Preparedness and awareness among tourists about natural disasters in the Philippines

- A Field Study

Päivi Kalliomäki, Taru Männistö

2025 Laurea

Laurea University of Applied Sciences

Preparedness and awareness among tourists about natural disasters in the Philippines – A Field Study

Päivi Kalliomäki, Taru Männistö
Global Health and Crisis Management
Thesis
June, 2025

Laurea University of Applied Sciences **Abstract**

Global Health and Crisis Management

Master's Degree

Päivi Kalliomäki, Taru Männistö

Preparedness and awareness among tourists about natural disasters in the Philippines – A Field Study

Year 2025 Number of pages 96

The aim of this field study was to investigate tourists' preparedness and awareness for natural disasters in the Philippines, as well as what challenges and areas for development there may be. The intention was to increase tourists' preparedness and, potentially, there safety or find ways to develop these.

The aim was to find out on what different ways tourists have prepared for possible natural disasters in the destination and whether there are any gaps in knowledge or preparation. In addition, the study aims to find out what tourists generally know about natural disasters in the Philippines. As an outcome, the study provides recommendations on how, where, and by whom tourists' awareness and preparedness could be improved.

The study's framework is built on background information about natural disasters, the incidence and impact of such as typhoons and earthquakes in the Philippines. The crisis management system in the Philippines, particularly in relation to natural disasters, is described as part of the background. Tourism and the impact of natural disasters on it in the Philippines context are highlighted.

This study was a qualitative field study using thematic analysis, an iterative process, and an abductive approach. Data was collected through field interviews at the Philippines in November 2024. There was a total of thirteen interviews and seventeen participants. Interviewees were selected using purposeful and convenient sampling based on their background and availability. The results were validated through researcher triangulation and systematic documenting and evaluating of study process.

Results show that tourists are not very prepared for natural disasters and have little or no knowledge of them, even though they were traveling in an area where they regularly occur. Tourists had not searched for information, nor had come across it while searching for information about the destination and were not even very interested in it. The results also revealed the information channels tourists used and through which they would like to receive information.

To increase tourist preparedness, safety and first of all awareness, information should be increased through both official and unofficial channels. Social media and peers should be utilized in developing information and preparedness. In addition, information should be provided to tourists in a way that they do not have to search and cannot avoid it.

Keywords: Preparedness, awareness, natural disaster, tourist

Contents

1 Introduction

Tourism in the Philippines is a vital part of the national economy, attracting millions of international visitors each year (DOT 2025). At the same time, the country is one of the most disaster-prone countries in the world, experiencing frequent typhoons, earthquakes and volcanic activity (Balita 2024; Del Prado 2024). With climate change intensifying the frequency and severity of such events, the intersection of tourism and disaster risk has become a growing concern, especially in remote destinations where infrastructure and resources are limited (Balita 2024; Salas 2023).

This research was conducted to examine how foreign tourists, travelling especially to remote destinations in the Philippines, are prepared in case of natural disasters and how aware are they of these events. The focus was on what preparedness measures the tourists have taken and whether there is a need to enhance their disaster preparedness. As such need was identified, the research further explored how improvements could be made.

This topic is especially important as the remote tourist destinations often have limited access to medical care, transportation and emergency services. In the event of a disaster, tourists may be more vulnerable, and their lack of preparedness can place additional burden to local communities. By improving tourists' preparedness and awareness, the resilience of local communities can be strengthened when fewer resources are needed for assisting outsiders (Bankoff & Hilhorst 2009; Victoria 2003).

The idea for this field study emerged from the researchers' shared interests towards global health and crisis management and backgrounds in nursing. A deepened interest towards natural disasters have increased during their master's studies, notably during an assignment related to natural disasters in Asia. A common research focus was developed by combining strengths and interests. The research reflects a common interest in preventative approaches, recognition of disaster risk and identifying practical solutions for disaster risk reduction and crisis management. Due to that researchers come from healthcare backgrounds the research is examined from a social perspective.

The study was conducted as a qualitative field research study in tourist destinations in the Philippines. Data was collected from semi-structured interviews with western tourists. The data was analysed using thematic analysis with iterative process and an abductive approach. The thematic structuring was done to identify recurring themes related to preparedness, awareness and perceptions of natural disasters.

This research presents a review of existing literature related to natural disasters, preparedness and disaster management strategies as well as tourism especially from natural disaster effects point of view. The research outlines the aims, main objectives and research questions. It explains the methodology behind the study and represents the findings and results of the field research, which are discussed in along with practical recommendations based on the results. Finally, it provides conclusion to the research. Abbreviations used in the study can be found in Appendix 7.

2 Background of the study

The Philippines is consistently ranked among the most disaster-prone countries in the world due to its geographical location along the seismically active Pacific Ring of Fire and the Pasific typhoon belt. The Philippine region in the Pacific Ocean is prone to seismic disturbances, which cause earthquakes and volcanic activity. Southwest monsoons bring heavy rains leading to flooding and landslides and the region is extremely prone to tropical cyclones (Balita 2024; Salas 2023). Natural hazards regularly impact the country, causing significant economic, social, and human losses and extreme events pose continuous challenges for disaster preparedness and management (Domingo & Manejar 2018; Piepiora, Belarga, Alindogan & Arcos 2016; Victoria 2003).

Tourism is a vital industry for the Philippines, contributing substantially to national and local economies (United Nations Environment Programme and International Council for Local Environmental Initiatives (UNEP & ICLEI) 2003; Tourism Teacher n.d.). However, the increasing frequency and intensity of natural disasters present direct threats not only to residents but also to visitors (Domingo & Manejar 2018; Piepiora et al. 2016). Tourists often lack sufficient awareness of local risks, evacuation procedures, and disaster response protocols (Victoria 2003; Tourism Teacher n.d.). Strengthening tourist preparedness is therefore not only critical for visitor safety but also for protecting host communities and ensuring the sustainability of tourism-dependent regions (UNEP & ICLEI 2003; Victoria 2003).

2.1 Natural disasters in the Philippines

Natural disasters cause large financial losses, damage to livelihood and loss of life every year. Climate change will increase the frequency of natural disasters. According to the Global Disaster Risk Index 2023, the Philippines has the world's highest risk of natural disasters. (Balita 2024; Salas 2023) Del Prado (2024) from the Philippine Statistics Authority has summarised the statistics (Figure 1) how the natural disasters have occurred and affected Philippines during the year 2023. Total financial damages worth of 24,49 billion Philippines peso was caused by natural extreme events and disasters. Compared to Forex exchange

course at 11.4.2025 this is equivalent for about 340 million euros (Forex n.d.) In 2022, the Philippines spent 314 billion pesos on disaster mitigation, prevention, management and recovery (Balita 2024; Salas 2023).

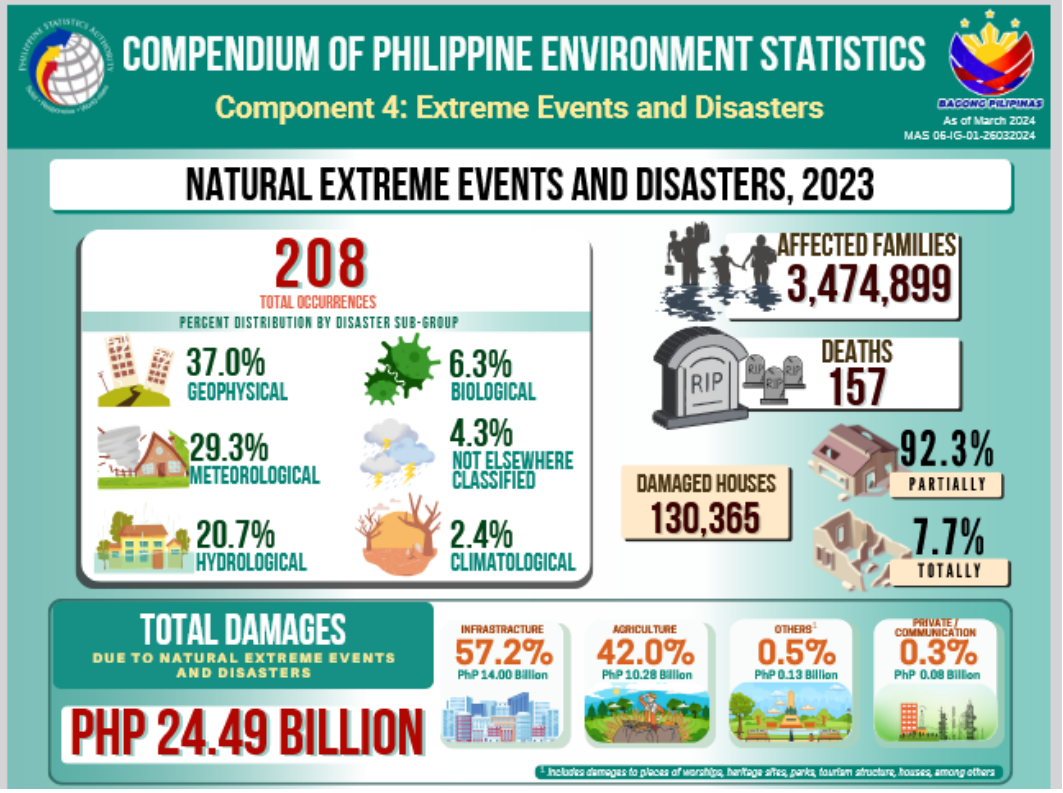


Figure 1: Natural extreme events and disasters in the Philippines 2023 (Del Prado 2024)

2.1.1 Tropical cyclones

According to Philippines Atmospheric, Geophysical and Astronomical Services Administration (PAGASA n.d.a.) tropical cyclones in the Philippines are called typhoons. The Philippines' location in the middle of a large ocean basin between the South China Sea and the Philippine Sea on the edge of the Pacific Ocean between latitudes 4 and 21 makes it particularly vulnerable to tropical cyclones. Finnish Meteorological Institute (No date) states that tropical cyclones are formed when the sun warms large masses of water to form a tropical depression, and they occur mainly on both sides of the equator in places where the sea surface temperature is at least 26–27 degrees Celsius. Unlike tropical storms in other areas, typhoons can develop in the western Pacific Ocean and the China Sea year-round because the Pacific Ocean, as a large body of water, remains warm all year round. Typhoons form over large tropical waters and usually weaken as they reach land. The greatest damage to people and the environment usually occurs when a typhoon makes landfall while still at full strength. The greatest damage from typhoons is caused by strong winds and heavy rains, which are accompanied by severe flooding. Typhoons can strike the eastern coast of the Philippines

directly from the Pacific Ocean, because there are no land barriers in between. In the Figure 1 can be seen the statistic cyclone tracks in Philippines from 1948 to 2015. (Finnish Meteorological Institute n.d.; PAGASA n.d.a).

Tropical cyclones have a life cycle of about six days, which allows for a reasonable prediction of their movements; sometimes they can also form more quickly, which means there is less time to give advance warning. Typhoons usually weaken when the heat supply from the sea is cut off, either due passing over a land area or the cooling of the ocean water. A drier layer of air or upper atmospheric currents can also affect the weakening of the storm (Finnish Meteorological Institute n.d.; PAGASA n.d.a).

In 2022, PAGASA (Pagasa n.d.a.) classified tropical cyclones into the five categories from mildest to most severe: tropical depression (TD), tropical storm (TS), severe tropical storm (STS), typhoon (TY) and super typhoon (STY) when the wind speed is 185 kph or more. Predicting the development of the intensity of typhoons is difficult, despite current technology. Tropical cyclones move at about 20-50 kilometres per hour, and their paths can be reasonably predicted, making it possible to warn the areas where the storm is likely to make landfall in good time (Finnish Meteorological Institute n.d.; PAGASA n.d.a).

Picture 1: Strong wind at Panglao, Bohol (© Kalliomäki & Männistö 2024)

The number of tropical cyclones varies annually in the Philippines. During 2021 there were 15 tropical cyclones, in 2022 18 and 2023 there were 11 tropical cyclones. In 2024, there were 18 storms that exceeded the tropical cyclone threshold, of which five were classified as TD, three were TS, two were STS, three were TY, and five were super typhoons (STY). During the

research period in October-November 2024, six tropical storms hit the Philippines. From these three were STY, two were TY, and one was STS. The storms caused various types of damage. For example, in October there was STS Kristine, which caused the most damage due to heavy rains. In November, STY Ofel brought strong winds (PAGASA n.d.b.).

PAGASA produces a prediction of tropical cyclones for following months in 2025 (Figure 2) and the statistics of occurrence of cyclones monthly throughout the year and the average of routes the typhoons have had previously. The probability of tropical cyclones is highest from July to October. (PAGASA n.d.b.)

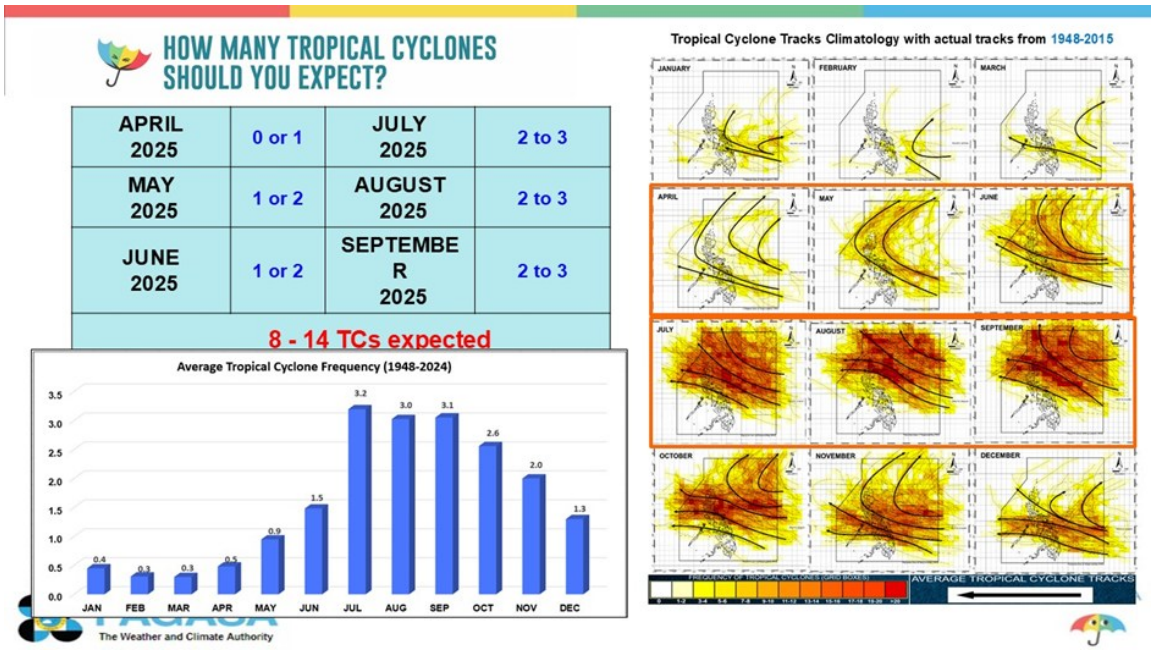


Figure 2: Monthly tropical cyclone forecast (PAGASA n.d.a)

Tropical cyclones are one of the most destructive natural disasters in the world. Strong winds, gusts of wind, rapidly rising water and waves, and heavy rain cause both loss of life and extensive property damage. Gusts of wind can be strong and sudden, or the wind can be constantly strong. The wind damages buildings, carries debris, and destroys vegetation. Heavy rain causes flooding, and the rising water level damages property and vegetation. Tropical cyclones are also associated with storm surges, which differ from flooding caused by rainfall in that they are sudden and strong rises in water levels and cause destruction mainly in coastal areas. Tropical cyclones can also be associated with localized tornadoes. In 2023, tropical cyclones alone caused more than 18 billion Philippine pesos worth of damage (Finnish Meteorological Institute n.d.; PAGASA n.d.a; Balita 2024; Salas 2023).

2.1.2 Volcanic activity

The Philippines belongs to the so-called Pacific Ring of Fire. The Philippine region in the Pacific Ocean is prone to seismic disturbances, which cause earthquakes and volcanic activity. (Balita 2024; Salas 2023) The Pacific Ring of Fire is a horseshoe-shaped region around the Pacific Ocean, which is about 40,000 kilometres long according to Evers (2025). Along this entire route, there are about 452 volcanoes and other seismic activity such as earthquakes. The Ring of Fire is formed at the junction of continental plates. As the continental plates move slowly, they can collide under, over or rub against each other. This creates seismic activity, i.e. volcanic eruptions and earthquakes (Evers 2025; Balita 2024; Salas 2023).

The Philippine Institute of Volcanology and Seismology (PHIVOLCS N.d.) and Delos Reyes et al. (2018) describe how the Philippine archipelago is between at the interface of the Philippine Sea Plate and the Eurasian Plate and in the Pacific Ring of Fire, making it highly vulnerable to crustal movements, resulting the Philippines being particularly susceptible to seismic and volcanic activity. Evers (2025) and PHIVOLCS (n.d.) explain how the deep ocean trenches, which have formed in parallel in volcanic areas, run both sides of Philippines archipelago. Trenches are created when a heavier continental plate pushes under a lighter one and cause severe seismic activity and disturbance in the area.

According to Delos Reyes et al. (2018), the Philippines currently has twenty-four active volcanoes. In a volcanic eruption, a vent, hill or mountain releases hot or molten rock and gases. PHIVOLCS (n.d.b.) lists lava flows, ashfall and possible flying rock as direct effects of an eruption. There may also be pyroclastic flows, which contain lava fragments, volcanic ash and hot gases, according to the National Geographic Society (2024). Pyroclastic flows move quickly and destroy everything in their path and dramatically change the landscape. They can also cause flooding, either by blocking the normal channel of a river or by melting a large amount of glaciers. (PHIVOLCS n.d.b.; National Geographic Society 2024).

Fragmented volcanic particles (tephra) or ashfall can form a thick layer when falling down and cause collaption of buildings or roofs and other infrastructural damages, contamination of water sources and burial of people, animals and vegetation. In addition of being a health hazard, ashfall causes damage and disruption in land traffic, power generation and air transport. Other indirect but volcanic eruption linked hazards are landslides, ground deformation, secondary explosions and pyroclastic flows, volcanic tsunamis and flooding. (PHIVOLCS n.d.b.)

PHIVOLCS (2018) classifies volcanic eruptions into five different alert categories, depending on how strong the activity is and what kind of eruption the volcano produces. Alert level zero is when no unusual activity is noticeably and alert level five is when the eruption is extremely hazardous and destructive. It is noteworthy that PHIVOLCS (2018) specifies the categories

even more precisely for each individual volcano according to their characteristics. The PHIVOLCS also provide instructions for action specified for each volcano and according to the alert level. (PHIVOLCS 2018).

Volcano Monitoring and Eruption Prediction Division (VMEPD n.d.) provides volcano bulletins, updates and advisories related to volcanic activities. VMEPD (n.d.) statistics show that since year 2000 there have been 45 mentioning of volcanic eruptions in Philippines of which most have been phreatic i.e. steamed water and gas eruptions. In 2024 and 2025 there have been activity in mountains Taal, Kanlaon and Mayon. On December 2024 there was a bigger eruption of Kanlaon in Negros which crossed the news threshold and according to National Disaster Risk Reduction and Management Council (NDRRMC 2025) led to massive evacuations and disruptions in traffic and for people's livelihoods (CBS News 2024; NDRRMC 2025). On March 30, 2025, there were two Level one alerts in effect for the mountains of Mayon and Taal and a Level three alert for the mountain of Kanlaon. (VMEPD n.d.; PHIVOLCS n.d.c.).

2.1.3 Earthquakes

Section 2.1.2 explains the reasons for the volcanic activity in the Philippines. These same reasons cause daily earthquakes and destruction in the region.

When the rock on the surface of the Earth moves suddenly at the edges of the continental plates, causing shaking of the ground, it is called an earthquake. The strength of an earthquake is measured by the amount of energy released (magnitude) and how it has been perceived, felt and affected its surroundings (intensity). The PHIVOLCS Earthquake Intensity Scale (PEIS) is used to measure the intensity of earthquakes in the Philippines. (Bolt 2025; Wald n.d.; PHIVOLCS n.d.d.; PHIVOLCS n.d.e).

Earthquakes are classified into two categories depending on their mechanism of occurrence. Tectonic earthquakes are caused by the movement of continental plates at faults and plate boundaries, and volcanic earthquakes are associated with volcanic eruptions. The centre of an earthquake on the surface is called the epicentre, and the damage caused by an earthquake is greater the closer you are to it. An actual earthquake can sometimes be predicted by fore shocks, but it is not always known whether they will be followed by an even larger earthquake. Wald (n.d.) states that science cannot yet predict when an earthquake will occur, although it is known in which area it is likely to occur. (Bolt 2025; Wald n.d.; PHIVOLCS n.d.d.; PHIVOLCS n.d.e)

A strong earthquake causes destruction over a wide area. The shaking of the ground causes structures to collapse, topple and parts of structures to fall. Damage to infrastructure can also cause fires due to electricity, gas and fuel leaks. Ground shaking can cause landslides especially in mountainous areas and liquefaction in lower areas. The damage in a landslide

depends on the composition of the material that is set in motion, its speed of movement and where the material ends up. A landslide can carry away structures, destroy infrastructure on its way, bury buildings, block roads and cause flooding. In liquefaction, buildings can sink, or collapse and structures embedded in the ground begin to float. Tsunamis caused by earthquakes are series of waves that flood from the sea and can cause great damage far inland. The waves contain large masses of water that carry soil and debris with them and cause destruction as they roll onto and away from land. Saltwater can destroy agricultural land for years and contaminate water sources, rendering them unfit for drinking. Tsunamis can also be caused by underwater landslides, meteorites, and volcanic eruptions. (Bolt 2025; PHIVOLCS n.d.e.)

The Philippines experiences about 20–30 earthquakes per day. As can be seen from the Table 1 adopted from Volcano Discovery (2025), most earthquakes are less than three magnitudes and very strong earthquakes over six magnitudes are rare. However, there are several of them yearly. PHIVLOCS (2025) maintains an Earthquake Information website, which provides up-to-date information and lists all detected earthquakes, and any additional information related to them. (Volcano Discovery 2025; PHIVLOCS 2025).

Table 1: Number of recent earthquakes by magnitude in the Philippines at 31.3.2025 (Adopted from Volcano Discovery 2025)

	Total number	<M2	M2+	M3+	M4+	M5+	M6+	M7+
Past 24 hours	27 quakes	5	21	-	1	-	-	-
Past 7 days	310 quakes	94	167	36	13	-	-	-
Past 30 days	1341 quakes	416	697	172	52	4	-	-
Past 365 days	16867 quakes	4 834	8783	2520	658	67	2	1
Past 3 years	52 702 quakes	13 275	28283	8127	2669	317	24	3
Past 10 years	102 647 quakes	19 716	57 764	17 545	6 825	733	53	5

2.2 Preparedness and awareness in disaster management

Disaster preparedness and awareness are key factors in effective disaster management. Preparedness refers to proactive measures aimed at reducing the impact of disasters and accelerating recovery. Awareness, on the other hand, relates to individuals' and communities' understanding of risks and their ability to respond appropriately before, during, and after a disaster (Rogayan & Dollete 2020).

Rogayan and Dollete (2020) highlight that successful risk communication must consider the socio-economic status and cultural context of communities, as these factors influence their perception and preparedness for disasters. Theories of disaster preparedness emphasize the role of education, communication, and structural interventions in enhancing individuals' and communities' ability to cope with disasters.

Natural disasters pose significant risk to both local communities and tourists in the Philippines, a country frequently affected by typhoons, floods, earthquakes, and other hazards. Understanding disasters preparedness and awareness among tourists is crucial for ensuring safety and minimizing risks in disaster-prone areas. Kurata et al. (2023) mentions that studies indicate that individuals who perceive disasters as severe are more likely to engage in preventive behaviours, while tourists, due to their transient nature, may lack localized knowledge about specific risks in the Philippines (Kurata et al. 2023).

Preparedness strategies involve proactive measures to mitigate risks. Effective approaches to protect tourists include emergency briefings conducted by hotels, technology-driven alerts such as mobile applications and SMS notifications, and community engagement initiatives where tourists participate in local disaster preparedness programs (Ochoa 2024). These strategies ensure tourists have access to real-time warnings and evacuation procedures, increasing their ability to respond appropriately in emergency situations. Kurata et al. (2023) highlight that media plays a significant role in shaping tourists' perceptions of disaster severity, influencing their willingness to take precautionary actions.

Despite ongoing efforts, challenges remain in enhancing disaster preparedness. Some tourists disregard warnings due to unfamiliarity with local risk assessments or scepticism regarding official information. Financial constraints and inconsistent support from local authorities further limit the implementation of disaster preparedness initiatives in tourism sectors. To address these issues, policymakers should mandate disaster preparedness training for tourism-related businesses and enforce risk communication plans specifically tailored for tourists (Kurata et al. 2023). Infrastructure improvements, such as well-marked evacuation zones and accessible emergency shelters, are vital in reducing vulnerability (Ochoa 2024). Public awareness campaigns utilizing brochures, social media, and interactive drills reinforce disaster preparedness efforts among visitors and local communities alike (Kurata et al. 2023).

2.2.1 Behavioural models in disaster management

Theoretical models related to disaster management help understand how individuals and communities can prepare for crises and minimize their impacts. Kurata et al. (2023) and Rogayan and Dollete (2020) offer perspectives on disaster preparedness and risk management theories that support preventive measures and community resilience.

Kurata et al. (2023) integrate two important behavioural science theories, Protection Motivation Theory (PMT) and Theory of Planned Behavior (TPB), to analyse disaster preparedness in flood-prone areas. PMT focuses on how people assess threats and decide to take preventive actions. According to the theory, the severity of the risk, perceived vulnerability, and confidence in the effectiveness of coping measures influence people's behaviour. TPB emphasizes the impact of individual attitudes, social norms, and perceived behavioural control on decision-making. The study found that information provided by the media and personal experiences affect how people perceive risks and respond to them.

Kurata et al. (2023) observed in their study that an individual's previous disaster experiences, social environment, and risk perception influence their readiness to take preventive measures. This suggests that authorities and communities should invest in awareness campaigns and enhance individuals' knowledge and skills. Rogayan and Dollete (2020) on the other hand stress that theoretical development of disaster preparedness is not enough; it must be integrated into concrete educational programs and community practices. The goal is to build stronger community resilience, where people understand disaster risks and can respond effectively before, during, and after a crisis.

Rogayan and Dollete (2020) examine building disaster preparedness at the community level and emphasize that integrating risk communication and education is crucial for Philippines sustainable development goals, to ensure healthy, adaptive and disaster resilient society. Their research highlights the importance of community-based disaster risk reduction (CBDRR) and its impact on building disaster preparedness. The CBDRR model emphasizes the role of local communities in disaster preparedness and risk mitigation. Community members should be actively involved in the preparation process, improving their ability to identify risks and respond effectively.

Both Kurata et al. (2023) and Rogayan and Dollete (2020) provide important insights into disaster management theories. PMT and TPB highlight factors related to individual behavior, while CBDRR emphasizes community action and risk communication. Integrating these models can help develop more effective disaster preparedness strategies that combine both personal and community responsibility in managing disaster risks.

2.2.2 Community participation

Community development is a crucial aspect of disaster management. Brennan, Phillips, Walzer and Hales (2025) emphasize that community development and building local capacity are essential for effective disaster mitigation and reducing suffering during crises. Collaborative community efforts can strengthen preparedness and response capabilities.

Key humanitarian and community aspects, such as poverty, race, inequality, social justice, mental health, and societal division, are critical factors in community response to disasters. Considering these factors helps build more equitable and sustainable solutions. The importance of care and support networks is also central. Social support, empathy, inclusion, and conflict resolution are practical and measurable means of creating effective and caring communities. Well-functioning support networks aid in post-crisis recovery. (Kurata et al. 2023; Rogayan & Dollete 2020; Brennan et al. 2025; Emami, Lorenzoni & Turchetti 2024)

Research and practical examples in crisis management highlight the importance of integrating theory and real-time examples with applied programs, and practical applications enhance understanding of effective solutions development (Brennan et al. 2025). Community development is a key factor in crisis management according to Brennan et al. (2025), as it helps local communities build resilience and adapt to changing conditions. Disaster mitigation and recovery require long-term community-based strategies that integrate research, policy, and practical approaches.

Practical examples of improving crisis management include the impact of local support networks, community-based education programs, and the integration of policy and practice. For instance, the role of social networks and volunteer activities can significantly reduce the adverse effects of crises. Engaging the community in disaster preparedness through education and workshops can help local residents develop the necessary skills and knowledge to prepare for crises. Additionally, communities where local governments work closely with residents are better able to develop sustainable solutions for disaster management. This collaboration can include joint planning meetings, regular drills, and awareness campaigns that enhance community readiness and resilience. By ensuring that the community can respond quickly and effectively in crisis situations, the damage and suffering caused by disasters can be minimized (Brennan et al. 2025). Practical applications of these principles can be observed in the context of disaster management in the Philippines.

Community-based disaster risk reduction and management (CBDRRM) is foundational in enhancing local resilience in the Philippines. In the Asia Pacific Ministerial Conference of Disaster Risk Reduction (APMCDRR) 2024 organized by United Nations Office for Disaster Risk Reduction (UNDRR), participants emphasized the importance of community-led systems where local actors are involved in development and preparedness plans. When communities lead, the response becomes more contextually relevant and sustainable (Kalliomäki & Männistö 2024; UNDRR 2024).

2.2.3 The role of risk communication in disaster preparedness

Risk communication is a crucial component of disaster risk reduction, ensuring that individuals, communities, and decision-makers receive clear, actionable information about

potential threats. According to Stewart (2024), traditional approaches often follow either top-down risk management methods or from bottom to up- community engagement strategies, but a more effective model combines elements of both. Rogayan and Dollete (2020) emphasize the importance of understanding the socioeconomic and cultural factors that shape how communities perceive risk, affecting their preparedness and response. Effective communication strategies as highlighted also by Nuriman and Hidayat (2025) and how both locals and tourists should be engaged, as visitors often lack awareness of local disaster risks. By integrating dissemination, dialogue, and participation, risk communication can help foster informed decision-making, enhance trust between authorities and the public, and ultimately lead to better disaster preparedness.

Recent findings further illustrate how these principles are applied in practice. During the APMCDRR 2024 conference, multiple examples were shared on how timely and reliable communication—especially through Early Warning Systems (EWS)—has saved lives. Community-based networks were highlighted as efficient channels for disseminating warnings quickly, such as women sharing updates “woman to woman” using social networks. These practices showcase how localized communication strengthens both awareness and action in disaster risk reduction (Kalliomäki & Männistö 2024).

2.3 Natural disaster preparedness and management strategies in the Philippines

As Philippines is a country highly vulnerable to natural disasters, reinforcing the need for disaster risk reduction and preparedness strategies at both national and local levels (Domingo & Manejar 2018; Piepiora et al. 2016) and strengthening existing strategies are critical to not only for protecting communities and economies but also for safeguarding key sectors such as tourism. (UNEP & ICLEI 2003; Victoria 2003).

The responsibilities in disaster risk reduction in the Philippines are distributed across multiple administrative levels, coordinated by the National Disaster Risk Reduction and Management Council (NDRRMC). The NDRRMC leads national-level policy, coordination, and standard setting, while Regional DRRM Councils (RDRRMCs) adapt plans regionally. The country’s disaster risk management policies are based mainly on two important laws: the Local Government Code of 1991 and the Philippine Disaster Risk Reduction and Management (DRRM) Act of 2010 (Republic of the Philippines 1991; Republic of the Philippines 2010). The 2010 DRRM Act shifted the focus from reactive disaster response to proactive risk reduction. (Domingo & Manejar 2018).

Disaster risk management in the Philippines follows four thematic pillars: disaster prevention and mitigation, disaster preparedness, disaster response, and disaster rehabilitation and recovery (Republic of the Philippines 2010). The division of responsibilities for these four

thematic pillars is defined in the National Disaster Risk Reduction and Management Plan (NDRRMP) 2020-2030 (Figure 3) (NDRRMC 2020).

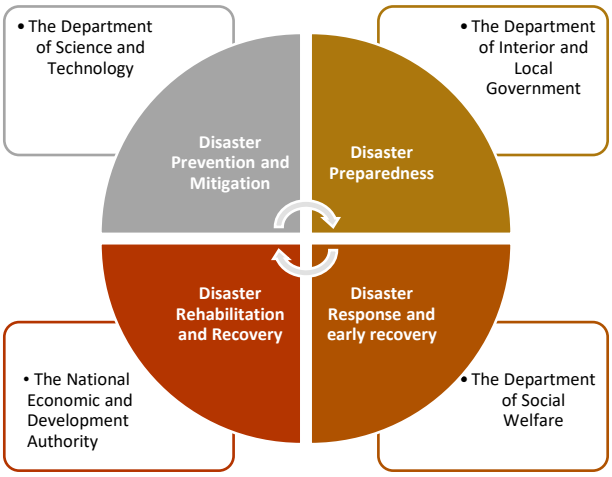


Figure 3: The Philippine DRRM systems' priority thematic areas and responsible departments of overall steering and leadership (NDRRMC 2020)

The Department of Science and Technology is responsible for overall steering and leadership in Disaster Prevention and Mitigation. This thematic area includes, among others, research, risk-centred policies in preparedness at all levels: plans and budgets, development of early warning systems, risk finance and insurance mechanisms, ecosystem and climate adaptation in policies and plans, and disaster resilience of people, business and livelihoods. Disaster Preparedness falls under the Department of Interior and Local Government. The objectives of this theme include increasing awareness at all levels, increasing preparedness skills, training and practice, developing disaster preparedness plans and policies, and strengthening cooperation between various stakeholders. The planning under the Disaster Response and Early Recovery theme is led by the Department of Social Welfare. The Department is responsible for the steering and leadership of activating emergency operations, warnings, planning and coordinating search and rescue and early relief operations, and for the planning and implementation of evacuations and all response actions and plans and implementations as well as early recovery actions. The National Economic and Development Authority is in leadership and steering of Disaster Rehabilitation and Recovery theme. Their objectives are to assess damage and rehabilitation and recovery needs and make programs for these and develop different term recovery plans in all levels of society (NDRRMC 2020).

At the local level, Provincial, City, Municipal and Barangay DRRM Councils (P/C/M/BDRRMCs) are responsible for community-based implementation, risk mapping, public education, and early warning systems. Barangay being the smallest administrative unit in the hierarchy, a village or a district in a city. All Local Government Units (LGUs) must allocate at least 5% of their annual budget for disaster risk reduction. This system aims to ensure vertical coherence

and horizontal integration between actors (Figure 4) (Republic of the Philippines 1991; Republic of the Philippines 2010; Domingo & Manejar 2018).

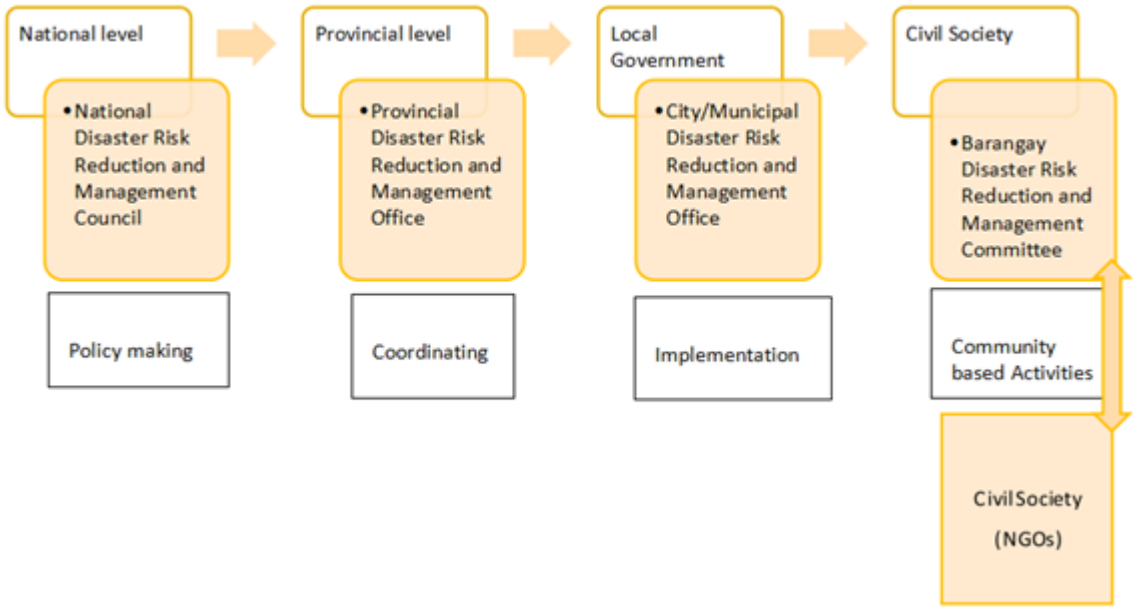


Figure 4: The division of responsibilities in DRRM activities in the Philippines

Local government units (LGUs) are tasked with responsibilities across all disaster phases: before, during, and after a disaster. Their duties include risk assessment, public education on disaster risks, first-aid training, evacuation centre construction, and collaboration with relevant agencies (Domingo & Manejar 2018).

Recognizing the vulnerabilities associated with disaster risk, particularly in areas with high tourist activity, government agencies have begun implementing initiatives aimed at improving safety and resilience. The Department of Tourism (DOT), the Department of Health (DOH), and the Tourism Infrastructure and Enterprise Zone Authority (TIEZA) have started to work towards improving first aid facilities for tourists in remote areas with high tourist density (DOT 2024c).

The integration of early warning systems into national and local disaster management strategies are essential for reducing the impact of natural hazards. Discussions at APMCDRR 2024 emphasized that countries with well-developed EWS—leveraging mobile apps, community radios, and peer-to-peer communication—demonstrated greater resilience. In the Philippines, such systems must be designed inclusively, reaching all social groups and enabling swift evacuation and response decisions before a disaster strikes (Kalliomäki & Männistö 2024).

Bankoff and Hilhorst (2009) investigated disaster preparedness and resilience by comparing the roles of the state and non-governmental organizations (NGOs), with particular attention to the Albay province. In this region, the Provisional Public Safety and Emergency Management Office (PPSEMO) developed emergency service structures in the 1990s, including round-the-clock rescue teams that remain operational today. This government entity operates within the broader national disaster management framework coordinated by the National Disaster Risk Reduction and Management Council (NDRRMC). The system extends through multiple levels, as seen in Figures 3 and 4, including Provincial Disaster Coordinating Councils (PDCCs), Local Government Units (LGUs), and down to barangays—the smallest administrative units responsible for community-level preparedness (Domingo & Manejar 2018).

NGOs frequently employ community-based disaster management (CBDM), emphasizing participation, local knowledge, and vulnerability assessments. Citizens' Disaster Response Network (CDRN) pioneered this approach in the late 1980 s, advocating for grassroots involvement in hazard mapping, resource planning, and emergency response strategies (Victoria 2003; Bankoff & Hilhorst 2009). This model is especially valuable in regions where government structures are weak or underfunded, a view supported by findings in Domingo and Manejar (2018).

Bankoff and Hilhorst (2009) stated in their study that a prominent example of grassroots disaster response is the organization Tabang sa mga Biktima sa Bicol (TABI), which operates under the Mayon Disaster Response Network (MDRN). Both are local NGOs that mobilize quickly during crises through networks of trained community committees. TABI also supports community health volunteers to enhance resilience in areas where poverty poses a daily challenge (Bankoff & Hilhorst 2009). These initiatives represent an alternative framework where affected populations are not merely recipients of aid but active participants in disaster management. Decentralizing disaster risk reduction responsibilities to community level actors has proven effective in the Philippine context. As presented at APMCDRR 2024, the localization of Disaster Risk Reduction (DRR) strategies enhances community ownership, strengthens trust, and increases responsiveness. Locally managed early warning systems and preparedness plans ensure that interventions are not only technically sound but also culturally and socially accepted by communities (Kalliomäki & Männistö 2024).

Despite the central role of LGUs and barangays, resource limitations often stall the implementation of disaster plans (Domingo & Manejar 2018). In such cases, NGOs play a compensatory role—but not without tension. According to Bankoff and Hilhorst (2009), mutual distrust and competition for international funding can strain relationships between state agencies and NGOs.

In international disaster policy, multi-stakeholder collaboration and inclusive approaches are widely promoted. Governmental agencies bring coordination and structure, while NGOs contribute flexibility and grassroots reach (Victoria 2003; Domingo & Manejar 2018). However, building effective cooperation requires mutual trust, shared goals, and transparent practices.

In conclusion, the roles of governmental and civil society actors in disaster preparedness in the Philippines are not mutually exclusive but complementary. Sustainable disaster resilience depends on recognizing and integrating the strengths of both systems, only then can preparedness strategies be truly effective and tailored to community needs (Victoria 2003; Domingo & Manejar 2018; Bankoff & Hilhorst 2009).

2.3.1 Stakeholders in disaster management

In international disaster policy, multi-stakeholder collaboration and inclusive approaches are widely promoted. Governmental agencies bring coordination and structure, while NGO's contribute flexibility and grassroots reach (Victoria 2003; Domingo & Manejar 2018). However, building effective cooperation requires mutual trust, shared goals, and transparent practices (Bankoff & Hillhorst 2009).

Stakeholder analysis is a critical tool in disaster management, particularly within the tourism sector. A broad range of stakeholders—including tourists, local communities, businesses, government entities, educational institutions, and NGO's, contribute to and are affected by tourism activities (Tourism Teacher n.d.). Each stakeholder brings different needs, perspectives, and resources, making inclusive planning essential for resilience building.

According to Piepiora et al. (2016) in the context of disaster risk reduction, local communities often face the most immediate risks, while businesses and shareholders may focus primarily on financial considerations. Government bodies are responsible for creating policies and infrastructure that safeguard both residents and visitors (UNEP & ICLEI 2003). Educational institutions and research organizations contribute to knowledge development, while NGOs advocate for environmental and cultural preservation. In addition to local governments, NGOs and private sector actors are crucial stakeholders in disaster management. NGOs provide immediate aid, infrastructure rehabilitation, and long-term recovery programs after major disasters (Piepiora et al. 2016).

At APMCDRR 2024, the role of local leadership was emphasized not only in formal structures but also within grassroots networks. Community based early warning dissemination and preparedness initiatives—such as peer-to-peer messaging and resource coordination—proved to be highly effective, particularly in areas with limited infrastructure. These examples illustrate how inclusive DRR strategies can increase overall effectiveness and sustainability

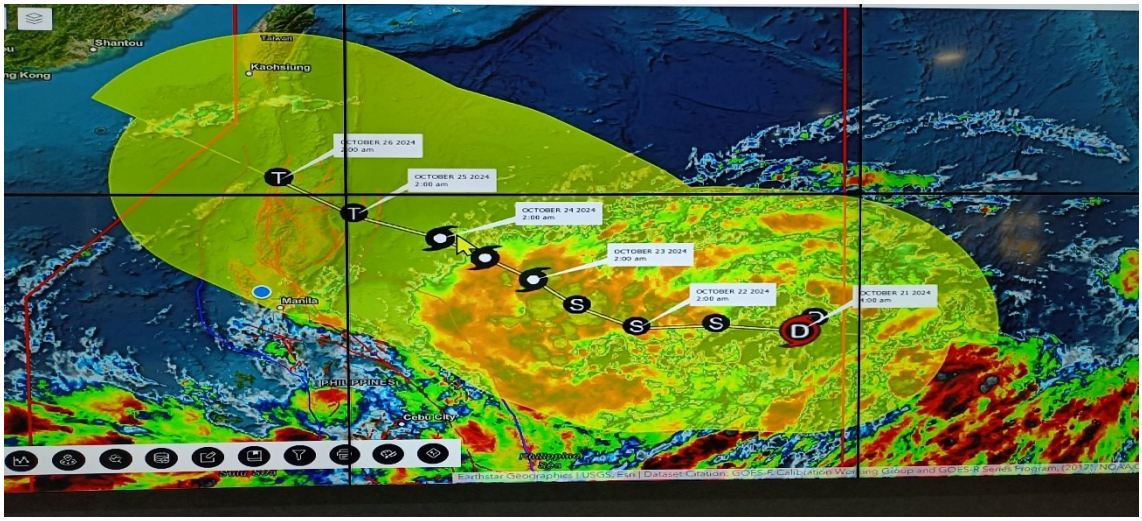
(Kalliomäki & Männistö 2024). Collaboration among authorities, civil society, and private actors is essential for effective disaster preparedness and response according to Piepiora et al. (2016). Integrating stakeholder perspectives into tourism planning strengthens community resilience and enhances the sustainability of both tourism and disaster management strategies (Tourism Teacher n.d.; Victoria 2003).

Community-Based Disaster Management (CBDM) is especially important in the Philippines. It empowers local communities to identify hazards, disseminate warnings, and organize recovery efforts (Victoria 2003). Strengthening communities is essential for sustainable disaster preparedness. Tourism, an important source of income for many local communities, can, if poorly managed, exacerbate environmental degradation and increase disaster risks (UNEP & ICLEI 2003). Therefore, integrating disaster risk considerations into tourism development is vital for long-term sustainability.

However, the effectiveness of disaster management and preparedness strategies in the Philippines is not based solely on legal frameworks and governance structures. One of the most critical elements is the availability of timely and reliable warning systems that enable rapid response when natural hazards threaten. In the Philippines, agencies such as PAGASA are responsible for developing and maintaining early warning systems (PAGASA 2025a). Technology offers powerful tools for disaster preparedness—but only when designed inclusively. Even though in the APMCDRR 2024 conference there were mentioned specific tools, that might be helpful, there remain gaps. DRR and EW systems must balance high-tech innovation with analogy methods to always ensure accessibility (Kalliomäki & Männistö 2024).

2.3.2 The role of PAGASA and early warning systems in disaster preparedness in the Philippines

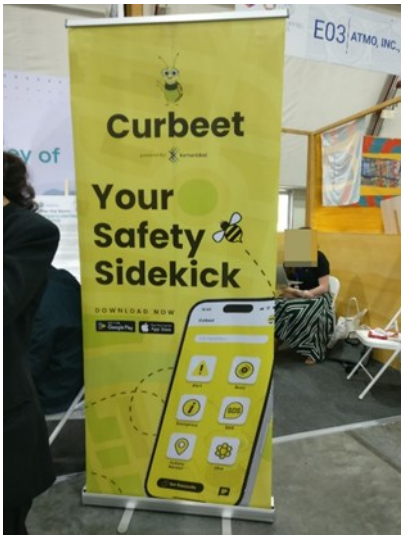
Timely and reliable warning systems are a vital component of disaster preparedness in the Philippines. The responsibility for weather monitoring and the development of early warning systems lies with the Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA 2025a). PAGASA monitors and provides weather forecasts, storm warnings, flood advisories, and other meteorological information that are crucial for disaster preparedness efforts and also issues official warnings. Authorities, local governments, and citizens rely on PAGASA’s data to plan evacuations and protective actions, particularly during typhoons and heavy rain events. In addition, modern weather applications like Windy support individual and organizational preparedness by offering easily accessible, real-time weather data (PAGASA 2025b).



Picture 2: Philippines Disaster Resilience Foundation (PDRF) prediction map of typhoon Katarina (© Kalliomäki & Männistö 2024)

An effective warning system is crucial in disaster risk management, as it significantly reduces fatalities and damages during natural disasters. Rapid, clear, and widely disseminated warnings enable timely evacuations and protective measures, thus enhancing community resilience against hazards (PAGASA 2025a).

In the Philippines, disaster preparedness relies on a multi-level system where legislation, local governance, community participation, and technological tools work together. Although the country has comprehensive policies and warning systems in place, challenges remain in terms of resource availability and practical implementation at the local level. Strengthening collaboration among stakeholders, supporting community-based approaches, and continuously improving warning systems are key steps towards building more resilient and safer communities in the future (Domingo & Manejar 2018).



Picture 3: Example of early warning applications for mobile phones presented at APMCDRR (© Kalliomäki & Männistö 2024)

2.4 Tourism in the Philippines

Tourism is one of the largest single sectors of the Philippine economy. The World Travel and Tourism Council (2024) reveals that one fifth (21.3 %) of the Philippines' economy comes from travel and tourism, and the year-on-year growth has been around 25 %. One fifth, or 20 %, of the national workforce is employed in tourism (World Travel and Tourism Council 2024.) Department of Tourism Philippines (DOT 2024a) reports that tourists generated 482,54 billion Philippine pesos in 2023. Compared to Forex exchange course at 11th April 2025 this is equivalent to about 6,7 billion euros. Visitors stayed an average of 11,6 nights and spent an average of 6 900 pesos per day (~96 €), with an average per capita consumption of about 80 115 pesos (~1 113 €). (DOT 2024a; Forex n.d.).

According to statistics from the Department of Tourism in the Philippines (DOT 2025), over 5.9 million tourists visited the Philippines in 2024. The average monthly number of tourists arriving varies from 411 to 598 thousand visitors. The annual growth rate was 9.15 %. About 8.6 % of tourists were Filipinos from overseas and 91.4 % were tourists with a different nationality. Of the tourists who arrived in 2024, 26.4 % were South Koreans, 15.9 % were Americans, and 0.08 % were Finnish. In total, visitors from 209 different countries came to the Philippines in 2024 if all the countries from which at least one visitor came are included (DOT 2025). Although South Korea was the largest source of tourists, Australian and especially American tourists brought in more money and income (DOT2024a.) Addition to these numbers there are over 48 million domestic overnight tourist mobilities yearly (DOT 2024b.)

Table 2: Purpose of visit to the Philippines on 2023 (adopted from Department of Tourism 2024a)

Purpose of Visit 2023	% Share
Holiday / Pleasure	70.12
Visit Friends / Relatives	12.14
Business / Professional	8.13
Education / Training / Studies	1.84
Convention / Conference	0.85
Health / Medical Reason	0.31
Government / Official Mission	0.15
Incentive	0.02
Others	6.40

As it can be seen from Table 2 adopted from the Department of Tourism (2024a), most of the tourism to the Philippines is related to holiday and pleasure tourism. This is further refined in research. People come to the Philippines for its beautiful beaches and natural attractions and warm climate, combined with a rich cultural heritage states Shimizu, Chatterjee and Cheung (2023). Susilo and Santos (2023) add the Philippines' rich biodiversity and natural wonders, World Heritage-listed rice terraces, opportunities for climbing and hiking, numerous festivals, and bustling cities like Manila, where history and the present meet, to Philippines attractions.

Tourism in the Philippines is also becoming more diverse, not just beach holidays. In order to increase sustainability and reduce vulnerability, efforts are being made to direct visitors to cultural destinations outside of traditional beach destinations. Eco-tourism and community-based tourism are increasing, as is the previously mentioned local tourism. (Susilo & Santos 2023).

Fabros, Lopez and Roma (2023) also report that there is some so-called 'dark tourism' heading to the Philippines, the amount of which is emerging. Dark tourism, or thanatourism, involves visiting destinations that are somehow related to death and suffering and is often linked to other forms of tourism. Thanatourism destinations can include cemeteries, mausoleums or disaster sites, which are visited for educational purposes, remembrance, sightseeing or cultural heritage, recreation, family bonding, curiosity or event venues. (Fabros et al. 2023).

Prasetya and Susilo (2022) write about the impact of social media on the growth of tourism in the Philippines, especially in terms of travel to more remote areas: experiences shared on social media and beautiful pictures of influencers have served as a marketing channel. Domestic tourism is also growing rapidly, especially after the Covid pandemic, and is now a very significant part of the Philippine tourism industry with the previously mentioned over 48 million overnight stays per year (Susilo & Santos 2023; DOT 2024b).

When studying tourist mobility in the Philippines, the Department of Tourism (2024a) Figure 5 'Arrivals by airport entry' is used as a basis. In addition to these airports, Caticlan Airport opened in 2024 and serves especially those traveling to Boracay. A similar figure compiled from statistics for the entire year 2024 was not available at the time of the study.

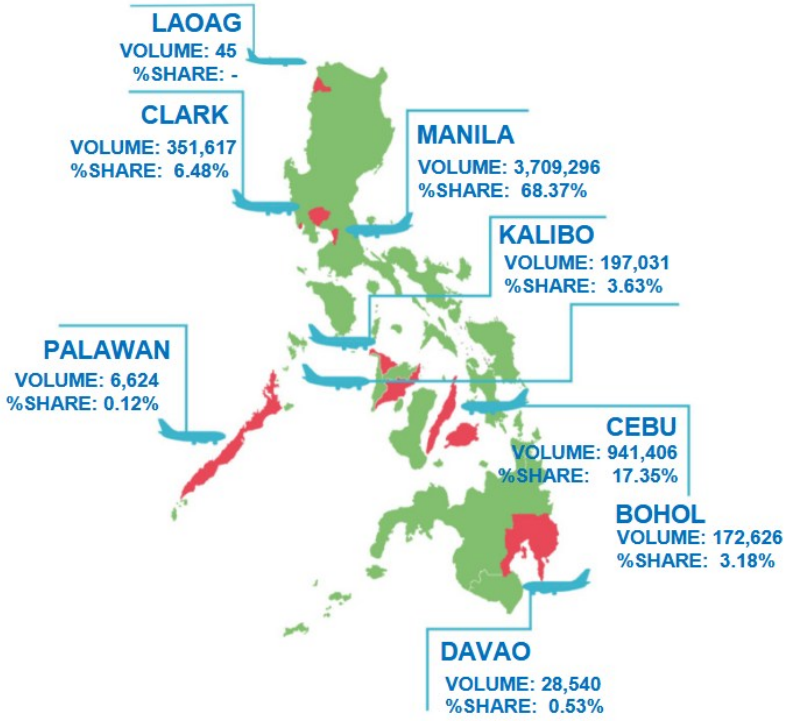


Figure 5: Arrivals by airport of entry (Department of Tourism 2024a)

The Philippine government did not provide information on how many nights tourists stayed in one destination, but SiteMinder's (2025) Hotel Booking Trends for 2024 tracks travellers' hotel bookings across over 450 booking channels and their statistics show that the average length of hotel stay in the Philippines in 2024 was one night. Majority of the tourists stayed one night at place, and it was very rare to stay longer than three nights (Table 3) (SiteMinders 2025).

Table 3: Length of average hotel stay on 2024 (adopted SiteMinders 2025)

Average length of hotel stays	Percent of stays
One night	76,5 %
Two nights	12,8 %
Three to four nights	7,8 %
Five to six nights	1,8 %
Seven nights	1 %

However, given that travellers spend an average of 11 nights in the Philippines, it can be assumed that they change destinations frequently. This was also supported by the conversations on Facebook about travellers' travel plans, that were monitored during the field research, which involved traveling around the Philippine archipelago and staying a few nights at a time in a destination and the interviews and experiences on site.

In addition to destinations, the Philippines government has invested in tourism by developing infrastructure. Airports have been modernized, and ground travel has been developed to improve access to tourist destinations. (Susilo & Santos 2023; World Travel and Tourism Council 2024). According to Rosselló, Becke and Santana-Gallego (2020), the number of tourists coming to a country has a long-term impact on the national economy, especially in countries where tourism is a key source of income, so it is important that the government and policymakers consider in their own actions how they could positively affect the number of incoming tourists, as has been done in the Philippines.

2.4.1 Natural disasters effect on tourism

In the Philippines, tourism is one of the pillars of the country's economy states Shimizu et al. (2023) and natural disasters have a significant impact on tourism and create great economical losses. People usually travel to the Philippines for beautiful beaches, nature experiences and adventure and tourism is dependent on natural resources. Since tourists travel a lot for both nature and nature activities, when these are damaged and cannot be supported, tourists will not come to the destination. A natural disaster in a tourist destination reduces the number of tourists arriving in the area, which in turn leads to job losses, especially for those with less education and those working in informal jobs. Ma, Chiu, Tian, Zhang and Guo (2020) state that natural disasters have a great negative effect on number of tourists and tourist experience. Shimizu et al. (2023) also found in their study that in the Philippines, areas that

were most vulnerable to natural disasters were also the most popular tourist destinations. Natural disasters lead to airport closures, rescheduling and cancellation of flights, cancellations of boat trips and tours, and people being stranded in flooded areas or without electricity or means of evacuation or transportation options. Hotel stays and venues were also cancelled due to temporary or permanent closure of buildings and postponed or cancelled travel plans. When infrastructure is damaged, tourists may head to other areas. (Borje 2024; Busalla 2025; Shimizu et al. 2023).

Rosselló, Becken and Santana-Gallego (2020) also concluded in their study that the impact of natural disasters on tourism is mainly negative, and disasters are perceived as a negative motivator when choosing a destination. Volcanic eruptions had a particularly negative effect, although Rosselló et al. (2020) did not specifically mention typhoons when discussing natural disasters. The researchers found that a natural disaster occurring within a year could reduce the number of tourists by up to 3.4–4.5 %, depending on the natural phenomenon. Rosselló et al. (2020) also concluded that, regardless of the cause, the damage caused to the economy and infrastructure by various natural disasters reduced the number of tourists as was mentioned also by Shimizu et al. (2023). Some harmful natural phenomena, such as heat and cold waves, were not seen to have an impact on tourism in their study, although the effects on local residents are considerable. Rosello et al. (2020) found in their study that some natural disasters, such as industrial accidents, wildfires and storms, where many people died, could even increase the number of tourists coming to the country. They explained this by saying that in some cases tourists did not perceive the natural phenomenon as a threat to their own safety, the disaster may have caused ‘humanitarian' tourists to travel to the area, or the high mortality caused by the disaster led to increased visits to relatives and friends.

All researchers Ma et al. (2020), Shimizu et al. (2023), Cahigas, Prasetyo, Persada and Nadlifatin (2023) and Rosselló et al. (2020) concluded in their studies that, as a rule, natural disasters reduce the number of tourists in the area where they occur. The consequences of natural disasters on the country's economy, infrastructure and the ability to meet the needs of tourists are negative and thus reduce the image of the attractiveness of the area and thereby the number of tourists. The impact can be short or long-term depending on how sharing information, reconstruction and other recovery measures are initiated. In countries where tourism is the main industry and the most important source of income, the temporary absence of tourists can also decisively affect recovery opportunities and therefore it is very important that the government and policy makers invest in preventive measures and preparedness in addition to recovery and crisis management measures. (Ma et al. 2020; Shimizu et al. 2023; Cahigas et al. 2023; Rosselló et al. 2020).

It is shown that tourists are often less prepared for natural disasters than local residents. Their knowledge of risks and recommended response strategies may be limited, which can

compromise their safety in crisis situations. In their study, Nuriman and Hidayat (2025) explain that previous studies have examined tourists' awareness of earthquakes, tsunamis, and typhoons, as well as the effectiveness of information provided to them regarding risks and protective measures. Nuriman and Hidayat (2025) also highlight the need for integrating risk communication strategies into tourism management, ensuring that visitors receive timely and actionable information on disaster risks and response measures.

2.4.2 Tourists' perception of risk and safety

When tourists choose their travel destination, several different factors influence their decision. Cahigas et al. (2023) emphasize that when choosing a travel destination, tourists look for factors both for and against the destination, and the advantages and disadvantages are in conflict when making a travel decision.

Cahigas et al. (2023) studied tourists returning to a destination after a natural disaster. In their study, the tourists were natives, but they also referred to international tourists and studied tourist behaviour in general. Thei highlighted issues of safety, raising awareness, traveling alone or with others, and balancing the pursuit of desires and safety. Natural disasters can cause long-term reputational damage to a destination, especially when tourists assess its safety writes Shimizu et al. (2023). Cahigas et al. (2023) point out that when choosing a destination, tourists' decision-making is negatively affected by the lack of public transport, the condition of the infrastructure, safety and the anticipation of it and changing situations, lack of hygiene, and possibly unexpected costs when traveling in a disaster area.

The more information tourists received about the disaster area situation, the progress of repairs, and the authorities' disaster management, Cahigas et al. (2023) found out that it influenced positively tourists’ decision to travel to an area although it was affected by a natural disaster. Shimizu et al. (2023) show that high media attention and negative reporting about the disaster negatively affects tourists' willingness to travel. On the other hand, Shimizu et al. (2023) came to the same conclusion as Cahigas et al. (2023) that with the widest possible positive information from the authorities and the community about preparedness and recovery, a positive image will be achieved in the minds of tourists and tourism will not suffer such large losses. The main factors influencing the choice of a destination were the possibilities for adventure and activities, a beautiful culturally rich environment, good food and an affordable holiday. In addition, some people were also influenced by the opportunity to support the local community by travelling there. The study also found that the more tourists had found out about the situation in the destination, the better they were able to adapt to changing circumstances (Cahigas et al. 2023).

Cahigas et al. (2023) describe that after a natural disaster, tourists expect various organizations to solve the problems brought about by the disaster in terms of infrastructure,

resources and the physical environment. The decision to travel can be positively influenced by the transparent and clear communication of local authorities about the situation in the destination and how quickly normality will begin to return. According to both Shimizu et al. (2023) and Cahigas et al. (2023), effective crisis management strategies can also improve the perception of the reduction of risk and whether it is possible to travel to the destination. The travel decision was greatly influenced by the affordable price, atmosphere, hospitality, culture and food of the destination. These were factors that could make a tourist travel to the area despite the possible risks.

Cahigas et al. (2023) found that tourists postpone traveling to areas that have experienced a natural disaster because the perceived risks make traveling feel uncertain, unsafe, and suspicious. Traveling was perceived to involve financial, psychological, physical, and social risks, and tourists easily ended up choosing a destination with fewer risks. Ma, Chiu, Tian, Zhang and Guo (2020) agreed that influenced by different functions self-defence is important factor in decision making. Doubts about the availability of sufficient services or that not all desired activities could be done in the destination, or the fact that the damage was visible, reduced the willingness to travel to an area that had just experienced a natural disaster. As one detail, Cahigas et al. (2023) mentioned that Asian tourists may experience that traveling to a disaster area brings bad luck and therefore avoid traveling. Those traveling alone were more likely to travel elsewhere, while those traveling with a companion were more likely to travel to a disaster area (Cahigas et al. 2023; Ma et al. 2020).

Tourists make travel decisions based on hedonic motivation, possible travel restrictions and risks claim Cahigas et al. (2023). Ma et al. (2020) adds to this that natural disasters cause fear and insecurity. Travel is worth taking risks, hedonic motivation refers to what can be achieved by going to a destination; pleasure, new experiences; good food and cultural experiences in a great environment report Cahigas et al. (2023). In the other hand Ma et al. (2020) points out that safety is the most important factor when comparing to hedonistic factors. According to Cahigas et al. (2023), access to information also played a major role in making travel decisions. The information received from authorities, as mentioned earlier, was considered important, but travel decisions and behaviours were also greatly influenced by information received from elsewhere. The experiences and recommendations of peer groups or relatives and friends influenced the decision about the travel destination and its conditions. Social media and electronic word of mouth (ewom) information and post disaster news have a major impact on tourist behaviour. Tourists' awareness of natural disasters is shaped by factors such as media exposure, personal experience, and general risk perception. Local governments and tourism establishments play a critical role in information dissemination, using digital platforms and on-site materials to educate visitors on potential risks and safety measures (Estrella 2025).

Shimizu et al. (2023) and Cahigas et al. (2023) both emphasized that tourists make decisions based on images and the more positive the image of the authorities' actions, preparedness measures and the construction of infrastructure to be sustainable, the more likely tourists are to travel to a destination with an increased risk of natural disasters. Ma et al. (2020) agreed with them and added the observation that tourists should be offered safety tips in multiple languages. They also pointed out that the more often natural disasters occur in a destination, the more uncertain consumers become and therefore, as emphasized in all three studies, information, the creation of positive images and especially actions that affect safety and the sustainability of infrastructure and information about them are of great importance in tourist decision-making. (Shimizu et al. 2023; Cahigas et al. 2023; Ma et al. 2020).

Karl, Muskat and Ritchie (2020) also studied tourists' decision-making process regarding their travel destination in relation to its risks. They found that tourists are more likely to change their travel destination if there is a possibility of being the target of a terrorist attack than if there are natural risks. However, half of the travellers in their study chose to travel to a destination with known nature risks. The choice of destination and possible change were also influenced by the tourists' gender, age, travel experience, and travel goals. Karl et al. (2020) found that older, especially female, travellers who don't look for novel experiences, tend to seek safer travel destinations. Younger male travellers who sought novel and adventurous experiences were less likely to change their travel destination despite the risks in the destination or even looked for more challenging and further away destinations.

It has been demonstrated in several different studies that the more information tourists receive about their travel destination, the better they are able to make decisions about where they want to go. Transparent information gathered from reliable sources, supplemented by the experiences of their peers, influences decision-making about a travel destination. Based on this information, depending on their background, tourists then choose a destination, sometimes a slightly less safe one, as long as they know how to act there.

2.4.3 Enhancing preparedness in tourist destinations

Crisis management in tourism encompasses prevention, preparedness, response and recovery. Various crisis management models have been developed to support the tourism and hospitality industry. A literature review by Casal-Ribeiro, Boavida-Portugal, Peres and Seabra (2023) identified and highlighted the need for ongoing research to test and further develop these theories.

Crisis management involves the actions, communications and interventions that organizations regularly implement to prevent, mitigate and normalize a crisis. Effective crisis management in tourism not only helps mitigate the immediate impacts of crises but also ensures the long-term sustainability and resilience of the industry. By integrating comprehensive crisis

management strategies, the tourism industry can better prepare for and respond to various threats, ultimately securing both the industry and its stakeholders. (Casal-Ribeiro et al. 2023) Incorporating disaster education into tourism campaigns can also improve awareness (Estrella 2025).

Enhancing disaster preparedness and awareness among tourists is essential to ensuring visitor safety and minimizing the impact of natural disasters. Strengthening education, risk communication, and emergency infrastructure will help create a resilient tourism industry that is equipped to manage disaster risks. By fostering a culture of preparedness, the Philippines can protect both its local communities and visiting tourists from the adverse effects of natural hazards (Kurata et al. 2023; Estrella 2025; Ochoa 2024).

The effectiveness of risk communication in tourist destinations depends largely on how well local stakeholders and residents understand the communication process and the challenges associated with it. Rogayan and Dollete (2020) emphasize in their study that climate risk communication must consider the socio-economic situation and cultural context of local communities, as these factors significantly influence how messages are received and interpreted. They argue that risk communication is not just about information dissemination but should also encourage people to take proactive measures to mitigate risks. Individuals with prior experiences of disasters demonstrate higher preparedness levels, reinforcing the need for tourism sectors to educate especially first-time visitors (Kurata et al. 2023).

Nuriman and Hidayat (2025), on the other hand, discuss risk communication strategies in disaster-prone areas and highlight the importance of continuous improvement in risk management within tourist destinations. Their research indicates that interaction between locals and tourists in risk communication is crucial, as it fosters collective safety and enhances community resilience. Additionally, they point out that leveraging technology, such as mobile applications and social media, can significantly improve the accessibility and impact of risk communication.

In light of these studies, it can be concluded that improving risk communication in tourist destinations requires both strategic planning and a community centred approach to ensure that risks are recognized in time and their effects minimized. In relation to that, strategies and communication of risk mitigation will also add to the tourists' feelings of safety. Even during a crisis - a well-done crisis communication as well as existing and tested strategies of crisis management decrease the risks for combined threats for tourists and locals alike. Then it will increase the positive feelings that people encounter. If personal feeling of safety and coordination in the time of crisis is felt, tourists are more likely to return.

3 Study aims and objectives

The number of tourists in the Philippines is constantly increasing, yet at the same time, the region experiences numerous natural extreme events every year, which threaten not only locals but also tourists. The preparedness or the lack of it, affects both tourists and the community's survival in a crisis situation. It is important to assess preparedness and awareness so it can be considered how those could potentially be developed.

The aim of the study was to assess tourists' preparedness and awareness regarding natural disasters when traveling to the Philippines.

The main objective of the study was to assess tourists' knowledge towards natural disasters. The detailed objectives were 1) to determine how well tourists are aware of the prevalence and effects of natural disasters. Additionally, the objective was to 2) investigate what kind of preparedness preparations the tourists have made for natural disasters, and 3) to identify any gaps in tourists' preparedness and explore potential ways to address them.

The applied PICO model was used to help formulate research questions. Hossein, Jahanshahlou, Akbarzadeh, Zarci and Vaez-Gharamaleki (2024) emphasize that a good research question guides the design of the research, perspectives and the formation of conclusions. The research questions were designed to be clear and focused so that it is easy to understand what the study was trying to investigate. The final research questions emerged from the analysis of the data. The research topic was not unique, but it had not been studied previously in this context and aspect. The research questions formed provided data to be analysed. The research questions will arouse the interest of the readers and are in line with ethical guidelines. From different frameworks, the PICo model suitable for qualitative research investigating a specific population and phenomenon in certain context was chosen to help formulate the research questions (Table 4). Hossein et al. (2024) describe that classic PICO-model is used in nursing research when the aim is to understand and study the experiences of participants and their relationship to the intervention. However, in this study it is applied to deepen understanding of tourists' experience and the relationship to information and preparedness for natural disasters in Philippines so the PICo model was more suitable. PICo model guided collection of data and analyses towards the phenomena and context. In the PICo framework, **P** describes the population under study, **I** describes the phenomena of interest, and **Co** describes the context (Hossein et al. 2024).

Table 4: PICo model (Hossein et al. 2024)

P = Population	I = Phenomena of Interest	Co = Context
Tourists	Preparedness and Awareness of Natural Disasters	Philippines

PICo Question: What is the preparedness and awareness (I) of tourists (P) about Natural disasters (I) in Philippines (Co)?

1) How well tourists are aware of the prevalence and effects of natural disaster in Philippines?

2) What kind of preparedness preparations the tourists have made for natural disasters?

3) Are there any gaps in tourists' preparedness and explore potential ways to address them?

These research questions were used to guide the course of the study so that the main objective of the study could be reached.

4 Study methods

The research was carried out as a qualitative field study using thematic analysis, iterative process and an abductive approach. According to Grönroos and Vilkka (2011, 5), a researcher on qualitative field research locally conducting interviews is subject to personal contact. The researchers were influenced by the field that guided the layout of the questions and the acquisition of further information. Participating the weeklong Asia-Pacific Ministerial Conference on Disaster Risk Reduction (APMCDRR) 2024 organized by UNDRR in the beginning of the field work in Manila increased the researchers' previous competence in relation to preparedness. Conferences' lectures and workshops brought great insight into the research topic and during the conference, observations were made about, among other things, how preparedness is organized in the Philippines and what kind of challenges there may be in, for example, information transfer when distances are long and conditions are unstable. The program of the conference can be found in the Appendix 5.

After the conference the work at Philippine Disaster Relief Foundation's (PDRF) Emergency Operations Centre (EOC) was followed for a week. During that time, a great deal was learned about the distribution of corporate disaster relief and the coordination of relief efforts during the typhoon that occurred at the same time. This greatly increased the researchers' understanding of natural disasters, the assistance and aid needs and its delivery and

coordination in the Philippines. Working on the field doing research also guided the formation of actual research questions. The research was not completely objective, and the researchers' own experiences gave their own frames to the research context. (Grönfors & Vilkka 2011, 5; Philippines Disaster Resilience Foundation n.d.).

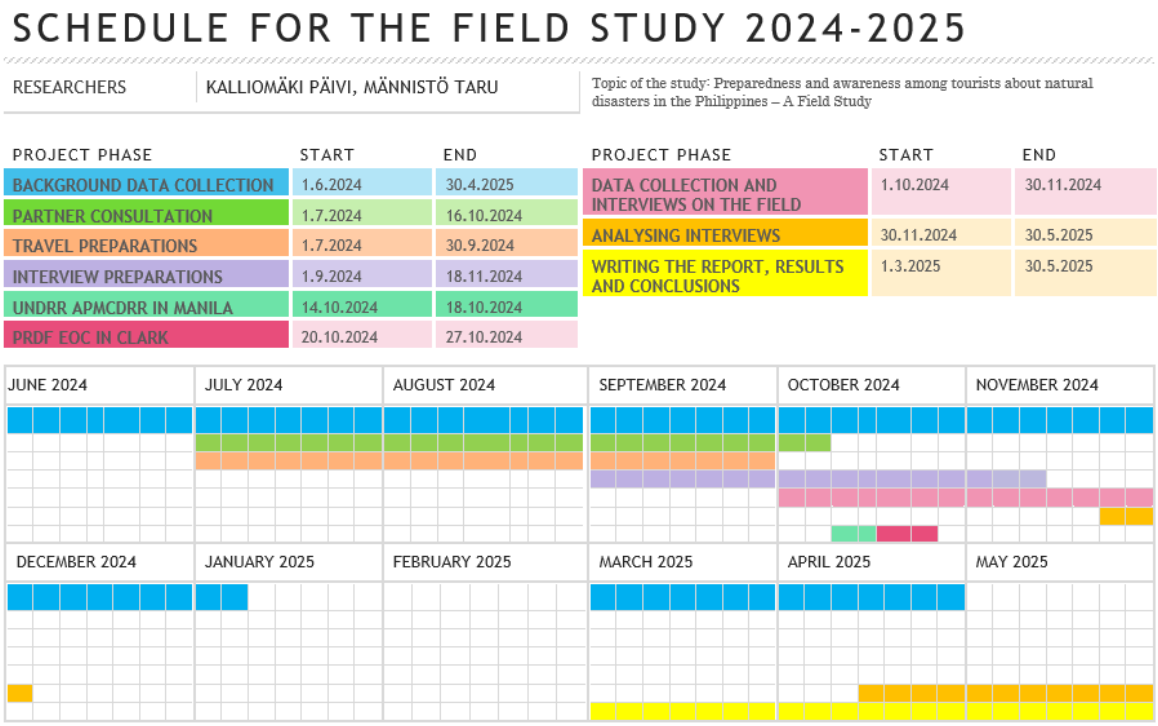
The study plan took shape as the research progressed and changed while still in the field which is typical for qualitative study describe Grönfors and Vilkka (2011, 24) and happened in this study when the focus group changed. The study schedule is seen in Table 5. Qualitative research is characterized using interviews to obtain data, and this study also used a phenomenological approach, aiming to find themes in the participants' responses and thereby understanding the meaning of their actions (Hirsjärvi, Remes & Sajavaara 2008, 162).

This field research originated from the degree program in Global Health and Crisis Management and the researchers' own interest in practicing field research abroad. The choice of the research problem was influenced by previous work on natural disasters and community resilience.

4.1 Study schedule

Grönfors and Vilkka (2011, 111) encourage researcher to report clearly the full schedule of the field research. The schedule of this study was planned flexibly from the beginning. The interviews were known to take place in the Philippines in the fall of 2024, which influenced the scheduling in many ways. The outline of the study was started in the spring of 2024, and the actual planning took place in June the same year. Consultation with the work life partner occurred in July, continuing through autumn until a meeting in the Philippines in October 2024.

Table 5: Schedule for the field study



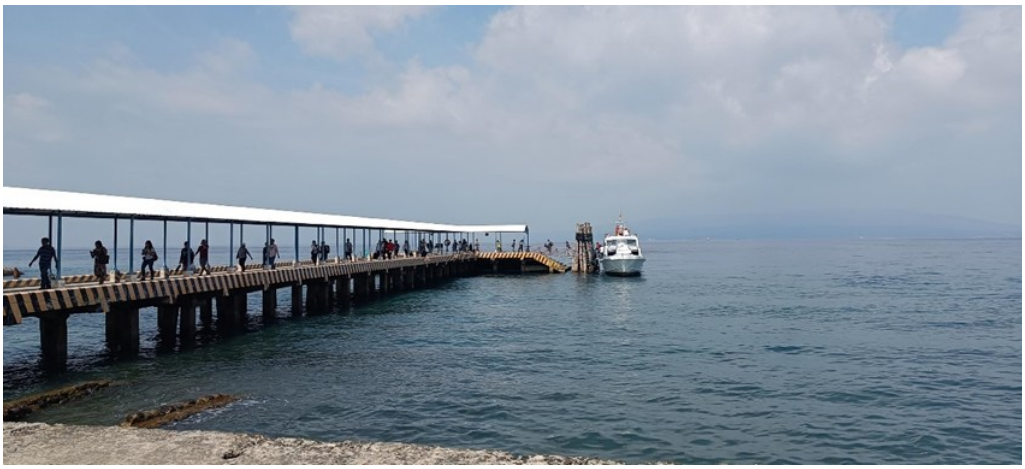
The information retrieval was conducted in September with the school's information analyst. The study's topic analysis presentation was held in October and study's plan presentation in November 2024. During these presentations, many good perspectives and new tips were obtained for the work from the student colleagues and the thesis supervisor.

The field section of this study was conducted in the Philippines from 8th October to 30th November 2024. The preparation of interview materials and the formulation of interview questions began in September and continued until early November. A meeting was held with the thesis supervisor on November 11th to discuss the progress and stages of the thesis. At this point, the change in the direction of the topic was discussed. Re-orienting the topic of the field study resulted in changes to plans and schedules with additional information searches, completely rewriting the interview questions and changing the target group of the study while already in the destination. This prolonged the schedule significantly.

The interviews were conducted during the period 18th – 29th November 2024. Transcription took place between December 2024 to January 2025, and the analysis of the interviews and the report writing was conducted between March and May 2025. During this period the progress of the study was discussed with the thesis supervisor and opponent several times.

4.2 Description of the study setting

The conduction of field study began from City of Manila where UNDRR's APMCDRR was participated and locations of Filipino culture visited. From Manila, a land transport was taken to City of Clark where PDRF's EOC was visited. The research continued in the island of Bohol, to where air transport was taken from Clark. Rest of the travels between islands was made by different kind of sea transports. Travel by sea was very dependable of weather as the vessels were not always very large as can be seen in the Picture 4.



Picture 4: Public transport between islands (© Kalliomäki & Männistö 2024)

Longer land transports at the island of Cebu were made by taxi. The stay in Bohol and the island of Siquijor were for familiarizing Central Visayas tourist setting and the test interviews were made at Siquijor and theory base worked on. The final reorganizing of the research and questions were made in Dumaguete. The interviews were conducted in an area with a lot of Western tourists and focused on Central Visayas: Moalboal in Cebu Island, Bantayan island, Camotes Islands and Cebu City and finally at Cebu Airport. Routes travelled related to this study can be seen in a map in the Figure 6.

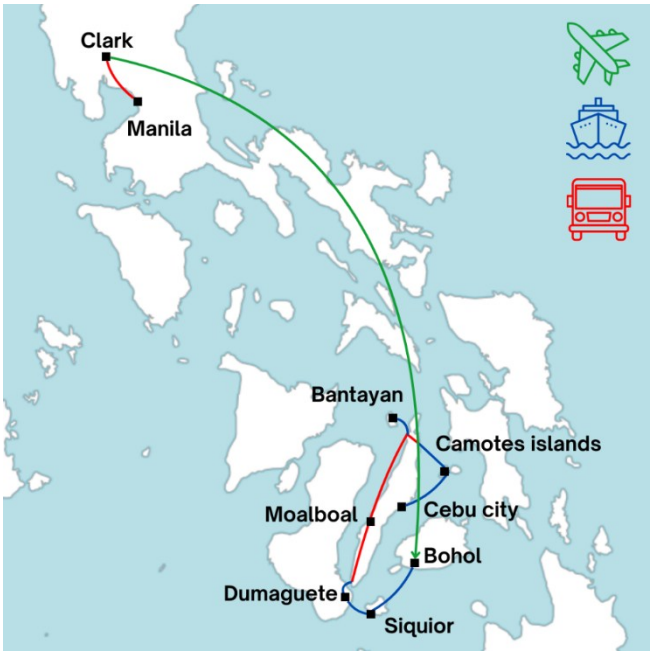


Figure 6: Locations and route of the field study (Map Ase/anup 2018; Modifications PK)

The eastern outer archipelago of Philippines was left out as it was a typhoon season and the researcher's safety were to be secured. The Palawan archipelago was omitted to allow the reasonable movement of researchers in areas where distances are long and travel slow. The Luzon area, where a lot of tourists visit, was left out of interview sites because of the many of the tourists are Koreans and, in addition, in the period the research was conducted in the Philippines six typhoons made a landfall in Luzon area. Southern part of the Philippines i.e. Mindanao was excluded as an interview area because the RMC (2024) did not recommend traveling there due to political unrest and the potential threat of kidnapping of tourists.

4.3 Study design

The study used the qualitative fieldwork method introduced by Martti Grönfors (Grönfors & Vilkka 2011) as a basis. When planning the study, a possible interesting research problem was considered, after which the actual field research was planned and prepared. After the study was carried out, the results were analysed, and a summary and conclusions were drawn.

The study used a qualitative abductive reasoning and partly inductive method. As Grönfors and Vilkka (2017, 19) point out, abductive reasoning always has a guiding idea, which is obtained, for example, from scientific studies read or even from an intuitive idea or assumption. In this study, the idea of preparedness and thus awareness or lack thereof began to form even before going to the field and while conducting the research while in the field. The very original idea was how tourists affect the preparedness of small service providers, and from that it then took shape as the target group changed, to the preparedness of tourists.

In this study, the assumption was the possible lack of preparation of tourists and the lack in finding out information in advance and independently and not related to natural disasters, which was reflected, among other things, in repeated basic questions in Facebook when searching for information for the trip. Preparedness naturally involves awareness of what needs to be prepared for. The abductive method was well suited to this study because it allowed all the small observations to be included and considered the fact that matters related to preparedness were considered important and progressed accordingly. Abductive reasoning can include unexpected facts, even if they are not fully representative, and then reflect them on previous theory and context (Grönfors & Vilkka 2017, 15-20, 87).

According to Grönfors and Vilkka (2011, 15) in the inductive method observations are made by proceeding from details to generalizations. The collected material was to be organized so that it could be classified or thematically described. Themes were sought from the participants' responses and thereby tried to understand the significance of their actions, as is done in the phenomenological approach (Hirsjärvi et al. 2008, 162). In the inductive methodology, different levels of generalization can be defined based on the results. In this study, the aim was to find reasons for why people act in a certain way, but also to form hypotheses based on the collected data.

During the preparation phase of the field study, practical arrangements were worked on and, according to Grönfors & Vilkka's (2011, 21) theory, the later explained methodological aspects were worked on. Consideration was given to what would be a suitable target group and how it could best be reached. In the early stages of the study, a working life partner who was supposed to help in reaching the target group was involved. This was supposed to ensure that the target group could be reached and that it was compatible with the research problem and fieldwork methods. The funding for the study was secured and is discussed in more detail in chapter 6.3. 'Description of project funding'. Since there was no external funder, the research could be directed based on the researchers' interests and observations of the phenomenon. The research was directed based on the researchers' interests and observations of the phenomenon. Increasing tourist safety and preparedness, and thereby potentially increasing community resilience, were also leading ideas when thinking about study research goals. As it is possible with qualitative field studies, this study also changed due to the influence of external factors, but since the study was designed to be flexible, this challenge was overcome even though the research problem and target group changed. (Grönfors & Vilkka 2011, 21).

In this study, field interviews were the only data analysed, although covert observation was conducted beforehand. The decision was made to use interviews alone to obtain information because tourists were not a unified, stationary community whose activities could be observed for practical reasons. It is also not possible to determine an individual's awareness or

preparedness other than by interviewing, when the situation is not acute in terms of preparedness (Grönfors & Vilkka 2011, 60-61).

The purpose of the focused observation introduced by Grönfors and Vilkka (2011) was applied and utilized when creating the interview framework. The aim was to find out how much information the interviewees already had, where they had obtained the information and why from that source, why they acted (or did not act) in a certain way, and what methods the interviewees had used to obtain the information (Grönfors & Vilkka 2011, 57).

4.4 Information acquisition

At the first stage a comprehensive information search was conducted to build the theoretical background for the research, focusing on the topics of natural disasters, tourism, and crisis management. Key search terms included "natural disasters," "risk," "safety," "community resilience," and "tourism," which were applied to various databases such as EBSCOhost, ProQuest Central, Statista, and CINAHL. The search specifically considered research related to Asia and the tourism perspective on community resilience enhancement. Using search terms, relevant research and literature were identified to support community resilience enhancement and improve tourists' awareness and preparedness in natural disaster situations.

During the information search, guidance from Laurea's information specialist was also utilized, which allowed for the refinement of database selection and search term precision to align with the objectives of the study. The search results were critically evaluated and selected to ensure the inclusion of relevant and high-quality sources for the research.

The literature and previous studies in the field were reviewed in advance, and additional information was sought while the study was still ongoing. There was little previous research on the behaviour of foreign tourists in this context, although previous studies found generalizable behavioural patterns that were utilized in formulating interview questions. New literature and article searches were conducted during the research as research problem changed and became more specific when the target group changed. Previous research did not limit the study, as no research had been conducted on this topic in the Philippines (Grönfors & Vilkka 2011, 30-31).

The same qualitative criteria as earlier were also maintained at new searches. Searches made from systems were not always successful and many good sources were accessed through article references. Statistical data referred to in the studies were also searched from the official websites of the Philippine Government, because the studies always referred to these data sources. A few tables were also used from the websites of the Philippine government statistics to better and more clearly describe some statistical data. Figures were also included to illustrate a culturally different way of publishing official statistical data, for

example Figure 1 and Figure 2. The websites of PAGASA and the Philippines Statistic Authority stated that all content is in the public domain unless otherwise stated, and due to the inoperability of the contact information, it was considered that the image can be published when the source is clearly indicated and there is no financial benefit from using the figures. The researcher's own images were used to increase the authenticity of the field research.

4.5 Data collection

This subchapter describes the different ways in which data was collected and how the interviews were conducted. The subchapter is divided into sections describing the selection of interviewees, the conduct of the interviews, and other data collection.

The interviews were conducted as semi-structured themed interviews. The interview question themes were based on the researchers' impression of the phenomenon of tourists' preparedness and awareness for natural disasters. The topic had been familiarized with in advance and there was great personal motivation for it. The interview frame guiding interviews was made to ensure that all the things that are desired in the discussions were exposed. The questions asked in the interviews were written down, but subject to the course of the interview, questions were presented in a different order or in slightly different formats, depending on what the interviewee had already said, whether clarifying questions were needed, or if a theme had not yet been discussed. It was also agreed that, based on the participants' answers, additional clarifying questions would be asked to obtain as broad a picture of the phenomenon as possible. There were no ready-made answer options and participants were guided through questions to interesting themes in the discussion. (Hirsjärvi et al. 2008, 203; Grönfors & Vilkka 2011, 63).

4.5.1 Selection of participants

The interviewees were selected from among Western tourists on site in the target environment using purposeful sampling, because the aim was to study specifically the tourists' preparedness and it was assumed that they naturally have relevant knowledge, understanding and experience of their own preparedness. When searching for interviewees, convenience sampling was also used, not all tourists met were interviewed, but those whose situation seemed to be most convenient for the interview. That is, they were met in a suitable environment at a suitable time without any interruptions to their daily activities. In some places, such as Bantayan and Camotes, only a few tourists were reached and everyone was interviewed.

In contrast to the PICo model, the concept of tourist was defined more precisely to make it easier to understand the 'community' of the research subjects. Western tourists were chosen as the target group so that their cultural and educational background contexts would be as

close as possible to the researchers' own understanding. The interviewees were sought to be chosen as extensively as possible from adults but otherwise all ages, genders and representing different nationalities. The interviewees did not closely belong to any of the same travel groups or nationalities, they did not intentionally stay in the same hotel or travel together except for those who participated in the interview at the same time. However, they belonged to the 'community' of Western tourists when compared to the previously presented phenomenological idea of community by Grönfors & Vilkka (2011, 10, 61).

The interviews and interview questions were in English, and it was assumed that Western tourists would also know English better than Asians. Korean and other Asian tourists were left out of the target group for formerly mentioned reasons. People living abroad but of Filipino background were also not included in the target group, as their approach to natural disasters in their former homeland is different from that of other tourists. Although, according to Grönfors and Vilkka (2011, 61), the same participant is good to interview several times, this was not possible in this case. Tourists were changing locations often and spent time in one destination only for a few days which made it difficult to reach them again. For that reason, all participants were interviewed only once. (SiteMinders 2025; DOT 2024a.)

A total of 13 interviews were conducted and 17 interviewees participated. The interviewees came from nine different Western countries: France, Germany, Romania, Russia, Spain, Sweden, Switzerland, the United Kingdom and the United States. The interviewees represented both genders, four women and thirteen men. All participants were adults, ranging in age from their twenties to their sixties. Some of the participants travelled alone and some travelled with a spouse or a friend. For those traveling with a spouse, some had a spouse of the same nationality as themselves and some had a local spouse.

4.5.2 Conducting interviews

Technically, two test interviews were conducted to try out the interview frame before the actual interviews began. Aim was to find out the duration of the interviews and to know how to use the necessary interview techniques and to practice the interview situation. Consideration was given to the findings from pilot interviews and pre-discussions with tourists, and questions were formulated according on these. The original interview frame was modified slightly after the pilot as it was noticed that there was a need for advanced additional questions and interviewers should ask even more about 'why' and 'how' questions around the theme. Some of the questions were modified to be even more clearly open-ended to get the most in -depth answers and discussion (Grönfors & Vilkka 2011, 27-63).

The interviews were carried out by the researchers, who both were present at all interviews. One of the interviewers was mainly responsible for leading each interview. One interviewer took care of the operation of the interview recorder at the time and, if necessary,

supplemented the actual interviewer's questions with additional questions. In interview situations, the roles were changed so that both took turns leading the discussion and the other acted as an assistant. The interview techniques did not change much as the interviews progressed, and the style of the interviews remained the same (Grönfors & Vilkka 2011, 27-63).

The interviews were conducted in the Central Visayas region of the Philippines. Test interviews were conducted on the island of Siquijor, after which the actual interviews were conducted in five different locations in the Central Visayas region: town of Moalboal, Island of Bantayan, Islands of Camotes, Cebu City and Cebu airport. The locations and the routes of the field work can be seen in the Figure 6.

When going into the fieldwork, the researchers' appearance was also considered. According to Grönfors and Vilkka (2011, 30), the dressing of the researchers is significant depending on the target group. Since tourists were being interviewed, normal travel clothes could be worn. This also allowed showing of belonging to the group. When the interviewees were economically and socially 'in the same group', the interview situations were relaxed and liberated, and there were no hierarchical differences that could potentially hinder the interviews. If in the study had interviewed, for example, authorities, the clothing should have been more formal. This was considered when obtaining background information in participating in the APMCDRR (UNDRR 2024) and visiting the PDRF (n.d.) Emergency Operations Centre, for which more formal clothing had been prepared. (Grönfors & Vilkka 2011, 30-31; UNDRR 2024; PDRF n.d.).

The interviews were mainly conducted in the afternoons or evenings, because it was challenging to reach the interviewees during the day due to their daily activities. The interviews were held in informal environment, choosing a quiet place. The interview environment was controlled as highly as possible, but usually the researcher met the interviewees where they were rather than ask them to move to a different location. For this reason, most interviews were conducted in restaurants or on the beach, one was held at the airport. Interviews were always conducted when and where the opportunity arose and the time was suitable for the interviewees (Grönfors & Vilkka 2011, 63-77).

When asking for consent to the interview, the researchers first introduced themselves to the interviewees, who were first told orally about the purpose of the study and if the interviewee was willing to participate in the study, Participant Information and Participant Consent was discussed with them. The form in question can be found in Appendix 1. To create a confidential relationship with the participants, they were openly informed about the purpose of the research, genuine interest was shown in them, efforts were made to demonstrate that the promise of anonymity would be kept, and the research problem was presented in a

development-friendly light (Grönfors & Vilkka 2011, 32-63). A more confidential relationship was established with two participants over several social meetings before committing to the interview. The other two interviewees had been met earlier at another location, so the threshold for their participation was lower (Grönfors & Vilkka 2011, 32-34, 111.) A few of the participants in the study were initially somewhat suspicious of participating in the interviews, but when the purpose and nature of the study were explained, their opinion changed and they were willing to take part (Grönfors & Vilkka 2011, 44, 111). These participants came from Eastern Europe, so it is possible that their social background may have played a role in this initial attitude. Only one of the people asked for an interview refused, citing permanent residence in the locality and being busy at the time. All interviews were recorded with an interview recorder, which was placed on a table or other surface during the interviews so that the interviewees could see it.

The total duration of the interview material was 4 hours 44 minutes and the average interview lasted 20 minutes, the shortest interview being 12 minutes 30 seconds and the longest 38 minutes 13 seconds (Table 6). The aim was to limit the duration of the interviews so that the interviews were not too short and superficial, but they did not stretch too long either. Most of the interview subjects were on vacation, and therefore the interviews were not unnecessarily extended to avoid boredom among the participants. (Grönfors & Vilkka 2011, 63). Hirsjärvi et al. (2008, 201) are critical of shorter interviews, stating that interviews lasting less than half an hour are not worth doing, as the same information would be available with questionnaires. However, even in this schedule, the researchers were able to ask more detailed questions than what a questionnaire would have provided. The situations also often continued as a free-form exchange of information between the researchers and the participants, including sharing additional information.

Table 6: Summary of the interviews

Code	Date	Place	Length	Code	Date	Place	Length
V1	18.11.24	Moalboal	19:17	V10	24.11.24	Camotes Islands	38:13
V2, V3	20.11.24	Bantayan	18:50	V11, V12	26.11.24	Cebu City	17:21
V4	20.11.24	Bantayan	17:84	V13	27.11.24	Cebu City	23:11
V5	21.11.24	Bantayan	18:43	V14	27.11.24	Cebu City	24:01
V6, V7	21.11.24	Bantayan	20:22	V15, V16	27.11.24	Cebu City	13:59
V8	23.11.24	Camotes Islands	19:14	V17	29.11.24	Cebu Airport	19:11
V9	23.11.24	Camotes Islands	12:30				

4.5.3 Additional data collection

In addition to the formal interviews, the researchers made their own observations of tourist behaviour by following two different Facebook groups before, during and after the trip. This covert observation was also used when examining the research phenomenon. Grönfors and Vilkka (2011, 59) describe this as part of participatory research. In this case, the researchers participate in the lives of the subjects as members of the community without others knowing about the research purpose of participation and thinking of the researcher only as an ordinary participant in the group. This was done by following the discussion about the possibility of natural phenomena's, weather and collection of background information in the Facebook community, to which the researchers also belonged to. Because covert observation is ethically questionable, no comments have been taken from the Facebook groups, and no individualized information has been recorded. Only behaviour related to the phenomenon was observed at a general level. Covert observation guided the formation of the research questions, the aim was to find out why people act in a certain way and whether the interviewees have acted this way (Grönfors & Vilkka 2011, 60). The Facebook groups followed were 'Travel to the Philippines', which has 126,000 members, and 'Philippines Travel Tips', which has 81,000 members. By following these groups, a general idea of the phenomenon and tourists' preparedness was obtained.

As Grönfors and Vilkka (2011, 76) urges, field notes were made about the phenomena, for example, about the questions tourists ask on Facebook, but those were only used to give general observations of the phenomenon. In addition, a field diary was kept monitoring the

process of study and save researchers' own comments. The field diary included observations made at the site, observations of test interviews, what kind of interviews had been conducted and in what location, where the researchers moved and what they did related to the research, as well as thoughts on the course of the research and decisions about methodology, reframing the topic, and meetings with the supervisor. In addition, observations of how people behaved in the destination documented. A few informal discussions were also held with local service providers, residents and tourists, which also gave an idea of how locals working in tourism are prepared for natural disasters and these were recorded to field diaries.

Personal field diaries were completed in the evenings after the actual situations and after the field trip. Most often, it was not possible to fill out the diary at the exact moment of the event. Field diary entries were coded based on dates, although Grönfors and Vilkka (2011, 81) do not consider this to be the best possible option. In this study, this did not matter, as the collection of the research data to be analysed focused only on interviews and there was no continuous observation at the site, so it was acceptable if there were 'blank' days between diary entries, nothing had been forgotten to be recorded (Grönfors & Vilkka 2011, 76-81).

4.6 Data analyses

Grönfors and Vilkka (2011, 85-94) talk about abstraction, by which they mean organizing data so that the conclusions drawn from it can be transferred to this study. The abstraction is also related to the researchers' own experience of the problem they are studying. Relations and experience about the topic are explained in the beginning of Chapter 4. Researchers had some abstract idea of the target group and the strategy with which to approach the collected data, how to organize, examine and analyse the data to form some kind of logical overall picture. (Grönfors & Vilkka 2011, 84-86).

Some analysis took place already during the research process and fieldwork (Grönfors & Vilkka 2011, 22-23). For example, there was no information about weather applications in use when the research was in the planning stage. While conducting the field study and encountering them, weather applications were included in the research and participants were asked about their use.

For analysis purposes all interviews were transcribed in their entirety because they were of reasonable duration and there was not an impossible amount of material (Grönfors & Vilkka 2011, 91). Transcriptions all the interviews were listened to again and the transcription was checked for verbatim for accuracy. It was decided that the most effective way to do the analysis was thematic content analysis.

In this analysis of the results of the field study, Nowell, Norris, White, and Moules's (2017) theory of qualitative thematic analysis was used, in which they used Lincoln and Guba's (1985) criteria for trustworthiness (Table 7). Although the structure presented for phases of thematic analyses by Nowell et al. (2017) was tried to be followed in the chronological order, in this study too, as Nowell et al. (2017) describes, the process was repeated and when reflecting at different stages and sometimes it was necessary to go back and do the stages again, which also enhanced the credibility and confirmability of the analysis.

Table 7: Phases of thematic data analyses adopted from Nowell et al. (2017) and data analyses in this study

Phases of thematic analyses (Nowell et al. 2017)	**Means of Establishing Trustworthiness (Nowell et al. 2017)**	**In this field study**
Familiarizing yourself with your data	- Prolong engagement with data - Triangulate different data collection modes - Document theoretical and reflective thoughts - Document thoughts about potential codes/themes - Store raw data in well-organized archives - Keep records of all data field notes, transcripts, and reflexive journals	- Data was collected from interviews with audio recording - A field diary and field notes were kept that included the process of the work - The collected data was read several times - Themes were initially discussed and outlined - Personal perspectives on coding were considered - Common cloud folder was created for study documents
Generating initial codes	- Peer debriefing - Researcher triangulation - Reflexive journaling - Use of a coding framework - Audit trail of code generation - Documentation of all team meeting and peer debriefings	- Interesting and recurrent matters were excavated from the data independently by both researchers - Initial production of codes was made by underlining the text - During the data coding the researchers regularly reflected on their observations and recorded in a field diary if necessary - All data was read through completely by both researchers several times - The data that was collected for background purposes was documented to the research report - Approximately half of the data was double-coded - Coding framework was shared between researchers - Please see Appendix 6
Searching for themes	- Researcher triangulation - Diagramming to make sense of theme connections - Keep detailed notes about development and hierarchies of concepts and themes	- The themes outlined in the data were refined together and the subthemes emerged from the codes - Themes were formed with inductive process from raw data, and with abductive approach based on intuitive understanding and familiarity

		- Subthemes and a few 'loose' codes began to be noticed - Main themes began to form from subthemes - The approach was a less structured manual method - Everything in the process was documented as accurately as possible - Relationships between themes were sought - All data was kept together at this stage - The researchers continued to code independently, combining and discussing their findings
Reviewing themes	- Researcher triangulation - Themes and subthemes vetted by team members - Test for referential adequacy by returning to raw data	- Coding was refined - The relevance of themes was assessed, fine-tuned and codes were reorganized and re-divided - The raw data was visited constantly - Researchers exchanged ideas regularly and worked on a common shared file
Defining and naming themes	- Researcher triangulation - Peer debriefing - Team consensus on themes - Documentation of team meetings regarding themes - Documentation of theme naming	- Clear names were assigned to the themes - Themes were examined in relation to the written background data and research questions - Peer-review was requested from the opponent and feedback was documented - The entire research was reread by both researchers - Themes and their content were finalized
Producing the report	- Member checking - Peer debriefing - Describing process of coding and analysis in sufficient details - Thick descriptions of context - Description of the audit trail - Report on reasons for theoretical, methodological, and analytical choices throughout the entire study	- Detailed analyses of the themes found, were written open into the research report - The report was written when analysis was done in a timely manner, the entire research process was written out - Themes were raised as key results, all were discussed - The report was confirmed to be reliable and trustworthy - The participants' voices were sought to be heard, quotations from raw data were added to the report - The results and literature discuss with each other in the report

During the analysis, the relationship between the research questions and the data as well as the results was considered and considered throughout the analysis. Especially descriptive answers that tell why, how, and what emerged from the findings of the study. These findings were not only descriptions of what was happening, but theoretical background of the research

topic made sense of these findings on a deeper level (Bailey 2018). During the analysis, a clearer picture of the researchers' preliminary assumption emerged. In addition, the dispersion of themes revealed clear inconsistencies in the clustering of responses among the themes as can be seen in the Table 8. These clusters were considered as the analysis progressed, and they were also highlighted in the results.

Table 8: Thematic breakdown of clusters

	Preparedness	Awareness	Information gathering	Perceptions	Improving preparedness
Information	82	117	91	24	22
Source	0	0	106	0	0
Feelings	7	0	5	34	7
Assumptions	0	13	0	14	0
Attitude	6	6	8	93	1
Knowledge	22	45	0	22	0
Weather	25	65	59	0	11
Natural disaster	36	61	0	37	11
Items	95	0	0	0	0
Safety	11	25	5	0	0
Reliability	11	20	9	0	0
Future measures	6	0	0	0	40
Desired information source	0	0	0	0	41
Consideration	16	26	0	6	0
Location	0	30	0	0	0

4.7 Data management

The data management plan, which was developed during the study's design phase and later updated, can be found in Appendix 4, and it describes in detail the issues related to the processing of data for this study. In addition, a few withdrawals related to practical work have been recorded here.

Field diary entries were stored behind two-factor authentication in the researcher's personal cloud service at the educational institution, which was inaccessible to others. This meant there was no need to worry about the notes being lost, for example, if the computer failed. Only researchers had access to their personal field notes. (Grönfors & Vilkka 2011, 76-81)

Consent and information documents were not given physically to the participants, as during the field research carrying papers and printing them would have been challenging. The interviewees received the ‘Participant Information and Participant Consent Form’ by scanning the QR-code from the interviewer's phone, which then opened the form on the interviewee's phone. The participant discussed his/her consent to engage in the interview with the researchers, after which he/she verbally stated consent to participate in the interview to the recorder. Mobile scanning of the QR code cannot be traced and thus the participants' identity remains secure. The QR code can be found in the Appendix 2.

For recording the interviews, a battery-powered SONY ICD-PX333 interview recorder was used. It had no access to Wi-Fi and was connected to computer with physical wire. Interviews were transferred to computer with wire and stored in a cloud folder in the researchers' organization, which could only be accessed by the researchers after two-step authentication. The interview recordings were first transcribed using the artificial intelligence-based Microsoft Clipchamp program, which was recommended by the Laurea University of Applied Sciences service desk as reliable and secure. After transcription, the raw data was coded during listening so that no identifying information about the respondents, such as their country of origin or possible names, was left in the material.

5 Research results

This chapter presents the key findings of the field study, categorised into five main themes that emerged from the interviews: Preparedness, Awareness, Information gathering, Perceptions and Improving preparedness. The results provide insights into how tourists perceive and approach disaster preparedness while travelling in the Philippines.

Participants described beautiful beaches, diving spots, sunshine, remote islands and affordability as key factors when choosing the Philippines as a travel destination. Two interviewees mentioned that they had worked while on vacation. A few were meeting their local spouses. The risk of natural disasters did not play a major role in travel decision making, although a few had considered them. Emerging of new themes was anticipated and expected. These areas, seen in the Figure 7, are the ones where there is a cluster of answers.

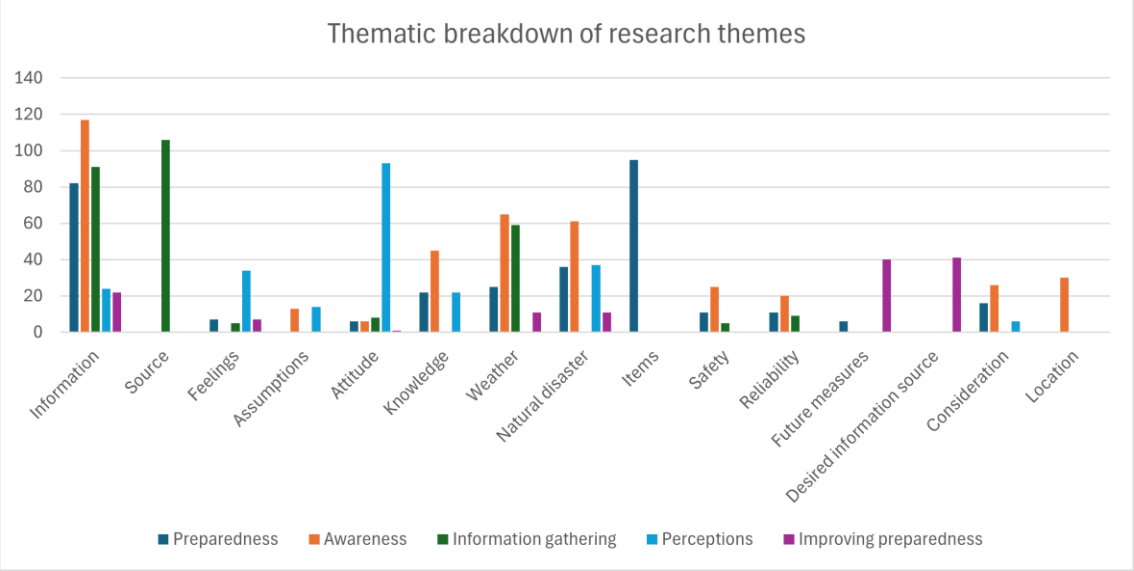


Figure 7: Thematic breakdown of the emerged themes from data analysis

In themes of Preparedness, Awareness and Information gathering the answers are clustered enough to indicate that participants have thought that these subthemes; Information and Source, are important to the main themes mentioned above.

Also, other focused cluster areas in Preparedness and Awareness are in subthemes of Weather, Natural disaster and Items. The before mentioned themes also apply to the main theme of Awareness as is presented in Figure 7.

The main theme Perceptions represents both a clear area of focus of the participants as well as aspects that they consider less important based on the interviews. In Perceptions, the emphasis is on feelings, attitudes, and assumptions. The interviews revealed that the participants presented very few ideas related to safety, for instance. This observation supports existing research by Estrella (2025) and Cahigas et al. (2023), which addresses tourists' perceptions of risks and safety, as tourists' awareness is strongly shaped by various factors, such as personal experiences, information from the media, and their general risk perceptions. For many participants, the perceived risks were limited solely to topics such as theft or traffic accidents, overlooking natural disasters or the need to prepare for them.

Main theme Future improvements brought up a focus on what the interviewees considered important in this theme. As presumed, the data clustered around subthemes of desired information source as well as future measures. This indicates that the participants had a significant number of thoughts and ideas when questioned about how and with what to improve the current status quo. Examples of these were that in this digital age, information could reach more if they were in ´small bites´, such as YouTube videos or other social media platforms.

A few of the participants in the study mentioned that they themselves or someone close to them had experienced some kind of natural disaster while in the Philippines on this or a previous trip. None of the travellers mentioned experiencing an earthquake during their trip, even though the Philippines experiences earthquakes of varying intensity about twenty times a day (Volcano Discovery 2025.), and some did not even know about this. A couple said that they had avoided a typhoon during their trip, and one even said that she had slept through one. This suggests that tourists had either not experienced typhoons due to short stays or had proactively moved to safer areas.

Considering the results, many people know about typhoons or natural disasters, but they don’t realize the severity and unpredictability of natural events and hazards. Because of this, several participants said that they would prepare better if it were necessary because a typhoon would hit and they wouldn't have time to get away from its way. However, in this kind of acute situation, how and where will they get the supplies from, was left unsaid. Most participants trusted that they always had enough information, either from the channels they

followed or from locals, that they had time to avoid the incoming storm, go to a safe place or to acquire preparedness equipment's if it seemed inevitable that it would be needed. As mentioned earlier, during the field research, the Philippines had six typhoons, the effects of which researchers themselves were able to avoid by good travel planning and following weather reports. This indicates that all kind of tourists could avoid getting caught in major storms in case they gather enough updated information and take precaution measures such as changing locations in time.

As the study settings in this field research were informal and interviews were semi-structured, despite planning questions and themes beforehand, the interviews went on as a relaxed conversation, communicating both ways. The researchers learned new things from the participants and the participants gained information, knowledge, awareness and some preparedness measures, such as useful apps, during the interviews. The interviews were eye-opening for all the participants. Conversations made participants look at their knowledge, attitudes, preparedness- and awareness-levels in new perspectives. During one of the interviews the participants asked from the research for more information about Philippines safety situation regarding natural disasters. As this participant was in the very beginning of his long trip, the information gained during and after the interview hopefully, got him some support and was an eye-opening conversation.

Furthermore, the participants were asked about travel notification procedures, like the ones used in Finland. Only one of the interviewees had completed such a notification, while in most interviews, the researchers had to explain what it entails, and some participants were unable to confirm whether such procedures were in place in their home country. Only a couple could confidently state that such a procedure exists, but none of them had implemented it. However, few of the interviewees contemplated the matter and the possibility of making such a notification, concluding that they could or would do so if something would happen. This prompted a significant amount of discussion and reflection during the interviews, mostly since this is a general way of thinking, so governments don't have the actual number of their residents in for e.g. natural disaster affected area. Some of the interviewees believed that such a notification would be extremely beneficial based on voluntary participation, and one further considered that this could also serve as a channel for information. It is noteworthy that all of these interviewees were from the same country, and each of their interviews was conducted as individual interviews. However, each of the participants had someone close to them that knows where they are located, even if the travel notice to the government was not a familiar thing.

Phone connections break during typhoons, therefore informing the government of the origin country should be done beforehand, which is hard to accomplish globally because some participants mentioned having trust issues for their country of origin. This was evident when

discussing the travel notification, a couple of participants expressed a clear distrust in communicating to the authorities in their home country about where they were traveling to or their exact location in a foreign country.

5.1 Preparedness

A bit over third of the participants indicated that they had not made any preparations for a natural disaster. Nevertheless, it emerged that each interviewee possessed at least one or more items or objects that could be beneficial in an emergency as seen in Figure 8. It is noteworthy that over half of the participants said that the mobile phone was the most important item to take along. They justified this by saying that the phone contains all the information, including travel documents, contact information, and the ability to search for information, so it is worth taking it with you even if it is not working at that moment. Additionally, half stated that they would also take their passport, while only some of the participants mentioned cash, which is the most used method of payment in the Philippines. Each of these three matters are quite useless when a natural disaster strikes, for example if you must sit on the roof of your house for three days due to flooding, which was used as an example in the interviews. Participants believed cash would help in emergencies, but access to supplies or functioning cash withdrawal machines during disasters may be limited. No one thought about the fact that at that point, perhaps there is nothing to sell, no access to supplies or that there are a lot of people in need of help.

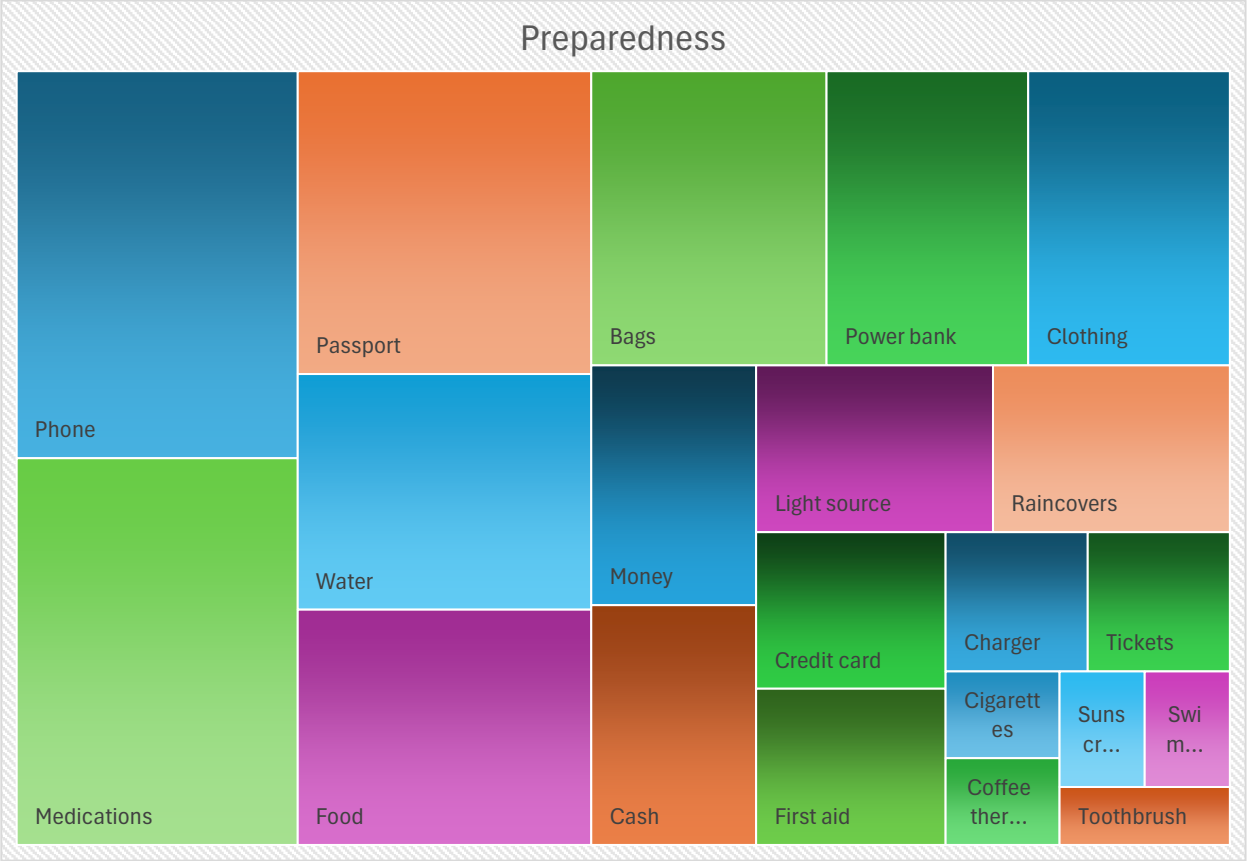


Figure 8: Preparedness items that the participants have with them and would take in case of emergency

For most participants water and food were at the top of the order of importance. Same number of participants said they had some kind of food or snacks as said that they had water, yet these were not always the same persons, only three had both. Others were not prepared at all for disruptions in access to food or clean water. One participant stated that the water is the most important thing. Other preparedness methods mentioned on top of supplies included were getting in good shape, making informed decisions, such as planning safe travel destinations by following storm movements, and taking care of one's health with vaccines.

5.2 Awareness

Results show that almost all the participants had at least some knowledge about natural disasters in the Philippines. From the 17 participants only one didn't have any knowledge or had not sought information of the subject of natural disasters, the same participant was also the youngest among the interviewed individuals and had done the most extensive background work on the Philippines in general. From this, it can be concluded that there is little talk about natural disasters on social media and other informal information sources.

Over half of the participants were aware of different dangers related to natural disasters but also political disturbances and the dangers in traffic or with animals like stray dogs or snakes and jelly fish. Slightly less than one quarter of participants said that they didn't want to know anything about natural disasters because too much negative information could ruin their vacation. However, this information is somewhat contradictory considering that majority of the participants knew at least something about typhoons and several were currently following forecast about possible typhoons. While discussing with the participants one question was 'What do you know about natural disasters in the Philippines?', for this question third of participants said that they don't have knowledge of the subject. Nonetheless, when the interviews continued, they had even some kind of information about for example typhoons or earthquakes related to natural disasters, excluding the one of the participants who didn't have any information at all.

In the two months of field research time at nine different locations and travelling in several different transportations, the researchers themselves saw only a few warning signs for example tsunami prone area or for evacuation centre location. Only one of the eleven accommodations had visible warnings of natural events or emergency instructions, and only one accommodation provided advance information about the preparedness measures needed in a more remote location. This also came up in the discussion during the interviews. Participants recalled seeing some signs somewhere and few had seen an evacuation centre or its location sign. Only few of participants mentioned that they would know where to go and find the information for the location of the evacuation centre. This is an interesting point as especially earthquakes or tsunamis come with an extremely short warning time. Therefore, in such a situation, one should know what to do and where to go. Additionally, considering the administrative divisions of the Philippines, many barangays have one or more evacuation points, so it could be assumed that tourists would see signs indicating these locations or would receive instructions in case of emergencies.

Picture 5: Evacuation sign at Bantayan island (© Kalliomäki & Männistö 2024)

As the Philippines belongs to the ring of fire, this came up in the interviews, so this can be interpreted as a good base knowledge of natural disaster awareness. As one participant mentioned besides this, is that the Philippines have so called ´typhoon alley´ where typhoons which are formed in the Pacific Ocean, have a clear route through the country and proceed further.

5.3 Information gathering

The participants mentioned as an information source 26 different platforms or ways as seen in Figure 9. The most used ones were communicating with locals, international and local news, Google and recommendations from travellers. Many participants relied on local knowledge. In the event of an emergency, they said they would ask their spouse, the hotel manager or staff, or other locals who were there or nearby for help.

YouTube was considered a reliable source of information, and many participants had looked there for information about the travel destination but also for news. More official sources that the theory also backed up, especially for obtaining weather information, were WindyApp and PAGASA, which many said they followed. Other sources of information worth mentioning were Google Maps, Apple Weather, ChatGPT, and perhaps not so reliable sources like Wikipedia and movies. Many also said they followed various travel blogs written about the Philippines. Several participants reported that they obtain information from social media channels and evaluate and cross checked the reliability of the information, but they preferred information from people who have been to the destination.

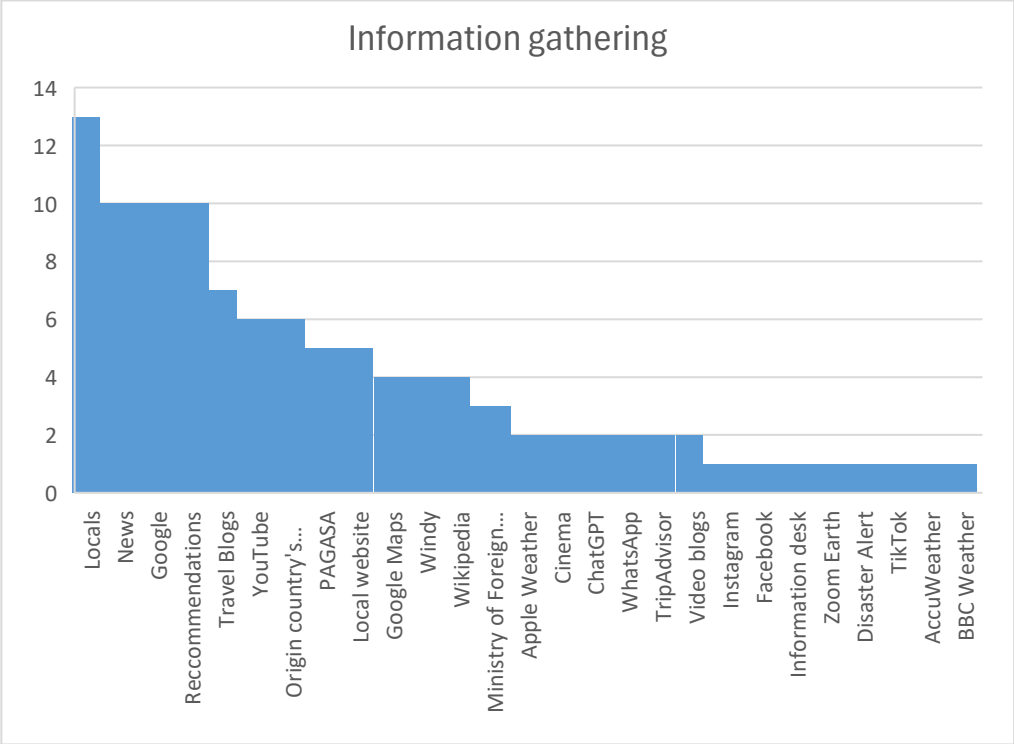


Figure 9: Information sources participants used

Over a half of the participants made sure that their information either received or obtained, was indeed accurate. Little less than half showed trust to locals and the information received from them, although one of the participants strongly believed that the information provided by locals cannot be trusted because they are not very intelligent in their opinion. However, with using locals as an information source, language barriers may occur. When language barriers may arise, it also raises questions about the reliability of the information. In a couple of interviews, it was revealed that the participants had received a text message on their phone in Filipino and asked locals to translate the message. In both cases, the local translation did not match the translation the participants themselves later received from the internet.

While staying in the Philippines, almost all participants said that they looked at the weather forecasts, but a participant commented that she checked weather only once and this was for the reason to get a nice photograph for social media.

> No, only yesterday I look weather before I want to post one photo with good weather because in "Ö" now its cold […] Yeah, it's snowing, and I want a good post. Only one day I looked weather. (Participant V7)

From the interviews a piece of information emerged from two friends' narratives of a national WhatsApp group maintained by volunteers representing their nationality and living in the

Philippines. These participants relied heavily on the information they received from this WhatsApp group but used also different sources during their trip.

Several interviewees had obtained information from their home country's government websites, but one said that the information was pessimistic and that they could not go anywhere based on it. Government travel advisories were considered reliable sources, but travel decisions were not made based on them and more relied on information received from travellers through various other channels, which was supplemented by news, for example.

5.4 Perceptions

From the analysed material one of the emerged subthemes were attitude and again analysing the material there emerged for example, trust or lack thereof, belittling typhoons and one's own knowledge, indifference, and relaxation. Some of the interview participants had an ignoring attitude about typhoons and searching for typhoon related information and less than half had assumptions about typhoons or other travellers' knowledge about typhoons. These assumptions were, for example, that everyone knows about typhoons or

> Typhoons, they don't really cause a lot of problems, I don't think. (Participant V4)

The research shows that again a bit less than half of the participants said that even though they acknowledge natural disaster and typhoon risks, it doesn't stop them from coming to the Philippines and enjoying their holiday. Third of the participants had the same kind of relaxed attitude and they pointed out a very important observation, to quote

> What happens, happens. (Participant V2)

> But we don't know if there's a tsunami or an earthquake or if the volcano erupts. So, umm, you can't, take measures for everything. So, we just accepted that there's this risk. (Participant V5)

When asking clarifying questions from the participants about why they had not prepared better, some said that they have no fear about typhoons or natural disasters. The same attitude emerged in another part of the discussions with the other participants, so it can be concluded that half of the don't feel afraid.

Participants also have assumptions about finding resources in a natural disaster situation like the following:

> Would have an idea where the, where would be, where the location would be, because I know that would be a hotel. So I know that they would have food, water there. (Participant V4)

> I don't have food, which is probably quite silly, but then food is quite accessible. And I have cash, because money talks. (Participant V10)

One participant even contemplated out loud that

> How likely is a typhoon to happen in November? (Participant V1)

Few of the participants valued life in the proportions that they acknowledged for the most important thing being their own or loved one's life. One participant stated that his wife is the most important thing to save in case of emergency. The appreciation of life and health-related travel preparations was also reflected in the fact that vaccinations were seen as an important part of preparedness. Several participants said this when asked how they had prepared for the trip. Two of the participants mentioned that someone close to them had experienced a typhoon before. That is, they had personal awareness of the matter. The other didn't have it influence his preparedness behaviour, but he acted as fatalistically as before. For another participant, it had raised his preparedness level so that he thought more broadly about, among other things, the durability of buildings and alternative water sources. This participant also had his own health challenges and had very carefully investigated where it was worth being, where and how to evacuate, and where it was easiest to get help if needed. Of course, these were related to him personally, but on a general level, the participants had not given much thought to or been prepared of their logistics during a natural disaster. Many had experience that transportation could be difficult during a natural disaster, but they did not have any specific plans or information on how to act.

Overall, the participants' attitudes ranged from indifferent to ignorant or fatalistic. Either they had not looked for facts about natural disasters, even though they were aware of their existence, or they did not want to think too much about the risks, believing that the probability of being at the mercy of a natural disaster was small. They did not want to ruin their vacation by worrying too much and would rather enjoy beautiful and pleasant things that bring pleasure than worry about a possible future. Lessons were learned from familiar locals who did not worry too much or took possible warnings superficially or thought that they would only act when there was some reason to do so.

5.5 Improving preparedness

One important part of this research was to identify any gaps in tourists' preparedness and explore potential ways to address those gaps. From the interviews emerged that almost third participants might consider investing in their own preparedness either in the future or is already contemplating such an investment now. A woman travelling solo said that

> I don't feel underprepared. (Participant V1)

When the interview continued their thoughts on the subject changed, leading them to consider the possibility of investing for e.g. in a seawater filtration system in the future.

The interviewees were able to reflect on what they might need for future preparedness, primarily in terms of materials, such as a flashlight and batteries, survival box or first aid kit, and in a bigger scale for longer-term housing purposes e.g. star link or access to fresh water like own well or a generator.

Another distinct comment from the interviews regarding future preparedness emerged from a couple-interview with two friends. When asked towards the end of the interview what could help in better preparation, one of the participants pondered finally

> But I guess if we knew a typhoon was coming, and we couldn't go away for any reason, then I, I guess we would prepare ourselves, like drinking water, cans, things like that. (Participant V15)

However, this might be too late to start preparing at a stage when one can no longer leave the location or for example, a typhoon has already hit the area. The participants in question had been on vacation in the Philippines for a month, engaging in what is known as island hopping. They had been monitoring the weather and typhoons from reliable sources during the trip, so they were also aware of the four typhoons that occurred during their journey that far, and in response, they had changed their travel plans to avoid them. Therefore, it can be concluded that even though they were aware of natural disasters, including typhoons, and monitored these events, nonetheless they were not prepared or had not considered preparedness for a situation that could arise very unexpectedly. A somewhat similar observation was noted in other interviews also; although the participants have knowledge about the topic and may potentially keep track of the situation, they may not necessarily have any thoughts on preparedness or on how one should be prepared in advance.

As a result, several different channels were identified from the desired sources of information, a total of 17 different ones as seen in Figure 10. Among these, social media in general and its various channels emerged, in particular YouTube and various peer group channels such as travellers' blogs were mentioned. Information from peers was perceived as reliable and not as boring as, for example, information provided by governments. However, more official channels were also desired, particularly linked the e-travel governmental form, which all arrivals must fill out anyway. Participants suggested that information be provided by the local government, upon arrival and in a way that it would not have to be searched for and could not be avoided. Early warning applications were also mentioned as were visible signs and posters.

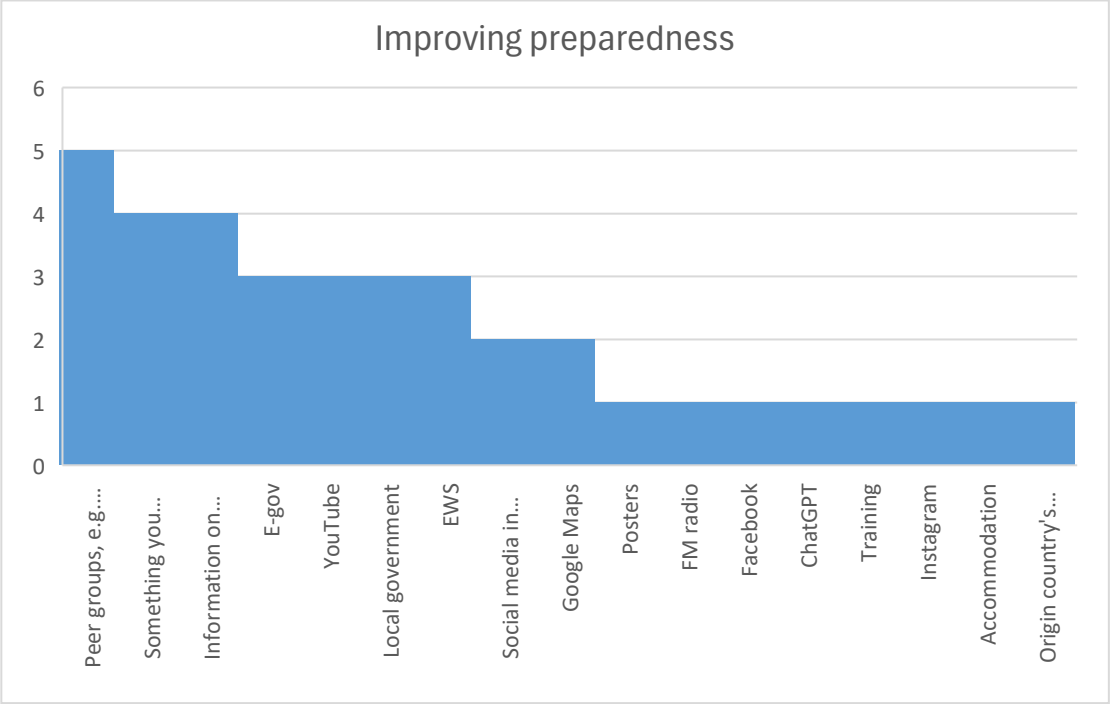


Figure 10: Information sources participants desired

The results revealed two noteworthy perceptions that are, however, closely related to the desired source of information. One of the themes that emerged was that participants wanted information to be provided in small, easily digestible or watchable bites, so that it notifies but does not scare. Participants' comments:

> How to give crisis information without scaring people away (Participant V1)
>
> Thailand has got tsunami warnings all over the beaches, you know, and sirens present around the beaches, escape routes and it just. It keeps it in the back of your mind. I'ts not going to stop your from having a good time whilst you do that. But still you know that there's a visible. It's a visible. It's present. (Participant V13)
>
> That is a problem for touristy places. Umm Egypt sharks, they never talk about sharks because people are afraid of sharks and if they are afraid of the water they will not come to go into the water and then they will stay away. And I imagine that could be the same. That if you if you tell the people danger, danger, danger, they may think, ooh danger, I might go somewhere where no one tells me that it's dangerous. Well, if they tell you once you arrive, might be better. OK. You may not go back. (Participant V1)
>
> Exactly. They could have the information, like a horror movie about typhoons. And then there is like a little stand giving you emergency kits for 1000 euros. Oh, the dumb “Y”’s, they would buy it. (Participant V1)

This subject was discussed with a couple of interviewees, as well as how to achieve this. A good example of this is comment from participant V13 regarding Thailand's clear warnings and participant V1’s comments on Egypt’s sharks.

The youngest of those interviewed had conducted extensive and high-quality background research before his backpacking trip to Asia, but he was also the only one who was unaware of the natural disasters in the Philippines. His response to the question about sources of information effectively summarized the alternatives and issues that emerged from other interviews:

> Something that's a bit more like unavoidable, perhaps like at airports or like when you literally, you know, can't not read it and understand then. Maybe something like that. (Participant V14)

The participant in question responded that various channels are beneficial all tough, they mentioned social media in general but also specified YouTube and Instagram and the latter one being the best source since,

> I think the social media is probably the quickest way to get information […] It's a habit. It's the same thing I do at home for better or for worse. (Participant V14)

In general, information was known to be found, among other things, in government travel advisories, which were found to be somewhat gloomy in presenting all the dangers and unnecessarily long. It was hoped that the information would be easily found, or rather, more easily presented, in official information channels, at the latest when arriving in the country. It was also suggested that the information be presented in short, clear 'chunks' that are easily digestible. Social media and peer information are a desired and good channels that were also used.

6 Discussion

In addition to analysing the results and connecting them to the larger picture, this chapter discusses, trustworthiness, the ethical and legal considerations and integrity of the study, strengths and limitations of the field study, funding, how working life cooperation did not materialize, as well as recommendations and future development needs.

These tourists had already chosen the Philippines as their destination, so this study did not reveal how many had not come due to safety concerns as Shimizu et al. (2023) and Ma et al. (2020) suggested. It can be stated that, at least for these tourists, hedonistic, pleasure seeking, motivation prevailed over possible risks of natural disasters in choosing a destination. This supports Chigas et al. (2023) study, where people will come to a destination even if it is a little dangerous as long as it is enjoyable and affordable. It is also in correlation in statistics of why people come to Philippines (Department of Tourism 2024a).

On the other hand, it also remains unclear how much the risks had influenced the travel decision, because the results showed that participants did not have much knowledge about natural disasters. However, all the participants had ended up at the destination and searched for information about it, so from this alone it could be concluded that information about natural disasters is not easily visible when searching for destination information about the Philippines.

Language and accessibility barriers, misinformation and disinformation were repeatedly highlighted at the APMCDRR 2024 as there are critical challenges in disaster preparedness and response. When life-saving messages are delivered through digital platforms and possibly only in the local language, large segments of population, including foreign tourists, may be excluded from vital information. Conference participants stressed that communication gaps can lead to delayed or incorrect evacuation decisions, putting lives at risk. Interviewees discussed that their biggest safety concern was regarding road safety, as well as possible wild animal attacks.

Social media was identified as a channel through which both misinformation and disinformation can rapidly spread, increasing confusion and mistrust during crises. On the other hand, social media, peer travellers and influencers are particularly those from which tourists obtain up-to-date information as is evident from the results of this study. Cahigas et al. (2023) and Shimizu et al. (2023) both singled out obtaining up-to-date information from social media and Cahigas et al. (2023) specifically mentioned information obtained from peers. Many of the interviewees said that they obtained information through social media and some even followed and received their information from the volunteers' WhatsApp group. The researchers' own observations also supported the fact that social media is used to obtain all kinds of information about a travel destination, sometimes even 'lazily' without going out to seek information themselves from more official sources, but rather directly asking their peer group for it. This supports Prasentaya and Susilo's (2022) study on the role of social media in Philippine tourism and Cahigas et al. (2023) study on peer group recommendations in choosing a travel destination and Kurata et al. (2023) revelation of medias big role in tourists' knowledge of disasters.

Therefore, it would be important that social media is not only considered a source of incorrect information but is also utilized as an information channel where reliable information from the authorities can be obtained. According to Victoria (2003) and Rogayan and Dollete (2020) an effective disaster preparedness requires the implementation of multilingual messaging, hybrid communication systems combining digital and analogical methods localized broadcasting and community-based messaging. This became apparent in the participants' responses when they for example had received warning text messages during the typhoons, but had not understood them and, in addition, the translations provided by locals were not

accurate. Prioritizing reliable and affective communication strategies is essential to ensure that all individuals, both residents and tourists, receive accurate and timely information during emergencies (Victoria 2003; Rogyan & Dollete 2023; Kalliomäki & Männistö 2024).

In addition to simply gathering information, participants who had never heard of the weather following application, the Windy App, were introduced to it after the interviews. The researchers had found this app particularly useful when tracking typhoons and felt it was important to share the information. Several interviewees downloaded it and immediately started monitoring it. One of the gaps found in the research, how to get the information to tourists, could be implemented with the help of EWS. As the theory shows and discussed in the APMCDRR (UNDRR 2024), in case of natural disaster a reliable and present warning systems should be in place. This was discussed also with few of the participants, that either already existing EWS could be used, or it could be privately managed, warnings based on location. These systems could also provide proactive advice appropriately related to location-based risks.

During the data analysis, attention was drawn to the clusters of themes. Upon examining these, it became evident that not all desired thematic connections had received responses, such as the desired information source and information gathering, as well as safety and preparedness (see Table 8). This brought up the question, that were the interview questions clear enough, were the interviews affected by outside influence e.g. noise, and were the thematics themed well enough. This challenge needs to be considered in the future research endeavours.

As PAGASA (n.d.a) says, for example, a typhoon causes strong gusts of wind, which, for example, break telephone poles and lines, and PHIVOLCS (n.d.b) describes how flash floods, landslides and earthquakes otherwise damage infrastructure and disrupt electricity production. Still, respondents relied heavily on their phones, at least in the sense that they carry all their information and can be used to contact home or the authorities. At least at some point. If the infrastructure disruption continues for a longer period of time, phones will become useless both when the power goes out and when the networks are down.

As different kind of information channels, based on observations, mainly report on the nature of the destination, the weather, and places to visit, information about natural disasters and how to prepare for them naturally remains sparse. When examining the data, clear differences can be observed between the sources of information searched and the desired source of information. When comparing sources (Figure 11), a few are highlighted in both, such as information obtained from people, the country of origin, or the local authorities, as well as YouTube.

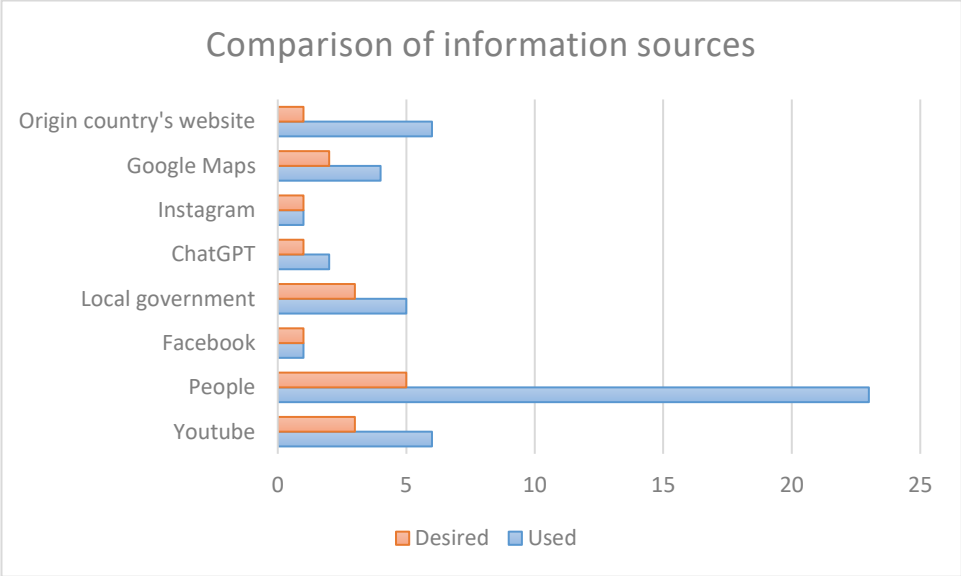


Figure 11: Comparison of overlapping sources of information, used and desired

What was interesting in the data, is that information gathering theme didn't get any support from subthemes of future measures. This raises the question, did the research focus group really consider the questions fully as they only focused on recollecting what they had done in the name of information gathering, but not without stating any future measures that they'd do in the future. This again raises the question based on the data, that did the participants just not consider these answers or was the interview answers highly influenced by, for example, with the interviewee's understanding attitudes or the lack of interest in the topic. Additionally, the error of the researcher's thematic analysis could be the source of such inconsistency.

6.1 Methodological review

The chosen approach to use a qualitative field study using thematic analysis, iterative process and an abductive approach research methods were well suited to this research. The qualitative field research theory presented by Grönfors and Vilkka (2011) suited to the interviewing of tourists in the Philippines and its analysis, and it provided good tips for both implementation and analysis. Nowell et al. (2017) creative steps for the thematization of qualitative research helped novice researchers to streamline the analysis process and consider the necessary steps. Lincoln and Guba's (1985) quality criteria, which were adopted from Nowell et al. (2017) study, helped to examine the trustworthiness of the study and other related criteria and ensure that the research process was carefully planned and implemented.

6.2 Trustworthiness

For research to be trustworthy, it is important to make visible that it has been done in a consistent, exhaustive and precise manner writes Nowell et al. (2017). In this study, trustworthiness has been ensured by conducting the research systematically and documenting all stages well. The analysis methods have been explained in detail and clearly so that readers can conclude the reliability and accuracy of the process.

The usability of this work has been increased by demonstrating the trustworthiness of the study using Lincoln and Guba's (1985) reliability criteria, which are presented by Nowell et al (2017). In addition, the validity and reliability of the study were examined using Grönfors and Vilkka's study (2011) and the Critical Appraisal Skills Program (CASP 2024). The CASP (2024) checklist can be used to ensure the reliability, explicitness and transparency of qualitative research, and this study was reviewed to ensure that all points were considered when conducting and reporting the study (Nowell et al. 2017; Grönfors & Vilkka 2011, CASP 2024).

The credibility of this study was ensured by committing to the process for a long time, the actual completion of the study has lasted a little over a year. The researchers made initial observations before, during and after the field research. The study context and background information on both natural disasters on Pacific area and crisis management theories were already immersed in previous study assignments and the familiarization with the topic was comprehensive and was further enriched while working at APMCDRR and at the PDRF EOC. Data collection triangulation was achieved when two researchers obtained data from different sources like theoretical research, by observing social media and collecting interview material and further returning to the conference notes. The triangulation of the researchers was achieved when all data was always processed by two researchers, who met daily during the field research and regularly during other phases of the study and the observations were constantly compared. Peer review was requested from the opponent and other tips and observations from fellow students and the supervisor at different stages of the research process. Due to the research topic and context, it was not possible to test the study's observations and interpretations with the participants. As an important part of increasing credibility, the authors have used critical thinking and self-evaluation throughout the process. Results reflect the views and authentic experiences of participants and analysis and conclusions have been drawn from the collected data. Quotations from participant’s answers have been used strengthen the idea that the themes rose from the research data. The authors have remained aware that they do not lead the interviewee in any direction, for example during the interviews and have considered their role and impact to the results (Lincoln & Cuba 1985, cited in Nowell et al. 2017).

The goal was to conduct as many interviews as possible until saturation was reached in the responses and no more responses that brought new perspectives were received. During the field research, there was no time to analyse the interviews along the way. However, since both researchers were present when the interviews were conducted, a general understanding was formed that no new perspectives were being provided in the interviews and sufficiency was reached and enough data was gained so meaningful interpretations could be made. So, it was acceptable that the sample was 13 interviews and there were 17 participants in total.

This study describes the context, data and it's processing as accurately as possible, so that the reader or other researchers can conclude whether the study's results are potentially transferable or usable in another situation or environment. The implementation of the interviews, the selection of participants and the analysis of the data and results are described in detail (Lincoln & Guba 1985, cited in Nowell et al. 2017). Although the interviews were conducted mainly in the Central Visayas region, the results of the study can be transferred to the entire Philippine region, because all interviewees, except one, had also travelled to other regions in the Philippines than Central Visayas (Grönfors & Vilkka 2011, 111). The mobility of the interviewed tourists correlates with the information observed in the background research that people only spend short periods of time at one destination and visit several destinations during their trip (SiteMinders 2025; DOT 2024a.) The results of the study could be transferred to any environment where tourists travel, and natural disasters occur.

This chapter aims to describe the dependability of the study as presented by Lincoln and Guba (1985), Koch (1994) and Sandelowski (1986) as referred to by Nowell et al. (2017) and validity as described by Grönfors and Vilkka (2011). Both criteria, which lead to the validity, dependability and trustworthiness of the study, were combined because they have the same perspectives.

The internal validity of the study has been increased by ensuring that the relationship between the theoretical and conceptual properties is logical, i.e. the researchers have sought to ensure that the conclusions, concepts and hypotheses presented in the study are consistent. The external theory written during the study and in advance and its comparison with the conclusions and empirical data has been considered consistent (Grönfors & Vilkka 2011, 103). Internal validity is increased by the additional knowledge that researchers gained during the fieldwork of the topic under study.

The more detailed the research process is described, the better its validity and dependability are demonstrated. The research process of this study has been described as openly as possible. An effort has been made to explain in detail how the research was conducted, especially regarding the interviewees, and an effort has been made to describe the course of the research so that readers can clearly follow how and why different decisions were made

when conducting the study Although the interview situations themselves are not repeatable for these participants, it would be possible to repeat a similar study using the same interview framework. The process of conducting the field study has been described clearly so that other researchers could repeat the whole study ending with similar or comparable results. An effort has also been made to describe in detail how the material was processed and how the transcriptions were checked. In conducting this study, the raw data and its storage have been carefully documented. Field notes, which also served as a reflective journal throughout the research, were utilized in writing the report. In the research report, both the decisions to change the topic and the choice of method are described in detail. The dialogue between the researchers could have been documented even more precisely to clarify the audit trail. During the fieldwork, the researchers had long discussions about the methods and research methodology. These discussions often took place on the road, in a restaurant or at other times when there was a momentary stop, so the documentation has been partially incomplete. The stages of the research, for example the change of the research question while already in the field and the coding process and analysis of the data have been described to strengthen the audit trail. The funding of the research and the independence of the researchers have also been described honestly. (Grönfors & Vilkka 2011, 106-107; Koch 1994 and Sandelowski 1986 cited in Nowell et al. 2017)

The confirmability of this study has been established by the fact that credibility, reliability and validity have been achieved through careful and transparent documentation. Decisions about different choices have been documented and the reasons for the choices justified, making it easier for the reader to understand what the decisions made during the study are based on (Lincoln & Guba 1985 and Koch 1994 cited in Nowell et al. 2017).

The analyses have been made based on the material and the themes and their interpretations are based on the information obtained in the interviews. Direct quotes from the participants' responses support the justification of the results and increase reliability. The audit trail is strong, and the choices made can be traced using the research diary. The researchers' own preconceptions and relationship to the phenomenon under study have been highlighted in the report (Nowell et al. 2017)

6.3 Ethical and legal considerations, integrity

The authors of this study have sought to follow the responsible conduct of research and good research ethics and integrity when doing this work and to comply with the Guidelines of the Finnish Advisory Board on Research Integrity (TENK 2012). The study has been done to follow care and honesty, and research has been done as accurately as possible when storing results, presenting and evaluating them. Information, research and evaluation methods are selected ethically sustainable and according to the criteria for scientific research. The results of the

study will be published openly. The work of other researchers is referred to in accordance with appropriate scientific practice. The information and data collected in the study are properly stored (TENK 2012; Arene 2020).

Before commencing the study, it was agreed that copyright belongs to both researchers. Both researchers have had the responsibility to ensure the ethics of the research and the integration throughout the research process. The preservation and disposal of material after the study has been agreed between researchers. Researchers have reported the financial and other affiliations related to the research to all parties in the research report and the participants' information form. Researchers made sure that they are not inhibited when conducting research and considered accurate data protection. The use and publishing rights of research data and results are limited to research authors only (TENK 2012; Arene 2020).

As this research studies people and their behaviour, the ethical guidelines are followed. There was no need for an ethical pre-evaluation as the study is not related to the field of medicine. As the participants were selected 'on the spot' from tourists faced there was no need to apply approval from TENK Finnish Ethics Committee or other authority. In addition, the participants were asked to consent to participate in the study, their physical integrity was not interfered with, the study did not investigate minors, and the study did not cause severe stimuli, mental harm or safety threats. Participants were not asked about sensitive things. The study did not collect personal information from people other than sound, so no specific research permits were required (Arene 2020; TENK 2020; TENK 2023).

Participants were informed about the aims of the research and how the results of interviews will be used. A consent form for the participants was created and asked to be verbalized at the beginning of the interview as proof of volunteer participation. Participants were informed that they can withdraw their participation at any stage of data collection at the interviews. The interviewees were also informed that after processing the interview material, it was no longer possible to withdraw from the study, as certain responses could no longer be removed from the anonymized data.

In this study, Participant Research Information and Participant Informed Consent Notice were merged into the same document that was shown to the interviewees at the beginning of the interview via readable QR code and it was ensured that they take their time to read it. After that, at the beginning of the interview, the interviewees were asked to verbally state to the recorder that they have read and understood the background information and give their volunteer consent of participation to the research.

The information participants provided was handled so that the individuals cannot be recognized. The interviews were both recorded and transcribed and from the beginning handled anonymously. The coded results were stored on separated files for research use only

behind strong password protection. The audio files were deleted once the transcription was completed and reviewed. Please see Appendix four ‘Data management plan’ for more detailed information on data collection, use and preservation.

In addition to the need for ethical protocols and research permits for according to Finnish legislation and scientific research, the Philippines Health Research Ethics Board's (PHREB 2022) guidelines for 'National Ethical Guidelines for Research Involving Human Participants 2022' were investigated. The guidelines follow the same line about the good international scientific practice that has already been written. No research on human health was conducted, there was no external funding in the study, the Philippine citizens were not involved in research. In addition, participants did only participate in interviews that are not identifiable and other background information used in the study is publicly available. The study follows international ethical guidelines throughout scientific research, and the rights and security of participants are respected at all stages, particularly the Informed Consent Process of Participation. The study is social in nature not health related. So, all in all it was understood that ethical prior evaluation was not needed from PHREB (PHREB 2022).

6.4 Description of project funding

The major expenses when conducting research consisted of traveling back and forth to the Philippines, the internal travel in the Philippines and the cost of accommodation in different locations. Vaccinations and visas for the trip also became expenses. Laurea University of Applied Sciences participated in the travel expenses of both researchers with a grant of EUR 350 each. The grant was used for travel expenses.

The small size of the grant was affected by the application period. Since confirmation of the trip was not received from the working life partner until autumn 2024, the grant could only be applied for after that. The timing affected the fact that Laurea's grants for the year had already run out and researchers only received a grant for five days each even though the travel time was two months. Because learning by doing and testing and experiencing the things learned in practice was meaningful and desirable, it was decided to carry out the field research anyway, mainly with self-financing.

Secondary costs came from the acquisition of local data SIM cards in the Philippines and a few modest printing costs. The research participants were not given paper documents or commitment forms, but Participant information was provided electronically, in which case it did not result in additional costs. The recorder used for interviews was borrowed from Laurea University of Applied Sciences at no extra cost. Communication with foreign partners and educational institutions was handled through telecommunications or free Wi-Fi provided by accommodations, so those did not incur additional costs.

Participation in the United Nations Asia Pacific Ministerial Conference in Disaster Risk and Reduction was free. Passport photos for delegate cards were paid for by the researchers' own funds. Workspace for a week at the Emergency Operations Centre of the Philippines Disaster Resilience Foundation was free.

Neither of the study authors received any external financial benefit from the study, and there were no financial interests associated with the study. Because there were no financial commitments, research could be directed to areas of interest.

6.5 Strengths and limitations

According to the original plan, each interview was to be transcribed immediately, and the interview questions were to be formulated according to whether more information was needed on some part of the phenomenon. Unfortunately, due to changes in the schedule, there was no time for this, so additional questions were asked, or questions were rephrased according to the researchers' knowledge of the material. The interview structure remained largely the same. This may have resulted in the data obtained being more superficial than if there had been time to analyse all the interviews after they had ended and then seek additional information through additional questions.

As the start of the interviews was delayed and while the researchers moved from one area to another, occasionally it was difficult to find diverse participants in some locations. The researchers had to conduct interviews wherever they happened to be. The aim was to select as many Western tourists of different ages and genders as possible for the interviews. When the interviews were at their peak, the researchers were recommended an island as a destination where the tourists were a very homogeneous group so that 90 % of the Western tourists were middle-aged men with Filipino wives. This made it difficult to find diverse interview subjects and threatened to make the group of participants in the study too homogeneous. After this, deliberately younger people, people of different genders and traveling in different groups were sought out to interview. This was successful, problem was corrected in Cebu City and the sample group for the study became sufficiently broad.

Written consent forms were not distributed to participants because carrying them would have been inconvenient when traveling and moving to different locations. However, the Participant Information and Consent form behind the QR code had its challenges. In the beginning of the interview each participant scanned the QR code, but a few were unable to access the participant information and consent form on their own phones due to difficulties in signing in process. Still each participant read the form, and it was opened to them on the researchers’ phone when necessary and discussed together after reading.

An absolute strength of the study was the researchers' strong familiarity with the topic in general, which was especially strengthened during the research trip when the researchers participated for a weeklong Asia-Pacific Ministerial Conference on Disaster Risk Reduction APMCDRR 2024 organized by UNDRR and participated several lectures a day. A study period for a week at the Philippine Disaster Resilience Foundation's (PDRF) Emergency Operations Centre also strengthened mastery of the subject area (UNDRR 2024; PDRF n.d.).

The research would have been further deepened by collaboration or interviews with local authorities and barangays actors in the locations where tourists were interviewed.

The planned schedule was challenged by communication with the work life partner and a summer vacation season 2024 during critical planning period. The reinforcement of the original topic was postponed and the time of the practical implementation of the research could not be changed because the time of study leave of researchers could not be postponed. For these reasons, many tasks overlapped at the autumn 2024, and travel arrangements took time from developing the field research.

In January and February 2025, the research work was on hold. In March, the research work continued by further refining the theoretical background, analysing the results of the interviews, and writing the research report. Challenges were caused by the accelerating schedule towards the end.

6.6 Work life cooperation and change of topic

The original goal of the study was to interview small local entrepreneurs and find out how they have been prepared for natural disasters in relation to the fact that in addition to their personal/ family preparedness they also have an extra people i.e. their customers to look after. The idea was to include the idea of community resilience and how preparedness affects it.

A lecturer from the Philippines Disaster Resilience Foundation (PDRF) was contacted after his presentation on the UN Humanitarian Networks and Partnerships Weeks that were participated related to studies in the beginning of May 2024. PDRF is a non-governmental organization that collaborates with corporate disaster relief and supports the assistance coordinated by the Philippine government. It does, among other things, community work and preparedness training for small communities. It was suggested to the lecturer if PDRF could be a work life partner in the study and this was mutually agreed (PDRF n.d.).

Based on the contact, a few meetings were arranged with the company in Teams before the field journey to the Philippines. Representatives of the foundation agreed to assist in finding small businesses, co-partners and barangays and in targeting the research to a suitable area.

Unfortunately, the actual cooperation did not work out once the researchers arrived in the destination, presumably due to a lack of resources on behalf of the PDRF. This led to the need to re-draft the research questions, change the research target group, and reformulate the interview questions. These changes in turn affected the schedule and locations where the interviews were conducted.

However, even though the actual work life partnership did not work out, at the PDRF's direction and suggestion, the researchers applied to participate in the APMCDRR organized by UNDRR. Conference was held in Manila at time of beginning of the research journey. Participation in the week-long APMCDRR was a unique and valuable experience. The complete conference program can be found in the Appendix 5 (UNDRR 2024).

Picture 6: Researchers as Finnish delegates at APMCDRR (© Kalliomäki & Männistö 2024)

Despite the challenges of work life cooperation related the study itself, the researchers had a precious opportunity to work at the PDRF Emergency Operations Centre in Clark for a week. In addition to gaining great insight into disaster management during the week, contacts were made, work and daily lives of ordinary Filipinos was familiarised, and a lot learned about the activities of NGO (PDRF 2021).

Picture 7: PDRF operational stakeholder meeting during TY Katrina (© Kalliomäki & Männistö 2024)

6.7 Recommendations

For future, this topic could use more research. It would have been interesting to interview the same subjects a second time and assess whether they had changed their actions since the first interview. In some cases, it felt that the interview also served as a kind of awakening intervention and already during the interviews, some of the interviewees said that they would start using the presented phone applications to monitor the weather and at least became interested in their own preparedness.

As this study shows lack of preparedness and huge gaps in knowledge about typhoons and natural disasters, it is recommended that there would be more information available for tourists in the forms they cannot avoid. Tourists should be provided with more information about the concrete possibility of a natural disaster in the Philippines. The information could be for example, automatically sent to tourists after they filled out the eTravel form. It could also include concrete preparation suggestions, such as the fact that it would be a good idea to have water and food for at least a day, cash and a flashlight. There could also be information campaigns at destination airports. Feedback could be collected from them initially on whether they seem too flashy. There could also be a market gap for small preparedness kits sold to tourists arriving to the Philippines.

Awareness should be raised about what to do and where to go when something happens. Since, for example, the organization of evacuation sites is the responsibility of the barangays, they should also take care of informing and posting visual signs frequently enough. Barangays could oblige accommodation providers operating in their area to provide this information to everyone arriving along with emergency numbers. The researchers received advance preparation instructions from one accommodation, which explained what things to bring when coming to this more remote location. Accommodation providers in smaller places could be required to send this information to all of those who have booked accommodation.

Since the Philippines Department of Tourism has Facebook, Instagram, YouTube, and TikTok accounts, among other social media accounts, they could regularly publish preparedness guidelines and collaborate with social media influencers such as bloggers, since it would be an easy access point as people already spend their time on this type of media source. The preferred information sources are real stories from real people. These could be in a documentary or a movie, or a short story for example in YouTube, which was a well-used source based on the interview answers in this study as well. These social media channels have multiple choices, are fairly reliable and easy to double check the facts.

Role of barangays and accommodation providers in informing the tourists could be the subject of further research or development project, or the information obtained from this study could be made available to them.

Areas that need to be addressed in tourists' preparedness based on the results, is the enhancement of awareness regarding the suddenness and unpredictability of natural disasters, as well as the importance of anticipating such situations by increasing the level of preparedness. In each interview, questions that were almost unchanged were asked, “What would help you to be more prepared?” and “Where would you like to receive the information about this?”. Based on the responses to these questions, the researchers were able to create a clear picture of future needs, especially concerning information acquisition and the preferred information channels.

7 Conclusions

This research shows that tourists are not prepared for natural disasters in the Philippines, nor fully aware of the seriousness of these situations. The research objective was achieved and answers to the research questions were obtained.

Tourists had some knowledge and prior ideas about natural disasters in the Philippines, but not much specific information about how often they occurred or what kind of impact those might have on them. Although information about the travel destination had been obtained in advance, information about natural disasters had not been sought or specifically encountered. Information about natural disasters was also not wanted too much, as it was not felt to have a positive impact on their own travel.

No actual preparedness measures had been taken for natural disasters in mind. However, general travel-related measures that can be equated with preparedness measures had been taken. These would be useful things and objects carried with.

There were gaps in tourists' awareness of natural disasters and how to prepare for them. These gaps could be filled by wide-ranging information dissemination in both official and unofficial channels. Preparedness and action instructions should be distributed in multiple languages in sources that are easily accessible to tourists so that information would not have to be searched for but would either be forcibly displayed or automatically distributed to everyone in a coordinated and planned manner by authorities and service providers. In addition, cooperation with peers on social media channels would increase awareness and through that preparedness.

The initial assumption of the phenomena, 'Tourists don’t know about the risks of natural disasters in the Philippines and that they are not prepared to face those', was confirmed by the research results.

References

Ase/anup 2018. 6 free maps of the Philippines. Accessed 7 April 2025. https://aseanup.com/free-maps-philippines/

Bailey, C. 2018. A guide to qualitative field research. (3rd ed.). SAGE Publications, Inc. doi: 10.4135/9781071909614

Balita, C. 2024. Natural disasters in the Philippines. Accessed 26 July 2024. https://www.statista.com/topics/5845/natural-disasters-in-the-philippines-at-a-glance/

Bankoff, G. & Hilhorst, D. 2009. The politics of risk in the Philippines: Comparing state and NGO perceptions of disaster management. Disasters, 33(4), 686–704. doi: 10.1111/j.1467-7717.2009.01104.x

Bolt, B. 2025. Earthquake | Definition, Causes, Effects, & Facts | Britannica. Accessed 1 April 2025. https://www.britannica.com/science/earthquake-geology

Borje, R.E.A. 2024. Climate change, tourism and their interconnected impacts. Accessed 27 March 2025. https://tribune.net.ph/2024/09/22/climate-change-tourism-and-their-interconnected-impacts

Brennan, M. A., Phillips, R., Walzer, N. & Hales, B. D. 2025. Community Development for Times of Crisis. Taylor & Francis. Accessed 2 April 2025. https://www-taylorfrancis-com.nelli.laurea.fi/reader/read-online/2bde79dc-af37-4acf-827f-e8ee9f6b2113/book/pdf?context=ubx

Cahigas, M.M.L., Prasetyo, Y.T., Persada, S.F. & Nadlifatin, R. 2023. Examining Filipinos' intention to revisit Siargao after Super Typhoon Rai 2021 (Odette): An extension of the theory of planned behavior approach. International Journal of Disaster Risk Reduction, 84103455. doi: 10.1016/j.ijdrr.2022.103455

Casal-Ribeiro, M., Boavida-Portugal, I., Peres, R. & Seabra, C. 2023. Review of crisis management frameworks in tourism and hospitality: A meta-analysis approach, Sustainability, 15 (15), 12047. doi: 10.3390/su151512047

CBS News 2024. Philippines' Kanlaon volcano erupts, shooting ash 2.5 miles into the sky and prompting mass evacuation. Accessed 31 March 2025. https://www.cbsnews.com/news/philippines-volcano-kanlaon-eruption-evacuations-negros-island/

Delos Reyes, P.J., Bornas, Ma.A.V., Dominey-Howes, D., Pidlaoan, A.C., Magill, C.R. & Solidum, Jr. & Renato U. 2018. A synthesis and review of historical eruptions at Taal Volcano, Southern Luzon, Philippines. Earth-Science Reviews, 177565–588. doi: 10.1016/j.earscirev.2017.11.014

Del Prado, D.G. 2024. The Compendium of Philippine Environment Statistics - Component 4 Extreme Events and Disasters. Accessed 1 April 2025. https://psa.gov.ph/system/files/enrad/4.%20Infographics_Component%204_rev_signed.pdf

Domingo, S.N. & Manejar, A.J.A. 2018. Disaster preparedness and local governance in the Philippines. PIDS Discussion Paper Series, No. 2018-52. Accessed 4 April 2025. https://hdl.handle.net/10419/211072

DOT (Department of Tourism Philippines). 2024a. Inbound Tourism Update 2023. Accessed 6 April 2025. http://www.tourism.gov.ph/files/2024/tourism_demand/01/01-23/Inbound/December.pdf

DOT (Department of Tourism Philippines). 2024b. RegionalTravelers2023.pdf. Accessed 14 August 2024. http://www.tourism.gov.ph/files/2024/tourism_demand/07/07-11/RegionalTravelers/RegionalTravelers2023.pdf

DOT (Department of Tourism Philippines). 2024c. DOT, DOH SIGN DEAL TO BULD PHILIPPINES' FIRST EVER TOURIST FIRST AID FACILITIES. Accessed 13 August 2024. https://beta.tourism.gov.ph/news_and_updates/12305-2/

DOT (Department of Tourism Philippines). 2025. Visitor arrivals ranking by country of residence January-December 2023/2024. Accessed 6 April 2025. http://www.tourism.gov.ph/files/2025/tourism_demand/01/01-03/JAN-DEC.pdf

Emami, S.G., Lorenzoni, V. & Turchetti, G. 2024. 'Towards resilient healthcare systems: A framework for crisis management', International Journal of Environmental Research and Public Health, 21(3), p. 286. doi: 10.3390/ijerph21030286

Estrella, M. R. 2025. 'Climate risk communication in tourism destinations in Siruma, Camarines Sur, Philippines', Partido State University. doi: 10.47772/IJRISS.2023.70620

Evers, J. (ed.) 2025. Plate Tectonics and the Ring of Fire. Accessed 31 March 2025. https://education.nationalgeographic.org/resource/plate-tectonics-ring-fire

Fabros, Ma.G.M., Lopez, E.L.F. & Roma, M.N. 2023. Dark tourism in the Philippine context: Indicators, motivations, and spectrum. Social Sciences & Humanities Open, 7(1), 100452. doi: 10.1016/j.ssaho.2023.100452

Finnish Meteorological Institute. No date. Trooppiset hirmumyrskyt. Accessed 26 March 2025. https://www.ilmatieteenlaitos.fi/trooppiset-hirmumyrskyt

Forex. No date. Matka alkaa tästä - Valuutta ja elämykset. Accessed 11 April 2025. https://www.forex.fi/

Grönfors, M. & Vilkka, H. (ed.). 2011. Laadullisen tutkimuksen kenttätyömenetelmät. Hämeenlinna: SoFia-Sosiologi-Filosofiapu Vilkka. https://vilkka.fi/books/Laadullisen_tutkimuksen.pdf

Hirsjärvi, S., Remes, P. & Sajavaara, P. 2008. Tutki ja kirjoita. Keuruu: Tammi.

Hosseini, M.-S., Jahanshahlou, F., Akbarzadeh, M.A., Zarei, M. & Vaez-Gharamaleki, Y. 2024. Formulating research questions for evidence-based studies. Journal of Medicine, Surgery, and Public Health, 2100046. doi: 10.1016/j.glmedi.2023.100046

Kurata, Y.B., Ong, A.K.S., Ang, R.Y.B., Angeles, J.K.F., Bornilla, B.D.C. & Fabia, J.L.P. 2023. 'Factors Affecting Flood Disaster Preparedness and Mitigation in Flood-Prone Areas in the Philippines: An Integration of Protection Motivation Theory and Theory of Planned Behavior', Sustainability, vol. 15, no. 8, p. 6657. doi: 10.3390/su15086657

Ministry for Foreign Affairs of Finland. 2024. Filippiinit: matkustustiedote. Accessed 6 April 2025. https://um.fi/matkustustiedote/-/c/PH

National Geographic Society. 2024. Pyroclastic Flow. Accessed 31 March 2025. https://education.nationalgeographic.org/resource/pyroclastic-flow

NDRRMC (National Disaster Risk Reduction and Management Council). 2020. National Disaster Risk Reduction and Management Plan 2020–2030. Quezon City: Office of Civil Defense – Policy Development and Planning Service. Accessed 4 May 2025. https://www.preventionweb.net/publication/philippines-national-disaster-risk-reduction-and-management-plan-2020-2030

NDRRM (National Disaster Risk Reduction and Management Council). 2025. SitRep No. 37 for Kanlaon Volcano Eruption (2024). Accessed 31 March 2025. https://ndrrmc.gov.ph/attachments/article/4276/SitRep_No_37_for_Kanlaon_Volcano_Eruption_2024.pdf

Nowell, L.S., Norris, J.M., White, D.E. & Moules, N.J. 2017. Thematic Analysis: Striving to Meet the Trustworthiness Criteria. International Journal of Qualitative Methods, 16(1), 1609406917733847. doi: 10.1177/1609406917733847

Nuriman, D.A. & Hidayat, M. 2025. 'Risk communication strategies in the tourism industry in disaster-prone areas', IOP Conference Series: Earth and Environmental Science, vol. 1438, no. 1, p. 012028. doi: 10.1088/1755-1315/1438/1/012028

Ochoa, M.D.C. 2024. 'Preparedness confidence and challenges on disaster management among tourism establishments in Zamboanga City, Philippines', Environment and Social Psychology, vol. 9, no. 11, p. 3139. doi: 10.59429/esp.v9i11.3139

PAGASA (Philippines Atmospheric, Geophysical and Astronomical Services Administration). 2025a. Tropical Cyclone Wind Signal System. Accessed 26 April 2025. https://www.pagasa.dost.gov.ph/learning-tools/tropical-cyclone-wind-signal

PAGASA (Philippines Atmospheric, Geophysical and Astronomical Services Administration). 2025b. Tropical Cyclone Information. Accessed 26 April 2025. https://www.pagasa.dost.gov.ph/climate/tropical-cyclone-information

PAGASA (Philippines Atmospheric, Geophysical and Astronomical Services Administration). No date a. About tropical cyclones. Accessed 26 March 2025. https://www.pagasa.dost.gov.ph/information/about-tropical-cyclone

PAGASA (Philippines Atmospheric, Geophysical and Astronomical Services Administration). No date b. Tropical Cyclone Associated Rainfall. Accessed 27 March 2025. https://www.pagasa.dost.gov.ph/climate/tropical-cyclone-associated-rainfall

PDRF (Philippine Disaster Resilience Foundation). 2021. Emergency Operations Center/ Functions. Accessed 21 October 2024. https://www.pdrf.org/emergency-operations-center/functions/

PDRF (Philippine Disaster Resilience Foundation). No Date. About PDRF. Accessed 13 August 2024. https://www.pdrf.org/who-we-are/about-pdrf/

PHIVOLCS (The Philippine Institute of Volcanology and Seismology). 2025. Earthquake Information. Accessed 1 April 2025. https://www.phivolcs.dost.gov.ph/index.php/earthquake/earthquake-information3

PHIVOLCS (The Philippine Institute of Volcanology and Seismology). No date b. Introduction to Volcanoes. Accessed 31 March 2025. https://www.phivolcs.dost.gov.ph/index.php/volcano-hazard/introduction-to-volcanoes

PHIVOLCS (The Philippine Institute of Volcanology and Seismology). No date a. Volcanoes of the Philippines. Accessed 31 March 2025. https://www.phivolcs.dost.gov.ph/index.php/volcano-hazard/volcanoes-of-the-philippines

PHIVOLCS (The Philippine Institute of Volcanology and Seismology). No date c. PHIVOLCS-LAVA: Volcano status. Accessed 31 March 2025. https://wovodat.phivolcs.dost.gov.ph/bulletin/list-of-bulletin

PHIVOLCS (The Philippine Institute of Volcanology and Seismology). No date d. Introduction to Earthquake. Accessed 31 March 2025. https://www.phivolcs.dost.gov.ph/index.php/earthquake/introduction-to-earthquake

PHIVOLCS (The Philippine Institute of Volcanology and Seismology). No date e. Earthquake Hazards. Accessed 31 March 2025. https://www.phivolcs.dost.gov.ph/index.php/earthquake/earthquake-hazards

PHREB (Philippine Health Research Ethics Board). 2022. National Ethical Guidelines for Research Involving Human Participants 2022. Accessed 13 November 2024. https://ethics.healthresearch.ph/index.php/phoca-downloads/category/4-neg

Piepiora, Z., Belarga, O., Alindogan, M.A. & Arcos, V.H.R. 2016. The Philippine Disaster Management System During Large Scale Disasters, Surveying Geology & Mining Ecology Management (SGEM), Sofia. Vol. 3. Accessed 4 April 2025. https://www.proquest.com/central/docview/2014384353/fulltextPDF/1DFC32C7DCBC421CPQ/1?accountid=12003&sourcetype=Conference%20Papers%20&%20Proceedings

Prasetya, M. & Susilo, D. 2022. The effect of content marketing on purchase intention through customer engagement as variable mediation. Jurnal Komunikasi Profesional, 6(5), 423–434. doi: 10.25139/jkp.v6i5.5192

Republic of the Philippines. 1991. Republic Act No. 7160 – Local Government Code of 1991. Accessed 6 April 2025. https://www.officialgazette.gov.ph/downloads/1991/10oct/19911010-RA-7160-CCA.pdf

Republic of the Philippines. 2010. Republic Act No. 10121: Philippine Disaster Risk Reduction and Management Act of 2010. Official Gazette of the Republic of the Philippines. Accessed 6 April 2025. https://www.officialgazette.gov.ph/2010/05/27/republic-act-no-10121/

Rogayan Jr., D. V. & Dollete, L. F. 2020. Disaster Awareness and Preparedness of Barrio Community in Zambales, Philippines: Creating a Baseline for Curricular Integration and Extension Program. Review of International Geographical Education (RIGEO), 10(2), 92-114. doi: 10.33403/rigeo.634564

Rosselló, J., Becken, S. & Santana-Gallego, M. 2020. The effects of natural disasters on international tourism: A global analysis. Tourism Management, 79104080. doi: 10.1016/j.tourman.2020.104080

Salas, E. 2023. Disaster risk index of most affected countries 2023. Accessed 26 July 2024. https://www.statista.com/statistics/1270469/disaster-risk-index-most-affected-countries/

Shimizu, R.R., Chatterjee, J.R. & Cheung, M.A. 2023. Natural Hazards and Their Effects on the Tourism and Hospitality Sector in Philippines. Journal of Hospitality and Tourism Management, 6(4), 12–22. doi: 10.53819/81018102t5226

SiteMinder. 2025. SiteMinder's Hotel Booking Trends. Accessed 7 April 2025. https://www.siteminder.com/hotel-booking-trends/

Stewart, I.S. 2024. 'Advancing disaster risk communications', Earth-Science Reviews, vol. 249, p. 104677. doi: 10.1016/j.earscirev.2024.104677

Susilo, D. & Santos, M.C.K. 2023. Digital Marketing Communication for Promoting Philippines Tourism. International Journal of Research and Review, 10(6), 209–220. doi: 0.52403/ijrr.20230625

Tourism Teacher. No date. Stakeholders in Tourism: Who Are They and Why Do They Matter? Accessed 4 April 2025. https://tourismteacher.com/stakeholders-in-tourism/

UNEP & ICLEI (United Nations Environment Programme and International Council for Local Environmental Initiatives). 2003. Tourism and local agenda 21: the role of local authorities in sustainable tourism. Accessed 6 April 2025. https://wedocs.unep.org/20.500.11822/7920

UNDRR (United Nations Office for Disaster Risk Reduction). 2024. Asia-Pacific Ministerial Conference on Disaster Risk Reduction APMCDRR 2024. Home page. Accessed 7 April 2025. https://apmcdrr.undrr.org/2024

Victoria, L.P. 2003. Community-Based Disaster Management in the Philippines: Making a Difference in People's Lives. Asian Disaster Preparedness Center. Philippine Sociological Review, 2003, 65-80. Accessed 4 April 2025. https://pssc.org.ph/wp-content/pssc-archives/Philippine%20Sociological%20Review/2003/PSR%202003%20(Full).pdf#page=65

VMEPD (Volcano Monitoring and Eruption Prediction Division). No date. Eruption History. Accessed 31 March 2025. https://wovodat.phivolcs.dost.gov.ph/volcano/erupt-history?volcan=&sdate=2025-03-31&edate=2025-03-31&btn-search=&page=1

Volcano Discovery. 2025. Earthquake statistics: Philippines - detailed charts and tables, current and past seismic activity. Accessed 1 April 2025. https://www.volcanodiscovery.com/earthquakes/philippines/stats.html

Wald, L. No date. The Science of Earthquakes | U.S. Geological Survey. Accessed 31 March 2025. https://www.usgs.gov/programs/earthquake-hazards/science-earthquakes

Unpublished

Kalliomäki, P. & Männistö, T. 2024. Personal notes from the Asia-Pacific Ministerial Conference on Disaster Risk Reduction (APMCDRR) 2024. Accessed 17 October 2024. Unpublished material.

Figures

Pictures

Tables

Appendices

Appendix 1: Participant research information and Participant informed consent notice

Participant Information and Participant Consent Form

Study Title: Preparedness and awareness among tourists about natural disasters in the Philippines – A Field Study

Invitation to participate in a research study

We'd like to invite You to take part in our research study, where we investigate how tourists travelling at Philippines are prepared in advance for a possible case of natural disaster and how the guidance of tourists could help and facilitate them and local communities in the event of a disaster. You were recruited as a participant as you are a foreign tourist travelling in Philippines. Researchers interview as many participants as necessary until new and different information is no longer gained. The results of the interviews are analysed between the interviews.

This information document describes the study and Your role in it. Before you decide, it is important that You understand why the research is being done and what it would involve for You. Please take time to read this information and discuss it with others if You wish. If there is anything that is not clear, or if You would like more information, please ask us. After that we will ask You to verbally agree and a consent to participate in the study.

Participant information

Voluntary nature of participation

The participation in this study is voluntary. You can withdraw from the interview at any time without giving any reason and without there being any negative consequences. When the interview is interrupted, the information in the interview in question will be deleted immediately. If You withdraw from the study or withdraw Your consent later, any data collected from You before the withdrawal can be included as part of the research data because removal of collected data is not possible as it can not be identified due to anonymity of data collected.

Purpose of the study

The Philippine Island Group is in the Pacific Ring of Fire, which is the world's most susceptible to various natural disasters such as typhoons, floods and earthquakes. Philippine communities must constantly prepare for exceptional conditions in challenging areas. Tourism in Philippines is growing at a significant pace. Tourists also travel in remote areas, for whom traveling is challenging and time consuming. In the event of a natural disaster, access of help to these areas may be prolonged.

The purpose of the study is to

- investigate how tourists are prepared in advance for a possible natural disaster and
- how the guidance of tourists could help and facilitate them and local communities in the event of a disaster

The study collects information by interviewing tourists in the Philippines related to their preparedness actions. If you can make your valuable contribution by participating in a volunteer interview it would make a significant additional value for our research.

Who is organising and funding the research?

Study is organized and funded by researchers Kalliomäki and Männistö and it is part of their Master's studies in a degree programme Global Health and Crisis Management in Laurea University of Applied Sciences, Finland. Small grant has been provided by Laurea UAS for travelling costs. There are no other outside funders or financial gain related to this study.

What will participation involve?

Participation in this research study involves an anonymous interview that will last about ½ hrs. The study will be completed latest in May 2025. Interviews will be done anonymously and kept confidential. The interviewee is asked to refrain from telling any personal information, such as a name, information related to other persons or organizations. If this information comes in the recording, it will be removed during the interview transcribing phase.

How is collected data managed?

Collected research data will not be reused or opened after this study is completed. External translators are not used because both researchers are fluent in English and only responsible researchers process the raw data collected. Data is transcribed with Laurea's data protected Teams according to Laurea's own instructions. After transcription, the information will be verified and then the audio recordings will be deleted. Data is stored outside of Europe on researchers' personal computers, protected by a password and in a password-locked folder. After this, copies are made to a secure Laurea user account and locked OneDrive with a password. Access to the data is only granted to researchers PK & TM. File destruction is carried out according to instructions, by deleting and overwriting. After the study is completed, all data collected in the interviews will be destroyed by overwriting the texts and deleting the data after two years.

Possible benefits of taking part the study

By participating in this study and interview, you will gain information about multiple online sites to gain information that can benefit your safety on your travels. Additionally, the information you provide will help on the development of a pretravel preparedness information for tourists heading to Philippines and thereby increasing safety, resilience and survival of tourists and local communities in case of natural disaster occurs.

Possible disadvantages and risks of taking part

No disadvantages or risks are associated with participating in this survey.

Financial information

Participation in this study will involve no cost to You. You will receive no payment for Your participation.

Informing about the research results

Completed study will be published in Theseus database and two short press releases may be published of the study in peer review level publication. In the finished study, there is no identifiable respondent, although anonymous quotes may be published without being combined with an individual respondent.

Termination of the study

The researchers PK and TM conducting the study can also terminate the study if an acute personal or national crisis happens.

Further information

Further information related to the study can be requested from the researchers in charge of the study.

Thank you for your time and investment in research!

Researchers:

Päivi Kalliomäki, Registered Nurse, Vocational Teacher
Taru Männistö, Registered Nurse

Master's degree students
Global Health and Crisis Management
Laurea University of Applied Sciences, Finland
paivi.kalliomaki@student.laurea.fi
taru.mannisto@student.laurea.fi

Thesis supervisor:

Teija-Kaisa Aholaakko
Principal Lecturer, PhD
Laurea University of Applied Sciences
teija-kaisa.aholaakko@laurea.fi

Participant consent

I have been invited to participate in the above research study.

I have read and understood the written participant information provided. The written information has provided me sufficient information about above study, the purpose and execution of the study, about my rights as well as about the benefits and risks involved in it. I have had the opportunity to ask questions about the study and have had these answered satisfactorily.

I have had sufficient information of the collection, processing and transfer/disclosure of my personal data during the study and the Privacy Notice has been available.

I have had enough time to consider my participation in the study.

I voluntarily consent to participate in this study. I have not been pressurized or persuaded into participation.

I understand that my participation is entirely voluntary and that I am free to withdraw my consent at any time, without giving any reason. I am aware that if I withdraw from the study, any data collected from me before my withdrawal, can be included as part of the research data.

I have received Participant research information and Participant informed consent notice by scanning the QR-code provided.

By agreeing verbally this information I confirm that I voluntarily consent to participate in this study.

If the legal basis of processing data within this study is a consent granted by the data subject, by verbally agreeing I grant the consent for process my interview data. I have right to withdraw the consent regarding processing of personal data as described in the Privacy Notice.

Could you please state to the recorder the date and that you have read the Research Information and Participant Consent Notice and voluntarily consent to contents of it and participate in the study.

Thank you for your participation!

Appendix 2: QR -code leading to Participant research information and Participant informed consent notice

LAUREA AMMATTIKORKEAKOULU
University of Applied Sciences

Participant research information and
Participant informed consent notice

Kalliomäki, Päivi; Männistö, Taru

Study title: Preparedness and awareness among tourists about natural disasters in the Philippines – A Field Study

QR -code leading to Participant research information and Participant informed consent notice

Appendix 3: Theme frame to assist in the interview

Kalliomäki, Päivi
Männistö, Taru

8.11.2024

Question frame

- Who we are?
- What is the purpose of this interview?
- Confidenciality form
- Do you have any questions?

1. What made you decide on the Philippines as a destination?
2. What kind of information did you look up about Philippines beforehand?
3. What do you think about safety in the Philippines safety, especially in terms of natural hazards?
4. What do you know about natural disasters in Philippines?
5. How did you prepare for this trip?
6. What specific apps or websites you use during your trip for information and safety updates?
7. Where do you usually look for travel-related information??
8. Why did you choose that source or channel for this information??
- Why didn't you search for information?
- What made you choose this option?
9. How have you prepared in case of a natural disaster?
10. What kind of preparedness supplies do you have?
11. What would have helped you prepare better?
12. What method or channel would you prefer for receiving more information on safety and preparedness?
13. What would you do right now if a natural disaster, like a typhoon, were to occur?

14. Age?
15. Country of residence?
16. Gender?
17. Who are you travelling with?
18. Do you have travellers' insurance?
19. Have you registered a travel notice with your government?
20. Are you aware if your government provides a travel notice service?

How many times have you been at Philippines etc….

THANK YOU! 😊

Appendix 4: Data management plan

DATA MANAGEMENT PLAN

Planners: Päivi Kalliomäki, Taru Männistö

Thesis title: Preparedness and awareness among tourists about natural disasters in the Philippines.

Plan preparation date: 18.11.2024, last update 31.5.2025

1. General description of the data

1.1. Description of the data: Data and materials to be collected or that already exist and their properties

The collected data comes from interviews that are recorded by authors PK & TM with a recorder. Interviews are conducted anonymously. Access to the data is only granted to authors PK & TM. The recordings are in mp3 format. While outside of Europe data is stored on researchers' personal computers, protected by a password and in a password-locked folder. After arrival back to Europe, copies are made to a secure Laurea user account and locked OneDrive with a password on authors PK & TM's common folder and additionally the folder is locked with a password. File destruction is carried out according to instructions, by both deleting and overwriting.

Relevant databases were used to obtain existing background material for this thesis (EBSCOhost, ProQuest Central, Statista, CINAHL and Google Scholar). In addition, other relevant literature, websites and guidelines of key contributors, including the websites of various Philippine government agencies, were utilized.

Material/ Data	Type	Format	Access	Collection method
Interview data	audio, text	MP3, docx	Researchers	By interviews made in Philippines
Notes from APMCDRR	text	text	Researchers	Notes made while attending APMCDRR in Manila, Philippines
Notes from field diaries	text	text	Researchers	Entries made to field diaries while on processing the field study

1.2. Ensuring the quality of the data

The same recorder and format are used for each interview, so that the quality and consistency of the recordings remains the same. The device is tested before each interview. The length of the interviews is kept as short as possible, to minimize interruptions and

distractions. The interviews are conducted together with both researchers, taking turns doing individual interviews to avoid possible introduction.

The recordings will be transferred to Laurea's closed cloud service when all of the interviews are done and transcribed. The recordings will be transcribed as soon as possible by the authors.

2. Ethical principles, legislation and the processing of personal data

2.1. Personal data and data protection considerations

Collected data doesn't contain any sensitive personal data.

The data will contain some indirect personal data such as the interviewee's voice. It is possible that the data will contain sensitive personal data (age, gender and place of residence), depending on the interviewee's answers.

The collected data is going to be anonymized during transcription. Data anonymization occurs in connection with transcription, when audio recordings are removed from the recorder and transcribed. After this, interviewees cannot be identified. In addition, authors PK & TM may use coding, so that no information can lead to the identification of the interviewee. At the beginning of the interview, the interviewee is instructed not to disclose their name, other personal information, workplace, or anything that would allow them to be identified. During data transcription the possible personal information described above will be removed.

Our data will presumably not contain such sensitive personal data that there would be a need to prepare a Data Protection Impact Assessment, DPIA. The data does not contain sensitive information, such as name or other personal data, health status, political or religious beliefs, or race or ethnic origin.

2.2. Main responsibility for the processing of personal data, i.e. controllership

Working together, the authors PK & TM are considered joint controllers. In this case, both parties are equally responsible for ensuring that personal data is handled in accordance with relevant data protection regulations.

2.3. Privacy policies and statements

A detailed informed consent form is created to the interviewees, where is clearly explained the purpose of the research, how the data will be used, participants` rights and how the data will be protected. Before the interviews, this consent form is distributed to the interviewees. The form is reviewed together by authors PK & TM with the interviewee before the start of the interview and the interviewee's understanding of voluntariness is confirmed verbally consenting the participation. This document is made accessible to participants by QR-code during the consent process, ensuring transparency about data handling practices. The form is given to the interviewee to read, and in addition, the form is verbally discussed with the interviewee. The interviewee is given time to read the form calmly and ask questions. Verbally, it is checked with the interviewee if there are any questions and they have fully understood the information and consent.

The participation in this study is completely voluntary. Interviewee can withdraw from the interview at any time without giving any reason and without there being any negative consequences. When the interview is interrupted, the information in the interview in question will be deleted immediately. If the interviewee wishes to withdraw from the study or withdraw their consent later, any data collected from them before the withdrawal can be included as part of the research data, because removal of collected data is not possible as it cannot be identified due to anonymity of data collected.

2.4. Research designs in theses requiring ethical review

The interviews are conducted anonymously based on a completely voluntary basis. The interviews are conducted as so-called "street-side interviews" abroad, the study is not related to the field of medicine, participants were asked to consent to participate in the study, their physical integrity was not interfered with, the study does not investigate minors, and the study does not cause severe stimuli, mental harm or safety threats, participants are not asked about sensitive things. The study does not collect personal information from people other than sound, so no specific research permits were required and there is no need for an ethics committee or ethical review.

2.5. How will you manage the rights to the data and materials you use, produce and share?

The copyright of the Thesis, Results and Research material as well as other Intellectual Property Rights belong to both authors PK & TM.

The final thesis will be public. Interviews and data will not be shared with anyone outside the authors.

3. Data documentation

3.1. Data documentation

The data is decoded and transcribed as soon as possible after the interviews and analysed. Data is documented anonymously. A table is made of the recording of the interview data, showing the time, place and duration of the interview.

Data is transcribed with Laurea’s data protected Teams according to Laurea’s own instructions. After transcription, the information will be verified and then the audio recordings will be deleted.

3.2. Data order and integrity

Data is not shared or saved for later use. The data is only intended for this thesis. After the thesis is completed and approved all data collected in the interviews will be destroyed and overwritten after two years.

4. Recording and information security during the thesis process

Data is stored in both authors computers, behind a strong password and in a folder protected by a password. In addition to this, copies are stored in authors joint Laurea OneDrive, which only authors have access to and need username and password, in addition to a folder behind a password.

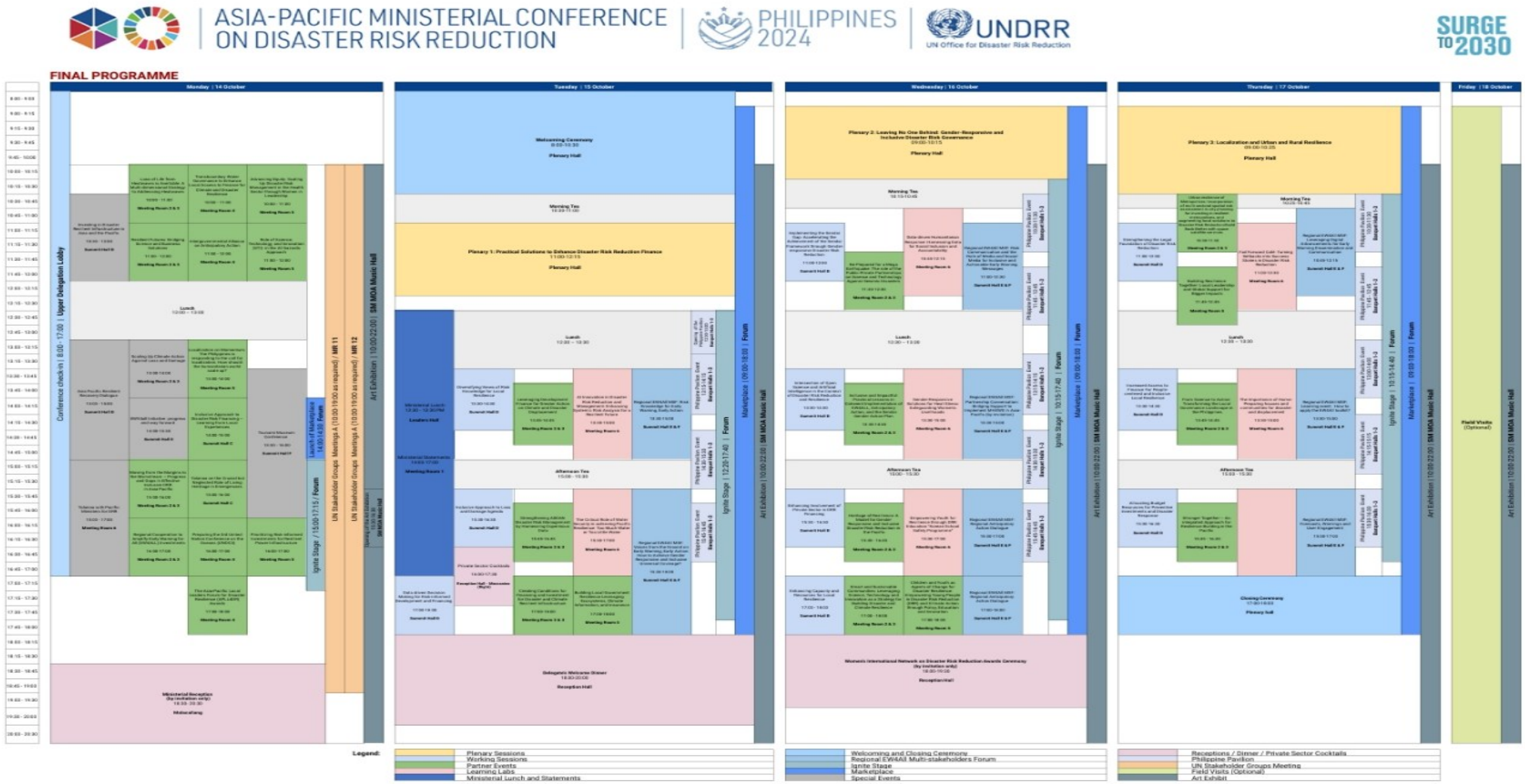
5. After the completion of your thesis: destroying, preserving, or finding further use for and opening data

After the completion of the thesis, the remaining data will be stored on both authors' personal password-protected computers, as well as in a password-protected folder. The information will be kept according to Laurea's guidelines for two years from the publication, in case someone questions the data and its integrity. The data is completely anonymized, so there is no way for the interviewees to be identified. The data will be deleted and overwritten from both authors computers two years after the completion of the thesis.

6. Duties and responsibilities

The main responsibility for data storage, back-up copies and destruction are shared with authors PK & TM, and all steps are planned and decided together.

Appendix 5: United Nations Office for Disaster Risk and Reduction, program of Asia - Pacific Ministerial Conference in Disaster Risk and Reduction 2024



Appendix 6: Excerpt from larger dataset: the Thematic Content Analysis – 'Transcription Template'

Seasonal changes	Weather	Awareness	V1, v10, v11, v12, v17		
Ongoing TF	Natural disaster, Weather, Safety, Location	Awareness	V1, v10, v15, v16, v17	"Didn't even realize, at night, a big TF hit" v1	Didn't follow up on the weather forecast
Seasons (Storm -, high -, wet -)	Weather	Awareness	v1, V14, v9, v10, v11, v12, v17		
Travel time	Information, Weather	Awareness	V1, v4, V14, v10, v11, v12		
Medications	Items	Preparedness	V1, v4, v6, v7, v10, v11, v12, v14, v15, v16, v17		Vaccinations, malaria pills, medications
How likely is a ND	Assumptions, Natural Disaster, Information	Awareness	V1, v2, v3	"How likely is a TF to happen in November" v1 "It happens every month" v2, v3	
Ignored everything else	Attitude	Perceptions	V1, v11, v12		
If it happens it happens	Attitude	Perceptions	v2, v3, v5, V13, v15, v16		
ND knowledge doesn't put off coming	Attitude, Natural disaster, Information, Knowledge	Perceptions	V13, v9, v10, v11, v12, v15, v16, v17	It's not on the forefront of your planning stages V13	
No fear for ND	Feeling, Attitude, Knowledge, Natural Disaster	Perceptions	V14, v9, v10, v11, v12, v15, v16, v17	"Fear of ND is not high on my list while I'm here … not even a consideration to be fair. I'm not really concerned. … It never really even crossed my mind that that was something to think about" v14	Didn't even know if there is a high risk for ND in Phil even had done a lot of online research otherwise -> doesn't show in blogs, TikTok etc.
Know about ND	Information, Knowledge, Natural disaster	Awareness	v1, v2&3, v4, v5, v6&7, v8, v9, v10, v11&12, v13, v15&16, v17		Every interviewee knew at least something about natural disasters in the Philippines. Some knew that there are typhoons there, while others also knew about geography, the Ring of Fire, volcanoes, and earthquakes.
Google	Information, Source, Weather	Information gathering	V1, v4, V13, V14, v5, v6, v7, v11, v12, v15		

Appendix 7: Abbreviations

AI – Artificial Intelligence
APMCDRR - Asia-Pacific Ministerial Conference on Disaster Risk Reduction
CBDM - Community-Based Disaster Management
CBDRR - Community-based disaster risk reduction
CBDRRM - Community-based disaster risk reduction and management
CDRN - Citizens' Disaster Response Network
DOH - Department of Health
DOT – Department of Tourism Philippines
DRR – Disaster Risk Reduction
DRRM – Disaster Risk Reduction and Management
EOC – Emergency Operations Center
EWS – Early Warning Systems
ICLEI – International Council for Local Environmental Initiatives
LGU – Local Government Unit
MDRN - Mayon Disaster Response Network
NDRRMC - National Disaster Risk Reduction and Management Council
PAGASA – Philippines Atmospheric, Geophysical and Astronomical Services Administration
PDCC - Provincial Disaster Coordinating Council
PDRF - Philippines Disaster Resilience Foundations
PHIVOLCS - The Philippine Institute of Volcanology and Seismology
PHREB - the Philippines Health Research Ethics Board
PMT - Protection Motivation Theory
PPSEMO - the Provisional Public Safety and Emergency Management Office
STS - severe tropical storm
STY - Super typhoon
TABI - Tabang sa mga Biktima sa Bicol
TD - Tropical depression
TIEZA - Tourism Infrastructure and Enterprise Zone Authority
TPB - Theory of Planned Behaviour
TS - Tropical storm
TY - Typhoon
UN – United Nations
UNDRR – United Nations Office for Disaster Risk Reduction
VMEPD - Volcano Monitoring and Eruption Prediction Division