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## A CONCEPTUAL FRAMEWORK ON MOTIVATION TO INSURE AGAINST FLOOD PERIL AND THE MODERATING ROLE OF CHARITY HAZARD

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### Abstract:

The increasing frequency and severity of flash flood disasters in Malaysia, particularly in states such as Selangor, Kelantan, and Pahang, has exposed a reality that despite the increasing risk of flood disasters, 74% of homeowners still do not have flood insurance coverage. Moreover, the mind-sets that "floods happen, but it won't happen to me" indicates that risk perception alone is insufficient to drive protective action. Therefore, a study is essential to investigate the behavioural factors that influence individuals' motivation to adopt insurance as a protective measure. This paper aims to propose a conceptual framework based on Protection Motivation Theory (PMT) to identify the main factors influencing individuals' motivation to purchase flood peril cover. Additionally, this paper operationalizes protection motivation variables in the context of insurance purchase motivation. This framework developed on two main cognitive appraisals namely threat appraisal and coping appraisal. The uniqueness of this framework lies in the integration of "charity hazard" as a moderator variable to test the extent to which reliance on government assistance weakens the relationship between cognitive appraisal and protection motivation. Theoretically, this study refined the application of PMT by adding moderating effects of charity hazards. Data analysis is proposed through PLS-SEM 3.0 to simultaneously examine direct relationships and for precise moderation analysis. Practically, this framework provides valuable insights to Ministry of Finance, NADMA, insurance

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companies, NGO's and communities in designing more effective strategies to reduce household vulnerability through insurance.

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Charity Hazard, Coping Appraisal, Flood Insurance, Protection Motivation Theory, Self-Efficacy, Threat Appraisal.



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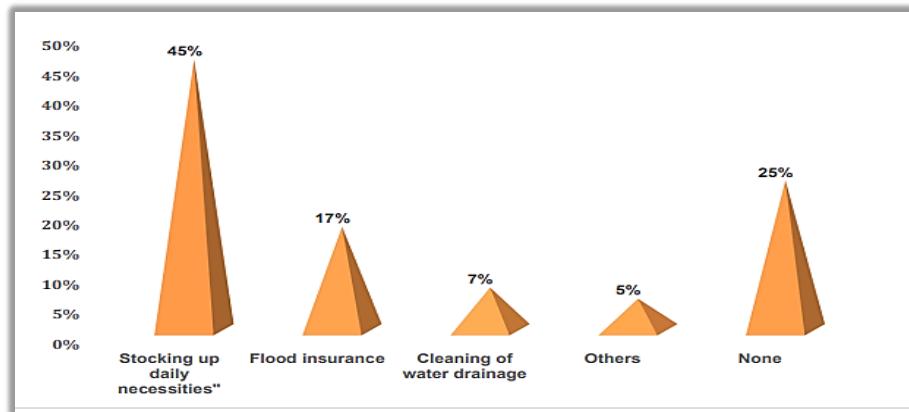
## Introduction

In recent years, there has been a notable surge in both of the occurrence and intensity of flash flooding across Malaysia, with states like Selangor, Pahang, and Kelantan being particularly hard-hit. Despite this growing frequency of flood, many homes remain unprotected against flood perils, with only a small proportion of homeowners opting for flood perils coverage in their insurance policies. This gap is concerning, especially when the effects of climate change getting to intensify which then making the flood disaster even worse (Muzamil et al., 2022).

When major floods occur, social media postings often report news about flood disasters featuring images of submerged homes and damaged properties. People watch, like and show sympathy on the posting but in general many individuals feel that "floods happen, but it won't happen to me," leading them to overlook the importance of flood peril protection for their homes. Consequently, this mindset contributes to the fact that among 1,201 respondents, 74% of homeowners remain uncovered, leaving their homes vulnerable to flood damage (Zurich, 2021). Statistics also report that a significant portion of Malaysian households remain financially vulnerable to natural hazards, showing that more than 50% of homes are uninsured against structural damage from fire, floods, or severe weather (The Star, 2025).

Additionally, many individuals are unclear of the perils coverage provided in their insurance policies. Insurance company survey reveals that 25% of insured consist of homeowners who do not fully understand the coverage of their existing home insurance or takaful, and 43% are unaware that home contents may not be included (Zurich, 2021). This lack of awareness, coupled with low insurance uptake, highlights the urgent need for greater protection against the financial losses caused by natural hazards such as floods. The factors that will motivate them to take flood cover protection need to study specifically to untangle these issues.

DOSM in their recent statistics had listed down the type of the flood's preventive and preparation actions that has been adopted by the flood victims. Among of the preventive actions are such as stocking up daily necessities, buying flood insurance, cleaning of water drainage and others. The statistics reported only 17% of flood victims having flood insurance as part of their flood preventive and preparation actions (DOSM, 2024). Figure 1 summarized the percentage of action taken by the flood victims.



**Figure 1: Percentage of Action Taken by The Flood Victims**

Source: Department of Statistics Malaysia, 2024

Looking at the issues that insurance not always the priority choice to protect flood perils, this paper seeks to develop a conceptual framework anchored in Protection Motivation Theory (PMT) by conceptualizing the key determinants of protection motivation to structure what variables will influence homeowners to insure against flood risks, while also considering the moderating role of charity hazard in the framework. This paper also aims to operationalize the variables in the context of insurance motivation. Through this conceptual framework, this paper hopes to provide insight on possible determinants that can be explored to know which motivation variables will lead homeowners to mitigate financial loss through insurance.

## Literature Review

Protection Motivation Theory (PMT), introduced by Rogers in 1975, serves as a prominent framework for analyzing how individuals interpret risk and subsequently decide on protective response. It has been extensively used in research communication of risk, adherence to safety compliance and decision making particularly in uncertain and threatening circumstances. Prior study had confirmed that PMT shaping various preventive behaviours, including actions taken to protect health and minimize potential risks or losses (Floyd et al., 2000; Eppright et al., 1994).

As has been widely applied to explain individual's engagement in preventive and protective behaviours, PMT demonstrated that protection motivation serves as a mechanism that drives protective response in various contexts. For instance, in the public health context, protection motivation drives exist when individuals show protective responses by taking health-protective actions and behaviours aiming at reducing health risks. In the context of natural disasters, recent studies that adopt PMT highlighted that psychological reactions influenced individuals' choices to engage in risk-reducing measures, whereas individuals are more likely to adopt precautionary measures like purchasing insurances, adjusting savings and seeking other

mitigation action against disaster (Heo et al., 2021; Xiao & Meng, 2024). It can be simply synthesized that, individual who psychological care about their safety will take better care of their financial being

At its core, PMT is a theory that suggests people are motivated to act when they perceive a high probability of a serious threat and the potential for significant consequences. This theory explains the analogy of behavioural shift from “feeling at risk” (threat appraisal) to “taking action” (coping appraisal). In essence, PMT arises from the interaction between how individuals perceive the severity and likelihood of a threat and their judgment of how effectively they can manage or mitigate that threat. This interaction explains why individuals facing the same risk will respond differently because their decision depends not only how threatening the threat is but also on how capable they can manage the threats.

Briefly, this paper is adopting PMT as the underpinning theory as it is offering a suitable lens to evaluate threats and coping appraisal in response to flood peril. There are other studies that adopt PMT in the context of the Malaysian flood. For instance, Radhakrishnan et al. (2025) recently integrated PMT to examine insurance purchase intentions among flash flood survivors in the Klang Valley, finding that response efficacy and the belief that insurance is an effective mitigation tool is the single strongest predictor of proactive financial behaviour. Other studies, such as those by Vishwanath Harish et al. (2023), have used PMT to explore how extreme past flood damage can unexpectedly reduce self-efficacy and lead to a sense of acceptance, thereby inhibiting the adoption of protective measures. From these studies, it posits individuals are motivated to protect themselves from threats through a cognitive appraisal process.

In PMT, there are two key variables: threat appraisal and coping appraisal. Threat appraisal represents the process by which an individual evaluates the "risk perception" of a flood event. It is composed of two primary sub-components perceived severity, which assesses the magnitude of potential harm to one's property or life, and perceived vulnerability, which evaluates the personal likelihood of being affected by a flood (Torten et al., 2018), Faryabi et al. (2023). In the meantime, coping appraisal consists of two sub variables which are response efficacy, self-efficacy and response cost. Response Efficacy is the belief that a specific action (such as purchasing insurance) is effective in reducing risk. Self-Efficacy is the individual's confidence in their own ability to carry out the protective behaviour and response Cost is the perceived financial, time-based, or psychological barriers to adopting the measure.

Other than PMT, this paper is also based on the Samaritan Dilemma concept to support the development of the conceptual framework. Samaritan Dilemma is an economic theory that has been coined by James M. Buchanan in 1975. In technical terms, Samaritan Dilemma describes circumstances where the altruistic desire of a “Good Samaritan” to assist those in need results in unintended exploitation. In other words, it is a conflict where offering charity or aid can create a "moral hazard", when individuals depend on the aid thereby reducing their motivation to engage in self-protective behaviours. In the context of risk management these circumstances are also known as “Charity hazard”.

The concept of charity hazard is a term that refers to a scenario where individuals forgo insurance and relying on expected government aid. Prettenthaler et al. (2004) was originally ideated this term, while subsequent research provided a deeper analysis of its underlying psychological and societal factors (Raschky & Weck-Hannemann, 2007). In short, charity is a kind of hazard when society is too dependent on government aid. Prettenthaler et al. (2004)

suggest there are three beliefs why society tends to depend entirely on the government for aid. The first belief is in general individuals should not be blamed for natural disasters or the damage they cause. The second belief is, it is the government job to fix the economy and bring order back to society after a disaster happens and the third belief is the low numbers of people have insurance, it isn't just the fault of the homeowners. It is also seen as the government's fault for not providing affordable access to insurance.

In the context of flood in Malaysia, the government spends billions ringgit on flood aid to assist the recovery of the flood victims (NADMA, 2024). While government aid is essential for citizen's welfare, some individuals choose not to invest in insurance knowing the government will always assist them. But if the government limits aid to those who failed to take precautions, it would likely face political backlash from the citizens. Due to political pressure, the government cannot say no, hence the aid is guaranteed every time a flood occurs. This circumstance could affect the demand for insurance protection for floods in Malaysia. To confirm whether the charity hazard could affect insurance demand in Malaysia, a conceptual framework is needed to execute future research on this matter.

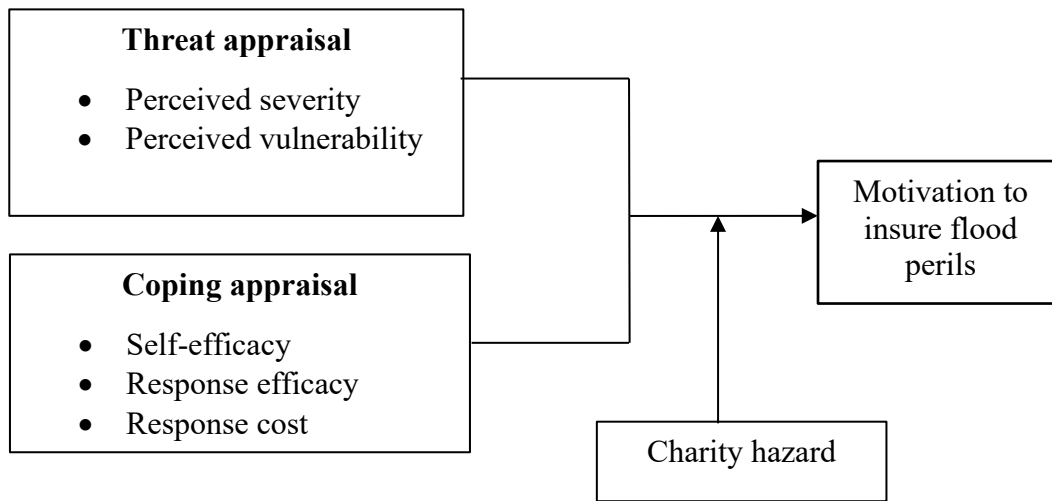
In this paper, charity hazard is adopted as a moderating variable. It will not be adopted as a direct predictor due to the inconsistent findings from previous research. Basically, moderator variables are typically introduced when there is an unexpectedly weak or inconsistent relation between a predictor and a criterion variable (Baron & Kenny, 1986). There are many studies that have confirmed charity hazard affects insurance demand (Raschky et al., 2013; Landry et al., 2021, Hudson & Thieken, 2022). Landry (2021) found that, in regions where government aid is guaranteed and publicized, it significantly diminishes insurance demand. In the other note, Hudson and Thieken (2022) observed a similar pattern among German households where the anticipation of state support led to a marked low take up for insurance. In contrast, there are also other studies that found government aid can increase insurance demand (Browne & Hoyt, 2000), (Garbarino, 2024). A recent study by Garbarino (2024) concluded that people are less willing to take up insurance when they expect the government to provide disaster aid. However, people are more willing to take up insurance when they see it as a fair way to share disaster costs between government and the people. These findings show that government aid can also increase insurance uptake. Due to this conflict in findings, this paper intends to conceptualize charity hazard as moderating due to its capability to affects the relationship of variables in the previous study.

Given the unique context of Malaysia, where natural disaster relief efforts are often government-led it is vital to examine it in future empirical study. By considering charity hazard as a moderating factor, this paper gives some ideas that, will the post-disaster relief affect both the threat appraisal and coping appraisal processes within Protection Motivation Theory (PMT). As to-date, there are still a lack of study in Malaysia regarding whether charity hazard may weaken the perceived necessity for flood insurance even if individuals recognize the high risk of flooding or it may not. As such, positioning charity hazard as a moderating effect rather than direct variables offers a new theoretical perspective that may strengthen the existing research.

### **Conceptual Framework**

The foundation of the conceptual framework in this paper is grounded on the Protection Motivation Theory (PMT). This conceptual framework suggests that motivation to protect can

be measured by adopting two cognitive appraisals that are able to predict their motivation to perform protective behaviours. The illustration of the conceptual framework is as per figure 2.



**Figure 2: Conceptual Framework**

Source: Protection Motivation Theory (Rogers, 1975)

With the adoption of threat and coping appraisal in the conceptual framework, it helps to measure whether individuals choose to adopt, continue or avoid action that mitigate risk such as purchasing insurance or taking other precautionary measures. It has been proven by previous research with a result that individuals are more likely to adopt protective measures when they perceive a high risk and think that coping with that risk is affordable (Tasantab et al., 2022), (Bubeck et al., 2018). A study by Azizam et al. (2020) and Harish et al. (2023) similarly highlighted that PMT explains how individuals make decisions to mitigate disaster by evaluating threat and coping factors.

Based on this conceptual framework, it can be operationalized that there are two main components that make up the independent variables: threat appraisal and coping appraisal. The independent variables are the factor that drives or causes a decision in a person's motivation. Under the threat appraisal, perceived severity and perceived vulnerability acts as the dimensions for threat appraisal. Within this study, perceived severity can be operationalized as the degree to which a person believes the consequences of a flood will be devastating to their life or property. For perceived vulnerability it can be operationalized as the extent to which an individual feels they are at high risk of being affected by a flood. Under coping Appraisal, self-efficacy, response efficacy and response cost as the dimension for coping appraisal. It can be further operationalized that self-efficacy is the self-confidence to manage the purchase of insurance. Response efficacy can be operationally referred to the belief that insurance is an effective solution while response cost operationally related to what are the for the individual to obtain the protection or the effort required to obtain protection.

“Motivation to insure flood peril” will act as the dependent variable. The dependent variable is the outcome or effect that the study aims to measure. Operationally, “motivation to insure flood perils refer to the level of motivation or encouragement or tendency of individuals to obtain flood perils coverage from their evaluation from threat and coping appraisal”

One of the key academic contributions from this framework is the adoption of charity hazards as moderation variables. In the context of this framework, charity hazard can be operationalized as the effect of reliance on government or public assistance that may reduce the effect of threat and coping assessment on motivation to buy insurance. By having charity hazard as a moderator, this framework allows future research attempts to broaden the existing PMT by examining whether charity hazard influences the relationship between protection motivation and the decision to purchase flood peril cover.

To validate the proposed conceptual framework, future empirical research with the use of quantitative approach through a cross-sectional survey design is recommended. Since this framework involves dependent variables, independent variables and moderating effect, the Partial Least Squares Structural Equation Modeling 3.0 (PLS-SEM 3.0) is recommended to be used as the analysis tool as it allows for simultaneous analysis of the direct relationship between the variables as well as allowing for precise moderation analysis to test the extent to which charity hazard modifies the strength of the relationship against threat and coping appraisal towards motivation to insurance.

Unit analysis suggested to become the respondents to validate this framework is the individual either they are homeowner or the primary household decision-maker. The selection of this unit is appropriately done because the motivation to purchase flood insurance is a cognitive process that occurs at the individual level. On the other hand, target individuals as the unit of analysis is relevant in the Malaysian context given the issues raised by the insurance companies that 74% of this group are uninsured against flood damage (Zurich, 2021). From the academic research context, choosing the correct unit of analysis will impact validity and reliability as well as the logical fallacy of research. Taking individuals homeowners as the unit analysis is capable to provide the precise measurement during data analysis for quantitative study method and avoid logical fallacy because cognitive process of threat and coping appraisal happens at individual level (Lauren Stewart, 2025)

## Conclusion

From the theoretical perspective this paper introduces a conceptual framework that contributes to the disaster risk and insurance literature by providing a theoretically grounded protection motivation with moderating effects of charity hazard. Rather than extending the PMT theory, this paper refined the theory by integrating charity hazard as a moderator. This refinement will contribute to theoretical advancement from using traditional PMT only to integrating moderating variables that are more updated following current issues. By inserting charity hazards as a moderator, researchers could provide richer insights into theoretical models and practical interventions in flood disaster settings.

The conceptual framework also offers a foundation for future empirical studies to test the relationships between variables to generate the result empirically. By examining how charity hazards may weaken, strengthen or alter the relationship between threat and coping appraisals and insurance motivation, the framework offers more focused research on flood insurance, particularly in settings where post-disaster assistance is available in a country like Malaysia. PMT with charity hazard as moderator, will act as a guideline to assess individuals' behaviour to a broader perspective when external intervention exists, therefore contributing to theoretical contribution.

From the perspective of practical contribution, future empirical research grounded on this framework will give significant contribution to policymakers and insurance companies in designing more effective strategies in encouraging adoption of insurance as protective measures, not just relying on physical protective measures. Policymakers in Malaysia such as the Ministry of Finance, Bank Negara Malaysia, NADMA (National Disaster Management Agency), NGO's and other related agencies can leverage results from this framework to execute appropriate interventions that may address charity hazards and insurance adoption. These policymakers can craft strategies such as communication design campaigns, intervention initiatives or incentives that will encourage more adoption of insurance as one of flood preparedness. On the other hand, insurance companies may also benefit by tailoring their products by targeting the right market segment that are more susceptible to flood thereby improving insurance uptake. NGOs, meanwhile, can use findings from this framework to promote a balanced approach that integrates both physical and financial protective measures thus fostering a culture of shared responsibility and proactive risk management among societies.

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**Ethics Statement:** This study did not involve any human participants, animals, or sensitive data requiring ethical approval. The authors confirm that the research was conducted in accordance with accepted academic integrity and ethical publishing standards.

**Author Contribution Statement:** All authors contributed significantly to the development of this manuscript. Author <sup>1,3</sup> was responsible in identifying the core research gap, crafting the conceptual framework, authored the literature review and methodology. Author <sup>2</sup> acted as primary supervisor to steer the development of the conceptual framework and supervise the overall manuscript write up. All authors read and approved the final version of the manuscript prior to submission.

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## References

- Azizam, N. A., Dzulklipli, M. R., Shamimi, N. I., Maon, S. N., John, D., Belawing, J., Jawa, J., & Yahaya, N. (2020). Applicability of theory of planned behavior and protection motivation theory in predicting intention to purchase health insurance. *Advances in Business Research International Journal*, 6(1), 41–52.
- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173–1182.
- Browne, M. J., & Hoyt, R. E. (2000). The demand for flood insurance: Empirical evidence. *Journal of Risk and Insurance*, 67(2), 231–242.
- Bubeck, P., Botzen, W. J. W., Laudan, J., Aerts, J. C., & Thieken, A. H. (2018). Insights into flood-coping appraisals of protection motivation theory: Empirical evidence from Germany and France. *Risk Analysis*, 38(6), 1239–1257.
- Department of Statistics Malaysia (DOSM). (2024). Flood preventive and preparation actions statistics. Putrajaya: DOSM.
- Eppright, D. R., Tanner, J. F., & Hunt, J. B. (1994). Fear, coping, and information: An empirical study. *Journal of Business Research*, 30(2), 141–153. [https://doi.org/10.1016/0148-2963\(94\)90064-7](https://doi.org/10.1016/0148-2963(94)90064-7)
- Faryabi, R., Davarani, F. R., Daneshi, S., & Moran, D. P. (2023). Investigating the effectiveness of protection motivation theory in predicting behaviors relating to natural disasters in households of southern Iran. *Frontiers in Public Health*, 11.
- Faryabi, R., Sharifabad, M. A. M., Sardooei, Z. A., Daneshi, S., Hushmandi, K., & Raei, M. (2021). Safety behavior predictors related to the food safety of greenhouse products among greenhouse owners based on protection motivation theory. *The Open Public Health Journal*, 14(1), 250–256.
- Floyd, D. L., Prentice-Dunn, S., & Rogers, R. W. (2000). A meta-analysis of protection motivation theory. *Journal of Applied Social Psychology*, 30(2), 407–429. <https://doi.org/10.1111/j.1559-1816.2000.tb02323.x>
- Garbarino, E., et al. (2024). Government aid and insurance demand: A behavioral perspective. *Journal of Risk and Insurance*.
- Grima, S., Hamarat, B., Özen, E., Girlando, A., & Dalli-Gonzi, R. (2021). The relationship between risk perception and risk definition and risk-addressing behaviour during the early COVID-19 stages. *Journal of Risk and Financial Management*, 14(6), 272.
- Harish, T. V., Sairam, N., Yang, L. E., Garschagen, M., & Kreibich, H. (2023). Identifying the drivers of private flood precautionary measures in Ho Chi Minh City, Vietnam. *Natural Hazards and Earth System Sciences*, 23(3), 1125–1138.
- Heo, W., Rabbani, A., & Grable, J. E. (2021). An evaluation of the effect of the COVID-19 pandemic on the risk tolerance of financial decision makers. *Finance Research Letters*, 41, 101842.
- Hudson, P., & Thieken, A. H. (2022). The impact of government relief on flood insurance demand in Germany. *Journal of Flood Risk Management*, 15(2).
- Landry, C. E., et al. (2021). Government disaster aid and insurance demand: Evidence from the U.S. *Journal of Risk and Insurance*.
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. Springer.
- Lazarus, R. S., & Folkman, S. (2013). *Stress, appraisal, and coping* (30th anniversary ed.). Springer.
- Lauren Stewart. (2025). Cognitive processes in insurance decision-making. *Journal of Behavioral Economics and Policy*.

- Muzamil, S. A. H. B. S., Zainun, N. Y., Ajman, N. N., Sulaiman, N., Khahro, S. H., Rohani, M. M., Mohd, S. M. B., & Ahmad, H. (2022). Proposed framework for the flood disaster management cycle in Malaysia. *Sustainability*, 14(7), 4088.
- NADMA. (2024). Flood disaster aid expenditure report. National Disaster Management Agency, Malaysia.
- Persatuan Insurans Am Malaysia (PIAM). (2025, June 3). Millions of Malaysian homes uninsured and vulnerable. *The Star*. <https://www.thestar.com.my/news/nation/2025/06/03/millions-of-msian-homes-uninsured-and-vulnerable>
- Prettenthaler, F., Albrecher, H., & Köberl, J. (2004). Charity hazard and disaster insurance demand. *Environmental Hazards*, 6(4), 223–232.
- Radhakrishnan, M., Reza, M. N. H., Al Mamun, A., Masud, M. M., & Makhbul, Z. K. M. (2025). Behavioral insights into insurance purchase among flash flood survivors in Malaysia. *Humanities and Social Sciences Communications*, 12(1), 783.
- Raschky, P. A., Schwarze, R., Schwindt, M., & Zahn, F. (2013). Uncertainty of government relief and the demand for flood insurance. *Journal of Risk and Uncertainty*, 46(2), 145–166.
- Raschky, P. A., & Weck-Hannemann, H. (2007). Charity hazard—A real hazard to natural disaster insurance? *Environmental Hazards: Human and Policy Dimensions*, 7(4), 321–329.
- Rogers, R. W. (1975). A protection motivation theory of fear appeals and attitude change. *The Journal of Psychology*, 91(1), 93–114.
- Tasantab, J. C., Gajendran, T., & Maund, K. (2022). Expanding protection motivation theory: The role of coping experience in flood risk adaptation intentions in informal settlements. *International Journal of Disaster Risk Reduction*, 76, 103020.
- Torten, R., et al. (2018). Risk perception and insurance uptake: A PMT perspective. *Journal of Risk Research*.
- Xiao, J. J., & Meng, K. (2024). Financial capability and financial anxiety: Comparison before and during the COVID-19 pandemic. *International Journal of Bank Marketing*, 42(6), 1348–1369. <https://doi.org/10.1108/IJBM-03-2023-0157>
- Zurich Malaysia. (2021, October 26). Pandemic increases awareness reduces affordability for protection among Malaysians. *Zurich Malaysia*. <https://www.zurich.com.my/about-zurich/zurich-in-the-news/2021/2021-10-26>