

Disaster Risk Reduction Management Committee Capability- High Risk Barangays of Baguio City

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Abstract: Natural disasters vary in impact and severity, but resilient communities can mitigate their impact. In the Philippines, RA 10121 established Barangay Disaster Risk Reduction and Management Committee (BDRRMC), but its full potential has yet to be realized. The study is divided into two phases to determine the BDRRMC's capability in high-risk barangays in Baguio City, Philippines. The first quantitative phase-descriptive design uses a reliability-and-validity-tested questionnaire administered to 145 respondents that was chosen via total enumeration. According to a single-factor ANOVA, the BDRRMC has an overall weighted mean capability of 3.25, which means a very high capability in disaster management. Moreover, under the communication construct, the p-value for a length of service was 0.05, and the p-value for age was 0.03, indicating a statistically significant difference that suggests these variables affect DRRM capability. Because of this, a qualitative phase-case study was followed up to explain the quantitative result. Further, splitting the 12 participants chosen through homogeneous sampling into two groups based on the low and high weighted mean. Using a theme-by-theme joint display to integrate the data, with themes from group 1 promoting encourage awareness, prioritization, and increased coordination, while themes from Group 2 include compliance issues, budget issues and constituent support. The findings result in expansion as fit of integration because of the identified challenges in local disaster management. Therefore, DRRM officers are competent, but a lack of funding and support from constituents limits their effectiveness during disaster operations, resulting in a reactive rather than proactive approach.

Keywords: Barangay, Capability, Disaster Management, local community, Philippines

1. Introduction

Humanity on a global scale feels the effects of natural disasters. Strengthening community resilience is key to adapting to ongoing challenges. Although progress has been made, there are still research and practice gaps (Norris et al., 2007). The link between natural hazards and disaster is demonstrated in Thompson's (2010) study, which suggested that if the Earth lost just 8% of its ice, the consequences would be dramatic. Florida, Louisiana, New Orleans, London, New York, and Shanghai may flood. According to Mathez (2009), the Western United States temperature will rise by 0.8 to 1.7 degrees Celsius by 2050, resulting in more rain and less snow. If climate change continues, Earth will become inhabitable. This has caused massive devastation, many victims, and incalculable damage to local economies, wiping out decades of development in a matter of seconds (Keith, 2008). Policymakers prioritize poverty reduction, education, and public health over DRR. Furthermore, the status quo of high reliance on the central government worsens the legal opacity in identifying jurisdictions and responsibilities (Al-Nammari & Mozamad, 2015). Moreover, The severity of a disaster depends on a community's vulnerability. This vulnerability isn't inherent because it's not evenly distributed; it's the result of complex factors that shape people's lives and environments. Vulnerable groups include minorities, orphans, nursing mothers, and the disabled (International Federation of Red Cross and Red Crescent Societies (ISDR), 2007). In the Philippines, natural disasters like Tropical Storm Uring in Ormoc, Leyte, the 1990 Baguio City earthquake, the 2006 Guinsaugon, Southern Leyte landslide, Typhoon Sendong in Northern Mindanao, and Typhoon Pablo in Southern Mindanao claimed many lives and damaged property (Presse, 2013). Due to these circumstances, Republic Act (RA) No. 10121, or the Philippine Disaster Risk Reduction and Management Act of 2010, was signed into law to strengthen Philippine disaster management, and the BDRRMC was created (RA

10121, 2010). Daep (2014) emphasized that the barangay must protect its residents from natural and man-made disasters. In relation to these, the role of barangays (or "villages" in English) in disaster management is recognized and defined. RA 10121 mandates BDRRMCs to "set the direction, develop, implement, and coordinate disaster risk management programs within their territorial jurisdictions" (Florano, 2014). In Benguet, residents are more aware of natural hazards after the Little Kibungan tragedy, which killed at least seventy people and the lack of a relocation site was one of the major concern during the displacement of at least several families (Cawis, 2014). Further, the lone district of Benguet Province, Baguio, with 128 barangays, was identified by the World Bank as one of Asia's seven risk-prone cities, with 90% of the city vulnerable to natural hazards due to its topography. The city was devastated by the 1990 earthquake and Typhoon Sendong, both of which left a lasting impression. The city lacks a comprehensive disaster management program and has failed to enforce environmental regulations that could mitigate disasters on repeated occasions. Baguio sits on four major fault lines: Mirador, San Vicente, Loakan, and Burnham. 1990's San Manuel, Tuba, Tebbo, and Digdig quake (Amor, 2011. para.1). With these, the study intends to raise their awareness of the importance of prioritizing DRM, that aims to foster cooperation with the programs implemented by the local government unit and to actively participate in disaster risk reduction activities and assistance to the barangay level before during, and after the occurrence of a natural hazard by identifying the BDRRMC's level of capability and understanding underlying concerns that affect disaster management.

2. Literature Review

Communities can effectively mitigate hazards because they know how to withstand, absorb, and recover from disturbances and threats. In addition, internal plans are better

than consultant-made ones because they are the first to aid during a disaster (Alcaynaet. Al, 2016). In the Philippines, community-based disaster preparedness (CBDP) strategies, like the Bayanihan culture of community cooperation, are crucial components of vulnerability reduction and disaster strategies (Uy & Rajib, 2012). However, low literacy, inability to act quickly, and cultural taboos contribute to residents' reluctance to evacuate due to attachment to their native lands, which impacts DRRM. The system is stressed because national and local agencies do not have clear duties and responsibilities. Some municipalities lack the capacity, commitment, and consistency to incorporate disaster risk reduction into their development strategies and budgets (United Nations,2014). In relation to community based disaster management, purok system a self-organizing Filipino sub-village was created. However,Matthies (2017) argues that purok system is distinct from community-based disaster risk management and can strengthen the resilience of disaster-prone areas. To emphasize that it is a recipient of 2011 UN Sasakawa Award but problems such as maintenance, voluntarism, and patronage remain . Despite the country's geographical, social, economic, political, and environmental circumstances, most notably its pervasive poverty disaster management is a major concern.Despite a legal framework, the COA (2013) found obstacles in implementing DRR. Uncontrolled growth, overpopulation, competing interests, and political tensions led to Yolanda's 6,300 deaths, 28,689 injuries, and 1,061 missing. In LGUs, disaster incidence and severity affect disaster-related expenditure demands and revenue-raising capacity, which may not be considered when allocating resources, creating a resource-risk imbalance.The 2013 budget shows that 54% of disaster risk management funds went to response and rehabilitation post-event and 46% to mitigation and preparedness pre-event. In terms of structure, only 34% of provinces, 34% of cities, and 60% of municipalities were not ready (Swiss NGO, 2011). In a related study , Department of Interior Local Government (DILG),2011 findings that based on eight major factors such as LDCC functionality, availability of evacuation centers, appropriate equipment, and the quality of the Disaster Risk Management Plan discovered that local level structures' capacities are still weak. It is also widely recognized that the country's institutional and legal framework for disaster management includes public and NGO participation that emphasize advocacy and legal support for communities at risk from development projects and environmental degradation (Luna, 2001). This challenges are existing because local and national governments are burdened by population growth despite policies to provide a reliable source of DRR funding (Barbon, 2012). Local governments do not view DRR as indispensable for achieving sustainable development and mitigating risks and climate change.The disaster preparedness is also a measure of their effectiveness in enhancing the adaptive capacity and resilience of their communities (Viloria et al., 2014). Additionally, disaster management is a form of project management with little visibility (Crawford et al., 2012). Subjective resilience is measured before, during, and after a project to find out how activities have changed how people feel about their ability to handle disasters over time (Jones& Tanner, 2016,239). Also, increased vulnerability and wrongdoing by government officials make natural disasters into social disasters, and state-to-local capacity is overwhelmed (Cutter & Gall,

2006).This disproportionately affects the most vulnerable people, such as the elderly, who are more vulnerable during a crisis. There is limited research on the disaster preparedness of older people by age group.Ineffective responses to weather-related disasters by small, resource-poor governments will exacerbate social inequality (Dzigbede et.Al,2020). Similarly in the thematic analysis findings of Tuohy et., Al, 2014 it determined personal, practical, and social readiness affects vulnerable groups in disaster management. Zakour and Harrell (2003) suggested ways vulnerable groups could access disaster services. In a crisis, social injustice is caused by people and places that are more likely to be affected by disasters, fewer institutions that help them, weaker local organization capacity and network interaction, and large geographical barriers that make it hard to redistribute resources.Further, Daellenbach et al. 2018 .'s study find four population segments, tying disaster preparation to rewards may encourage people who aren't prepared and don't support to make preparations. People may be more motivated to work harder if they know that government help might not be enough. To address this, the assessment in the Philippines supports gender mainstreaming by recognizing, accepting, identifying, and addressing the roles, needs, capacities, and vulnerabilities of men, women, children, people with disabilities, older adults, and other groups (NDRRMP,2011-2028).In addition, suggestions have been made to enhance disaster management, such as the Asio, 2020 study, which found a connection between respondent community and disaster awareness, as well as a moderate and direct connection between disaster knowledge and household preparations.Leadership models should encourage a balance between the autonomy and collaboration of employees. In addition, disaster management, digitalization, and financial support can help all organizations continue to manage their resources and responsibilities in order to address all humanitarian aspects of emergencies (Moşteanu, 2020). Disaster management addresses the root causes of people's vulnerability, improves their individual, communal, and institutional capacity, and improves their lives (DILG, 2012). Creating a resilient community contributes to disaster management, which helps communities survive and adapt. Legal frameworks and statutes govern local disaster management, but their efficacy is unknown, preventing full development. By understanding implementers' perspectives, a safe, resilient community can be created that may require dedicated skills, changes to the organizational structure and culture, and financial backing.

3. Research Design and Methodology

Explanatory sequential design was adopted in the study. This design uses qualitative data to explain and interpret quantitative outcomes. It is also useful when a quantitative study reveals unexpected results (Creswell,2007). The locale of the study is gleaned in Figure 1

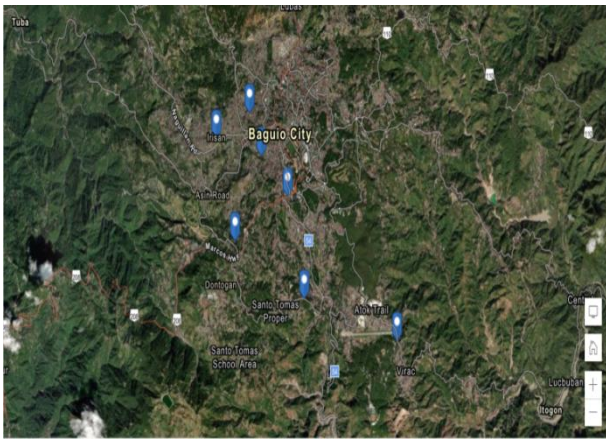


Figure 1. Locale of the study

The study was conducted at Baguio City, which is 250 km north of Manila and surrounded by the municipalities of La Trinidad, Itogon, and Tuba (About Baguio City | City Government of Baguio, n.d.). Using ARCGIS, an online website that works effectively by collaboratively building and using maps (Esri 2019). The locations of the seven barangays are represented with a blue pin as a legend. Baguio City's seven high-risk barangays were identified based on incident reports to the CDRRMC. Kias, Camp 7, Central Fairview, BGH Compound, Irisan, Bakakeng Central, and City Camp.

3.1 The conceptual framework for explanatory sequential design

A conceptual framework is used to justify the significance of a research problem. This framework shows how the research problem will be explored and the link between concepts and variables (Othman et, Al2020). The study's conceptual framework contains phases 1 and 2, including data collection, analysis, and interpretation. (see Figure 2).

Figure 1. The conceptual framework elements for explanatory sequential design

In Phase 1 - Quantitative study specifically descriptive design, used when describing a population, circumstance, or phenomenon accurately and systematically (McCombes 2022). The study aims to answer the following research questions:

1. What is the perceived level of capability of BDRRMC during disaster response in terms of :
 - a) Evacuation Committee
 - b) Communication committee
 - c) Security committee
 - d) Medical assistance committee
2. What is the difference in the perceived level of capability of BDRRMC during disaster response when grouped according to:
 - a) Age
 - b) Length of service
 - c) Educational attainment

Hypotheses

There is no significant difference on the level of capability of BDRRMC during disaster response when grouped according to age, length of service and educational attainment. Before

conducting the study, the researcher respectfully obtained permission and proper endorsement. The researcher got permission from barangay chairman and respondents to collect needed data. Followed by a letter to respondents before online (Outlook Form) survey administration that was subjected to Spearman Prophecy Brown to determine the questionnaire's reliability. A single factor Analysis of Variance (ANOVA) to test the significance of length of service, educational attainment, and age to BDRRMC level of capability. ANOVA is used to compare the means of three or more independent (unrelated) groups (Statistics Laerd, 2018) using the formula below:

Phase 2 (qualitative) was used to explain significant difference constructs in quantitative result interpretation. Qualitative research examines how participants interpret and make meaning of stories (Bhandari, 2022). Thematic analysis on semi-structured interviews helped understand quantitative data. It uses qualitative data to study people's opinions, knowledge, experiences, or values. Deductive reasoning uses theory or current knowledge to interpret evidence (Caulfield, 2019). Twelve participants were selected using homogeneous sampling. The goal of homogeneous sampling is to provide a sample with similar characteristics or qualities and when researching a specific group (Laerd Dissertation, Purposive Sampling, 2022). The participants are divided into two groups (See Table 1). Interview results were analyzed thematically.

Table 1

Participants selected for Case Study Analysis Using the Homogeneous Sampling Principle				
Quantitative result	Group 1		Group 2	
	Below 5 years	41-45yrs old	11-15 yrs	46-50 yrs old
Weighted Mean Interpretation	3.38	3.80	2.61	2.48
	Very high	Very high	High	Low

Lastly , a joint display method was applied to integrate and present quantitative and qualitative data to understand the study. Development is using one approach's findings to inform decisions about another method. Attention allocation data might be used to choose readers for open-ended interviews about what they were thinking and doing while reading (McCrudden, Marchand, & Schutz 2021).

3.2 Ethical consideration

By explaining the study's goal, informed consent was gained, and personal information was not collected to maintain respondent anonymity. After data analysis, the outlook form used to gather information has been deleted permanently.

4 Results and Discussion

4.1 Quantitative Phase Results

Table 2 shows the BDRRMC's evacuation, communication, security, and medical committees are highly capable with a weighted mean of 3.26. This implies the selected barangays are implementing BDRRMC mandates .This is consistent

with Santos et al. 2014 & Glindo (2018), BDRRMC is useful despite its drawbacks and workforce plays a key role in ensuring a disrupted region continues to function and recovers from disasters. According to Kusumasari & Alam (2012), a local government's ability to manage a disaster is a function of institutions, human resources, policy for effective implementation, financial, technical resources, and leadership. This means disaster management should include committees that contribute to hazard resilience.

and communication, and response. Most barangays were not aware of early warning system advances and usually rely on the announcement given by CDRRMC and PAGASA (Victoria, 2006 & UNISDR, 2006). Next is Security Committee with a weighted mean of 3.31 which means high. This implies that the selected barangays implemented methods and procedures to protect constituent safety during disaster response. Some of these policies, strategies, and initiatives are a result of improved relations between selected barangays and other agencies. The BFP, PNP, DSWD, and Red Cross give free seminars and training in partnership with the CDRRMC to share and deliver disaster risk reduction and management experience. Lastly in terms of Medical Committee's overall weighted mean is 3.27, which is quite high, indicating that the selected barangays rigorously adhere to the vulnerabilities and priorities of constituents needing medical help during disaster response. Local organizations and communities play a key role in disaster management, and scientific risk information is essential. Disaster management experience shows that health and water institutions should coordinate measures (Ishiwatari et al., 2019). However, Talleo (2012) added that Baguio's Barangay Peacekeeping Action Team (BPAT) that sometimes acts as volunteers in disaster management is moderately capable in first aid. Added by Teoxon (2014) reported a shortage of skilled medical professionals in Baguio City's EOCs. During disaster response, the medical committee is important because prompt care is needed, but a sudden crisis can impair its operation but are sometimes hesitant to use training because they fear criticism or taking responsibility for a life. A single-factor ANOVA result is also shown, with a p-value of 0.02 indicating a relationship between respondents' DRRM capacity and length of service. Respondents perceived that DRRM members with less than 5 years of length of service have higher capability as perceived by the respondents. Furthermore, the communication construct shows a significant difference with a p value of 0.05. In terms of educational attainment, a p-value of 0.74 indicates that the mean values for high school graduates, college graduates, and both graduates are the same, implying that education has no bearing on DRRM capability. The age difference is also significant, with a p-value of 0.03 indicating a difference. The respondents with the highest mean value were between the ages of 41 and 45, suggesting that younger DRRM members are more competent. Once more, the significant difference is calculated with a p-value of 0.03 under the communication construct. The findings of Mohammad-Pajooh & Ab (2014) reveal that having money, education, being older, and owning property all significantly aided locals in preparing for disasters. Men and people with more money and education who lived there were better prepared. Lastly, mitigation requires evaluation, monitoring, and dissemination, while preparedness requires planning, exercise, and training. Local government bodies need damage assessment, debris clearance, and disaster support skills during recovery (Kusumasari et al., 2010). Overall, the selected barangays in Baguio City have a high capacity for disaster management, suggesting that all relevant committees should be prioritized for successful disaster response. Each committee's skills have an effect on the others, like a chain reaction. However, the noteworthy results imply that communication constructs differ significantly, as evidenced by the statistics. This further suggests that the study's

Table 2

	CONSTRUCTS				
	Evacuation	Communication	Security	Medical	Overall
Level of Capability Weighted Mean	3.27	3.18	3.31	3.28	3.26
LENGTH OF SERVICE					
Below 5	3.46	3.23	3.56	2.97	3.40
5-10	3.38	2.86	2.61	3.03	3.40
11-15	3.45	3.37	2.80	3.08	3.19
Above 15	3.39	3.29	3.52	2.86	3.00
F	1.38	2.83	0.32	0.34	3.48
p	0.26	0.05*	3.40	3.40	0.02*
EDUCATIONAL ATTAINMENT					
College Graduate	3.35	3.13	3.23	3.36	3.24
College Level	3.40	3.00	3.30	3.24	3.22
High School	3.31	3.27	3.54	3.46	3.31
F		0.31			
p		0.74			
AGE					
25-30	3.42	3.27	3.50	3.56	3.43
31-35	3.67	3.76	3.90	3.90	3.65
36-40	3.38	3.40	3.63	3.63	3.58
41-45	3.71	3.80	3.63	3.63	3.76
46-50	3.13	2.48	3.15	3.15	2.86
51-55	3.29	3.03	3.13	3.13	3.21
56-60	2.90	2.77	2.75	2.75	2.77
61-65	3.26	3.20	3.32	3.32	3.24
65 and above	3.58	3.20	3.50	3.50	3.18
F	1.62	2.53	1.82	2.70	9.00
p	0.16	0.03*	0.11	0.07	0.00*

Table 2 Level of Capability of BDRRMC

* means significant

In terms of Evacuation Committee's 3.27 weighted mean is high. This means the selected barangays can respond to disasters. Trust between individuals and public officials improves the likelihood that people will leave before natural disasters, according to Walch, 2018. Evacuation experience improves basic and emergency readiness (Onuma et al., Al, 2017). Followed by the Communication committee scored 3.18, interpreted as high. Human resources, equipment, directories, and major infrastructures exist in the selected barangays, which improves the BDRRMC members capability to implement, making them fit and competent in disaster risk reduction management. The importance of having a good line of communication in the barangay, including increasing awareness, organizing with government offices, and timely warning services, is in line with the study of which stated that a complete and effective early warning system comprises four inter-related elements: risk knowledge, monitoring and warning services, dissemination

conclusions are influenced by age and service length since they convey distinct weighted means.

4.2 Integration of Quantitative and Qualitative data using a Explanatory Sequential Design Joint Display

Themes Related to BDRRMC Capability with High and Low Weighted Mean according to variables with significant difference

Qualitative Result				
Group 1 High weighted Mean		Group 2 Low weighted Mean		
Qualitative Research question				
What are your experience when conducting activities to educate BDRRMC members and constituents about disaster?				
Sub themes	Themes	Sub themes	Themes	Outcomes
Learning materials are provided	Encourage Awareness	Low attendance on training	Compliance issues	Expansion
House to house visitation		Refusal to evacuate		
Receiving and sharing information	Awareness	Not passing of incident reports	Compliance issues	Expansion
Knowledge enhance from disaster management training attended				
Qualitative Research question				
What activities are undertaken to ensure warnings and equipment are organized during disaster response ?				
Active participation	Prioritization	Implement ation of disaster plans is very difficult	Budget concerns	Expansion
Purchases equipment for rescue operation		Using available equipment		
Understanding importance of disaster response		Rely on donation during disaster response		Expansion
Disaster management is a must				
Qualitative Research question				
What are the concerns met during disaster response with regards to communication with other agencies?				
Receives support from the LGU	Increased Coordination	Evacuates on their own	Constituents support	Expansion
Seminars conducted by other agencies like Red Cross and BFP		Constituents are interested in livelihood seminars only		
CDRRMC and other agencies are willing to help		No volunteers during disaster		Expansion

After conducting interviews with (n=12) study participants, a joint display was utilized to explain the quantitative findings. The table presents the quantitative results of indicators with low and high weighted mean values, along with a theme to illustrate the underlying causes wherein building integration is used in the study which is a method for bridging research gaps (Fetters et al.2013). It ensures that Phase 2 outcomes are built on Phase 1 findings and provides additional justifications (See Table 3). The highest mean was recorded by Group 1 participants, who were respondents aged 41-45 with a below 5 years length of service. The 46–50 age range in Group 2 had the lowest mean with a 11-15-yearsof length of service. According to Kwon et al., 2020, disaster survivors and bereaved families play critical roles in disaster resilience . Case studies show disaster victims know more about management standards. In a similar study, age and hurricane-related distress reduced preparedness, but increasing age and household wealth increased resilience (Sattler et.Al, 2000 and Sato, et. Al, 2018). Furthermore, older adults with lower incomes were found to be less prepared than those with higher incomes (Cox & Kim, 2018). Lastly, the impact of social networks, engagement opportunities, and independence standards on senior disaster planning (Tuohy et, Al, 2022). In terms of their experience conducting disaster-related knowledge activities, Group 1 participants generated the theme of increasing awareness.This means BDRRMC BDRRMC members work to ensure constituents can attend trainings and seminars. As explained in Kapucu (2018), if individuals aren't ready, then nobody is ready. This puts an emphasis on family and individual preparedness. Planning and preparation improve emergency response, including resource use. (2014). Palaroan (2007) commended the LDRRMC for consistently implementing plans and activities in Baguio, such as disaster education. Community awareness can help DRRM staff. According to Cretney (2016), response and recovery should be included in community activities for social support and learning. Participant 5 states:

“We Cordillerans are already obligated to repair typhoon damages like riprap manufacturing, carpentry, and cleaning, so we don't even evacuate in most cases or rely on government assistance.”

Compliance in the same domain is the core of Group 2. This suggests that BDRRMC members work hard, but that participation is a problem. As each stakeholder has a unique perspective, there is no consensus on what resilience entails and how it can be measured (Tariq et.al 2021). In relation to COA (2013), the BDRRMC of the selected barangays are still developing a systematic approach to raising public awareness due to limited information and constituents' lack of participation in trainings and seminars. Disaster management officials with minimal training and limited national and local collaboration relied on volunteers for compliance. Developing disaster-resilient communities is hindered by the difficulty of translating scientific findings on disaster risk into actionable knowledge for local and national officials (Amor 2011 and Bollettino Et,Al, 2016).Participant 8 attests to this:

“We use the \$50,000 in annual funding to train our staff and residents, but when disaster strikes, the volunteers aren't available, which is understandable because they have to

Table 3. Joint Display from an integrated explanatory sequential design

ensure the safety of their families before reporting to the BDRRMC, resulting in a delayed response."

Many victims refuse to evacuate and ignore warnings because they lack confidence in the BDRRMC. If they have survived previous typhoons, they are confident that they can handle the disaster. Cutter and Gall (2006) identified factors that contribute to victims' refusal to evacuate. Underestimating risk, overestimating property structure and soundness, not knowing the shelter site, refusing to leave pets behind, and following neighbors, friends, and relatives. Leniency and empathy prevent BDRRMC members from ordering informal settlers to leave a dangerous area. If people won't leave, identifying hazards is useless. This makes rescue volunteers and others vulnerable. A linked study says that local people don't know enough about disasters and how to prevent them. Place dependence and disaster intensity were positively related to residents' willingness to evacuate, but their interaction was negatively related (Xu et al., 2020). Recent disasters have seen few early evacuations. In addition to individual traits, peer influence affects family evacuation decisions in two conflicting ways. When neighbors leave, so do families (Kulhman, 2020). Prioritization with regards to activities in coordinating warnings and equipment is group 1's theme. This shows disaster management precautions. One additional factor is the reorganization of the BDRRMC following every three-year election. It is only convened when a disaster threatens operations and performance (Florano, 2013). The vulnerability of one person might not be that of another. Different actors manage and record disasters differently. Therefore, approaches prioritize stakeholder participation over highly centralized management. Different realities demand different responses (Bankoff & Hillhorst, 2009). Cost-effective disaster risk reduction solutions produce positive results. Organizations are either unprepared or only partially prepared for natural disasters. This is because of financial and economic problems, a lack of information, and passivity (Galindo et al., 2014). According to Abejuro (2008), most LGU disaster risk reduction programs focused on disaster preparedness and post-disaster operations. This shows that DRRM officers face funding issues that may be resolved with good resource management, as Participant 50 said:

Money is a problem, but depends on how you spend it.

The theme of Group 2 is budgeting. This indicates that DRRM officials are having difficulty meeting their goals due to a lack of resources. The BDRRMC's budget is insufficient to address all constituency issues, so cost-effectiveness is not fully realized. According to Rouhanizadeh and Kermanshachi (2019), the absence of long-term funding programs for recovery hinders post-disaster recovery. Shreve & Kelman (2014) found that cost-effective DRR initiatives provide little political capital. They need measurable spending results to show constituents what individuals have just accomplished. Post-disaster aid is more political than DRR. Disaster recovery is usually done by constituents. The "bayanihan system" shows that people do not even rely solely on government aid. Instead of complaining about barangay inactivity, they act independently. During initial rehabilitation, the community is involved, but only extended family members help long-term (Alcayna et al., 2016). This

means that disaster management is only considered during the response phase, after which it is ignored, thereby impeding recovery and rehabilitation. Amor (2011) noted that CDRRMC lacks rescue equipment, preventing volunteers from participating. Some BDRRMC members are fine with the training budget not being fully allocated due to cost-cutting measures in anticipation of future demands. Consequently, each barangay's expense distribution varies because budgeting is up to the BDRRMC council, and it's often impossible to meet the law's minimum five percent requirement due to typhoon damage. Funding issues affect disaster response strategies. This is supported by Silver (2014), who found that lack of funds leads to reduced prioritizing or non-implementation of BDRRMC projects because members have few resources and often use their own. The law specifies how much of the fund must be used, but budgeting is the responsibility of the BDRRMC. This report emphasizes the limitations of moving policymaking beyond paper plans. Because the BDRRMC acts independently during disaster response and disregards DRM plans, DRM plans are deemed irrelevant. Plans are viewed as documents to be passed rather than action guides. Participant 15 states:

We were unable to provide the evacuees with the five folding beds and blankets that we recently purchased due to a lack of availability. Despite our early warnings, the local residents evacuated as the typhoon arrived.

Increased coordination regarding communication issues in disaster response is the theme of Group 1. It was emphasized that a resilient workforce encourages information sharing across organizations, levels of government, and the private sector. It is necessary for higher competency to place more emphasis on more interested parties. However, disaster planning, communication, authority, and coordination issues delay crisis management. This is due to overwork, authority conflicts over new disaster tasks, and organizational jurisdictional differences, which can be managed but not eliminated with proper planning (Osti, 2004 & Madrigano, et al 2017). Furthermore, participants reported that, despite limited human and institutional resources, local government outreach was vigorous, far-reaching, and persistent. (Ollerenshaw and colleagues, 2016) Their resiliency was exhibited by shared organizational identity, purpose, and values as well as by mutual trust and support, role flexibility, active problem solving, self-reflection, shared leadership, and skill development (Wyche, et Al, 2011). Although unfamiliarity, ownership, and organizational culture and operation hampered interaction, training of students and staff in community-level partner meetings and having a recognizable point of contact who can represent academic institution resources were both necessary for assisted disaster response teamwork. Dunlop et al. (2016) To effectively implement disaster risk reduction, local governments must be provided with the necessary resources and authority over decision-making. This necessitates a reorganization of the current governance structure as well as the participation of residents in risk communication (Malaloda, et Al, 2010 and Ikeda et., al, 2011). Disaster response must be improved to aid recovery, and organizational preparedness helps (Galindo et al, 2014). Low constituent participation hinders barangay implementation of RA 10121, despite free trainings from

BFP, PNP, CDRRMC, DSWD, and Red Cross. These findings show that private organization volunteers are willing to help and have valuable knowledge (Fulmer et al., 2007). To add the importance of collaboration, for instance, knowledge enhanced partnerships, collaboration of government agencies in response to man-made disasters and capacity increased (Lee, 2020). Constituent support during a disaster, according to respondents, is a major concern. Volunteers who give their time, skills, and money are a huge help in managing emergencies and disasters. In a time of crisis, people will help without being asked, so individuals must be prepared. This guarantees efficient responses, prevents duplication, and safeguards volunteers (Whittaker et al., 2015). Fewer constituents are willing to volunteer for disaster management, which affects funding. Due to a lack of motivation, BDRRMC reports aren't followed for example is the refusal to evacuate. Later, they complain about the ineffectiveness of DRRM officers. In a related study, Palaoan (2007) findings, the moderately implemented program in Baguio is the disaster brigade, which is regarded as extremely important because it does save everyone. In addition, only 45 of the Philippines' 80 provinces have DRRM units or offices, and only 23 have permanent staff (Luzerne, 2014). Training is not possible due to a lack of volunteers. Elderly barangay officials and tanods can't act quickly or do administrative work alone. Furthermore, community service funding encourages volunteers. Some people are hesitant to volunteer because they are unfamiliar with DRM laws. In comparison to seminars on health, education, and livelihood, seminars on disaster management are deemed unnecessary, resulting in unpreparedness. People only recognize their significance after a disaster. This is due to a lack of legal knowledge, which lessens interest in BDRRMC programs and activities, as stated by Participant 50:

Even if the majority of constituents are aware of the seminars, they will not attend if there is no free food, particularly if the topic is a natural disaster. A course on food processing and craft creation will attract many students.

Comparing high vs. low weighted mean group themes revealed significant differences in how participants explained how their capability is affected by program implementation in communication construct, which creates a domino effect in the entire disaster management committee. This suggests that qualitative data uncovered additional communication issues and concerns, indicating an extension between qualitative and quantitative data. The result supports Victoria's (2003) contention that community-based disaster mitigation promotes local development. According to Vilorio et al. (2014), the majority of barangays are unprepared for natural disasters due to a lack of resources, resulting in complacency. According to operational disaster theory, in disaster management, an individual's knowledge, competencies, and stress tolerance are crucial (Rusch, 2010). Since fewer DRM agencies made it hard for barangays to build relationships with the private sector. Private sectors tackle poverty, education, and healthcare. This makes the BDRRMC more reactive to constituent complaints and concerns. Insufficient financial and human resources, lack of disaster knowledge, long-term commitment, lack of pre-disaster planning, inadequate legislative authority, and lack of clear responsibilities (Malalgoda et al., 2013). The

BDRRMC's capacity to respond to disasters is limited. Integration demonstrated that length of service influences the findings of a study. Despite a small age gap, group 2's disaster response experience affects the quantitative study results. Community-based disaster mitigation is efficient, sustainable, and independent, but time-consuming. The law is not entirely effective, despite the fact that the majority of respondents were positive. In-depth interviews in some barangays reveal unequal implementation of risk-reduction strategies. Constituents who are dissatisfied will sometimes resort to using their own resources to solve the problem.

4. Conclusions

Officers' effectiveness in DRRM is, at least in part, a function of their age and level of experience in the field. Researchers were able to draw more conclusive conclusions from the data because participants highlighted specific issues in disaster management at the local scale. All things considered, DRRM officers are very capable. Due to limitations such as inadequate resources and a lack of public support, they are often required to adopt a reactive rather than proactive stance during disaster operations, limiting their effectiveness.

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