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Association of Evacuation Dimensions towards Risk Perception of the Malaysian students who studied at Jakarta, Medan, and Aceh in Indonesia

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ABSTRACT

Disasters can strike anywhere at any time that may result in injuries or loss of life for those individuals who are ill-prepared for disaster situations. Evacuation is a vital part of disaster management. Successful evacuation requires involvement of the community by understanding evacuation orders, knowing evacuation routes and timely decision making to evacuate. This study was conducted to measure the relationship between evacuation dimensions (behavioral, organizational, physical hazard, response, social, and warning) and risk perception using questionnaires gathered from the Malaysian students who studied at Jakarta, Medan, and Aceh in Indonesia. The outcomes of SmartPLS path model showed six important findings: firstly, behavioral not significantly correlated with risk perception. Second, organizational significantly correlated with risk perception. Third, physical hazard significantly correlated with risk perception. Fourth, response significantly correlated with risk perception. Fifth, social significantly correlated with risk perception. Sixth, warning significantly correlated with risk perception. Statistically, this result confirms that the implementation of organizational, physical hazard, response, social, and warning have been important determinant of risk perception. Conversely, the implementation of behavioral had not enhanced the risk perception in the organizational sample. In addition, discussion, implications and conclusion are elaborated.

INTRODUCTION

Disasters can strike anywhere at any time, vary in severity, and have devastating consequences that may result in injuries or loss of life for those individuals who are ill-prepared for disaster situations. According to Perry and Lindell (1997), disasters are a significant cause of death and disability around the world and also have tremendous social, economic, and political effects on society. Evacuation is a vital part of disaster management (Cova & Johnson, 2003) that is described as moving people at risk to safety (Na et al., 2012). Effective evacuation depends on several factors such as warning time, response time, information and instructions dissemination procedure, evacuation routes, traffic flow conditions, dynamic traffic control measures, and others (Pel et al., 2012) to mention a few.

Evacuation is largely a function of people defining themselves as being in danger and believing that leaving the area in question is beneficial (Fitzpatrick & Mileti, 1991). Successful evacuation requires involvement from both the community by issuing evacuation orders, providing marked exit routes and the individual decision making (Riad & Norris, 1998). Although community involvement is important in evacuation, external social influence can only go so far because ultimately the individual is responsible for the decision. Evacuation decisions are influenced by societal norms, different population subgroups, with different norms, may have different rates of evacuation (Moore, 1963). Case studies involving toxic spills, near nuclear meltdowns, and varied natural disasters such as hurricanes, volcanoes and floods have assumed that disaster behaviors such as evacuations or preparedness are prompted primarily by risk perceptions of an impending disaster (Sjoberg, 2000).

Risk concerns both the probability for and the consequences of the happening of an event (Adams, 1995). People are expected to vary in whether they focus upon probability or consequence (Drottz-Sjöberg, 1991). Risk is all about thoughts, beliefs and constructs (Sjöberg, 1979). According to Adams (1995: 69) "risk, according to the definitions most commonly found in the safety literature, is the probability of an adverse future event multiplied by its magnitude". The perceived risk concerns how an individual understands and experiences the phenomenon. Many factors may influence perceptions of risk, such as familiarity with the source of danger (Ittelson, 1978), control over the situation (Rachman, 1990), and the dramatic character of the events – rare, striking events tend to be overestimated, while frequency of common events tend to be underestimated (Lichtenstein, et al., 1978).

Risk perception is associated by demands for risk mitigation (Oltedal, 2004). Risk perception as defined by Slovic (1987) refers to people's intuitive and subjective evaluation of the riskiness of an activity, technology or event. In the past decades, substantial studies have been conducted to understand the riskiness of various technologies, activities, and events as judged by people and factors affecting such a judgment from different disciplines. People's risk perception is believed to be affected by their prior experience, their socio-demographic characteristics, social, cultural and institutional environment, and

the characteristics of risks (Taylor-Gooby & Zinn, 2006). Risk perception, among other factors, is believed to affect people's preparedness for, responses to and recovery from natural disasters (Grothmann & Reusswig, 2006; Bradford et al., 2012). Risk perception is defined as the subjective assessment of risk, not actual risk. Risk perception determines how people respond to hazards (Pennings & Smidts 2000; Pennings & Smidts 2003).

Risk perception, people's subjective judgment of the riskiness of activities, technologies, and events, is a prerequisite of their risky behavior. In coping with natural disasters, it is important to know how people perceive disasters risks and what factors affect their perceived level of riskiness, to predict their self-protective behavior and their response to public measures (Xu, 2014). Lin et al. (2008) studied general public and victims' risk perception and mitigation behavior towards floods and landslides in Taiwan. They found that risk perception, social trust and social economic factors (income and education) are positive predictors of mitigation measures, while sense of powerlessness and helplessness are negative predictors of mitigation measures. As stated by Slovic (1987), one challenge when dealing with risk perception at the individual level is that decision are often based on what is deemed as acceptable risk. Often citizens remain under-prepared because they may view disasters as an anomaly and remain dependent on governmental agencies to ensure their safety (Chen, 2012).

Emergency conditions change behavior and norms (Fritz, 1957; Perry, 1979). When a warning is received, people engage in what evacuation researchers have historically called the warning confirmation process. The aim of early warning is to raise awareness and encourage preparedness. The efforts for early warning would be more effective if risk perception had been taken into account (Xu, 2014). Waugh, (2008), the goals of warning systems are to communicate either directly or indirectly with all persons at risk and to elicit an appropriate protective response to reduce or eliminate that risk. Ideally, all at risk should hear (or see or feel), understand, believe, personalize, and respond to the warning by taking protective action (e.g., evacuating, sheltering in place, etc.). The issue of access should also include whether those at risk actually hear or see warnings, not just be able to hear or see them, including whether the warning system is reasonably effective in reaching those at risk. No system reaches everyone. Evacuation decisions, for example, typically are made by families and other social groupings. People consult with relatives, friends, and colleagues before deciding to evacuate.

Objectives of the Study

This study is conducted to measure six relationships: first, relationship between behavioral on risk perception. Second, relationship between organizational on risk perception. Third, relationship between physical hazard on risk perception. Fourth, relationship between response on risk perception. Fifth, relationship between social on risk perception. Lastly, relationship between warning on risk perception

LITERATURE REVIEW

Relationship between evacuation dimensions and risk perception

Extant studies about evacuation dimensions were conducted using different samples, such as a sample of 1,000 adults from Savannah, GA, Charleston, S.C, Charlotte, NC and Greenville, SC that experienced Hurricanes Hugo and Andrew evacuation decisions and risk perception (Riad & Norris, 1998), samples from Cedar Rapids, Iowa a mail-out survey technique to 1000 households located in the mandatory evacuation zone however 196 were completed and returned evacuees' perception of risk associated with the evacuation (Siebeneck & Cova, 2008), national urban household sample (814) in Israel, behavior preparedness actions due to risk perceptions (Kirschenbaum, 2005), and Seigler (2014) studied samples of 15,608 randomly selected addresses 3,272 surveys were returned from residents of the coastal regions South Carolina were surveyed on previous and potential evacuation behaviors in regards to a hurricane strike to the conglomerates of Northern (Horry and Georgetown); Central (Charleston, Berkeley, and Dorchester) and Southern (Beaufort, Colleton, and Jasper) citizens that be subject to a mandated evacuation with the necessary information in order make personal planning and preparing a top priority, which will in turn lead to an effective evacuation. These studies found that the people's risk perception is believed to be affected by their disaster evacuation dimensions (i.e., behavioral, organizational, physical hazard, response, social, and warning) in respective disaster affected areas (Riad & Norris, 1998; Siebeneck & Cova, 2008; Kirschenbaum, 2005; Seigler, 2014). This finding is consistent with the notion of Dash and Gladwin (2005) provide a comprehensive framework for evacuation as a function of individual factors, event characteristics and risk perception. Dash illustrates that risk perception is made up of a variety of elements that vary by individual and community, including; socioeconomic factors, experience factors, trust of authorities, storm knowledge, home characteristics, and message dissemination. These variables interact with each other to either enhance or reduce risk perception. Dash and Gladwin's approach is to organize the factors involved in decision-making, understand how information is used, and determine what influences individual action. Another theory, according to Douglas (1978) and Thompson et al. (1990), cultural theory is a general sociological theory. Cultural theory aims at explaining how people perceive and act upon the world around them. More specifically the theory claims that this is largely determined by social aspects and cultural adherence. This theory claims that this is largely determined by social aspects and cultural adherence. Both theories related to the literature that has been used to develop the conceptual framework for this study as shown in Figure 1.

Conceptual Framework and Research Hypothesis

The literature has been used as foundation to develop a conceptual framework for this study as shown in Figure 1.

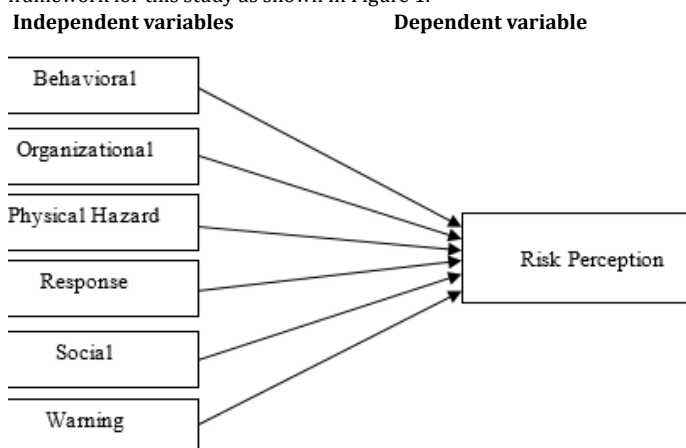


Figure 1 Relationship between evacuation dimensions and risk perception. Based on the framework, it can be hypothesized that:

- H1: There is a relationship between behavioral on risk perception.
 H2: There is a relationship between organizational on risk perception.
 H3: There is a relationship between physical hazard on risk perception.
 H4: There is a relationship between response on risk perception.
 H5: There is a relationship between social on risk perception.
 H6: There is a relationship between warning on risk perception.

METHODOLOGY

Research Design

This study used a quantitative based case study which allowed the researchers to integrate risk perception literature, a pilot study and the actual survey as the main procedure to gather data for this study. Using this

data collection procedure may gather accurate, less bias and high quality data (Davis, 1996; Cresswell, 1998; Sekaran, 2000). This study gathered data from the students who studied at Jakarta, Medan, and Aceh in Indonesia under the Ministry of Education Malaysia. This organizational responsible to the Malaysian Embassy in Indonesia where its role and function are to provide the administration for the students that studied in Indonesia.

At the initial stage, a pilot study was conducted by discussing survey questionnaires with five experienced officers comprising of two representatives from Malaysian Embassy in Indonesia (Jakarta and Medan), and two representatives of Ministry of Education Malaysia in Jakarta and Medan who have backgrounds in emergency evacuation in case of any disaster. The information gathered from such officers helped the researcher to develop the content and format of survey questionnaires for an actual research. Hence, a back translation technique was used to translate the content of questionnaires in Malay and English languages in order to increase the validity and reliability of the instrument (Sekaran & Bougie, 2010; Creswell, 2012).

Measures

The survey questionnaire had three sections. First, behavioral had 4 items that were modified from related behaviour characteristics (Sorensen & Sorensen, 2006). Second, organizational had 3 items, physical hazard had 3 items, response had 3 items, social had 3 items and warning had 3 items that were modified from Sorensen, Vogt & Mileti (1987). Third, risk perception had 3 items that were modified from related risk perception characteristics (Dash & Gladwin, 2005). All these items were measured using a 7-item scale ranging from "very strongly disagree" (1) to "very strongly agree" (7). Demographic variables were used as the controlling variables because this study focused on students perceptions towards emergency evacuation.

Unit of Analysis and Sample

The researchers had obtained an official approval to conduct the study from the Ministry of Education Malaysia and also received advice from Malaysian Embassy in Indonesia about the procedures of conducting surveys in Jakarta, Medan, and Aceh. The targeted population for this study was 1,500 students who studied in Jakarta, Medan, and Aceh in Indonesia. This organizational allowed the researchers to conduct this study, but the list of students was not provided to the researchers. Considering this situation, a convenient sampling technique was used to distribute the survey questionnaires to students who studied in respective locations in Indonesia. A total of 200 questionnaires were distributed. From the total number, 162 usable questionnaires were returned to the researchers, yielding 81 percent response rate. The survey questionnaires were answered by participants based on their consents and a voluntarily basis. The number of sample exceeds the minimum sample of 30 participants as required by probability sampling technique, showing that it may be analyzed using inferential statistics (Chua, 2006; Sekaran & Bougie, 2010).

Data Analysis

The research statistical analysis was conducted using structural equation model generated by SmartPLS version 2.0 (Ringle et al., 2005). The procedure of analyzing data is: first, validity test was performed by the convergent and discriminant validity. Second, the reliability analysis was performed by Cronbach alpha and composite reliability. Third, the structural model is assessed by examining the path coefficients using standardized betas (β) and t statistics. In addition, R² is used as an indicator of the overall predictive strength of the model. The value of R² are considered as follows; 0.19 (weak), 0.33 (moderate) and 0.67 (substantial) (Chin, 1998; Henseler et al., 2009).

RESULTS

Samples profile

In relation to sample profile, Table 1 shows that the majority respondent characteristics were females (50.6%), ages between 21 to 25 years old (61.1%), bachelor status (96.6%), location of study - Aceh (53.7%), field of study - Islamic studies (55.6%), education level - bachelor (77.8%), years of study between 4 to 5 years (53.7%), frequency of attending exposure on evacuation within studied periods - once (77.8%), and real experience in evacuation - no (69.8%).

| Respondent Profile | Sub Profile | Frequency | Percentage |
|---|--------------------|-----------|------------|
| Sex | Male | 80 | 49.4 |
| | Female | 82 | 50.6 |
| Age | Less than 20 years | 60 | 37.0 |
| | 21-25 years | 99 | 61.1 |
| | 26-30 years | 2 | 1.2 |
| | More than 31 years | 1 | 0.6 |
| Marital Status | Bachelor | 157 | 96.6 |
| | Married | 5 | 3.1 |
| Location of Study | Jakarta | 68 | 42.0 |
| | Medan | 7 | 4.3 |
| | Acheh | 87 | 53.7 |
| Field of Study | Management | 1 | 0.6 |
| | Medical | 69 | 42.6 |
| | Islamic Studies | 90 | 55.6 |
| | Others | 2 | 1.2 |
| Education Level | PhD | 27 | 16.7 |
| | Master | 4 | 2.5 |
| | Bachelor | 126 | 77.8 |
| | Diploma | - | - |
| | Certificate | 5 | 3.1 |
| Years of Study | Less than 1 year | 17 | 10.5 |
| | 2-3 years | 48 | 29.6 |
| | 4-5 years | 87 | 53.7 |
| | 6-7 years | 9 | 5.6 |
| | More than 8 years | 1 | 0.6 |
| Frequency of attending exposure on evacuation within studied periods. | Once | 126 | 77.8 |
| | Twice | 18 | 11.8 |
| | More than 3 times | 18 | 11.8 |
| Real experience in evacuation | Yes | 49 | 30.2 |
| | No | 113 | 69.8 |

Confirmatory Factor Analysis

Table 2 shows the results of convergent and discriminant validity tests. All constructs had the values of AVE larger than 0.5 indicating that they met the acceptable standard of convergent validity (Barclay et al., 1995; Fornell & Larcker, 1981; Henseler et al., 2009). Besides that, all constructs had the values of \sqrt{AVE} in diagonal were greater than the squared correlation with other constructs in off diagonal, showing that all constructs met the acceptable standard of discriminant validity (Henseler et al., 2009).

Note: \sqrt{AVE} is shown in a diagonal

Table 3 shows the factor loadings and cross loadings for different constructs. The correlation between items and factors had higher loadings than other items in the different constructs. The loadings of variables more strongly on their own constructs in the model, greater than 0.7 are considered adequate (Chin, 1998; Fornell & Larcker, 1981; Gefen & Straub, 2005; Henseler et al., 2009). In sum, the validity of measurement model meets the criteria.

Table 2 Fornell-Larcker Criterion Test

| | AVE | Behavioral | Organizational | Physical Hzd | Response | Risk Perception | Social | Warning |
|-----------------|----------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Behavioral | 0.806191 | 0.897881 | | | | | | |
| Organizational | 0.716374 | 0.335447 | 0.846388 | | | | | |
| Physical Hzd | 0.611138 | 0.309800 | 0.496190 | 0.781753 | | | | |
| Response | 0.774300 | 0.518041 | 0.344793 | 0.438504 | 0.879943 | | | |
| Risk Perception | 0.709118 | 0.210585 | 0.482130 | 0.388062 | 0.407528 | 0.842091 | | |
| Social | 0.617446 | 0.300984 | 0.448654 | 0.612087 | 0.304507 | 0.369587 | 0.785777 | |
| Warning | 0.707352 | 0.321165 | 0.440185 | 0.639023 | 0.370253 | 0.431627 | 0.602125 | 0.841042 |

Table 3 Factor Loading and Cross Loading

| Construct/Items | Behavioral | Organizational | Physical Hzd | Response | Risk Perception | Social | Warning |
|--|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| channelizing hazard warning professionally | 0.269396 | 0.332968 | 0.552680 | 0.219204 | 0.264734 | 0.485805 | 0.758086 |
| disseminate hazard warning to student respective locations effectively | 0.272984 | 0.421250 | 0.585000 | 0.393917 | 0.474974 | 0.529769 | 0.911692 |
| provide effective mode of warning system for emergency evacuation | 0.280636 | 0.340363 | 0.474197 | 0.276959 | 0.288484 | 0.514220 | 0.846274 |
| Malaysian representative as a term of reference in case of hazard | 0.104590 | 0.448910 | 0.750749 | 0.269184 | 0.346239 | 0.421084 | 0.417703 |
| disseminate hazard related news using telephone & electronic medium | 0.335006 | 0.302582 | 0.795825 | 0.371397 | 0.243275 | 0.490507 | 0.518386 |
| capable of planning emergency evacuation method | 0.323300 | 0.382499 | 0.797781 | 0.401027 | 0.299363 | 0.530012 | 0.573564 |
| provide technical support such as warning, evacuation centre, and method of evacuation | 0.284895 | 0.817682 | 0.427952 | 0.224971 | 0.392456 | 0.418940 | 0.330589 |
| broad experiences in implementing emergency evacuation system | 0.285502 | 0.864519 | 0.410715 | 0.333859 | 0.408641 | 0.345371 | 0.342610 |
| capable to provide logistic support for emergency evacuation | 0.281717 | 0.856228 | 0.421857 | 0.313531 | 0.422364 | 0.376872 | 0.440868 |
| details planning for emergency evacuation | 0.493472 | 0.272519 | 0.339428 | 0.847512 | 0.355399 | 0.192954 | 0.290632 |
| emergency evacuation planning for the benefit and safety of students | 0.369380 | 0.389478 | 0.447038 | 0.892471 | 0.387922 | 0.357117 | 0.361199 |
| preparation and response for emergency evacuation are total responsibilities | 0.516863 | 0.234300 | 0.363113 | 0.898955 | 0.326702 | 0.243229 | 0.321514 |
| confident with enough knowledge on hazard in location | 0.251861 | 0.392743 | 0.388783 | 0.431736 | 0.803424 | 0.304258 | 0.353895 |
| well known on emergency evacuation planning | 0.126542 | 0.459611 | 0.302285 | 0.280251 | 0.869789 | 0.291808 | 0.359216 |
| emergency evacuation planning easily access | 0.150796 | 0.362069 | 0.285324 | 0.313986 | 0.851664 | 0.338405 | 0.377184 |
| believed all information's about the hazards | 0.302683 | 0.351026 | 0.504785 | 0.302893 | 0.314375 | 0.766040 | 0.472769 |
| understood well the explanations on emergency evacuation planning | 0.231149 | 0.326887 | 0.473216 | 0.186210 | 0.300083 | 0.850756 | 0.508184 |
| Not a problem to access the information about evacuation | 0.160736 | 0.386795 | 0.462410 | 0.224013 | 0.249933 | 0.736027 | 0.433589 |
| assist handicap friends during emergency evacuation | 0.899516 | 0.253314 | 0.278163 | 0.401644 | 0.166523 | 0.293202 | 0.328868 |
| follow the instruction to identified assembly area | 0.906238 | 0.292567 | 0.236815 | 0.528193 | 0.140487 | 0.303692 | 0.296437 |
| be in vehicle provided for emergency evacuation | 0.937206 | 0.321026 | 0.306955 | 0.527124 | 0.267269 | 0.229355 | 0.280809 |
| fully concerned to any instruction on emergency evacuation | 0.846175 | 0.361994 | 0.280147 | 0.352648 | 0.101016 | 0.314154 | 0.251793 |

Table 4 shows the results of reliability analysis for the instrument. The composite reliability and Cronbach's Alpha had values of greater than 0.8, indicating that the measurement scale used in this study had high internal consistency (Chua, 2006; Henseler et al., 2009; Nunally & Benstein, 1994; Sekaran & Bougie, 2010).

Table 4 Composite Reliability and Cronbach's Alpha

| Construct | Composite Reliability | Cronbachs Alpha |
|-----------------|-----------------------|-----------------|
| Behavioral | 0.943236 | 0.923765 |
| Organizational | 0.883353 | 0.801773 |
| Physical Hzd | 0.824905 | 0.686845 |
| Response | 0.911387 | 0.854177 |
| Risk Perception | 0.879596 | 0.794251 |
| Social | 0.828283 | 0.689778 |
| Warning | 0.878207 | 0.799359 |

Outcomes of Testing Direct Effects Model

Table 5 shows the outcomes of direct effect model consist of H1, H2, H3, H4 and H5. First, behavioral not significantly correlated with risk perception ($\beta = 0.227$; $t = 1.319$), therefore H1 was not supported. Second, the hypothesis of organizational significantly correlated with risk perception ($\beta = 0.486$; $t = 6.263$), therefore H2 was supported. Third, the hypothesis of physical hazard significantly correlated with risk perception ($\beta = 0.395$; $t = 5.100$), therefore H3 was supported. Fourth, the hypothesis of response significantly correlated with risk perception ($\beta = 0.422$; $t = 5.578$), therefore H4 was supported. Fifth, The hypothesis of social significantly correlated with risk perception

($\beta = 0.372$; $t = 4.178$), therefore H6 was supported. In terms of explanatory power, quality of model predictions in the analysis can be demonstrated by the score of R2. The inclusion of risk perception had explained the variance in the behavioral 5.1 percent ($R^2 = 0.051$ (weak)), organizational 23.5 percent ($R^2 = 0.235$ (weak)), physical hazard 15.6 percent ($R^2 = 0.156$ (weak)), response 17.8 percent ($R^2 = 0.178$ (weak)), social 13.8 percent ($R^2 = 0.138$ (weak)) and warning had explained 18.6 percent of the variance in the risk perception ($R^2 = 0.186$ (moderate)).

Table 5 Estimation and Prediction Risk Perception of H1, H2, H3, H4, H5 and H6

| Relationships | β | t | R ² |
|--|----------|-------|----------------|
| Behavioral -----> Risk Perception | 0.227 | 1.319 | 0.051 |
| Organizational -----> Risk Perception | 0.485*** | 6.263 | 0.235 |
| Physical Hazard -----> Risk Perception | 0.395*** | 5.100 | 0.156 |
| Response -----> Risk Perception | 0.422*** | 5.578 | 0.178 |
| Social -----> Risk Perception | 0.372*** | 4.178 | 0.138 |
| Warning -----> Risk Perception | 0.432*** | 5.233 | 0.186 |

Note: Significant at * $t > 1.96$; ** $t > 2.576$; *** $t > 3.29$

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DISCUSSION AND IMPLICATIONS

The findings of this research show that evacuation dimensions such as organizational, physical hazard, response, social, and warning does act as an important determinant of risk perception in the organizational sample. In the context of this study, the Malaysian Embassy in Indonesia has taken a proactive action to plan, maintain, and monitor its service to students who studied in Jakarta, Medan, and Aceh in Indonesia. According to the interviewed respondents, organizational, physical hazard, response, social, and warning been properly exposed to the students will contribute to risk perception outcomes. Thus, the ability of the Malaysian Embassy in Indonesia to properly implement such evacuation dimensions has enhanced disaster risk perception in the studied areas.

This study provides significant impacts on three major aspects: theoretical contribution, robustness of research methodology, and practical contribution. In terms of theoretical contribution, this study reveals that evacuation dimensions

such as organizational, physical hazard, response, social, and warning act as important determinants of risk perception. This finding also has supported and broadened studies by Riad & Norris (1998); Siebeneck & Cova (2008); Kirschenbaum (2005); and Seigler (2014).

Regarding the robustness of research methodology, the survey questionnaires used in this study have exceeded the minimum standards of validity and reliability analyses; this can lead to the production of accurate and reliable findings.

With respect to practical contribution, the findings of this study can be used as a guideline by management of Malaysian Embassy in Indonesia to improve the risk perception of the students who studied at Jakarta, Medan, and Aceh in Indonesia. The possible suggestions are: firstly, disaster evacuation training program needs to be properly provided to students who studied in Indonesia in order to increase their awareness and readiness for disaster response. Secondly, to consider better exposure to individual staff who are committed to improve disaster evacuation planning for students who studied in Indonesia. Thirdly, selection of staff who served at Malaysian

Embassy in Indonesia needs to have knowledge of disaster risk management so that they will be better efficiency in providing information to smoothly implement disaster response. If these suggestions are heavily considered this may motivate the students who studied in Indonesia to perform better disaster evacuation in case the disaster occur

CONCLUSION

This study proposed the conceptual framework based on the disaster risk perception research literature. The measurement scales used in this study met the acceptable standards of validity and reliability analyses. The findings of SmartPLS path model confirmed that evacuation dimensions such as organizational, physical hazard, response, social, and warning did act as an important determinant of risk perception. This result has supported and broadened risk perception research literature published in most Western countries. Therefore, current research and practice within risk perception models needs to consider the evacuation dimensions as crucial elements of disaster response. The findings of this study further suggest that the ability of evacuation dimensions such as organizational, physical hazard, response, social, and warning contribute to risk perception outcomes. Hence, these positive outcomes may lead to sustained and achieved the goals of the Malaysian Embassy in Indonesia where its role and function are to provide the administration for the students that studied in Indonesia

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