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THE PERCEPTION EFFECT OF COVID-19 AND NON-PHARMACEUTICAL INTERVENTIONS (NPI) ON BEHAVIORAL INTENTION IN TOURISTIC TRAVEL AT INDONESIA

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Abstract: The COVID-19 pandemic has an impact on all activities around the world, especially tourism activities. Covid-19 will also affect people's behavioral intentions during touristic travel. Therefore, every country is taking additional measures to slow the spread through non-pharmaceutical interventions (NPI) such as wearing masks, social distancing rules, and maintaining hygiene. This research analyzed the travel decision-making process by combining COVID-19 variables and non-pharmaceutical intervention (NPI) cognition and behavioral intentions. Data collection method used in this study was quantitative mode and quota sampling. The research was conducted on 200 samples, namely Indonesians who had touristic travel in Indonesia. The data obtained were processed using SEM-PLS. The results of this research indicate that there is a positive and significant relationship between the perceptions of Covid-19 on non-pharmaceutical interventions so that there are similarities with the results of previous research in Turkey, the higher the perception of Covid-19 the more people are aware of the rules for using non-pharmaceutical interventions to slow the spread virus. Non-pharmaceutical interventions have no significant effect on behavioral intention and have the same results as the research in Turkey. The perception of Covid-19 has a different result from the Turkish research that has a negative and significant impact on behavioral intentions, while previous studies have negligible impact, which means that Indonesians regard travelling as a high-risk activity. In addition, the perception of Covid-19's behavioral intentions through non-pharmaceutical interventions has yielded insignificant results.
Keywords: *Behavioral Intention, Covid-19, Non-pharmaceutical (NPI), Touristic Travel*

Introduction

In late December 2019, the coronavirus (SARS-Cov-2) in Wuhan, China, has attracted great attention and has attracted great attention worldwide (Jiang et al., 2020). Covid-19 can cause severe acute respiratory syndrome (Ali et al., 2020). This greatly affected the country's economic growth. A situation like this has never happened before, and perhaps no other sector is as severely affected by Covid-19 as the tourism industry, and Indonesia is one of the countries affected by Covid-19 (Atmojo & Fridayani, 2021). Because tourism has become an integral part of human life (Nizar, 2015). In this case, the perception of Covid-19 can cause a lot of confusion, thus, it is necessary to implement non-pharmaceutical interventions (NPI) to predict future behavioral intentions.

The behavioral intention or intention of visiting entertainment venues is affected by the satisfaction experienced by tourists when visiting entertainment venues, including complete facilities, cleanliness, comfort and amusement (Aziiz, 2018). However, this pandemic affects people's behavioral intentions as consumers (Sheth, 2020). Therefore, when tourists are anxious about the Covid-19 pandemic, they are more likely to maintain personal and environmental hygiene and try to get vaccinated (Angguni & Lenggogeni, 2021). With uncertain surrounding, vaccines and drugs forcing affected countries to take additional measures to slow the spread namely non-pharmaceutical intervention (NPI) rules.

Non-Pharmaceutical Interventions (NPI) have been widely applied to control the spread of the 2019 coronavirus disease since February 2020 (Huh et al., 2021). Efforts to prevent the spread of COVID-19 prioritize the implementation of non-pharmaceutical

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interventions, such as social distancing, the use of masks, quarantine, self-isolation and hospitalization for confirmed cases, and others. (Ngonghala et al., 2020). Non-Pharmaceutical Interventions (NPI) does not only play an important role as personal and environmental hygiene measures to prevent the spread of Covid-19, but also as factors that encourage tourists to overcome psychological travel barriers and be motivated to conduct (Chung, Lee, & Park, 2021).

The previous research that became the reference for this research was carried out by (Kement, Çavuşoğlu, Demirağ, Durmaz, & Bükey, 2020) with the title "The Effect of perception of COVID-19 and non-pharmaceutical intervention on desire and behavioral intention in touristic travels in Turkey" behavioral intention in travel in Turkey. The results of this research indicate that the perception of Covid-19 on non-pharmaceutical interventions has a significant and positive effect. Perceptions of Covid-19 and Non-pharmaceutical Interventions have no significant effect on behavioral intention.

Referring to the previous research as well as introduction that has been presented above, the researchers compared studies in Turkey and Indonesia, hence the topic is set as "The Perception Effect of Covid-19 and Non-Pharmaceutical Interventions (NPI) On Behavioral Intention in Touristic Travel at Indonesia". This research is aimed at the tourism sector by analyzing the influence between variables and finding out whether perceptions have an indirect effect on behavioral intentions through non-pharmaceutical interventions (NPI). So that the results of this research can provide information and recommendations to the government and the public to better understand non-pharmaceutical actions on behavioral intentions during the Covid-19 pandemic.

Literature Review

Perception of Covid 19

The Covid-19 virus is a new virus that is related to the same virus family (Unicef, WHO, & IFRC, 2020). Corona virus causes common colds to more severe diseases such as Middle East Respiratory Syndrome (MERS-CoV) and Severe Acute Respiratory Syndrome (Putra & Dana, 2016).

Non-pharmaceutical intervention (NPI) during Covid 19

According to Wikipedia a non-pharmaceutical intervention or non-pharmacological intervention (NPI) is a type of health intervention that is not a drug. These interventions include social distancing, cough etiquette (covering the mouth with a handkerchief), the use of face masks, reducing contact with people and hygiene rules such as washing hands and cleaning touched surfaces (Çetin & Kara, 2020). Each country has used various non-pharmaceutical interventions (NPI) such as: isolation of confirmed cases and quarantines, social distancing such as closure of schools and workplaces, income support for households affected by Covid-19 and related interventions, as well as restrictions on domestic and international (Liu, Morgenstern, Kelly, Lowe, & Jit, 2020).

Behavioral Intention

Behavioral intention or intention to visit an entertainment place is influenced by the satisfaction felt by visitors when visiting the entertainment venue, with complete facilities, cleanliness, comfort and a sense of comfort after visiting the place (Aziiz, 2018). Behavioral intention will function as part of the desire that drives individuals into the status of "must do" or "will do" (Mamman, Ogunbado, & Abu-bakr, 2016).

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Hypothesis

Effect of Covid-19 perception on non-pharmaceutical intervention (NPI)

As of June 23, 2021, the Government of Indonesia reported 2,033,421 (15,308 new) confirmed cases of COVID-19, 55,594 (303 new) deaths and 1,817,303 recovered cases from 510 districts in 34 provinces (Disease & Report, 2021). The emergence of more infectious variants exacerbates the COVID-19 pandemic, especially if vaccines are less effective against novel variants (Wells & Galvani, 2021). However, infection rates can be reduced by a variety of non-pharmaceutical interventions (NPIs) and vaccines still targeted at large numbers of people will have a major impact (Moore, Hill, Tildesley, Dyson, & Keeling, 2021). For this reason, the following hypothesis was made:

H1. Perceptions of COVID-19 have a positive effect on non-pharmaceutical interventions (NPI).

Effect of non-pharmaceutical intervention (NPI) on behavioral intention

Non-pharmaceutical intervention (NPI) is an important component of society as a response to prevent the COVID-19 outbreak (Lai et al., 2020). Perceived risk will be a critical dimension in the tourist decision-making process, including: cognitive, affective, and more conative behavior (intention to travel) (Matiza, 2020). For this reason, the following hypothesis was made:

H2. Non-pharmaceutical intervention (NPI) negatively affects behavioral intention.

The effect of the perception of Covid-19 on behavioral intention

The current Corona virus may exceed the previously reported ratio of infected people and deaths (Zegarra-Valdivia, Chino-Vilca, & Ames-Guerrero, 2020) so that during this COVID-19 outbreak, tourism was badly damaged as travel was considered a high risk activity, Fear of the epidemic itself and perceptions of tourists have led to a significant decline in demand (Zheng, Luo, & Ritchie, 2021). For this reason, the following hypothesis was made:

H3. The perception of COVID-19 negatively affects behavioural intentions.

Indirect effect of Covid-19 perception on behavioral intention through non-pharmaceutical intervention (NPI)

To date, there is no vaccine or pharmaceutical treatment that is highly effective against COVID-19. Countries have used various non-pharmaceutical interventions (NPIs) (Liu et al., 2020). Thus, the hardest thing to prevent COVID-19 is social distancing and related efforts to control individual and population behavior (Eubank et al., 2020) The COVID-19 virus represents a primary health risk that affects tourist behavior and will be addressed by government intervention and immigration to reduce health risk factors (Matiza, 2020). For this reason, the following hypothesis was made:

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H4. The perception of COVID-19 positively affects behavioural intention through non-pharmaceutical interventions (NPI).

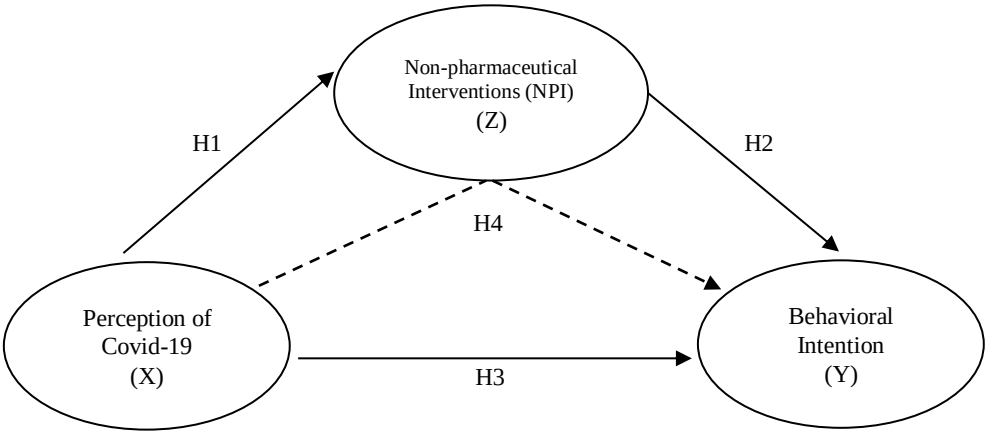

Figure 1. The Conceptual Framework

Method

This research used quantitative methods. The population in this research were all Indonesian people who have travelled in Indonesia in January - June 2020 with a total of 3,089,659 people according to the Indonesian Central Statistics Agency (BPS, 2020). The sample used follow the rule of ten times the largest number of formative indicators (Hair, Hollingsworth, Randolph, & Chong, 2017). Consequently, with the number of indicators as many as 20 multiplied by 10 and obtained the number of samples from this research was 200 people.

The sampling technique used quota sampling for someone who has traveled. The application of data collection was done by providing questionnaires. the Likert scale was used to evaluate the answers to each tool item, divided into 5 categories, namely 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree. Data analysis uses path analysis and SEM-PLS program for measurement model evaluation and structural model evaluation.

Table 1. Indicator

Variable		Indicator
Perception of COVID-19 X1 (PCOV) **(Kement et al., 2020)**	X1	Dangerous to travel due to COVID-19
	X2	COVID-19 is a very scary disease
	X3	Compared to SARS and Influenza A (H1N1), COVID-19 is more dangerous
	X4	Have a lot of information about COVID 19
	X5	Terrified of COVID 19
	X6	People in around refrain from traveling abroad
Non-pharmaceutical Intervention (NPI) **(Kement et al., 2020)**	Z1	Check information about COVID-19 and visit the website of the Ministry of Health of the Republic of Indonesia or WHO before traveling
	Z2	Read and check precautions about COVID-19 through a doctor or health center before traveling.
	Z3	Prepare a first aid kit for COVID-19 before the trip.

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	Z4	Get information about local medical and facilities to prepare for emergencies caused by COVID-19 before traveling.
	Z5	Wash your hands frequently when traveling.
	Z6	Do not touch eyes, nose and mouth while traveling.
	Z7	Covering my mouth and nose with a mask while traveling.
	Z8	Keep away from someone who has COVID19 symptoms while traveling.
	Z9	Refrain from meeting people for a while after traveling.
Behavioral intention (BI) **(Kement et al., 2020)**	Y1	Intending to travel soon
	Y2	Planning to travel soon
	Y3	Trying to travel soon
	Y4	Definitely invest time and money to travel in future.
	Y5	Willing to travel soon

Discussion and Result

Characteristics of respondents

Table 2. Profile of the respondent

Variable		*n*	%
Gender	Male	63	31.5%
	Female	137	68.5%
Job / Status	Student / College student	122	61.0%
	Private Sector Employee	26	13.0%
	Civil Servant	25	12.5%
	self-employed	8	4.0%
	Teacher	5	2.5%
	Freelance	1	0.5%
	Housewife	1	0.5%
	Doctor	1	0.5%
	Temporary Waitress	1	0.5%
	Does not work	10	5.0%
Age	Under 18 years old	58	29%
	18 – 34 years	111	55.5%
	35 – 54 years old	27	13.5%
	Over 55 years old	4	2.0%
Island	Sumatera	107	53.5%
	Java	66	33.0%
	Borneo	3	1.5%
	Sulawesi	1	0.5%
	Bali	18	0.5%
	NTT	3	1.5%
	Maluku	1	0.5%
	Papua	2	9%

From the 200 respondents, 31.5% of the respondents were male and 68.5% were female. Most of the respondents (61.0%) are students and are in the age range of 18-34 years. On the other hand, respondents stated that they came from the islands of Sumatra (53.5%), Java (33.0%), Kalimantan (1.5%), Sulawesi (0.5%), Bali (0.5%), NTT (1.5%), Maluku (0.5%), and Papua (9%).

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Evaluation of Measurement Models (Outer Model)

The measurement stages of the test model include: convergent validity test and discriminant validity test.

Table 3. Convergent validity and Average Variance Extracted (AVE)

CONSTRUCT	ITEM	OUTER LOADING	SAMPLE MEAN	T STATISTIC	AVE	RESULT
PERCEPTION OF COVID-19 (PCOV)	X1	0.788	0.788	16.229	0.558	VALID
	X2	0.841	0.837	26.904		VALID
	X3	0.802	0.802	22.368		VALID
	X4	0.538	0.541	6.719		VALID
	X5	0.735	0.733	15.692		VALID
	X6	0.741	0.739	16.131		VALID
BEHAVIOURAL INTENTION (BI)	Y1	0.941	0.936	14.602	0.711	VALID
	Y2	0.942	0.936	15.429		VALID
	Y3	0.927	0.922	14.728		VALID
	Y4	0.287	0.276	2.606		VALID
	Y5	0.917	0.912	15.284		VALID
NON-PHARMACEUTICAL INTERVENTION (NPI)	Z1	0.837	0.838	30.927	0.646	VALID
	Z2	0.845	0.846	25.869		VALID
	Z3	0.711	0.712	14.685		VALID
	Z4	0.781	0.781	17.697		VALID
	Z5	0.809	0.809	19.180		VALID
	Z6	0.660	0.652	9.196		VALID
	Z7	0.839	0.837	23.745		VALID
	Z8	0.850	0.850	28.222		VALID
	Z9	0.875	0.874	37.173		VALID

The results of the convergent validity test in Table 2. above show that the loading factor value of the X4, Y4 and Z6 indicators is invalid because according to (Hair, 2010) an indicator is declared valid if it has a loading factor value > 0.7 (Wahjoedi, 2021). So the X4, Y4 and Z6 indicators will be removed.

Table 4. Convergent validity and Average Variance Extracted (AVE)

CONSTRUCT	ITEM	OUTER LOADING	SAMPLE MEAN	T STATISTIC	AVE	RESULT
PERCEPTION OF COVID-19 (PCOV)	X1	0.779	0.777	14.449	0.627	VALID
	X2	0.858	0.856	32.504		VALID
	X3	0.814	0.812	24.000		VALID
	X5	0.760	0.759	18.869		VALID
	X6	0.743	0.741	14.711		VALID
BEHAVIOURAL INTENTION (BI)	Y1	0.940	0.939	73.795	0.677	VALID
	Y2	0.943	0.941	76.173		VALID
	Y3	0.929	0.928	50.114		VALID
	Y5	0.919	0.919	62.520		VALID
NON-PHARMACEUTICAL INTERVENTION (NPI)	Z1	0.842	0.839	30.316	0.870	VALID
	Z2	0.852	0.850	27.249		VALID
	Z3	0.709	0.705	13.345		VALID
	Z4	0.779	0.774	16.572		VALID
	Z5	0.806	0.806	18.874		VALID
	Z7	0.839	0.837	25.654		VALID
	Z8	0.860	0.859	30.139		VALID
	Z9	0.882	0.881	38.508		VALID

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After the indicators X4, Y4 and Z6 are removed, Table 3 shows that the loading factor gives a value above the recommended value, which is > 0.7 so that the indicators used in this research have reached convergent validity. In table 3, all variables have an AVE value > 0.5 so that the convergence validity is good.

Table 5. Discriminant Validity

	Perception of Covid-19 (PCOV)	Non-Pharmaceutical Intervention (NPI)	Behavioral Intention (BI)
X1	0.788	0.664	-0.29
X2	0.841	0.573	-0.28
X3	0.802	0.589	-0.234
X4	0.538	0.466	-0.045
X5	0.735	0.475	-0.302
X6	0.741	0.623	-0.246
Y1	-0.324	-0.302	0.941
Y2	-0.282	-0.279	0.942
Y3	-0.274	-0.306	0.927
Y4	0.031	0.07	0.287
Y5	-0.297	-0.283	0.917
Z1	0.673	0.837	-0.265
Z2	0.67	0.845	-0.269
Z3	0.51	0.711	-0.197
Z4	0.589	0.781	-0.154
Z5	0.569	0.809	-0.293
Z6	0.471	0.66	-0.203
Z7	0.618	0.839	-0.284
Z8	0.68	0.85	-0.32
Z9	0.7	0.875	-0.31

According to Table 4 all indicators in each construction have the highest relation value when compared to other construction values, so it can be concluded that the discriminant validity is good.

Table 6. Reliability Test

CONSTRUCT	COMPOSITE REALIABILITY	CORNBACH'S ALPHA	DECISION
PERCEPTION OF COVID-19 (PCOV)	0.918	0.890	Good
NON-PHARMACEUTICAL INTERVENTION (NPI)	0.942	0.930	Good
BEHAVIOURAL INTENTION (BI)	0.882	0.837	Good

Table 4 shows that all latent variables measured in this research have Composite Reliability (CR) and Cronbach Alpha values > 0.7, according to Ghozali, (2014) the composite reliability and Cronbach's alpha values are suggested to be more than 0.7 (Sasono et al., 2021) so that it can be concluded that all latent variables are reliable or all indicators have consistency in measuring the latent variables.

Evaluation of Structural Models (Inner Model)

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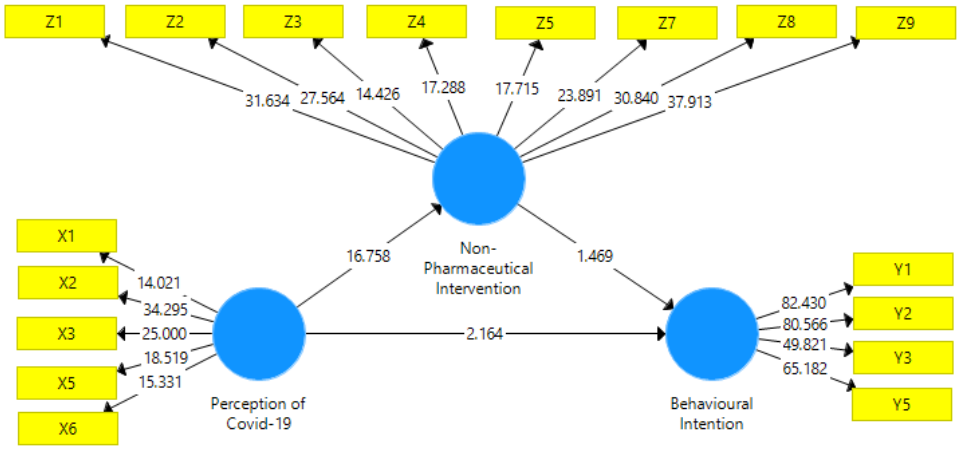

Figure 2. Structural model full Bootstrapping

The evaluation is structured using a structural model in SEM with PLS by performing the R-squared test and the significance test of the estimated path coefficients.

Table 7. Hypothesis Testing of Direct Effect

PATH	PATH COEFFICIENT (STANDARIZED)	T-STATISTIC	P VALUES	DECISION
PCOV → NPI	0.748	16.556	0.000	H1 : ACCEPTED (+)
NPI → BI	-0.144	1.464	0.144	H2 : NOT ACCEPTED (-)
PCOV → BI	-0.228	2.190	0.029	H3 : ACCEPTED (-)

From table 6. shows that:

- The first hypothesis explains that Perception of Covid-19 has a positive and significant effect on Non-pharmaceutical Interventions of 0.748.
- The second hypothesis explains that non-pharmaceutical interventions have a negative and insignificant effect on Behavioral Intention of -0.144.
- The third hypothesis explains that the perception of Covid-19 has a negative and significant effect on Behavioral Intention of -0.228.

Indirect Effect

Table 8. Indirect Result

Path	Coefficients	Result
PCOV → NPI → BI	-0.108	Not Significant

Table 8 shows that there is no indirect relationship between the perception of Covid-19 and behavioral intention through non-pharmaceutical interventions as an intervening variable.

Table 9. R-Square

Variable	R-Square	Result
NPI	0.560	Moderate
BI	0.122	Weak

Table 9 shows the criteria for the R-squared value, the r-square value of the non-pharmaceutical intervention variable is 0.560, thus it can be declared moderate, while the r-square value to the behavioral intention variable is 0.122, it can be stated that the r-square value of the behavioral intention variable is relatively weak.

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Conclusion

The results of the research show that there are similarities with the results of previous research in Turkey where the perception of Covid-19 has a positive and significant effect on non-pharmaceutical interventions. This shows that the higher the perception of Covid-19, the more people are aware of the rules for using non-pharmaceutical interventions to slow the spread of the virus. The non-pharmaceutical intervention applied had no significant effect on behavioral intention and had the same results as the research in Turkey which showed that tourists believe that NPI does not reduce travel risks and therefore does not increase their intention to travel.

The perception of Covid-19 is different from the results of the Turkish research, and it has a negative and significant effect on behavioral intentions, while the previous research has no significant effect, because Indonesians are increasingly aware that their perception of Covid-19 does not intend to travel, because travelling is considered a high-risk activity. And the fear of the epidemic itself has led to tourists' perception of a sharp drop in demand (Zheng et al., 2021). Furthermore, the perception of Covid-19 on behavioral intention through non-pharmaceutical interventions obtained insignificant results.

Managerial Implications

According to the analysis and conclusions of the research above, the positive effect of the perception of Covid-19 on the NPI will be a useful strategy for government agencies to keep informing the public about the non-pharmaceutical intervention (NPI) rules, such as the use of masks, keeping clean, etc., even though there are more Indonesians had been vaccinated. This research is also a strategy for travel companies to focus on tourists' perceptions of the pandemic.

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