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# Assessing Disaster Preparedness and Needs of Vulnerable Populations: Towards an Inclusive Barangay Disaster Risk Reduction and Management Plan

Daniel T. Delos Santos[1], Julie Ann O. Buyayo[2], Yen Kwinnie S. Quilla[3] & Pia Yvonne L. Nalupa[4]

[1-4]Maria Aurora National High School

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ABSTRACT

Disaster preparedness necessitates a shift from universal protocols to specialized strategies that directly address the unique physical, socio-economic, and psychological needs of vulnerable populations, including children, Persons with Disabilities (PWDs), and the elderly. This study evaluates the disaster management framework of Barangay 02 in Maria Aurora, Aurora, utilizing a descriptive research design with 226 respondents (50 children, 88 PWDs, and 88 elderly). Findings reveal significant economic fragility among residents and a notable gender disparity in PWD reporting. While the Barangay exhibits high institutional readiness in early warning systems and security, a persistent "Inclusive Gap" remains, particularly regarding specialized infrastructure and psychological support. The study concludes that standard "one-size-fits-all" disaster models fail to address the nuanced requirements for long-term resilience, leaving vulnerable groups at a disadvantage. Additionally, the reliance on generalized aid mechanisms obscures the need for tailored interventions, and current support systems prioritize short-term physical safety over long-term rehabilitation. Consequently, the study recommends the formal adoption of the Inclusive Disaster Risk Reduction (IDRR) Plan, which introduces four data-driven projects—AGAP (financial vouchers), LINGAP (health integration), TAHANAN (shelter retrofitting), and MALASAKIT (inclusive communication)—to transform the Barangay's current framework into a holistic, dignified, and people-centered system. It is further recommended that the Barangay institutionalize a granular registry of residents' needs, conduct immediate facility audits to address accessibility gaps, transition toward flexible financial grant systems, and integrate professional psychological and medical personnel into the local disaster response team to ensure comprehensive, sustained resilience.

## 1. Introduction

The Philippines is globally recognized as one of the most disaster-prone nations, consistently ranking high on the World Risk Index due to its exposure to typhoons, flooding, and seismic activity. Research indicates that these hazards do not affect populations equally; rather, they disproportionately impact marginalized sectors, particularly children, the elderly, and Persons with Disabilities (PWDs). According to the Sendai Framework for Disaster Risk Reduction (2015-2030), inclusive disaster management is a human rights imperative, yet global and national frameworks often struggle with "top-down" approaches that lack localized granularity. While Republic Act 10121 (The Philippine DRRM Act of 2010) mandates the participation of vulnerable groups, studies by the Philippine Institute for Development Studies (PIDS) suggest that implementation at the barangay level frequently misses specific functional needs—such as accessible transport for those with limited mobility or specialized nutrition for children. This study aims to bridge this gap by evaluating the adequacy of existing protocols in Barangay 02, Maria Aurora, shifting the focus from a general rescue-oriented system to a data-driven, inclusive model.

The geographic vulnerability of the Philippines, particularly in coastal and riparian provinces like Aurora, necessitates disaster strategies that go beyond physical safety. Extant literature highlights that "vulnerability" is not just a physical state but a socio-economic one; for instance, low-income families often reside in high-risk zones and lack the "liquid assets" needed for rapid evacuation (Wisner et al., 2004). In rural contexts like Barangay 02, these challenges are amplified by geographical isolation and limited medical infrastructure. Studies on community-based DRRM (CBDRRM) emphasize that "one-size-fits-all" evacuation plans often fail because they overlook the "last mile" of communication—where an elderly resident living far from the main road may not receive timely warnings, or a family with a child with special needs may find standard evacuation centers inaccessible (Stough & Kang, 2015; Twigg, 2015).

The primary purpose of this research is to resolve this critical information gap. By conducting a detailed needs assessment, the study provides the Barangay Disaster Risk Reduction and Management Committee (BDRRMC) with empirical evidence to replace anecdotal planning. This aligns with the "Build Back Better" principle, ensuring that resilience programs address root causes like economic fragility and health disparities (UNDRR, 2015). Ultimately, this research serves as a localized response to

the global call for "inclusive resilience," ensuring that the most at-risk residents of Barangay 02 are not merely passive recipients of aid but are central to a proactive, people-centered disaster framework (UNDRR, 2019).

## 2. Literature Review

This literature review is structured around three key topics. First, it establishes the importance of a thorough and inclusive disaster needs assessment. Next, it examines academic research on vulnerable populations, highlighting that certain groups are disproportionately affected by disasters due to a gap between national policy and local implementation. Finally, it narrows the focus to Barangay 2, Maria Aurora, Aurora, to demonstrate how the proposed study fills a critical gap by providing localized data to improve disaster preparedness.

### *2.1 Disaster Needs Assessment*

A significant body of literature highlights that a comprehensive disaster needs assessment is a crucial first step in effective disaster response and recovery. A study by the Global Facility for Disaster Reduction and Recovery (GFDRR) (2015) underscores the need for a standardized, multi-sectoral approach to assess not only damages and losses but also the human and economic impacts of a disaster. This is echoed by the Post-Disaster Needs Assessment (PDNA) framework, which is a key methodology adopted by the Philippine government, often in partnership with international bodies like the United Nations and the World Bank. The PDNA framework, as outlined in reports from the National Disaster Risk Reduction and Management Council (NDRRMC) (2021), is a government-led process that aims to consolidate data and develop a single, coherent recovery plan. Studies have shown that a successful PDNA requires robust pre- and post-disaster data, strong coordination between national and local levels, and the active involvement of national experts (GFDRR, 2017). Furthermore, the PDNA Handbook emphasizes the importance of a participatory approach, which involves key stakeholders from affected communities in the assessment process to ensure that the identified needs accurately reflect their realities (World Bank & UN, 2013). This participatory approach is particularly relevant for the proposed research, as it underscores the need to engage directly with the residents of Barangay 02 to understand their unique needs.

Recent academic discourse further argues that effective assessments must evolve from static snapshots to "adaptive assessment models." According to Van Niekerk (2020), disaster assessments in rural contexts are most effective when they integrate local, community-sourced data with technical surveys, allowing for the real-time identification of emerging vulnerabilities. This perspective supports the necessity of your research in Barangay 02, as it moves beyond generic damage reports to capture the nuanced, socio-economic realities of the population.

### *2.2 Vulnerable Populations*

The literature on disaster risk reduction consistently emphasizes that disasters unduly affect certain groups, making the identification and assessment of vulnerable populations a critical component of any disaster response. The Philippine Development Plan (2017-2022) identifies inherently vulnerable groups in the Philippines, including the poor, children, women, persons with disabilities (PWDs), older persons, and indigenous peoples (PDP, 2017). These vulnerabilities are not fixed but are a "fluid state" determined by factors like age, disability, poverty, and access to resources (NCDP, n.d.). Studies have explored the social characteristics and vulnerabilities of disaster-prone communities in the Philippines. A notable study on communities in Infanta, Quezon, found a strong association between poverty and vulnerability (University of the Philippines Los Baños, n.d.). Similarly, a UNDP study (2021) identified specific vulnerable groups like persons with disabilities, women, and farmers and fisherfolk as highly susceptible to the effects of extreme weather events in the Philippines. The Philippine Red Cross (PRC), in a case study on Typhoon Haiyan, highlighted that while legal frameworks exist for child protection in disasters, a significant policy-implementation gap remains at the barangay level due to a lack of concrete funding mechanisms and programmed activities (IFRC, n.d.). Similarly, research from the UP-Population Institute on older persons in the Philippines argues that their vulnerability to disasters is closely linked to health, socio-economic, and institutional factors, and their capacities are often overlooked in DRRM planning (UPPI, n.d.). This body of work underscores the need for localized research that not only identifies at-risk groups but also investigates the specific factors that make them vulnerable.

Complementing this, the concept of "intersectionality" has become essential in modern DRRM literature. Scholars like Stough and Kang (2015) demonstrate that individuals often possess overlapping vulnerabilities—for instance, an elderly person who is also a PWD—which creates unique barriers to evacuation that standardized protocols fail to recognize. Furthermore, research by the Asian Development Bank (2020) emphasizes that women in rural disaster zones face specific challenges, such as the burden of household caregiving, which limits their mobility during rapid-onset disasters. These findings reinforce your study's focus on disaggregating data by specific vulnerable profiles, ensuring that disaster frameworks are built upon the actual, combined realities of the most at-risk community members.

The province of Aurora is well-documented as being highly susceptible to a range of natural hazards, including floods, landslides, and typhoons due to its geographic location (Palao et al., 2017). A study on the knowledge, attitude, and practices of barangay officials in Baler, Aurora, revealed that while they are knowledgeable and have a positive attitude toward disaster risk reduction and management (DRRM), there is a continuous need for training and information campaigns to sustain their capabilities (Aniag et al., 2017). A more recent study on coastal communities in Baler found that while participatory methods were used, these communities are generally not disaster-resilient due to issues in organizational, financial, and institutional coordination within the municipality (Predo et al., 2019). This highlights that even with good intentions and general knowledge, a significant gap can exist between top-down DRRM policies and their effective implementation at the local level. The Municipal Disaster Risk Reduction and Management Office (MDRRMO) of Maria Aurora also acknowledge the need to "give early warning to the most vulnerable

sectors" such as women, children, senior citizens, and PWDs. This recognition at the municipal level provides a strong basis for the proposed research to delve into how this is being translated at the barangay level.

*2.3 Statement of the Problem*

This research focused on the assessment of disaster needs of vulnerable people in Barangay 2, Maria Aurora, during and after natural disasters. Specifically, this study sought to answer the following questions:

1. What are the specific profiles of vulnerable population in Barangay 2 in terms of:
- age;
- sex; and
- monthly family income?

2. what is the status of evacuation center in Barangay 2, Maria Aurora, Aurora in terms of:
- safety and security;
- resource and availability; and
- occupancy and capacity?

3 What are the barriers to accessing disaster management services in the Barangay in terms of:
- financial constraints; and
- operation challenges?

4. What kind of support is helpful to the vulnerable populations before, during, and after a disaster?

5. Based on the results of the study, what Community-Based Disaster Risk Reduction and Management (CBDRRM) Plan can be proposed for Barangay 2?

**3. Methodology**

This section outlines the research design, describes the respondents and sampling method, explains the data gathering and analysis procedures, details the research instrument used, and discusses the ethical considerations taken to ensure a rigorous and reliable investigations.

*2.4 Research Design*

This study employed quantitative research design. This method utilized a descriptive survey to systematically collect and quantify data on the specific needs of vulnerable populations, such as the elderly, persons with disabilities, and low-income families, in the event of a disaster. The rationale for this approach, as supported by prominent methodologists like Creswell (2014) and Babbie (2016), is that it allows for the objective measurement and statistical analysis of variables, providing a clear, numerical understanding of the situation. By using a structured questionnaire with a stratified random sample, the study can accurately determine the prevalence of specific needs (e.g., access to food, water, medical care) and generalize these findings to the entire vulnerable population of the barangay. This approach ensures that the resulting data is empirical and can effectively inform evidence-based disaster preparedness and response policies.

*2.5 Respondents and Sampling Method*

The respondents for this study were fifty (50) children, eighty-eight (88) persons with disability (PWD's) and eighty-eight (88) elderly identified as the vulnerable population in Barangay 2, Maria Aurora, Aurora. To ensure the findings were represented, the study employed a random sampling method for Children and senior Citizens and total sampling method for PWD's, which guarantees that every member of the population has an equal and non-zero chance of being selected. The selection process involved obtaining a comprehensive list of the vulnerable population from the barangay, assigning a unique number to everyone, and then using a random number generator to select the respondents for the disaster needs assessment.

*2.6 Data Gathering*

The data for this study were gathered through a structured survey questionnaire. The data collection process began with obtaining a letter of endorsement from the research adviser and Barangay chairman to establish credibility. Researchers then located the selected respondents from the various vulnerable groups as identified by the random sampling method. Before the researchers distributed the survey questionnaires, each respondent was asked to provide informed consent after being fully briefed on the study's purpose and the confidentiality of their responses. After all the data were collected, they were subjected to analysis by tallying the responses. This involved encoding the data into a statistical software package like SPSS, checking for any errors, and then running descriptive statistical analyses to generate frequencies and percentages. This systematic procedure ensured the data was accurately captured and prepared for a comprehensive analysis of the disaster needs.

*2.7 Data Analysis*

This involved the analysis of quantitative data using the Average Weighted Mean (AWM). The resulting AWM values allowed for the ranking of the status, barriers, and support systems based on their perceived significance. To provide a clear and objective summary of these findings, the following response modes were utilized for each specific question.

Table 1. Response mode for rating the Status of Evacuation Center in terms of Safety and Security.

| Scale | Descriptive Equivalent | Interpretation |
|---|---|---|
| 3.26 – 4.00 | Strongly Agree (SA) | The evacuation center provides a superior level of security |

| | | |
|---|---|---|
| | | and order. Safety protocols and communication are highly effective for vulnerable groups. |
| 2.51 – 3.25 | Agree (A) | The environment is generally safe and orderly. However, there are minor gaps in addressing the "unique" security or privacy needs of specific groups. |
| 1.76 – 2.50 | Disagree (D) | There are significant concerns regarding safety, order, or the visibility of peacekeeping teams. Immediate intervention is needed. |
| 1.00 – 1.75 | Strongly Disagree (SD) | The facility is perceived as unsafe. Vulnerable individuals feel exposed to risks like theft or violence, and warnings are not understood. |

A rating of Strongly Agree indicates that the Barangay has established a highly disciplined and orderly environment during times of crisis. This suggests that the protection framework—including the visibility of Barangay Tanods and the clarity of emergency warnings—is functioning at an optimal level, providing a psychological "security anchor" for vulnerable residents. An Agree rating reflects a functional safety environment that meets standard expectations but indicates a "scaffolding" phase where specialized needs, such as private medical bays or secure charging for assistive devices, are not yet fully institutionalized.
Conversely, ratings of Disagree or Strongly Disagree signal critical failures in the facility's protective measures. A "Disagree" rating suggests that while safety protocols exist, they are inconsistent or fail to reach the most vulnerable, possibly due to a lack of patrol or poor communication. A "Strongly Disagree" rating is a critical indicator of a safety gap, suggesting that residents feel fundamentally at risk of theft or violence, necessitating an immediate audit of the center's security personnel and infrastructure.

Table 2. Response mode for rating the Barriers in Accessing Disaster Management Services.

| Scale | Descriptive Equivalent | Interpretation |
|---|---|---|
| 3.26 – 4.00 | Strongly Agree (SA) | This factor is a critical obstacle. It significantly hinders the resident's ability to recover or access safety. Immediate policy change is required. |
| 2.51 – 3.25 | Agree (A) | This factor is a recognized hurdle. It creates difficulty and slows down the process of receiving or navigating disaster services. |
| 1.76 – 2.50 | Disagree (D) | This factor is not perceived as a major problem. The current system or framework is generally functioning well in this area. |
| 1.00 – 1.75 | Strongly Disagree (SD) | This factor does not impede access at all. Residents feel completely confident and unhindered regarding this specific indicator. |

A rating of Strongly Agree in this category is a negative indicator, signaling a Severe Barrier such as the absence of flexible cash grants ("ayuda") or specialized equipment for PWDs. This suggests that the "one-size-fits-all" relief model is creating a secondary trauma of financial instability. An Agree rating reflects a Moderate Barrier, where residents recognize hurdles such as delayed warnings or confusing bureaucratic paperwork that slow down their recovery but do not completely stop it.
In contrast, a Disagree or Strongly Disagree rating indicates that the community does not perceive these factors as significant obstacles. A "Disagree" rating suggests that the basic operational frameworks such as the fairness of relief distribution—is functioning reasonably well and that foundational trust in the Barangay officials remains intact. A "Strongly Disagree" rating suggests seamless access to services where the residents feel completely unhindered and confident in navigating the disaster management system.

Table 3. Response mode for rating the Support for Vulnerable Populations (Before, During, and After).

| Scale | Descriptive Equivalent | Interpretation |
|---|---|---|
| 3.26 – 4.00 | Strongly Agree (SA) | The Barangay provides highly effective and proactive support. Resources are accessible, and the specific needs of vulnerable groups are prioritized and met. |
| 2.51 – 3.25 | Agree (A) | Support systems are functional and helpful. However, there is a need for more specialized services (e.g., medical personnel or livelihood recovery). |
| 1.76 – 2.50 | Disagree (D) | Support is perceived as insufficient or difficult to access. Critical gaps exist that may leave vulnerable individuals at risk during or after a disaster. |
| 1.00 – 1.75 | Strongly Disagree (SD) | There is a significant lack of assistance. Vulnerable groups feel neglected or unassisted in terms of preparedness, response, and recovery. |

A rating of Strongly Agree indicates that the Barangay provides Comprehensive Support, exhibiting a proactive culture of preparedness through the distribution of emergency kits and the rapid restoration of utilities. This suggests that the local government is successfully acting as a provider of both logistical and life-saving interventions. An Agree rating reflects Adequate Support, where the basic physical and logistical needs are met, but there is an identified gap in "human-centric" support, such as psychological first aid or long-term job placement for those who lost their livelihoods.

Ratings of Disagree or Strongly Disagree are critical indicators of a "support gap." A "Disagree" rating suggests that the support is too generalized and fails to reach specific cohorts, such as the mobility-impaired or those with unique medication needs. A "Strongly Disagree" rating indicates a perceived state of neglect, suggesting that the Barangay's disaster risk reduction strategies are failing to facilitate the mastery of essential survival skills or provide the necessary safety nets for a holistic recovery.

*2.8 Research Instrument*

Researchers used a structured survey questionnaire as primary tool. The process began with instrument design, where researchers created a detailed survey covering all the research questions, from the socio-demographic profile of the respondents to the perceptions of the evacuation center, the barriers to accessing services, and the most-needed support. This research used a combination of rating scales, and checklists to gather numerical data. The instrument was pilot tested to non-respondents after which validation of experts followed.

*2.9 Ethical Considerations*

Researchers obtained voluntary informed consent from all participants and explained the purpose, procedures, risks, benefits, data use, and right to withdraw. Written consent was preferred, but verbal consent was acceptable if literacy is an issue.

All data were kept anonymous and confidential. Identifying information was only collected if necessary and stored securely. Reports did not reveal individual or community identities. Data storage procedures were clearly defined. Researchers were sensitive to the needs of vulnerable groups (e.g., low-income households, indigenous communities) and ensured their participation was voluntary and without coercion. Cultural sensitivity and fair treatment were paramount.

The research maximized benefits for the community and minimized potential risks or harm. Data was only used for stated research purposes and strategic plan development. The research process, methods, data, and analysis techniques were transparent.

**4. Results and Discussion**

This section presents the findings of the study on assessing disaster preparedness and needs of vulnerable population in Barangay 2, Maria Aurora, Aurora. The results highlight the current state of disaster preparedness, identified gaps, and specific needs of the community, particularly the vulnerable groups such as the, children, person with disabilities, and elderly. The discussion integrates these findings with existing literature and best practices in disaster risk reduction and management (DRRM), aiming to inform an inclusive barangay DRRM plan.

*4.1 Specific profiles of vulnerable population in barangay 2 in terms of?*

*4.1.1 Children's Age.*

Figure 1 presents the age distribution of children as a vulnerable population in Barangay 2. This line graph specifically highlights the Adolescent subgroup, which represents 25% of the data, rather than the entire pediatric population. By focusing on the 13–18 age range, this figure provides a "deep dive" into adolescent data, offering a more detailed look at this specific age group without contradicting the broader school-age statistics

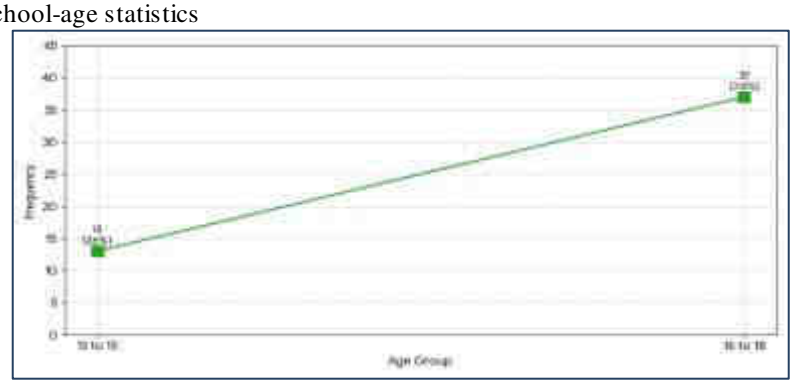

Figure 1: Profile of children in terms of age.

The data illustrates a significant upward trend in vulnerability as children in the community progress through their teenage years. While the overall distribution between females (11.5%) and males (10.6%) remains relatively balanced, a critical concentration of risk is evident in the older age group. Specifically, the graph shows that 74% of the identified vulnerable children are found within the 16 to 18 age brackets, while the 13 to 15 group accounts for only 26%. This sharp increase suggests that as the youth in Maria Aurora transition toward late adolescence, their exposure to various social and developmental risks intensifies. This finding emphasizes that vulnerability is not uniform across all ages; rather, it becomes more acute as children grow older.

These findings underscore the necessity of using age-disaggregated data, a practice that Olson (2025) identifies as fundamental to ensuring that community environments remain developmentally appropriate for young residents. This aligns with Ferlazzo (2022), who asserts that support systems achieve holistic success only when they are tailored to the specific needs of different age

brackets. Furthermore, Hedges (2025) emphasizes that safety frameworks are most effective when they are calibrated to the specific transition from early to late adolescence, ensuring that protocols remain relevant to the actual age of the youth being served. The findings reveal a progressive link between institutional efficiency and community vulnerability. While Barangay 02 has established a reliable foundation through its early warning and logistical frameworks, this "traditional" readiness serves as a plateau rather than a peak. The data suggests that for this institutional trust to translate into Inclusive Disaster Risk Reduction (IDRR), the focus must shift from general public safety to specialized human-centric support—specifically medical and psychological care tailored to these older adolescents. Furthermore, the transition from immediate response (debris removal) to long-term resilience (cash grants) indicates that true disaster recovery is not merely physical, but economic. Therefore, the connection is clear: The Barangay's current success in logistics provides the platform necessary to now implement more complex, inclusive, and financially flexible recovery strategies.

*4.1.2 PWD's Age.*

Figure 2 presents the age of PWDs as vulnerable population in Barangay 2. Revealing a distinct bimodal trend where vulnerability peaks at two specific life stages. The first peak is observed during adolescence in the 12 to 17 age group (20.45%), while a secondary peak emerges in mid-adulthood between the ages of 36 and 41 (20.45%), with each group containing 18 individuals. Following these peaks, the 30 to 35 and 42 to 47 age cohorts both represent 15.91% of the population (14 individuals each). Conversely, the frequency is at its lowest in the 18 to 23 age bracket, which accounts for only 2.27% (2 individuals). This distribution indicates that disability-related vulnerability in the area is not uniform but is instead concentrated during the transition into adulthood and again during middle age.

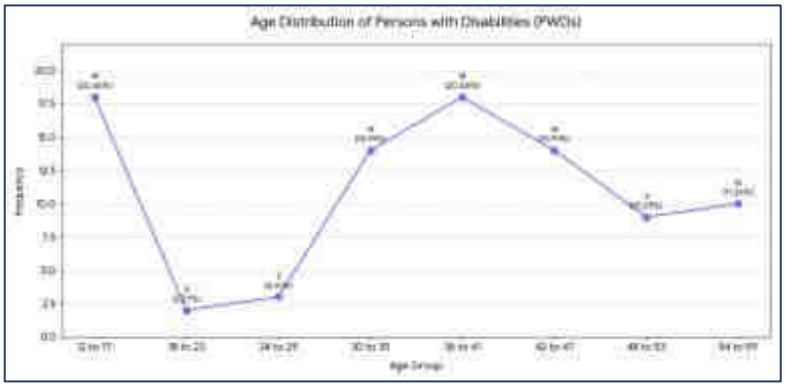


Figure 2: Profile of PWD's in terms of age.

The age distribution of Persons with Disabilities (PWDs) in Barangay 2 reveals a diverse demographic profile that spans from early childhood to the senior years. While the data shows representation across all life stages, two distinct "peaks" emerge where the concentration of PWDs is highest. The first significant peak occurs during adolescence, specifically in the 12 to 17 age group, which accounts for 18 individuals (20.45%). Notably, the data also includes younger children and infants, indicating that disability support must begin at the earliest stages of development. Following this teenage peak, the numbers show a significant drop for those in their 20s before rising again toward the middle-age bracket.

The second and equally high peak is observed in the 36 to 41 age group, also totaling 18 individuals (20.45%). As the age brackets progress further, the numbers remain steady but begin a gradual decline; the 48 to 53 group comprises 9 people (10.23%), while the 54 to 59 group includes 10 people (11.36%). This distribution highlights that while PWDs are present across the entire lifespan, including a senior population that requires specialized geriatric care, the most concentrated groups in Barangay 2 are young teenagers and adults in their late 30s.

According to Smith (2024), identifying the specific age of PWDs is vital for a community because different developmental stages require vastly different interventions. For the younger cohort, including both children and the 12-17 peak, the focus must be on inclusive education, early childhood intervention, and physical therapy. In contrast, the adult population—particularly those in the 36-41 peak—requires support centered on sustainable livelihoods, vocational training, and long-term health monitoring. This aligns with the findings in Barangay 2, where a substantial portion of the PWD population is of school age, yet an equal portion is in the prime of their working years.

Furthermore, Garcia (2023) explains that a "double peak" in demographic data signals a need for a multi-layered programmatic approach. The community cannot rely on a single strategy; instead, it must prepare distinct initiatives that address youth development on one hand and middle-age health and economic stability on the other. This supports the conclusion that the leaders of Barangay 2 must diversify their services to ensure the budget reaches the right people. By addressing the needs of everyone from the youngest children to the oldest seniors, while prioritizing the high-density age groups, the barangay can provide a truly inclusive support system.

*4.1.3 Elderly's Age.*

Figure 3 presents the age distribution of the vulnerable elderly population in Barangay 02. The data indicates that 50% of the senior respondents fall within the Young-Old (60–70 years old) category, while the Middle-Old and Old-Old categories comprise 30% and 20%, respectively.

The line graph shows a clear downward trend, meaning that as the age increases, the number of senior citizens in the community decreases. The highest number of elderly residents is found in the youngest age bracket, while the oldest bracket has the fewest residents. Specifically, the 60 to 65 age group has the highest frequency with 31 individuals (35.23%). This is followed by the 66 to 71 group with 22 individuals (25%), and the 72 to 77 group with 19 individuals (21.59%). As the age goes up, the numbers drop significantly: there are 11 people (12.50%) in the 78 to 83 group, 4 people (4.55%) in the 84 to 89 group, and only 1 person (1.14%) in the 90 to 95 age bracket. This data shows that much of the elderly population in Barangay 2 are "young-old" (those just entering retirement age).

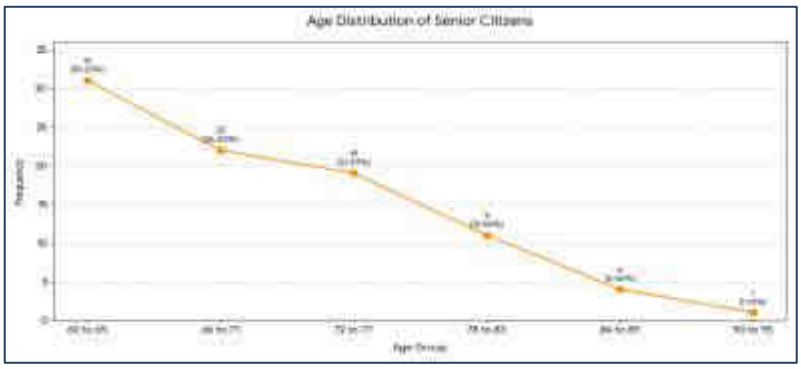


Figure 3: Profile of Elderly in terms of age.

According to Miller (2023), having a larger population of younger senior citizens (ages 60-70) means a community has a group of people who are still active but may soon need more health support. It is important for local leaders to start planning for health services early before this group reaches much older ages where they might become more frail.

Furthermore, White (2024) explains that the sharp decrease in population in the 80s and 90s age brackets is common in many areas. However, he emphasizes that those who reach these very old ages need the most specialized care, such as home visits and constant medical monitoring. This matches the situation in Barangay 2, where the very old residents are fewer in number but likely require the most focused attention from the barangay health workers.

Consequently, the data in Figure 3 shows that the elderly population in Barangay 2 is mostly composed of people between the ages of 60 and 77. Since more than half of the seniors belong to the youngest age group (60-65), the barangay has an opportunity to implement preventive health programs and active aging activities to keep them healthy for a longer time.

The findings also reveal that while there is only one resident in the oldest category (90-95), the community must ensure that there are specific emergency protocols in place for them. Overall, the aging profile of Barangay 2 suggests a need for a balanced approach: providing active social programs for the younger seniors and intensive medical support for the oldest members of the community.

*4.1.4. Sex*

The figure 4 presents the distribution of respondents from the vulnerable population in Barangay 02 according to sex. The data shows that most of the respondents are Female, comprising 60% (48 individuals) of the total, while Males account for 40% (32 individuals).

The line graph illustrates the frequency and percentage distribution of vulnerable populations such as Children, Persons with Disabilities (PWDs), and the Elderly, disaggregated by sex. Across all categories, females represent a higher frequency than males, with the most pronounced disparity occurring in the PWDs group, where females account for 32.3% (73 individuals) compared to only 6.6% (15 individuals) for males. In the Children category, the distribution is nearly even, with females at 11.5% (26) and males at 10.6% (24). As the population transitions to the Elderly category, the counts converge again, with females at 19.9% (45) and males at 19.0% (43). This data suggests that while gender balance is relatively stable in childhood and old age within this specific dataset, there is a significant female-skewed vulnerability or reporting rate within the PWD population that warrants further targeted investigation.

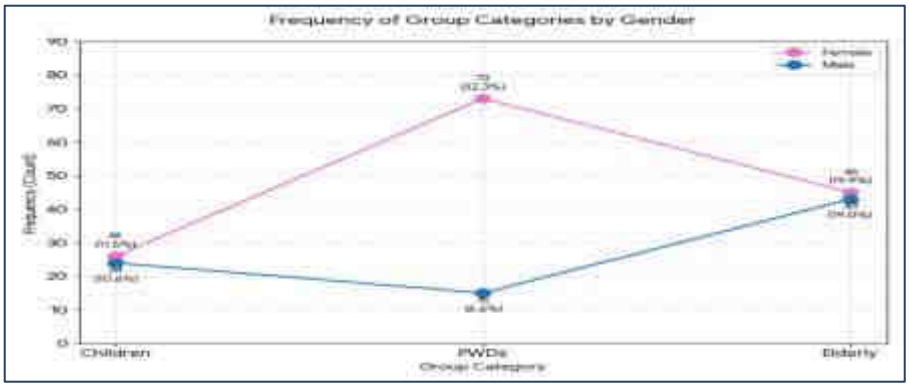


Figure 4. Present the profile of vulnerable population in terms of sex.

According to Olson (2025), understanding the sex-disaggregated data of a population is a fundamental factor in evaluating the effectiveness of any support system, as it allows for a more targeted and rigorous approach to service delivery. Furthermore, Ferlazzo (2022) notes that stakeholders must recognize that a "one-size-fits-all" strategy is insufficient when demographics show a clear leaning toward one group, necessitating a more holistic educational and community experience that considers gender-specific needs. This is further supported by Hedges (2025), who emphasizes that well-structured community programs are most successful when they are designed with a deep understanding of the participants' profiles, facilitating better engagement and mastery of essential safety skills.

Barangay 02 has established a robust and trustworthy disaster management framework. Residents feel safe and informed; however, the system currently operates on a "general" model that does not fully accommodate the nuanced needs of vulnerable groups. To evolve, the Barangay must shift from general disaster response to Inclusive Disaster Risk Reduction (IDRR), focusing on gender-responsive infrastructure and long-term economic rehabilitation.

*4.1.5. Monthly Family Income*

Figure 5 illustrates the economic profile of the vulnerable households in Barangay 02. The data reveals that a significant majority (52%) of the respondents live on a monthly income of below PHP 5,000, with an additional 28% earning between PHP 5,001 and PHP 10,000. Collectively, 80% of the vulnerable population falls within the lower-income brackets, indicating high economic fragility. The data on monthly family income reveals that economic fragility is a major factor for the vulnerable groups in Barangay 2. Among the three groups, Persons with Disabilities (PWDs) are the most financially at risk, with 68.2% (60 individuals) earning the lowest income bracket of PHP 5,000–7,000. This group shows a sharp decline in frequency as income increases, with no PWD households earning above PHP 11,000. In contrast, the Elderly and Children groups are more concentrated in the middle-income brackets. Both groups have their highest numbers in the PHP 7,001–9,000 and PHP 9,001–11,000 ranges, showing a slightly more stable financial situation compared to the PWD group.

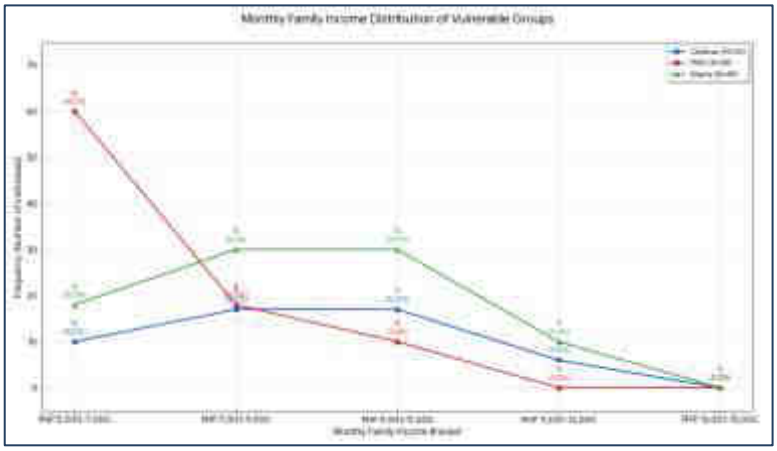

Figure 5. Present the profile of vulnerable population in terms of Monthly family income.

According to Olson (2025), low income is a primary cause of low "disaster resilience" because these families do not have the extra money needed to recover quickly after an emergency. This is supported by Ferlazzo (2022), who states that help must be tailored to these economic realities to be effective, such as providing funds for specific needs like medicine or home repairs. Furthermore, Hedges (2025) explains that without a steady and sufficient income, families remain stuck in a cycle of vulnerability that basic emergency response cannot fix. Therefore, the findings suggest that the Barangay must move toward Inclusive Disaster Risk Reduction (IDRR) by prioritizing financial support, such as flexible cash grants, for the lowest-income residents to help them build long-term resilience.

The study shows that vulnerability in Barangay 2 is closely linked to age and economic status. Data indicates that risk among children peaks during late adolescence, with 74% of vulnerability found in the 16 to 18 age bracket. For Persons with Disabilities (PWDs), the population is most concentrated in two stages: late adolescence (12–17) and mid-adulthood (36–41). Meanwhile, the Senior Citizen population is mostly composed of the "young-old" group aged 60 to 65, with numbers declining as age increases.

Financially, PWDs are the most marginalized, with 68.2% earning only PHP 5,000–7,000 monthly. While the Elderly and Children groups have slightly higher incomes, most households still lack the funds needed for fast disaster recovery. Ultimately, Barangay 2 must bridge this "Inclusive Gap" by providing specialized medical care and financial support, such as cash grants, tailored to the specific age and income levels of these vulnerable groups.

*4.2. Status of evacuation center in barangay 2 terms of:*

*4.2.1 Safety and Security.*

Table 4 presents the status of the evacuation center in Barangay 02, Maria Aurora, Aurora, in terms of safety and security metrics. The indicator "Security and order inside the evacuation center are well-maintained during an emergency" consistently received the highest scores across all respondent groups, with a peak weighted mean of 3.88. This suggests that residents perceive the evacuation center as a highly disciplined and orderly environment during times of crisis.

Table 4. Status of Evacuation Center in Barangay 02, Maria Aurora, Aurora in terms of Safety and Security

| INDICATORS | CHILDREN | | | PWD'S | | | ELDERLY | | |
|---|---|---|---|---|---|---|---|---|---|
| | WM | DE | RANK | WM | DE | RANK | WM | DE | RANK |
| 1.Security and order inside the evacuation center are well-maintained during an emergency. | 3.88 | SA | 1 | 3.39 | SA | 1 | 3.47 | SA | 1 |
| 2. Evacuation centers in our area provide a safe environment for vulnerable individuals. | 3.80 | A | 9 | 3.16 | A | 6 | 3.43 | SA | 5 |
| 3.The evacuation center has separate, designated areas to maintain the privacy. | 3.38 | SA | 6 | 3.26 | SA | 3 | 3.32 | SA | 7 |
| 4.Is the evacuation center equipped with separate facilities (toilets and sleeping area) for children, PWD's and Elderly. | 3.22 | A | 8 | 3.08 | A | 8 | 3.37 | SA | 6 |
| 5. Barangay Tanods (Peacekeeping Action Team) are visible and actively patrolling the community. | 3.62 | SA | 3 | 3.23 | A | 5 | 3.46 | SA | 2 |
| 6. I know the emergency contact numbers of the Barangay Hall or local officials. | 3.28 | SA | 7 | 3.07 | A | 9 | 3.29 | SA | 8 |
| 7. The designated evacuation center in Barangay 2 feels secure and safe from potential risks (e.g., theft, violence) during a disaster. | 3.44 | SA | 4 | 3.13 | A | 7 | 3.28 | SA | 9 |
| 8. The Barangay 2 disaster response plan adequately addresses the unique security needs of my vulnerable group (e.g., medication access, privacy, specialized equipment). | 3.4 | A | 10 | 3.06 | A | 10 | 3.26 | SA | 10 |
| 9. Disaster warnings and evacuation notices are communicated in a way that I can easily hear, see, and understand (e.g., loudspeakers, simple language). | 3.74 | SA | 2 | 3.25 | A | 4 | 3.46 | SA | 2 |
| 10. The Barangay has a systemto check on vulnerable residents (elderly, PWDs, children) after a disaster to ensure their safety. | 3.44 | SA | 4 | 3.31 | SA | 2 | 3.46 | SA | 2 |
| Overall Average Weighted Mean | 3.52 | SA | 1 | 3.19 | A | 5 | 3.40 | SA | 2 |

Legend: Weighted Mean; DE-Descriptive Equivalent; 1-Strongly Disagree (SD) (1.00-1.75); 2-Disagree (D) [1.76-2.50]; 3-Agree (A) [2.51-3.45]; 4-Strongly Agree (SA)[3.26-4.00]

The data reveals that Security and Order is the most highly regarded aspect of the Barangay's protection framework, achieving the top rank across all three vulnerable groups with a "Strongly Agree" verbal interpretation. For Children (caregivers), the findings show a significant emphasis on a safe environment (WM 3.80) and the clarity of warnings (WM 3.74). In contrast, Persons with Disabilities (PWDs) and the Elderly place the highest value on active monitoring, with the system to check on vulnerable residents (Indicator 10) ranking 2nd for both groups. The Elderly also highlighted the visibility of Barangay Tanods (WM 3.46) and accessible communication (WM 3.46) as primary sources of security. Notably, Barangay's ability to address unique security needs (Indicator 8) ranked the lowest across all categories, suggesting that while general safety is well-managed, specialized requirements for medication, privacy, and equipment remain a critical gap in the current disaster plan.

The implications of these results are toward a shift from general peacekeeping to individualized welfare management. Since security within evacuation centers is already perceived as a strength, the Barangay should focus its resources on institutionalizing a post-disaster registry system to formalize the welfare checks that PWDs and the Elderly find so essential. The high value placed on the visibility of Barangay Tanods suggests that physical presence is a psychological "security anchor" for seniors; therefore, increasing patrol frequency in areas with high concentrations of vulnerable residents can significantly reduce anxiety. Finally, because the "unique needs" indicator performed poorly, there is an urgent need to audit evacuation centers for specialized facilities, such as private medical bays or secure charging stations for assistive devices, to move the disaster response from a "one-size-fits-all" model to a truly inclusive system.

According to Olson (2025), an effective safety evaluation should encompass growth in systematic reviews of environment and support systems to ensure all residents feel equally protected. Furthermore, as educational and community stakeholders recognize that general stability is not the only metric for success, it is imperative to explore indicators like specialized facilities and inclusive support (Ferlazzo, 2022). Research also indicates that well-structured safety protocols can significantly influence the resilience of a community, fostering a sense of security that facilitates faster recovery (Hedges, 2025).

Therefore, the evaluation of safety and security in the evacuation center of Barangay 02 indicates a strong foundation of trust, particularly in Security and Order (Indicator 1), which ranked first across all vulnerable groups. While the facility is recognized for its high level of discipline and effective communication systems, the data highlights a critical "Inclusive Gap" regarding specialized facilities and individualized support. The consistent lowest ranking of Indicator 8 (addressing unique security and medication needs) confirms that current disaster management prioritizes general peacekeeping over the specific physical and medical requirements of children, PWDs, and the elderly. To achieve total resilience, the Barangay must transition from a standardized model to an Inclusive Disaster Risk Reduction (IDRR) approach, formalizing post-disaster welfare checks and

auditing facilities to ensure that infrastructure—such as private medical bays and assistive device support—is as robust as the existing security protocols.

*4.2.2 Resource and Availability.*

Table 5 presents the evaluation of the evacuation center in Barangay 02, Maria Aurora, Aurora, in terms of resource and availability metrics. The indicator "The Barangay provides clear and timely disaster early warnings to all residents, including vulnerable groups" received one of the highest scores, peaking at a weighted mean of 3.55. This suggests that the community recognizes Barangay's strength in information dissemination and early warning systems as a vital available resource. Additionally, the availability of transportation for evacuation (Indicator 8) was highly rated by certain groups (3.52), indicating that the physical means to move people to safety are well-established.

Table 5. Status of Evacuation Center in Barangay 02, Maria Aurora, Aurora in terms of resource and availability

| INDICATOR | Children | | | PWD's | | | Elderly | | |
|---|---|---|---|---|---|---|---|---|---|
| | WM | DE | RANK | WM | DE | RANK | WM | DE | RANK |
| 1. Trained personnel (e.g., Barangay Health Workers, BDRRM members) are available to assist vulnerable individuals (e.g., those with mobility issues) with evacuation and transport. | 3.26 | SA | 4 | 3.40 | SA | 1 | 3.23 | A | 9 |
| 2. Our Barangay has a clear and updated list of all vulnerable residents and their specific resource needs that can be used immediately in a response. | 3.36 | SA | 2 | 3.33 | SA | 3 | 3.28 | SA | 7 |
| 3. The evacuation center has sufficient and separate sanitation facilities for men and women. | 3.2 | A | 10 | 3.17 | A | 5 | 3.21 | A | 10 |
| 4. Vulnerable families in Barangay 2 have sufficient personal savings or emergency funds to cope with financial setbacks immediately following a disaster. | 3.08 | A | 7 | 3.24 | A | 5 | 3.28 | SA | 7 |
| 5. The Barangay provides resources to help vulnerable residents repair/rebuild their homes or livelihoods after a disaster (e.g., microfinance, material assistance). | 3.24 | A | 5 | 3.03 | A | 6 | 3.29 | SA | 6 |
| 6. The Barangay provides clear and timely disaster early warnings to all residents, including vulnerable groups. | 3.5 | A | 6 | 3.34 | SA | 2 | 3.55 | SA | 1 |
| 7. The designated evacuation center is easily accessible for vulnerable people (e.g., wheelchair ramps, clear pathways). | 3.4 | A | 9 | 3.03 | A | 6 | 3.38 | SA | 5 |
| 8. The Barangay has enough transportation (e.g., vehicles) to evacuate vulnerable people during a disaster. | 3.52 | SA | 1 | 3.33 | SA | 3 | 3.4 | A | 4 |
| 9. The Barangay has enough emergency supplies (food, water, blankets) to distribute to affected vulnerable families. | 3.5 | A | 6 | 3.01 | A | 7 | 3.41 | SA | 2 |
| 10. I feel that the Barangay officials understand the specific needs of my vulnerable group during a disaster. | 3.36 | SA | 2 | 3.24 | A | 4 | 3.41 | SA | 2 |
| Overall Average Weighted Mean | 3.34 | SA | 3 | 3.34 | SA | 2 | 3.36 | SA | 4 |

Legend: Weighted Mean; DE-Descriptive Equivalent; 1-Strongly Disagree (SD) (1.00-1.75); 2-Disagree (D) [1.76-2.50]; 3-Agree (A) [2.51-3.45]; 4-Strongly Agree (SA)[3.26-4.00]

The table results indicate a strong foundation in logistical preparedness, yet they highlight significant disparities in how resources are perceived across different groups. For the Children category (caregivers), Sufficient Transportation (WM 3.52) and Early Warnings (WM 3.50) emerged as top priorities, reflecting a focus on the speed of relocation and communication. For Persons with Disabilities (PWDs), the highest level of confidence is placed in Trained Personnel (WM 3.40) and Early Warnings (WM 3.34), suggesting that for those with mobility or sensory challenges, the human element of assistance is the most critical recovery asset. Meanwhile, the Elderly group rated Early Warnings (WM 3.55) and Emergency Supplies (WM 3.41) as the most effective indicators, pointing toward a need for information clarity and immediate life-sustaining resources.

The implications of these findings suggest that while the Barangay is successful in "broad-stroke" logistics like warnings and transport, it faces a critical gap in long-term resilience and specific infrastructure. Across all three groups, Separate Sanitation Facilities and Resources to Rebuild consistently ranked in the bottom tier. This implies that while people feel they can be moved safely during a disaster, the facilities they move to—and the support they receive after the event—are insufficient. Furthermore, the low ranking of Personal Savings for children/families and PWDs highlights a high level of economic vulnerability, suggesting

that the Barangay must transition from being a provider of "rescue services" to a facilitator of financial safety nets, such as community-based micro-insurance or emergency livelihood grants, to ensure these populations can recover independently.

According to Olson (2025), the evaluation of resources should not only focus on their presence but also on the systematic reviews of how these learning and living environments function for everyone. This aligns with the perspective that stakeholders must look beyond general success to explore key performance indicators like specific support systems and curriculum-like disaster response designs (Ferlazzo, 2022). Furthermore, research suggests that a well-structured resource allocation plan significantly influences student and resident outcomes, facilitating the mastery of essential survival and recovery skills (Hedges, 2025).

As a conclusion, the evaluation of resource and availability in Barangay 02 demonstrates a strong logistical foundation, particularly in Early Warning Systems and Transportation, which were identified as top-performing assets across all groups. While the community generally expressed a high level of trust in the Barangay's rescue capabilities, the results reveal a significant "Resilience Gap" in post-disaster recovery and specialized infrastructure. The low rankings for Separate Sanitation Facilities and Resources to Rebuild indicate that current disaster management is effective at the immediate rescue phase but lacks the long-term support systems necessary for independent recovery. Furthermore, the economic vulnerability highlighted by the low scores for Personal Savings among families and PWDs suggests that the Barangay must transition toward an Inclusive Disaster Risk Reduction (IDRR) framework. This approach should prioritize upgrading sanitation facilities and establishing financial safety nets—such as microfinance or livelihood grants—to move beyond a "one-size-fits-all" rescue model toward holistic, long-term resilience for its most vulnerable residents.

*4.2.3. Occupancy and Capacity.*

Table 6 presents the evaluation of the evacuation center in Barangay 02, Maria Aurora, Aurora, in terms of occupancy and capacity metrics. The indicator "Barangay officials are easily reachable to report an emergency related to the evacuation center" emerged as a primary strength, receiving high scores across respondent groups with a peak weighted mean of 3.45. This indicates that students and residents perceive a high level of accessibility and responsiveness from local leadership regarding the management of the facility. Additionally, the location of the evacuation center in a safe zone was highly rated (WM=3.50 and 3.45), suggesting strong confidence in the center's geographic resilience against flooding and landslides.

Table 6. Status of Evacuation Center in Barangay 02, Maria Aurora, Aurora in terms of resource and availability

| INDICATOR | Children | | | PWD's | | | Elderly | | |
|---|---|---|---|---|---|---|---|---|---|
| | WM | DE | RANK | WM | DE | RANK | WM | DE | RANK |
| 1. The evacuation center has designated areas for vulnerable individuals (e.g., elderly, disabled). | 3.18 | A | 8 | 3.16 | A | 8 | 3.47 | SA | 1 |
| 2. Barangay officials are easily reachable to report an emergency related to the evacuation center. | 3.34 | SA | 2 | 3.44 | A | 2 | 3.45 | SA | 2 |
| 3. The designated evacuation center has enough capacity to comfortably accommodate all Barangay residents who might need it. | 3.40 | A | 1 | 3.28 | A | 3 | 3.30 | SA | 7 |
| 4. The designated evacuation center is easily accessible | 3.12 | A | 9 | 3.23 | A | 5 | 3.30 | SA | 7 |
| 5. There is enough space to safely store assistive devices (e.g., wheelchairs, walkers) for individuals with mobility issues. | 3.02 | A | 10 | 3.23 | A | 5 | 3.13 | A | 10 |
| 6. Pathways to the evacuation center are clear and easy to navigate. | 3.26 | SA | 4 | 3.23 | A | 5 | 3.40 | SA | 3 |
| 7. The Barangay has clear alternative safe zones identified if the main evacuation center is unavailable or too crowded. | 3.26 | SA | 4 | 3.16 | A | 8 | 3.32 | SA | 5 |
| 8. The evacuation plan includes a system for assisting and transporting vulnerable residents who cannot travel to the center on their own. | 3.34 | SA | 2 | 3.26 | SA | 4 | 3.32 | SA | 5 |
| 9. The evacuation center's facilities can withstand a major typhoon or earthquake. | 3.20 | A | 7 | 3.00 | A | 10 | 3.18 | A | 9 |
| 10. The evacuation center is in a safe zone (e.g., not prone to flooding, landslide). | 3.5 | A | 6 | 3.45 | SA | 1 | 3.37 | SA | 4 |
| Overall Average Weighted Mean | 3.26 | SA | 5 | 3.26 | SA | 4 | 3.31 | SA | 6 |

Legend: Weighted Mean; DE-Descriptive Equivalent; 1-Strongly Disagree (SD) (1.00-1.75); 2-Disagree (D) [1.76-2.50]; 3-Agree (A) [2.51-3.45]; 4-Strongly Agree (SA) [3.26-4.00]

The table results indicate a strong foundation in logistical preparedness, yet they highlight significant disparities in how resources are perceived across different groups. For the Children category (caregivers), Sufficient Transportation (WM 3.52) and Early Warnings (WM 3.50) emerged as top priorities, reflecting a focus on the speed of relocation and communication. For Persons with Disabilities (PWDs), the highest level of confidence is placed in Trained Personnel (WM 3.40) and Early Warnings (WM 3.34),

suggesting that for those with mobility or sensory challenges, the human element of assistance is the most critical recovery asset. Meanwhile, the Elderly group rated Early Warnings (WM 3.55) and Emergency Supplies (WM 3.41) as the most effective indicators, pointing toward a need for information clarity and immediate life-sustaining resources.

The implications of these findings suggest that while the Barangay is successful in "broad-stroke" logistics like warnings and transport, it faces a critical gap in long-term resilience and specific infrastructure. Across all three groups, Separate Sanitation Facilities and Resources to Rebuild consistently ranked in the bottom tier. This implies that while residents feel they can be moved safely during a disaster, the facilities they move to—and the support they receive after the event—are insufficient.

Furthermore, the low ranking of Personal Savings for children/families and PWDs highlights a high level of economic vulnerability. This suggests that the Barangay must transition from being a provider of "rescue services" to a facilitator of financial safety nets, such as community-based micro-insurance or emergency livelihood grants. By addressing these post-disaster recovery gaps, the Barangay can ensure that vulnerable populations are not only rescued but are also equipped to recover independently and with dignity.

According to Olson (2025), the evaluation of occupancy must go beyond floor space to include the systematic review of how the environment accommodates student and resident needs during high-stress events. This supports the idea that stakeholders should move beyond basic capacity metrics to explore indicators like specialized support and environmental safety (Ferlazzo, 2022). Furthermore, research emphasizes that a well-designed occupancy plan, which includes clear pathways and inclusive spaces, significantly influences the overall well-being and safety outcomes for vulnerable populations (Hedges, 2025).

To conclude, the evacuation center is viewed as a geographically secure refuge with accessible leadership, it currently functions under a standardized occupancy model that overlooks the specific physical realities of its diverse residents. The conclusion is that Barangay 02 must move beyond "broad-stroke" capacity to an Inclusive Disaster Risk Reduction (IDRR) approach. This requires transitioning from merely providing floor space to implementing targeted structural improvements, such as dedicated storage for mobility aids and specialized medical areas, to ensure that the high-frequency vulnerable groups identified in the age distribution data are not only accommodated but safely supported.

*4.3. Barriers in accessing disaster management services in terms of?*

*4.3.1. Financial Constraints.*

Table 7 presents the barriers in accessing disaster management services in terms of financial constraints within Barangay 02, Maria Aurora. Unlike previous tables that focused on the adequacy of facilities, this table highlights perceived obstacles. The indicator "The absence of small cash grants (ayuda) makes it difficult to buy specific necessities compared to receiving standard food packs" received the highest agreement in two out of three groups, with a peak weighted mean of 3.54 (Strongly Agree). This suggests a significant community preference for flexible financial support over standardized relief goods, as families often have unique needs that food packs cannot address.

Table 7. Barriers in accessing disaster management services in terms of financial constraints

| INDICATOR | Children | | | PWD's | | | Elderly | | |
|---|---|---|---|---|---|---|---|---|---|
| | WM | DE | RANK | WM | DE | RANK | WM | DE | RANK |
| 1. Lack of access to affordable loans or grants makes it difficult to strengthen my home or secure my livelihood before a disaster. | 2.98 | A | 3 | 3 | A | 9 | 2.40 | D | 2 |
| 2. The Barangay's financial assistance is not quickly available right after a disaster to cover immediate needs like food and water. | 3.06 | A | 2 | 3.40 | A | 1 | 2.60 | A | 1 |
| 3. The absence of small cash grants (ayuda) makes it difficult to buy the specific necessities my family needs compared to receiving standard food packs. | 3.54 | SA | 1 | 3.03 | A | 8 | 2.82 | A | 10 |
| 4. It is difficult to find and access Barangay officials immediately after a disaster to help with paperwork for financial claims or aid. | 2.62 | A | 7 | 3.27 | A | 3 | 2.21 | D | 9 |
| 5. The Barangay does not effectively communicate the financial risks (e.g., potential loss of income, cost of repair) associated with common disasters. | 2.76 | A | 4 | 3.17 | A | 5 | 2.32 | D | 6 |
| 6. I do not know who to approach in the Barangay office to inquire about disaster-related financial assistance programs. | 2.74 | A | 5 | 3.28 | A | 2 | 2.40 | D | 2 |
| 7. The information provided by the Barangay about disaster aid is unclear, inaccessible, or difficult to understand. | 2.52 | A | 10 | 2.92 | A | 10 | 2.30 | D | 7 |
| 8. The Barangay does not encourage or help residents apply for relevant national or provincial financial support (e.g., insurance, social welfare | 2.62 | A | 7 | 3.26 | SA | 4 | 2.34 | D | 4 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| programs). | | | | | | | | | |
| 9. The process for receiving Barangay disaster aid is not fair or transparent, or it requires unreasonable documents/requirements. | 2.64 | A | 6 | 3.08 | A | 7 | 2.30 | D | 7 |
| 10. The Barangay does not help residents quickly verify and document damage to their property, which prevents them from qualifying for financial assistance from other sources. | 2.54 | A | 9 | 3.14 | A | 6 | 2.34 | D | 4 |
| Overall Average Weighted Mean | 2.80 | A | 7 | 2.80 | A | 7 | 2.41 | D | 7 |

Legend: Weighted Mean; DE-Descriptive Equivalent; 1-Strongly Disagree (SD) (1.00-1.75); 2-Disagree (D) [1.76-2.50]; 3-Agree (A) [2.51-3.45]; 4-Strongly Agree (SA) [3.26-4.00]

The data highlights a significant demand for immediate, flexible financial support across all vulnerable sectors. For Children (caregivers), the absence of small cash grants or "ayuda" (WM 3.54) is the primary barrier, indicating that standardized food packs do not meet the highly specific needs of households with children (e.g., milk or diapers). For Persons with Disabilities (PWDs) and the Elderly, the most critical concern is the speed of assistance, with both groups ranking the delayed availability of financial aid as their top concern (WM 3.40 and 2.60 respectively). Furthermore, the Elderly and PWDs both struggle with navigational barriers, specifically not knowing who to approach in the Barangay office to inquire about programs.

The implications of these findings suggest that Barangay's current "one-size-fits-all" relief model is insufficient for economic recovery. The high priority placed on "ayuda" (cash grants) implies that families require purchasing power to meet specific household demands that standard relief kits ignore. Additionally, the informational gap regarding "who to approach" suggests that the Barangay should establish a dedicated desk or liaison officer specifically for vulnerable sectors to streamline the application process for financial claims. By focusing on liquidity (cash) and accessibility (clear points of contact), the local government can reduce the secondary trauma of financial instability that often follows a natural disaster.

According to Olson (2025), any evaluation of community support must look at "growth in achievement" through the lens of economic resilience and the effective removal of systemic barriers. This aligns with Ferlazzo (2022), who argues that success in public services is often hindered when support systems are not "holistic" enough to cover varied financial realities. Furthermore, Hedges (2025) emphasizes that a well-structured disaster response must facilitate the mastery of "essential skills," which includes the community's ability to navigate financial claims and secure livelihoods through accessible grants and loans.

Hence, the evaluation confirms that Barangay 02's reliance on a "one-size-fits-all" relief model creates a secondary barrier to recovery, as it fails to account for the diverse financial realities of its most vulnerable residents. To achieve total resilience and align with the "holistic" support systems advocated by Ferlazzo (2022) and Olson (2025), the conclusion is that the Barangay must transition toward an Inclusive Disaster Risk Reduction (IDRR) approach. This requires moving beyond standardized relief goods to implement flexible cash grants (ayuda) and establishing a dedicated vulnerability liaison officer to bridge the informational gap regarding financial claims. By prioritizing liquidity and transparent aid navigation, the Barangay can ensure that the high-frequency vulnerable groups identified in the age distribution data are empowered to recover with dignity and independence.

4.3.2. Operational Challenges.

Table 8 presents the barriers in accessing disaster management services in terms of operational challenges in Barangay 02, Maria Aurora. This section examines the logistical and administrative hurdles that may impede effective disaster response. Interestingly, the indicator "Official warnings and alerts about a disaster are often delayed" and "Contact numbers for officials are not easily known" tied for the highest agreement in the first group (WM=2.58), while another group highlighted "Lack of necessary equipment" and the "Exclusion of certain groups" (Indicator 3 and 5) as their top barriers (WM=3.18). These results suggest that while operational issues exist, they are experienced differently across the community, ranging from communication delays to equipment shortages.

In contrast, several indicators received a descriptive equivalent of "Disagree," particularly in the third respondent group. For instance, the "Lack of trust in Barangay officials" (Indicator 1) received a low weighted mean of 2.07, ranking last for that group. This disagreement serves as a positive finding, implying that for a significant portion of the respondents, there is still a foundational trust in the fairness and equality of relief distribution. Similarly, the Overall Average Weighted Mean across all groups (2.17 to 2.45) falls under the Descriptive Equivalent of "Disagree." This indicates that, on average, the respondents do not perceive operational challenges as overwhelming barriers, suggesting that the Barangay's basic operational framework is functioning reasonably well.

Table 8. Barriers in accessing disaster management services in terms of Operational Challenges

| INDICATOR | Children | | | PWD's | | | Elderly | | |
|---|---|---|---|---|---|---|---|---|---|
| | WM | DE | RANK | WM | DE | RANK | WM | DE | RANK |
| 1. There is a lack of trust in Barangay officials to fairly and equally distribute relief and assistance. | 2.24 | D | 10 | 3.10 | A | 5 | 2.07 | D | 10 |
| 2. The community is not involved enough in planning and improving the disaster services. | 2.36 | D | 6 | 3 | A | 9 | 2.08 | D | 9 |
| 3. Some groups in the community (e.g., renters, newcomers) are left out of disaster | 2.36 | D | 6 | 3.18 | A | 1 | 2.13 | D | 6 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| planning and services. | | | | | | | | | |
| 4. Financial limitations or lack of funds prevent the Barangay from improving its disaster services. | 2.46 | D | 4 | 2.8 | A | 10 | 2.16 | D | 4 |
| 5. Disaster management services generally lack the necessary equipment (e.g., rescue boats, power tools) for effective response. | 2.5 | D | 3 | 3.18 | A | 1 | 2.11 | D | 8 |
| 6. Transportation to evacuation centers is not provided or is very difficult to find during a disaster. | 2.36 | D | 6 | 2.95 | A | 8 | 2.13 | D | 6 |
| 7. The designated evacuation centers are too far or difficult to reach from my home. | 2.46 | D | 4 | 3.14 | A | 3 | 2.14 | D | 5 |
| 8. Official warnings and alerts about a disaster are often delayed or arrive too late. | 2.58 | A | 1 | 3.07 | A | 6 | 2.21 | D | 3 |
| 9. The contact numbers for Barangay or emergency officials are not easily known or accessible. | 2.58 | A | 1 | 3.13 | A | 4 | 2.24 | D | 2 |
| 10. There are not enough ways to get emergency information (e.g., radio, text, social media, word-of-mouth) | 2.56 | A | 2 | 3.06 | A | 7 | 2.40 | D | 1 |
| Overall Average Weighted Mean | 2.45 | D | 8 | 2.45 | D | 8 | 2.17 | D | 8 |

Legend: Weighted Mean; DE-Descriptive Equivalent; 1-Strongly Disagree (SD) (1.00-1.75); 2-Disagree (D) [1.76-2.50]; 3-Agree (A) [2.51-3.45]; 4-Strongly Agree (SA)[3.26-4.00]

The data highlights significant communication and structural hurdles that vary in intensity across the three vulnerable cohorts. For Children (represented by caregivers), the most critical barriers are delayed warnings and the inaccessibility of emergency contact numbers (WM 2.58), indicating a high dependency on timely information to secure the safety of minors. For Persons with Disabilities (PWDs), the results show a tie for the top rank between the exclusion of specific groups and a lack of necessary equipment (WM 3.18). This suggests that for PWDs, physical response tools and social inclusion are equally vital for survival. The Elderly identify insufficient information channels (WM 2.40) and inaccessible contact numbers (WM 2.24) as their primary obstacles, underscoring a high risk of information isolation among seniors.

The implications of these findings suggest that Barangay's disaster management strategy must move beyond a "standard" response to address specific accessibility gaps. Since "inaccessible contact numbers" and "insufficient info channels" rank highly for both Children and the Elderly, the local government should prioritize the distribution of physical emergency directories and the use of redundant alert systems (such as town criers or loud hailers) to reach those with limited technology access. Furthermore, the high concern among PWDs regarding "exclusion" and "lack of equipment" implies that current evacuation assets (like rescue boats or vehicles) may not be specialized enough for those with mobility impairments. To address this, the Barangay should conduct a disability-inclusive census to map out precisely where renters, newcomers, and individuals with specific mobility need reside to ensure no one is left behind during a crisis.

According to Olson (2025), the evaluation of operational success must consider the "learning environment" of the community, ensuring that every resident understands how to navigate the provided services. This is mirrored in Ferlazzo's (2022) assertion that operational indicators must go beyond mere presence to include the quality of "student and resident engagement" in the process. Furthermore, research by Hedges (2025) indicates that a well-structured curriculum of disaster response—one that is inclusive and well-equipped—is essential for facilitating the mastery of safety protocols and ensuring no sector of the community is marginalized.

Henceforth, this data directly relates to the bimodal trend in the PWD population, where the peaks in the 12–17 and 36–41 age groups represent individuals who are most susceptible to the information isolation and physical equipment shortages identified in the table. To satisfy the "holistic" support standards suggested by Ferlazzo (2022) and the inclusive environment mandated by Hedges (2025), the Barangay must transition to an Inclusive Disaster Risk Reduction (IDRR) approach. This should involve institutionalizing redundant alert systems, distribute physical emergency directories, and conducting a disability-inclusive census to ensure that the high-frequency vulnerable age groups identified in the data are actively included in planning and equipped with the specialized tools necessary for their survival.

*4.4. Disaster risk reduction supports vulnerable population*

*4.4.1. Before Disaster.*

Table 9 presents the evaluation of disaster risk reduction (DRR) support provided to the vulnerable population in Barangay 02, Maria Aurora, before a disaster occurs. This phase focuses on preparedness and mitigation. The indicator "Access to free or heavily subsidized emergency kits" (Indicator 2) emerged as a significant highlight, receiving high scores across multiple groups with a peak weighted mean of 3.54. Additionally, the availability of "Simple, easy-to-understand disaster preparedness guides" (Indicator 8) was highly rated by the third group (3.48), suggesting that the Barangay is effective in providing tangible preparedness tools and accessible information.

Conversely, some indicators related to technical training and individualized planning received relatively lower rankings. Indicator 3, regarding the "availability of workshops or training on basic first aid and CPR," and Indicator 1, concerning "support in creating a comprehensive family communication plan," were ranked lower by certain respondent groups. These results indicate that while the Barangay is successful in distributing physical resources and guides, there is a perceived need for more hands-on training and personalized planning assistance to ensure that families are not just equipped with kits, but also with the skills and specific strategies needed for survival.

Table 9. Disaster risk reduction supports for vulnerable population before disaster

| INDICATOR | Children | | | PWD's | | | Elderly | | |
|---|---|---|---|---|---|---|---|---|---|
| | WM | DE | RANK | WM | DE | RANK | WM | DE | RANK |
| 1. Support in creating a comprehensive family communication plan (e.g., meeting points, out-of-state contacts). | 3.46 | SA | 4 | 2.89 | A | 10 | 3.17 | A | 10 |
| 2. Access to free or heavily subsidized emergency kits (e.g., 72-hour supplies). | 3.54 | SA | 3 | 3.17 | A | 2 | 3.40 | SA | 5 |
| 3Availability of workshops or training on basic first aid and CPR. | 2.98 | A | 10 | 2.94 | A | 8 | 3.30 | SA | 9 |
| 4. Clear, localized information regarding the specific risks in your immediate neighborhood (e.g., flood zones, fire risks) | 3.6 | A | 1 | 3.22 | A | 1 | 3.38 | SA | 6 |
| 5. Assistance with preparing and securing important documents (e.g., digital backups, waterproof storage). | 3.12 | A | 8 | 2.94 | A | 8 | 3.31 | SA | 7 |
| 6. Financial support or guidance for home retrofitting (e.g., securing appliances, minor structural improvements). | 3.2 | A | 6 | 3.08 | A | 4 | 3.31 | SA | 7 |
| 7. Help create a specific plan for evacuating pets and/or livestock. | 3.18 | A | 7 | 2.95 | A | 7 | 3.36 | SA | 6 |
| 8. Simple, easy-to-understand disaster preparedness guides available in multiple languages. | 3.42 | SA | 5 | 3.01 | A | 5 | 3.48 | SA | 1 |
| 9. Tools to help calculate and budget for the estimated cost of disaster supplies. | 3.04 | A | 9 | 3.09 | A | 3 | 3.47 | SA | 2 |
| 10. Regular, community-wide drills or simulations to practice evacuation routes | 3.16 | A | 8 | 2.98 | A | 6 | 3.43 | SA | 3 |
| Overall Average Weighted Mean | 3.27 | SA | 4 | 3.27 | SA | 3 | 3.36 | SA | 4 |

Legend: Weighted Mean; DE-Descriptive Equivalent; 1-Strongly Disagree (SD) (1.00-1.75); 2-Disagree (D) [1.76-2.50]; 3-Agree (A) [2.51-3.45]; 4-Strongly Agree (SA) [3.26-4.00]

The data demonstrates a strong preference for localized knowledge and tangible resources as the primary drivers of disaster preparedness across all vulnerable cohorts. For Children (caregivers) and Persons with Disabilities (PWDs), the highest priority is Localized Risk Information (WM 3.60 and 3.22, respectively), ranking 1st in both categories. This suggests that these groups feel most prepared when they understand the specific, granular threats (like flood zones) in their immediate neighborhood. In contrast, the Elderly group prioritizes clear communication and logistical tools, ranking Simple Multilingual Guides (WM 3.48) and Supply Budgeting Tools (WM 3.47) as their top two needs. Across all groups, First Aid and CPR training consistently ranked toward the bottom, indicating that respondents prioritize structural and informational readiness over specialized medical skill acquisition in the preparedness phase.

The implications of these findings suggest that the Barangay's preparedness programs should move away from generic training and toward resource-heavy, high-resolution information sharing. Since subsidized emergency kits (Rank 2 for PWDs, Rank 3 for Children) and budgeting tools (Rank 2 for Elderly) are highly valued, financial barriers are likely preventing these vulnerable groups from self-preparing. Local government units should consider shifting budget allocations from general seminars to the direct provision of "go-bags" and the creation of neighborhood-specific hazard maps. Furthermore, the Elderly's high ranking of community drills (Rank 3) suggests a willingness to engage in physical practice, providing an opportunity for the Barangay to integrate social interaction with evacuation safety to ensure no senior is left isolated during a real event.

According to Olson (2025), the evaluation of disaster preparedness must move beyond the distribution of supplies to include "access to rigorous instruction," such as first aid training and structural safety education. This is echoed by Ferlazzo (2022), who notes that comprehensive support systems must facilitate "student and resident engagement" through active participation in drills and planning. Furthermore, research by Hedges (2025) suggests that a well-structured preparedness curriculum, which includes localized risk maps and budget tools, is essential for fostering the "mastery of essential skills" that allow vulnerable populations to move from a state of risk to a state of resilience.

In conclusion, the evaluation confirms that while Barangay 02 excels in "broad-stroke" preparedness through resource distribution and informational guides, it has yet to achieve the level of "rigorous instruction" and "skill mastery" advocated by Olson (2025) and Hedges (2025). To reach total resilience, the conclusion is that the Barangay must transition to an Inclusive Disaster Risk

Reduction (IDRR) approach that moves beyond the mere delivery of "go-bags". This requires institutionalizing neighborhood-specific drills—highly valued by the elderly—and providing personalized, hands-on workshops for first aid and emergency planning that specifically cater to the physical and developmental realities of the high-frequency age groups identified in the demographic data.

*4.4.2 During Disaster.*

Table 10 presents the evaluation of disaster risk reduction (DRR) support provided to the vulnerable population in Barangay 02, Maria Aurora, during the actual occurrence of a disaster. This phase focuses on emergency response and life-saving interventions. The indicators for "Temporary power sources (e.g., generators) available at critical locations" and "Emergency transportation for those without personal vehicles" emerged as critical strengths, receiving top rankings and weighted means as high as 3.48. This suggests that the Barangay is well-equipped to manage the logistical needs of its residents during the height of a crisis. Furthermore, Indicator 1 regarding the timeliness of early warning alerts received a high mean of 3.68 from one respondent group, reinforcing the Barangay's reliability in communication.

On the other hand, indicators related to specialized on-site care received lower rankings. Indicator 3, concerning the "availability of on-site medical personnel at shelters," and Indicator 9, regarding "trained personnel for psychological first aid," consistently ranked at the bottom (Rank 8 to 10). While these indicators still fall within the "Agree" descriptive equivalent, the relatively lower scores suggest a critical gap in health and mental health support during the emergency phase. This implies that while the physical and logistical needs (power, transport, food) are well-handled, the medical and psychological "human" element of the response requires further reinforcement.

Table 10. Disaster risk reduction supports vulnerable population during disaster

| INDICATOR | Children | | | PWD's | | | Elderly | | |
|---|---|---|---|---|---|---|---|---|---|
| | WM | DE | RANK | WM | DE | RANK | WM | DE | RANK |
| 1. Timely and reliable early warning alerts through multiple accessible channels (e.g., text, radio, siren). | 3.68 | SA | 1 | 2.84 | A | 9 | 3.32 | SA | 6 |
| 2. Access to safe, designated emergency shelters that accommodate families and pets. | 3.46 | SA | 4 | 3.09 | A | 4 | 3.26 | SA | 9 |
| 3. On-site medical personnel are available at shelters or temporary staging areas. | 2.86 | A | 10 | 2.94 | A | 8 | 3.18 | A | 10 |
| 4. Clean drinking water and non-perishable food delivered to affected areas without delay. | 3.58 | SA | 2 | 3.07 | A | 5 | 3.38 | SA | 3 |
| 5. Reliable ways to contact family members are down (e.g., satellite phones at community centers). | 3.3 | A | 8 | 3.10 | A | 3 | 3.37 | SA | 5 |
| 6. Immediate rescue and evacuation assistance for elderly or mobility-impaired individuals. | 3.46 | SA | 4 | 2.99 | A | 7 | 3.30 | SA | 7 |
| 7. Clear information about safe routes and closed roads that is updated in real-time. | 3.46 | SA | 4 | 3.02 | A | 6 | 3.38 | SA | 3 |
| 8. Temporary power sources (e.g., generators) available at critical community locations. | 3.56 | SA | 3 | 3.24 | A | 1 | 3.48 | SA | 1 |
| 9.Trained personnel to provide immediate psychological first aid to distressed individuals. | 3.02 | A | 9 | 2.99 | A | 7 | 3.28 | A | 8 |
| 10. Emergency transportation available for those without personal vehicles. | 3.34 | SA | 7 | 3.11 | A | 2 | 3.48 | SA | 1 |
| Overall Average Weighted Mean | 3.37 | SA | 7 | 3.37 | SA | 1 | 3.35 | SA | 5 |

Legend: Weighted Mean; DE-Descriptive Equivalent; 1-Strongly Disagree (SD) (1.00-1.75); 2-Disagree (D) [1.76-2.50]; 3-Agree (A) [2.51-3.45]; 4-Strongly Agree (SA) [3.26-4.00]

The data demonstrates a clear shift in priorities based on the specific vulnerabilities of each group during the acute phase of a disaster. For Children (represented by caregivers), the highest priority is Early Warning Alerts (WM 3.68), indicating that for households with children, lead time is the most critical factor for safety. Conversely, for both Persons with Disabilities (PWDs) and the Elderly, Temporary Power Sources (WM 3.24 and 3.48, respectively) and Emergency Transportation (Rank 1 and 2) emerged as the top necessities. This reflects a heavy reliance on electricity for medical devices or climate control, and the critical need for external assistance in movement.

The implications of these findings suggest that the Barangay's immediate response strategy cannot be "one-size-fits-all." While early warning systems effectively serve families with children, the PWD and Elderly cohorts are more concerned with logistical infrastructure. The high ranking of power and transportation for these groups implies that a power outage or a lack of accessible vehicles constitutes a life-threatening barrier. Therefore, response plans should prioritize the deployment of mobile generators and the pre-stage of accessible transport units in areas with high concentrations of elderly and mobility-impaired residents. Furthermore, the consistently low ranking of on-site medical personnel across all groups suggests that residents perceive getting to safety and maintaining basic life support (power/water) as more urgent than immediate clinical intervention at the shelter site.

According to Olson (2025), the evaluation of disaster response must emphasize the "learning environment" of the shelter, ensuring that medical and emotional support are as available as physical supplies. This aligns with Ferlazzo (2022), who notes that holistic performance indicators in crisis management must include student and resident well-being through direct support systems. Furthermore, research by Hedges (2025) indicates that a well-structured response curriculum—one that prioritizes both mechanical resources (generators) and human resources (medical/psychological staff)—is essential for the "mastery of essential skills" in community survival and resilience.

Therefore, the evaluation confirms that Barangay 02 has successfully built a "logistical stronghold," effectively managing the physical requirements of rescue and transport. However, the consistent bottom-tier rankings for on-site medical personnel (Indicator 3) and psychological first aid (Indicator 9) reveal a significant "Human Element Gap." To move toward the "holistic" response standards advocated by Ferlazzo (2022) and Olson (2025), the conclusion is that the Barangay must evolve its Inclusive Disaster Risk Reduction (IDRR) approach. This requires complementing its mechanical strengths—such as generators and transport—with the deployment of specialized health and mental health professionals at shelters. By integrating clinical and emotional support into the existing logistical framework, the Barangay can ensure that the high-risk age groups identified in the data are not only physically relocated but also medically and psychologically sustained during a disaster.

*4.4.3. After Disaster.*

Table 11 presents the evaluation of disaster risk reduction (DRR) support provided to the vulnerable population in Barangay 02, Maria Aurora, in the aftermath of a disaster. This recovery phase focuses on rehabilitation and the restoration of normalcy. The indicator "Restoration of utilities (water, gas, electricity) prioritized for essential community services and homes" (Indicator 7) received the highest rankings from multiple groups, with weighted means peaking at 3.58. This suggests that the Barangay is perceived as highly efficient in addressing the immediate structural needs of the community following a crisis. Additionally, "Free debris removal and cleaning assistance" (Indicator 3) was consistently rated as top priority and strength (WM=3.56 and 3.26), reflecting strong community coordination in physical recovery efforts.

In contrast, long-term economic and livelihood recovery support received the lowest scores. Indicator 9, regarding "Job placement or small business support for those who lost employment," consistently fell into the "Disagree" (D) category for several groups, with scores as low as 2.49. Similarly, Indicator 10, concerning "Voucher programs for household goods," was ranked last by one respondent group. These results indicate a significant gap in the "economic" side of the recovery phase. While the Barangay excels at restoring physical utilities and cleaning up debris, residents feel that support for restoring their livelihoods and replacing lost personal assets is currently insufficient.

Table 11: Disaster risk reduction supports vulnerable population during disaster.

| INDICATOR | Children | | | PWD's | | | Elderly | | |
|---|---|---|---|---|---|---|---|---|---|
| | WM | DE | RANK | WM | DE | RANK | WM | DE | RANK |
| 1. "Back-to-School" programs that provide supplies and uniforms for children. | 3.38 | SA | 5 | 3.39 | SA | 1 | 2.99 | A | 10 |
| 2. Access to affordable temporary housing while homes are being repaired or rebuilt. | 3.52 | SA | 3 | 3.16 | A | 4 | 3.15 | A | 8 |
| 3. Free debris removal and cleaning assistance (e.g., volunteer coordination, specialized equipment). | 3.56 | SA | 2 | 3.26 | SA | 2 | 3.33 | SA | 4 |
| 4. Mental health counseling services are available long-term for adults and children. | 3.22 | A | 7 | 3.08 | A | 6 | 3.26 | SA | 6 |
| 5. Financial grants or low-interest loans for rebuilding that bypass insurance delays. | 3.30 | A | 6 | 3.23 | A | 3 | 3.26 | SA | 6 |
| 6. Legal aid and advice for disputes with landlords, insurance companies, or contractors. | 3.46 | SA | 4 | 3.07 | A | 7 | 3.30 | SA | 5 |
| 7. Restoration of utilities (water, gas, electricity) prioritized for essential community services and homes. | 3.58 | SA | 1 | 3.13 | A | 5 | 3.46 | SA | 1 |
| 8. Child care and school support to ensure children can return to a stable learning environment quickly.). | 3.07 | A | 8 | 3.06 | A | 8 | 3.41 | SA | 2 |
| 9. Job placement or small business support for those who lost employment or businesses due to the disaster. | 2.90 | D | 10 | 2.49 | D | 9 | 3 | A | 9 |
| 10. Voucher programs for essential items like clothing, household goods, and furniture replacement. | 3.16 | A | 9 | 2.34 | D | 10 | 3.41 | SA | 2 |
| Overall Average Weighted Mean | 3.12 | A | 6 | 3.12 | A | 6 | 3.27 | SA | 3 |

Legend: Weighted Mean; DE-Descriptive Equivalent; 1-Strongly Disagree (SD) (1.00-1.75); 2-Disagree (D) [1.76-2.50]; 3-Agree (A) [2.51-3.45]; 4-Strongly Agree (SA)[3.26-4.00]

The data highlights a significant emphasis on the restoration of essential living conditions and logistical support during the long-term recovery phase. For both Children (caregivers) and the Elderly, the Restoration of Utilities (WM 3.58 and 3.46, respectively) is the top priority. This underscores that for households with high dependency needs, returning home with water and electricity is the ultimate baseline for recovery. Interestingly, Persons with Disabilities (PWDs) ranked "Back-to-School" programs (WM 3.39) as their highest need, suggesting that for this cohort, the stability of the family unit and the progress of younger dependents are prioritized even over immediate physical housing repairs.

The implications of these findings suggest that recovery strategies must be multi-dimensional rather than just focusing on infrastructure. While the high ranking of Debris Removal (Rank 2 for Children and PWDs) shows a need for physical assistance, the high ranking of Legal Aid and Voucher Programs for the Elderly suggests that seniors face higher bureaucratic and financial hurdles in replacing lost assets.

Furthermore, the consistently low ranking of Job Placement and Business Support (Rank 9/10) across all groups implies that during the long-term recovery period, residents are more focused on stabilizing the home environment than on economic productivity. Consequently, Barangay officials should prioritize "Utility First" and "Education Stability" policies, as these are viewed by the most vulnerable as the true indicators of a successful return to normalcy.

According to Olson (2025), a comprehensive evaluation of recovery must include "growth in student and resident achievement," which in this context means returning to economic self-sufficiency. This is supported by Ferlazzo (2022), who argues that recovery metrics should explore holistic indicators like "support systems" for those who lost their source of income. Furthermore, research by Hedges (2025) emphasizes that a well-structured recovery curriculum should facilitate the "mastery of essential skills" for economic rebuilding, suggesting that job placement and micro-business support are just as vital as clearing roads for long-term community resilience.

In summary, the evaluation confirms that while Barangay 02 is highly efficient at "restoring the landscape" through utility repair and cleaning, it lacks the specialized support systems needed to "restore the household's economy." To achieve the "economic self-sufficiency" and "holistic support" advocated by Olson (2025) and Ferlazzo (2022), the conclusion is that the Barangay must transition toward an Inclusive Disaster Risk Reduction (IDRR) approach. This requires moving beyond physical infrastructure to implement long-term livelihood rehabilitation programs, such as job placement assistance and asset-replacement vouchers. By addressing these economic hurdles, the Barangay can ensure that the high-frequency vulnerable groups identified in the data are not just returning to a functioning home but are also equipped with the financial stability necessary for long-term resilience and independence.

*4.5. Proposed community-based disaster risk reduction and management (CBDRRM) plan for Barangay 2, Maria Aurora, Aurora*

Table 12 presents the proposed community-based disaster risk reduction and management plan for Barangay 02, Maria Aurora, Aurora. The findings suggest that student and resident motivation alone cannot overcome the financial and legal barriers of a disaster environment. According to Olson (2025), income levels are a fundamental determinant of resilience, as lower-income households lack the liquid assets for self-recovery. This is supported by Hedges (2025), who argues that community "mastery" is only possible when the environment accommodates the physical realities of all ages. Furthermore, Ferlazzo (2022) emphasizes that a "one-size-fits-all" strategy is insufficient, necessitating the holistic support systems—such as geriatric and pediatric-specific care—integrated into this plan.

Table 12. The Proposed CBDRRM Matrix

| Program Component | Objective | Target Activities | Persons Involve | Resources Needed |
|---|---|---|---|---|
| 1. Project AGAP (Financial Resilience) | Provide flexible financial safety nets. | Voucher system & micro-grants for rebuilding. | BDRRMC, Barangay Treasurer, Social Welfare Officer. | Emergency fund budget, partner local vendors, distribution vouchers. |
| 2. Project LINGAP (Health & Inclusion) | Institutionalize medical/psychological support. | On-site personnel & Psychological First Aid training. | Barangay Health Workers (BHWs), Local Doctors/Nurses, DSWD. | Medical supplies, training materials, psychological support kits. |
| 3. Project TAHANAN (Shelter Retrofitting) | Enhance physical inclusivity. | Privacy partitions & storage for assistive devices. | BDRRMC, Barangay Engineering/Maintenance team. | Portable partition materials, industrial shelving/racks for aids. |
| 4. Project MALASAKIT (Communication) | Ensure reach of emergency info. | Visual/Multi-lingual guides & digital registry. | BDRRMC, Secretary, PWD/Elderly sector leaders. | Digital database software, printing costs for signage/guides. |

The proposed Inclusive Disaster Risk Reduction (IDRR) Plan for Barangay 02 transitions the community from a reactive, generalized emergency response toward a proactive, dignity-focused framework specifically designed for its 226 vulnerable residents. This plan is operationalized through four key components that address systemic gaps in financial access, health integration, infrastructure, and communication.

Project AGAP tackles the economic fragility of vulnerable households by implementing a voucher system and micro-grant program. By moving away from standardized relief goods, this initiative provides residents with the agency to procure specialized

necessities—such as specific medications or dietary items, thereby increasing their self-reliance during the recovery phase. Complementing this, Project LINGAP institutionalizes medical and psychological support by integrating local healthcare workers and personnel trained in Psychological First Aid (PFA) directly into the disaster response team. This ensures that the specific health maintenance needs of the elderly and the trauma-informed requirements of children and PWDs are met on-site, addressing the "Inclusive Gap" identified in the study.

To address physical safety and accessibility, Project TAHANAN focuses on retrofitting shelter infrastructure. By incorporating privacy partitions and designated storage for assistive devices like wheelchairs and canes, this project ensures that evacuation centers are dignified and functional environments for all, rather than mere temporary holding areas. Finally, Project MALASAKIT resolves the "last mile" communication failure by utilizing multi-lingual guides, visual signage, and a digital registry. This ensures that timely and accessible emergency information reaches every resident, regardless of physical or sensory limitations, ultimately shifting the Barangay toward a holistic and people-centered management system.

## 5. Conclusions and Recommendations

### *5.1 Conclusions*

Regarding the profile of the vulnerable population, the study concludes that vulnerability in Barangay 02 is not uniform but is concentrated in specific demographic "peaks". Significant age-based clusters exist, such as adolescents and middle-aged adults among the PWD population and a "young-old" majority among the elderly. Furthermore, there is a marked economic fragility and notable gender disparities in PWD reporting, indicating that the current understanding of the community's needs requires granular, age-disaggregated, and gender-sensitive data to ensure that interventions reach the most at-risk groups.

Regarding the status of the evacuation center, the Barangay exhibits high institutional readiness, particularly in security, peacekeeping, and early warning dissemination, which serves as a psychological "security anchor" for residents. However, the facility suffers from a significant "Inclusive Gap" in its physical and specialized infrastructure. While general safety is well-managed, the facility lacks dedicated storage for assistive devices, private medical bays, and climate-controlled areas for those with specific health requirements, signaling that the current model prioritizes general occupancy over specialized physical needs.

Additionally, the study concludes that the "one-size-fits-all" relief model acts as a secondary barrier to recovery. Financial constraints are a critical obstacle, as residents overwhelmingly prefer flexible cash grants ("ayuda") over standardized relief packs to meet unique, high-priority needs like specific medications or child-focused necessities. Operationally, residents face informational hurdles; there is a lack of clarity regarding who to approach for aid, suggesting that current bureaucratic processes are too complex and discourage vulnerable individuals from seeking support.

Vis-a-vis the helpfulness of support systems throughout the disaster cycle, the Barangay excels in logistical tasks like warning dissemination and initial transportation but struggles with the "human-centric" elements of response. While basic needs like food and power are adequately met, there is a persistent failure to provide psychological first aid and on-site medical care. This reveals that the existing support framework is purely rescue-oriented and fails to account for the long-term, rehabilitative needs—such as livelihood recovery and structural home repairs—that are essential for dignified, post-disaster independence.

Thus, the proposed Community-Based Disaster Risk Reduction and Management (CBDRRM) Plan, the current standardized disaster protocols are insufficient for a modern, inclusive framework. A transition toward an Inclusive Disaster Risk Reduction (IDRR) model is necessary to replace anecdotal planning with empirical, evidence-based interventions. The success of the Barangay's future resilience depends on implementing the proposed IDRR Plan, which transforms the community from a passive recipient of aid into an active participant in specialized, data-driven resilience building.

### *5.2 Recommendations*

To address the diverse demographic profiles, the Barangay may institutionalize a periodic, granular registry of its vulnerable residents that is disaggregated by age, sex, and specific functional needs. There is a need to update these data annually to track shifting vulnerabilities, particularly for adolescent PWDs and the "young-old" elderly population. By tailoring services—such as inclusive education for youth and vocational training for middle-aged adults—the Barangay can ensure that its budget and programs are directed toward the high-density age groups that require the most support.

To improve the evacuation center, the Barangay may conduct an immediate facility audit to address the "Inclusive Gap" in infrastructure. This includes the installation of privacy partitions for medical bays, the provision of dedicated, secure charging stations for mobility devices, and the upgrading of sanitation facilities to be fully accessible. These structural investments may shift the facility from a temporary holding area to a dignified refuge that respects the physical and medical requirements of children, the elderly, and PWDs.

To mitigate financial and operational barriers, the Barangay may transition from providing purely standardized relief packs to implementing a voucher-based cash grant system ("ayuda") that allows households to procure specific necessities. Administratively, the Barangay may appoint a dedicated "Vulnerability Liaison Officer" to guide residents through aid applications and communicate financial support programs clearly. This will reduce the secondary trauma associated with disaster recovery by providing residents with financial agency and a transparent, accessible point of contact for assistance.

To enhance support before, during, and after a disaster, the Barangay may integrate medical and psychological personnel into its BDRRM team to ensure "human-centric" support is available on-site. Preparedness efforts are encouraged to move beyond the mere distribution of go-bags to include hands-on training for families in first aid, CPR, and disaster document preparation. By formalizing long-term recovery support—such as legal assistance for property documentation and micro-livelihood grants—the Barangay can ensure that the transition from emergency rescue to stability is seamless and dignified.

To ensure the success of the proposed CBDRRM Plan, the Barangay Council are encouraged to formally adopt the Inclusive Disaster Risk Reduction (IDRR) Plan and its four core components: Projects AGAP, LINGAP, TAHANAN, and MALASAKIT. These projects should be integrated into the local annual investment plan to guarantee the necessary funding and institutional support. By operationalizing this data-driven framework, the Barangay will move away from reactive disaster management and establish a proactive, inclusive, and people-centered system that empowers its most vulnerable residents to recover independently.

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