

## **Behavior Study on Wearing Mask by Office Workers in Dki Jakarta During the Covid-19 Pandemic: An Analysis with the theory of Planned Behavior**

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### **Abstract**

Covid-19 is a coronavirus 2 (SARS-CoV-2) pandemic initially detected in Wuhan, China, in December 2019 (Avula et al., 2020). However, Covid-19 has spread worldwide and is declared a world epidemic by the World Health Organization (WHO). Covid-19 has shown tremendous effects in developed countries, including the United States, Spain, Italy, France, and Germany. Globally, the number of Covid-19 cases is rising, leading numerous countries to take preventive steps in the face of the pandemic. Office areas are one of the places for the spread of Covid-19, especially for office workers with a high potential risk of Covid-19 infection.

The Theory of Planned Behavior is the employed research model, analyzing the workers wearing masks by office workers during the Covid-19 pandemic. The model was empirically evaluated by administering questionnaires data to sampling office workers in DKI Jakarta and its surroundings. Samples of 155 person office workers were collected using random sampling from blast digital format questionnaires via social media and chat applications. The TPB standard questionnaire is a data collection instrument with modifications based on the objectives of the study. This study examines the intention among office workers to use the mask that predicts worker's behavior using the Theory of planned behavior. The data obtained from the survey were analyzed using the Partial Least Squares Structural Equation Modeling (PLS-SEM) methodology, a multivariate statistical tool. The data reveal that intention displays more than 48 percent for workers' mask-wearing behavior in the office during the Covid-19 Pandemic. Surprisingly, the Theory of planned behavior (TPB) constructs involving subjective norms do not significantly influence the worker's intention to use the mask. The study's results deliver practical insights for workers and companies.

**Keywords:** Attitudes, behavior, intention, perceived behavior control, and subjective norms

### **1. INTRODUCTION**

The Covid-19 pandemic continues to spread at the level of danger associated with its spread extends to all levels of society. For this reason, the importance of reducing the risk of being exposed to the plague is that everyone needs to use personal protective equipment (PPE). PPE define as equipment used to minimize exposure to hazards that cause illnesses in the workplace, including masks and respirators (Ippolito et al., 2020). Thus, using masks and other safety actions, especially in public health issues, has become an international concern for health workers and the general public. One of the clusters for the spread of Covid-19 is an office environment where the work area is a closed area where workers interact with a high potential risk of Covid-19 infection. Government regulation about implementing Large-Scale Social Restrictions (PSBB) and the Enforcement of Restrictions on Community Activities (PPKM) limits the number of movements and social interactions in public areas, including offices. However, the issues need to be supported by discipline in protecting yourself, which is using a mask as PPE.

Wearing a mask is essential for workers since it allows them to combat the deadly Covid-19 with less fear of contracting the disease. It aims to break the chain of transmission of Covid-19, apart from other habits such as washing hands, personal hygiene, and maintaining social distancing.

Due to the growing number of Covid-19 cases worldwide, several countries have taken precautionary measures. However, a lack of cross-cultural agreement has been made regarding wearing masks to be an effective physical intervention against disease transmission. Another study analyzed the face mask debate during the Covid-19 pandemic (Wang et al., 2020).

In previous research was known that health workers were at the frontline of handling Covid-19. The use of masks is important against the dangerous Covid-19 to alleviate fear and anxiety about contracting the disease (Goh et al., 2020). However, hand cleanliness is regarded as a more effective technique for Covid-19 infection prevention by the general population than wearing a mask. On the Google search site, searches for the word "face mask" outnumbered the number of searches for the word "wash hands" (National Health Service, 2020).

So that by avoiding crowded areas and always using a mask is highly recommended that the transmission of Covid-19 can be reduced (Zou et al., 2020). From these studies, use the mask likely to become a new habit during the Covid-19 pandemic. However, to find out how this habit can work well, especially in public areas where people gather, wherein this study the office area with the interaction of workers in it is an interesting thing that needs to research.

According to the Theory of Planned Behavior, intention influence an individual's behavior. Attitudes, subjective standards, and perceived behavior control all impact intention (Ajzen, 1991). Health factors encouraged people to use masks to protect themselves and others (Leung et al., 2020).

Academic literature reveals studies on masks, including the benefits of using masks in reducing the spread of respiratory infections in society (Goh et al., 2020). Meanwhile, this research will be analyzing how the behavior of wearing a mask by office workers during the Covid-19 pandemic. Where will prove the hypothesis regarding variable attitudes, subjective norms, and perceived behavior control by workers to influence the intention and create a behavior of using masks in an office environment through the Theory of Planned Behavior.

Furthermore, utilizing the theoretical method described above, this study seeks to determine the effect of workers' habits in using masks in the work environment to protect themselves during the Covid-19 Pandemic. This study investigates whether the use of masks in the workplace is influenced by attitudes, subjective norms, and perceived behavior control. Finally, we anticipate that the effect of attitudes, subjective norms, and perceived behavior control on workers' intention to wear masks in their workplace during the Covid-19 pandemic could be explained by this research through the Theory of Planned Behavior approach.

## **2. LITERATURE REVIEW**

### **2.1 Theory of Planned Behavior**

The Theory of Planned Behavior has been acknowledged for its explanatory strength about people's intentions to do specific behaviors, mediated by three antecedent factors (Ajzen, 1991). These antecedent variables include: (1) Attitudes of people that reflect their assessment of behavior that intended to be favorable or unpleasant; (2) Subjective norm (SN) describes the views of relatives, friends, and other social reference groups on how an individual should behave in a certain way; and (3) perceived behavior control (BC) represents an individual's Perception of whether the desired behavior is easy or difficult to perform (Kumar, 2019).

To address the complexities of human social behavior, the Theory of Planned Behavior offers a practical conceptual framework. The theory integrates several key concepts from the social and behavioral sciences, and describes them for predicting and understanding certain behaviors within particular circumstances. Attitudes toward behavior, the subjective norm on behavior, and perceived control over habits tend to accurately predict behavioral intentions. Therefore, with combined perceived behavior control, this intention explains the majority of the variance in behavior simultaneously (Ajzen, 1991).

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The Theory of Planned Behavior is used in investigating a person's intention. Using survey data from 144 customers, the Theory of Planned Behavior predicts behavioral intention (Mancha & Yoder., 2015). Chen (2016), on the other hand, uses the Theory of Planned Behavior model to anticipate the influence of sustainable values on loyalty. Hua and Wang (2019) show that the Theory of Planned Behavior construction indicates people's desire to buy equipment that saves energy consumption. The Theory of Planned Behavior was applied to the workplace. It was discovered that human resource decisions by managers and senior management are influenced by attitudes, subjective norms, and perceived behavior control (Sawang & Kivits., 2014).

There have been numerous behavioral theories that explained individuals' behaviors in certain contexts. One of them is Theory of Planned Behavior (TPB) by Ajzen (1985), as a behavior-explaining framework. The TPB is a strong model to understand intention and behavior and has been used to successfully describe various behaviors (Hasheminezhad and Yazdanpanah, 2016). The idea behind TPB is that individuals' behaviors are affected by intentions. With remarkable success, the TPB is frequently used in examining the correlation between attitudinal components and behavioral intention.

Most of the Theory of Planned Behavior constructions are a substantial determinant of Intention (Yarimoglu & Gunay, 2020). Previously, a Theory of Planned Behavior research revealed that the three antecedents outlined above account for between 30-40% of intention variance, allowing enough space for other behavioral variables to exhibit this impact (Kautonen et al., 2015). Furthermore, the theoretical approach is the worker's return to their routine work at the office. Thus, Facemask will become a psychological symbol to prevent Covid-19 infections (Goh et al., 2020). This study will look at how attitudes, subjective norms, and perceived behavior control influence a worker's decision to wear a mask in the workplace.

## 2.2 Attitudes

Attitudes are the first determinants of intention to behave in the Theory of Planned Behavior (Ajzen & Fishbein, 1980). This is where an individual has either a positive or unfavorable assessment of the behavior in question. Therefore, the intention of the behavior will be high when the individual has a positive attitude toward the behavior. Conversely, the intention to behave will be lower if the individual has bad behavior (Lili et al., 2021). Furthermore, empirical data shows that behavior is an important antecedent variable of behavioral intention (Chen & Wu., 2020). Therefore, the intention to perform a behavior is affected by positive behavior.

When 50% of the general public use masks, the risk of infection is reduced up to 50%, whereas the chance of transmission could be insignificant if 80% of the public use masks (Yan et al., 2019). This phenomenon is observed in numerous countries that use masks on a regular basis. Their belief in the benefits, functions, and ways of using masks as PPE to protect fellow workers will encourage the behavior of a worker to use masks.

Empirical data supports the notion that behavior is an important antecedent characteristic of behavioral intention (C.-L. Chen & Wu, 2020; Choe & Kim, 2018; Faham & Asghari, 2019; Yeo, Goh, & Rezaei, 2017). Individual positive behavior will influence the intention to behave (Desa et al., 2011; Manowong, 2012). Therefore, a more favorable attitude on behavior suggests a stronger desire to engage in that act. Indicators can measure it in the form of an understanding of the function and how to use masks. For this reason, it is necessary to see how the trust factor can encourage worker behavior to use masks.

## 2.3 Subjective Norm

Subjective norms refer to the societal pressures that people feel while deciding to take action or not (Lili et al., 2021). For example, the opinions of family members, friends, the community, and government departments easily affect an individual's inclination to partake in certain activities. Several studies have found that subjective norms and intention to behave positively correlate (Khan, Ahmed, and Najmi, 2019; Piazza et al., 2019).

Subjective Norm, another significant antecedent variable of Intention, demonstrates the perceived social pressure of highly regarded people or groups (for example, family or friends) in the influence to perform particular behaviors (Ajzen, 1985, 1991). The Theory of Planned Behavior hypothesis states that norm

subjective positively correlates with behavioral intention. Therefore, greater support from an influential person or group could influence the individual to be more likely to engage in the desired behavior.

A positive link between perceived norm and intention has been suggested by empirical research from a variety of contexts (Cheon et al., 2012; Chu & Chen., 2016; Lin & Yu., 2018). So that the situation/social support for a worker to wear a mask will encourage the subjective norm of a worker. It can be measured by the indicators of support from family, colleagues, and company regulations. For this reason, it is necessary to see how the social support/situation factors can encourage the norm subjective of workers to use masks.

## **2.4 Perceived Behavioral Control**

Individual judgments of the ease or difficulty of carrying out activities are referred to as perceived behavior control in the Theory of Planned Behavior (Ajzen, 1985, 1991). Previous research discovered a positive connection between perceived behavior control and intended behavior (Kang et al., 2006; Kidwell & Jewell, 2003; Ru, Wang, & Yan, 2018).

The worker's abilities may play a role in predicting the intention to wear masks (Nie et al., 2020). As a result, this study presents a hypothesis on the relationship between perceived behavioral control and intention to wear masks. Perceptions of the convenience of using masks will encourage perceived behavior control by workers in using masks. For this reason, it is necessary to see how these perceptions can be encouraged worker norm subjective to use masks.

## **2.5 Intention**

Intention refers to a person's readiness to perform a certain behavior (Ajzen, 1985, 1991). It is regarded as a cognitive element that determines the extent to which the individual will perform the actual behavior (Ajzen, 1991; Enkel & Bader, 2016). The Theory of Planned Behavior states that intention acts as an antecedent variable of actual behavior, implying that actual behaviors tend to be performed more by individuals with intention (Ajzen, 1991; Davis, 1989; Fishbein & Ajzen, 1977).

The intention of an individual to do particular actions is the fundamental component in the Theory of planned behavior. The intention refers to the motivating elements that impact behavior; it reflects the individual's willingness to try and work to performing the behavior (Ajzen, 1991). Attitudes, subjective standards, and perceived behavior control all have an impact on behavioral intention. Behavioral intentions reflect how far a person will go and how much work they intend to put in to accomplish a specific action (Ajzen, 1980). Performative behavior intention eventually led to participation in that action (Ajzen, 1991).

Previous research has discovered a positive correlation between behavioral intention and actual behavior in the construction industry (Begum et al., 2009). As a result, this research presents a hypothesis on the relationship between perceived intentions and the practice of wearing masks. So, it assumed that the perception of intention to use masks encouraged workers' behavior wearing a mask. For this reason, it is necessary to see how workers' intentions in using masks can affect the behaviors of workers using masks in the office environment.

## **3. RESEARCH METHODOLOGY**

### **3.1 Research Data**

Based on the research objectives, this quantitative research determines workers' habit of using masks as personal protective equipment to prevent Covid-19 from spreading within the office environment. Researchers used literature study methods and questionnaires in this study.

Office workers in the Jakarta area and its surrounding become the statistical samples population of the research. Samples of 155 person office workers were collected using random sampling from blast digital format questionnaires via social media and chat applications. The TPB standard questionnaire is a data collection instrument with modifications based on the objectives of the study. The questionnaire consists of several sections, including demographic characteristics, ages, educational background.

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## 3.2 Measurement

The study used descriptive statistical analysis as the basis for information in this study using a 5-point Likert scale. The analysis was conducted to measure respondents' responses based on each measurement indicator.

This study uses a structured questionnaire by assessing five points of assessment where respondents are asked to determine the extent to which they strongly disagree to strongly agree with each statement about attitudes, subjective norm, perceived behavior control, intention, and behavior. The questionnaire statements correspond to prior research that used the Theory Planned Behavior method. All respondents' answers use a five-point Likert scale (from strongly disagreed to strongly agreed).

The instrument used was created using a validated scale from prior research to improve the validity and reliability of the results. Using the theory Planned of Behavior, attitudes, and subjective norms adopted from (Wang et al., 2018; Zhang et al., 2015) to assess the office workers' responses on the intention to use masks. Perceived behavior control is reflected in three driving aspects (Chen, 2016). Office workers' intention to use masks was measured using three items adapted from (Russell et al., 2017; Zhang et al., 2015). While the measure of the habit of office workers using masks adopted from (Yeow & Loo. (2018). A list of statement details along with their sources is in the appendix of this study.

## 3.3 Hypothesis

Referring to previous studies regarding the Theory of Planned Behavior, they stated that behaviors are influenced by intention. It is strongly influenced by attitudes, subjective norms, and perceived behavior control (Ajzen, 1991). Hence, to determine the impact of workers' use of masks in the workplace, factors must be operationalized. This study uses 3 (three) variable models, namely the independent, mediating, and dependent variables. The variables include Attitudes, Subjective Norms, and Perceived Behavioral Control as an Independent variable (X), intention as a mediating variable (X<sub>1</sub>), while behavior as a dependent variable (Y).

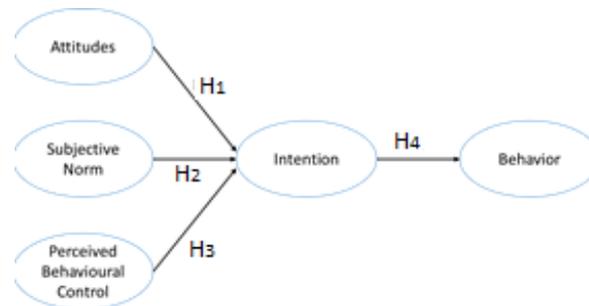


Figure 1. Research Hypothesis

- 1: H The attitudes of office workers have a positive effect on workers' intention to use masks;
- 2: H The subjective norm of office workers has a positive influence on the intention to use a mask; Perceived Behavioral Control for office workers has a positive influence on the intention to use masks;
- 3: H The intention of using masks has a positive influence on the behavior of office workers using masks;
- 4: H The attitudes of office workers have a positive effect on workers' intention to use masks;

## 4. RESULT

### 3.4 Descriptive Analysis

Structured equation modeling (SEM) could be applied in quantitative studies to examine complicated relationships through data type variety (Wolf, Harrington, Clark, & Miller, 2013). Generally, there are two SEM statistical approaches; covariance-based SEM (CB-SEM) and at least partial square SEM (PLS-SEM). SmartPLS software is used as a "structural equation modeling" (SEM) based on the "partial least squares" (PLS) technique. In comparison to the covariance technique, this methodology is more suited for assessing the importance of the proposed pathway due to its high prediction accuracy and minimal sensitivity to normalcy issues (Ali et al., 2018; Chin, 1998). Furthermore, SmartPLS computes different model assessment metrics using the bootstrap approach, dividing a model's statistical sample into 5000 or more subsamples (Sarstedt and Cheah, 2019).

Source data come from about 155 respondents in total were collected in a week with workers in the Jakarta area and surrounding as respondents. Among the respondents, 67.10 percent are males, and 32.90 percent are female. With 70.97 percent of all respondents, a substantial portion was 30-45 years old, 22.58 percent respondents were less than 30 years old, and 7.10 percent respondents were more than 45 years old. The details of respondents' profiles are summarized in Table 1.

**Table 1. Descriptive Statistics**

<b>Profile</b>	<b>N</b>	<b>%</b>
<b><u>Gender</u></b>		
Female	51	32.90%
Male	104	67.10%
<b><u>Age</u></b>		
<30 years	35	22.58%
30 – 45 years	110	70.97%
>45 years	10	6.45%
<b><u>Education</u></b>		
High School	3	1.94%
Undergraduate	123	79.35%
Post Graduate	29	18.71%
<b><u>Area</u></b>		
DKI Jakarta	147	94.84%
Bekasi & Cikarang	7	4.52%
Tangerang	1	0.65%

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The respondent's perceived level of agreement is indicated by the means and standard deviations results, shown by all items variables having a score over 4.6 (see Table 2). These findings show that respondents intend to use a mask in the workplace. The findings also indicate that respondents had a high level of agreement, with most mean values hovering around 5. This implies positive behavior by workers on using masks in the workplace.

Table 2. Construct items

Construct	Mean	SD
ATT <sub>1</sub>	4.75	0.53
ATT <sub>2</sub>	4.89	0.39
ATT <sub>3</sub>	4.95	0.22
SN <sub>1</sub>	4.66	0.63
SN <sub>2</sub>	4.74	0.53
SN <sub>3</sub>	4.48	0.73
PBC <sub>1</sub>	4.74	0.46
PBC <sub>2</sub>	4.67	0.52
PBC <sub>3</sub>	4.85	0.36
IT <sub>1</sub>	4.79	0.44
IT <sub>2</sub>	4.84	0.40
IT <sub>3</sub>	4.74	0.55
BH <sub>1</sub>	4.90	0.32
BH <sub>2</sub>	4.91	0.37
BH <sub>3</sub>	4.89	0.31

## 4.1 Measurement Model

PLS-SEM is a popular approach for examining the influence of independent study variables on dependent constructs, particularly in human resource research (Bagheri et al., 2020; Wu, 2010). The model's reliability should be established prior testing. The reliability of the composite and the mean-variance extracted estimate reliability and convergent validity (see Table 3). The composite reliability for all constructions is more than the acceptable level of 0.70 (Hair et al., 1998).

Whereas convergent validity may be determined by the mean of the extracted variants (AVE), which must be more than 0.50 (Fornell & Larcker, 1981). Factor loading could also determine the convergent validity. To assess convergent validity, the Average Variance Extracted (AVE) is computed (the extent to which two theoretical constructs should be related). Reliability and validity can accept if the value is higher than 0.70 and AVE is above the threshold value of 0.50 (Hair et al., 2017).

Factor loadings greater than 0.50 were significant (Hair et al., 1998). A stricter criterion of loading greater than 0.70 was proposed (Fornell, 1982). The factor loadings of the components in the study model were all more than 0.50, with the majority above 0.70. Each item had a substantial influence ( $p < 0.01$  in all cases) on its underlying construct. As a result, all of the model's constructs exhibited sufficient reliability and convergent validity. Composite Reliability (CR) measures the internal consistency in scale items with a Cronbach alpha

value of the model being more than 0.7, indicating control of measurement error in SEM, except for the intention, which shows a slightly lower value. (Hair et al., 2006).

Table 3. Reliability Test

Research construct and research items		Factor Loading >0.7	Composite Reliability >0.7	AVE >0.5
<b><u>Attitude</u></b>			0.88	0.71
ATT <sub>1</sub>	Using a mask during the Covid-19 pandemic made me feel comfortable	0.84		
ATT <sub>2</sub>	Using a mask prevents the spread of Covid-19 in the community	0.85		
ATT <sub>3</sub>	Everyone is responsible for wearing masks during the Covid-19 pandemic	0.83		
<b><u>Subjective Norm</u></b>			0.87	0.69
SN <sub>1</sub>	I will use a mask If my family and friends use masks during the Covid-19 pandemic	0.77		
SN <sub>2</sub>	The information media encouraged me to wear a mask during the Covid-19 pandemic	0.90		
SN <sub>3</sub>	The community around me influenced me to wear a mask	0.83		

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	during the Covid-19 pandemic			
	<b><u>Perceived Behavior Control</u></b>		0.92	0.80
PBC <sub>1</sub>	I know what types of masks I can use at the office during the Covid-19 pandemic	0.93		
PBC <sub>2</sub>	I know the procedures for using masks at the office during the Covid-19 pandemic	0.91		
PBC <sub>3</sub>	I was able to use a mask at work during the Covid-19 pandemic	0.84		
	<b><u>Intention</u></b>		0.89	0.74
IT <sub>1</sub>	I am interested in the use of masks during the Covid-19 pandemic	0.91		
IT <sub>2</sub>	I will give masks to colleagues who did not use masks while in the office during the Covid-19 pandemic	0.83		
IT <sub>3</sub>	I am interested in participating in the mask use program in the office during the Covid-19 pandemic	0.84		

<b><i>Behaviour</i></b>		0.92	0.80
BH <sub>1</sub>	Using a mask has become my behavior during the Covid-19 pandemic	0.94	
BH <sub>2</sub>	Using a mask while at work has become my behavior	0.88	
BH <sub>3</sub>	I had to participate in wearing masks during the Covid-19 pandemic as a new behavior	0.90	

Discriminant validity is demonstrated by comparing the shared variances between constructs with the AVE of individual constructs, which is demonstrated by the fact that the square root of the AVE of each construct should generally be greater than the correlations between it and any other construct in the model (Fornell and Larcker, 1981). All results confirm discriminant validity that can see in Table 4. Finally, the measurement model demonstrated adequate reliability, convergent validity, and discriminant validity.

Table 4. Discriminant Validity

	<b>ATT</b>	<b>BH</b>	<b>IT</b>	<b>PBC</b>	<b>SN</b>
<b>ATT</b>	0.84				
<b>BH</b>	0.81	0.91			
<b>IT</b>	0.69	0.69	0.86		
<b>PBC</b>	0.58	0.53	0.76	0.89	
<b>SN</b>	0.46	0.44	0.49	0.64	0.84

Notes: correlation coefficients include in the lower triangle of the matrix, and the square root of AVE is on the diagonal.

#### 4.2 Structural Modelling

This research aims to identify the relationships among attitudes, Subjective Norm, and Perceived behavior control with the intention to form behavior of using a mask during the Covid-19 Pandemic. Researchers used the PLS-SEM to test the relationship among the variables and compare the modeled relationships with the observed scores to achieve the objective.

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Table 5. Hypothesis Relationship

Hypothesis	Path	SD	T Stat	P Values	Signi-ficance
H <sub>1</sub>	ATT -> IT	0.084	4.487	0	Supported
H <sub>2</sub>	SN -> IT	0.066	0.814	0.416	Not Supported
H <sub>3</sub>	PBC -> IT	0.096	6.026	0	Supported

The SmartPLS program used bootstrapping to assess hypothesis connections with up to 5000 generated subsamples. Bootstrapping applies random sampling methods to estimate the sample distribution of any statistic as a measure of accuracy (Efron and Tibshirani, 1993). The analysis of the research model is based on the estimated beta coefficients ( $\beta$ ) of each variable, indicating the influence of attitudes, Subjective Norm, and Perceived Behavioral Control on behavior formation intent in the TPB. The findings indicated that subjective norms had no significant influence ( $\beta=-0.054$ , P Values=0.416) on the intention to use a mask during the Covid-19 pandemic. So, hypothesis H<sub>2</sub> was not supported.

The substantial positive effect of attitude ( $\beta=0.378$ ,  $t=4.478$ ,  $p<0.001$ ) and perceived behavioral control ( $\beta=0.576$ ,  $t=6.026$ ,  $p<0.001$ ) in defining support for hypotheses H<sub>1</sub> and H<sub>3</sub> drove about 67.3 percent of the intention to employ mask. Meanwhile, 48.1 percent of the behavior to using a mask during the Covid-19 Pandemic significantly influencing by intention to using mask were support for hypothesis H<sub>4</sub>.

## 5. CONCLUSION

### 5.1 Discussion & Implication

Workers' behaviors on using masks were examined in this research. There has been no research into office employees using masks during the covid-19 pandemic utilizing the TPB. Subjective norms had no significant impact on young consumers' intention to wear a mask using TPB's methodology, but perceived behavioral control and attitudes were major predictors of wearing a mask intention. Based on the results, creating policies and programs for workers to wear masks in the office encourages workers to wear masks. However, subjective norms' effect on workers wearing masks during the Covid-19 pandemic is not supported by the results and contradicts the original TPB's position on the significance of subjective norms in influencing workers' use of masks.

There are numerous critical academic implications resulted from the findings. Previous studies have shown that wearing a mask is essential to fight the deadly Covid-19, as it reduces the worry and anxiety of getting the illness (Goh et al., 2020). Individuals' behaviors are not only affected by attitudes, and behavioral control but also by social pressure (i.e., subjective norms). As a result, this study implies that subjective norms are an important component to be considered when examining individuals' behavior on wearing masks during the Covid-19 pandemic, particularly in the workplace setting as a public interaction space.

This study provides several implications for practitioners. According to the results, attitude and behavioral control have a key influence in forming an intention to wear a mask within the workplace during the Covid-19 pandemic. Therefore, the company should create and applied strict policies about wearing a mask in the office.

This study gives vital information for the company and office workers to encourage masks by knowing the three drivers of the TPB model and the particular beliefs. Among the three determinants, the highly crucial component for intention was perceived behavioral control. The establishment of perceived behavioral control is significantly contributed by all control beliefs, with health concerns regarded as the most significant control factors. Most importantly, companies and office workers should actively wear masks during the Covid-19 pandemic and provide information about how important using masks in the office is as a preventive action to protect office workers from the spread of Covid-19.

## 5.2 Conclusion

The study's primary objectives were to examine the connections between attitude, subjective norms, perceived behavioral control, intention, and behavior of office employees applying a mask during the Covid-19 pandemic. There are four research conclusions based on the SEM model given in this paper.

First, a solid theoretical framework was established through habitual behavior and TPB to determine the workers' intentions on using masks. Secondly, the study responds to research demand for further empirical exploration on habits that affect mask uses, particularly among office workers. Third, the influence of attitude, subjective norms, and perceived behavioral control on workers' intention to adopt a behavior of using a mask are examined. The outcome of the SEM analysis supports our theory. Except for the hypothesis H2 was not supported were subjective norms no significant effect on the intention of using a mask during Covid-19 pandemic. Fourth, it covers a mask research gap concerning individuals' actions during the Covid-19 pandemic to protect themselves and others.

## 5.3 Research Limitation & Future Research

When evaluating the outcomes of this study, many limitations must be acknowledged. We did not investigate the moderating impact of the connection between attitude, subjective norms, perceived behavioral control, intention, and conduct due to time constraints and complexities. This limitation of the study would be interesting for future research.

Due to sample size and research restrictions, the study did not rule out the impacts of demographic and cultural factors. However, it may pave the way for future studies to explore these characteristics with bigger samples. In addition, future studies may also include qualitative approaches to provide in-depth understanding regarding mask-wearing behavior in a broader context.

## APPENDIX. QUESTIONER CONSTRUCT

Variables	Code	Questions
<b>Attitude</b> (Wang et al., 2018; Zhang et al. 2015)	ATT <sub>1</sub>	Using a mask during the Covid-19 pandemic made me feel comfortable
	ATT <sub>2</sub>	Using a mask prevents the spread of Covid-19 in the community
	ATT <sub>3</sub>	Everyone is responsible for wearing masks during the Covid-19 pandemic
<b>Subjective Norm</b> (Wang et al., 2018; Kochan et al., 2015; Zhang et al. 2015)	SN <sub>1</sub>	I will use a mask If my family and friends use masks during the Covid-19 pandemic
	SN <sub>2</sub>	The information media encouraged me to wear a mask during the Covid-19 pandemic
	SN <sub>3</sub>	The community around me influenced me to wear a mask during the Covid-19 pandemic
<b>Perceived Behavioral Control</b> (Chen, 2016)	PBC <sub>1</sub>	I know what types of masks I can use at the office during the Covid-19 pandemic
	PBC <sub>2</sub>	I know the procedures for using masks at the office during the Covid-19 pandemic
	PBC <sub>3</sub>	I was able to use a mask at work during the Covid-19 pandemic
<b>Intention</b> (Russell et al., 2017; Zhang et al. 2015)	IT <sub>1</sub>	I am interested in the use of masks during the Covid-19 pandemic
	IT <sub>2</sub>	I will give masks to colleagues who did not use masks while in the office during the Covid-19 pandemic

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	IT <sub>3</sub>	I am interested in participating in the mask use program in the office during the Covid-19 pandemic
<b>Behavior</b> (Yeow and Loo, 2018)	BH <sub>1</sub>	Using a mask has become my behavior during the Covid-19 pandemic
	BH <sub>2</sub>	Using a mask while at work has become my behavior
	BH <sub>3</sub>	I had to participate in wearing masks during the Covid-19 pandemic as a new behavior

**REFERENCES**

- [1] Aboelmaged M, E-waste recycling behaviour: an integration of recycling habits into the technology acceptance model and the Theory of planned behaviour, *Journal of Cleaner Production*.  
<https://doi.org/10.1016/j.jclepro.2020.124182>.
- [2] Ali, F., Rasoolimanesh, M, Sarstedt, M., Ringle, M., Ryu, K., 2018. An assessment of the use of partial least squares structural equation modeling (PLS-SEM) in hospitality research. *International Journal of Contemporary Hospitality Management* 30 (1), 230-247.
- [3] Bagheri, A., Bondori, A., Allahyari, M.S., Surujlal, J., 2020. Use of biologic inputs among cereal farmers: application of technology acceptance model. *Environ. Dev. Sustain.*  
<https://doi.org/10.1007/s10668-020-00808-9>.
- [4] Beesoon, S., Behary, N., & Perwuelz, A. (2020). Universal masking during COVID-19 pandemic: Can textile engineering help public health? Narrative review of the evidence. *Preventive Medicine*, 139, 106236. <https://doi.org/10.1016/j.yjpm.2020.106236>.
- [5] C. Huang, Y. Wang, X. Li, L. Ren, J. Zhao, Y. Hu, Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China, *Lancet* 395 (2020) 497–506. [https://doi.org/10.1016/S0140-6736\(20\)30183-5](https://doi.org/10.1016/S0140-6736(20)30183-5).
- [6] Chen, M., 2016. Extending the Theory of planned behavior model to explain people's energy savings and carbon reduction behavioral intentions to mitigate climate change in Taiwan—moral obligation matters, *Journal of Cleaner Production* 112 Part2, 1746-1753.
- [7] Chen, S., 2016. Using the sustainable modified TAM and TPB to analyze the effects of perceived green value on loyalty to a public bike system. *Transportation Research Part A: Policy and Practice*, 88, 58-72. <https://doi.org/10.1016/j.tra.2016.03.008>.
- [8] Chen, C.-L., & Wu, C.-C. (2020). Students' behavioral intention to use and achievements in ICT-Integrated mathematics remedial instruction: Case study of a calculus course. *Computers & Education*, 145, 103740. <https://doi.org/10.1016/j.compedu.2019.103740>.
- [9] Cheon, J., Lee, S., Crooks, S. M., & Song, J. (2012). An investigation of mobile learning readiness in higher education based on the Theory of planned behavior. *Computers & Education*, 59(3), 1054–1064. <https://doi.org/10.1016/j.compedu.2012.04.015>.
- [10] Chin, W., 1998. *The partial least squares approach to structural equation modeling*. Mahwah, New Jersey: Lawrence Erlbaum Associates.
- [11] Choe, J. Y., & Kim, S. (2018). Effects of tourists' local food consumption value on attitude, food destination image, and behavioral intention. *International Journal of Hospitality Management*, 71, 1–10. <https://doi.org/10.1016/j.ijhm.2017.11.007>.
- [12] Chu, T.-H., & Chen, Y.-Y. (2016). With Good We Become Good: Understanding e-learning adoption by Theory of planned behavior and group influences [Yi-Ying] *Computers & Education*, 92–93, 37–52. <https://doi.org/10.1016/j.compedu.2015.09.013>.
- [13] Desa, A., Ba'yah Abd Kadir, N., Yusoooff, F., 2011. A study on the knowledge, attitudes, awareness status and behaviour concerning solid waste management. In: *Procedia - Social and Behavioral Sciences*.

- [14] Elkhider, H., Ibrahim, F., Sharma, R., Sheng, S., Jasti, M., Lotia, M., Nalleballe, K. (2020). COVID-19 and stroke, a case series and review of literature. *Brain, Behavior, & Immunity - Health*, 9, 100172. <https://doi.org/10.1016/j.bbih.2020.100172>.
- [15] Faham, E., & Asghari, H. (2019). Determinants of Behavioral Intention to use e-textbooks: A study in Iran's agricultural sector. *Computers and Electronics in Agriculture*, 165, 104935. <https://doi.org/10.1016/j.compag.2019.104935>.
- [16] Fornell, CA (1982). A second generation of multivariate analysis (Vol. 1: Methods). New York: Praeger Special Studies. Total Quality Management 441
- [17] Fornell, C.A., & Larcker, D.F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39–50.
- [18] Goh, Y., Tan, B. Y. Q., Bhartendu, C., Ong, J. J. Y., & Sharma, V. K. (2020). The face mask: How a real protection becomes a psychological symbol during Covid-19? *Brain, Behavior, and Immunity*. <https://doi.org/10.1016/j.bbi.2020.05.060>.
- [19] Hasheminezhad, M., Yazdanpanah, M., 2016. Determine factors that influence students' intention regarding consumption of organic products: comparison of Theory of Planned Behavior and Health Belief Model. *Iranian J. Agric. Econ. Dev. Res.* 46, 817–831 (in Persian).
- [20] Kautonen, T., van Gelderen, M., Fink, M., 2013. Robustness of the Theory of planned behavior in predicting entrepreneurial intentions and actions. *Entrepreneurship Theory and Practice* 39 (3), 655-674.
- [21] Khan, F. W. Ahmed, A. Najmi, Understanding consumers' behavior intentions towards dealing with the plastic waste: perspective of a developing country, *Resour. Conserv. Recycl.* 142 (2019) 49–58, <https://doi.org/10.1016/j.resconrec.2018.11.020>
- [22] Kochan, C., Pourreza, S., Tran, H., Prybutok, V.R., 2016. Determinants and logistics of e-waste recycling. *Int. J. Logist. Manage.*, 27 (1), 52–70.
- [23] Kumar, V., Singh, S. B., & Singh, S. (2020). COVID-19: Environment Concern and Impact of Indian Medicinal System. *Journal of Environmental Chemical Engineering*, 104144. <https://doi.org/10.1016/j.jece.2020.104144>.
- [24] Leung, C.C., Lam, T.H., Cheng, K.K., 2020. Mass masking in the covid-19 epidemic: people need guidance. *Lancet* 395, 945.
- [25] Lin, M.-L., & Yu, T.-K. (2018). Patent applying or not applying: What factors motivating students' intention to engage in patent activities. *Eurasia Journal of Mathematics, Science and Technology Education*, 14(5), 1843–1858. <https://doi.org/10.29333/ejmste/85420>.
- [26] M. Ajzen, I., & Fishbein, Understanding Attitudes and Predicting Social Behaviour, New Jersey, Prentice-Hall., Englewood Cliffs, 1980.
- [27] Mancha, R. M., Yoder, C. Y., 2015. Cultural antecedents of green behavioral intent: An environmental theory of planned behavior. *Journal of Environmental Psychology* 43, 145-154. <https://doi.org/10.1016/j.jenvp.2015.06.005>
- [28] Manowong, E., 2012. Investigating factors influencing construction waste management efforts in developing countries: an experience from Thailand. *Waste Manag. Res.* 30 (1), 56e71.
- [29] National Health Service, 2020. Are face masks useful for preventing coronavirus?. <https://www.nhs.uk/conditions/coronavirus-covid-19/commonquestions/>.
- [30] Nie, J., Zheng, C., Zeng, P., Zhou, B., Lei, L., & Wang, P. (2020). Using the Theory of planned behavior and the role of social image to understand mobile English learning check-in behavior. *Computers & Education*, 103942. <https://doi.org/10.1016/j.compedu.2020.103942>.
- [31] Piazza, A.J, A.P. Knowlden, E. Hibberd, J. Leeper, A.M. Paschal, S. Usdan, Mobile device use while crossing the street: utilizing the Theory of planned behavior, *Accident Anal. Prev.* 127 (2019) 9–18,

Behavior Study on Wearing Mask by Office Workers in Dki Jakarta During the Covid-19 Pandemic:  
An Analysis with the theory of Planned Behavior

- <https://doi.org/10.1016/j.aap.2019.02.006>.
- [32] Russell, S., Young, C., Unsworth, K., Robinson, C., 2017. Bringing habits and emotions into food waste behaviour. *Resources, Conservation and Recycling* 125, 107-114
- [33] Sarstedt, M., Cheah, J., 2019. Partial least squares structural equation modeling using SmartPLS: A software review. *Journal of Marketing Analytics* 7, 196-202.
- [34] Sawang, S., Kivits, R. A., 2014. Greener workplace: Understanding senior management's adoption decisions through the Theory of planned behavior. *Australasian Journal of Environmental Management* 21(1), 22-36.
- <https://doi.org/10.1080/14486563.2013.848418>
- [35] Wang, Z., Guo, D., Wang, X., Zhang, B., Wang, B., 2018. How does information publicity influence residents' behaviour intentions around e-waste recycling? *Resources, Conservation and Recycling*, 133, 1-9.
- [36] Wang, J., Pan, L., Tang, S., Ji, J.S., Shi, X., (2020). Mask use during COVID-19: A risk-adjusted strategy. *Environmental Pollution*,
- <https://doi.org/10.1016/j.envpol.2020.115099>.
- [37] Yan, J., Guha, S., Hariharan, P., Myers, M., 2019. Modeling the effectiveness of respiratory protective devices in reducing influenza outbreak. *Risk Anal.* 39, 647–661.
- [38] Yarimoglu, E., Gunay, T., 2020. The extended theory of planned behavior in Turkish customers' intentions to visit green hotels. *Business Strategy and the Environment* 29(3), 1097-1108.
- <https://doi.org/10.1002/bse.2419>
- [39] Yeo, V. C. S., Goh, S.-K., & Rezaei, S. (2017). Consumer experiences, attitude and behavioral intention toward online food delivery (OFD) services. *Journal of Retailing and Consumer Services*, 35, 150–162. <https://doi.org/10.1016/j.jretconser.2016.12.013>.
- [40] Yeow, P., Loo, W., 2018. Determinants of Consumer Behavior Regarding Reusing, Refurbishing, and Recycling Computer Waste: An Exploratory Study in Malaysia. *International Journal of Business and Information* 13, 457-488
- [41] Zhang, D.L., Huang, G., Yin, X., Gong, Q., 2015. Residents' waste separation behaviors at the source: using sem with the Theory of planned behavior in Guangzhou, China. *International Journal of Environmental Research and Public Health* 12, 9475-9491
- [42] Zhang, M., Emery, A. R., Tannyhill, R. J., Zheng, H., & Wang, J. (2020). Surgical Masks or N95 Respirators for OMF Surgery During COVID-19 Pandemic. *Journal of Oral and Maxillofacial Surgery*. <https://doi.org/10.1016/j.joms.2020.08.024>.