impact on intention to travel or is accepted (H9: = 0.154, t = 2.547). The variable attitude has a substantial influence on the likelihood of visiting or being accepted (H10: = 0.138, t = 2.252). Subjective norm has a substantial influence on travel intention or is accepted (H11: =0.173, t = 2.299), and perceive behavioral control is also accepted or has a big impact on travel intention (H12: = 0.508, t = 7.648). The result of hypotheses testing is shown in the Table 6.

Table 6. Hypotheses Results.

Hypothesis	Original Sample (Estimated β)	Standard Deviation (STDEV)	T Statistics	P Values	Decision
H1 POC-19 -> Attitude	-0.056	0.071	0.788	0.431*	Rejected
H2 POC-19 -> SN	-0.042	0.069	0.612	0.541*	Rejected
H3 POC-19 -> PBC	0.005	0.075	0.064	0.949*	Rejected
H4 POC-19 -> NPI	0.563	0.047	11.865	0.000***	Accepted
H5 POC-19 -> ITV	0.046	0.045	1.018	0.309*	Rejected
H6 NPI -> Attitude	0.209	0.073	2.880	0.004***	Accepted
H7 NPI -> SN	0.362	0.066	5.497	0.000***	Accepted
H8 NPI -> PBC	0.353	0.078	4.553	0.000***	Accepted
H9 NPI -> ITV	0.154	0.060	2.547	0.011***	Accepted
H10 Attitude -> ITV	0.138	0.061	2.252	0.025***	Accepted
H11 SN -> ITV	0.173	0.075	2.299	0.022***	Accepted
H12 PBC -> ITV	0.508	0.066	7.648	0.000***	Accepted
H13 HC -> ITV	-0.018	0.034	0.541	0.589*	Rejected

***Significant at the *p< 0.05 level (two-tailed).* Note: NPI (Non-Pharmaceutical Intervention), HC (Health Consciousness), AT (Attitude), SN (Subjective Norm), PBC (Perceive Behavioral Control), ITV (Intention to Visit).

4-5- Direct and Indirect Effect

In this study, mediation analysis is used to analyze the role of the mediating variable. According to the findings of this study, the variable NPI has the greatest influence on travel intention (0.563). The variable of perceived behavioral control has a substantial influence on travel intention (β= 0.508, t = 7.648) and has a favorable impact on travel intention. In light of non-pharmaceutical intervention and perceived behavioral control, perception of Covid-19 has a substantial and beneficial influence on intention to travel ($\beta_{\text{Perception of COVID-19 -> NPI -> PBC -> ITV}}$ = 0.101, t =3.394). However, perception of Covid-19 has no significant impact on intention to travel in the context of non-pharmaceutical intervention and attitude ($\beta_{\text{Perception of COVID-19 -> NPI-> ATT -> ITV}}$ = 0.016, t = 1.597), and variable perception of Covid-19 has no significant impact on intention to travel in the context of non-pharmaceutical and subjective norm ($\beta_{\text{Perception of COVID-19 -> NPI-> SN -> ITV}}$ = 0.016, t = 1.918). As a result, through non-pharmaceutical intervention, perception of Covid-19 has a considerable influence on attitude. The variable non-pharmaceutical is a significant predictor of Covid-19 perception to subjective norm. Through non-pharmaceutical intervention, the perception of Covid-19 has a considerable influence on perceived behavioral control. In addition, the impression of Covid-19 has a substantial influence on non-pharmaceutical intervention's desire to travel. Another outcome of Covid-19 perception is that it has no significant influence on intention to travel via attitude, perception of Covid-19 on intention to visit through subjective norm, and perception of Covid-19 on intention to visit through perceived behavioral control. Non-pharmaceutical intervention has no significant influence on intention to travel through attitude, subjective norm, or perceived behavioral control, and finally, non-pharmaceutical intervention has no significant impact on intention to travel through attitude, subjective norm, or perceived behavioral control. Table 7 summarizes the findings of all direct and indirect analyses.

Table 7. The Direct, Indirect and Total Effect of the Structural Model.

Independent variable	NPI	HC	ATT	SN	PBC	ITV
Perception of Covid-19						
Direct effect	0.563	-	-0.056	-0.042	0.005	0.046
Indirect effect						
Perception of Covid-19 -> NPI -> PBC -> ITV						0.101***
Perception of Covid-19 -> NPI -> ATT -> ITV						0.016*
Perception of Covid-19 -> NPI -> SN -> ITV						0.035*
Perception of Covid-19 -> NPI -> Attitude		0.018				
Perception of Covid-19 -> NPI -> SN		0.204				
Perception of Covid-19 -> NPI -> PBC		0.199				
Perception of Covid-19 -> NPI -> ITV						0.087***
Perception of Covid-19 -> ATT-> ITV						-0.008*
Perception of Covid-19 -> SN -> ITV						-0.007*
Perception of Covid-19 -> PBC -> ITV						0.002*
Total effect	0.563		0.365	-0.042	0.005	0.272
NPI						
Direct effect			0.209	0.362	0.353	0.154
Indirect effect						
NPI -> ATT-> ITV						0.029*
NPI -> SN -> ITV						0.062*
NPI -> PBC -> ITV						0.180*
Total effect			0.209	0.363	0.353	0.425
Health Consciousness						
Direct effect						-0.018
Indirect effect						
Total effect						-0.018
Attitude						
Direct effect						0.138
Indirect effect						
Total effect						0.138
Subjective Norm						
Direct effect						0.173
Indirect effect						
Total effect						0.173
Perceive Behavioural Control						
Direct effect						0.508
Indirect effect						
Total effect						0.508

4-6- Discussion

The hypothesis is accepted based on the findings of this study, which shows that the changing perception of Covid-19 has a major influence on non-pharmaceutical intervention in pandemic Covid-19. The Covid-19 and non-pharmaceutical interventions will be considered by tourists, indicating that they are concerned about their health. Consumers believe that non-pharmaceutical intervention is the way to reduce the risk of contagion when visiting or traveling in this study, which is similar to or in line with another field in which consumers believe that non-pharmaceutical intervention is the way to reduce the risk of contagion when visiting or traveling during pandemic [12]. According to the findings, purpose, perceived behavioral control, prior behavior, and non-pharmaceutical intervention are all important variables in tourists' decision-making. As a result, it is crucial to consider the influence of Covid-19 perception and non-pharmaceutical intervention on a person's desire to visit a certain location.

The findings indicate that Covid-19 perception has no significant influence on the desire to visit a place, indicating that the hypothesis is rejected. This research suggests that the pandemic Covid-19 has no effect on a person's desire to visit a certain location. The perception of danger, on the other hand, is the most important element in determining tourist visit intentions [31]. As a consequence, visitors do not perceive that the Covid-19 pandemic poses a travel danger, and their perception of risk is reduced as a result of government or medical management of the pandemic. Despite the pandemic Covid-19, Indonesian visitors are impacted by the perceptions of others around them, which may have enhanced their desire to visit a destination. The Indonesian government has also been promoting, asking travelers, both foreign and domestic, to follow health procedures such as wearing a mask, maintaining physical distance, and using hand sanitizer when visiting the country.

Based on the findings, the decision of tourists to visit a local location in the pandemic Covid-19 era (in the post pandemic Covid-19 time) is typically important, based on planned behavior theory. In the post-pandemic Covid-19 period, variable attitude has a positive link and importance to variable intention to visit a location. Furthermore, in this study, the variable subjective norm has a positive and substantial effect on the variable intention to visit a location, and the hypothesis is accepted. Perceived behavioral control is the last variable in TPB, and it has a strong influence on and a positive association with the variable desire to visit a nearby place. In the tourist area, the notion of planned behavioral frameworks (attitude, subjective norm, and perceived behavioral control) has been employed and has a favorable link [42, 44, 45]. Perceived behavioral control (PBC) has been found to be a powerful predictor of intention in TPB investigations in previous research [84–87]. Based on the study from [37], the idea of TPB, in which consumers' behavioral intention is positively influenced by their attitude toward action, perceived social pressure, and perceived capacity to act, has a beneficial impact.

In the case of Indonesian tourists, their perceptions of Covid-19 as a risk are unaffected. This research explains why the number of Covid-19 infected people in Indonesia grew dramatically between 2020 and 2021 [7]. In other words, in the setting of Covid-19, Indonesian visitors do not modify their attitude, subjective norm, or perceived behavioral control. The findings of this study suggest that the value of non-pharmaceutical intervention during and after post Covid-19 might influence tourist behavior to visit a destination. It implies that visitors can visit a local destination after a pandemic Covid-19 by following health measures to protect themselves from Covid-19. However, other researchers claim that tourists' attitudes and behavioral intentions are influenced by how they perceive danger when traveling [88, 89]. Perception of risk also contributes to the study's discovery that risk perception has a major impact on subjective norm and perceived behavioral control [21]. Lower levels of risk, in general, result in positive attitudes, improved self-confidence that their family or friends would display favorable attitudes toward the desired conduct, and increased judgments of their own capacity to undertake the desired action [22].

Non-pharmaceutical intervention (NPI) has a considerable influence on attitude, subjective norm, and perceived behavioral control, as well as whether or not hypotheses are accepted. It is possible to conclude that non-pharmaceutical intervention influences visitors' usage of NPI while traveling. The Indonesian government has promoted non-pharmaceutical interventions to protect society against pandemic Covid-19, such as wearing a mask, maintaining physical distance, being healthy, and washing their hands with soap. Previous research has shown a strong relationship between the variable illness, attitude, and intention [10, 90]. It can be stated that NPI plays the most important role in preventing the spread of illness, as the study finds a significant relationship between perception of Covid-19, NPI, and intention to visit. This is consistent with [12], who stated that pandemic H1N1 2009 significantly influenced intention to international visit toward non-pharmaceutical intervention. As a consequence, this finding is corroborated by [12] who state that non-pharmaceutical intervention is the primary function for personal preventive in order to lower infection risk and highlight purpose. During a pandemic, health consciousness plays a critical role because it allows people to avoid the spread of sickness or the spread of the virus. Based on the statistical results, the variable health consciousness toward variable intention to visit has no significant influence in this study, and the hypothesis is rejected. This finding reveals that tourists are concerned about their planning to visit in the aftermath of the Covid-19 pandemic and they are not following health precautions while on the trip. As the result, travelers are less concerned about their health while deciding to travel following the pandemic Covid-19. Tourists, according to risk theory, tend to avoid unfavorable encounters and always attempt to enhance their enjoyment. The danger of Covid-19 illness would have an influence on tourists if they are less health concerned. This study's findings are consistent with marketing theory, which states that elevated risk perception influences purchasing behavior [91].

Some researchers' studies show that the tourists' visit intention can give impact by perceiving risk [10, 92, 93]. In marketing field research, the risk is discovered by [94], who believes that consumer behavior involves both risk and uncertainty as a result of their will and discomfort. However, the factors like income, health risk perception, and consumption can give impact to the tourist behavior in pandemic period [95]. All of the criteria mentioned are crucial in inspiring tourists to visit a destination. Furthermore, the Covid-19 disaster contributes significantly to the danger in terms of health risk, as well as the effect of the perception of pandemic risk and tourist confidence. Our findings in this study provide a point of view on disaster risk, including pandemic disaster risk and crisis management perception. As a result, based on the greater impact of COVID-19, our study illustrates how the pandemic affects the tourism industry and leisure.

Findings of this study indicate that tourists and locals would view Covid-19 as a risk when traveling in post-pandemic Covid-19 areas. The personal NPI for Covid-19 as an adaptable among tourists to visit a location infers six key implications based on the findings of this study, which include the government, agencies, traveler marketers, hospitality sectors, and stakeholders. First, tourist intentions to visit the destination are resilient during the pandemic Covid-19 because the potential of tourists perceives NPI such as hand washing, wearing a mask while traveling, maintaining social distance, and checking the information about the Covid-19 as ways to avoid the spread of illness during a journey. Tourists will be able to be aware of their health consciousness if there is a guideline for NPI hygiene information at public destinations and safety information such as airplane onboard publications and internet information. Second, tourism operators and the government should update all Covid-19 information, conduct NPI campaigns, and raise health awareness during the epidemic. These are the complexities of the situation in the tourism sector while dealing with the pandemic Covid-19, worldwide air transport, and practical concerns in tourism connected to NPI and health consciousness, all of which influence travelers' trip intentions.

5- Conclusion, Recommendation, and Future Direction

During pandemic Covid-19, the tourism sector has been severely damaged by the pandemic, which results in a shift in visitor behavior. Based on TPB constructs, this study investigates the impact of Covid-19, non-pharmaceutical intervention, and health consciousness on intention to visit a local location in Indonesia during the pandemic Covid-19 era. TPB construct attitude has a substantial influence on intention to visit, subjective norm has a big impact on intention to visit, and the variable perceive behavioral control has a significant impact on intention to travel, according to a deeper analysis. The fluctuating health consciousness, on the other hand, has no effect on the desire to travel. It is critical for all practitioners, tourist marketers, leisure industries, government, and stakeholders who have the time to study this article to understand Covid-19 perception, non-pharmaceutical intervention, health consciousness, and behavior to travel in the pandemic Covid-19 era.

The perception of Covid-19 as a danger, as well as the health sector (non-pharmaceutical intervention and health consciousness) as variables that might impact local tourist behavior to visit a local destination in Indonesia, are examined in this study. This research will equip people's planning to visit a local location in Indonesia during the pandemic of Covid-19 with the knowledge that health is one of the most important factors to consider while avoiding risks like Covid-19. The researchers feel that this study can contribute to the tourist sector by assisting the government in making policies for disaster travel, such as during the Covid-19 era.

5-1- Limitation and Future Research

Our research has limits, but it does provide an opportunity to learn more and do more research. The study looks at how Covid-19, non-pharmaceutical interventions, health consciousness, and TPB conceptions are perceived in the tourism industry, particularly in destination areas. The study investigates the TPB concept in relation to the pandemic Covid-19, and how it relates to tourists' perceptions of Covid-19, non-pharmaceutical interventions, and health awareness when visiting a local destination in Indonesia. First, our research focuses on visitors' intentions to visit a local attraction in Indonesia. However, a new study involving international tourists from various nations might be undertaken. Second, the data are collected using online survey and quantitative approach. Therefore, the next research can apply different approach such as mixed methods or qualitative method to know more about the intention to visit a destination by visitors. The basic concept in this study relates to extend the theory of TPB (theory of planned behavior) and health perspective and risk by measuring the risk of Covid-19. Future research may capture the extension more precisely about the tourist visit intention by considering CHSE (Clean, Health, Sustainability and Environmentally) in the post Covid-19.

6- Declarations

6-1- Author Contributions

Conceptualization, P. and L.W.L.; methodology, S.Y.L; software, D.I.S.; validation, P.P., S.Y.L and L.W.L.; formal analysis, S.Y.L.; investigation, D.I.S; resources, S.Y.L; data curation, P.P.; writing—original draft preparation, P.P.; writing—review and editing, S.Y.L; visualization, L.W.L; supervision, L.W.L; project administration, D.I.S.; funding acquisition, S.Y.L All authors have read and agreed to the published version of the manuscript.

6-2- Data Availability Statement

The data presented in this study are available on request from the corresponding author.

6-3- Funding

The author received no financial support for the research, authorship, and/or publication of this article.

6-4- *Conflicts of Interest*

The authors declare that there is no conflict of interests regarding the publication of this manuscript. In addition, the ethical issues, including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, and redundancies have been completely observed by the authors.

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