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THE RELATIONSHIP BETWEEN THE LEVEL OF PARTICIPATION IN DIFFERENT MITIGATION PROGRAMS AND LEVEL OF PREPAREDNESS OF THE BARANGAY FUNCTIONARIES IN BARANGAY WANGAN: A CORRELATIONAL STUDY

Torregoza, Princess Angel
Digma, Nevin Bryce
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Nomos, Christian Noah

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Torregoza, Princess Angel
Digma, Nevin Bryce
Manteza, Alexis
Nomos, Christian Noah

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APPROVAL SHEET

In partial fulfillment of the requirements in Practical Research 2, this study entitled **THE RELATIONSHIP BETWEEN THE LEVEL OF PARTICIPATION IN DIFFERENT MITIGATION PROGRAMS AND LEVEL OF PREPAREDNESS OF THE BARANGAY FUNCTIONARIES IN BARANGAY WANGAN: A CORRELATIONAL STUDY,** prepared and submitted by **Princess Angel Torregoza, Nevin Bryce Digma, Alexis Manteza,** and **Christian Noah Nomos** is hereby recommended for oral examination, approval and acceptance.

JESSICA O. RABANG
Research Adviser

PANEL OF EXAMINERS

Approved by the panel of examiners, after the presentation of the study with the grade of **PASSED**.

MS. RIALYN BAGUIO
Panel Member

MRS. IDYL MAE MALAQUE
Panel Member

Accepted in partial fulfillment of the requirement in Practical Research 2.

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MA. CORAZON C. SUNGA, PhD
Basic Education Principal

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ABSTRACT

This quantitative study utilized a descriptive-correlational approach to examine the demographic profile, participation in mitigation programs, and preparedness levels of the respondents in Barangay Wangan. The total population sampling method was used and there were 62 respondents who participated in the study. Consequently, the study found that female respondents (64.516%) and over half of respondents aged 41-60 years old participated in tree planting and clean-up drives in Barangay Wangan. Both male and female respondents demonstrated high preparedness levels. Age ranges showed a mean of 0.00 for 13-19 years, 3.6 for 20-40 years, 3.876 for 41-60 years, and 3.586 for 61 years and above. No significant relationship was found between participation in mitigation programs and preparedness levels.

Keywords*: Barangay Functionaries, Barangay Wangan, Age, Sex, Mitigation Programs, Preparedness, Participation*

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INTRODUCTION

Background of the Study

Floods, a common global disaster, has increased significantly economic losses in the late 20th and early 21st centuries due to changes in rainfall-driven flood risk (Kundzewicz et al., 2013). Moreover, flooding caused by various environmental factors, is unavoidable and is expected to continue impacting American households. However, with proper flood preparedness, fatalities and financial consequences can be minimized (Alu, 2022). Hazard mitigation planning or programs involve identifying natural disaster risks and vulnerabilities, developing long-term strategies to protect people and property, and reducing the impact of disasters for better rebuilding ("Hazard Mitigation Planning," 2023). Finally, post-disaster mitigation and preparedness are crucial in preparing for future disasters (Bullock et al., 2013).

In order to work with regional organizations to address natural disasters, Pakistan has set up national and provincial disaster management authorities. The capacity of local institutions, their current state of readiness, and the gaps in their capacity to build capacity for managing disasters locally, however, are not well understood (Shah et al., 2019). In the Netherlands, while flooding is a prominent risk, citizens are poorly prepared to deal with the consequences of flood hazards. More insight is needed into the psychological mechanisms underlying preparatory behavior to effectively apply interventions to motivate citizens to prepare (Kerstholt et al., 2017). In addition, between 2018 and 2020, a community-based flood monitoring project was implemented in Makassar, Indonesia, and Suva, Fiji, where residents of informal settlements used their smartphones to document

flood levels, collecting over 5,000 photos that provided valuable insights into flood dynamics and strengthened community resilience. The case study's conclusions imply that strategies for community participation in flood monitoring can yield benefits beyond just making flood documentation easier, like fostering risk communication and social capital development. The conclusions point out that numerous other community-based projects have been created worldwide that are comparable to rise flood monitoring project. The majority of the literature concurs that these new approaches are thought to be especially promising in terms of enhancing disaster knowledge and awareness when community members participate in disaster risk reduction, despite the fact that these initiatives differ greatly in the extent of community participation and their methodologies (Wolff, 2021).

The Philippines' level of flood preparedness is greatly impacted by the extent of participation in disaster risk reduction management (DRRM) initiatives. Studies conducted in the nation's flood-prone areas have demonstrated that implementing DRRM to the fullest extent possible—including prevention, mitigation, preparedness, response, and recovery—plays a critical role in boosting flood resilience (Kurata et al., 2023). Risk perception, media coverage, firsthand knowledge, and community exercises are some of the variables that impact how seriousness, vulnerability, and behavioral attitudes toward disaster preparedness are perceived. Furthermore, it has been discovered that training courses on disaster risk management have a strong correlation with a rise in public knowledge and comprehension, highlighting the significance of education and awareness raising in reducing the likelihood of flooding (Tahir et al., 2022).

However, the flood control in Manila is a social and technical challenge. Technically speaking, many of the roughly sixty pumping stations that are currently in use

are outdated and incapable of handling even typical rainfall conditions. The city has expanded quickly over the last few decades, but insufficient new pumping stations have been built to meet the needs of low-lying areas. Dense populations frequently surround waterways, causing homes to encroach over the water, disrupting waterflow and impeding upkeep and desilting. Furthermore, solid waste clogs pumping station entrances and waterways, as was once again demonstrated during Karding (Stoutjesdijk, 2018). In Cabanatuan City, flooding is the main hazard. There is a noticeable knowledge gap regarding how to assess the efficacy of government agencies tasked with mitigating the effects of disasters, despite the significance of lowering risk during man-made or natural disasters. There is not a common instrument available yet to gauge how well they perform their duties. Programs designed to assess the overall performance of the local government unit, on the other hand, are appropriately implemented. Programs to gauge the LGU's performance include the "Gawad Kalasag" and the Seal of Good Governance (Cuya-Antonio & Antonio, 2017). In addition, Silang-Sta. Rosa subwatershed in the Philippines, emphasized flood control with significant spatial ramifications. Planned land-use conversion and anticipated climate change are likely to increase the intensity of flooding in the study area, according to the application of participatory watershed land-use management (PWLM), a systematic process with useful tools (e.g., scenario simulation, risk assessment). As a countermeasure, zoning enhancement is essential (Endo et al., 2017).

Further, the study conducted in Davao City on Vulnerability Profile and Risk Perception towards Inclusive Disaster Risk Reduction in Flood Vulnerable Communities revealed that all barangay functionaries participated in disaster risk reduction programs regardless of factors like awareness levels, training opportunities, resources allocation, and

community engagement. However, the study noted a disparity in the level of active participation among functionaries, with some showing strong involvement while others exhibited a lack of commitment. The variation in participation levels seemed to be influenced by factors such as differing awareness levels, availability of training opportunities, resources allocation, and the overall level of community engagement. Despite these disparities, all barangay functionaries were found to be engaged to some degree in the disaster risk reduction initiatives. Efforts to promote more uniform and committed participation across all functionaries could potentially enhance the effectiveness of disaster risk reduction programs in these flood-prone communities (Cayamanda et al., 2021).

The study's proponents were barangay functionaries who live in Barangay Wangan; therefore, they were keen to find out how various mitigation strategies affected the population's level of preparation. Since there have not been many studies on this topic in a barangay context specially in barangay Wangan, researchers decided to investigate the connection between different mitigation strategies and the level of preparation in barangay Wangan. This study clarified how neighborhood involvement affects preparedness outcomes.

Statement of the Problem

This study aimed to determine the relationship between the level of participation of the barangay functionaries and their corresponding level of preparedness. Specifically, it sought to answer the following questions:

1. What are the demographic data of Barangay Wangan Functionaries in terms of:

1.1 sex; and

1.2 age?

2. What is the level of participation of the Barangay Wangan Functionaries in the different mitigation programs in terms of:

2.1 tree planting; and

2.2 clean up drive?

3. What is the level of preparedness of the people living in Barangay Wangan specifically in hazardous and flood-prone areas, when grouped according to age and sex?

3.1 sex; and

3.2 age?

4. Is there a significant relationship between the different mitigation programs and the level of preparedness of the barangay functionaries in Barangay Wangan, in terms of:

4.1 sex; and

4.2 age?

Hypotheses

H_a: There is a significant relationship between the level of participation in different mitigation programs and the level of preparedness of the barangay functionaries in Barangay Wangan.

H_o: There is no significant relationship between the level of participation in different mitigation programs and the level of preparedness of the barangay functionaries in Barangay Wangan.

Review of Related Literature

In this section, the researchers gathered different information from different sources that are related to different mitigation programs and level of preparedness to deeply understand its concept in order to support this study.

Different Mitigation Programs

Flood mitigation strategies are categorized into structural and nonstructural methods, with structural methods like floodwalls, seawalls, and escape routes, and nonstructural methods like relocation, zoning, subdivision, and building codes for high-risk locations (Flood Mitigation, 2023). Mitigation, as defined by Lindell et al. (2020) is a pre-impact initiative aimed at ensuring safety against fatalities and wreckage during the exact moment of danger, involving community success, land use methods, and creation practices (Genovese & Thaler, 2020).

Flood mitigation involves reducing natural flood resistance by destroying mangroves and wetland habitats. Nonstructural mitigation, such as oyster beds along shorelines, offers benefits like reduced deterioration and improved fish habitats. Local, state, and federal offices support this approach. Seepage foundations are developed to transport water out of developed areas. Initiatives by the “United States Army Corps of Engineers” (USACE), “National Oceanic and Atmospheric Administration” (NOAA), and “Environmental Protection Agency” (EPA) are working to restore or protect natural features. Gray infrastructure, such as pipes, drains, trenches, and storm sewers, often release pollutants. Green infrastructure, using natural cycles to infiltrate and reuse rainwater, reduces overflow and contaminants from entering surface waters. This approach helps reduce water levels in streams and rivers. The EPA's regulations on stormwater

pollution have been the primary federal role in stormwater management. However, towns and water users are now exploring green infrastructure to replenish groundwater from urban runoff and floodwaters (Carter et al., 2019). Also, flood prevention strategies include the following: drainage improvements, barriers, wet/dry flood proofing, elevation and relocation as well as acquisition (Rahman et al., 2017).

According to the study by Brody and Highfield (2013), local flood mitigation strategies increasingly use open space protection, but there is limited empirical research on its effectiveness in reducing flood damage. The study, conducted from 1999 to 2009, assessed the impact of FEMA's Community Rating System (CRS) program on 450 local communities and its ability to reduce insured flood damages. The findings suggest that open space protection remains crucial despite environmental, socioeconomic, and policy factors. Further, as stated by Rahman et al., (2022), it is costly to carry out flood mitigation engineering and source control methods are not commonly used for flood mitigation.

Moreover, Bank (2013) said that managing flood risk has made significant progress over the course of many years, from one side of the world to the other. Execution, however, continues to be difficult to attain. The board worldview is viewed as more mind-boggling than a more typical standard-based approach because it encompasses "entire frameworks" and "entire life" thinking. Whatever the case, it is most likely its strongest point and a requirement for more planned and educated guidance. The Worldwide Fund for Nature (WWF), the General Institute of Water Resources and Hydropower Planning and Design (GIWP), the People's Republic of China Ministry of Water Resources, UNESCO, the Asian Development Bank (ADB), and a number of top international experts from the United Kingdom, South Africa, Australia, and the United States collaborated to produce this book.

It was initially intended to evaluate and disseminate contemporary approaches to managing water resources in difficult environments, offering fresh perspectives on sound strategic planning and risk management. In addition, the study of Welsch et al., (2022), disclosed that a 100% rise in the amount of money spent on the flood mitigation programs can bring down flood damages by 9%, which are fundamental to policy makers planning for efficient policies against floods.

Flooding is the most frequent natural disaster, causing significant economic damage and fatalities globally. To be flood resilient, countries must resist, absorb, and recover from floods, transform, and adapt. Six governance strategies can improve flood resilience: diversifying flood risk management methods, aligning methods to reduce fragmentation, involving public and private actors in flood risk management, ensuring adequate financial resources, ensuring sufficient formal rules, and adopting normative principles. These techniques can be applied in various institutional and physical contexts and may provide guidance for governance of climate adaptation more generally (Driessen et al., 2018). Also, flooding is a devastating natural disaster that is expected to become more common, making flood mitigation crucial. Different flooding occurrences have unique beginning points and drivers, requiring different management and damage mitigation techniques. Examples include large-scale repositories and stormwater management strategies to shift water from streams during high-stream times, ground-level measures to mitigate rising water levels and ice jams, scene stormwater management techniques to support a green environment and regular seepage in urban areas, and part-level measures for mortgage holders to reduce water damage from cellar flooding (Watson et al., 2016). Furthermore, it also has disadvantages like this study. It suggests that a

comprehensive, resilient flood risk management approach, despite requiring adaptation costs and land use compromises, is more effective in managing increasing risk and extreme events by reducing vulnerabilities (Trell et al., 2017). Lastly, properties can be protected from flooding by private-side flood mitigation solutions like foundation drainage systems and backwater valves, but their effectiveness depends on regular maintenance, building code enforcement, and installation practices (Sandink & Binns, 2021).

In conclusion, flood mitigation strategies involve structural and nonstructural methods, community success, land use, and green infrastructure. It has initiatives to protect natural features and reduce pollution. Countries must resist, absorb, recover, transform, and adapt to improve flood resilience. Furthermore, mitigation programs like foundation drainage systems and backwater valves, while effective, require regular maintenance, building code enforcement, and installation practices for optimal effectiveness.

Preparedness of People During Flood Situations

Floods, for example, can cause public crises. Everyone is responsible for preparing for disasters, as it is the key to endurance and readiness for any situation. Devoting time to preparation and planning before disaster occurs is crucial. Learning disaster crisis terminology can help plan ahead, potentially saving one's life and that of others (“Be Prepared: Defining Key Preparedness Terms,” 2023). The IFRC (International Federation of Red Cross and Red Crescent Societies) advocate for Public Social Orders to enhance their local readiness and reaction limits to prevent and mitigate the impact of disasters on networks (Binns, 2020). Lastly, this research exposed notable gender-specific variations in preparedness for floods, indicating that the risks of flooding must be managed differently for men and women (Promsri, 2020).

India's rainstorm season, which receives 80% of its precipitation, causes yearly flooding due to factors like riverbank disintegration, waste blocks, and stream attacks. This results in significant death tolls and irreparable damage to businesses, resources, foundations, and government administrations. Public authorities must respond to these events and implement well-thought-out plans to manage flood risks, including driving and exercising flood supervision and direct partner exercises. Flood-prone areas should be inspected, early warning systems maintained, and flood management decisions based on satellite data made to reduce flood effects. Poor families in these areas are most vulnerable to flood tragedies. Governments should establish flood risk funding structures to protect casualties, as families in flood-prone areas risk losing their property, belongings, and even their lives (“Floods Management: Prevention, Protection and Mitigation | Columbia Global Centers,” 2024). In addition, Mavhura et al. (2020) stated that preparing for floods not only saves lives and reduces injuries, but also minimizes property damage and mitigates the psychological pain and stress on victims, as well as ensuring that communities are equipped to handle the adverse effects of catastrophes.

Also, floods are one of the most well-known and repeated catastrophic events in the world. The monetary damage and human losses brought on by the flood's sporadic occurrence have affected the economy more than any other natural disaster. India has also had several flood disasters that resulted in significant human casualties. Flooding occurrences have been discovered to be on the rise. The environment can be a variable of alterations, torrents, tidal waves, or a lack of waterway executives, among other things, but how much obliteration is developing both in terms of financial matters and lives is unknown. The executives' initiatives and guidelines in India are quite planned and efficient;

nonetheless, these drives' organization and execution want more noticeable productivity. Flood damage has increased over the last decade. However, the study highlights the need for improved efficiency in the administration and implementation of organized disaster management programs, indicating a potential gap in people's preparedness (Tripathi, 2015). Also, flood mitigation programs work to reduce the danger of floods through such activities as keeping track of the best place for land use. This helps in putting measures in place to save human lives and properties from the effects of flooding. The actions increase readiness for eventualities and facilitate prompt reactions by societies. Mitigation is also effective in reducing collateral damage after floods, including disease outbreaks and disruptions of day-to-day activities, thus facilitating a faster recovery. Reducing loss costs can be achieved through the elimination of flood risks, which promotes sustainability efforts as well (Syarif et al., 2022).

Further, the bad side of preparedness is that a department leader's lack of understanding and competing priorities can make it difficult to build support for emergency management, which is vital for local government but requires support from a variety of stakeholders. Employees of local government may also doubt the need for emergency management and disregard their responsibility to prepare for possible incidents. Disaster readiness requires more than just planning, as assumptions about human behavior during emergencies are often false. (“Obstacle Course: Understanding the 4 Obstacles to Being Prepared for a Disaster,” 2016). Furthermore, flood preparedness also has limitations. Since flood preparedness is associated with social vulnerability, factors such as lack of awareness, financial capabilities, and health problems can affect how people get ready for flooding. High social vulnerability results in low levels of preparedness. For all the

individual flood protections, many dread disasters and do not take any precautionary measures; this indicates that there is a need for enhanced preparedness (Działek et al., 2019)

In conclusion, floods can trigger public crises, requiring disaster preparedness. The "International Federation of Red Cross and Red Crescent Societies" (IFRC) advocate for improved local readiness and reaction limits. India's rainstorm season causes yearly flooding, resulting in significant death tolls and irreparable damage. Public authorities must implement flood management plans, inspect flood-prone areas, maintain early warning systems, and establish funding structures. Preemptive strategies are crucial for avoiding mishaps and gaps between the level of preparedness of the people. India has experienced numerous flood disasters, highlighting the need for improvement. Also, disaster readiness is not just about planning, but also involves understanding human behavior during emergencies, as assumptions about human behavior can be misleading.

Tree Planting as an Impactful Flood Prevention Technique

Trees are essential for retaining fossil fuel byproducts and preventing atmospheric deviance from exceeding the Paris Agreement's 3.6 degrees Fahrenheit goal. To combat environmental change, tree farms in the U.S. should increase their output to three billion seedlings annually, surpassing current levels. This is in line with a review in Frontiers in Forests and Global Change (Mandel, 2021). As the environmental crisis subsides, organizations and consumers are collaborating with charitable organizations and legislatures to promote global tree-building, aiming to provide livelihoods, reduce carbon dioxide emissions, and enhance biological system health (Einhorn, 2022). Trees can help reduce air pollution by concealing surfaces and lowering temperatures, reducing the risk

of harmful pollutants like ground-level ozone. They also reduce the need for traditional cooling and the ozone-depleting substances associated with it. Trees can also decrease particulate matter (PM) in the air through dispersion and deposition, which are typically collected in waxy leaves and washed away by rainwater (Traverso, 2022). Air pollution, including particulate matter, is linked to various health issues, including bronchial side effects, glaucoma risk, coronary episodes, vascular changes, mental imbalance, hypertension, and heart failure. The US National Park Service states that planting trees reduces air pollution by lowering temperatures, reducing energy use in buildings, and eliminating pollutants (Weeden, 2023).

Most importantly, trees are valued for their taste and benefits to our surroundings, as well as their role in managing runoff. Their leaf overhangs help reduce disintegration from falling precipitation and provide a surface for downpour water to land and evaporate ("Soak up the Rain: Trees Help Reduce Runoff | US EPA," 2023). Further, trees, hedgerows, and woods are crucial in natural flood management. They gather rain, establish "macropores" in soil, and reduce runoff from catchment areas. Trees also act as a drag on rising waters, easing back the stream. A multi-scale experiment in Wales showed that free sheep plots planted with broadleaved trees were more successful at retaining surface runoff. (Goodwin, 2017). Tree planting has both positive and negative effects. However, if done poorly, it can worsen the problems it was meant to solve, as planting the wrong trees in the wrong place can reduce biodiversity and ecosystem resilience (Einhorn, 2022). Also, there are cities facing increased rainfall and rising sea levels that need long-term solutions to combat runoff and flooding. Research by Zabret and Šraj (2021) suggested that incorporating trees and green infrastructure in urban areas can be more effective than

traditional barriers and drains. Trees offer benefits like water interception, absorption, and evaporation, reducing flooding and mitigating storm impacts. Planting trees in urban areas is cost-effective and crucial for climate change mitigation and adaptation. Previous studies in British Columbia and Mexico have shown trees can intercept 50–60% of rainfall (Box, 2021).

Also, mature trees can cause significant damage, both above and below ground, and require regular pruning and trimming to maintain their beauty. Trees grow slowly, and it can take decades to grow a large tree. Tree maintenance is essential, as it involves regular pruning, leaf removal, and cleaning up seeds and fruits. Trees can cost up to $200 each, not including additional costs for landscaping services. Trees are fussy, time-consuming, and require pruning, harvesting, and cleanup in addition to the need for disease detection and insect and bird protection (Spengler, 2023). Further, the Warwickshire study proved that floods can be mitigated effectively by planting trees in towns with no permeable surfaces, as they boost infiltration and water retention capacities (Revell et al., 2022). Though tree planting aids in minimizing floods through enhanced characteristics of soils, reduced surface runoff, and increased evapotranspiration, its efficiency is subject to the prevailing atmospheric patterns, variety of soil kinds, and terms under which it is implemented within a specific area (Marapara, 2021).

Clean Up Drive: A Flood Prevention

Clean-up drives encompass the participation of individuals and volunteers who are dedicated to eliminating waste from pristine surroundings. Frequently, these initiatives are undertaken in conjunction with local governmental bodies, wildlife agencies, and educational establishments. By engaging in such drives, individuals become more

cognizant of the importance of proper waste management and the consequential impact on the ecosystem. These endeavors are seamlessly incorporated into broader conservation campaigns (Banerjee, 2023). Further, clean-up drives have a lot of benefits. Since it has thoroughly cleaned one's village in Paremas Village, Jerowaru District, and East Lombok, it has raised awareness about the cleanliness of the coastlines as well as the impact of garbage on them. These programs improve the areas for conservation and attract tourists, which is a tool to promote environmental conservation. There is community participation, accountability, and learning how to deal with pollution. Successful clean-up programs are commended by people who appreciate their global potential (Mulyani et al., 2023).

Community clean-up drives promote tourism, boost local economies, protect wildlife, and raise public awareness about littering. With over 90% of Americans acknowledging littering issues, engaging in clean-up efforts is crucial. By identifying local waste management needs, individuals can collaborate with local establishments, encouraging wider participation. These collective efforts contribute to a cleaner, more sustainable planet and empowerment during challenging times (Dow, 2021). Community clean-up initiatives are crucial in urban areas, especially in developing regions, to maintain drainage systems, mitigate flood effects, promote public participation, and improve public health by reducing illness risk and malaria (Newman et al., 2022). Lack of community cleanup efforts can increase flooding risk due to waste accumulation in canals and roadsides, hindering water flow and obstructing drainage systems. This can lead to heavy rainfall, breeding grounds for disease-carrying mosquitoes and potentially triggering outbreaks of illnesses like dengue hemorrhagic fever. The presence of refuse in floodwaters can disperse pollutants, posing additional public health risks. Litter can also harm the

environment's aesthetic appeal, transforming areas into slums and negatively impacting quality of life (Riyani, 2022).

Furthermore, cleanup drives face disadvantages, including problems with urban waste management in developing nations, where people frequently do not understand their part in the problem and decline to take part in cleanup efforts (Rangeti & Dzwairo, 2021). Also, urban sanitary conditions also require improvement, but there is disagreement about how to do so. Community-driven drives have advantages but face obstacles like coordination, co-production, affordability, and trans-sectoral issues. Market-driven and state-led efforts are frequently compromised due to lack of market demand and barriers to low-cost sanitation facilities. In Pakistan and India, two community-driven approaches to improving urban sanitation have addressed less institutionally rooted issues like the lack of local technical skills in constructing and maintaining better facilities, while also overcoming these obstacles and fostering better community-government relations (McGranahan, 2013).

Flood Preparedness Across Different Biological Identities

Disaster preparedness is the state of taking action to minimize the number of fatalities and other damages caused by flood disasters by swiftly and effectively responding to the situation and providing for recovery. In other words, being prepared involves setting up the required safeguards for a prompt and efficient reaction to an occurrence. Making sure the right systems and resources are in place to support those affected by the disaster and give them the tools they need to help themselves is the goal of preparation. Preparing for a flood disaster involves a variety of actions and safeguards that can be implemented procedurally or physically. In order to effectively anticipate, respond to, and recover from

the effects of impending or current disaster situations or conditions, governments, professional response and recovery organizations, communities, and individuals must be well-prepared. This includes having the necessary knowledge, capacities, activities, and measures in place beforehand (Glago, 2021). Further, the study of Cuesta et al. (2022) showed that women see flood risks more than men. Nevertheless, both sexes have the same approach to preparing for floods. Advanced educational levels result in more positive attitudes, whereas young adults and young females tend to perceive a higher risk of floods. This indicates a gender distinction in preparedness behaviors.

The perceptions of risk and readiness of men and women in Serbia for these kinds of events were conducted with 2,500 participants in 19 out of 191 municipalities. Based on this study's results, men appeared to perceive greater individual and household preparedness and to be more confident in their ability to deal with flooding (Cvetković et al., 2018). This can also be seen in the study of Rai et al. (2023), men's perceptions and levels of preparedness for flood events appear to vary depending on the situation. Men were more confident in their ability to handle flooding and felt more prepared as individuals and as households than women were in a Serbian study. However, when it came to risk perception, women showed a deeper comprehension of these occurrences, while men appeared more certain of their capacity to handle flooding and to perceive greater individual and household preparedness (Hashim et al., 2021).

A study involving 509 respondents found that women have a deeper understanding of flood events and are more willing to help victims. Factors such as risk perception, media, and personal experience influence perceived severity and vulnerability. These factors also affect attitudes toward behavior, social norms, and perceived behavioral control. 56.2% of

female respondents were considered more disaster-resilient (Kurata et al., 2023). However, there are barriers that prevent women from fully participating in flood early warning systems and disaster response planning. Societal norms and a lack of attention to women's knowledge and views contribute to the lack of women's participation in risk assessment and planning processes (Shah et al., 2022).

Further, a relevant note, entitled “Assessment of Disaster Preparedness Level of Medical Students of a University, Turkey,” aimed to assess disaster preparedness knowledge levels among 75 medical students at a university and evaluate the relationships between related factors and preparedness knowledge. Results showed a median score of 51.0, with higher scores in women, second and upper graders, and those living in the city where their family resides. This means that female is more prepared at flood occurrences than man (Tözün et al., 2022). Furthermore, the role of women in flood risk management, disaster preparedness, response, and recovery activities in Char South Baladoba, Kurigram District, is very significant, but they have limited decision-making powers (Bassar, 2017).

Also, Chisty (2023), stated that in the findings of her study, it was observed that women in the community had greater knowledge about the consequences of flooding and benefits of helping out during a flood compared to men who were more inclined towards undertaking voluntary work during a flood. Lastly, De Silva and Jayathilaka (2014), showed differences between the genders in participation in flood mitigation. These disparities make women more susceptible to flood because of factors like their jobs, money, social roles and being left out of decision making. Further, the data were gathered through semi-structured questionnaire interviews with 900 farmers (50.2% women and 49.8% men) and four 20-member focus group discussions. The study found that 85.2% (or 767 farmers)

were aware of climate change and its implications for agriculture and other livelihood activities. Men and women had similar perceptions of climate change, with the majority seeing increased strong winds, higher temperatures, more frequent droughts, increased rainfall variability, and increased flooding (Partey et al., 2018). In addtion, a hierarchical regression model was used to conduct a gender-based analysis. Men had a higher percentile score (0.430 units) than women, indicating that male respondents were less vulnerable in the study area. The regression model's results revealed that using gender as an explanatory variable increased the model's explanatory power significantly. The overall findings of quantitative and qualitative data analysis revealed that floods had different effects on men and women, with women being more vulnerable overall, due in part to gender-related sociocultural norms (Naz & Saqib, 2021).

Flood Preparedness Across Different Age Groups

A state of preparedness is the culmination of all actions taken in advance of an occurrence that aim to minimize potential disruptions and lessen the extent of harm caused by the event. To be more precise, it encompasses all preparations and resources allocated to avert fatalities and illnesses, and consequently, to lessen human suffering—both individual and communal—both during and following the catastrophe. It is made up of actions taken at a specific moment by individuals, families, communities, locales, countries, regions, institutions, and states to counteract possible negative effects of risks. The ability to absorb, buffer, and respond is a component of preparedness; it is also known as the society's resilience to a hazard (Lakein, 2014). Also, the research of Yildiz et al. (2021) showed that there was no significant variation in the recognition of flood risks among children before and after a flood. This indicates that they have a stable perception

of such disasters across their ages. Nevertheless, the importance of being prepared has risen among children after flooding, demonstrating their ability to take steps regardless of age. The study argues for better training as well as policies geared toward improving flood management and enhancing preparedness.

Furthermore, the distinct physical and psychological obstacles faced by individuals 65 years of age and above may impact their degree of readiness, their ability to manage, and their capacity to react to and recover from an incident involving hazards. A study by Ashida et al. (2015) demonstrated that older adults can effectively manage a range of daily challenges despite indicated vulnerabilities, including disruptions in basic services, access to bathrooms, clothing, and housing, potable water, crowding in temporary housing, and a lack of communications and transportation. They also discovered that social ties among older persons can either encourage or obstruct preparedness behavior, whereas their selfless desire to support their community would encourage them to be prepared. As a result, this demographic could still make a valuable contribution to the creation of stronger and more practical catastrophe preparation. However, according to a nationwide study by Al-Rousan et al. (2014) on older persons' preparedness for catastrophes, most older folks lack an emergency plan, sufficient backup supplies of food, water, or medicine, and adequate education about disaster preparedness. Only 34.3% reported participating in an educational program or reading materials about disaster preparation. Nearly 15% reported using electrically powered medical devices that might be at risk in a power outage. The preparedness score indicated that increasing age, physical disability, and lower educational attainment and income were independently and significantly associated with worse overall preparedness.

Moreover, it has been discovered that the degree of preparedness in flood circumstances varies among younger people. Research has indicated that youth in particular are especially susceptible to the risks associated with flooding if they are not adequately prepared (Ridzuan, 2023). However, youth's preparation activities can be greatly impacted by their level of involvement in flood disaster management (FDM). According to research, respondents who live in flood-affected areas participate in FDM more actively since they have firsthand experience with flooding. Furthermore, it has been recommended that young people's involvement in disaster management be expanded in order to create a more comprehensive program tailored to local needs (Kurniawan et al., 2021). However, according to Adzkiya et al. (2023) young individuals' level of preparedness for floods does not appear to be impacted by their age. For instance, Muslim youth in Indonesia are well-aware of the hazards associated with disasters and use technology to keep an eye on current events, but their attitudes regarding preparedness and resilience are concerning.

Furthermore, an Indonesian study revealed a significant correlation between the community's level of knowledge and its readiness for flood disasters, suggesting that knowledge influences the community's concern for being ready and vigilant in disaster anticipation, particularly for those residing in flood-prone areas. As a result, even if age may not have a direct impact on preparedness, elements like education and awareness campaigns can greatly raise young people's levels of preparedness Kumambouw et al., 2023). Additionally, the research conducted under the “Fostering disaster mitigation through community participation- case of Kochi residents following the Kerala floods of 2018 and 2019 " determined that old adults, specifically those aged 55 and above, exhibit

the highest level of readiness in the face of calamities, particularly individuals residing in households with specific requirements or those necessitating external assistance due to physical ailments. Similar to our study, the combination of 61 years old and above and 41–60 years old, which involves people aged 55 and above, showed that as they have participated in different mitigation programs, their level of preparedness is high as well with 41–60 years old being the highest, and 60 and older years old after it (Ali & George, 2021).

However, a study in Serbia revealed that men appeared to perceive greater individual and household preparedness and to have greater confidence in their ability to deal with flooding. Women, on the other hand, showed a deeper comprehension of these events. The respondents, who made up 50.2% (1256) of the male population and 49.8% (1244) of the female population, were typical of the nation's gendered stratification, which records 51.3% men and 48.7% women. Respondents' average age was forty years old, with those under thirty-one (711; 28.4%) being the most represented group. In addition, it was discovered that, in comparison to women (47.4%), men (52.6%) reported being more willing to comply with evacuation orders ($p = 0.02$). A comparison of all the items showed statistically significant differences in the preferred evacuation strategies. Although men favored staying in the house, they also favored moving to higher floors (52.6%, 39.9%) or visiting friends' homes (39.9%, 32.2%). Even after following orders to evacuate, men appear to have less faith in the public authorities' escape routes. They indicated that they would rather stay in their homes or visit neighbors (Cvetković et al., 2018). In addition, a study examined gender differences in flood risk perception and post-flood mitigation behaviors among 405 private groundwater supply users in Ireland. It found that women are

more affected by climate change and pollute more than men, highlighting a critical inequity in rural areas. Women tend to perceive environmental and hydrological risks more acutely than men, but this does not always translate into flood-related behaviors. Males reported higher flood preparedness levels than females, suggesting a degree of difference between perception of flood risk and post-flood health behaviors. Furthermore, a study in Ireland revealed gender differences in flood risk perception and mitigation behaviors among private groundwater users. There are 168 females and 237 males. It surveyed private groundwater users aged 18 and above in Ireland, focusing on socio-demographic characteristics, flood experience, and health behaviors during flooding, with 42.7% of respondents aged >49 years (McDowell et al., 2020).

Preparedness and Mitigation Programs in Flood Management

A study conducted in Indonesia showed that the Sapanan people demonstrated a high level of understanding and activity in relation to flooding. This was because of the community's disaster preparedness, which they had opted to utilize as a learning platform. In connection to this study, flooding frequently resulted in the emergence of a variety of diseases, preventing the community from carrying out its normal activities. Because they were cleaning their homes, the children were unable to attend school due to the muddy condition of the seats and environment (Syarif et al., 2022). According to studies, with enough planning and mitigation measures, catastrophic disasters can be prevented through the results of this study. It will offer insights into the variables influencing disaster readiness, which may serve as a foundation for actions taken to minimize losses during such occurrences. Understanding the contributing elements will help national and local government entities better understand how the public views disasters and how to respond

to them when they happen. This is relevant to the process of making policies, as the outcomes of the evaluation that will be carried out will be incorporated into disaster risk management policies with the aim of achieving sustainable and ideal responses, such as resource maximization and the avoidance of losses or casualties (Ong et al., 2023).

Moreover, during disasters, Indonesian communities frequently evacuate, hiding in hills, rice fields, and meadows. While those in need of medical attention are transported by young people or village residents to the closest clinic or hospital, injured people receive assistance from family or neighbors. Communities need to do more and contribute to the creation and upkeep of disaster-resilient villages in order to support disaster resilience. This calls for systemic initiatives to improve knowledge and skills as well as community relationships, infrastructure, and integrated information systems (Bullock et al., 2013). Further, the measures designed to mitigate floods, such as building flood defenses and improving drainage systems, reduce the vulnerability of society to flooding, thereby enhancing preparedness for flooding. Such measures make people aware of the risks of flooding and develop a more active attitude towards them. Combining mitigation efforts with preparedness measures promotes sustainable development in flood-prone areas. This helps communities survive and restore themselves after hazards, thus minimizing the damage of a flooding incident (Kurata et al., 2023).

Also, in contrast to various case studies, it is useful to expand our understanding of human-flood systems. An individual's mitigating action can enhance the preparedness of a community (Kahlor et al., 2019). In Canada, they face increasing flood risks due to population growth and climate change. Flood Early Warning systems (FEWs) help inform the public, identify infrastructure, and distribute evacuation routes. However, existing

FEWs are limited in forecast horizon and geographical coverage and require precise hydraulic models and computing, which explains that not all mitigation programs increase their level of preparedness (Snider et al., 2023). Also, some studies contradict the positive relationship between the mitigation programs and level of preparedness. The participation of business organizations in preparedness activities is crucial in determining the level of preparedness; however, these activities consist of observable and quantifiable actions that need to be performed in order to meet preparedness objectives. In the past, preparedness lists have been added up using basic arithmetic to quantify preparedness actions. However, because these methods assumed that all of the preparedness activities were of a similar scale, they did not discuss or give weight to any of the activities (Hashim et al., 2021). Lastly, flood-affected youths in Semarang City are more involved in disaster management, but overall participation is low. Improving preparedness involves education, socialization, training, and disaster response simulations (Kurniawan et al., 2021).

Barangay Initiatives on Flood Mitigation

In recent studies, there is an ambition to develop a more resilient and sustainable approach to flood management by recognizing its effectiveness in reducing adverse consequences (Wang et al., 2022). Importantly, the safety of communities and their resilience depends on means of averting danger or reducing its impact. Long-term resilience building cannot be complete without sustainable development practices. For example, the fact that barangay disaster risk reduction and management committees exist is a step towards disaster risk reduction. These include eco-friendly infrastructure, community-based early warning systems, and nature-based solutions to improve disaster preparedness and response capacities. Integrating green technologies into housing design,

such as rainwater harvesting systems or green roofs, can mitigate risks effectively while promoting environmental conservation and sustainability alike. In this respect, the barangay disaster risk reduction and management committees are very important in implementing these strategies for river basin communities situated in the southern Philippines, which are vulnerable regions (Nacaya et al., 2022).

Further, the research on "Hazard Experiences and Risk Reduction and Mitigation Initiatives of Residents in Barangay 843—Zone 92 in Pandacan, Manila" puts emphasis on the importance of barangay functionaries in flood initiatives. They are responsible for coordinating and implementing measures that will reduce risks as well as mitigate floods within the community, such as information campaigns, drills, trainings, government-agency coordination, and resource mobilization to enhance resilience to flooding events. The study highlights the significant hazards faced by residents in Barangay 843 (Zone 92), including property damage caused by flooding, which disrupts daily activities. Information campaigns have been carried out by barangay officials to address them before they occur, including drills, training sessions for residents, cooperation with governmental organizations, and fund mobilization. Hence, this research emphasizes community-based approaches as well as placing emphasis on the role played by barangay functionaries in reducing and mitigating the effects of hazards among inhabitants who are vulnerable in urban areas like the Pandacan area of Manila. By understanding the specific challenges that a given community faces and adopting strategies that are appropriate to these challenges, people living here can better prepare for and respond to future hazard events, thereby safeguarding their welfare and preventing any catastrophic outcome (Cipriano & Garcia, 2019). Additionally, there are twenty typhoons visiting the Philippines every year on

average, and climate change exacerbates their destructiveness. The Disaster Risk Reduction and Management (DRRM) Act was passed in 2009, though Barangay San Antonio in Pasig City has been maintaining local emergency rescue teams and equipment since 2000. In 2008, the barangay established its Emergency Response/Rescue Program that fused fire together with medical teams. The latter became one of the Galing Pook Awards awardees. Barangay Tumana, Marikina City, which is prone to flooding, started by establishing an early warning system using the Water Level Monitor at the Marikina River. They alerted residents through increasing levels of warnings so as to evacuate and be prepared for additional warnings (Salazar, 2024). Also, barangay communities frequently practice flood preparedness, with a mean score of 3.84, especially during flash flood alerts, ensuring vigilantness and staying on higher ground (Rogayan & Dollete, 2020).

In conclusion, recently conducted research is centered on coming up with a more resilient method of flood control that has to do with sustainable development practices such as barangay disaster risk reduction and management committees. To improve disaster preparedness and response capacities before, during, and after calamities, these groups make use of eco-friendly infrastructure, community-based early warning systems, and nature-based solutions. However, these schemes may not work well due to issues like meager funding, inadequate education programs for capacity building, and the lack of cooperation among various players in this sphere. Therefore, their effectiveness can be maintained only through continuous evaluation processes as well as their updating in different communities.

Theoretical Framework

In 1975, Rogers established the "Protection Motivation Theory (PMT)". This model discusses how people are driven to respond to a perceived health threat or hazard in a self-protective manner. Individuals, families, and even parent-child units are described under the idea. This has been used to deal with a variety of calamities, including floods in Europe and wildfires and earthquakes in the United States. PMT has been utilized to improve and strengthen safer mitigation and response behavior techniques for communities faced by various hazards; it can also be the key to eventually saving human life (Westscott et al., 2017). The basic idea behind Roger's approach is to comprehend the responses to triggers that may be utilized to analyze and evaluate persons in the presence of a potential hazard. Having said that, the research is relevant to Roger's theory in terms of people's preparedness and reactions to a catastrophic calamity.

Furthermore, propositional control and expectancy theory serve as the foundation for the Theory of Planned Behavior (TPB), a reasoned action model that has been supported by numerous correlational studies and interventions. TPB holds that intention is the antecedent of behavior and is influenced by attitude, subjective norm, and perceived behavioral control (Ajzen, 1975). The individual's risk assessment model is based on Protection Motivation Theory (PMT). This model explains how people adopt preventive behaviors or measures and how they cognitively perceive or evaluate any risk that could endanger their life. The PMT, created by Rogers in 1975, identifies the factors that prompt people to take preventative measures and act upon perceived health threats (Nazneen et al., 2021). PMT is a recognized theoretical framework for evaluating how people behave in response to threats. The model also acknowledges the role of various factors such as

demographic characteristics, past experiences, and emotional responses in shaping individuals' perceptions of threat and their likelihood of engaging in protective actions (Byrd et al., 2022).

The Theory of Planned Behavior (TPB), which offers a thorough framework for comprehending the elements influencing individual decision-making and behavioral intentions for a particular action, such as planning for floods, is ideally suited to explain flood preparedness intents. In the context of TPB and disaster preparedness, attitudes, subjective norms, and perceived behavioral control all have a major impact on the desire to engage in safe behavior (Najafi et al., 2017).

The theories mentioned delve into the intricate interplay between participation in mitigation programs and the preparedness level of barangay functionaries. Drawing from the Protection Motivation Theory (PMT), the research examines how individuals perceive and respond to risks, shedding light on the factors that drive their adoption of preventive measures. PMT, established by Rogers in 1975, identifies key motivators that prompt people to take action against perceived health threats, such as those posed by natural disasters, specifically floods. Additionally, the study integrated the Theory of Planned Behavior (TPB) to understand the decision-making processes and behavioral intentions surrounding disaster preparedness. TPB offers a comprehensive framework that considers attitudes, subjective norms, and perceived behavioral control as influential factors shaping individuals' inclination towards engaging in protective behaviors. By synthesizing PMT and TPB, this study sought to provide a nuanced understanding of how participation in mitigation programs correlates with the preparedness level of barangay functionaries,

offering valuable insights for disaster management strategies in Barangay Wangan and beyond.

Conceptual Framework

The study is guided by the following conceptual framework shown below:

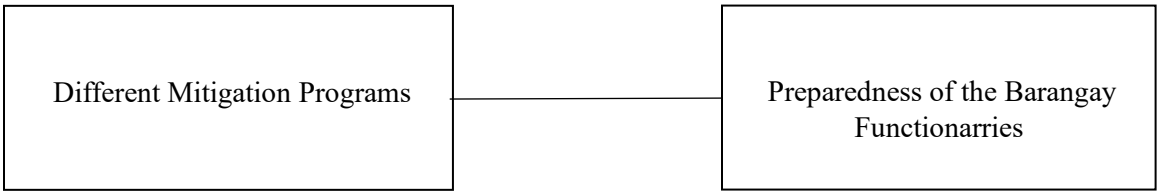

Figure 1: Conceptual Framework

As shown above, the researchers were trying to figure out if there is a significant relationship between the different mitigation programs and the preparedness of the barangay functionaries living in Barangay Wangan.

Significance of the Study

This study focused on the relationship between mitigation programs and the preparedness of barangay functionaries in Barangay Wangan with the goal of enhancing community resilience through tailored strategies. By empowering barangay functionaries with increased autonomy, accountability, and adaptability, the community can better respond to disasters effectively. The research findings are valuable for future studies, offering insights for further exploration and identifying research gaps to advance knowledge in this area. Moreover, the findings can be used to evaluate the efficacy of mitigation efforts, aiding local governments and disaster management groups in enhancing readiness in Barangay Wangan. Additionally, the study results can inform resource allocation decisions and guide the implementation of relief processes. Ultimately, the study

can support decision-making processes and inform the development of frameworks, regulations, and standards that cater to the specific needs of the Barangay Wangan community.

Scope and Delimitation

This study aimed to determine the relationship between different mitigation programs and the level of preparedness of the barangay functionaries, which refers to the people working in the barangay. This included the captain, barangay kagawad, Sangguniang Kabataan (SK) chairman, barangay treasurer, barangay Violation Against Women and Children (VAWC) officer, Sangguniang Kabataan (SK) kagawad, purok leader, assistant leaders, and barangay health workers in Barangay Wangan. In addition to the indicators indicated in the study, no other variables related to other mitigation measures were included, nor were any subjects who were unavailable for the study included. The availability of the barangay functionaries of Barangay Wangan was taken into consideration when choosing the aforementioned area.

The chosen respondents of this study were the barangay functionaries living in Barangay Wangan. Also, this study only picked those individuals who had explicitly taken part in the said disaster mitigation programs, which incorporated tree planting and clean-up drives.

Definition of Terms

The following terms used in this study were defined operationally.

Different Mitigation Programs – refers to the establishment of a strong framework and

primary measures, the participation of local networks in disaster risk reduction drives which includes the tree planting and clean up drive.

Preparedness of the People – refers to the information, perception, and reasonable steps taken to protect individuals and property in flood crisis situations.

Barangay Functionaries – refers to the people working in the barangay which includes the captain, barangay kagawad, *Sangguniang Kabataan* (SK) chairman, barangay treasurer, barangay Violation Against Women and children (VAWC) officer, *Sangguniang Kabataan* (SK) kagawad, purok leader, assistant leaders, and barangay health workers.

Chapter 2
METHODS

This chapter covers the research design and research procedure that are utilized by the researchers in pursuing the study. It discusses the locale of the study, the selection of the respondents, sampling method, research instruments and statistical treatment of the data.

Research Design

This quantitative study used descriptive-correlational research, a well-known sociology method, to explore mental, social, and monetary anomalies through mathematical evaluation. According to Coghlan and Brydon-Mill operator (2014), quantitative methods capture a large amount of mathematical information. The study employed the descriptive analysis technique. A descriptive research design used various methodologies to accurately characterize populations, circumstances, or oddities, providing what, where, when, and how questions, but not why (McCombes, 2023). Furthermore, a correlation indicates the strength and course of a relationship between two factors, with a positive or negative heading. Correlational research plans examine these connections without variables controlling them (Bhandari, 2023).

The descriptive method was used to describe the demographic profile of the respondents in terms of sex, socio-economic status, and age. The same method was used in analyzing the influence of different mitigation programs in terms of tree planting and clean up drive to reduce flood risk. Similarly, descriptive method was utilized to determine the level of preparedness of the barangay functionaries in Barangay Wangan. On the other hand, correlational approach was used to determine whether or not there is a significant

relationship between different mitigation programs and level of preparedness of the barangay functionaries in Barangay Wangan.

Research Respondents

The respondents to this research are the barangay functionaries living in Barangay Wangan. In deciding, the proponents used the total population under purposive sampling technique. Total population sampling is a purposive sampling technique that examines the entire population with specific characteristics. Researchers often use this method due to its small size and well-defined nature. It eliminates potential bias but is not justified for consuming more resources and time (Canonizado, 2021). To do so, a survey will be conducted to determine the participation of different mitigation programs of the barangay functionaries and their level of preparedness. The participants must be male or female. They must be 13-19 years old, 20-40 years old, 41-60 years old, and 61 years old and above. It is also crucial that they have participated in different mitigation programs including tree planting and clean-up drive.

Research Locale

Wangan, a barangay in Davao City, has a population of 6,905, accounting for 0.39% of the city's total. In 2015, the population was 5,821, with 1,406 households and an average of 4.14 members per household. The highest age group in Wangan was 5 to 9, with 629 individuals, while the lowest was 80 and over with 38. The population grew from 3,068 in 1990 to 6,905 in 2020, a 3.66% increase from the previous year. Wangan is located on the island of Mindanao and has an elevation of 294.9 meters above sea level. (“Wangan, Davao City Profile – PhilAtlas,” 1990).

Research Instrument

The researchers utilized a self-made or researcher-made survey questionnaire that used a five-point Likert scale type with the following descriptions: Very Often, Often, Sometimes, Rarely, and Never. Each of these options weighed 5 down to 1. The research questionnaire consisted of three sections. The first section was about the demographic profile of the participants, including their sex and age range. The age range included persons between the ages of 13 and 19, 20 and 40, 41 and 60, and 60 years and older. The second section focused on the extent of involvement or the level of participation of the barangay functionaries in various mitigation programs within Barangay Wangan. Finally, the third section explored the level of preparedness of the barangay functionaries specifically for the potential threat of flooding.

Data Gathering Procedure

There were specific actions taken to uphold the ethical norms that served as the research's guiding principle. The review's proponents ascertained the School President's and Basic Education principal's agreement before gathering data. The research instrument and the survey form used to select the respondents were made ready for distribution as soon as authorization was received.

Second, following the acceptance of the survey, the researchers determined the respondents and produced the study instrument. Furthermore, prior to conducting the survey, the researchers provided an orientation to the respondents, discussing the purpose and relevance of our study, the extent of engagement of the participants, including their rights as respondents to the study, and the ethical considerations that the researchers would observe and follow. The researchers also gave letters of permission and informed consent to the respondents.

Lastly, the researchers provided hard copies of the survey questionnaires for the respondents to answer, while adhering to ethical considerations and securing data for easy access, ensuring that the respondents could easily answer the questions.

Ethical Considerations

Ethical considerations matter for logical trustworthiness, basic freedoms and nobility, and cooperation among science and society. These standards guarantee that support in studies is willful, informed, and safe for research subjects. Research ethics are a bunch of rules that ought to be constantly followed by researchers and scientists while gathering information from individuals (Bhandari, 2023).

Furthermore, the researchers were diligent in maintaining the legitimacy and credibility of their research by being transparent about its content and objectives, avoiding the dissemination of false information, and adhering to ethical considerations. In addition, the researchers' efforts to maintain the confidentiality and obscurity of respondents' information by ensuring informed consent and data protection and by not sharing their answers with others significantly increased their confidence in the researchers, thus enhancing their ability to understand and interpret the respondents' responses.

Data Analysis

The researchers used frequency and percentage in determining and analyzing the demographic profile of the respondents in terms of sex status and age. A variable's frequency is the number of times it appears in a dataset, while its frequency distribution represents its frequency. Its potential qualities are the number of events of every possible value in the dataset (Turney, 2023). Furthermore, the frequency of a value is the habitual frequency within a span, and a frequency distribution is a representation of this frequency,

either in graphical or tabular format, indicating the number of perceptions within a given span (Young, 2022).

In addition, the mean and standard deviation were utilized in both SOP 2 and 3 to decipher the different mitigation programs of Barangay Wangan concerning tree planting and clean-up drives and the level of preparedness of barangay functionaries in Barangay Wangan by assessing their participation in mitigation programs and their actions or how prepared they were during the occurrence of floods.

Table 1. Table of Interpretation on the Level of the Participation of the Respondents in Different Mitigating Programs

Range of Means	**Description**	**Interpretation**
4.21 - 5.00	Very Often	This means that the barangay functionaries have a very high level of participation and actively participate in all the mitigation programs implemented in barangay Wangan like tree planting and clean-up drive.
3.41 - 4.20	Often	This means that the barangay functionaries have a high level of participation and participate in many mitigation programs implemented in barangay Wangan like tree planting and clean-up drive.
2.61 - 3.40	Sometimes	This means that the barangay functionaries have a moderate level of participation and participate in some mitigation programs implemented in Barangay Wangan like tree planting and clean-up drive.
1.81 - 2.60	Rarely	This means that the barangay functionaries have a fair level of participation and seldomly participates in mitigation programs implemented in Barangay Wangan like tree planting and clean-up drive.
1.00 - 1.80	Never	This means that the barangay functionaries have a low or no level of participation and does not participate in mitigation programs implemented in Barangay Wangan like tree planting and clean-up drive.

Source:https://www.academia.edu/29970079/The_Influence_of_Community_Participation_in_Management_of_Water_Shed_as_a_Flood_Mitigation_Strategy_on_Household_Livelihood_in_Nyando_Flood_Plains_Kisumu_County

Meanwhile, the accompanying gradation and interpretation were utilized to break down and decipher the information assembled on the level of participation of the barangay

functionaries of barangay in terms of the mitigation programs which include tree planting and clean-up drive.

Table 2. Table of Interpretation on the Level of Preparedness of the Respondents

Range of Means	Description	Interpretation
4.21 - 5.00	Very Often	This means that the barangay functionaries have a very high level of preparedness when grouped according to sex and age.
3.41 - 4.20	Often	This means that the barangay functionaries have a high level of preparedness when grouped according to sex and age.
2.61 - 3.40	Sometimes	This means that the barangay functionaries have a moderate level of preparedness when grouped according to sex and age.
1.81 - 2.60	Rarely	This means that the barangay functionaries have fair level of preparedness when grouped according to sex and age.
1.00 - 1.80	Never	This means that the barangay functionaries have very low or no level of preparedness when grouped according to sex and age.

Source:https://www.academia.edu/79183297/LEVEL_OF_PREPAREDNESS_OF_BACHELOR_OF_TECHNICAL_VOCATIONAL_TEACHER_EDUCATION_STUDENT_FOR_THE_LICENSURE_EXAMINATION_FOR_TEACHERS

To address the research question #4 pertaining to the relationship between the level of participation and the level of preparedness of the barangay functionaries in Barangay Wangan, the proponents of this study used Pearson r. Furthermore, Pearson's correlation coefficient, otherwise called as the correlation coefficient, is an estimation that measures the strength of the connection between two factors. Values of 1 or +1 demonstrate an ideal direct connection between the two factors, while a value of 0 shows no straight relationship. Negative qualities essentially demonstrate the heading of the relationship, with one variable expanding into different abatements. A linear relationship, though not a completely direct one, is demonstrated by correlation coefficients that stray from 0 yet are not 1 or +1 (Stewart, 2023).

Table 3. The Quantitative Interpretation of the Degree of Relationship of Pearson Correlation Coefficient

R	**Descriptive Level**
± 1.00	Perfect Correlation
between ± 0.75 to ± 0.99	High Positive (Negative) Correlation
between ± 0.51 to ± 0.74	Moderately High Positive (Negative) Correlation
between ± 0.31 to ± 0.50	Moderately Low Positive (Negative) Correlation
between ±0.01 to ± 0.30	Low Positive (Negative) Correlation
0.00	No Correlation

Source: ***https://file.scirp.org/Html/4-1240215_37645.htm***

Chapter 3

RESULTS AND DISCUSSION

This chapter covers the presentation, tabulation, analyses and interpretation of the data gathered during the conduct of this investigation. The arrangement of the presentation was based on the order of the Statements of the Problem presented in Chapter 1.

Research Question #1: ***What are the demographic data of Barangay Wangan Functionaries in terms of age and sex?***

Table 4. Demographic Data of the Respondents in Barangay Wangan in terms of Age and Sex

	Valid	**Frequency**	**Percent**
Sex	Female	40	64.516%
	Male	22	35.484%
Total		62	100%
Age	13-19 years old	0	0%
	20-40 years old	14	22.581%
	41-60 years old	34	54.838%
	61 and above	14	22.581%
Total		62	100%

Table 4 shows the demographic profile of the respondents according to sex and age. In terms of sex, a total of sixty-two (62) were taken, 64.516% (40) of the respondents are female while 35.484% (22) were male. From this demographic profile, it can be inferred that among the respondents of Barangay Wangan, there are more female respondents than male.

However, a study in Ireland revealed gender differences in flood risk perception and mitigation behaviors among private groundwater users. There are 168 females and 237 males. It surveyed private groundwater users aged 18 and above in Ireland, focusing on socio-demographic characteristics, flood experience, and health behaviors during flooding, with 42.7% of the respondents aged >49 years (McDowell et al., 2020). Furthermore, the role of women in flood risk management, disaster preparedness, response, and recovery activities in Char South Baladoba, Kurigram District, is very significant, but they have limited decision-making powers (Bassar, 2017). Also, Chisty (2023), stated that in the findings of the study, it was observed that women in the community had greater knowledge about the consequences of flooding and benefits of helping out during a flood compared to men who were more inclined towards undertaking voluntary work during a flood. Lastly, De Silva and Jayathilaka (2014), showed differences between the genders in participation in flood mitigation. These disparities make women more susceptible to flood because of factors like their jobs, money, social roles and being left out of decision making. Further, the data were gathered through semi-structured questionnaire interviews with 900 farmers (50.2% women and 49.8% men) and four 20-member focus group discussions. The study found that 85.2% (or 767 farmers) were aware of climate change and its implications for agriculture and other livelihood activities. Men and women had similar perceptions of climate change, with the majority seeing increased strong winds, higher temperatures, more frequent droughts, increased rainfall variability, and increased flooding (Partey et al., 2018). In addtion, a hierarchical regression model was used to conduct a gender-based analysis. Men had a higher percentile score (0.430 units) than women, indicating that male respondents were less vulnerable in the study area. The regression model's results revealed

that using gender as an explanatory variable increased the model's explanatory power significantly. The overall findings of quantitative and qualitative data analysis revealed that floods had different effects on men and women, with women being more vulnerable overall, due in part to gender-related sociocultural norms (Naz & Saqib, 2021).

In terms of age, from a total of sixty-two (62) respondents, the 13 to 19 years old respondents accounted for 0.00% (0), the 20 to 40 years old respondents for 22.581% (14), the 41 to 60 years old respondents for 54.838% (34), and the 61 years old and above respondents for 22.581% (14). According to these numbers, the 41 to 60 years old respondents have the largest number of respondents among all age groups. While the age groups 20 - 40 years old and 60 years and above have the same number of respondents. This is then followed by the 13- 19 years old which do not have any respondents participating.

In the research of Kurniawan et al. (2021), due to personal experiences with flooding, flood-impacted young people within the age range of 14–35 are more actively involved in managing flood disasters, specifically through mitigation activities. Furthermore, the elderly portray accountability in readiness for floods, and this differs with their ability to get ready or deal with the problem during a flood. During the Queensland floods, it was observed that old people were very prepared for the disaster, but their increasing weakness made it impossible to stop flooding, hence making explicit the need for age-group-specific kinds of arrangements in case of emergency (Brockie & Miller, 2017). Lastly, in households, age factors greatly affect how mitigation of floods is carried out. For example, while older people use different ways to mitigate the occurrence of floods

and reduce their impacts, younger people use other methods of mitigating floods and reducing their effects (Ahmad & Afzal, 2020).

Research Question #2: ***What is the level of participation of the Barangay Wangan Functionaries in the different mitigation programs in terms of tree planting and clean-up drive?***

Table 5. Participation of Mitigation Programs implemented in Barangay Wangan in terms of Tree Planting, and Clean-Up Drive

Indicators	Mean	Standard Deviation	Description	Interpretation
Tree Planting	3.445	0.467	Often	High level of participation
Clean Up Drive	4.044	2.271724	Often	High level of participation
Overall Mean: 3.745				

Table 5 shows the mitigation programs implemented in Barangay Wangan in terms of tree planting and clean-up drives. As shown in the table, the Barangay Wangan respondents accumulated a mean of 3.445 and a standard deviation 0.467 in terms of tree planting. This result signifies that tree planting is at practiced often which means that the barangay functionaries have a high level of participation in terms of tree planting activity.

Further, the research by Zabret and Šraj (2021) suggested that integrating trees and green infrastructure in urban areas can be more effective for flood mitigation than traditional barriers and drains. Trees provide various benefits such as water interception, absorption, and evaporation, which help reduce flooding and lessen the impact of storms. The cost-effective planting of trees in urban environments is essential for climate change mitigation and adaptation. Studies in British Columbia and Mexico indicated that trees can intercept between 50-60% of rainfall (Box, 2021). Trees are appreciated for their aesthetic appeal, environmental benefits, and their role in managing runoff, reducing strain on urban

drainage systems and flood risks in rural areas. Trees, deadwood, and bushes along water bodies act as natural barriers against rising waters, decreasing water levels and stream flow. Tree planting efforts have been shown to significantly lower peak flood streams, decrease stream volumes, and shorten the time to reach peak flood levels (Goodwin, 2017). Further, the Warwickshire study proved that floods can be mitigated effectively by planting trees in towns with no permeable surfaces, as they boost infiltration and water retention capacities (Revell et al., 2022). Though tree planting aids in minimizing floods through enhanced characteristics of soils, reduced surface runoff, and increased evapotranspiration, its efficiency is subject to the prevailing atmospheric patterns, variety of soil kinds, and terms under which it's implemented within a specific area (Marapara, 2021). Hence, practicing tree planting is often beneficial for the barangay.

On the other hand, in terms of clean-up drive, results showed that Barangay Wangan respondents have a mean score of 4.044 and a standard deviation of 2.271724. This implies that a clean-up drive is at often practiced which means that the barangay functionaries have a high level of participation.

Furthermore, community clean-up initiatives play a vital role in urban areas, especially in developing regions with flood risks. These initiatives are essential for maintaining drainage systems, reducing flood impacts, and encouraging community involvement in preserving public spaces and infrastructure. They also have a positive impact on public health by decreasing the risk of illnesses like malaria during rainy seasons. By engaging community-based organizations and offering non-financial rewards, these initiatives motivate various community groups to assist in enhancing drainage systems and minimizing flood-related issues (Newman et al., 2022). Neglecting community clean-up

efforts can heighten flooding risks by causing waste buildup in canals and roadsides, obstructing water flow, fostering disease-carrying mosquitoes, and posing additional health hazards. Moreover, litter can diminish the environmental appeal and lower the overall quality of life in the community (Riyani, 2022). Further, engaging the community in community clean-up drives can help prevent blockages and mitigate flood impacts, thereby enhancing flood preparedness (Syarif et al., 2022). This means that a clean-up drive can help increase people's preparedness.

Research Question #3: ***What is the level of preparedness of the people living in Barangay Wangan specifically in hazardous and flood-prone areas, when grouped according to age and sex?***

Table 6. Level of Preparedness of the barangay functionaries Living in Barangay Wangan Specifically in the Hazardous and Flood-Prone Areas, When Grouped According to Sex and Age

Indicators	Classification	Preparedness Mean	Preparedness Standard Deviation	Description	Interpretation
Sex	Male	3.68	0.516531	Often	High level of preparedness
	Female	3.685714	0.511252	Often	High level of preparedness
Age Range	13 - 19 years old	0.00	0	Never	Very low level of preparedness
	20 - 40 years old	3.7	0.510549	Often	High level of preparedness
	41 - 60 years old	3.835294	0.501454	Often	High level of preparedness
	61 years old and above	3.3	0.543224	Often	High level of preparedness

Table 6 shows the level of preparedness of the barangay functionaries' terms of sex and age. In terms of sex, the level of preparedness of the male respondents has a mean of

3.68 and a standard deviation of 0.516531 which implies a high level of preparedness and the female respondents have a mean of 3.685714 and a standard deviation of 0.543224 which means a high level of preparedness as well.

Further, a relevant note, entitled “Assessment of Disaster Preparedness Level of Medical Students of a University, Turkey,” aimed to assess disaster preparedness knowledge levels among 75 medical students at a university and evaluate the relationships between related factors and preparedness knowledge. Results showed a median score of 51.0, with higher scores in women, second and upper graders, and those living in the city where their family resides. This means that females are more prepared at flood occurrences than males (Tözün et al., 2022). Lastly, this research exposed notable gender-specific variations in preparedness for floods, indicating that the risks of flooding must be managed differently for men and women (Promsri, 2020).

In terms of age, 13-19 have a mean of 0, 20-40 have a mean of 3.7 with a standard deviation of 0.516531, 41-60 have a mean of 3.835294 and a standard deviation of 0.501454, and the 61 years old and above have a mean of 3.3 with a standard deviation of 0.543224. The results imply that when grouped according to age, the 41-60 years old have a higher level of preparedness compared to all age ranges. That is followed by 20-40 years old, 61 years old and above, and 13-19 years old.

In addition, a study in Serbia revealed that men appeared to perceive greater individual and household preparedness and to have greater confidence in their ability to deal with flooding. Women, on the other hand, showed a deeper comprehension of these events.The respondents, who made up 50.2% (1256) of the male population and 49.8% (1244) of the female population, were typical of the nation's gendered stratification, which

records 51.3% men and 48.7% women. Respondents' average age was forty years old, with those under thirty-one (711; 28.4%) being the most represented group. In addition, it was discovered that, in comparison to women (47.4%), men (52.6%) are reported to be more willing to comply with evacuation orders ($p = 0.02$). A comparison of all the items showed statistically significant differences in the preferred evacuation strategies. Although men favored staying in the house, they also favored moving to higher floors (52.6%, 39.9%) or visiting friends' homes (39.9%, 32.2%). Even after following orders to evacuate, men appear to have less faith in the public authorities' escape routes. They indicated that they would rather stay in their homes or visit neighbors (Cvetković et al., 2018).

However, youth participation in disaster management appears to help improve preparedness action, according to this study titled "How Far Disaster Management Implemented Toward Flood Preparedness: A Lesson Learned from Youth Participation Assessment in Indonesia." encompassing 191 adolescents in 16 Semarang City subdistricts, ages 14 to 35. The information includes the behavior, awareness, and involvement of youth in Flood Control and Disaster Management (FDM). Furthermore, it is believed that in order to create a more comprehensive disaster management program that meets regional needs, there needs to be a greater level of youth participation. The reearchers proposed that flood disaster response simulations, education, socialization, training, and/or training should be used to convert Flood Control and Disaster Management (FDM) into disaster awareness.

Planning efforts also have a noteworthy impact on other aspects in flood-affected areas, despite their being less than 23%. Planned mitigation activities may help young people in flood-affected areas understand how important prevention is in reducing the

severity of flood impacts. According to data gathered on the ground, youth affected by floods are particularly sensitive to environmental rehabilitation initiatives and enhance existing disaster management practices. In general, young people in both regions are likely to take high disaster management actions (> 80%) once they are faced with a disaster. This can be seen from the extent to which flood management has benefited from disaster response efforts. On the other hand, compared to youth in flood-affected areas, young people in unaffected areas participate less in disaster management at all stages on average ($p = 0.00$). This suggests that information about disaster management is still restricted to disaster-affected areas and has not been fairly dispersed among all Semarang City groups (Kurniawan et al., 2021).

Furthermore, this study contradicts the result of the study by Ashida et al., (2015) which demonstrated that older adults specifically 65 and above can effectively manage a range of daily challenges despite indicated vulnerabilities, including disruptions in basic services, access to bathrooms, clothing, and housing, potable water, crowding in temporary housing, and a lack of communications and transportation. They also discovered that social ties among older persons can either encourage or obstruct preparedness behavior, whereas their selfless desire to support their community would encourage them to be prepared. As a result, this demographic could still make a valuable contribution to the creation of stronger and more practical catastrophe preparation.

Research Question #4: ***Is there a significant relationship between the different mitigation programs and the level of preparedness of the barangay functionaries in Barangay Wangan in terms of sex and age?***

Table 7. The Relationship Between the Level of Participation of the Barangay Functionaries and Their Level of Preparedness to Flood

Indicators	Classification	r value	p value	Description
Sex	Male	-0.025	0.918	Low Positive Correlation
	Female	0.914	0.218	High Positive Correlation
Age groups	20-40 years old	-0.140	0.632	Low Positive Correlation
	41-60 years old	0.170	0.336	Low Positive Correlation
	61 years old and above	0.017	0.955	Low Positive Correlation

Table 7 shows the relationship between the level of participation of different mitigation programs and the level of preparedness of barangay functionaries of barangay Wangan when grouped according to sex and age. As seen in the table, in terms of sex, the correlation value for the male respondents is -0.025 with a corresponding p value of 0.918 which is higher than the alpha (alpha= 0.05). Further, the correlation value for the female respondents is 0.914 with a corresponding p-value of 0.218> 0.05. The results imply that there is a low relationship between the level of participation of different mitigation programs and the level of preparedness of male barangay functionaries of Barangay Wangan. However, as presented in the table, the results show that there is a high relationship between the level of participation of the different mitigation programs and the level of preparedness of female barangay functionaries in Barangay Wangan.

In terms of age groups, the 20-40 years old respondents have accumulated the r value of -0.140 with a corresponding p-value of 0.632> 0.05. Also, the 41-60 years old respondents have a correlation value of 0.170 with a corresponding mean score of 0.336> 0.05. Lastly, the 61 years old and above respondents have a correlational value of 0.017 with a corresponding mean score of 0.955> 0.05. These results imply that there is a low

relationship between the level of participation of different mitigation programs and the level of preparedness across different age groups of barangay functionaries in Barangay Wangan.

The results presented in Table 7 show that there is a relationship between the level of participation of different mitigation programs and the level of preparedness of barangay functionaries in Barangay Wangan when grouped according to sex and age groups. Although none of the results demonstrated in the table showed a perfect correlation, all the positive correlation values imply that the graph is going upward. In a nutshell, this means that the higher level of participation of the barangay functionaries across different mitigation programs, the higher their level of preparedness also.

A study shown by Octaviana and Jaenudin (2022), stated that there were 12,199 disasters between 2017 and 2021, including floods, tornadoes, landslides, forest fires, earthquakes, abrasion, and volcanic eruptions. Many disasters have resulted in 4,851 deaths and 39,633 people missing or injured (BNPB, 2021). The sampling technique used in this study was total sampling, with 335 nursing students from STIKes Yatsi, Tangerang. Data was collected through the distribution of questionnaires. Chi-square test was used to analyse the data. The results showed that the majority of female students had a high level of knowledge (55.2%) and preparedness (58.5%). The bivariate analysis results revealed a significant relationship between knowledge and disaster preparedness ($r = 0.016$, $p < 0.05$). The study found that the greater the student's knowledge, the better the disaster preparedness. In contrast to this, a study by Lee and Chung (2020) about disasters disproportionately affects women, particularly in developing countries, due to differences in socio-cultural customs or physical condition. In developed countries, however, the

percentage of male and female disaster victims was not significantly different. The survey had a total of 489 adult participants. As a result, both men and women were unaware of the possibility of a disaster and needed to be educated on shelter locations and evacuation procedures. Gender analysis revealed significant differences in male and female responses to specific questions. Women, for example, struggled to obtain disaster and safety management training.

Chapter 4
CONCLUSION AND RECOMMENDATIONS

This chapter comprised the conclusion with regard to the findings and the generated recommendations of the study.

Conclusion

The findings of the study after the survey was completed show that there were more female respondents as the barangay functionaries than men about forty-two respondents of females and twenty men that sums them up to sixty-two respondents all in all. That being said, a great number of barangay functionaries aged forty-one to sixty years old have more respondents, and with the same number of respondents aged twenty to forty and sixty years old and above. There were no respondents aged thirteen to nineteen on the day of the data gathering. In our statement of problem two, the level of participation of the barangay functionaries in the tree planting and clean-up drive was often high, which translates to both having a high level of participation. In addition to that, the results on our statement of problem number three is mostly often which translates that their level of preparedness is high and with the age range of thirteen to nineteen which has a low or no level of preparedness because they are not present at the time of the data gathering. In addition to that, the results of our statement of problem number three are mostly often, which translates that their level of preparedness is high, whereas those in the age range of thirteen to nineteen, it has a low or no level of preparedness because they were not present at the time of the data gathering. Lastly, in our statement of problem number four, the factors considered were the p value and alpha value in each indicator of it. In the male, our p value is described as a moderately high positive correlation, and our female has a low

positive correlation. In addition, the description of the age range of twenty to forty years old is moderately high positive correlation, and in the age range of forty-one to sixty, the description of it is moderately low positive correlation, and in the age range of sixty years old and above, the description of their p value is high positive correlation.

Essentially, the results of the study discovered that there is a relationship between the level of participation and the level of preparedness of barangay functionaries and their level of preparedness skills regardless of sex and age. However, it is noteworthy that although none of the results showed a perfect correlation, all the positive correlation values still imply that the graph is going upward. Therefore, it is valid to conclude that there is a relationship between the level of participation in the different mitigation programs and the level of preparedness of barangay functionaries. With this, the researchers of this investigation accepted the alternative hypothesis and thus rejected the null hypothesis. Given that there is a relationship between the two variables of the study, it can be concluded that the level of participation in the different mitigation programs of the barangay functionaries corresponds with their level of preparedness to flood.

Recommendations

Based on the findings produced in this study, it proves that there is a relationship between the level of participation on the different mitigation programs and the level of preparedness of the barangay functionaries in the Barangay Wangan. The following recommendations were suggested;

The Local Government Unit (LGU) can use this study as a basis for assessing effectiveness of specific mitigation, and also the disaster management groups can develop specific measures to improve readiness in Barangay Wangan. Also, it can be utilized as a

tool for detailing decisions and developing careful frameworks, regulations, and standards that address the unique needs of the Barangay Wangan community.

The barangay functionaries of Barangay Wangan can use this study to strengthen the community resilience of Barangay Wangan. In order to encourage commencement of particular strategies that were in accordance with the requirements and vulnerabilities of Barangay Wangan, local leaders as well as organizations ought to have knowledge of the relationship between their level of participation on the different mitigation programs and preparation level.

Lastly, the future researchers can expand this study's discoveries to investigate specific perspectives or factors that might not have been completely shrouded to dig further into the connection between participation on the different mitigation programs and preparedness, and it also allows them to distinguish research gaps or regions that need further examination, so the future researchers can focus on filing in these holes, which can bring about a more exhaustive comprehension of the subject and conceivably yield new experiences.

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Appendix 1: Letter of Permission

HOLY CROSS COLLEGE OF CALINAN, INC
Davao- Bukidnon Highway, Calinan Poblacion, Davao City

February 6, 2024

Sr. Cherie Eloisa Garrote, PM
School President
Holy Cross College of Calinan, Inc.

Dear Sister Garrote,

Greetings of peace and solidarity!

We are writing this letter to inform you that we will be conducting a research study entitled: **THE RELATIONSHIP BETWEEN THE DIFFERENT MITIGATION PROGRAMS AND LEVEL OF PREPAREDNESS OF THE POPULATION IN BARANGAY WANGAN: A CORRELATIONAL STUDY** as the major requirement in our Practical Research 1 and 2. The objective of our study is to determine the potential relationship between the different mitigation programs implemented in Barangay Wangan and the level of preparedness of the residents. Questionnaires will be used to gather data from the residents of the said barangay. The result of the study will be part of the contribution to the said barangay.

In line with this, we would like to ask permission to you that we will conduct a respondents' consultation among the residents of the said barangay and administer the questionnaire to to the residents on the day.

Participation in this study is completely voluntary, therefore, participants are free to withdraw from the study at any time without moral obligation to the researcher and to the school. Further the participants have the right to verify the data to be included in the final manuscript.

Should you wish to know more about the study, please feel free to contact:

(Princess Angel Torregoza - 09566927471 / torregozaprincess9@gmail.com)

Thank you very much.

Very truly yours,

Princess Angel Torregoza
Researcher

Nevin Bryce Digma
Researcher

Alexis Manteza
Researcher

Christian Noah Nomos
Researcher

Noted by:

Mrs. Jessica O. Rabang
Research Adviser

Approved by:

Sr. Cherie Eloisa Garrote, PM
School President

Complaints about this research:

The Holy Cross College of Calinan requires that all the participants are informed and if they have complaints regarding the manner in which the research is conducted, it may be given to the researcher, or if an independent person is preferred, to the Research and Publication Head, Research Office, Holy Cross College of Calinan with the following numbers: 295-0797 or 09491985644.

Appendix 2: Letter of Request

HOLY CROSS COLLEGE OF CALINAN,INC
Davao- Bukidnon Highway, Calinan Poblacion, Davao City

January 29, 2024

HON. DANILO M. ABABON
Barangay Captain
Barangay Wangan
Calinan District, Davao City

Dear Hon. Ababon,

Greetings of peace and solidarity!

We are writing this letter to inform you that we are conducting a research study entitled: **THE RELATIONSHIP BETWEEN THE DIFFERENT MITIGATION PROGRAMS AND LEVEL OF PREPAREDNESS OF THE POPULATION IN BARANGAY WANGAN: A CORRELATIONAL STUDY** as a major requirement in our Practical Research 1 and 2 subjects.

The objective of our study is to determine the potential relationship between the different mitigation programs implemented in Barangay Wangan and the level of preparedness of the residents. Hopefully, the results of this study will provide valuable insights to mitigate damages and losses when it comes to preparedness and the effectiveness of the mitigation programs implemented in your barangay.

In connection with this, we would like to request a list of location in the barangay that are flood-prone and are affected during heavy rainfall. In addition, we would like to ask permission to conduct our study to the residents of these areas.

We highly appreciate your support in giving us the necessary access and permission for the successful completion of our research study. Should you wish to know more about the study, please feel free to contact:
Princess Angel Torregoza – 09566927471 / torregozaprincess9@gmail.com

Thank you very much.

Very truly yours,

Princess Angel Torregoza
Researcher

Nevin Bryce Digma
Researcher

Alexis Manteza
Researcher

Chrisitian Noah Nomos
Researcher

Noted by:

Mrs. Jessica O. Rabang
Research Adviser

Approved by:

Complaints about this research:

The Holy Cross College of Calinan requires that all the participants are informed and if they have complaints regarding the manner in which the research is conducted, it may be given to the researcher, or if an independent person is preferred, to the Research and Publication Head, Research Office, Holy Cross College of Calinan with the following numbers: 295-0797 or 09491985644.

Appendix 3: Letter to the Validator

HOLY CROSS COLLEGE OF CALINAN,INC
Davao- Bukidnon Highway, Calinan Poblacion, Davao City

February 5, 2024

Mrs. Idyl Mae L. Malaque
School Teacher
Holy Cross College of Calinan, Inc.

Dear Mrs. Malaque,

Greetings of peace and solidarity!

We, Princess Angel Torregoza, Nevin Bryce Digma, Alexis Manteza, and Christian Noah Nomos enrolled in the class of STEM 12 – Our Lady of Fatima and conducting a research entitled: **THE RELATIONSHIP BETWEEN THE DIFFERENT MITIGATION PROGRAMS AND THE LEVEL OF PREPAREDNESS IN BARANGAY WANGAN: A CORRELATIONAL STUDY.** This study aims to know he relationship between the different mitigation programs and the level preparedness of the population in Barangay Wangan and will attempt to gather the responses from the respondents toward the following questions:

1. What is the demographic data of barangay Wangan in terms of:

    1.1 age and;
    1.2 sex?

2. What are the mitigation programs implemented in barangay Wangan in terms of:

    2.1 tree planting; and
    2.2 clean up drive?

3.What is the level of preparation of the people living in barangay Wangan specifically in the hazard, flood, when group according to:

    3.1 age; and
    3.2 sex?

4. Is there a significant relationship between the different mitigation programs and the level of preparedness in the population in barangay Wangan?

May we request your kind assistance in validating the questionnaire of the research study. Would you please fill out the attached validation sheet and give suggestions/comments for the improvement of our questionnaire.

Should you wish to know more about the study, please feel free to contact:

Princess Angel Torregoza - 09566927471 / torregozaprincess9@gmail.com

Thank you very much for your help.

Very truly yours,

Princess Angel Torregoza
Researcher

Nevin Bryce Digma
Researcher

Alexis Manteza
Researcher

Christian Noah Nomos
Researcher

Noted by:

Mrs. Jessica O. Rabang
Research Adviser

Approved By:

MRS. IDYL MAE L. MALAGUE

Appendix 3: Letter to the Validator

HOLY CROSS COLLEGE OF CALINAN,INC
Davao- Bukidnon Highway, Calinan Poblacion, Davao City

February 5, 2024

Ms. Rialyn V. Baguio
School Teacher
Holy Cross College of Calinan, Inc.

Dear Ms. Baguio,

Greetings of peace and solidarity!

We, Princess Angel Torregoza, Nevin Bryce Digma, Alexis Manteza, and Christian Noah Nomos enrolled in the class of STEM 12 – Our Lady of Fatima and conducting a research entitled: **THE RELATIONSHIP BETWEEN THE DIFFERENT MITIGATION PROGRAMS AND THE LEVEL OF PREPAREDNESS IN BARANGAY WANGAN: A CORRELATIONAL STUDY.** This study aims to know he relationship between the different mitigation programs and the level preparedness of the population in Barangay Wangan and will attempt to gather the responses from the respondents toward the following questions:

1. What is the demographic data of barangay Wangan in terms of:

    1.1 age and;
    1.2 sex?

2. What are the mitigation programs implemented in barangay Wangan in terms of:

    2.1 tree planting; and
    2.2 clean up drive?

3.What is the level of preparation of the people living in barangay Wangan specifically in the hazard, flood, when group according to:

    3.1 age; and
    3.2 sex?

4. Is there a significant relationship between the different mitigation programs and the level of preparedness in the population in barangay Wangan?

May we request your kind assistance in validating the questionnaire of the research study. Would you please fill out the attached validation sheet and give suggestions/comments for the improvement of our questionnaire.

Should you wish to know more about the study, please feel free to contact:

Princess Angel Torregoza - 09566927471 / torregozaprincess9@gmail.com

Thank you very much for your help.

Very truly yours,

Princess Angel Torregoza
Researcher

Nevin Bryce Digma
Researcher

Alexis Manteza
Researcher

Christian Noah Nomos
Researcher

Noted by:

Mrs. Jessica O. Rabang
Research Adviser

Approved By:

Appendix 4: Validation Sheet

Holy Cross College of Calinan, Inc
Davao-Bukidnon Highway, Calinan Pobalcion, Davao City

Research Assessment Tool and Validation Sheet

Name of Evaluator : MRS. IDYL MAE MALAGUE
Degree : BEED
Position : JHS Teacher
Institution : HCCC

To the Evaluator: Please check the appropriate box for your ratings.
POINT EQUIVALENT: 1 – Poor 2 - Fair 3 – Good 4 – Very Good 5 - Excellent

	Criteria/ Indicators	1	2	3	4	5
1	**CLARITY OF DIRECTIONS AND ITEMS** The vocabulary level, language structure and conceptual level of questions suit to level of respondents. The test directions and items are written in clear and understandable manner.			✓		
2	**PRESENTATION/ ORGANIZATION OF ITEMS** The items are presented and organized in logical manner.			✓		
3	**SUITABILITY OF ITEMS** The items appropriately represent the substance of the research. The questions are designed to determine the condition, knowledge, perception and attitudes that are supposed to be measured.			✓		
4	**ADEQUATENESS OF ITEMS PER CATEGORY** The items represent the coverage of the research adequately. The number of questions per area category is representative enough of all the question needed for the research.			✓		
5	**ATTAINMENT OF PURPOSE** The instrument as a whole fulfills the objectives for which it was constructed.				✓	
6	**OBJECTIVE** Each item question requires only one specific answer or measure only one behavior and no aspect of questionnaire suggest bias on the part of the researcher.				✓	
7	**SCALE AND EVALUATION RATING SYSTEM** The scale adapted is appropriate for the items.				✓	

Comments and Suggestions: _____

Signature Evaluator

Appendix 4: Validation Sheet

Holy Cross College of Calinan, Inc
Davao-Bukidnon Highway, Calinan Pobalcion, Davao City

Research Assessment Tool and Validation Sheet

Name of Evaluator : Rialyn V. Bagyo
Degree : BSED- Math
Position : Teacher
Institution : HCCC

To the Evaluator: Please check the appropriate box for your ratings.
POINT EQUIVALENT: 1 – Poor 2 - Fair 3 – Good 4 – Very Good 5 - Excellent

	Criteria/ Indicators	1	2	3	4	5
1	**CLARITY OF DIRECTIONS AND ITEMS** The vocabulary level, language structure and conceptual level of questions suit to level of respondents. The test directions and items are written in clear and understandable manner.			✓		
2	**PRESENTATION/ ORGANIZATION OF ITEMS** The items are presented and organized in logical manner.				✓	
3	**SUITABILITY OF ITEMS** The items appropriately represent the substance of the research. The questions are designed to determine the condition, knowledge, perception and attitudes that are supposed to be measured.			✓		
4	**ADEQUATENESS OF ITEMS PER CATEGORY** The items represent the coverage of the research adequately. The number of questions per area category is representative enough of all the question needed for the research.			✓		
5	**ATTAINMENT OF PURPOSE** The instrument as a whole fulfills the objectives for which it was constructed.			✓		
6	**OBJECTIVE** Each item question requires only one specific answer or measure only one behavior and no aspect of questionnaire suggest bias on the part of the researcher.			✓		
7	**SCALE AND EVALUATION RATING SYSTEM** The scale adapted is appropriate for the items.				✓	

Comments and Suggestions: _____

Signature Evaluator

Appendix 5: Informed Consent

HOLY CROSS COLLEGE OF CALINAN, INC
Davao- Bukidnon Highway, Calinan Poblacion, Davao City

February 09, 2024

_____
Respondent
Barangay Wangan
Calinan, Davao City

THE RELATIONSHIP BETWEEN THE DIFFERENT MITIGATION PROGRAMS AND THE LEVEL OF PREPAREDNESS IN BARANGAY WANGAN: A CORRELATIONAL STUDY

Dear _____,

Greetings of peace and solidarity!

You are invited to participate in the research project identified above which will be conducted by Princess Angel Torregoza, Nevin Bryce Digma, Alexis Manteza, and Christian Noah Nomos. This research study is one of the major requirements in Practical Research 2. The objective of our study is to determine the potential relationship between the different mitigation programs implemented in Barangay Wangan and the level of preparedness of the residents.

Survey Questionnaires will be used to gather data from the respondents about the level of participation in each mitigation program.

Participation in this study is completely voluntary, therefore, you are free to withdraw from the study at any time without moral obligation to the researcher and to the school. Further the participants have the right to verify the data to be included in the final manuscript.

Should you wish to know more about the study, please feel free to contact:
(Princess Angel Torregoza 09566927471)

Thank you very much.

Very truly yours,

Princess Angel Torregoza
Researcher

Nevin Bryce Digma
Researcher

Alexis Manteza
Researcher

Christian Noah Nomos
Researcher

Noted by:

Mrs. Jessica O. Rabang
Research Adviser

Complaints about this research:

The Holy Cross College of Calinan requires that all the participants are informed and if they have complaints regarding the manner in which the research is conducted, it may be given to the researcher, or if an independent person is preferred, to the Research and Publication Head, Research Office, Holy Cross College of Calinan with the following numbers: 295-0797 or 09491985644.

Appendix 6: Survey Questionnaire

HOLY CROSS COLLEGE OF CALINAN, INC.
Davao-Bukidnon Highway, Calinan Poblacion, Davao City

SURVEY QUESTIONNAIRE

THE RELATIONSHIP BETWEEN THE LEVEL OF PARTICIPATION IN DIFFERENT MITIGATION PROGRAMS AND LEVEL OF PREPAREDNESS OF THE BARANGAY FUNCTIONARIES IN BARANGAY WANGAN: A CORRELATIONAL STUDY

We are doing a study on the identification on the level of preparedness in Barangay Wangan. Your participation in this survey is critical in gathering the necessary data.

Please contact any of the researchers if you have any questions about the questionnaire. Your thoughtful response and effort spent answering the evaluation questions are much appreciated.

Thank you very much for your continued support and cooperation.

Instruction: Please check or supply the information needed in the space provided.

Name (Optional) _____

Part I: Demographic Profile

1. Sex

[ ] Male [ ] Female

2. Age

[ ] 13 -19 years old [ ] 20 – 30 years old [ ] 41 – 60 years old

[ ] 61 years old and above

Part II.

Different mitigation programs used by the barangay functionaries in Barangay Wangan:

1 = Never 2 = Rarely 3 = Sometimes 4 = Often 5 = Very Often

A.	**Tree planting**	1	2	3	4	5

1	I frequently participate in barangay-sponsored tree-planting initiatives.					
2	I frequently participate in community tree-planting activities.					
3	I am frequently informed about the benefits of planting trees.					
4	I recommend planting trees to others.					
5	I am proficient at planting various trees.					

B.	**Clean Up Drive**	1	2	3	4	5
1	I participate in community-based clean up drive.					
2	I encourage other people to participate in clean up drives.					
3	I face difficulties or challenges during clean up drive.					
4	I receive any instructions or guidance before participating in clean up drive.					
5	I am informed about the benefits of clean up drive.					

Part III: What is the level of preparation of the barangay functionaries in barangay Wangan specifically in the hazard, flood?

Level of preparation of the people living in the barangays in Wangan specifically in the hazard, flood		1	2	3	4	5
1	I store important survival commodities such as food, water, and first aid kits readily available in the unlikely circumstance of a flood.					
2	I undertake regular management on my residence, such as cleaning gutters and maintaining appropriate water drainage, in order to minimize flood risks.					
3	I elevate essential documentation, electrical devices, and things of value to safeguard against probable flood-related harm.					
4	I am optimistic in my capability to take action accurately during a flood incidence based on my degree of preparedness.					
5	I established out evacuation paths and corresponded with every member of the household, in the event of flood.					

Appendix 7: Raw Data

Tree Planting

Respondents	Sex	Age Range	Q1	Q2	Q3	Q4	Q5
1	M	41 - 60 years old	2	3	2	4	4
2	F	20 - 40 years old	3	3	4	3	2
3	F	20 - 40 years old	3	2	4	4	3
4	M	41 - 60 years old	4	4	4	4	4
5	F	20 - 40 years old	3	3	2	4	3
6	F	20 - 40 years old	4	3	4	4	4
7	F	41 - 60 years old	2	3	4	4	3
8	F	41 - 60 years old	3	2	3	4	4
9	F	41 - 60 years old	3	3	2	4	1
10	F	61 years old and above	3	4	4	3	4
11	F	20 - 40 years old	4	4	4	3	3
12	F	41 - 60 years old	3	2	3	3	3
13	M	61 years old and above	1	1	1	1	1
14	M	61 years old and above	5	4	3	4	5
15	F	61 years old and above	3	1`	`1	2	3
16	M	20 - 40 years old	3	3	3	4	4
17	F	41 - 60 years old	5	5	5	5	5
18	F	61 years old and above	3	3	3	4	4
19	F	41 - 60 years old	3	2	3	3	3
20	F	41 - 60 years old	3	3	3	4	3
21	F	41 - 60 years old	3	3	3	4	3
22	F	41 - 60 years old	3	2	4	3	4
23	F	41 - 60 years old	2	2	4	3	3
24	M	41 - 60 years old	4	4	4	3	3
25	M	41 - 60 years old	2	3	2	2	4
26	M	41 - 60 years old	2	4	3	3	4

27	F	20 - 40 years old	2	2	5	4	4
28	F	41 - 60 years old	2	2	3	1	2
29	F	61 years old and above	5	4	1	1	4
30	M	41 - 60 years old	5	4	4	4	4
31	F	41 - 60 years old	3	3	4	5	5
32	F	61 years old and above	2	3	2	3	2
33	F	41 - years old	3	3	3	3	3
34	F	41 - 60 years old	3	2	3	4	5
35	F	41 - 60 years old	3	1	3	3	3
36	F	41 - 60 years old	4	3	3	4	4
37	F	41 - 60 years old	3	2	3	3	3
38	M	41 - 60 years old	3	4	5	1	5
39	F	61 years old and above	1	1	1	1	1
40	M	61 years old and above	1	1	3	2	4
41	M	61 years old and above	4	3	5	5	5
42	F	61 years old and above	3	2	3	4	2
43	M	41 - 60 years old	1	1	2	4	5
44	F	20 - 40 years old	2	1	3	4	1
45	F	41 - 60 years old	5	5	5	5	5
46	M	20 - 40 years old	3	3	3	3	3
47	M	20 - 40 years old	2	2	5	5	5
48	M	61 years old and above	5	5	5	5	5
49	M	61 years old and above	3	3	4	5	5
50	F	41 - 60 years old	5	5	5	5	5
51	F	41 - 60 years old	5	5	5	5	5
52	F	41 - 60 years old	5	5	5	5	5
53	F	41 - 60 years old	5	5	5	5	5
54	F	41 - 60 years old	5	5	5	5	5
55	F	20 - 40 years old	4	5	4	5	4
56	F	41 - 60 years old	4	3	3	3	4

57	F	61 years old and above	3	3	3	3	3
58	F	41 - 60 years old	4	3	3	4	4
59	F	41 - 60 years old	4	4	4	4	4
60	M	20 - 40 years old	3	4	4	3	3
61	M	20 - 40 years old	4	4	4	5	4
62	M	20 - 40 years old	5	5	4	5	5

Clean Up Drive

Respondents	**Sex**	**Age Range**	**Q1**	**Q2**	**Q3**	**Q4**	**Q5**
1	M	41 - 60 years old	3	3	3	3	2
2	F	20 - 40 years old	3	3	3	5	5
3	F	20 - 40 years old	3	3	3	5	5
4	M	41 - 60 years old	5	5	3	4	4
5	F	20 - 40 years old	5	4	4	4	5
6	F	20 - 40 years old	3	3	2	4	4
7	F	41 - 60 years old	5	5	3	3	4
8	F	41 - 60 years old	4	3	4	4	4
9	F	41 - 60 years old	4	4	2	4	4
10	F	61 years old and above	3	3	4	4	4
11	F	20 - 40 years old	4	4	3	4	4
12	F	41 - 60 years old	5	4	3	3	5
13	M	61 years old and above	3	3	3	3	3
14	M	61 years old and above	4	2	3	5	1
15	F	61 years old and above	5	5	3	5	3
16	M	20 - 40 years old	3	3	2	3	3
17	F	41 - 60 years old	5	5	5	5	5
18	F	61 years old and above	3	3	3	4	3
19	F	41 - 60 years old	4	3	4	4	4
20	F	41 - 60 years old	3	5	3	5	4

21	F	41 - 60 years old	3	5	3	5	4
22	F	41 - 60 years old	4	4	3	4	5
23	F	41 - 60 years old	5	4	45	5	5
24	M	41 - 60 years old	4	4	4	4	4
25	M	41 - 60 years old	1	1	2	1	2
26	M	41 - 60 years old	3	3	3	4	4
27	F	20 - 40 years old	5	5	1	5	5
28	F	41 - 60 years old	1	4	4	4	5
29	F	61 years old and above	4	2	1	4	5
30	M	41 - 60 years old	3	3	3	3	3
31	F	41 - 60 years old	1	4	4	3	5
32	F	61 years old and above	3	3	3	4	4
33	F	41 - years old	4	4	4	4	4
34	F	41 - 60 years old	3	3	3	4	5
35	F	41 - 60 years old	4	3	4	4	4
36	F	41 - 60 years old	4	4	4	4	4
37	F	41 - 60 years old	4	3	4	4	4
38	M	41 - 60 years old	5	3	4	5	5
39	F	61 years old and above	1	1	1	1	1
40	M	61 years old and above	4	4	4	4	4
41	M	61 years old and above	5	5	5	5	5
42	F	61 years old and above	1	4	4	4	5
43	M	41 - 60 years old	5	5	3	5	5
44	F	20 - 40 years old	3	4	4	4	4
45	F	41 - 60 years old	5	5	1	1	5
46	M	20 - 40 years old	3	3	3	3	4
47	M	20 - 40 years old	5	5	3	5	5
48	M	61 years old and above	5	5	4	3	5
49	M	61 years old and above	5	5	5	5	5
50	F	41 - 60 years old	5	5	5	5	5

51	F	41 - 60 years old	5	5	5	5	5
52	F	41 - 60 years old	5	5	5	5	5
53	F	41 - 60 years old	5	5	5	5	5
54	F	41 - 60 years old	5	5	5	5	5
55	F	20 - 40 years old	5	4	3	5	5
56	F	41 - 60 years old	5	4	5	5	5
57	F	61 years old and above	4	4	4	4	4
58	F	41 - 60 years old	5	5	4	5	5
59	F	41 - 60 years old	5	5	3	5	5
60	M	20 - 40 years old	4	5	4	4	5
61	M	20 - 40 years old	4	5	1	5	5
62	M	20 - 40 years old	5	4	1	5	5

Level of Preparedness

Respondents	**Sex**	**Age Range**	**Q1**	**Q2**	**Q3**	**Q4**	**Q5**
1	M	41 - 60 years old	4	4	4	4	4
2	F	20 - 40 years old	2	3	2	3	1
3	F	20 - 40 years old	4	3	4	4	4
4	M	41 - 60 years old	4	4	3	4	4
5	F	20 - 40 years old	3	4	3	3	1
6	F	20 - 40 years old	3	2	3	3	2
7	F	41 - 60 years old	2	4	2	2	4
8	F	41 - 60 years old	4	4	4	4	4
9	F	41 - 60 years old	3	4	4	4	4
10	F	61 years old and above	5	4	4	3	2
11	F	20 - 40 years old	4	4	4	4	4
12	F	41 - 60 years old	2	5	4	3	1
13	M	61 years old and above	1	1	1	1	1
14	M	61 years old and above	4	3	2	1	5

15	F	61 years old and above	1	2	3	2	3
16	M	20 - 40 years old	4	4	4	4	4
17	F	41 - 60 years old	5	5	5	5	5
18	F	61 years old and above	4	4	4	4	4
19	F	41 - 60 years old	4	4	4	4	4
20	F	41 - 60 years old	3	3	3	3	3
21	F	41 - 60 years old	3	3	3	3	3
22	F	41 - 60 years old	4	4	4	4	4
23	F	41 - 60 years old	2	4	2	1	1
24	M	41 - 60 years old	4	4	4	4	4
25	M	41 - 60 years old	2	1	2	1	3
26	M	41 - 60 years old	3	2	3	3	4
27	F	20 - 40 years old	3	3	5	5	3
28	F	41 - 60 years old	3	2	1	2	4
29	F	61 years old and above	4	3	4	3	4
30	M	41 - 60 years old	4	3	4	3	4
31	F	41 - 60 years old	5	3	3	3	5
32	F	61 years old and above	4	4	4	4	4
33	F	41 - years old	1	4	3	3	3
34	F	41 - 60 years old	3	3	4	4	5
35	F	41 - 60 years old	4	4	4	4	4
36	F	41 - 60 years old	4	4	4	4	4
37	F	41 - 60 years old	4	4	4	4	4
38	M	41 - 60 years old	5	5	5	5	5
39	F	61 years old and above	1	1	1	1	1
40	M	61 years old and above	2	5	3	4	4
41	M	61 years old and above	5	4	5	5	4
42	F	61 years old and above	3	2	4	2	4
43	M	41 - 60 years old	1	3	1	4	2
44	F	20 - 40 years old	4	4	4	1	1

45	F	41 - 60 years old	5	5	4	4	5
46	M	20 - 40 years old	3	2	3	3	3
47	M	20 - 40 years old	5	5	5	5	5
48	M	61 years old and above	3	5	3	3	5
49	M	61 years old and above	5	5	5	5	5
50	F	41 - 60 years old	5	5	5	5	5
51	F	41 - 60 years old	4	5	5	5	5
52	F	41 - 60 years old	5	5	5	5	5
53	F	41 - 60 years old	5	5	5	5	5
54	F	41 - 60 years old	4	5	4	4	4
55	F	20 - 40 years old	5	5	5	4	4
56	F	41 - 60 years old	5	5	5	5	5
57	F	61 years old and above	4	4	4	3	4
58	F	41 - 60 years old	5	5	5	5	5
59	F	41 - 60 years old	5	5	5	5	5
60	M	20 - 40 years old	4	4	5	4	5
61	M	20 - 40 years old	4	4	4	4	4
62	M	20 - 40 years old	5	5	5	5	5

Responde	Sex	Age Range	Q1	Q2	Q3	Q4	Q5
1	F	20 - 40 years old	3	3	4	3	2
2	F	20 - 40 years old	4	3	4	4	4
3	F	20 - 40 years old	4	5	4	5	4
4	M	20 - 40 years old	3	3	3	3	3
5	M	20 - 40 years old	2	2	5	5	5
6	M	20 - 40 years old	3	4	4	3	3
7	M	20 - 40 years old	4	4	4	5	4
8	M	20 - 40 years old	5	5	4	5	5
9	F	20 - 40 years old	3	2	4	4	3
10	F	20 - 40 years old	3	3	2	4	3
11	F	20 - 40 years old	4	4	4	3	3
12	F	20 - 40 years old	2	2	5	4	4
13	F	20 - 40 years old	2	1	3	4	1
14	M	20 - 40 years old	3	3	3	4	4
15	F	41 - 60 years old	2	2	4	3	3
16	F	41 - 60 years old	5	5	5	5	5
17	F	41 - 60 years old	5	5	5	5	5
18	F	41 - 60 years old	5	5	5	5	5
19	F	41 - 60 years old	5	5	5	5	5
20	F	41 - 60 years old	4	3	3	4	4
21	F	41 - 60 years old	4	4	4	4	4
22	F	41 - 60 years old	5	5	5	5	5
23	F	41 - 60 years old	5	5	5	5	5
24	F	41 - 60 years old	4	3	3	3	4
25	M	41 - 60 years old	2	3	2	4	4
26	M	41 - 60 years old	1	1	2	4	5
27	F	41 - 60 years old	2	3	4	4	3
28	F	41 - 60 years old	3	2	3	4	4
29	F	41 - 60 years old	3	3	2	4	1
30	F	41 - 60 years old	3	2	3	3	3
31	F	41 - 60 years old	5	5	5	5	5
32	F	41 - 60 years old	3	2	3	3	3
33	F	41 - 60 years old	3	3	3	4	3
34	F	41 - 60 years old	3	3	3	4	3
35	F	41 - 60 years old	3	2	4	3	4
36	F	41 - 60 years old	2	2	3	1	2
37	F	41 - 60 years old	3	3	4	5	5
38	F	41 - 60 years old	3	2	3	4	5
39	F	41 - 60 years old	3	1	3	3	3
40	F	41 - 60 years old	4	3	3	4	4
41	F	41 - 60 years old	3	2	3	3	3
42	M	41 - 60 years old	4	4	4	4	4

41	F	41 - 60 years old	3	2	3	3	3
42	M	41 - 60 years old	4	4	4	4	4
43	M	41 - 60 years old	4	4	4	3	3
44	M	41 - 60 years old	2	3	2	2	4
45	M	41 - 60 years old	2	4	3	3	4
46	M	41 - 60 years old	5	4	4	4	4
47	M	41 - 60 years old	3	4	5	1	5
48	F	41 - years old	3	3	3	3	3
49	F	60 years old and	3	4	4	3	4
50	F	60 years old and	3	1`	`1	2	3
51	F	60 years old and	3	3	3	4	4
52	F	60 years old and	5	4	1	1	4
53	F	60 years old and	3	3	3	3	3
54	M	60 years old and	1	1	1	1	1
55	M	60 years old and	5	4	3	4	5
56	M	60 years old and	5	5	5	5	5
57	M	60 years old and	3	3	4	5	5
58	F	60 years old and	2	3	2	3	2
59	F	60 years old and	1	1	1	1	1
60	F	60 years old and	3	2	3	4	2
61	M	60 years old and	1	1	3	2	4
62	M	60 years old and	4	3	5	5	5

Female						
F	20 - 40 years old	3	3	4	3	2
F	20 - 40 years old	3	2	4	4	3
F	20 - 40 years old	3	3	2	4	3
F	20 - 40 years old	4	3	4	4	4
F	41 - 60 years old	2	3	4	4	3
F	41 - 60 years old	3	2	3	4	4
F	41 - 60 years old	3	3	2	4	1
F	60 years old and above	3	4	4	3	4
F	20 - 40 years old	4	4	4	3	3
F	41 - 60 years old	3	2	3	3	3
F	60 years old and above	3	1`	`1	2	3
F	41 - 60 years old	5	5	5	5	5
F	60 years old and above	3	3	3	4	4
F	41 - 60 years old	3	2	3	3	3
F	41 - 60 years old	3	3	3	4	3
F	41 - 60 years old	3	3	3	4	3
F	41 - 60 years old	3	2	4	3	4
F	41 - 60 years old	2	2	4	3	3
F	20 - 40 years old	2	2	5	4	4
F	41 - 60 years old	2	2	3	1	2
F	60 years old and above	5	4	1	1	4

F	41 - 60 years old	2	2	3	1	2
F	60 years old and above	5	4	1	1	4
F	41 - 60 years old	3	3	4	5	5
F	60 years old and above	2	3	2	3	2
F	41 - years old	3	3	3	3	3
F	41 - 60 years old	3	2	3	4	5
F	41 - 60 years old	3	1	3	3	3
F	41 - 60 years old	4	3	3	4	4
F	41 - 60 years old	3	2	3	3	3
F	60 years old and above	1	1	1	1	1
F	60 years old and above	3	2	3	4	2
F	20 - 40 years old	2	1	3	4	1
F	41 - 60 years old	5	5	5	5	5
F	41 - 60 years old	5	5	5	5	5
F	41 - 60 years old	5	5	5	5	5
F	41 - 60 years old	5	5	5	5	5
F	20 - 40 years old	4	5	4	5	4
F	41 - 60 years old	4	3	3	4	4
F	41 - 60 years old	4	4	4	4	4
F	41 - 60 years old	5	5	5	5	5
F	41 - 60 years old	5	5	5	5	5
F	41 - 60 years old	4	3	3	3	4
F	60 years old and above	3	3	3	3	3

Male								20-40 years old						
M	41 - 60 yea	2	3	2	4	4		F	20 - 40 yea	3	3	4	3	2
M	41 - 60 yea	4	4	4	4	4		F	20 - 40 yea	4	3	4	4	4
M	60 years o	1	1	1	1	1		F	20 - 40 yea	4	5	4	5	4
M	60 years o	5	4	3	4	5		M	20 - 40 yea	3	3	3	3	3
M	20 - 40 yea	3	3	3	4	4		M	20 - 40 yea	2	2	5	5	5
M	41 - 60 yea	4	4	4	3	3		M	20 - 40 yea	3	4	4	3	3
M	41 - 60 yea	2	3	2	2	4		M	20 - 40 yea	4	4	4	5	4
M	41 - 60 yea	2	4	3	3	4		M	20 - 40 yea	5	5	4	5	5
M	41 - 60 yea	5	4	4	4	4		F	20 - 40 yea	3	2	4	4	3
M	41 - 60 yea	3	4	5	1	5		F	20 - 40 yea	3	3	2	4	3
M	60 years o	1	1	3	2	4		F	20 - 40 yea	4	4	4	3	3
M	60 years o	4	3	5	5	5		F	20 - 40 yea	2	2	5	4	4
M	41 - 60 yea	1	1	2	4	5		F	20 - 40 yea	2	1	3	4	1
M	20 - 40 yea	3	3	3	3	3		M	20 - 40 yea	3	3	3	4	4
M	20 - 40 yea	2	2	5	5	5								
M	60 years o	5	5	5	5	5								
M	20 - 40 yea	3	4	4	3	3								
M	20 - 40 yea	4	4	4	5	4								
M	20 - 40 yea	5	5	4	5	5								
M	60 years o	3	3	4	5	5								

Appendix 8: Tabulated Results

The Level of Participation of the barangay Wangan

Descriptive Statistics

	Tree planting	Clean up drive
Valid	62	62
Missing	1	1
Mean	3.443	4.027
Std. Deviation	0.931	1.382
Minimum	1.000	1.000
Maximum	5.000	12.800

The Relationship between Different Mitigation Programs and the Level of Preparedness in barangay Wangan

Pearson's Correlations

Variable		Different migitation program	Level of preparedness
1. Different migitation program	Pearson's r	—	
	p-value	—	
2. Level of preparedness	Pearson's r	0.509	—
	p-value	< .001	—

Appendix 9: Editor's Certificate

HOLY CROSS COLLEGE OF CALINAN, INC.
Davao- Bukidnon Highway, Calinan Poblacion, Davao City
RESEARCH AND PUBLICATION OFFICE

CERTIFICATION

This is to certify that the research paper of **Princess Angel C. Torregoza, Nevin Bryce T. Digma, Alexis M. Manteza, Nevin Bryce,** and **Christian Noah A. Nomos** entitled **THE RELATIONSHIP BETWEEN THE LEVEL OF PARTICIPATION IN DIFFERENT MITIGATION PROGRAMS AND LEVEL OF PREPAREDNESS OF THE BARANGAY FUNCTIONARIES IN BARANGAY WANGAN: A CORRELATIONAL STUDY** has undergone the editing process and been approved by the undersigned.

This certification is issued upon the request by the researcher on August, 2025.

RIZALITO H. PAGA, PhD
Editor

CURRICULUM VITAE

PERSONAL INFORMATION

Name: Princess Angel C. Torregoza

Age : 19

Date of Birth: April 16, 2006

Place of Birth: Davao City

Address: Bayanihan Wangan, Calinan, Davao City

Sex: Female

Civil Status: Single

Citizenship: Filipino

Religion: Roman Catholic

Father's Name: Roberto Torregoza Occupation: Teacher

Mother's Name: Angelita C. Torregoza Occupation: Housewife

EDUCATIONAL BACKGROUND

	SCHOOL	YEAR GRADUATED
Elementary:	Holy Cross College of Calinan,Inc.	2018
Junior High School:	Holy Cross College of Calinan,Inc.	2022
Senior High School:	Holy Cross College of Calinan,Inc.	2024
Track:	Academic Track	
Strand:	Science, Technology, Engineering, Mathematics	

CURRICULUM VITAE

PERSONAL INFORMATION

Name: Nevin Bryce T. Digma

Age : 19

Date of Birth: December 29, 2005

Place of Birth: Davao City

Address: Purok 4A Gumalang Baguio District, Davao City

Sex: Male

Civil Status: Single

Citizenship: Filipino

Religion: Messianic

Father's Name: Christopher V. Digma Occupation: Businessman

Mother's Name: Ruby T. Digma Occupation: Teacher

EDUCATIONAL BACKGROUND

	SCHOOL	YEAR GRADUATED
Elementary:	Philippine Nikkei Jin Kai School of Calinan	2018
Junior High School:	Philippine Nikkei Jin Kai School of Calinan	2022
Senior High School:	Holy Cross College of Calinan,Inc.	2024
Track:	Academic Track	
Strand:	Science, Technology, Engineering, Mathematics	

CURRICULUM VITAE

PERSONAL INFORMATION

Name: Alexis M. Manteza

Age : 19

Date of Birth: July 27, 2006

Place of Birth: Davao City

Address: 435 Peñano Street, Calinan, Davao City

Sex: Male

Civil Status: Single

Citizenship: Filipino

Religion: Roman Catholic

Father's Name: Ferdinand E. Manteza Sr. Occupation: Seaman

Mother's Name: Alice M. Manteza Occupation: Housewife

EDUCATIONAL BACKGROUND

	SCHOOL	YEAR GRADUATED
Elementary:	Holy Cross College of Calinan,Inc.	2018
Junior High School:	Holy Cross College of Calinan,Inc.	2022
Senior High School:	Holy Cross College of Calinan,Inc.	2024
Track:	Academic Track	
Strand:	Science, Technology, Engineering, Mathematics	

CURRICULUM VITAE

PERSONAL INFORMATION

Name: Christian Noah A. Nomos

Age : 19

Date of Birth: May 02, 2006

Place of Birth: Valenzuela City

Address: P-1B Malagos, Baguio Dist., Davao City

Sex: Male

Civil Status: Single

Citizenship: Filipino

Religion: Seventh Day Adventist (SDA)

Father's Name: Crisanto A. Nomos Occupation: Seaman

Mother's Name: Mylene A. Nomos Occupation: Medical Officer

EDUCATIONAL BACKGROUND

	SCHOOL	YEAR GRADUATED
Elementary:	Calinan LAM Adventist Academy,Inc.	2018
Junior High School:	Baguio National School of Arts and Trades	2022
Senior High School:	Holy Cross College of Calinan,Inc.	2024
Track:	Academic Track	
Strand:	Science, Technology, Engineering, Mathematics	