Exploring Home Insurance Awareness among Flood Victims in Malaysia

Anis Shumaira Mohamad Asnadi & Ahmad Shazrin Mohamed Azmi*

College of Built Environment, Universiti Teknologi MARA (UiTM), 40450 Shah Alam, Selangor, Malaysia

***Corresponding Author**

DOI: https://dx.doi.org/10.47772/IJRISS.2024.8120285

Received: 17 December 2024; Accepted: 21 December 2024; Published: 20 January 2025

ABSTRACT

This study aims to explore the awareness of flood victims in Malaysia about home insurance, especially with special coverage for perils. Insuring houses properly against perils is crucial because natural disasters like major flooding regularly hits Malaysia and causes huge losses to the victims and country. This study has prepared some literature describing the impact of regular flooding in Malaysia, which is considered as among the expensive losses in natural disaster. The literature then has explained the importance of insurance as an instrument to mitigate the risk of homeowner during flooding and relate it to a low percentage of special coverage insurance take out in Malaysia. Data collection was conducted quantitatively solely using a survey. The survey was able to get 315 responses, which could give some indications of awareness level among Malaysian towards home insurance. The survey from this study has shown that half of the respondents did not insure their house and only a quarter of the respondents have bought additional coverage for perils like flooding. Based on the results from the survey, this study can mention five reasons contributing to the situation that make people unaware of this insurance coverage. Also, this study has suggested five strategies to encourage people to buy home insurance as protection against flood in the future.

Keywords: Flood risk mitigation, disaster risk, home insurance, awareness, Malaysia

INTRODUCTION

Flood has become the most common disaster in the world with 3,254 occurrences or 44% out of 7,348 recorded disasters worldwide for the period between 2000 until 2019, with an average of 163 flooding events per year, it recorded significant losses to 1.65 billion of people, with 104,614 death toll and USD651 billion economic cost worldwide (Centre for Research on the Epidemiology of Disasters (CRED), 2020). In Malaysia, the loss because of flooding is also enormous, whereby the losses were costed at RM6.112 billion in year 2021, RM1.026 billion in 2022 and RM0.755 billion in 2023 for the whole country (The Office of Chief Statistician Malaysia, 2024). With high total losses because of frequency and magnitude of the flooding, citizens should strengthen their flood resistance with insurance protection as risk mitigation. It is in line with the strategy outlined in the Sendai Framework for Disaster Risk Reduction 2015-2030 in building resilient through a changed perspective towards managing the disaster risk rather than managing the disasters. The Sendai Framework has outlined the approaches to manage disaster risk at the strategic level which encourage the involvement of local, national, regional and global levels through collaborations across sectors to reduce people's exposure and vulnerability from disasters. So, people at their own level should be part of these initiatives by at least getting protection through insurance coverage to mitigate the disaster risk.

Evaluating the impact of 2021 floods on the Insurance and Takaful sector, the Central Bank of Malaysia has highlighted the significant underinsurance of flood risks among households in flood-prone areas. According to the Central Bank of Malaysia, surveys suggested that only half of respondents have home insurance/takaful protection and only 26% of respondents have extra flood coverage for their residential buildings and home contents (Central Bank of Malaysia, 2022). The low percentage of insurance/takaful protection severely

burdened victims, given that flood losses to homes reached RM157.4 million in 2022 and RM168.3 million in 2023 (The Office of Chief Statistician Malaysia, 2024). Central Bank of Malaysia opined the citizens are lack of awareness of the availability of insurance/takaful products for flood to cover their residential buildings and home contents as the major attribute to low takeout percentage of insurance/takaful protection in Malaysia.

With the aim of identifying people's awareness of home insurance/takaful with flood coverage as risk management instrument for flood, this study has set two objectives. First, to investigate people's awareness of getting insurance/takaful to mitigate the risk of flooding. Second, is to develop strategies to encourage people to get home insurance/takaful with flood coverage. The study expected to benefit the homeowners to seek risk mitigation instruments for their home and for the insurance/takaful service providers to approach the prospect customers and offer suitable protection plan.

LITERATURE

Natural disasters

The United Nations Office for Disaster Risk Reduction (UNDRR) is the leading office within the United Nations for the coordination of disaster risk reduction worldwide and towards achieving the Sustainable Development Goals (SDGs). Disaster definition can be taken from the definition produced by the UNDRR's Sendai Framework for Disaster Risk Reduction 2015-2030 (Sendai Framework) as the hazardous events interacting with conditions of exposure, vulnerability, and capacity cause serious disruptions to communities or societies at any scale, leading to human, material, economic, and environmental losses and impacts (United Nations Office for Disaster Risk Reduction, 2017). Whereby the effects of the disaster are always immediate and localized impact but is often has widespread and could last for a long period. The effect may test or exceed the capacity of a community or society to cope using its own resources, and therefore may require help from external sources such as the neighbouring jurisdictions or those at the national or international levels.

Global climate change has caused natural disasters to become rapid and severe in most parts of the world. Data from the Emergency Events Database (EM-DAT) for 50 years spanning from 1970 until 2019 compiled by the Centre for Research on the Epidemiology of Disasters (CRED) has shown that there were 22,326 recorded disasters worldwide with 4,607,671 deaths and USD4.9 trillion economic losses (World Meteorological Organization (WMO), 2021, 2023). Meanwhile, the 20-year data from 2000 to 2019 period were showing 7,348 disasters affecting 4.03 billion people, resulting in 1.19 million deaths and approximately USD2.97 trillion in worldwide economic losses (Centre for Research on the Epidemiology of Disasters (CRED), 2020). The number of disasters worldwide has increased from decade to decade and the impact is also growing with a higher number of victims, death and economic losses.

The EM-DAT data by continent, for the year 2000 until 2019 period, has shown that the Asian continent recorded the highest number of disasters with 3,068 events, followed by the Americas at 1,756 events and Africa with 1,192 events. By country, China had the most disaster events with 577 occurrences, the United States of America was at the second highest with 467 disaster events and followed by India (321), Philippines (304), and Indonesia (278). Meanwhile, by disaster type, flood become the most occurring disaster, accounting for 44% of total disaster events, storm (28%), extreme temperatures (6%), landslide (5%), drought (5%), wildfires (3%), volcanic activity (1%) and mass movement (less than 1%).

Some argued that a lack of resources, poor infrastructure, insufficient trained personnel, and slow implementation of comprehensive disaster management and disaster-related information dissemination leave developing countries vulnerable to disaster hazards (Clerveaux & Spence, 2009; Makwana, 2019; Math et al., 2006). Examining the 20-year data, that argument has its basis, considering that only two countries, the USA and Japan, out of ten most occurred disaster events were the developed countries. The other eight countries were developing countries and mostly from the Asian continent. Looking from the perspective of the country's national income, high-income countries able to reduce the numbers of people affected and killed by disaster events, but suffer significantly larger economic losses, while low-income countries report limited economic losses and relatively high death toll per disaster event (Centre for Research on the Epidemiology of Disasters (CRED), 2020). The developed countries mostly have the capacity to invest in getting technical data, making

use of the technologies, develop and installing early warning systems and having good overall preparation for disasters. According to UNDRR, the installation of multi-hazard early warning system can be eight times more effective in saving lives and reduce the fatalities. Thus, making the developed countries able to effectively reduce the number of casualties from disasters.

Floods

Flooding events have become more frequent and have had a detrimental impact on the government and society. In the past 20-years period from 2000 to 2019, EM-DAT data had shown that the flood has dominated the number of worldwide disasters with 3,254 occurrences or 44% out of 7,348 disaster events. It was 134% more compared to 1,389 recorded flooding events for the same 20-years period from 1980 to 1999 (Centre for Research on the Epidemiology of Disasters (CRED), 2020). China and India were the two most affected countries by flooding affecting 900 million and 345 million people respectively over the two decades. Flood in coastal and riverine areas are the most frequent natural disaster and have caused various damages, losses and fatalities which affecting the live of the people.

Natural hazard and human factor have influenced the frequency and magnitude of the flood disaster most of the times. Rapid urbanization of river catchments has made increased runoff and declining river capacity, which has led to more frequent and larger floods (Billa, Shattri, Rodzi Mahmud, & Halim Ghazali, 2006). The combination of natural poor terrain topography, landform, high tide and climate with man-made rapid development, deforestation, bad infrastructure design and engineering, together with drainage flaws are highly causing the flood to occur (Pradhan, 2009). River flood plains and other low-lying coastal areas are facing high chances of facing both riverine and coastal flooding. It causes major problems, damaging prime agricultural fields and government infrastructure, including roads, bridges, irrigation dykes, and flood-control structures, as well as causing thousands of people displacement, fatalities, and environmental effects (Mishra & Sinha, 2020; Tsakiris, 2014).

Flooding events would significant financial burdens on the government and damaged the economy (Wan Daud, Zainol, Salleh, Yazid, & Jamal, 2016). The government would have to pay certain costs associated with floods, whether before, during and after the flood events. As part of preparations before the flood, the government would spend a huge amount of money to develop various structural and non-structural disaster management initiatives such as the flood forecasting system, warning system, flood proofing, educating people's awareness and various others (Mohit & Sellu, 2017). According to Bhattacharya, Lamond, Proverbs, & Hammond (2013) there are several elements that can contribute to damage caused by flood events and potentially impact property values. The identified flood-prone areas usually receive negative connotation from the public and consequently affect property values.

In many years, monsoonal floods will occur in Malaysia because of heavy rainfall and cause the rapid increase of river water. Historically, Malaysia experienced big flood events in 1886, 1926, 1931, 1947, 1954, 1957, 1965, 1967, 1970/1971, 1988, 1993, 1996, 2000, 2006/2007, 2008, 2009, and 2010 (Chan, 2015). It continues to happen in 2014, 2017, 2020, 2021, 2022 and recently in 2024. Malaysia's location near the equator and at the southernmost point of the Asian continent means its equatorial climate experiences two monsoon seasons, significantly affecting its weather. The northeast monsoon, which happens between October to March, usually brings heavy rainfall and triggered the flood in Malaysia, especially in the east coast of Peninsular Malaysia (Pradhan, 2009). In terms of severity in the country's modern history, the 2014, 2021, and 2024 floods in Kelantan, Terengganu, Pahang, and Selangor were among the worst. Other than extensive or big floods, flash floods are also common in major cities in Malaysia, such as in Kuala Lumpur and Klang Valley areas because of intense thunderstorm.

Contributed by natural and human factors, about 10.1% of the country's total area is identified as a flood-prone area and affects approximately 5.67 million people annually (Department of Irrigation and Drainage Malaysia, 2012). As per record from 1965 until 2016, flooding event recorded about 48% of total natural disaster events in Malaysia and flood alone could bring up to 90% of total damages caused by natural disasters (Baharudin Ahmad, 2023; Pradhan, 2009). In 2023, authorities moved 92,534 flood victims to evacuation centres, which was much lower compared to 251,799 in 2022 (BERNAMA, 2024b). But, data from the recent Malaysian floods

(November 19th-December 15th, 2024) reveals that 147,109 people became flood victims, and forcing the authorities to move 57,525 victims to evacuation centers (Malaysian Department of Social Welfare, 2024). During major floods, victims typically spend one to four weeks in evacuation centers until the waters recede and authorities declare it safe to return home. This affects so many life aspects such as the physical, emotion, psychology and economics.

Malaysian government through its National Security Council (MKN) has formulated the National Security Council (MKN) Directive No. 20 as a national policy for coordinating disaster response, effective May 11, 1997 (with a revision on March 30, 2012), and established the Malaysian Disaster Management Agency (NADMA) in 2015 to coordinate all agencies in disaster preparedness (Chong & Kamarudin, 2018; Ismail, 2024). Directive No. 20 then was recently being replaced by NADMA Directive No. 1: Policy and Mechanism National Disaster Management effective on 1st August 2024 to outline more efficient and effective disaster management policies and mechanism for disaster prevention, mitigation, preparation, responses and recovery efforts as guidance for government agencies, statutory bodies, NGOs and private entities (BERNAMA, 2024a; Ismail, 2024).

Malaysia has learnt from its neighbouring countries including Japan in managing disasters through various guidelines and initiatives such as implementing Sendai Framework for Disaster Risk Reduction 2015-2030 (Sendai Framework), ASEAN Agreement on Disaster Management and Emergency Response, the ASEAN Standard Operating Procedures for Regional Standby Arrangements, the Coordination of Joint Disaster Relief and Emergency Response Operations, as well as establishes relations with many international agencies such as UNDRR and International Civil Defence Organisation (ICDO) (United Nations Office for Disaster Risk Reduction (UNDRR), 2021). From time to time, Malaysia has increased its preparedness for disasters and managing the situation to ensure the well-being of its citizens and avoiding major economic losses to the country.

Mitigating the flooding risk

UNDRR has envisioned a world where disasters no longer threaten the well-being of people and the future of the planet by building resilience among communities at the local, national and international level. It envisages the Sendai Framework to be followed as a guideline to make the community safer and more resilient in facing the disasters by changing the approach from managing disaster to managing risk (United Nations Office for Disaster Risk Reduction, 2023). There are four priorities for action under the Sendai Framework, which all are attributing to disaster risk, i.e., understanding disaster risk, strengthening disaster risk governance, investing in disaster risk reduction and enhancing disaster preparedness towards better recovery, rehabilitation and reconstruction (United Nations Office for Disaster Risk Reduction, 2015). Overall, the framework has outlined seven global targets, four priorities and 38 indicators to assess progress towards the success implementation of the strategies to prevent the creation of new risk, reduce existing risk and increase resilience by 2030.

In line with the Sendai Framework's Fourth Priorities for action, insurance is listed as among the various solutions to be adopted as the compensatory risk management strategy and recovery measures in the event of disasters, whereby the intention is to strengthen people's resilient financially and socially (Hardoy, Filippi, Gencer, Morera, & Satterthwaite, 2019; United Nations Economic Commission for Europe & United Nations Office for Disaster Risk Reduction, 2018). So, getting insurance cover for must be considered highly as a strategy to cope with disaster risk because its compensation can play an active role in providing financial help for people to recover from disaster.

Before modern insurance, people perceived risk as fate to accept, not defy. Later, the concept of risk mitigation based on solidarity among communities became an acceptable way of alleviating losses through the risk sharing. The Great Fire of London in 1666, which destroyed 70,000 homes, had spurred the development of contemporary insurance in the 17th and 18th centuries together with implementing actuarial science as a rational means of business to quantify the cost of risk (Haueter, 2013). Insurance industry has expanded and revolutionized with introducing many insurance products, which inevitably invites control from the governing authorities to safeguard the public interests.

Home insurance or homeowner insurance is a sort of property insurance to protect a private residence. It differs from house loan insurance, although some mortgage insurance policies would offer a standard life insurance as

well. People view home insurance as a tool for managing uncertainty by financing household recovery from damage or losses caused by perils (Mathur & Paul, 2022). It has the purpose of ensuring survival and continuity of property assets for the owners (Olaleye & Adegoke, 2009). While insurance is a more common protection scheme, takaful is a Shariah-compliant joint-guarantee scheme to protect the participants. Muslims can simply refer to it as a Shariah-compliant insurance scheme to serve as an alternative for the conventional insurance (Mohd Fauzi et al., 2016). Regardless of the conventional or Shariah-compliant protection scheme, both are functional in offering homeowners avenues for financial relief to recover from their losses in the event of perils. The availability of the Shariah-compliant protection scheme also possible to reduce avoidance and encourage the Muslims to participate in managing their risk against disasters.

Homeowner's insurance usually covers several accident conditions involving the insured property, such as injury sustained by the homeowners while on the property, loss or damage to personal items or house contents, house exterior and interior damages and loss of use of the property. However, standard homeowner insurance policies exclude acts of war and acts of God, requiring homeowners to purchase special coverage for additional perils, like floods and earthquakes (Kagan, 2024). Flood insurance might lessen the financial burden of damage by spreading the financial obligation among others facing the same risk (Roslan, Omar, Hara, Solemon, & Baharuddin, 2019). It can help to minimize the financial hardships after natural disasters (Mahfuzul, Aldrie, & Ara, 2022). Insurance with special coverage on perils can support for quick recovery by reducing the financial burdens resulted from the losses of homes, businesses or any valuable assets and minimizing economic instability (Kjellgren, 2013; Kreibich, Christenberger, & Schwarze, 2011; Thieken, Mariani, Longfield, & Vanneuville, 2014). Homeowners will be entitled to get financial claims to recover from the perils and pay for any repairing expenses when they purchase insurance's special coverage.It also promotes positive societal implication through social stability, addressing social equity concerns and preparation for various mass relocation alternatives (Lamond & Penning-Rowsell, 2014; Priest, Clark, & Treby, 2005).

Nevertheless, there is a concern for homes in the flood-prone areas, whereby due to the risk profile of the area, the insurance companies may possibly to set higher insurance premium rates for flood related cover (Central Bank of Malaysia, 2022). It is inevitable considering that the probability of the flood to occur and cost to compensate the losses are relatively high. If there is no proper intervention, high premium will deter people from getting the insurance. Luckily, the insurance capacity for flood is sufficiently available and the price is stable because insurance industry has gained some flexibility to adjust and reduce their pricing (Faber Consulting AG, 2022). Judging the scenario, both insurance companies and homeowners must tolerate and find the balance for the benefits of both parties. It is because the insurance company may not be able to pay enough compensation to their customer and face difficulties to sustain if they are exceeding their limits. There is an evidence that insurance companies in Australia, United States and several other countries are struggle to maintain their insurability against the climate-related risk and already withdrawing from residential insurance segment in certain region due to increasing climate-related risk (Faber Consulting AG, 2024).

There are notable policy and flood insurance uptake differences between the developed and developing countries (Lamond & Penning-Rowsell, 2014). It is in the report that the developed countries cover a higher percentage of losses, in contrast to most of the developing countries that cover no more than 25% of total economic losses (Jha et al., 2011). In less-developed countries, flood damage and the absence of flood insurance often leave many citizens dependent on ad hoc government payments (Van Schoubroeck, 1997). Recovery from flooding can come at a high cost, often beyond the means of the affected individuals. Although the government feels obliged to financially helping its people to recover from the disaster, but it is always not sufficient to compensate for every losses because the expenditure might be massive for the government to cover (Petseti & Nektarios, 2013). As previously showed, one practical way for the government and citizens to lessen the negative effects of flooding is through the purchase of flood insurance.

However, flood insurance has been overlooked by Malaysian despite being a crucial component of an all-encompassing, integrated strategy for non-structural approach for mitigating flood-related risks (Aliagha, Jin, Choong, Nadzri Jaafar, & Ali, 2014). Malaysians mostly have auto insurance for their vehicles because it is legally required. But many still do not have the special coverage for flood as addition to their mortgage insurance for their homes, buildings, or commercial properties because it is not mandatory. Malaysia's mortgage market is competitive, making the financial institutions to exclude the additional cover for floods in order to make their

mortgage products financially attractive to the customers (Faber Consulting AG, 2022). The public also claims that their location is not prone to floods and is unaware that flood insurance even exists, reducing the demand for flood insurance (Aliagha et al., 2014; Wan Daud et al., 2016). Quite unfortunate to see the result of one survey by Zurich Malaysia in 2021 with 1,201 households participation showing that only 26% of the respondents took out flood insurance or special coverage (Central Bank of Malaysia, 2022; Nur Nazlina Nadzari, 2022). The samples signalling that other 74% of Malaysian dwellings are at risk if there are any perils happened. Another statistic from the General Insurance Association of Malaysia has shown that only 4.0% from Malaysian citizens have taken out flood insurance or special coverage (Malaysia Gazette, 2022). Despite people are acknowledging the importance of insurance in mitigating losses, the subscription remains low everywhere in the developing countries (Mathur & Paul, 2022).

The willingness of the people to take out the insurance depends on several factors. Quite common people think that bad fortune could never happen to them or low chances to be in such a critical situation (Lam & Chua, 2005). But it also depends on people's knowledge of the insurance plan, the benefits, experience in facing the disaster and perceived vulnerability to the disaster loss (Mathur & Paul, 2022). The professionalism of the insurance companies is vital to put confidence in customers by having excellent policy statements, claims management procedures and corporate image (Tom, Ibok, & Awok, 2012). Some demographic reasons such as age, family size, education, illiteracy, ignorance, income level, wealth, poverty, working status, health, life expectancy, religious belief, socio-cultural belief could also become the decision factors for people to buy insurance policies (Eunyoung & DeVaney, Sharon A., 2005; Mathur & Paul, 2022; Olaleye & Adegoke, 2009). Regardless of the reasons, more efforts should be made to increase the flood insurance penetration rate among households in the flood-prone areas because the losses from the disasters are heavily burdening the households and the country.

METHODOLOGY

Aims to identify people's awareness of home insurance/takaful with flood coverage as risk management instrument for flood, the study employed mainly the quantitative approach to attempt its objectives. Whereby the researchers were investigating people's awareness of getting home insurance with flood cover as risk mitigation through a survey. Then, the researchers were finding the strategies to encourage people to get home insurance with flood cover based on the results gathered from the survey.

Considering that this study is rather a social survey and not intended to collect technical information from the respondents, only several general questions were asked in the survey. The questionnaire had paid attention to people's risk aversion decision through insurance and the factors influencing their decision to buy or not to buy home insurance with flood cover. The data collection approach was mainly through online to get wider coverage, cheaper, faster and minimize human error during the data entry.

Targeting respondents from states regularly hit by major floods, the researchers conducted the survey for about five weeks, from May 4, 2024, to June 13, 2024. The study adopts the non-probability sampling, specifically the snowball sampling to easily reach out the right respondents. Whereby, the researchers had initially identified several people who were living in the flood prone areas to answer the survey. The researchers then asked the respondents for their favour to share the questionnaire to their contacts who were also living in the flood prone areas. The study was aware that the number of flood victims in Malaysia can be over 100,000 people during major flooding, but the study could only get 315 responses. Despite the questions were very brief and should only take approximately five minutes to answer, several respondents were not answering certain questions. Thus, the response received was not enough to represent the population, but at least, gave some indicators of how Malaysian perceived flood insurance as their risk mitigation approach.

Following the completion of the survey, the study analysed the data using the Statistical Package for Social Science (SPSS) software. Considering the simplicity of the questions asked in the survey, the study was only analysing the data using the frequencies analysis.

RESULTS

Based on the survey analysis from the 315 respondents, the study able to present results as follows.

a) Home insurance status

Table 1: Home insurance status

do you currently have home insurance for your property?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	139	44.1	46.6	46.6
	no	159	50.5	53.4	100.0
	Total	298	94.6	100.0	
Missing	System	17	5.4		
Total		315	100.0		

Table 1 shows the respondents who have and did not have home insurance for their house. Based on the response, 44.1% (n=139) of the respondents have home insurance for their house, 50.5% (n=159) did not have home insurance and 5.4% (n=17) were not answering. The study was aware that many of the respondents were living in their own built house and did not have any mortgage with the financial institution. Thus, making them not obliged to get the home insurance.

b) Home insurance with flood coverage status

Table 2: Home insurance with flood coverage status

if yes, does your home insurance cover flood damage?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	80	25.4	52.6	52.6
	no	72	22.9	47.4	100.0
	Total	152	48.3	100.0	
Missing	System	163	51.7		
Total		315	100.0		

Table 2 shows the respondents who have home insurance with flood coverage, where only 25.4% (n=80) claimed they bought special coverage insurance for flood as addition to their home insurance. The remaining did not buy the special coverage insurance or did not answer the question. Half of the respondents did not answer this question.

c) Reasons for not purchase home insurance and with special coverage

Table 3: Reasons for not purchasing home insurance and with special coverage

if no, why haven't you purchase home insurance?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	cost is too high	51	16.2	30.0	30.0
	unaware that flood insurance is available	48	15.2	28.2	58.2
	don't believe flood are a serious threat	33	10.5	19.4	77.6
	believe the goverment will provide suffient support in case of flood	38	12.1	22.4	100.0
	Total	170	54.0	100.0	
Missing	System	145	46.0		
Total		315	100.0		

Table 3 shows the response of why the respondents did not purchase home insurance together with special

coverage to mitigate risk from flooding events. Despite not having more than half of the respondents answered this question, 16.2% (n=51) of the respondents were of the opinion that the insurance cost is high. 15.2% (n=48) were not aware about flood insurance, 10.5% (n=33) felt flood is not a serious threat and 12.1% (n=38) believed that they could get support from the government.

d) The perceived risk of future flood occurrence

Table 4: The perceived risk of future flood occurrence

how concerned are you about the risk of future flooding in your area?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not concerned at all	5	1.6	1.6	1.6
	not concerned	6	1.9	1.9	3.5
	neutral	44	14.0	14.1	17.6
	concerned	70	22.2	22.4	40.1
	very concerned	187	59.4	59.9	100.0
	Total	312	99.0	100.0	
Missing	System	3	1.0		
Total		315	100.0		

Table 4 shows how the respondents perceive the risk expected from the future occurrence of flooding in their areas. 59.4% (n=187) expressed that they were very concerned with the risk of future flooding and 22.2% (n=70) were concerned with the risk. Only a small percentage of the respondents were not concerned at all.

e) Consideration to purchase the insurance

Table 5: Consideration to purchase the insurance

if you don't currently have flood insurance, would you consider purchasing it if it were more affordable?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	252	80.0	80.8	80.8
	no	60	19.0	19.2	100.0
	Total	312	99.0	100.0	
Missing	System	3	1.0		
Total		315	100.0		

Table 5 shows respondents' consideration to insure their houses if the insurance is affordable. Most of the respondents, at 80.8% (n=252) will consider purchasing home insurance. Only 19.2% (n=60) were not considering it.

f) Getting the flood insurance appealing

Table 6: Getting the flood insurance appealing

what the features or benefits would make flood insurance more appealing to you?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	lower premium	56	17.8	21.7	21.7
	easier to claim	69	21.9	26.7	48.4
	broader coverage (includes contents of the insurance)	56	17.8	21.7	70.2
	goverment suubsidies	38	12.1	14.7	84.9
	increase awareness and education on flood insurance	39	12.4	15.1	100.0
	Total	258	81.9	100.0	
Missing	System	57	18.1		
Total		315	100.0		

Table 6 shows the attributes of making flood insurance appealing to respondents. While 18.1% (n=57) of the respondents did not answer the question, others were giving a mixed opinion on how to make flood insurance more appealing to them. However, 21.9% (n=69) of the respondents wanted the insurance to be easier to claim. 17.8% (n=56) equally wanted a lower premium and broader insurance coverage. Only a small percentage of them wanted government subsidies and to increase flood insurance awareness and education.

DISCUSSIONS

People awareness about flood insurance

Results have shown that despite the frequent floods in Malaysia, many homeowners still not getting themselves the flood insurance. Several factors contribute to this. First, many of the homeowners built their house themselves, thus not being forced to take out the homeowner insurance unlike the people who buy their houses using the mortgage facilities by financial institutions. Second, they lacked awareness about the benefits of home insurance, especially the special coverage to cover the perils. Third, some homeowners are not aware they can buy special coverage in addition to their home insurance or mortgage insurance for perils, such as flood. Fourth, the information about flood insurance might not be reaching them. Fifth, there are ignorant people in the community who are not concerned about risk mitigation that insurance could offer.

In order to improve public awareness about flood insurance, all insurance companies, through their agents, have consistently reached out to the public using various social media platforms to advertise and promote flood insurance. Insurance companies have actively promoted the availability of affordable, online-accessible flood insurance plans. They wanted to correct the misconception of the public who assuming that standard home insurance policies or mortgage insurance will automatically cover flood damage. This information gap can lead to a false sense of security, leaving them vulnerable in the event of a flood. Thus, there is a need for improved public education about flood insurance and its role in protecting homes.

Strategies to encourage people to get the flood insurance

Without belittling the continuous efforts by governments, insurance companies and the public at large to raise public awareness and reduce the knowledge gap, there are a few initiatives that can be done to spread the message and encourage people to get the flood insurance. First, the authorities can come out with targeted educational campaigns and explain the benefits of flood insurance. These campaigns should clearly outline how flood insurance protects homeowners financially, its availability as an add-on to existing homeowner's policies, and the different coverage options available to suit individual needs. To ensure a wider reach, it's important to use various communication channels beyond social media. Partnering with local media outlets, community leaders, and government agencies for targeted outreach programs can significantly increase public awareness and their understanding about flood insurance.

Second, to ask insurance companies to explore the development of risk-tiered premiums that allow for more affordable plans in areas with a lower flood risk. A cheaper insurance plan could become the encouragement for homeowners who might be hesitant due to perceived high costs. Third, to promote the ease of purchasing flood insurance online. Through an online platform, people can easily research plans and get coverage without facing unnecessary hurdles. Fourth, the insurance companies must facilitate and ease the claim process. The timeframe for reimbursement is crucial because faster reimbursements can put in confident to customers. Knowing they will receive financial help quickly after a flood event can provide much-needed peace of mind and encourage them to invest in this valuable protection. Fifth, to show customers why flood insurance is valuable as a financial safety net to get them interested. Any promotions or good policies would help the customers to decide. So, a good way of communicating the protection, cost savings and additional benefits from the insurance policies will encourage the customers to get it. At least, to make them well informed and help them decide.

CONCLUSION

This study has explored the situation of flooding events in Malaysia, which causes massive losses to individuals and the country. It then leads to the need for insurance to cover losses caused by the flood despite people's

awareness about insurance for special perils is still low. Consistent with the literature that highlighted a low percentage of insurance for special coverage in Malaysia, the survey from this study has shown that half of the respondents did not insure their house and only a quarter of the respondents have bought additional coverage for perils like flooding. This consequently shows that many homeowners are not covered by insurance and will put them in difficulties to quickly recover from the disaster.

So, awareness and encouragement must be given to these people for them to get insurance for their houses as a risk mitigation plan. This study has suggested five strategies to encourage people to get home insurance. For further research, there is a need to assess the effectiveness of promotions and campaigns to educate people about insurance. Next, exploration of the potential development of comprehensive flood insurance products tailored to specific flood risk zones is also can be done because it has some importance to better protect the interest of the public. This customization might increase the appeal of flood insurance for a broader range of homeowners in flood-prone areas.

REFERENCES

1. Aliagha, U. G., Jin, T. E., Choong, W. W., Nadzri Jaafar, M., & Ali, H. M. (2014). Factors affecting flood insurance purchase in residential properties in Johor, Malaysia. Natural Hazards and Earth System Sciences, 14(12), 3297–3310. doi: 10.5194/nhess-14-3297-2014
2. Baharudin Ahmad. (2023, October 17). Penilaian kerosakan akibat banjir di Malaysia. Presented at the Simposium Maklumat Geospatial Kebangsaan 2023 (NGIS Ke-9), Putrajaya International Convention Centre (PICC). Putrajaya International Convention Centre (PICC): Pusat Geospatial Negara, Kementerian Sumber Asli dan Kelestarian Alam, Malaysia. Retrieved from https://geolearning.mygeoportal.gov.my/moodle/pluginfile.php/937/mod resource/content/1/Kertas%203%20-%20JPS.pdf
3. BERNAMA. (2024a, March 10). Arahan NADMA No.1 Jadi Panduan Utama Pengurusan Bencana—Ahmad Zahid. Retrieved 15 December 2024, from BERNAMA website: https://www.bernama.com/bm/news.php?id=2347666
4. BERNAMA. (2024b, July 5). Dasar Pengurusan Bencana Negara Akan Disemak Semula—Ahmad Zahid. BERNAMA. Retrieved from https://www.bernama.com/bm/news.php?id=2295155
5. Bhattacharya, N., Lamond, J., Proverbs, D., & Hammond, F. (2013). Development of conceptual framework for understanding vulnerability of commercial property values towards flooding. International Journal of Disaster Resilience in the Built Environment, 4(3), 334–351. (world). doi: 10.1108/IJDRBE-08-2012-0024
6. Billa, L., Shattri, M., Rodzi Mahmud, A., & Halim Ghazali, A. (2006). Comprehensive planning and the role of SDSS in flood disaster management in Malaysia. Disaster Prevention and Management: An International Journal, 15(2), 233–240. doi: 10.1108/09653560610659775
7. Central Bank of Malaysia. (2022). Financial Stability Review 2nd Half 2021. Central Bank of Malaysia. Retrieved from https://www.bnm.gov.my/documents/20124/6459002/fsr21h2en book.pdf
8. Centre for Research on the Epidemiology of Disasters (CRED). (2020). The human cost of disasters: An overview of the last 20 years (2000-2019) (p. 30). Brussels, Belgium: Centre for Research on the Epidemiology of Disasters (CRED) & United Nations Office for Disaster Risk Reduction (UNDRR). Retrieved from Centre for Research on the Epidemiology of Disasters (CRED) & United Nations Office for Disaster Risk Reduction (UNDRR) website: https://www.preventionweb.net/files/74124 humancostofdisasters20002019reportu.pdf
9. Chan, N. W. (2015). Impacts of Disasters and Disaster Risk Management in Malaysia: The Case of Floods. In D. P. Aldrich, S. Oum, & Y. Sawada (Eds.), Resilience and Recovery in Asian Disasters (127th ed., pp. 239–265). Tokyo: Springer Japan. doi: 10.1007/978-4-431-55022-8_12
10. Chong, N. O., & Kamarudin, K. H. (2018). Disaster Risk Management in Malaysia: Issues and Challenges fromthe Persepctive of Agencies. PLANNING MALAYSIA: Journal of the Malaysian Institute of Planners, 16(1), 105–117. doi: 10.21837/pm.v16i5.415
11. Clerveaux, V., & Spence, B. (2009). The Communication of Disaster Information and Knowledge to Children Using Game Technique: The Disaster Awareness Game (DAG). International Journal of Environmental Research, 3(2), 209–222. doi: 10.22059/ijer.2010.48

12. Department of Irrigation and Drainage Malaysia. (2012). Updating of Condition of Flooding and Flood Damage Assessment in Malaysia: Final Report Volume 1.0. Kuala Lumpur: Jabatan Pengairan dan Saliran.
13. Eunyoung, B. & DeVaney, Sharon A. (2005). Human Capital, Bequest Motives, Risk and the Purchase of Life Insurance. Journal of Personal Finance, 4(2), 62–84.
14. Faber Consulting AG. (2022). Malaysian Insurance Highlights 2021 (p. 55). Zurich, Switzerland: Faber Consulting AG. Retrieved from Faber Consulting AG website: https://faberconsulting.ch/files/faber/pdf-pulse-reports/MIH21 Final Web.pdf
15. Faber Consulting AG. (2024). Malaysian Insurance Highlights 2024 (p. 38). Zurich, Switzerland: Faber Consulting AG. Retrieved from Faber Consulting AG website: https://www.malaysian-re.com.my/api/uploads/Malaysian Insurance Highlights 2024 df82519933.pdf
16. Hardoy, J., Filippi, M. E., Gencer, E., Morera, B. E., & Satterthwaite, D. (2019). Words into Action guidelines: Implementation guide for local disaster risk reduction and resilience strategies. United Nations Office for Disaster Risk Reduction. Retrieved from https://www.undrr.org/publication/words-action-guidelines-implementation-guide-local-disaster-risk-reduction-and
17. Haueter, N. V. (2013). A History of Insurance. Zurich, Switzerland: Swiss Reinsurance Company Ltd. Retrieved from https://www.swissre.com/dam/jcr:638f00a0-71b9-4d8e-a960-dddaf9ba57cb/150 history of insurance.pdf
18. Ismail, A. (2024, October). Managing Natural Catastrophe—Malaysian Perspective. Presented at the International Fire Conference & Exhibition Malaysia (IFCEM), Kuala Lumpur Convention Centre, Kuala Lumpur, Malaysia. Kuala Lumpur Convention Centre, Kuala Lumpur, Malaysia. Retrieved from https://ifcem.bomba.gov.my/portal/wp-content/uploads/2024/10/PAPER-7-Senior-Supt.-I-Arjunaidi-1.pdf
19. Jha, A., Lamond, J., Bloch, R., Bhattacharya, N., Lopez, A., Papachristodoulou, N., … Barker, R. (2011). Five Feet High and Rising: Cities and Flooding in the 21st Century (SSRN Scholarly Paper No. 5648). Rochester, NY: Social Science Research Network. Retrieved from Social Science Research Network website: https://papers.ssrn.com/abstract=1832164
20. Kagan, J. (2024, March 5). What Is Homeowners Insurance and How Does It Work? Retrieved 16 December 2024, from Investopedia website: https://www.investopedia.com/terms/h/homeowners-insurance.asp
21. Kjellgren, S. (2013). Exploring local risk managers' use of flood hazard maps for risk communication purposes in Baden-Württemberg. Natural Hazards and Earth System Sciences, 13(7), 1857–1872. doi: 10.5194/nhess-13-1857-2013
22. Kreibich, H., Christenberger, S., & Schwarze, R. (2011). Economic motivation of households to undertake private precautionary measures against floods. Natural Hazards and Earth System Sciences, 11(2), 309–321. doi: 10.5194/nhess-11-309-2011
23. Lam, W., & Chua, A. (2005). The mismanagement of knowledge management. Aslib Proceedings, 57(5), 424–433. doi: 10.1108/00012530510621879
24. Lamond, J., & Penning-Rowsell, E. (2014). The robustness of flood insurance regimes given changing risk resulting from climate change. Climate Risk Management, 2, 1–10. doi: 10.1016/j.crm.2014.03.001
25. Mahfuzul, I. Md., Aldrie, A. A., & Ara, B. R. (2022). Potential impact of coastal hazards: Case of Pahang, Malaysia. Disaster Advances, 15(2), 66–72. doi: 10.25303/1502da6672
26. Makwana, N. (2019). Disaster and its impact on mental health: A narrative review. Journal of Family Medicine and Primary Care, 8(10), 3090–3095. doi: 10.4103/jfmpc.jfmpc 89319
27. Malaysia Gazette. (2022, June 14). Hanya 4% rakyat Malaysia miliki insurans banjir. MalaysiaGazette. Retrieved from https://malaysiagazette.com/2022/06/14/hanya-4-rakyat-malaysia-miliki-insurans-banjir/
28. Malaysian Department of Social Welfare. (2024). InfoBencanaJKM - Jabatan Kebajikan Masyarakat [Portal]. Retrieved 15 December 2024, from Info Bencana JKM website: https://infobencanajkmv2.jkm.gov.my/landing/index.php?b=0&a=0
29. Math, S. B., Girimaji, S. C., Benegal, V., Uday Kumar, G. S., Hamza, A., & Nagaraja, D. (2006). Tsunami: Psychosocial aspects of Andaman and Nicobar islands. Assessments and intervention in the early phase. International Review of Psychiatry, 18(3), 233–239. doi: 10.1080/09540260600656001
30. Mathur, T., & Paul, U. K. (2022). Predictors of home insurance purchase: The homeowners' knowledge,

perceived benefits and perceived vulnerability towards disaster losses. International Journal of Housing Markets and Analysis, 17(3), 683–701. (world). doi: 10.1108/IJHMA-08-2022-0127

31. Mishra, K., & Sinha, R. (2020). Flood risk assessment in the Kosi megafan using multi-criteria decision analysis: A hydro-geomorphic approach. Geomorphology, 350, 106861. doi: 10.1016/j.geomorph.2019.106861
32. Mohd Fauzi, P. N. F. N., Abd Rashid, K., Sharkawi, A. A., Hasan, S. F., Aripin, S., & Arifin, M. A. (2016). Takaful: A review on performance, issues and challenges in Malaysia. Journal of Scientific Research and Development, 3(4), 71–76.
33. Mohit, M. A., & Sellu, G. M. (2017). Development of Non-structural Flood Mitigation Policies and Measures for Pekan town, Malaysia. Asian Journal of Behavioural Studies, 2(6), 9–20. doi: 10.21834/ajbes.v2i6.33
34. Nur Nazlina Nadzari. (2022, December 29). Lebih ramai rakyat Malaysia ambil insurans banjir—Utusan Malaysia. Utusan Online. Retrieved from https://www.utusan.com.my/ekonomi/2022/12/lebih-ramai-rakyat-malaysia-ambil-insurans-banjir/
35. Olaleye, A., & Adegoke, O. J. (2009). Homeowners' perception of insurance of real estate development in Lagos, Nigeria. International Journal of Housing Markets and Analysis, 2(2), 179–189. doi: 10.1108/17538270910963108
36. Perwaiz, A., Parviainen, J., Somboon, P., & Mcdonald, A. (Series Eds.). (2021). Disaster Risk Reduction in Malaysia: Status report 2020 (p. 37). Bangkok, Thailand: United Nations Office for Disaster Risk Reduction (UNDRR). Retrieved from https://www.undrr.org/publication/disaster-risk-reduction-malaysia-status-report-2020
37. Petseti, A., & Nektarios, M. (2013). Earthquake insurance for Greece: Comparative analysis and pricing issues. The Journal of Risk Finance, 14(3), 251–265. (world). doi: 10.1108/JRF-11-2012-0082
38. Pradhan, B. (2009). Flood susceptible mapping and risk area delineation using logistic regression, GIS and remote sensing. Journal of Spatial Hydrology, 9(2), 1–18.
39. Priest, S. J., Clark, M. J., & Treby, E. J. (2005). Flood insurance: The challenge of the uninsured. Area, 37(3), 295–302. doi: 10.1111/j.1475-4762.2005.00633.x
40. Roslan, R., Omar, R. C., Hara, M., Solemon, B., & Baharuddin, I. N. Z. (2019). Flood insurance rate map for non-structural mitigation. E3S Web of Conferences, 76, 03002. doi: 10.1051/e3sconf/20197603002
41. The Office of Chief Statistician Malaysia. (2024). Media Statement—Special Report on Impact of Floods in Malaysia 2023. Department of Statistics Malaysia (DOSM). Retrieved from https://docs.publicnow.com/viewDoc?filename=65120%5CEXT%5C5888C746CCA98E5BCB25D65B6EC3FAAB5F736117696265C14B0346D1276E3C1DD2B7E2D76955D935.PDF
42. Thieken, A. H., Mariani, S., Longfield, S., & Vanneuville, W. (2014). Preface: Flood resilient communities – managing the consequences of flooding. Natural Hazards and Earth System Sciences, 14(1), 33–39. doi: 10.5194/nhess-14-33-2014
43. Tom, E. E., Ibok, I. N., & Awok, M. P. (2012). Factors affecting insurance consumption in Akwa Ibom state, Nigeria. Journal of Research in International Business and Management, 2(12), 323–328.
44. Tsakiris, G. (2014). Flood risk assessment: Concepts, modelling, applications. Natural Hazards and Earth System Sciences, 14(5), 1361–1369. doi: 10.5194/nhess-14-1361-2014
45. United Nations Economic Commission for Europe & United Nations Office for Disaster Risk Reduction. (2018). Words into Action guidelines: Implementation guide for addressing water-related disasters and transboundary cooperation. New York & Geneva: United Nations. Retrieved from https://www.undrr.org/publication/words-action-guidelines-implementation-guide-addressing-water-related-disasters-and
46. United Nations Office for Disaster Risk Reduction. (2015). Sendai Framework for Disaster Risk Reduction 2015-2030. United Nations Office for Disaster Risk Reduction. Retrieved from https://www.undrr.org/publication/sendai-framework-disaster-risk-reduction-2015-2030
47. United Nations Office for Disaster Risk Reduction. (2017). Sendai Framework Terminology on Disaster Risk Reduction. Retrieved 26 December 2024, from https://www.undrr.org/terminology/disaster
48. United Nations Office for Disaster Risk Reduction. (2023, March 9). United Nations Office for Disaster Risk Reduction—Our work [Official Website]. Retrieved 27 December 2024, from https://www.undrr.org/our-work
49. Van Schoubroeck, C. (1997). Legislation and Practice Concerning Natural Disasters and Insurance in a

Number of European Countries. The Geneva Papers on Risk and Insurance - Issues and Practice, 22(2), 238–267. doi: 10.1057/gpp.1997.19

50. Wan Daud, W. N., Zainol, F. A., Salleh, F., Yazid, A. S., & Jamal, A. Z. (2016). Developing microtakaful flood model in Malaysia—Its relevance and policy impacts. International Journal of Business Continuity and Risk Management, 6(3), 197–208. doi: 10.1504/IJBCRM.2016.079008
51. World Meteorological Organization (WMO). (2021). WMO Atlas of Mortality and Economic Losses from Weather, Climate and Water Extremes (1970-2019) (No. WMO-No. 1267; p. 89). Geneva 2, Switzerland: World Meteorological Organization (WMO). Retrieved from World Meteorological Organization (WMO) website: https://primarysources.brillonline.com/browse/climate-change-and-law-collection/wmo-atlas-of-mortality-and-economic-losses-from-weather-climate-and-water-extremes-19702019;cccc026820231218
52. World Meteorological Organization (WMO). (2023, May 23). Economic costs of weather-related disasters soars but early warnings save lives. Retrieved 23 December 2024, from World Meteorological Organization website: https://wmo.int/media/news/economic-costs-of-weather-related-disasters-soars-early-warnings-save-lives