Jurnal ASPIKOM, Vol. 7, No. 2, July 2022, pp. 218-234
P-ISSN: 2087-0442, E-ISSN: 2548-8309
DOI: http://dx.doi.org/10.24329/aspikom.v7i2.1103

Examining Perceived Risk and Behavioral Intention in the Context of COVID-19 Pandemic

I Gusti Lanang Agung Kharisma Wibhisono*, Ummi Salamah
Department of Communication, Faculty of Social and Political Sciences, Universitas Indonesia
Corresponding author, e-mail: i.gusti913@ui.ac.id

Abstract

An individual's subjective assessment of the probability of negative consequences could influence the willingness to perform certain behaviors. Previous literature had identified socio-psychological factors that influence behavioral intention in various contexts. However, their influence on perceived risk and behavioral intention in a pandemic is rarely discussed. Using quantitative approach, empirical data were obtained through a survey of Denpasar citizens aged 17-30 (n=212) and analyzed using the PLS-SEM method. The result suggests that perceived risk could be influenced by interpersonal discussion, trust in institutions, and information-seeking ability. Meanwhile, efficacy belief and perceived risk could influence the intention to wear masks. On the other hand, media and internet exposure do not show significant influence on perceived risk.

***Keywords**: Perceived Risk, Behavioral Intention, COVID-19, Health Communication, Risk Communication*

Abstrak

Penilaian subjektif individu tentang adanya kemungkinan negatif dapat mempengaruhi keinginannya untuk melakukan sebuah perilaku. Penelitian terdahulu telah mengindentifikasi faktor sosiopsikologis yang dapat mempengaruhi intensi perilaku dalam konteks yang beragam. Namun, belum banyak yang mendiskusikan bagaimana variabel anteseden tersebut dapat berpengaruh terhadap persepsi risiko dan intensi perilaku pada konteks pandemi. Menggunakan pendekatan kuantitatif, data empiris diperoleh melalui survei pada masyarakat Kota Denpasar berusia 17-30 tahun (n=212) dan data dianalisis menggunakan PLS-SEM. Hasil penelitian menunjukkan bahwa persepsi risiko dapat dipengaruhi oleh kepercayaan individu pada institusi, diskusi interpersonal, juga kemampuan pencarian informasi. Sedangkan, intensi penggunaan masker dapat dipengaruhi oleh kepercayaan efikasi dan persepsi risiko. Di sisi lain, paparan media dan internet tidak menunjukkan pengaruh signifikan pada persepsi risiko.

***Kata Kunci**: Persepsi Risiko, Intensi Perilaku, COVID-19, Komunikasi Kesehatan, Komunikasi Risiko*

Article History: *Received January 31, 2022; Revised June 20, 2022; Accepted June 22, 2022*

Introduction

The COVID-19 pandemic poses a health risk for every individual around the world. It has impacted several countries, including Indonesia. According to the World Health Organization (WHO), someone could be infected with COVID-19 through body fluids droplets when people talk, cough, or sneeze (WHO, 2020a). Several recommended measures are detection, testing, tracing, treatment, isolating, and mobilizing public response (WHO, 2020c). Therefore, individual's response to mitigate health risks becomes important to examine.

Some instances of recommended health protective behaviors during a pandemic include washing hands, keeping a distance, and wearing masks. The Centers for Disease Control and Prevention (CDC) explains that the use of masks is recommended because it is a form of source control that can reduce the rate of transmission of COVID-19 between individuals (CDC, 2020). A study from the Indonesian Central Bureau of Statistics shows that this behavior has not been carried out consistently. People in the 17-30 year range have not maximally implemented health behaviors (BPS RI, 2020; Nugraheny, 2020). In order to produce effective communication, an understanding of individual attributes and traits needs to be taken into account (Thomas, 2006). Moreover, Ratzan et al. (in Schiavo, 2007) explain that communication can be a tool to encourage individuals, institutions, or the public in general about health issues.

Prior works have shown that psychosocial factors can be used to predict and understand health outcomes, such as behaviors or behavioral intentions. For example, in composing a health message, communicators need to consider how people think about the health risks. Previous studies have pointed out that perceived risk can be related to an individual's desire to perform health behaviors (Choi, Shin, et al., 2018; Lin et al., 2017; Rimal et al., 2009; Yang & Wu, 2019). Previous research has also revealed that the relationship between these two constructs varies (Rimal et al., 2009; Zhao & Cai, 2009). Meanwhile, Lin et al. (2017) show that some communication antecedent variables have weak results. Due to the fact that prior works were in the context of various health issues, hence, this study investigates the relationship between perceived risk in the context of the COVID-19 pandemic and the intention to wear mask. In addition, this study also identifies and examines the role of antecedent variables on perceived risk and the intention to wear mask in the context of the COVID-19 pandemic.

Health and risk communication could help people to mitigate risk by preparing the public at risk to face health threats (Littlejohn & Foss, 2009). Literature suggests that decent risk communication would find a middleground for experts and public when giving information in an uncertain situation (Berry, 2007). However, risk communication in a pandemic faces several challenges, such as the loss of public trust, the loss of reputation, the impact on the economy, and death (WHO, 2020b). Literature suggest that public communication may influence public attitude towards the pandemic (Adhani et al., 2022; Karolina & Zarkasi, 2022). This situation prompts the need to understand how individuals form self-protective behavior in a risky situation.

A study conducted by Lapor COVID-19 and the Social Resilience Lab of Nanyang Technological University (NTU) discovered that the risk perception index in two big cities in Indonesia, such as Jakarta and Surabaya, is in the category that tends to be rather low (Lapor COVID-19, 2020a, 2020b). Meanwhile, in Bali Province, the city of Denpasar became the location of the most positive confirmed cases of COVID-19 (Tim SPBE Provinsi Bali, 2020). In communicating information about COVID-19, a

number of challenges need to be encountered, such as low public trust. This can be indicated from several protests related to swab tests and rapid tests as administrative requirements. This action was in the spotlight because it involved public figures, and some participants were seen not wearing masks when the action occurred (Rosidin, 2020; Sukardi, 2020).

Prior works suggested that psychosocial factors could influence health outcomes (e.g., Choi, Shin, et al., 2018; T. T. C. Lin et al., 2017; Rimal & Real, 2003), yet there is limited research on the role of communication factors in this relationship. Based on these explanations, this study aims to determine the relationship between perceived risk and intention to wear mask in the context of a pandemic. The study also aims to discover other variables influencing perceived risk and intention to wear masks during a pandemic. Finally, the study would test a model that can predict the perceived risk and intention to wear mask with variables that have been identified.

The literature defines perceived risk as an individual's subjective assessment of the negative possibility that can arise (Berry, 2007; Choi, Shin, et al., 2018; Rimal & Real, 2003). This definition shows that each individual can perceive risk differently. Nonetheless, most individuals can experience an optimism bias that makes them feel less at risk than others (Ferrer & Klein, 2015). Perceived risk in previous studies was generally measured by items consisting of perceived susceptibility as well as perceived severity (Rimal & Real, 2003).

Perceived risk is an important construct for understanding health behavior change and interventions (Ferrer & Klein, 2015; Lin et al., 2017; Waters et al., 2014). This construct is believed to be able to influence behavioral intentions. Behavioral intention is a construct that is often discussed in behavioral theories such as Theory of Planned Behavior, Protection Motivation Model, or Risk Perception Attitude Framework. Intention is defined as how strong an individual's desire and effort are to perform a behavior (Ajzen, 1991). This study delves into the behavioral intention to wear mask in the context of the COVID-19 pandemic. Previous studies have revealed the relationship between behavioral intentions and actual behaviors (Guan et al., 2016; Record, 2017; Yang & Wu, 2019). In addition, behavioral intentions have also been investigated in the context of different issues, such as HIV/AIDS (Rimal et al., 2009), HPV (Pask & Rawlins, 2016), skin cancer (Rimal & Real, 2003), mental health (Shi & Kim, 2020), and smoke haze disaster (Lin et al., 2017).

Recent studies have also demonstrated the ability of perceived risk to predict various contexts of behavioral intentions. This construct is used to predict behavioral intentions related to mental health (Shi & Kim, 2020), socioeconomics (Choi, Shin, et al., 2018), use of masks (Lin et al., 2017), as well as information seeking (Rimal et al., 2009; Rimal & Juon, 2010). Despite that, some studies do not show a significant relationship between behavioral intention and perceived risk (Rimal et al., 2009; Rimal & Juon, 2010). Inconsistent findings in previous studies led this study to investigate whether there is a significant relationship between perceived risk and the intention to wear mask in the context of the COVID-19 pandemic. Additionally, this study provides an updated context, namely the COVID-19 pandemic. Thus, this study assumes that

H1: Perceived risk regarding the COVID-19 pandemic is positively related to the intention to wear mask

In addition to investigating the relationship between perceived risk and intention to wear mask, this study also aims to delve into the relationship between the antecedent variables with the perceived risk and the intention to wear mask. Several antecedent

variables were identified in prior works such as Choi, Shin, et al. (2018) and Lin et al. (2017). Meanwhile, the theories that are often applied in the existing literature related to perceived risk include: Risk Perception Attitude Framework and Heuristic-Systematic Information Processing Model. Choi et al. (2018) explained that perceived risk could be predicted through media exposure, internet exposure, information-seeking ability, trust in government, and trust in media. The study revealed that all of these variables could predict perceived risk, and perceived risk could predict socioeconomic behavioral intentions in the case of MERS in South Korea (Choi, Shin, et al., 2018). Other research shows that perceived risk can be predicted through interpersonal discussion (Lin et al., 2017).

Based on the assumptions of the Risk Perception Attitude Framework, perceived risk can influence behavioral intentions. However, behavioral intentions can also be predicted by efficacy beliefs. An efficacy belief refers to the individual's belief that they can avoid risk by doing things that are recommended. Efficacy beliefs generally consist of self-efficacy and response efficacy (Littlejohn et al., 2017; Rimal & Real, 2003). It is assumed that efficacy beliefs moderate the relationship between perceived risk and behavioral intention. Several studies show varying results. Efficacy beliefs are claimed to have a direct relationship only with behavioral intention and do not moderate the relationship between perceived risk and behavioral intention (Pask & Rawlins, 2016; Zhao & Cai, 2009). Thus, this study assumes that

H2: Efficacy beliefs moderate the relationship between perceived risk of the COVID-19 pandemic and the intention to wear mask

H3: Efficacy beliefs are positively and significantly related to the intention to wear mask

According to previous research, media exposure can predict perceived risk (Choi, Shin, et al., 2018; C. A. Lin & Lagoe, 2013; Wu & Li, 2017). Media exposure is concerned with how individuals perceive a risk (Huang, 2020). Meanwhile, internet exposure refers to the frequency with which individuals obtain information through internet channels (Choi, Shin, et al., 2018). This study defines media exposure as the frequency with which individuals receive information about COVID-19. This research assumes that:

H4: Media exposure is positively and significantly related to the perceived risk of an individual regarding the COVID-19 pandemic

H5: Internet exposure is positively and significantly related to the perceived risk of an individual regarding the COVID-19 pandemic

Information-seeking ability is an individual's ability to access and understand risk information (Choi, Shin, et al., 2018). This previous study pointed out that individuals with better information-seeking abilities would have lower perceived risk. This study assumes that with more information channels and the number of messages related to COVID-19, individuals will be more confident in processing information related to the pandemic. Therefore,

H6: Information-seeking ability is negatively and significantly related to the perceived risk of the COVID-19 pandemic

The literature shows that heuristic information processing depends on cues such as likeability, attractiveness, or trustworthiness (Chaiken, 1980; Choi, Shin, et al., 2018). Trust is also the key to dealing with the pandemic. Previous research has revealed that trust can influence risk perception (Choi, Shin, et al., 2018). Furthermore, it is also asserted that trust in the government can affect behavioral intentions (Bish & Michie,

2010; Choi, Shin, et al., 2018). Moreover, trust in the media in this study refers to individuals' perceptions of the credibility of media content (Choi, Shin, et al., 2018). Nevertheless, prior works have shown that there is a negative relationship between trust in the media and perceived risk. Thus, this study assumes that:

H7: Trust in the government is negatively and significantly related to the perceived risk of an individual regarding the COVID-19 pandemic

H8: Trust in the government is positively and significantly related to the intention to wear mask

H9: Trust in the media will be negatively and significantly related to the perceived risk of the COVID-19 pandemic

Interpersonal discussion is included in this research model because previous research pointed out that this construct can predict perceived risk (Lin et al., 2017). An interpersonal discussion is a form of information seeking by discussing a particular issue with friends, family, or closest people. In addition, interpersonal discussion is considered an activity requiring more individual involvement than paying attention to mass media (Lin et al., 2017). Prior works have shown that interpersonal discussions, as well as discussions mediated through social networks, can facilitate the exchange of risk-related information and generate discussion between users (Lin et al., 2017; Wu & Li, 2017). This study also assumes that perceived risk can mediate the relationship between antecedent variables and the intention to wear mask (Choi, Shin, et al., 2018; Lin et al., 2017). Hence:

H10: Interpersonal discussion will relate positively and significantly to the perceived risk of an individual regarding the COVID-19 pandemic

H11: Perceived risk will mediate the relationship between antecedent variables in model development (media exposure, internet exposure, information-seeking ability, trust in the government, trust in the media, and interpersonal discussion) and the intention to wear mask

Based on the literature review, this study developed an analytical model as follows:

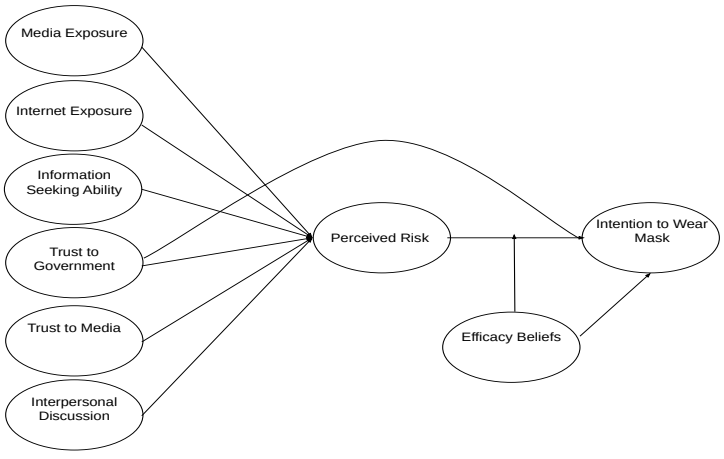


Figure 1. Analysis Model

Based on the previous explanations, the researchers proposed a conceptual

framework (model) based on previous research, namely Choi et al. (2018) and Lin et al., (2017). These two studies provide a basis for looking at the antecedent variables of perceived risk and behavioral intentions. This research is also guided by the assumptions of the Risk Perception Attitude Framework (RPA) and the Heuristic-Systematic Information Processing Model (HSM). Both theories have the same flow, namely the search for information (Thompson, 2014). In HSM, information processing is the result of ability and motivation. On the other hand, RPA explains behavior as a result of risk assessment and motivation (Thompson, 2014).

Method

This study obtained the data from an online survey of the people of Denpasar City aged 17-30 years. This age range was selected because BPS research revealed that this group shows a relatively low adherence to health protocols (BPS RI, 2020). Denpasar was chosen as the research location because it has the highest population compared to other districts in Bali. The survey was conducted by distributing questionnaire links. In order to increase participation, this study provided e-money (Rp25,000) for lucky respondents. Before filling out the questionnaire, respondents were asked to read the research information and give consent through research participation approval. Respondents were given the freedom to withdraw at any time from the study, and the researchers' contact information was also provided to the respondent. The data were collected in December 2020 for two weeks.

The samples were determined through non-probability sampling by setting criteria and comparing the population per sub-district in Denpasar City. The set criteria were people living in Denpasar City and aged 17-30. According to the Denpasar City population data, the population of Denpasar City in 2018 was 647,954 people (East Denpasar of 119,066; South Denpasar of 176,156; West Denpasar of 188,273; and North Denpasar of 164,495). By following the guide of (Joseph F. Hair et al., 2017), the recommended minimum sample size by taking into account the number of arrows that lead to the most endogenous variables is 130 samples (80% statistical power, 5% probability of error, and 0.10% R2 value). Thus, this study set the quota for East Denpasar as many as 24 people, West Denpasar as many as 38 people, South Denpasar as many as 35 people, and North Denpasar as many as 33 people. By setting criteria and quota, it is hoped that the sample would still reflect the study population better. Health communication research using non-probability sampling method is not uncommon, for example, those conducted by Rimal & Juon (2010), Grasso & Bell (2015), and Wu & Li (2017).

The data were analyzed using the partial least squares-structural equation modeling (PLS-SEM) method. PLS-SEM is a variant-based type of SEM consisting of measurement and structural models. PLS-SEM was chosen because this analysis method can show complex relationships between constructs in a model. Moreover, it can accommodate predictive research, non-normal data distribution, or complex structural model (Hair et al., 2011). This study evaluated the reflective (reliability, convergent validity, and discriminant validity) and formative (indicator's weight and VIF) measurement models and also evaluated the structural model (Joseph F. Hair et al., 2017). The data was analyzed using the SmartPLS application (Ringle et al., 2015).

The construct was measured using a modification of the indicators in previous studies to suit the context of this study (Choi, Shin, et al., 2018; Dryhurst et al., 2020; Huang, 2020; Lin et al., 2017; Shi & Kim, 2020; Strömbäck et al., 2020). The

questionnaires were distributed using items in Indonesian. All constructs were measured using Likert scales (0-6 for Media Exposure & Internet Exposure; 1-6 for the rest). This study also asked about the sociodemographic characteristics of the respondents, such as gender, domicile, age, education level, perceived health condition, monthly expenses, and the number of mass media and internet that were actively used by respondents.

Table 1. Measured Constructs

Construct	Number of Item
Perceived Risk	12
Media Exposure	3
Internet Exposure	7
Information-seeking Ability	4
Trust in the Government	5
Trust in the Media	7
Interpersonal Discussion	3
Intention to Wear Mask	5
Efficacy Beliefs	7

Results and Discussion

The conducted survey resulted in a total of 251 responses. After going through the cleaning process, there were 212 responses that could be processed further. The number of samples is sufficient based on the ten times rule criteria and a minimum of 130 samples (Joseph F. Hair et al., 2017).

Table 2. Demographic Information

Characteristic	Description	Percentage
Gender	Male	32%
	Female	68%
Domicile	South Denpasar	28%
	East Denpasar	27%
	North Denpasar	23%
	West Denpasar	22%
Age	17-25	95.3%
	>25	4.3%
Education Level	Junior High	0.9%
	Senior High or equivalent	24.1%
	Diploma (D3)	3.3%
	Bachelor's degree or equivalent	69.8%
	Master's degree or equivalent	1.9%
Perceived Health Condition	Very Not Good	0.5%
	Somewhat Good	10.4%
	Good	40.6%
	Very Good	48.6%
Monthly Expenses	<700.000	20.8%
	700.000-1.000.000	22.2%
	1.000.000- 1.500.000	20.8%
	1.500.000- 2.000.000	9%
	2.000.000- 3.000.000	15.6%
	>3.000.00	11.8%

Demographically, the majority of respondents in this study were female (68%) if compared to male (32%). 28% of the respondents live in South Denpasar, 27% live in East Denpasar, 23% live in North Denpasar, and 22% live in West Denpasar. This proportion was quite balanced compared to Denpasar City's population per sub-district. Most of the respondents were 23 years old (42%), and most had taken the undergraduate level (70%). Most respondents rated themselves in good health (49%). Respondents also spent most of Rp. 700,000—Rp. 1,000,000 per month (22%).

Television became the popular conventional media for obtaining information about COVID-19 (n=198). Meanwhile, less than 50 respondents answered using newspapers or radio as a source of information. On the other hand, as many as 176 respondents answered actively using social media Instagram as a source of information, followed by Twitter (n=125), Line Today (n=119), YouTube (n=96), portal websites (n=84), news applications (n=70), and Facebook (n=32). In both of these questions, respondents were allowed to answer more than 1 type of media.

The compiled initial analysis model was evaluated using measurement model analysis and structural model analysis to see the validity and reliability of the constructs. In the initial model, the constructs of perceived risk and efficacy belief are multidimensional and are arranged as higher-order constructs. In contrast, the other constructs are arranged as lower-order constructs. Reflective model analysis was implemented by looking at convergent validity (AVE, outer loadings), discriminant validity (cross-loadings, Fornell-Larcker criterion, HTMT), and reliability by looking at internal consistency values (composite reliability, Cronbach's alpha). The analysis of the formative model was carried out by looking at the collinearity of the indicators (VIF) and the significance-relevance of the formative indicators. All constructs in the initial analysis model have good reliability (composite reliability > 0.7) (Joseph F. Hair et al., 2017). However, when looking at the convergent validity, several items on the construct of perceived risk (PSev3) and internet exposure (IE1-IE5) showed values of outer loadings < 0.4 and AVE < 0.5, respectively. This study eliminated invalid indicators until the AVE can be tolerated (0.5) (Joseph F. Hair et al., 2017). When looking at discriminant validity, there were problems with the Fornell-Larcker and HTMT values on the dimensions of perceived risk and efficacy belief construct indicators (SE2, SE4) and the intention to wear mask (INT1 & INT2). The problem of discriminant validity indicates the possibility of indicators measuring the same thing. So, this study combined problematic indicators in a more general construct supported by theory and removed strongly correlated indicators (Joseph F. Hair et al., 2017; Henseler et al., 2015). There were no problems in the formative model in the initial model (VIF < 5 and the relationship is relevant and significant). Based on these considerations, this study respecified the model by eliminating the PSev3, IE1, IE2, IE3, IE4, and IE5 indicators that are invalid due to outer loadings in the hope of making a better AVE construct. The perceived risk construct was also measured unidimensionally because it has discriminant validity problems. SE2, SE4, INT1, and INT2 indicators were also not included in the respecification model.

After respecification, all constructs in the reflective model can be considered as having internal consistency because the value of Cronbach's alpha and composite reliability was > 0.5. All indicators on the reflective construct displayed convergent validity because the AVE value > 0.5 and the outer loadings were in an acceptable range. All constructs also had discriminant validity because there were no cross-loadings, Fornell-Larcker criterion, and HTMT (<0.9) problems. Based on the analysis

of the reflective measurement model in the respecification model, it can be said that all constructs had discriminant validity, convergent validity, and sufficient reliability. In the formative measurement model (efficacy belief dimension), there was no multicollinearity problem as indicated by the VIF value < 5 and had a significance and relevance indicator weight on the construct of efficacy beliefs.

Table 3. Construct Validity and Reliability (Respecification)

Construct	Item	Cronbach's Alpha	Composite Reliability	AVE
Perceived Risk	11	0.915	0.929	0.545
Media Exposure	3	0.723	0.841	0.638
Internet Exposure	2	0.742	0.886	0.795
Trust to the Government	5	0.918	0.936	0.745
Trust to the Media	7	0.723	0.841	0.638
Interpersonal Discussion	3	0.833	0.899	0.784
Information-Seeking Ability	4	0.822	0.879	0.650
Intention to Wear Mask	3	0.786	0.874	0.700
Response Efficacy	3	0.912	0.945	0.851
Self-efficacy	2	0.883	0.945	0.896

Furthermore, the specification model was analyzed structurally. The bootstrapping procedure was performed using 5000 subsamples. The results of the structural analysis were also used to evaluate hypotheses. Six predictor variables are connected with perceived risk, including interpersonal discussion, trust in the media, trust in the government, information-seeking ability, media exposure, and internet exposure. In addition, there are three predictor variables of the intention to wear mask, including perceived risk, trust in the government, and trust in efficacy. The analysis showed that all predictor variables had a VIF value < 5, so there was no multicollinearity issue. Furthermore, the structural model analysis revealed a significant relationship between the variables of perceived risk and the intention to wear mask ($\beta=0.127$; $p<0.05$); thus, H1 is supported. Regarding the role of efficacy beliefs, this study found that efficacy beliefs were positively and significantly related to the intention to wear mask ($\beta=0.634$, $p<0.05$), but there was no interaction effect between perceived risk and efficacy beliefs ($\beta=-0.026$, $p>0.05$, $t<1.96$). This indicates that H2 is rejected and H3 is supported. This study discovered that there was no significant positive relationship between media exposure and perceived risk ($\beta=0.080$, $p>0.05$) and no significant positive relationship between internet exposure and perceived risk ($\beta=0.021$, $p>0.05$); hence, H4 and H5 are rejected. Information-seeking ability was positively and significantly related to perceived risk ($\beta=0.215$; $p<0.05$). However, this relationship is different from the hypothesis, so H6 is rejected. This study found that trust in the government was negatively and significantly associated with perceived risk ($\beta=-0.236$; $p<0.05$), but there was no significant positive relationship with the intention to wear mask ($\beta=0.016$; $p>0.05$); thus, H7 was supported and H8 rejected. Media trust is positively and significantly related to perceived risk ($\beta=0.227$; $p<0.05$), but the relationship is different from the hypothesis, so H9 is not supported. This study also revealed that interpersonal discussion was positively and significantly related to perceived risk ($\beta=0.299$; $p<0.05$), so H10 is supported. Furthermore, this study looked at the specific indirect relationship and found that there was no significant indirect path (all paths were not significant at the 0.05 level). This means that the perceived risk did not mediate the relationship between the antecedent variables and the intention to wear a mask; so, H11 is rejected. In

general, factors that can predict perceived risk and intention to wear mask can explain 35.4% and 55.4% of the variance respectively.

Table 4. Summary of the Hypotheses

Hypothesis	Path coefficient	t Value	p Value	Support
H1	0.127	2.251	0.024	Yes
H2	-0.026	0.522	0.602	No
H3	0.634	6.487	0.000	Yes
H4	0.080	1.128	0.260	No
H5	0.021	0.278	0.781	No
H6	0.215	2.566	0.010	No
H7	-0.236	2.840	0.005	Yes
H8	0.016	0.375	0.708	No
H9	0.227	3.059	0.002	No
H10	0.299	4.034	0.000	Yes
H11	Not significant at the level of 0.05 ($p>0.05$; $t<1.96$)			No

This study yielded several important findings. First, the results reveal that trust in government, trust in the media, interpersonal discussion, and information-seeking abilities have a significant influence on perceived risk. Second, the variables of perceived risk and efficacy beliefs seem to affect the individual's intention to wear masks. In addition, this study shows that media exposure and internet exposure do not significantly affect perceived risk, nor does it find any effect of trust in government on the intention to wear mask.

This study pointed out that the interpersonal discussion variable influences perceived risk most. These findings further confirm a study by Lin et al. (2017) which examined the perceived risk and the intention to wear mask in the context of a smoke haze disaster. Moreover, these findings show that the more often individuals communicate COVID-19 risk information to those around them, the higher the perceived risk is. The process of forming perceived risk usually occurs through mediated communication or interpersonal communication with family, neighbors, or co-workers (Tyler in Wu & Li, 2017). Wu and Li (2017) suggest that interpersonal communication can facilitate the exchange of information by people on social networks. These findings also suggest that information exchange on the closest social networks such as family, friends, and co-workers can increase an individual's perception of risk related to COVID-19. Practically speaking, this closest social network can be used as a target for better risk and health communication when compared to one-to-many channels through mass media. Social networking sites may facilitate this mediated interpersonal discussion. However, it can also create a situation where interaction happens or is limited only between people with similar backgrounds (Hanusch & Nölleke, 2019), thus creating interaction only with like-minded people. In fact, a study also suggests that interpersonal discussion cannot be directly substituted with mediated interpersonal discussion and influences behavioral intention (Xin et al., 2021).

Trust appears to be an important variable in the context of the COVID-19 pandemic. According to previous research (Choi, Shin, et al., 2018), the results showed that the more individuals judged media content to be trustworthy, the higher the perceived risk they had. This indicates that the formation of perceived risk also depends on the assessment of media content. In this study, trust in the media focuses on how

individuals perceive media content as credible. Further research can elaborate by not only looking at the credibility of media content but also as an institution/industry.

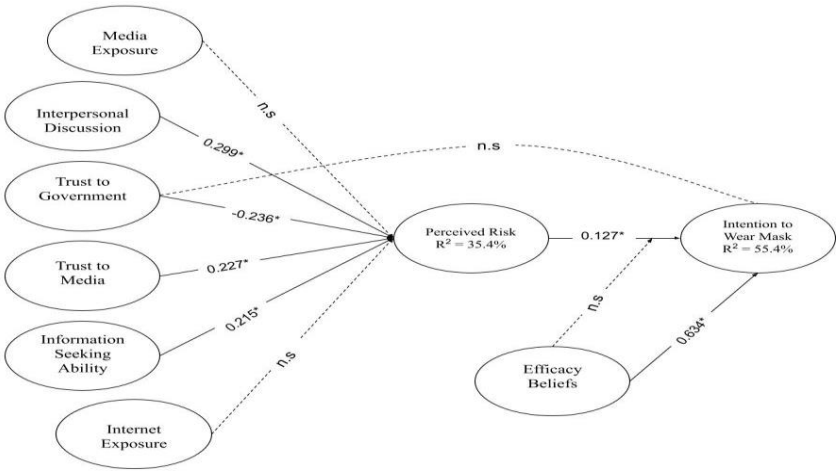
Meanwhile, other antecedent variables such as trust in the government also significantly influence perceived risk. Media and government can be seen as two sources of information or communicators during a pandemic. Although yielding significant values, some of the findings of this study appear to have mixed results when associated with previous studies. For example, this study found that trust in institutions such as the government negatively impacts perceived risk, which is in line with the previous study's findings (Choi, Shin, et al., 2018). This means that the greater the individual's belief that government institutions can handle the risk of COVID-19, the perceived risk of COVID-19 will decrease. This study does not distinguish specific government entities. However, this finding could be due to the sense of security perceived by individuals as a result of the efforts made by the government. This can be counterproductive in risk and health communication efforts if the individual has an unrealistic bias or optimism. Unrealistic optimism is a condition when one perceives oneself to be at a lower risk than others (Ferrer & Klein, 2015). Previous research has shown that optimism bias is negatively associated with perceived risk, which may make one feels no need to engage in proactive health behaviors to avoid negative outcomes (Larsman et al., 2012). The findings regarding the significant effect of trust in the media and government indicate that whoever communicates the message becomes important to pay attention to in risk and health communication programs. This study argues that trust is an important key to handling the pandemic.

The information-seeking ability appears to be an antecedent variable of perceived risk, which also has a significant effect. This study shows that the more individuals feel they are able to find, access, and assess risk information, the higher the perceived risk they have about the COVID-19 pandemic. In contrast to the research results of Choi et al. (2018) which pointed out a negative relationship between the two, this study resulted in a positive relationship. Choi et al. (2018) argued that the negative relationship might arise due to self-efficacy from seeking or gathering information. The different results in this study could be due to other variables related to perceived risk, such as anxiety. Information seeking done by individuals can make them feel anxious so that the perceived risk increases.

Nonetheless, in contrast to previous studies, this study shows no significant effect between media exposure and internet exposure with perceived risk. This finding is not in accordance with previous research (Choi, Shin, et al., 2018). Initially, this study assumed that the media and the internet had a role in building public awareness about the confronted health risks. Moreover, the literature shows that the media play a role because they can be a quick source of information for individuals in new or previously unknown situations (Choi et al., 2018; Wu & Li, 2017). This insignificant research result might be because this study only investigated on how often individuals were exposed to risk information about COVID-19 from various media channels (television, radio and newspapers) and the internet (website portals, news applications), without concerning on how much attention was allocated by individuals to the information obtained through these various communication channels. Practically speaking, these findings indicate that the number of messages does not necessarily make individuals form perceived risk. Thus, the risk and health communication program should pay attention to other factors such as the credibility of the information source.

This study also found interesting findings related to the intention to wear mask among the people of Denpasar City. The results show that perceived risk and efficacy beliefs influence the intention to wear a mask. Trust in the government also does not appear to significantly affect the intention to wear a mask. This distinction could be caused by differences in the context of the behavioral intentions studied. Although it is significant, the relationship between perceived risk and behavioral intentions is different from the negative relationship found by previous research (Choi, Shin, et al., 2018). This difference could be caused by the context of the behavioral intention under study. The intention to wear a mask is a behavior that makes individuals avoid health risks. The significant results in this study confirm most of the studies examining perceived health risk variables, efficacy beliefs, and behavioral intentions. However, several different results indicate some limitations need to be considered, such as the context of the risk being discussed or the type of behavioral intention under study. According to the Risk Perception Attitude Framework, the perception of risk can influence behavioral intentions (Littlejohn et al., 2017). Thus, the results of this study strengthen the two assumptions of the framework.

This study did not find a moderating role for efficacy beliefs. Similar results were also shown by other studies such as Pask & Rawlins (2016). This could be due to the homogeneous nature of the data (Pask & Rawlins, 2016). This study indeed chose the age range of 17-30 years as the respondent's criteria because this age group had the lowest level of health protocol compliance among other age groups. It is suggested that future works can pay more attention to the diversity of age groups to provide richer explanation whether there is an interaction effect between perceived risk and efficacy belief.



*p < 0.05

Figure 2. Analysis Results

This study has developed the findings of the model in previous studies (Choi, Shin, et al., 2018; Lin et al., 2017) by also taking the role of efficacy beliefs on behavioral intentions into account. The results of this study indicate that several variables can predict perceived risk, such as interpersonal discussion, trust in government, trust in the media, and information-seeking ability. Meanwhile, the

variables that can predict the intention to wear mask are perceived risk and efficacy belief.

Several important findings in this study have implications for risk and health communication. The purpose of risk and health communication is to prepare the public for threats and risk mitigation. Various theories show that to form behavioral intentions and real behavior. Communicators need to consider perceived risk (e.g., Risk Perception Attitude Framework). This research shows that if communicators intend to encourage the intention to wear mask, then the messages need to stimulate judgments about the susceptibility and severity of COVID-19. Psychological aspects such as efficacy belief also need to be considered to form the behavioral intention. The importance of this aspect of efficacy belief is reinforced by the results of previous studies, which showed a significant effect of efficacy belief on behavioral intentions while perceived risk did not affect behavioral intentions (Rimal et al., 2009). In addition, communicators need to consider public trust in information such as the government and the media. The communication process also needs to pay attention to the ability to search for public information and interpersonal social networks owned by individuals.

Conclusion

This study found that interpersonal discussion, trust in the media, trust in the government, and information skills can form the perceived risk in the Denpasar City community aged 17-30. In addition, perceived risk and efficacy beliefs have a role in shaping the intention to wear mask in the studied population. From several identified perceived risk antecedent variables, media exposure and internet exposure do not appear to have a significant relationship. Meanwhile, trust in the government is not significantly related to the intention to wear mask. This study found no interaction effect between perceived risk and efficacy beliefs. Finally, this study does not see any indirect paths between antecedent variables through perceived risk and intention to wear mask. The results of this study have fulfilled the research objectives mentioned in the previous section.

The findings of this study also have practical implications for efforts to communicate health information for behavior change. This research shows that it is important to consider an interdisciplinary approach in handling the COVID-19 pandemic. In order to form the behavioral intention, the messages should stimulate the individual's perceived risk in addition to only promoting the desired behavior. Psychological factors such as efficacy belief also need to be considered. The communicators can be health promotion staff, risk communication staff, or government officials. The messages can also be constructed based on audience segmentation and media habits. In addition to paying attention to the perceived risk, source credibility is still an essential thing to be taken into consideration. Trust in institutions can be the key to handling the pandemic. The compiled messages can also concern public trust because trust in institutions can affect public risk perceptions. Statements that have the potential to reduce trust should be avoided. In the communication process, interventions are not only carried out on individuals but also through interpersonal networks considering the significant influence of interpersonal discussions on perceived risk.

This study has analyzed the antecedent variables of perceived risk and the intention to wear masks in the context of the COVID-19 pandemic through the perspective of risk and health communication. Nonetheless, there are a number of limitations that need to be considered. First, the Risk Perception Attitude Framework

assumes that perceived risk influences behavioral intentions. In addition, efficacy beliefs are also assumed to affect behavioral intentions and moderate the relationship between perceived risk and behavioral intentions. This study has not found an interaction or moderating effect of efficacy beliefs. This indicates that it is still necessary to investigate whether there is an interaction effect between the two variables in different contexts. Furthermore, this study has also developed a model from previous research by integrating several exogenous variables that measure the same endogenous variable (e.g., Choi, Shin, et al., 2018; Lin et al., 2017).

Secondly, the results of this study must be generalized with caution because it uses a non-probability sampling technique. The researchers have attempted to tighten the criteria for respondents by targeting residents of Denpasar City aged 17-30 and paying attention to the population proportion per sub-district. Further research can use the probability sampling method if the population framework has been owned before data collection and adjust the research items to the research context. Moreover, different research contexts may produce different results. Thirdly, this study only examined behavioral intentions or intentions and has not yet reached the stage of real behaviors. Future research can examine real behaviors using the Theory of Planned Behavior framework or longitudinal research design.

Acknowledgement
We would like to thank the editors & reviewers for the constructive feedback addressed to this paper.

References

Adhani, A., Anshori, A., & Mahardika, A. (2022). *Public Attitudes towards the Government' s Policy Communication in Preventing COVID-19*. *7*(1), 61–70.

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*(2), 179–211. https://doi.org/10.1016/0749-5978(91)90020-T

Berry, D. (2007). *Health communication: Theory and practice*. Open University Press.

Bish, A., & Michie, S. (2010). Demographic and attitudinal determinants of protective behaviours during a pandemic: A review. *British Journal of Health Psychology*, *15*(4), 797–824. https://doi.org/10.1348/135910710X485826

BPS RI. (2020). *Perilaku Masyarakat di Masa Pandemi COVID-19: Hasil Survei Perilaku Masyarakat di Masa Pandemi COVID-19 (7-14 September 2020)*.

CDC. (2020). *Considerations for Wearing Masks*. CDC. https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/cloth-face-cover-guidance.html

Chaiken, S. (1980). Heuristic versus systematic information processing and the use of source versus message cues in persuasion. *Journal of Personality and Social Psychology*, *39*(5), 752–766. https://doi.org/10.1037/0022-3514.39.5.752

Choi, D., Yoo, W., Noh, G., & Park, K. (2018). Exploring Risk Perception and Intention to Engage in Social and Economic Activities During the South Korean MERS Outbreak. *International Journal of Communication*, *12*(2018).

Dryhurst, S., Schneider, C. R., Kerr, J., Freeman, A. L. J., Recchia, G., van der Bles, A. M., Spiegelhalter, D., & van der Linden, S. (2020). Risk perceptions of COVID-19 around the world. *Journal of Risk Research*, *0*(0), 1–13. https://doi.org/10.1080/13669877.2020.1758193

Ferrer, R. A., & Klein, W. M. P. (2015). Risk perceptions and health behavior. *Current Opinion in Psychology*, *5*, 85–89. https://doi.org/10.1016/j.copsyc.2015.03.012

Grasso, K. L., & Bell, R. A. (2015). Understanding Health Information Seeking: A Test of the Risk Perception Attitude Framework. *Journal of Health Communication*, *20*(12), 1406–1414. https://doi.org/10.1080/10810730.2015.1018634

Guan, M., Coles, V. B., Samp, J. A., Sales, J. M. D., DiClemente, R. J., & Monahan, J. L. (2016). Incorporating Communication into the Theory of Planned Behavior to Predict Condom Use Among African American Women. *Journal of Health Communication*, *21*(9), 1046–1054. https://doi.org/10.1080/10810730.2016.1204383

Hair, Joe F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing Theory and Practice*, *19*(2), 139–152. https://doi.org/10.2753/MTP1069-6679190202

Hair, Joseph F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2017). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)* (2nd Editio). SAGE Publications.

Hanusch, F., & Nölleke, D. (2019). Journalistic Homophily on Social Media: Exploring journalists' interactions with each other on Twitter. *Digital Journalism*, *7*(1), 22–44. https://doi.org/10.1080/21670811.2018.1436977

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, *43*(1), 115–135. https://doi.org/10.1007/s11747-014-0403-8

Huang, Q. (2020). How Does News Media Exposure Amplify Publics' Perceived Health Risks About Air Pollution in China? A Conditional Media Effect Approach. *International Journal of Communication*, *14*(0), 20.

Karolina, C. M., & Zarkasi, I. R. (2022). *Pros and Cons of Vaccine Refusal in Social Media*. *7*(1), 98–111.

Lapor COVID-19. (2020a). *Warga DKI Kurang Siap Menghadapi New Normal*. Lapor COVID-19. https://laporcovid19.org/warga-dki-kurang-siap-menghadapi-new-normal/

Lapor COVID-19. (2020b). *Warga Surabaya Belum Siap Menghadapi Pelonggaran Pembatasan Sosial*. Lapor COVID-19. https://laporcovid19.org/warga-surabaya-belum-siap-menghadapi-pelonggaran-pembatasan-sosial/

Larsman, P., Eklöf, M., & Törner, M. (2012). Adolescents' risk perceptions in relation to risk behavior with long-term health consequences; antecedents and outcomes: A literature review. *Safety Science*, *50*(9), 1740–1748. https://doi.org/10.1016/j.ssci.2012.04.009

Lin, C. A., & Lagoe, C. (2013). Effects of News Media and Interpersonal Interactions on H1N1 Risk Perception and Vaccination Intent. *Communication Research Reports*, *30*(2), 127–136. https://doi.org/10.1080/08824096.2012.762907

Lin, T. T. C., Li, L., & Bautista, J. R. (2017). Examining How Communication and Knowledge Relate to Singaporean Youths' Perceived Risk of Haze and Intentions to Take Preventive Behaviors. *Health Communication*, *32*(6), 749–758. https://doi.org/10.1080/10410236.2016.1172288

Littlejohn, S. W., & Foss, K. A. (2009). *The encyclopedia of communication theories*. SAGE Publications.

Littlejohn, S. W., Foss, K. A., & Oetzel, J. G. (2017). *Theories of human*

communication (11th ed.). Waveland Press, Inc.

Nugraheny, D. E. (2020). *Survei BPS Perilaku 3M Belum Diterapkan Konsisten oleh Masyarakat*. Kompas.Com.

Pask, E. B., & Rawlins, S. T. (2016). Men's Intentions to Engage in Behaviors to Protect Against Human Papillomavirus (HPV): Testing the Risk Perception Attitude Framework. *Health Communication*, *31*(2), 139–149. https://doi.org/10.1080/10410236.2014.940670

Record, R. A. (2017). Tobacco-Free Policy Compliance Behaviors among College Students: A Theory of Planned Behavior Perspective. *Journal of Health Communication*, *22*(7), 562–567. https://doi.org/10.1080/10810730.2017.1318984

Rimal, R. N., Böse, K., Brown, J., Mkandawire, G., & Folda, L. (2009). Extending the purview of the risk perception attitude framework: Findings from HIV/AIDS prevention research in Malawi. *Health Communication*, *24*(3), 210–218. https://doi.org/10.1080/10410230902804109

Rimal, R. N., & Juon, H. S. (2010). Use of the risk perception attitude framework for promoting breast cancer prevention. *Journal of Applied Social Psychology*, *40*(2), 287–310. https://doi.org/10.1111/j.1559-1816.2009.00574.x

Rimal, R. N., & Real, K. (2003). Perceived risk and efficacy beliefs as motivators of change: Use of the risk perception attitude (RPA) framework to understand health behaviors. *Human Communication Research*, *29*(3), 370–399. https://doi.org/10.1093/hcr/29.3.370

Ringle, C. M., Wende, S., & Becker, J.-M. (2015). *SmartPLS 3*.

Rosidin, I. (2020). *Jerinx SID Demo Tanpa Masker, Pemprov Bali Tidak Punya Kewenangan Beri Sanksi*. Kompas.Com.

Schiavo, R. (2007). *Health Communication: From Theory to Practice*. Jossey-Bass.

Shi, J., & Kim, H. K. (2020). Integrating Risk Perception Attitude Framework and the Theory of Planned Behavior to Predict Mental Health Promotion Behaviors among Young Adults. *Health Communication*, *35*(5), 597–606. https://doi.org/10.1080/10410236.2019.1573298

Sukardi, M. (2020). *Jerinx Ditahan, Intip Lagi Aksi Anti-Masker hingga Tolak Rapid Test Covid-19*. Okezone.Com. https://www.okezone.com/tren/read/2020/08/12/620/2261198/jerinx-ditahan-intip-lagi-aksi-anti-masker-hingga-tolak-rapid-test-covid-19?page=1

Thomas, R. K. (2006). *Health Communication*. Springer.

Thompson, T. L. (2014). *Encyclopedia of Health Communication*. SAGE Publications.

Tim SPBE Provinsi Bali. (2020). *Data Penyebaran Covid-19 Di BALI Sampai Dengan 2020-08-30*. Tim SPBE Provinsi Bali. https://pendataan.baliprov.go.id

Waters, E. A., McQueen, A., & Cameron, L. D. (2014). Perceived Risk and its Relationship to Health-Related Decisions and Behavior. In L. R. Martin & M. R. DiMatteo (Eds.), *The Oxford Handbook of Health Communication, Behavior Change, and Treatment Adherence* (pp. 193–213). Oxford University Press.

WHO. (2020a). *Pertanyaan dan jawaban terkait Coronavirus*. WHO.

WHO. (2020b). *Risk communication and community engagement readiness and response to coronavirus disease (COVID-19): interim guidance, 19 March 2020*. WHO. https://www.who.int/publications/i/item/risk-communication-and-community-engagement-readiness-and-initial-response-for-novel-coronaviruses

WHO. (2020c). *WHO Director-General's opening remarks at the media briefing on COVID-19 - 11 March 2020*. WHO. https://www.who.int/dg/speeches/detail/who-

director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020

Wu, X., & Li, X. (2017). Effects of mass media exposure and social network site involvement on risk perception of and precautionary behavior toward the haze issue in China. *International Journal of Communication*, *11*, 3975–3997.

Xin, M., Luo, S., She, R., Chen, X., Li, L., Li, L., Chen, X., & Lau, J. T. F. (2021). The impact of social media exposure and interpersonal discussion on intention of COVID-19 vaccination among nurses. *Vaccines*, *9*(10), 1–13. https://doi.org/10.3390/VACCINES9101204

Yang, Q., & Wu, S. (2019). How Social Media Exposure to Health Information Influences Chinese People's Health Protective Behavior during Air Pollution: A Theory of Planned Behavior Perspective. *Health Communication*, *00*(00), 1–10. https://doi.org/10.1080/10410236.2019.1692486

Zhao, X., & Cai, X. (2009). The role of risk, efficacy, and anxiety in smokers' cancer information seeking. *Health Communication*, *24*(3), 259–269. https://doi.org/10.1080/10410230902805932