

INVESTIGATING BEHAVIOURAL DETERMINANTS FOR DISASTER PREPAREDNESS AMONG YOUTH IN MALAYSIA

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Abstract

Disaster preparedness refers to the efforts taken to increase knowledge and preparation for handling disasters regarding the risks, related agencies, preventive measures, and other disaster-related information. This may include plans or preparations to save lives or property or to help the response and rescue service operations. Youth is considered to be one of the most vulnerable groups of people, and those who are most affected in the event of a disaster. For that reason, this study investigates the determinants of disaster preparedness among youth in the context of a developing country, specifically Malaysia. Measures derived from the Theory of Planned Behaviour were analysed using the Partial Least Square-Structural Equation Model (PLS-SEM) examining the links between disaster preparedness and its behavioral determinants. The results show that the behavioral factors of attitude, social norms, and perceived behavioral control, can explain disaster preparedness among youth. Successful interventions should not only convince people of the value of disaster preparedness, but also equip them with the knowledge and resources necessary to carry it out. Such knowledge would be beneficial for policymakers to understand how behavioral factors are significant and necessary for integration in policy. The enforcement of policies regarding disaster preparedness should be embedded at a very young age as youth specifically are one of the most vulnerable groups of society in the event of a disaster.

Keywords: Disaster preparedness; attitude; perceived behavioral control; social norms

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INTRODUCTION

Disaster events often happen without warning. It is a complex and multi-faceted global issue. Most disasters lead to consequences such as socio-economic, mental, and physical effects. According to the International Federation of Red Cross and Red Crescent Societies (2020), "A disaster is a sudden, calamitous event that seriously disrupts the functioning of a community or society and causes human, material, and economic or environmental losses that exceed the community's or society's ability to cope using its available resources. Though often caused by nature, disasters can have human origins". According to Wisner & Adams (2002), there are two types of disaster, namely natural and man-made. Natural disasters include volcanic eruptions, tsunamis, flash floods, and earthquakes, while man-made disasters may consist of human accidents, military conflicts, and political unrest. Based on a study by Makwana (2019), developing countries are more susceptible to disasters due to poverty, resource deficiency, limited access to education, inadequate infrastructure, and lack of awareness and knowledge. Malaysia is vulnerable to both natural and man-made disasters and can therefore experience tremendous losses. Hence, government intervention is imperative in the wake of such disasters. Government intervention has evolved in recent years from providing financial assistance to psychosocial interventions. In addition, psychosocial intervention is provided in the aftermath and prior to any disaster events by providing awareness, preparedness and necessary knowledge and skills to the society. Furthermore, the improvement of preparedness for facing adverse events is one of the efforts to reduce disaster risk (UNISDR, 2009). The preparedness to handle oneself in the event of a disaster is necessary to minimise any disaster difficulties in the absence of immediate health services and emergency responders.

Flooding and landslides are two of the most frequent natural disasters in Malaysia. In the past few years, these natural disasters have increased tremendously due to human activities. Despite being a natural based disaster, human activities, such as uninhibited development and haphazard land clearing, boost the frequency and severity of floods, particularly at peak rainfall and time of concentration (Rahman, 2014). One of the worst disasters was the 2014-15 Malaysia floods in which persistent precipitation caused water levels to rise beyond safe levels. For that reason, approximately 60,000 people evacuated their homes, and the country suffered an estimated RM284 million worth of damages (Ruiz Estrada, Koutronas, Tahir, & Mansor, 2017). Sabah and Sarawak were severely affected by flooding as a result of high-intensity rainfall during the northeast monsoon in 2015. During that time, Kuching division received an amount of 900mm of rainfall while other divisions in Sarawak received between 400mm to 500mm of rainfall. The disaster also caused the evacuation of approximately 13,878 people and one youth casualty case.

In the context of Malaysian youth, this study seeks to identify the relationship between disaster preparedness intentions in reference to flood risk, and the attitude, perceived behavioral control, and social norms of Malaysian youth. As a result of the high costs of disaster assistance and the resulting damage to social structure and social determinants, disaster behavior studies have been conducted since 1940. According to Ao et al. (2020), individual motivation determines intentions. The tendency for behavioral intentions in a disaster involves the study of links between perception and behavior. According to Najafi et al. (2017), there are three important aspects of motivational factors: attitude toward behavior or the degree of evaluation that the behavior is favorable or unfavorable, social factors (perceived social pressure to implement or not implement the behavior), and behavioral control (perceived

ease or difficulty in showing the behavior). If an individual's attitude and subjective norms favor the behavior, and the perceived behavioral control is higher, the person's desire to contemplate performing the behavior will be higher. Vinnel, Milfont, and McClurec (2021) divided attitudes into two types: experiential attitudes based on experience and instrumental attitudes based on consequences. In his research, Motoyoshi (2006) discovered a link between attitude and disaster preparedness objectives. The study found that how people perceive and accept disaster risk has an impact on how prepared they are for disasters. Flood hazards are easily accepted by people who have a great sense of self-responsibility.

In terms of the relationship between social norms and disaster preparedness intentions, social norms are defined as the impacts on an individual's behavior that are based on what is considered typical by the individual's social group. Social norms have also been divided into injunctive norms, which deal with whether or not a behavior is acceptable, and descriptive norms, which deal with the prevalence of the behavior (Vinnel, Milfont, & McClurec, 2021). Meanwhile self-efficacy, which is defined as the confidence in performing a specific behavior, such as overcoming hurdles to achieve a specific habit, can be used to examine the relationship between perceived behavioral control and disaster preparedness intentions. Individuals' high acceptance of a crisis management scenario is due to their great self-efficacy (Zaman, Zahid, Habibullah & Din, 2021).

During disaster events, youth may encounter specific complications and difficulties such as being separated from their families, lack of knowledge in handling and facing the emergency state of the situation, and being too young to drive any transport vehicle as the minimum age for driving in Malaysia starts at 15 years old. The Youth Societies and Youth Development Act 2007 defines youth as a person not less than 15 years and not more than 40 years old. The United Nations and

the Asian Development Bank classify young people aged 15 to 29 as youth. Malaysia's new youth policy, enacted in 2015, categorizes youth as those aged 18-30, in which the implementation of the new definition began in 2018 (IsDB, 2019). According to a rough calculation based on the most current breakdown of population data (mid-2018) available from the Department of Statistics showed that about 14 million of Malaysia's total population of 32.4 million were aged between 15 and 40. With the effect of the enactment, and lowering of the age cap for youths from 40 to 30, it is important to note that the number of people who qualify as youths would be cut to roughly 9 million; this is approximately 28% of the population compared to the previous 45% (New Straits Times, 2019).

Few studies were found in the context of developing countries which aim to understand the impacts of behavioral factors in disaster preparedness. Mojtahedi & Oo (2012) revealed that a clear understanding of preparedness is important for future enhancement in reducing vulnerability and providing effective and accurate risk assistance. Additionally, previous research has not given much attention to examining youth, one of the most vulnerable groups of individuals, in the event of a disaster. Consequently, this study has been conducted to fulfil these limitations. The study concentrates on investigating the behavioral determinants of disaster preparedness among youth in the case of Sarawak, Malaysia, a state in a developing country.

LITERATURE REVIEW

Due to the fact that disaster management has become a major issue for policymakers in many nations, different levels of government must focus more on catastrophe preparation, presentation, and response, rather than rehabilitation and reconstruction due to the substantial costs involved (Rahman, 2020). According to the Hyogo Framework for Action, there are five pillars

of disaster resilience including governance, risk assessment, knowledge and education, risk management and vulnerability reduction, and disaster preparedness and response. Disaster preparedness also refers to “an initiative intended to increase readiness and knowledge among various stakeholders regarding the risks, related agencies, preventive measures, and other disaster-related information. It seeks to improve the overall preparedness towards a disaster or at least the type of disaster that is likely to happen at a particular locality” (Magiswary, Murali, Saravanan & Maniam, 2010).

Effective and strategic measures are important at all stages to restrict the amount and severity of natural disasters. The mitigation of disaster risk is not entirely the duty of authorities, but rather the outcome of the collaborative contributions of various stakeholders; thus, cooperation between all relevant parties is vital. Policy interventions will fail without other players, such as non-governmental organisations and the society (Henry and Gireesan, 2011). While significant disaster events have an influence on the whole nation, the consequence on vulnerable populations is more visible. Youth falls into this group and requires specific planning and teaching. Research has indicated the value of the early involvement of young people in disaster planning and preparedness initiatives. However, most studies involving youth are descriptive and end up as case studies in handbooks, recommendations, and lectures (Khorram-Manesh, 2017). This also indicates that critical analysis on youth’s ability to mitigate the effects of disasters is mainly lacking (Mitchell et al, 2008). Youth plays an imperative role in the society and is a main driver in shaping the future of the Malaysian economy. Empowering youth to recognise their role in prevention and preparedness can help them to bridge the gap between knowing and doing (Faber et al., 2014). Disaster preparedness and know-how should be specifically mentioned in the present as a strategy to promote youth endurance and the communication of information in order to

lessen the risk of disasters in their households (Sawada, 2007; Mitchell et al, 2008; Khorram-Manesh, 2017).

From economic insight, the human reaction towards risk depends on their risk preference. The concept of expected utility theory explains that a person’s rationality to choose options in a complex condition (in this case disaster) is based on their tolerance or preference for risk. Neumann and Morgenstern (1944) found that a person will choose the weighted factors that maximize their utility. A person has maximized their utility when their behavior maximizes the expected value of the possible outcomes. Thus, a person’s decisions and behavior reflect their decision-making to cope and adapt to disaster risk (Borges, Foletto, & Xavier, 2015). Prospect Theory is a development of decision-making theory contributed by Kahneman & Tversky (1979). This theory further explains that expectations, asset integration, and risk aversion, are aspects that can maximize the value of decision making.

There is an array of studies on the socio-demographic determinants of disaster preparedness or prevention (Fothergill, 1998; Sattler et al., 2000, Mishra and Suar, 2005; Heller et al., 2005; Mohammad-pajooch & Ab. Aziz, 2014; Najafi et al., 2015). An investigation conducted by Mohammad-pajooch & Ab. Aziz (2014) on disaster preparedness among residents in Kuala Lumpur, tested the existence of a relationship between the investigated preparedness factors and the disaster preparedness of residents of Kuala Lumpur. The study found several factors affecting preparedness, including perceived risk, socio-demographics, and past experience. The study showed that in terms of a preparedness index, 62% of residents were not prepared to deal with a disaster, 23% of residents had a moderate level of preparation, while 15% reported a high level of disaster preparedness. With regard to the socio-demographic factor, the study showed that as age increased, the level of preparedness of residents also increased, females showed a

lower level of preparedness than males, and residents who had the highest level of income were among the most prepared (Mohammad-pajooch & Ab. Aziz, 2014).

There are contradicting outcomes regarding the relationship between age or different generational cohort and disaster preparedness. Some literature indicates that disaster preparedness behavior rises with age (Settler et al., 2000; Mishra and Suar, 2005). However, Heller et al. (2005) pointed out that older people are less likely to be engaged in disaster preparedness. These studies predominately emphasize the role of socio-demographics and do not explain the behavioral reasons behind engagement in disaster preparedness.

Apart from the fundamental economic theory, disaster preparedness must be tackled by understanding the psychological aspects that focus human behavior towards risk. In 1975, Fishbein & Ajzen (1975) introduced the Theory of Reasoned Action (TRA). This theory studied behavioral intentions (BI) which are determined by the individual's influence (A_B) (the person's attitude towards performing the volitional behavior) and a normative influence (SN) (the subjective norm to the performed behavior, in reference to the vital reference group in behavior theory, which is not an independent action) (Hale, Householder, & Greene, 2002) TRA is expressed in the Mathematical equation:

$$BI = (A_B)W_1 + (SN)W_2 \quad (1)$$

Where W_n is a derived weight.

This theory has been extended to the Theory of Planned Behaviour (TPB) where the positive or negative intention to perform a behavior is based on the combination of attitude, subjective norms, and perceived control. In their study, Najafi, Ardalan, Akbarisari, Noorbala, & Elmi (2017) identified several theoretical frameworks in the past literature which deal with behavior, and which can help to reduce the risk of natural disasters; these theories include the Protection Motivation Theory (PMT), Person Relative to Event Theory (PrE), Protective Action Decision Model (PADM), Social-Cognitive Preparation Model, and the

Theory of Planned Behavior (TPB) (Najafi et al., 2017).

Based on the systematic review conducted by Ejeta et al. (2015), the most frequently applied theories in the area of disaster preparedness are The Health Belief Model (HBM), Extended Parallel Process Model (EPPM), Theory of Planned Behavior (TPB), and Social Cognitive Theory. The study also highlighted the three main disaster scenarios which are influenza (H1N1 and H5N1), floods, and earthquake hazards. Interestingly, most studies are conducted in the USA and very few studies have been conducted in the Asian region, which is considered to have higher levels of annual disaster events and victims when compared with other continents. In the context of developing countries, studies that have applied the TPB in the context of disaster preparedness include the studies of Najafi et al. (2017), Wahyuni et al. (2020) and Zaman et al. (2021). Najafi et al. (2017) showed that intentions to perform disaster preparedness behavior in Iran are significantly influenced by attitude, perceived behavioral control and social norms. The model used in the study was based on unprepared and prepared people and did not entail the effects of different generational cohorts.

Karl Mannheim developed the concept of generation in the 1920s in a treatise entitled 'The Problem of Generations' (1952/1928) (Timonen & Conlon, 2015). Mannheim's theory acknowledges the significance that events have on individuals within a specific context. Therefore, generations are categorised based on the idea that peoples' experiences of significant events impact their thoughts and feelings. Their previous experiences shape their understanding of new experiences. In other words, the term "generation" refers to the grouping of people with little more in common than the years they were born (DeChane, 2014). Nevertheless, generation studies are essential as a tool to examine changes in views over time; they can explain how different formative experiences interact

with the life cycle and ageing process to shape people's view of the world (Doherty, C., Kiley, J., Tyson, A., & Jameson, 2015).

According to Salleh, Mahbob & Baharudin (2017), there are six cohorts of generations that have been widely used in previous studies, namely Traditionalists (1900-1945), Baby boomers (1946-1964), Generation X (1965-1980), Generation Y (1981-1994) and Generation Z (1995-2012). This study adopts the concept of Generation Z in examining the behavioral determinants for disaster preparedness. Wiedmer (2015) described that among all generations, Generation Z is the latest generation that is currently growing up and will be dominating the world in the next several decades. In terms of behavioral characteristics, Generation Z is categorised as having poor communication skills and being extensively engaged with technology (Glass, 2007; MacKenzie, J., & McGuire, 2016; and Wiedmer, 2015).

While there are no studies which have specifically examined the behavioral determinants of disaster preparedness among youth in either developed or developing countries, there are a rising number of general studies on youth disaster preparedness. A number of disaster based studies were conducted by Nifa et al. (2017, 2018) and Chong et al. (2018) particularly in the context of Malaysian youth. Nifa et al. (2017) confirmed that while there is literature on the importance of education in disaster safety and resilience awareness from a young age, the areas of study are found to be underexplored and put too greater emphasis on certain situational and geographical factors of locations with high disaster risk. Nifa et al. (2018) stressed the necessity for a culture of prevention among all demographic groups, stating that policymakers are responsible for enhancing disaster preparedness studies among the younger generation. Disaster preparedness is beneficial to develop disaster resilience and build a sustainable environment in the long-run particularly in hazard prone areas.

Based on the studies conducted by

Guterman (2005), McCabe, et. al. (2012); and McCabe, et. al., (2013), existing policies and studies are mostly concerned with physical preparations by the people for natural disasters, while there appears to be a lack of psychological preparedness in disaster preparedness theory and practise. Disasters are typically evaluated in terms of the cost of social and economic destruction, but there is no comparison to the emotional suffering a person bears after a tragedy (Makwana, 2019). According to Zulch (2019) individuals must be psychologically equipped to properly manage a disaster warning situation or disaster impact and individuals who are psychologically prepared before a crisis may be able to anticipate and understand their sentiments, as well as manage their emotional responses, resulting in stronger coping skills. Thus, this study will integrate the psychological factor by focusing on the behavioral aspects of youth that influence disaster preparedness. It is high time for Malaysia to recognise the importance of psychological readiness in disaster preparedness and to incorporate it as a core component of disaster preparedness policies, programmes, and training.

The Theory of Planned Behaviour by Ajzen (1991) was selected for use in the current study by investigating its utility in explaining the factors associated with the disaster preparedness behavior of youth in Sarawak, Malaysia. The theory is suitable for investigating the antecedents of behavior, while it can also be directly applied in the domain of disaster risk reduction. The behavioral elements of the youth readiness index were used for defining and assessing the disaster preparedness behavior of youth in the study. It is hypothesised that intentions to perform disaster preparedness behavior can be predicted from the attitudes, subjective norms, and perceived behavioral control of the youth.

METHODOLOGY

To determine the role of the behavioral determinants of disaster preparedness, data

were analysed using PLS-SEM. PLS-SEM was applied due to the study’s exploratory nature, low sample size, and possible non-normality of the data. PLS-SEM consists of the measurement and structural model. The measurement model assesses the relationships between the factors and the indicators they represent. The tests for the measurement model include composite reliability, indicator loadings, discriminant validity, and average variance extracted. The structural model assesses the path relationships between the independent and dependent factors/variables used in the study.

Study Setting and Sampling Techniques

The study was conducted in Sarawak, Malaysia. The research respondents consisted of youth living in the study area, aged from 18 to 30 years old. This age range is considered acceptable since anyone under the age of 18 in Malaysia is considered a minor, and participation in the study would require the consent of a parent or guardian. The study employed convenience sampling, a type of non-probability sampling approach wherein participants of the study are viewed as “convenient” providers of data by the researcher. The minimum sample size for SEM is n = 100-150, according to studies by Ding, Velicer, and Harlow (1995) and Tabachnick and Fidell (2001). The questionnaire was distributed to a convenience sample of 300 respondents, with a return of 171 completed responses (approximately 57% response rate). A G*power analysis was conducted to

determine whether the sample size was adequate. A priori analysis was used to compute the sample size, which was set at a level of significance of 5%, a power of 80%, and an effect size of 0.30, with a maximum of 3 predictors. According to the results of the G*power analysis, the minimum required sample size was 64 respondents. As a result, the sample size achieved was deemed large enough for the analysis and investigating the relevance of the hypotheses in the study.

The questionnaire consisted of 12 behavioral questions, each using a 5-point-Likert scale ranging from Strongly Disagree to Strongly Agree. Figure 1 shows the conceptual framework of the study. On the left-hand side (LHS) are the independent variables which are the behavioral factors based on the Theory of Planned Behaviour, including attitude, perceived behavioral control, and social norms. On the right-hand side (RHS) is the dependent variable which is the intention to perform disaster preparedness behavior. The study utilises indicators from Mc Ivor and Paton (2007) to represent the behavioral determinants. The indicators representing the intention for disaster preparedness are shown in Table 2. The hypotheses developed are presented in Table 1.

Hypothesis 1: There is a significant positive relationship between attitude and intentions towards disaster preparedness.

The first hypothesis relates to the role of attitude in influencing the intentions for disaster preparedness. The positive or negative aftermath determines the attitude

Table 1. Research Hypotheses

H:	Hypothesis
H1	There is a significant positive relationship between attitude and the intention for disaster preparedness.
H2	There is a significant positive relationship between perceived behavioral control and the intention for disaster preparedness.
H3	There is a significant positive relationship between social norms and the intention for disaster preparedness.

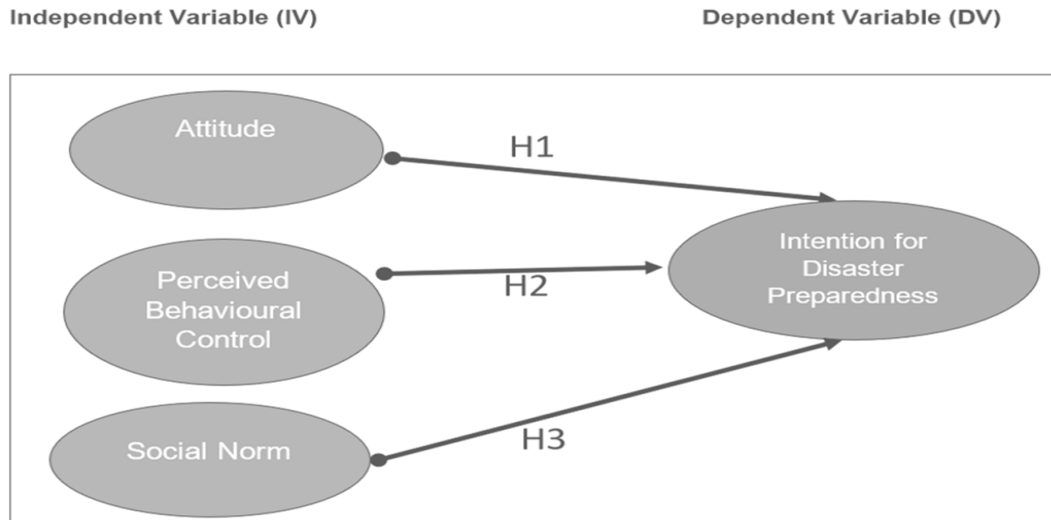


Figure 1. Conceptual Framework

Table 2 Variables and Indicators

Variables	Indicators
<u>ATTITUDE</u>	
ATT1:	The extent to which you believe that preparing for disaster events will reduce damage to homes.
ATT2:	The extent to which you believe that preparing for disaster events will improve living conditions and property value.
ATT3:	The extent to which you believe that preparing for disaster events will help to deal with disruptions to family and community life.
<u>SOCIAL NORMS</u>	
SN1:	The extent to which you believe that family will view disaster preparedness as favorable.
SN2:	The extent to which you believe that friends will view disaster preparedness as favorable.
SN3:	The extent to which you believe that work colleagues will view disaster preparedness as favorable.
SN4:	The extent to which you believe that the general community will view disaster preparedness as favorable.
<u>PERCEIVED BEHAVIORAL CONTROL</u>	
PBC1:	You have enough resources and knowledge to cope in the event of a disaster.
PBC2:	You have sufficient monetary resources to cope in the event of a disaster.
PBC3:	You have sufficient sources of information for reference in the event of a disaster.
<u>INTENTIONS</u>	
INT1:	You have the intention to prepare for the event of a disaster.
INT2:	You have the intention to seek information of how to cope in the event of a disaster.

Source: Mc Ivor and Paton (2007).

towards a certain behavior based on the respondent's perception of performing that behavior (Doll & Ajzen, 1992). A number of studies have indicated a positive relationship between attitude and disaster preparedness (Najafi et al., 2017; McIvor & Paton, 2007). An individual's intention for behavior is more likely influenced by the greater salience of a certain attitude (Doll & Ajzen, 1992). Hence, it is expected that when an individual possesses a positive attitude, it will lead to stronger intentions to prepare for disaster. The indicators representing attitude are shown in Table 2.

Hypothesis 2: There is a significant positive relationship between perceived behavioral control and intentions towards disaster preparedness.

The second hypothesis relates to the role of perceived behavioral control in influencing the intention for disaster preparedness. Perceived behavioral control is defined as the perceived ease or difficulty in performing a specific type of behavior. It has been previously shown that there is a positive relationship between perceived behavioral control and disaster preparedness (Najafi et al., 2017). The indicators representing attitude are shown in Table 2. Generally, when an individual's perceived behavioral control is higher, this leads to a stronger intention to prepare for disaster.

Hypothesis 3: There is a significant positive relationship between social norms and intentions towards disaster preparedness.

The third hypothesis relates to the role of social norms in influencing the intention for disaster preparedness. Social norms are described as the perceived pressures from society for performing or not performing a certain behaviour. Past studies have shown that social pressure provides a significant influence on individuals to prepare themselves in the event of a disaster (Tang & Feng, 2018). In other words, individuals tend to adhere to behavior that is prevalent and considered as beneficial in society. It is expected that there is a positive relationship

between social norms and disaster preparedness (Najafi et al., 2017; McIvor & Paton, 2007). The indicators representing attitude are shown in Table 2. Generally, social norms lead individuals towards stronger intentions to prepare for disaster.

RESULTS

This study applied the TPB to assess the behavioral determinants of the disaster preparedness of youth in Sarawak. The results show that 51.2 per cent of the respondents agreed that they have the intention to prepare for the event of a disaster, 40.2 per cent of the respondents were neutral, while 8.6 per cent did not intend to prepare themselves for the event of a disaster. The results also indicate that 60.4 per cent of the respondents agreed that they have the intention to seek information to be able to encounter the event of a disaster, 35.0 per cent of the respondents were neutral, and 4.6 per cent did not intend to seek information to support themselves in encountering a disaster event.

Assessment of Measurement Model

According to PLS-SEM, the measurement model was first assessed to ensure that the indicators adequately represent the latent variables or constructs. These tests included the reliability of the measurement scales, as well as convergent validity and discriminant validity checks. According to the findings (see Table 3), all item loadings were found to be greater than 0.7, which is satisfactory. All constructs met the minimum requirement of 0.5 for the average variance extracted and 0.7 for composite reliability (Sarstedt, Ringle & Hair, 2017; Hair et al., 2010; Fornell & Larcker, 1981). The discriminant validity values indicated that the square roots of the AVEs were greater than the correlations between the construct and other constructs in the model. Hence, all the tests found the measurement model to be satisfactory.

Table 3 Factor loadings, CR and AVE

Construct	Items	Loadings	Cronbach's Alpha	Average Variance Extracted (AVE)	Composite Reliability (CR)
ATTITUDE	ATT1	0.836	0.772	0.686	0.867
	ATT2	0.877			
	ATT3	0.769			
INTENTIONS	INT1	0.933	0.791	0.825	0.904
	INT2	0.883			
PBC	PBC1	0.872	0.832	0.748	0.832
	PBC2	0.822			
	PBC3	0.899			
SN	SN1	0.892	0.915	0.798	0.915
	SN2	0.911			
	SN3	0.911			
	SN4	0.858			

Table 4 Discriminant Validity of the Constructs

	ATTITUDE	INTENTION	PBC	SN
ATTITUDE	0.828			
INTENTION	0.436	0.908		
PBC	0.291	0.453	0.865	
SN	0.615	0.410	0.330	0.893

Assessment of the Structural Model

Figure 2 and Table 5 show the PLS path model results. These results indicate that all three behavioral determinants, including social norms, attitude, and perceived behavioral control, were statistically significant in explaining the disaster preparedness intention. These results support the work of Najafi et al. (2017) and McIvor & Paton (2007). The results suggest that perceived behavioral control ($\beta = 0.332$) has a stronger influence on disaster preparedness compared to attitude ($\beta = 0.250$) and social norms ($\beta = 0.146$). Furthermore, the R^2 of 0.32 indicates that the model is substantial. R^2 demonstrates the variance explained in each of the endogenous constructs with a scale running from 0 to 1; higher values indicate greater accuracy in prediction (Sarstedt, Ringle, & Hair, 2017). The percentage of variance in disaster preparedness intentions explained by the three factors (about 32%) is within the range

typical for TPB studies (e.g., Vinnell, Milfont, & McClure, 2021; Armitage and Conner, 2001).

In the context of this study, perceived behavioral control explains that the ease with which an individual prepares for disaster may encourage them to have higher disaster preparedness. This is where a policy-makers role becomes important in equipping society with the necessary financial and information resources pertaining to any potential disaster events. The more strongly they feel they are in charge of their disaster preparedness, the more likely they are to carry out their plans. That is, greater perceived control tends to strengthen the incentive of individuals to engage in disaster preparedness (Najafi, 2017).

Social norms provide information within society which allows a shortcut in behavioral decision-making, enabling a person to make accurate and efficient decisions (Vinnell, Milfont, & McClure, 2019). The probability of preparing oneself for facing the event of a

disaster is influenced by other people of a similar socio-economic group, in this case, youth. That means, it is very likely for individuals to prepare themselves for any disaster events such as flood or earthquake, if they are surrounded by a society with a high level of disaster preparedness (Tang & Feng, 2018). Significant others such as family, friends and peers play an important part in an individual’s decision to perform a specific action via the individual’s view of the prevalence of that behavior. In addition, a recent study conducted by Wang et al.(2021) found that the favorable effect of social norms on readiness intentions makes it an acceptable focus when considering the power

of social mobilisation.

In this study positive attitude represents how favorable an individual is towards disaster preparedness. Past literature has also emphasised the importance of a belief system deeply ingrained in culture or religion regarding past disaster experience; this distinguishes one from having a positive or negative attitude towards disaster preparedness (Adomah Bempah & Olav Øyhus, 2017; Alexander, 2012). Furthermore, Vinnell, Milfont, and McClure (2021) reported that attitudes toward natural hazards were significantly and positively associated with intentions to prepare for them.

Table 5 PLS-SEM Results

H:	Hypothesis	Outcome
H1	There is a significant positive relationship between attitude and intentions towards disaster preparedness ($\beta = 0.250^{***}$).	Supported
H2	There is a significant positive relationship between perceived behavioral control and intentions towards disaster preparedness. ($\beta = 0.332^{***}$)	Supported
H3	There is a significant positive relationship between social norms and intentions towards disaster preparedness. ($\beta = 0.146^*$)	Supported

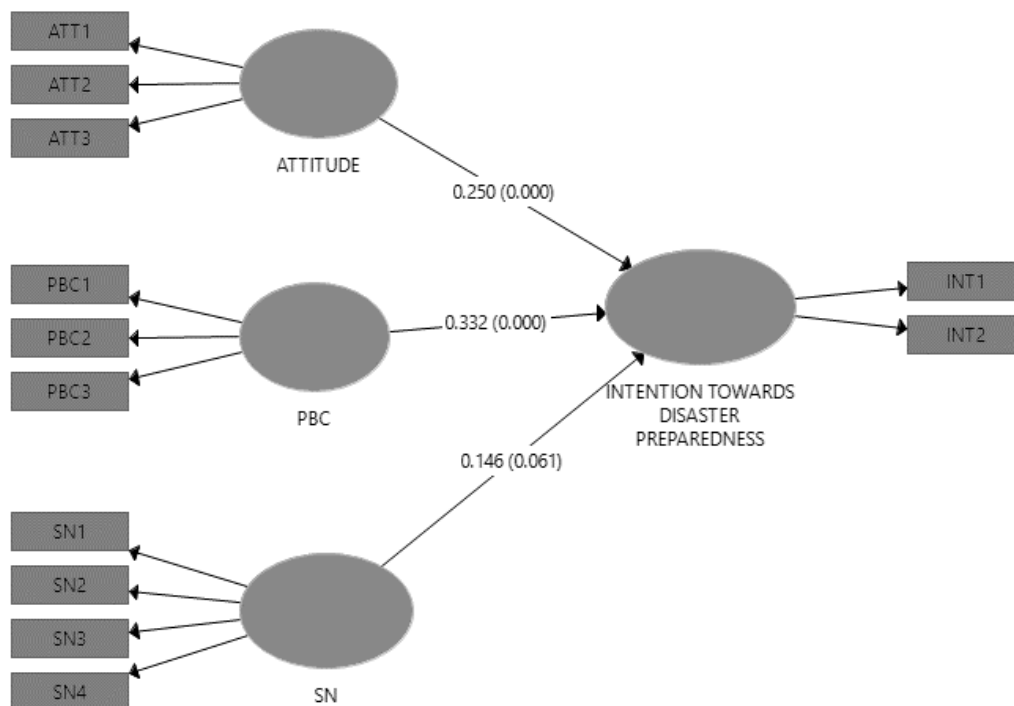


Figure 2. PLS-SEM Output

CONCLUSION

The importance of disaster preparedness in Malaysia is essential in providing a better understanding among individuals in the event of a disaster. Hence, identifying the determinants of disaster preparedness may reduce the risks and vulnerabilities that society may experience, through sound policymaking. According to this study, it was found that behavioral factors are significant in explaining disaster preparedness in the case of Malaysian youth. While a number of existing studies have shown the importance of disaster readiness, very few have pointed out the role of behavioral factors as its determinants. The outcome of this study bridges the gap in the existing literature by explaining the significance of behavioral factors in disaster preparedness among youth in the context of a developing country. More specifically, this shows the significance of a generational effect among youth in determining disaster preparedness. The findings indicate that youth preparedness can be enhanced via perceived behavioral control, attitude, and social norms. The exclusion of youth from disaster preparation jeopardises their safety in the event of a disaster and disregards an important asset for risk communication, education, advocacy, and pragmatic risk mitigation initiatives (Anderson, 2005). In this case, it shows that while youth are vulnerable in the event of a disaster, the consequences of the aftermath of such an event can be reduced or alleviated by influencing these behavioral factors. This is particularly significant as youth should be viewed as dynamic change agents rather than merely risk communication carriers (Mitchell et al., 2008). The scenario points out the imperatives of integrating the input gained in constructing strategies that can improve the level of preparedness to lessen the impact of a disaster on Malaysian society.

Managerial Implications

Although Malaysia has enforced

policies on disaster management in the past, it is necessary to review their effectiveness. Disaster management policies should not be limited to handling the aftermath of a disaster but also encompass the aspect of preparing prior to any event of disaster. This can be achieved by providing ample knowledge to enhance readiness via various efforts such as campaigns, mass lecture, advertisements, and workshops, through mainstream and digital platforms. Another strategy that may be included is geographically mapping the level of preparedness to properly monitor people, particularly those who reside in a risky or disaster-prone area. Considering this, policy-makers can identify the level of preparedness in different geographical areas, provide better communication, and improve society's efforts in critical areas.

LIMITATIONS AND FURTHER RESEARCH

There are a number of limitations in this study. First, the study was conducted focusing on youth. Therefore, the results of the study cannot be generalized, but instead provide a deeper understanding with respect to a concerning age group as youth are considered as one of the most vulnerable groups in the event of a disaster. The outcomes of this study can be used in the context of youth in different countries or regions. Secondly, the study mainly applied the Theory of Planned Behaviour, highlighting three main factors: social norms, perceived behavioral control, and attitude, to represent the behavioral factors. Other theories may also be integrated for a wider understanding of the behavioral factors in influencing disaster preparedness.

In terms of future studies, several areas are suggested. First, a wider respondent profile is recommended, as this has the potential to represent the socio-demographic background of the country, for a more generalized output. Additionally, it is essential to ensure that rural populations are included in the study. This is because people

in rural areas are more vulnerable in facing disaster events than the urban population. Second, in tandem with the limitations mentioned, it is important to extend the variables and indicators that represent the behavioral factors beyond what was used in this study. Factors derived from other theories can be included to represent more human aspects.

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