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# Disaster Preparedness Practices of Low and Middle-Income Households in the Coastal Communities in Negros Occidental, Philippines



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**ABSTRACT.** Disaster preparedness has played a vital role in mitigating disaster risks. A well-planned disaster risk reduction program is effective in minimizing hazards and casualties. The study determined the extent of disaster preparedness practices of households in the coastal communities of a congressional district in the Philippines, particularly on typhoons, in terms of disaster preparedness literacy, participation in community disaster preparedness, and disaster preparedness on supplies and kit contents. A descriptive-comparative research design was used to administer a researcher-made survey instrument to 341 coastal household members. Statistical techniques such as Kolmogorov Smirnov, Mann Whitney U test, Kruskal Wallis, Mean, and Standard Deviation were used in the study. The findings revealed a great extent of disaster preparedness practices with significant differences when respondents were grouped according to household income and educational attainment of the household members. However, there were no significant differences when grouped according to household size, type of housing unit, and type of housing structure. Household income is very minimal in purchasing food/kit supplies was identified as the most significant challenge experienced by the households. The study recommends an enhanced Barangay Disaster

Risk Reduction Management (BDRRM) Plan to strengthen the programs, projects, and activities to increase the adaptive capacity and involvement of households toward disaster preparedness.

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## 1.0. Introduction

Disaster preparedness has played a vital role in mitigating disaster risks. Pieces of evidence have shown that a well-planned Disaster Risk Reduction Management (DRRM) approach creates an impact on eradicating loss of lives and economic losses (Hemachandra et al., 2021). DRRM has gathered a broader audience due to disasters affecting human and financial losses in recent decades. Thus, 2015 has been a year of movement for several organizations to push forward toward eradicating disaster losses through Sendai Framework, Sustainable Development Goals, and Climate Change Conferences, as encouraged by the United Nations (Jayaraman, 2016). Moreover, the 2030 Agenda for Sustainable Development emphasizes the direct implication of reducing disaster risks in achieving SDG #13: Climate Action. It focuses on strengthening the adaptive capacity and resiliency to any climate hazards (Hoffman & Muttarak, 2017).

In the Association of Southeast Asian Nations (ASEAN) countries, almost all hazards, including typhoons, are considered the most dangerous natural hazards. Southeast Asia suffers financial losses amounting to \$91 billion between 2004-2014 due to typhoons and other natural hazards (Asian Development Bank [ADB], 2021). Thus, it draws the attention of the policymakers to focus more on disaster risk reduction since the coastal communities in Southeast Asia are said to be the most disaster-prone regions (Yoshioka et al., 2021). In response to this, the ASEAN ministers in charge of disaster management had adopted a work program that aims to strengthen the resiliency and coordination of the nations in mitigating the effects of disasters for a safer community and more sustainable and developed countries (Gabrielle, 2018).

According to the World Economic Forum in 2018, the Philippines ranked third among the countries with the highest disaster risks gaining an index value of 25.14% (United Nations Office for



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Disaster Risk Reduction [UNDRR], 2019). Due to its location in the typhoon belt, the country is also susceptible to typhoons, storm surges, and flash floods (Maminta, 2019). The Philippines incurs an average of 20 typhoons every year, wherein six are considered destructive (Dariagan et al., 2021). Due to rapid urbanization that results in climate change, sea-level rise, and other forms of environmental degradation such as pollution, coastal areas are also vulnerable and susceptible to these disasters (UNDRR, 2019). Moreover, almost 20% of the total losses during Typhoon Yolanda were in the fishing sector, including the destruction of fishing-related assets (Food and Agriculture Organization of the United Nations, 2018).

Disasters in the form of typhoons and storm surge-induced flooding can be very destructive for coastal communities (Dalisyay & De Guzman, 2016; Islam et al., 2018). Like other provinces in the Philippines, Negros Occidental is also vulnerable to different hazards like typhoons and flash floods. According to the National Disaster Risk Reduction and Management Council (NDRRMC) reports, last January 2021, more than 7000 families were affected by the flash floods leaving Php 4.12 million damaged to the fishing sectors (Luna, 2021). While the situational report of the Office of the Civil Defense (OCD) in Western Visayas, during the onslaught of Typhoon Odette (also known as Typhoon Rai) in the Negros province, there were 290,928 families affected, and 266,137 damaged houses were coming from the southern cities and municipalities of the said province (Guidalquiver, 2022).

Several studies have been reviewed, including Jones and Dodgen (2017) on disaster management, Chung and Yen (2016) on disaster prevention, Torani et al. (2019) on disaster education for children, Molina and Neef (2016) on community participation, and Mendoza et al. (2016) on capacity building on disasters. Studies conducted in Western Visayas and Province of Negros Occidental are those of Dariagan et al. (2021) on the disaster preparedness of the local governments in four criteria: systems and structures, policies and plans, building competencies, and equipment and supplies, Ventura and Madrigal (2020) on the awareness and practices of public high school students on disaster preparedness, Sumbillo Jr. and Madrigal (2020) on the DRRM practices of Augustinian Recollect Schools, and Cordevilla and Caelian (2020) on the DRRM awareness and practices of Universal Banks. However, there is a dearth of studies on disaster preparedness practices of households in the coastal communities of a congressional district, hence a gap.

Thus, the study determined the extent of disaster preparedness practices of households in the coastal communities, particularly during typhoons. The findings were utilized to enhance the Barangay Disaster Risk Reduction Management (BDRRM) Plan for the coastal communities.

## **2.0. Framework of the Study**

This study theorized that the household size, household income, educational attainment of a household member, type of housing unit, and type of housing structure influence their disaster preparedness practices during disasters such as typhoons. Thus, the more favorable the demographic variables of these households, the greater the disaster preparedness they had observed.

This study was anchored on the Adaptive Capacity Framework by Brooks (2003). This framework discusses the relationship between vulnerability, risk, and adaptive capacity. In the framework, vulnerability has two aspects, biophysical pertains to the hazards faced by the community, and social refers to variables that might affect the community's decision-making. Risk focuses on the climate hazard in a community, and adaptive capacity is seen as a strategy to avoid and minimize risk impacts and respond to any hazards. This implies the relationship of these factors that affect one another, thus creating adaptation strategies that would help in mitigating disaster risks for every household in the community.

Relating the framework to the study, the decision-making factor of the households living in the coastal communities are influenced by the household size, household income, educational attainment of a household member, type of housing unit, and type of housing structure. Given that the typhoon is considered a top risk in every coastal community, these households observed disaster preparedness practices through several disaster exposures. With that, households have developed their adaptive capacity and resiliency measures, thus creating adaptation strategies to withstand any disastrous events.

## **3.0. Methodology**

This study utilized a quantitative research design using descriptive and comparative approaches. The descriptive approach is appropriate because the researcher observed a large mass of the target

population and made the required conclusion about the variables (Ritchie et al., 2013). The descriptive approach was used to determine the extent of disaster preparedness practices in the coastal communities of the congressional district in Negros Occidental in terms of disaster preparedness literacy, participation in community disaster preparedness, and disaster preparedness on supplies and kit contents as assessed by the households.

This study also utilized a comparative design to allow the researcher to examine the differences and similarities between the different variables (Kumar, 2018). It was used to compare the extent of disaster preparedness practices of the households when grouped according to household income, household size, highest educational attainment of the household members, type of housing unit, and type of housing structure.

The respondents of the study were 341 household heads which were provided by the community leaders based on their 2021 community profile identified through stratified sampling. A researcher-made survey questionnaire anchored on the *Operation Listo Advocacy Program* of the Philippine Department of Interior and Local Government (DILG) was used to gather and collect primary data in the study. Part I contains the demographic profile of the respondents. Part II measures the extent of disaster preparedness practices of households in terms of disaster preparedness literacy, participation in community disaster preparedness, and disaster preparedness on supplies and kit contents. The extent of disaster preparedness practices was measured on a scale of 1 to 5; the highest is 5, which means "very great extent," and the lowest is 1, which is interpreted as "not at all". Part III focuses on the challenges encountered by the households.

The survey instrument was validated by six experts: Provincial DRRM Officer, DILG Officer, Community Leaders, Municipal DRRM Officer, and Community Secretary. The validity result was 4.875, which means that the survey questions were very good and interpreted as valid using the criteria of Good and Skates. A reliability test was also conducted on 30 household members who did not participate in the actual study. It was also found reliable using Cronbach's Alpha with a score of 0.939.

Further, the data were treated and analyzed using Mean, Standard Deviation, Kolmogorov-Smirnov, Mann-Whitney U test, and Kruskal Wallis test.

#### **4.0. Results and Discussion**

##### **Profile of the respondents**

Table 1 presents the demographic profile of the 341 respondents coming from the seven coastal communities covering two coastal municipalities of a congressional district in Negros Occidental.

In the aspect of household size, there are 246 or 72.1% average households and 95 or 27.9% big households. For household income, there are 295 or 86.5% low-income earners, 46 or 13.5% middle-income earners, and none were high-income earners. For educational attainment, there are 19 or 5.6% with no formal education, 51 or 15% who attained elementary level, 169 or 49.6% who attained high school level, and 102 or 29.9% who attained a college and higher level. For the type of housing structure, 300 or 88% live in a single house, and 41 or 12% live in a duplex house. Meanwhile, for the type of housing structure, 198 or 58.1% live in a concrete structure, and 143 or 41.9% live in a light/wood structure.

Descriptively, it suggests that most household members residing in the coastal communities of a congressional district in Negros Occidental have one to five members, earning up to Php 21,914.00 per month and high school level education. They reside in single housing units or independent residential structures separated by an open space or walls from all other structures. These are made of concrete structures where the roof comprises galvanized iron or wood, but the walls are made of wood, or half concrete/stone and half wood (see Table 1). The demographic depicts a variety of household members where these variables were a great player that affects the disaster preparedness practices of the households in coastal communities. Thus, similar to Lee et al. (2018), household size and other factors have varied significantly in the decision-making process due to natural disasters.

##### **Extent of disaster preparedness practices of households in the coastal communities**

Generally, the findings in Table 2 showed that, as a whole, the extent of the disaster preparedness practices of households was a great extent ( $M=4.09$ ;  $SD=0.63$ ). This indicates that the household members observe disaster preparedness practices most of the time. The finding

**Table 1.** Demographic Profile of the Respondents

Variable	f	%
Household Size		
Average (1-5 individuals)	246	72.1
Big (more than 5 individuals)	95	27.9
Household Income		
Low (up to Php 21,914.00)	295	86.5
Middle (Php 21,915.00 to 76,669.00)	46	13.5
Educational Attainment		
No Formal Education	19	5.6
Elementary Level	51	15.0
High School Level	169	49.6
College and Higher Level	102	29.9
Type of Housing Unit		
Single House	300	88.0
Duplex House	41	12.0
Type of Housing Structure		
Concrete	198	58.1
Light/Wood	143	41.9
<i>Total</i>	<i>341</i>	<i>100.0</i>

implies that households demonstrate a developed adaptive capacity and are primarily aware of disaster preparedness measures in terms of preparedness literacy, community disaster preparedness participation, and disaster preparedness on supplies and kit contents.

This finding was similar to the study results of Dariagan et al. (2021), which revealed that those who live in the coastal areas have a higher level of preparedness. Further, it was also similar to the study of Akbar et al. (2020), which showed a high level of disaster preparedness among the households in coastal communities and suggested that disaster preparedness should be implemented more at the household level.

Of the three components, disaster preparedness on supplies and kit contents was rated the highest ( $M=4.19$ ;  $SD=0.70$ ), followed by disaster preparedness on literacy ( $M=4.08$ ;  $SD=0.68$ ), while participation in community disaster preparedness was the lowest ( $M=3.99$ ;  $SD=0.77$ ). However, all of them were interpreted to a great extent. The findings imply that the household members had observed these measures most of the time when it comes to preparing basic needs, community participation, and disaster knowledge, which happen to be the most important things that a family should bear in mind in times of disaster.

This supported the study conducted by Chen et al. (2019), which emphasized that stockpiling emergency supplies is an integral part of achieving effective household preparedness, and the study of Molina and Neef (2016) that community participation contributes and plays a crucial role in disaster management and addresses the continuous increase of losses from disasters. Moreover, in the study of Chan and Ho (2018) that disaster preparedness was channeled through the efforts of the individuals to uplift their preparedness level, such as acquiring first-aid training, stockpiling supplies and equipment, participating in community training and simulation exercises, and understanding the government's protocols on disasters.

When the extent of disaster preparedness was measured using income and educational attainment, results showed that middle-income earners rated higher ( $M=4.37$ ;  $SD=0.51$ ) and college graduates ( $M=4.24$ ;  $SD=0.53$ ) interpreted a very great extent. It means that household members observe the disaster preparedness practices all the time. It implies that those household members living in the coastal communities who are part of the middle-income earners and who have college and higher levels of educational attainment have more capacity to provide for their household needs. They also understand disaster preparedness literacy, participation in community disaster

preparedness, and disaster preparedness on supplies and kit contents.

This finding strengthened the claim of Ashenefer and Mamo Wubshet (2017), which revealed that a household with high-income earners has more preparation for disasters than low-income earners due to their financial capacity. It is also paralleled to the study conducted by Cvetković (2016), wherein high-income earners have more knowledge of disasters and practice safety measures than low-income earners. A similar study by Bagarinao (2017) also revealed that low-income respondents do not prepare their food and medical supplies and are less likely to send a family member for disaster training due to their disposition in life.

In terms of educational attainment, the findings were supported by the study of Hoffman and Muttarak (2017), wherein individuals with high educational attainment were more capable of understanding the risks and anticipating the adverse effects of disasters even without prior experience. The study by Olowoporoku (2017) revealed that highly educated respondents were more likely to send a family member to basic safety training, such as first aid training and community drills. Further, Ashenefer and Mamo Wubshet (2017) indicated that the relationship between education and disaster preparedness due to the wide range of understanding of a household member who acquired formal education was validated.

However, the extent of disaster preparedness practices of the households when grouped according to big households (M=4.15; SD=0.58), average households (M=4.07; SD=0.64), single households (M=4.10; SD=0.64), duplex households (M=4.03; SD=0.54), concrete house structures (M=4.14; SD=0.61), light/wood house structure (M=4.02; SD=0.64) were all of great extent. This means that household members had observed the disaster preparedness practices most of the time. The findings demonstrate that the same practices are being observed regardless of the household size, type of housing unit, and type of housing structure. Thus, it would always depend on how strong the disaster is and how the household members observe and follow pre-emptive measures.

This finding is supported by the studies of Murti et al. (2014), Bagarinao (2016, 2017), and Asio (2020), which revealed that household size does not affect the respondents' disaster preparedness. However, the finding contradicts the study of Islam et al. (2018) that family size is a challenge in disaster operations. The bigger the family size would result in congestion in aid delivery and emergency evacuation.

On the aspect of housing units, the study of Tran et al. (2012) mentioned that every disaster, such as typhoons and housing units, usually incurs the highest losses regardless of the government's recovery actions. Supported by the study of Uddin and Matin (2021), building safer community

**Table 2.** Extent of Disaster Preparedness Practices of Households in the Coastal Communities

Variables	Literacy			Participation			Supplies and Kits			Disaster Preparedness		
	M	SD	Int	M	SD	Int	M	SD	Int	M	SD	Int
Household Size												
Average	4.06	0.69	GE	3.96	0.80	GE	4.17	0.72	GE	4.07	0.64	GE
Big	4.14	0.68	GE	4.06	0.71	GE	4.24	0.64	VGE	4.15	0.58	GE
Household Income												
Low	4.04	0.69	GE	3.96	0.78	GE	4.15	0.71	GE	4.05	0.63	GE
Middle	4.38	0.59	VGE	4.21	0.69	GE	4.48	0.53	VGE	4.37	0.51	VGE
Education Attainment												
No Formal Education	4.06	0.64	GE	4.13	0.56	GE	4.26	0.67	VGE	4.14	0.53	GE
Elementary Level	3.86	0.80	GE	3.88	0.81	GE	4.00	0.78	GE	3.91	0.73	GE
High School Level	4.03	0.69	GE	3.97	0.81	GE	4.17	0.73	GE	4.06	0.64	GE
College & Post-Grad Level	4.30	0.56	VGE	4.05	0.73	GE	4.32	0.56	VGE	4.24	0.53	VGE
Type of Housing Unit												
Single House	4.10	0.69	GE	3.99	0.78	GE	4.20	0.71	GE	4.10	0.64	GE
Duplex House	3.96	0.62	GE	3.95	0.76	GE	4.17	0.58	GE	4.03	0.54	GE
Type of Housing Structure												
Concrete	4.14	0.65	GE	4.01	0.79	GE	4.25	0.64	VGE	4.14	0.61	GE
Light/Wood	4.00	0.72	GE	3.96	0.75	GE	4.11	0.76	GE	4.02	0.64	GE
<i>Whole</i>	<i>4.08</i>	<i>0.68</i>	<i>GE</i>	<i>3.99</i>	<i>0.77</i>	<i>GE</i>	<i>4.19</i>	<i>0.70</i>	<i>GE</i>	<i>4.09</i>	<i>0.63</i>	<i>GE</i>

Note: M=Mean, SD=Standard Deviation, Int=Interpretation, GE=Great Extent, VGE=Very Great Extent

shelters is vital for disaster risk mitigation, especially for low-lying households and coastal regions.

Meanwhile, the finding revealed that housing structure did not matter because everybody was found to be prepared because of their exposure to typhoons, which tend to increase their preparedness measures. However, this finding was contradictory to the study contradicted by Mattsson (2015), which revealed that poorly built houses are one of the reasons for death tolls during typhoons, and wooden houses do not have a solid foundation to counter the heavy winds brought by the typhoon. Also, Venable et al. (2020) mentioned that housing materials are significant in creating safety perceptions of a housing unit. It also revealed that households living in a wood house perceived that their homes were least safe from disasters.

**Difference in the extent of disaster preparedness practices of households in the coastal communities**

Mann Whitney U test was used to determine the significant difference in the extent of disaster preparedness practices of households on typhoons when respondents were grouped according to household size, household income, type of housing unit, and type of housing structure.

The findings in Table 3 revealed that there was no significant difference in the extent of disaster preparedness practices respondents when grouped according to household size [U=10968.5, p=0.380], type of housing unit [U=5408.0, p=0.210], and type of housing structure [U=12564.5, p=0.076]. The result implied that household size, type of housing unit, and type of housing structure have the same disaster preparedness practices. It does not support the idea that having a big household, living in a single housing unit, and having a concrete housing structure have better disaster preparedness measures. Likewise, this signifies that all households are responsible for establishing better disaster preparedness practices for their family.

This is supported by the study of Murti et al. (2014) and Asio (2020) that the household size of the respondents does not impact the disaster preparedness plan and the readiness of the household members to prepare for any incoming disasters like typhoons. In the aspect of housing units, Tran et al. (2012) stated that housing units, regardless of their type, usually incur the highest losses during disasters such as typhoons. While in the aspect of housing structure, the study of Shen et al. (2011) mentioned that housing structures made of brick and strong woods could help mitigate disaster risks. However, Monzur’s (2017) study mentioned that a typhoon-resistant house is only achievable if the community strictly follows the rules and processes in building a safer housing structure, as stated by the government and other partner agencies.

Meanwhile, there is a significant difference in the extent of disaster preparedness practices of households on typhoons when respondents were grouped according to household income [U=4632.5, p=0.001]. The result implied that household income influences the disaster preparedness practices of households in the coastal communities. It supports the idea that having a higher income would increase a household’s disaster preparedness practices. This claim is similar to the results of the study by Bagarinao (2017) that income level positively correlates with preparedness. Moreover, evidence proves that poverty status and household well-being are susceptible to natural disasters (Hallegatte et al., 2020).

**Table 3.** Difference in the Extent of Disaster Preparedness Practices of Households in the Coastal Communities

Variable	U	z	p
Household Size	10968.5	-0.878	0.380
Household Income	4632.5*	-3.463	0.001*
Type of Housing Unit	5408.0	-1.254	0.210
Type of Housing Structure	12564.5	-1.774	0.076

**Difference in the households disaster preparedness practices according to educational attainment**

Kruskal Wallis was used to determine the significant difference in the extent of disaster preparedness practices of households on typhoons when respondents were grouped according to the educational attainment of the household members.

The findings in Table 4 revealed a significant difference in the extent of disaster preparedness practices when respondents were grouped according to educational attainment [ $\chi^2(4) = 11.665$ ,

p=0.020]. The result implied that educational attainment influences the disaster preparedness practices of households in the coastal communities. Thus, having a formal education would expound the perception of an individual toward disaster preparedness and would lessen their susceptibility to disasters. Moreover, a post hoc test using Dunn’s test revealed that college and higher-level respondents have significantly higher preparedness than other groups of respondents. This indicates that those with college and higher-level of education have better responses and understanding of disaster preparedness practices. Further, there are even DRRM activities being taught in the schools to ensure that they will be able to share the knowledge with the members of their households.

The finding substantiated the study conducted by Torani et al. (2019), which supported the importance of education on disasters and emergencies. This is also supported by the study of Sayuti et al. (2021), which unveiled that the absence of a disaster education curriculum and disaster-related training would result in low disaster preparedness for the respondents. Moreover, in the study conducted by Mutarak and Pothisiri (2013), education has a significant relationship with disaster preparedness, and participants with high educational attainment have effective disaster education.

**Table 4.** Difference in the Households Disaster Preparedness Practices According to Educational Attainment

Variable	$\chi^2$	df	p
Educational Attainment	11.665	4	0.020

Note: \*the difference is significant when  $p \leq 0.05$

Pairwise Comparisons of Education Attainment

Sample 1-Sample 2	Test Statistic	Std. Error	Std. Test Statistic	Sig.
Elementary Level-High School Level	-18.763	15.743	-1.192	0.233
Elementary Level-No Formal Education	28.246	26.485	1.066	0.286
Elementary Level-College Level	-45.853	16.900	-2.713	0.007
High School Level-No Formal Education	9.483	23.844	0.398	0.691
High School Level-College Level	-27.090	12.355	-2.193	0.028
No Formal Education-College Level	-17.607	24.622	-0.715	0.475

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same. Asymptotic significances (2-sided tests) are displayed. The significance level is .05.

**Challenges encountered by households in the coastal communities**

Table 5 shows the challenges encountered that affected the households’ perception of efficiently attaining disaster preparedness practices. In the study of Al-Dahash et al. (2016), recognizing these challenges will bridge the gaps and encourage everyone to prepare appropriately during disasters to mitigate these challenges.

The top five challenges were: household income is very minimal to purchase food/kit supply (f=309); shortage of rescue materials (f=250); insufficient funds to purchase the emergency supplies (f=234); hesitant to evacuate because no one will secure the house (f=210); and unable to check the supplies and kits regularly (f=187). This implies that despite the great extent of disaster preparedness practices, unavailability/lack of supplies and kits remained a top problem because most respondents were low-income earners. It means that most of the respondents do not have access to sustain the supplies and kits needed to survive any disasters due to their financial incapacity.

This finding is supported by the study of Karim and Noy (2016), which stated that poverty tends to increase right after a disaster due to the damage and losses they have encountered. Households in the coastal communities may be able to prepare and secure supplies, but sustaining them for the entire year might be a problem.

Meanwhile, other challenges were lack of knowledge of physical hazards around the surroundings (f=107), no time to discuss the cause and effects of typhoons among the household members (f=102), and lack of knowledge to discuss the emergency plan or information about the typhoon with the household member (f=96), lack of knowledge on the early warning system and signals for typhoons (f=94), and absence of radio or television for the typhoon updates (f=78). This implies that households in the coastal communities need continuous education and training on



disaster preparedness to ensure the best practices among their households and communities. Thus, considering the ever-changing concept and impact of disasters every year, there is also a need to educate on how to survive any of them.

This claim is supported by the Substance Abuse and Mental Health Services Administration (SAMHSA, 2016) study that inconsistent updates on disaster risk maps, under-maintained disaster management plans, and insufficient evacuation shelters are some of the challenges that affect disaster preparedness aspects. Further, the study of Asio (2020) demonstrated that compliance with disaster management programs and their implementation process are among the prevalent issues.

**Table 5.** Challenges Encountered by Households in the Coastal Communities

Rank	Items	f	%
1	Household income is very minimal to purchase food/kit supply.	309	90.6
2	Shortage of rescue materials.	250	73.3
3	Insufficient funds to purchase the emergency <i>balde</i> .	234	68.6
4	Hesitant to evacuate because no one will secure the house.	210	61.6
5	Unable to check the supplies and kits regularly.	187	54.8
6	No time to participate in any training/seminars provided by the community.	175	51.3
7	No training/seminars were provided by the community leaders.	141	41.3
8	Unaware of emergency hotline numbers in case of emergencies.	123	36.1
9	No coordination with the community leaders about the evacuation center/shelters, disaster plans, and information campaigns on disasters.	116	34.0
10	Lack of awareness on community disaster preparedness.	113	33.1
11	Lack of knowledge on physical hazards around the surroundings.	107	31.4
12	No time to discuss the cause and effects of typhoons within household members.	102	29.9
13	Lack of knowledge to discuss the emergency plan or information about the typhoon with the household member.	96	28.2
14	Lack of knowledge on the early warning system and signals for typhoons.	94	27.6
15	Absence of radio or television for the typhoon updates.	78	22.9

The overall analysis revealed that it partially validated the Adaptive Capacity Framework due to the significant difference found in the variables of household income and educational attainment of a household member. The result showed a very great extent remark which implies that these households had observed the disaster preparedness practices all the time. This affirms that having a high income and a high level of educational attainment draws more vital disaster preparedness practices, thus creating a higher adaptive capacity in this group of households. Hence, this signifies that disaster preparedness practices should provide more avenues for the households, regardless of their group, to ensure their involvement and participation in the DRRM activities available in their communities.

**5.0. Conclusion**

The great extent in disaster preparedness practices of households in the coastal communities revealed a need for continuous improvement in terms of preparedness literacy, participation in community disaster preparedness, and disaster preparedness on supplies and kit contents to develop and enhance the adaptive capacity and resiliency measures. Moreover, when respondents were grouped according to household income and educational attainment, these variables showed a significant difference, implying that only those with higher income and educational attainment can provide the essentials and complete understanding of the concept of disaster preparedness in their households.

The study’s findings were limited since it was conducted on communities of one congressional district only. It does not reflect the opinion of coastal communities in the province. Also, the idea of government implementers at the national, provincial, and municipal levels was not included in the data gathering as it was conducted at the height of the COVID 19 pandemic. It is recommended that future researchers conduct similar studies on other coastal communities to support or refute the findings of this study.



This study also provides results that identify the challenges encountered by the household members that hindered them from performing the disaster preparedness practices thoroughly. Moreover, the researcher proposed an enhancement of the BDRRM Plan that aims to strengthen the involvement of households in the DRRM activities of their local communities. Further, observing these proposed programs, projects, and activities, would create a positive outlook for the households and reach a very great extent remark to ensure that they follow all the measures all the time for their safety.

## 6.0. Declaration of Conflicting Interest

The authors declared no conflicts of interest with respect to the authorship, communities involved, research, and/or publication of this article.

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