



Disaster Preparedness, Risk Perception, And Disaster Risk Reduction Management Implementation Towards Organizational Resilience

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ABSTRACT

This study aimed to determine the risk perception, disaster preparedness, DRRM implementation and organizational resilience of elementary school teachers in the Ambray district. The researcher employed a descriptive correlational design in administering the survey questionnaire. One hundred twenty (120) respondents from the Ambray district were chosen at random to participate as respondents. The survey questionnaire was administered to respondents via Google Forms. The survey questionnaires were validated by the research adviser, subject specialist, technical editor, statistician, and a group of teachers before administration.

The mean and standard deviation were calculated to determine the respondents' risk perception, disaster preparedness, DRRM implementation and organizational resilience. Moreover, the findings revealed a significant relationship between risk perception and disaster preparedness. A significant relationship exists between risk perception and DRRM implementation. It was also found that a significant relationship exists between disaster preparedness and organizational resilience. Also, DRRM implementation showed a significant relationship with organizational resilience. It was found that disaster preparedness significantly mediates the relationship between risk perception and the implementation of Disaster Risk Reduction and Management (DRRM). DRRM implementation significantly mediates the relationship between risk perception and organizational resilience. Nevertheless, DRRM implementation significantly mediates the relationship between disaster preparedness and organizational resilience.

Keywords: Risk perception, Disaster Preparedness, DRRM implementation and Organizational resilience

1. Introduction

The Philippines ranked first in the 2024 World Risk Index, making it the most disaster-prone country globally, with a score of 46.9. The archipelago experiences various natural disasters yearly, including typhoons, earthquakes, and volcanic eruptions. Disruptive events often worsen these events.

In the extensive area of educational management, the effectiveness of educational institutions is fundamentally anchored in ensuring safety and security. Recently, there has been an increased focus on school disaster management and organizational resilience. This growing emphasis stems from the need to prepare communities, including schools, for potential disasters and disruptive events.

In the context of hazards and disruptive events, it is vital to acknowledge the opportunities and challenges that administrators, educators, and students must navigate concerning risk perception, disaster preparedness, disaster risk reduction management implementation, and organizational resilience. This discussion addresses the obstacles that must be overcome and examines potential strategies to enhance school readiness in the event of such events. By tackling these issues and seizing relevant opportunities, educational institutions can bolster their resilience and improve their preparedness for the uncertainties.

Their perception of risk influences people's ability to understand and respond to risk. Personal experiences with hazards influence how individuals perceive and understand risk. As a result, each person identifies risk differently, as their perceptions are shaped by their unique lifestyle and experiences. Risk perception is the main factor that motivates individuals to take preparedness actions. However, those with prior experience and a high-risk perception are not always more prepared. This relationship becomes even more complex when evaluating preparedness levels for hazards with varying characteristics.

According to Escobar (2021), the implementation of a disaster and risk reduction management plan faced several challenges encountered by the school heads and teachers as follows: a) Lack of teachers' training for DRRM; b) lack of inventory, vulnerability and risk assessments of school buildings and infrastructures; c) unavailability of resources to implement DRRM plans, programs, and activities; d) unclear funding source to sustain DRRM plans, programs, and activities; and e) lack of parents' engagement to support DRRMP. The education sector should implement a straightforward development

program on disaster management to enhance strategies for reducing disaster risk in schools and communities. It's also essential to evaluate the implementation of disaster risk reduction programs, as they vary by location and type of disaster. (Parcon, 2017; Saique, 2018).

On the other hand, the Department of Education has advised educational institutions to implement disaster preparedness protocols within their facilities. Preparedness can mitigate the effects of disasters and hazards on educational institutions. Disaster preparedness is essential for ensuring the safety and well-being of individuals and communities during emergencies.

Organizational resilience refers to the development of the capabilities and capacities necessary to thrive in the face of challenges and recover from difficult situations. When an organization establishes policies, practices, and processes to prepare for and recover from disasters, it has organizational resilience. (Lengnick-Hall et al., 2011). According to Mahmoudi et al. (2020), organizational resilience is a practical objective that consistently contributes to an organization's performance during business operations, disasters, and critical situations. In other words, resilience enables organizations to manage complex challenges. To foster resilience, organizations must be consistent and highly reliable. Resilience is the ability of a system to recover after an emergency.

The findings from this study may provide valuable insights in several key areas, especially in enhancing risk perception, disaster preparedness, and the implementation of disaster risk reduction management in schools. These insights can enhance the organizational resilience of schools, enabling them to maintain their operations and deliver quality services before, during, and after a hazard occurs. This resilience can lead to significant academic successes, foster a positive school culture, promote partnerships, enhance adaptability, increase student engagement, and ultimately support lifelong quality learning services.

2. Literature Review

2.1. Risk Perception

Risk perception, for this reason, must be considered as a required component of risk management alongside more scientific assessments. Perceived risks are often distinct from objective risks, largely because people perceive some risks very differently from the predictions made by the more objective assessment models. Perceived risk is based on an individual's perception of the threat and is associated with their value judgment. Usually, such a cognitive process is based upon emotional reaction rather than a "reasoned response". (Ferrier and Haque, 2001)

In the theory of planned behavior, attitude is the first construct affecting intention. Attitude refers to the extent to which a person develops a positive or negative perception toward a given behavior (Ajzen 1991). Attitude may be categorized as cognitive (that is, beliefs or knowledge about an attitude object), affective (that is, the feelings or emotions toward an object), and behavioral (that is, the way that a person has influenced their behavior) (Eagly and Chaiken 2007). Significant associations between attitude and intention can be observed in various settings and contexts, as evidenced by a large number of published works.

The second construct is subjective norm, which reflects a person's perceptions of how others expect them to behave. Subjective norm consists of injunctive (that is, how the social network wants this person to behave) and descriptive (that is, the behavior of the social network) components (Daellenbach et al. 2018).

The last construct, perceived behavioral control, is the volitional factor in the Theory of Planned Behavior. It incorporates a person's perception of their capacity or control over their behavior (Ajzen, 1991). Perceived behavioral control consists of internal (that is, self-efficacy; the belief for a person to be capable of performing a given behavior) and external (that is, perceived controllability; the barriers to performing a given behavior) components (Ajzen 2002). Manstead and van Eekelen (1998) suggested that self-efficacy primarily affects intention, while perceived controllability influences behavior. Therefore, perceived behavioral control affects both behavioral intention and actual behavior (Sai Leung Ng, 2022)

2.2 Disaster Preparedness

According to Ronquillo's 2020 study, there are three levels of preparedness: community risk assessment, Communication System, and Capacity building.

Community Risk Assessment is a participatory process for assessing hazards, vulnerabilities, risks, and the ability to cope, preparing coping strategies, and ultimately implementing a risk reduction options plan by the local community. Community risk assessment utilizes scientific information and predictions, as well as participatory discourses, to identify, analyze, and evaluate the risk environment of a particular community. It aims to reach consensus among the community on actions needed to manage the risk environment. CRA serves two purposes: Informs Local Decision-Making: It provides data on the nature and level of risks, who is most affected, available means to reduce risks, and potential initiatives to reduce vulnerability and build capacity. Empowers Communities: The participatory process strengthens community engagement, allowing them to understand their capacities, enhance self-confidence, and actively contribute to problem-solving. (A Facilitator's Guidebook for Community Risk Assessment and Risk Reduction Action Plan).

Communication during and immediately after a disaster situation is a crucial component of response and recovery, as it connects affected individuals, families, and communities with first responders, support systems, and other family members. Reliable and accessible communication and information systems are also key to a community's resilience. (East Asia Summit Earthquake Risk Reduction Centre) By developing a comprehensive disaster

communication system and implementing it before an emergency strikes, organizations can be better prepared to manage crises and ensure the public receives timely and accurate information during difficult times. (Tulane University, 2023) In terms of a communication system as a DRRM strategy, Magunda (2010) explained that public awareness activities foster changes in behavior leading towards a culture of risk reduction. According to her, the overall objective of the communication strategy is to widely disseminate information on disasters and risk reduction, as well as their likely effects, to save lives and livelihoods.

Capacity-building plans should be integrated into the disaster management system, encompassing international, national, regional, provincial, and district (town) planning processes, as well as enhancing the quality of life by increasing both individual and societal coping capacities during the risk reduction phase. Government and civic organizations (NGOs, Red Cross, etc.) should work decisively together to build the community's disaster response capacity. Numerous publications discuss the importance and applications of capacity building; however, the academic dimension of capacity building for disaster mitigation has not been sufficiently explored.

Individual capacity building is essential because it improves knowledge, skills, values, attitudes, health outcomes, awareness, and motivation. It requires creating conditions that encourage participation. Organizational processes, such as organizational culture and leadership, are referred to by terms including capacity development, human resources, physical resources, various networks, punishment and reward systems, and performance. Organizational capacity building determines how an individual can contribute to an organization. In an organizational-based approach, the community is at the center of disaster risk management, and all stages of this approach (diagnostics, analysis, improvement, monitoring, and evaluation) are organized around the community's interests and capabilities. In this approach, all activities are carried out by members of the community, and society must be structured to raise awareness of the need for disaster management. The environment and conditions required for developing the capacities of individuals and organizations are linked to corporate capacity building. According to these definitions, capacity building can be defined as the development of skills to reduce and cope with disasters and disaster risks in communities at the local, provincial, and national levels. (Cvetković, et al, 2021)

2.3 Disaster Risk Reduction and Management Implementation

The Philippine government has developed designs to counterbalance the effects of both natural and artificial disasters. The primary intent of formulated laws and policies is to increase the resilience of vulnerable communities and the country against natural disasters, thereby reducing damage and loss of property. In addition, R.A. 10121, also known as the Philippine Disaster Risk Reduction and Management Act, paved the way for new plans and policies to execute various measures and actions across all phases of disaster risk reduction and management (DRRM). This provided a paradigm shift from reactive to proactive, from top-down and centralized management to bottom-up and participatory disaster risk reduction process (RA 10121, 2010). Through this Act, the National DRRM Framework (NDRRMF) and National DRRM Plan (NDRRMP) were developed. Both the NDRRMF and NDRRMP foresee a country which has "safer, adaptive and disaster-resilient Filipino communities toward sustainable development". Together with the paradigm shift is the creation of the four thematic areas, namely, a) Prevention and Mitigation, b) Preparedness, c) Response, and d) Rehabilitation and Recovery. Each area has long-term goals and activities that will lead to the attainment of the overall vision in DRRM. According to the NDRRMF, resources invested in the four thematic areas must prioritize disaster prevention and mitigation, disaster preparedness and climate change adaptation to be more effective in attaining its goal and objectives (NDRRMF, 2011). While the DRRM Act provided a legal basis for its disaster risk reduction directives, the Department of Education (DepEd) issued DepEd No. 37, s. 2017 as the basis of the Basic Education Framework, with a more comprehensive Disaster Risk Reduction and Management. In this framework, the offices and schools of DepEd shall have institutionalized Disaster Risk Reduction and Management (DRRM) structures, systems, protocols, and practices. Moreover, the impact of disasters always finds its way into schools through strong typhoons and massive flooding that ruins school properties. Thus, the Philippines, being prone to disasters, warrants a closer examination of its disaster-related policies currently in place (Catanus, 2018; Mamhot, 2019).

The Department of Education has issued several DepEd Orders to guide the implementation of disaster preparedness measures and protocols. One of these is DepEd Order No. 33, s. 2021, which emphasizes guidelines for school-based disaster preparedness and response measures related to tropical cyclones, flooding, and other weather-related disturbances and calamities. This order outlines the actions that schools must take as well as the support that the schools' division office will provide.

The school must develop various programs to support both students and staff in the event of any disasters. The educational system needs to implement these supportive initiatives. In many countries that are susceptible to disasters, major disasters have been integrated into the curricula. Therefore, education and training in disaster preparedness are crucial components of classroom instruction (Gerdan, 2014).

Shat et al. (2020) emphasize that the primary goal of school emergency responses is to protect children until they can reunite with their families. Investigating these responses can help identify strengths, weaknesses, and variations in emergency preparedness practices. Sena (2019) defines disaster preparedness as the readiness to respond to crises and emergencies. It involves providing leadership, training, and support to communities and governments, enhancing the capabilities of emergency responders to prepare for disasters, mitigate their effects, and facilitate recovery efforts.

A vital responsibility of school administrators and staff is to take proactive measures to ensure the safety of students. Consequently, it is essential to assess whether these key individuals are familiar with the safety plans and adequately prepared for any potential disasters that may arise within the school. (Dela Cruz and Ormilla, 2022)

It is imperative to evaluate the extent to which learners and educators are familiar with the safety plans and adequately prepared for potential disaster situations (Mamogale, 2011). Grant (2012) underscored that disaster awareness in educational institutions can be effectively integrated through the

strategic dissemination of safety protocols, the installation of firefighting equipment, the provision of clear evacuation routes, and the ongoing maintenance of school facilities. Additional measures include organizing seminars focused on disaster awareness, engaging in peer education initiatives, and utilizing both electronic and print media to promote awareness. Furthermore, the incorporation of action learning methodologies and the integration of disaster risk studies within the framework of science education can significantly enhance overall disaster preparedness. (Tizon and Comighud, 2020)

Disaster preparedness encompasses strategies designed to prepare for catastrophic events effectively. Essential activities involve establishing policies, offering training, and disseminating information (Bello et al., 2022). To mitigate the impacts of disasters, individuals gather supplies and conduct drills, adhering to organized guidelines and checklists for preparing homes, communities, and schools (Bronfman et al., 2019).

Alayna et al. (2016), Garcia (2016), and Mamon (2017) recognized the need for further research on the status and implementation of school Disaster Risk Reduction and Management (DRRM) programs, particularly regarding the preparedness of teachers and students for natural disasters. They emphasized that a thorough understanding of the current state of these programs is essential for effectiveness. Additionally, Garcia (2016) and others highlighted the necessity of conducting studies to evaluate the readiness of staff and students to respond to emergencies, which would help identify areas for improvement. The authors stressed the importance of ongoing evaluation to enhance schools' resilience and ensure the safety and well-being of students and staff during crises.

2.4 Organizational Resilience

Preparedness for and the management of natural and artificial hazards are a concern not just for governments and communities, but also for organizations. Organizations can face significant damages and losses, just as their workers may experience negative outcomes to their productivity and well-being. Thus, resilience, or the ability to recover from adversity, is important for both organizations and their members. An organization's ability to become resilient is dependent on the presence of organizational processes, practices and procedures that enable it to overcome challenges (Lengnick-Hall et al., 2011).

The assessment of risks has led to a range of approaches for evaluating these uncertainties, including models that describe how risks impact individuals or organizations. Accident avoidance should be explored to understand and support resilience. Resilience should be prioritized based on its impact on safety and cost, just like other mitigating actions in regular hazard analysis. Hazards are deemed to be acceptable or not acceptable based on an assessment of hazard criticality. (S. Johnsen, 2010)

A robust communication system is a key element for any organization. It holds even greater importance in the face of a crisis and is considered a key element in building organizational resilience. It holds special importance in organizations that rely heavily on communication to coordinate their resources. (Cristina Ruiz-Martin, Gabriel Wainer, Adolfo Lopez-Paredes, 2021)

Building institutional capacity to prevent, prepare and respond to disasters is among the aspects emphasized in the Hyogo Framework for Action 2005-2015 to enhance the resilience of disaster-affected communities. Lessons from past programs can inform the design and implementation of future capacity-building interventions, aiming to make them both a means and an end in themselves for building disaster resilience in communities and nations. (Tadele, and Manyena, 2009)

Building resilience requires managing risks as encapsulated in the term Disaster Risk Management (DRM) defined as "the systematic process of using administrative directives, organizations and operational skills and capacities to implement strategies, policies and improved coping capacities to lessen the adverse impacts of hazards and the possibility of disaster" (Dangcalana et al., 2019)

Resilience is both a function of planning for and preparing for future crises (planned resilience) and adapting to chronic stresses and acute shocks (adaptive resilience). (Barasa et al, 2018)

Crises are marked by a high degree of anxiety and ambivalence, which, if not contained, can unfold highly dysfunctional behavior, especially at a time when ideally the focus needs to be fully on the task at hand. It is therefore appropriate to study how a company interacts within its system environment during a crisis, and how collective emotions and change dynamics influence its behavior and actions. Therefore, system psychodynamic thinking (Vries & Cheak, 2014) will be applied to understand the emergent nature of organizational resilience further.

Both risk management and contingency planning are critical components of organizational resilience. Risk management enables organizations to anticipate and mitigate potential threats, while contingency planning provides a practical framework for responding to risks that materialize. Contingency planning is crucial for ensuring that an organization can continue to function in the event of a disruption. The primary purpose of these plans is to provide a predefined response to potential crises, reducing downtime and minimizing operational impact. Contingency plans should be regularly developed, updated, and tested to ensure they are effective and practical. Testing can be done through simulations or drills to identify weaknesses and improve the plan's functionality. Regular reviews also enable organizations to identify and address new risks, as well as refine their response strategies as needed. (Guillaume, 2024)

Adaptive capacity refers to the arrangements and processes that enable adjustment through learning, adaptation, and transformation. (Parsons et al, 2016)

Adaptive capacity is a vital dimension that leads to organizational resilience in maintaining organizational missions when faced with unsettling events (Dutra et al., 2015). Furthermore, it enables the sustainability of an entity through the practical use of organizational resources, thereby decreasing the undesirable outcomes of change and enhancing institutional effectiveness (Keenan, 2016).

The adaptive capacity of an entity enables swift and substantial responses to disturbances (Rahi 2019). When adaptive capacities are expressed as actions, this can result in adaptation and heighten a system's managing capability and, in so doing, reduce its vulnerability to environmental hazards (Brooks & Adger 2005; Rahi 2019)

2.5 Risk Perception and Disaster Preparedness

Perception of risk has been identified as the most critical factor driving disaster preparedness. Several studies that have been conducted share similarities, namely individual subjective assessment and risk assessment or risk perception, as critical factors that explain emotional responses, behavior, and cognitive processes in responding to a disaster. Risk perception is "subjective judgments about the likelihood of certain events occurring and how concerned we are with consequences". Risk perception involves assessing a risk's potential and its associated negative consequences. According to Z. Akbar et al. (2020), Risk perception is defined as a person's beliefs, attitudes, judgments, and feelings, as well as the social or cultural values that a person adopts regarding the dangers and benefits associated with a particular situation. People respond to the threat they perceive; if their perceptions are incorrect, then self-protection efforts, the public, and the environment will also be misguided. Several factors have been identified that can influence the perception of disaster risk. One is that personal experience has a strong impact on disaster risk perception, making people more aware of the risks they might face. It was also found that knowledge of disasters, through education and awareness, would lead to a more accurate risk perception.

In the context of disaster preparedness behavior, risk perception is a central aspect of numerous previous studies on disaster preparedness (Paul and Bhuiyan, 2010; Shreve et al., 2016). According to Lazo et al. (2015), the popularity of risk perception suggests its potential to extend the theory of planned behavior in predicting disaster preparedness behavior.

Based on the research of An Gie Yong et al. (2017), effective risk communication and management require an understanding of how lay individuals perceive risks. Although there are different theoretical explanations for lay individuals' risk perception, most theorists agree that individuals must first believe the hazard is valid before any actions can occur. Indeed, research has demonstrated that individuals' subjective evaluation of natural hazards is an important factor in their disaster preparedness. However, the direct link between risk perception and disaster preparedness has not been consistently reported in the literature. The mixed findings could be attributed to the varying operationalizations of risk perception and disaster preparedness. For instance, Ozdemir and Yilmaz demonstrated how different dimensions of individuals' risk perception for earthquakes (e.g., perceived likelihood of earthquake versus beliefs about responsibility for earthquake mitigation) predicted different types of preparedness behaviors. Likewise, other studies have demonstrated that risk perception consists of multiple dimensions, and different risk perception dimensions are associated with different behavioral responses. These studies suggest that individuals' risk perception is a cogent, rich structure that is beyond the evaluation of hazard characteristics. Individuals' risk perception is valuable as it encompasses beliefs about responsibility, control, acceptability, and response to hazards. Accordingly, we defined individuals' risk perception for natural disasters as a multidimensional structure consisting of beliefs about natural disaster risks and issues.

2.6 Risk Perception and DRRM Implementation

Based on the study of A. Haque and K. Fatema (2022). Perceived risk of disaster is important in influencing adaptive behavior. Disaster risk reduction interventions can therefore benefit from inclusive local consultation during the planning and implementation stages, by taking into account local people's perceived risk of disaster.

According to the study by Comighud (2018) and Faustino et al. (2019), another study aimed to determine the status of the implementation of the DRRM program in public elementary and secondary schools on the Island of Samar, which is vulnerable to typhoons. The public schools on the Island of Samar were found to be vulnerable to tropical storms, flash floods, and cyclones. Insufficient funding from DepEd for DRRM implementation in schools, limited financial support from stakeholders, inadequate equipment and facilities for DRRM implementation, and a lack of modern technology needed for implementation are among the issues faced by the respondents.

Additionally, based on Mamon et al. (2017), some aspects of disaster risks are understood by the respondents, and most of them are ready, adapted, and aware of the hazards that natural disasters can cause. However, students have a very low perception of disaster risk. Based on these findings, the core subject of Earth and Life Science somehow elevated the students' knowledge of natural hazards. Learning competencies include recognizing hazards, creating hazard maps for identification, and practical ways to cope with geologic, hydrometeorological, and coastal processes. Geologic processes include earthquakes, volcanic eruptions, and landslides. Hydrometeorological processes include tropical cyclones, monsoons, floods, and tornadoes. Coastal processes include erosion, submersion, and saltwater intrusion. These competencies enhance students' understanding of the basic concepts related to natural hazards and the measures of mitigation and adaptation. Disaster risk perception must be improved among students to make informed judgments about the imminent dangers of natural hazards. Risk perception among students shall be developed to ensure an effective and protective public response and action.

The study by Le Brocque et al. (2017) highlighted the role of teachers and other school personnel in providing mental health and psychosocial (MHPSS) support to learners during post-disaster events. In connection with this, it was also revealed that the school serves as a platform where learners regain their sense of normalcy. Despite this idea, it is sad to know that most of the teachers are not trained on how to handle the post-traumatic behavior of learners in school.

2.7 Disaster Preparedness and DRRM Implementation

According to Astulil et al. (2021), Murti and Mathez-Stiefel (2019), and Wu and Guo (2021), the concept and practice of disaster risk reduction involve systematically identifying and mitigating the factors that contribute to disasters. Disaster risk reduction practices include lowering the vulnerability of people and property, reducing exposure to hazards, managing land and the environment carefully, and enhancing preparedness for unfavorable events. Disciplines such as disaster management, mitigation, and preparedness are all encompassed in disaster risk reduction (DRR), which is also a component of sustainable development. Development initiatives must lower the risk of Additionally based on Etikan et al. (2016), Latupeirisa, (2020), Salita et al., (2020) even though the search for natural disaster preparedness has mainly concentrated on family preparedness, the study of workplace preparedness is emerging as an appropriate field of study given the role that organizations play in the domestic economy, the lives of the individuals they employ, and even the recovery period following natural disasters. Workplace preparedness, like family preparedness, entails planning activities like talking with employees about the impact and significance of preparing the company for natural hazards, having an emergency plan in place, having alternative energy supplies for the operation of the company following a natural disaster, event's insurance, and having an emergency kit in the company.

2.8 Disaster Preparedness and Organizational Resilience

According to E. Madrigano et al (2017), Resilience will require greater focus on the factors that contribute to field building and, within that, the development of a resilience-oriented workforce. For this paper, we define a resilience-oriented workforce not as a single and unique set of professionals trained in resilience, but rather a goal state whereby all professions involved in protecting and promoting health of places and people possess the capacity (knowledge, attitudes, and skills) necessary to be integrated (not just connected) and thus resilient in the face of a disaster or other widespread stress. Prior research has suggested that a resilient community requires strong connections between neighborhoods and community organizations, as well as between a diverse range of local and non-governmental groups. These professions necessarily include those focused on building and protecting places (e.g., engineers, urban planners, architects) and those focused on promoting the health of individuals (e.g., healthcare providers, emergency managers, social service providers, faith-based organizations, public health practitioners, law enforcement).

2.9 DRRM Implementation and Organizational Resilience

In the study by Tolentino (2024), the implementation of climate change education and school disaster management, in consideration of the mentioned regulations, proved to be a diligent asset in combating threats to destabilizing school progress. Recent studies on climate change education have identified a noticeable gap in understanding the combined capabilities of climate change education and school disaster management in promoting the resilience of school organizations. Previous research has primarily focused on the science, political moves, economic concerns, and impacts of climate change, leaving the curriculum and management of schools, especially those less mentioned and visited, including Stand-alone Senior High Schools, relatively unexplored. This gap also presents an opportunity to explore the implementation of school disaster management in greater depth, thereby contributing to the existing body of knowledge on promoting higher organizational resilience in schools.

According to Aspiras, K.F. (2022), most studies and current efforts focus on community resilience, and with good reason; his study introduces another equally important dimension—the institutional resilience, specifically the Metro Manila local government units' ability to effectively and efficiently reduce risks and manage disasters. His research focuses on one aspect: intergovernmental linkages. It posits that one way to build and strengthen institutional resilience in the context of disaster risk reduction and management is through partnerships with key stakeholders, specifically government actors at all levels, that can complement the available resources of a given region or locality before, during, and after a disaster.

3. Hypotheses

The study posited the following hypothesis.

1. There is no significant relationship between risk perception and disaster preparedness.
2. There is no significant relationship between risk perception and the implementation of Disaster Risk Reduction and Management (DRRM).
3. There is no significant relationship between disaster preparedness and the implementation of Disaster Risk Reduction and Management (DRRM).
4. There is no significant relationship between disaster preparedness and organizational resilience.
5. There is no significant relationship between the implementation of DRRM and organizational resilience.

4. Methodology

The researcher used the descriptive correlational method. According to Tuquero et al. (2025), a descriptive correlational design was employed to examine the relationships between selected variables, including risk perception, disaster preparedness, disaster risk reduction and management (DRRM) implementation, and organizational resilience. The descriptive method also involves collecting data to test hypotheses or answer questions concerning the status of the subject of the study. This is a fact-finding study that provides an in-depth and accurate interpretation of the findings.

The population of this study includes randomly selected teachers from 10 schools in the Ambray District. A survey questionnaire was distributed to 10 schools in the Ambray District, and 120 respondents took the time to answer the survey using Google Forms. These respondents are the source of information for the research conducted during the academic year 2024-2025.

The researcher used survey questionnaires to determine the respondents' disaster preparedness, risk perception, disaster risk reduction management implementation, and organizational resilience of the Ambray District. The questionnaire was structured into five sections. The first section collects demographic information from the respondents, including age, gender, civil status, type of school, teacher position, educational attainment, and length of service. The second section centers on risk perception, while the third pertains to disaster preparedness. The fourth section evaluates the school's disaster risk reduction management, and the final section focuses on organizational resilience.

Disaster preparedness, Risk Perception, Disaster Risk Reduction and Management, and organizational resilience were measured using a questionnaire. The questionnaire includes a 4-point Likert scale.

The measurement items for attitude, subjective norm, perceived behavioral control, and intention regarding disaster preparedness were adapted from the works of Ajzen (1991), Najafi et al. (2017), Daellenbach et al. (2018), Tan et al. (2020), and Ng (2021). The questionnaire will utilize a 4-point Likert scale for responses. Participants rated the items based on the following options: 4= Strongly Agree, 3= Agree, 2= Disagree, 1= Strongly Disagree.

Disaster preparedness includes Community Risk Assessment, Communication System, and Capacity Building. The items were rated based on the following: 4= Strongly Agree, 3= Agree, 2= Disagree, 1= Strongly Disagree.

The measurement items for DRRM Implementation are Prevention, Preparedness, Response, and Recovery. The questionnaire will utilize a 4-point Likert scale for responses. Participants rated the items based on the following options: 4= Strongly Agree, 3= Agree, 2=Disagree, 1= Strongly Disagree.

The Benchmark Resilience Tool (BRT-53) assesses the practical application of the theoretical constructs that comprise organizational resilience. The basis of the BRT-53 was developed from the qualitative work of McManus (2008), who investigated the resilience of organizations in New Zealand. McManus (2008) identified 15 indicators of organizational resilience grouped under three factors. Stephenson (2010), building on the work of McManus (2008), then developed a quantitative methodology that measured the indicators of organizational resilience. This later work of Stephenson (2010a) and Lee et al (in press) led to the current form of the BRT-53. Using exploratory factor analysis (EFA) techniques, 53 items are constrained by 13 theoretical constructs defined as "indicators" that are found to be constituents of a two-factor model of organizational resilience. The two latent factors are named: adaptive capacity and planning. The questionnaire will utilize a 4-point Likert scale for responses. Participants rated the items based on the following options: 4= Strongly Agree, 3= Agree, 2= Disagree, 1= Strongly Disagree.

The results of the reliability testing, as measured by Cronbach's Alpha, indicate that the validated instrument is highly consistent internally across its respective subscales. All subscales have alpha measures in the commendable to acceptable range, with none falling below the critical value of 0.70. The subscales under the "Risk Perception" and "Organizational Resilience" categories also demonstrated high reliability, with Cronbach's Alpha values ranging from 0.823 to 0.890, indicating good internal consistency.

Additionally, "Disaster Preparedness" and "DRRM Implementation" items also showed acceptable reliability, with alpha measures of 0.707 to 0.896, reflecting that the items in each construct measure consistently the variables of concern. These results affirm the reliability of the instrument in measuring perceptions, preparedness, and resilience in the context of disaster risk reduction and management, thus endorsing its use in future data collection and analysis.

The researcher obtained written permission to study at the district supervisor's office. The researcher then informed the principal about the study's findings and procedures. Following the acceptance of the questions, the researcher delivered and administered them to the respondents. Once the respondent has completed the questionnaire, the researcher quickly retrieves the instrument. The survey questionnaires contain questions that respondents must respond to.

After several consultations between the researcher and his adviser, the topic or concept was conceptualized and submitted to the Dean's office. A panel of experts reviewed it to ensure the content's quality. Suggestions from the panel were considered during the refinement of the concept before its intended implementation.

The researcher obtained permission to conduct the study from the San Pablo School Division Superintendent's Office. Furthermore, assistance from school administrators was requested to ensure the successful dissemination of the research instrument.

Following her approval, a letter was sent to the Ambray District's district supervisor, principals, and all school heads informing them of the researcher's desire to collect data at their stations.

Following approval of the permission letter by the superintendent, district supervisors, principals, and school heads' offices, the researcher conducted her study as follows: First, with the help of the school heads, the researcher sent the questionnaire link to the respondents via Google Forms. They had plenty of time to finish the questionnaire. The researcher was constantly watching the respondents' responses. The researcher immediately turned off the link after retrieving all the responses at the specified time, as there would be no responses to accept.

After respondents completed the online survey form, the researcher compiled all the instruments and gathered all the necessary data. The researcher kept track of the data before passing it on to the statistician. The data will then be statistically processed. When the statistician delivered the results, the researcher prepared and analyzed tables to gain a deeper understanding of the study's focus.

Ethical Consideration. The researcher was confident that the respondents' responses and information would remain private. The researcher and thesis adviser kept the survey questionnaire data results confidential. The names of the respondents were also omitted from this paper.

The collected data were statistically analyzed to determine respondents' demographics, including age, gender, marital status, school type, teaching position, educational attainment, and years of service. The researcher used means and standard deviations to describe risk perception, disaster preparedness, DRRM implementation, and organizational resilience. Pearson r Correlation and Serial Mediation were used to determine whether there is a link among disaster preparedness, risk perception, DRRM implementation, and organizational resilience.

5. Results and Discussion

Table 1. Frequency Distribution of the Respondents

| | Frequency | Percent | Cumulative Percent |
|--|-----------|---------|--------------------|
| Age | | | |
| 26-30 years old | 37 | 30.8 | 30.8 |
| 31-35 years old | 15 | 12.5 | 43.3 |
| 36-39 years old | 16 | 13.3 | 56.7 |
| 40 years old and above | 52 | 43.3 | 100.0 |
| Gender | | | |
| Male | 10 | 8.3 | 8.3 |
| Female | 110 | 91.7 | 100.0 |
| Civil Status | | | |
| Single | 38 | 31.7 | 31.7 |
| Married | 80 | 66.7 | 98.3 |
| Widow/Widower | 2 | 1.7 | 100.0 |
| School Type | | | |
| Small | 12 | 10.0 | 10.0 |
| Medium | 85 | 70.8 | 80.8 |
| Big | 23 | 19.2 | 100.0 |
| Teacher Position | | | |
| Teacher I | 32 | 26.7 | 26.7 |
| Teacher II | 27 | 22.5 | 49.2 |
| Teacher III | 52 | 43.3 | 92.5 |
| Master Teacher I | 6 | 5.0 | 97.5 |
| Master Teacher II | 3 | 2.5 | 100.0 |
| Educational Attainment | | | |
| with Bachelor's Degree | 16 | 13.3 | 13.3 |
| College Degree with Units in Education | 2 | 1.7 | 15.0 |
| With MA Units | 47 | 39.2 | 54.2 |
| With Master's Degree | 55 | 45.8 | 100.0 |

| Length of Service | | | |
|--------------------------|------------|--------------|-------|
| 0-5 years | 31 | 25.8 | 25.8 |
| 6-10 years | 31 | 25.8 | 51.7 |
| 11-15 years | 20 | 16.7 | 68.3 |
| 16-20 years | 17 | 14.2 | 82.5 |
| 20 years and above | 21 | 17.5 | 100.0 |
| Total | 120 | 100.0 | |

Table 1 presents the distribution of respondents across their seven profiles. For age, most respondents are 40 years old or above, accounting for 43.3% of the total sample size. It is then followed by the youngest age group, aged 26 to 30 years. The remaining age groups (31-35 years old and 36-39 years old) have almost the same sample size, with 15 and 16 samples, respectively. This shows that most of the samples came from the oldest and youngest respondents. Regarding their gender, more than 90% of the respondents are female, while the remaining 10% are male. This is not a shocking result, as the majority of the teaching force in the Philippines is predominantly female. Many of the respondents were also married, which constitutes 2/3 of the total sample size. It is then followed by single teachers, covering 31.7% of the total sample size. Only two samples were identified as widows/widowers.

Regarding school types, the majority of respondents were from a medium-sized school, comprising 85 samples, or 70.8% of the total sample size. It is then followed by respondents from big schools, covering 19.2% of the total sample. Only 12 respondents were identified as being from a small school.

For teaching positions, most respondents hold the position of Teacher III, with a frequency of 52, covering 43.3% of the total sample size. It is then followed by the Teacher I position, covering slightly more than a quarter of the total sample size. The least number of teaching positions counted among the respondents are from Master Teacher I and II, with 5.0% and 2.5% of the sample size, respectively. This shows that the majority of the respondents have more than 5 years of teaching experience.

The majority of the respondents have attained a Master's Degree or have MA Units, covering a cumulative percentage of 85%. The remaining 18 samples are teachers who meet the minimum teaching requirement for an entry-level teaching position. This reflects that the respondents are actively pursuing continuous professional development even after being hired in DepEd.

And for length of service, more than ½ of the total sample size are teachers with at most 10 years of teaching experience. There are still a noticeable number of veteran teachers with more than 20 years of teaching experience. This suggests that schools are now staffed with a younger generation of teachers in the field.

Table 2. Risk Perception of the Respondents as to Attitude

| | | Mean | SD | VI |
|----------------|---|-------------|--------------|------------------------|
| 1. | The teacher has relevant information on disasters/hazards. | 3.79 | .408 | Highly Observed |
| 2. | The teacher has an awareness strategy exists to stimulate resilience. | 3.79 | .408 | Highly Observed |
| 3. | The teacher provides an effective platform for transferring information, knowledge, and skills to the learners. | 3.78 | .419 | Highly Observed |
| 4. | The teacher has mobilized other stakeholders to take part. | 3.72 | .453 | Highly Observed |
| 5. | The teacher improves disaster management training through stimulation exercises, drills, or workshops should be provided. | 3.78 | .414 | Highly Observed |
| Overall | | 3.77 | .3443 | Highly Observed |

Legend: 1.00-1.49 Not Observed; 1.50-2.49 = Slightly Observed; 2.50-3.49 = Substantially Observed; 3.50-4.00 = Highly Observed

Table 2 depicts the respondents' risk perception in terms of attitude. With an overall mean of 3.77 and a standard deviation of 0.3443, it is evident that all indicators of respondents' risk perception are highly correlated with their attitude. The greater the risk, the more likely individuals are to take action to mitigate it. Teachers generally rated themselves highly in terms of processing and disseminating relevant information on disasters, advocating for resilience awareness among peers and students, and actively facilitating disaster education. The respondents show a cautious or serious attitude towards risk. The results highlight that respondents recognize the identified risk as significant, suggesting a strong interest in implementing proactive measures to address it effectively.

The teacher has relevant information on hazards and an awareness strategy to stimulate resilience, with a mean of 3.79 and a standard deviation of 0.408. Educators are aware of the potential risks and dangers that could impact the school community. The schools provide informative posters to educate and remind students, faculty, and staff about safety protocols before, during, and after a disaster. The schools also practice drills every quarter. According

to Dela Cruz and Ormilla (2022), teachers are aware of hazards and understand the Disaster Risk Reduction and Management (DRRM) program and its activities.

A mean of 3.72 and a standard deviation of .453 suggests that the teacher has mobilized other stakeholders to participate. This indicates that teachers actively encouraged others, such as parents, school staff, local organizations, or even government officials, to participate in educational activities, projects, or initiatives. The school has an incident command system, including a barangay component. Officials, SPTA Officers, and teachers. According to Dela Cruz & Ormilla (2022), school and community stakeholders are engaged and asked to participate in integrating DRR in the educational programs and activities that promote DRR awareness.

Table 3. Risk Perception of the Respondents as to Subjective Norm

| | | Mean | SD | VI |
|----------------|--|-------------|--------------|------------------------|
| 1. | The school organization has well-established disaster response and relief operations. | 3.74 | .458 | Highly Observed |
| 2. | The school organization has an adequate and prompt assessment of needs and damages. | 3.74 | .440 | Highly Observed |
| 3. | The school organization has an integrated Search, Rescue and Retrieval (SRR) capacity. | 3.63 | .593 | Highly Observed |
| 4. | The school organization has a temporary shelter and/or structural needs are adequately addressed. | 3.72 | .522 | Highly Observed |
| 5. | The school organization has a basic social service provided to affected population (whether inside or outside Evacuation Centers). | 3.69 | .547 | Highly Observed |
| Overall | | 3.71 | .4220 | Highly Observed |

Legend: 1.00-1.49 Not Observed; 1.50-2.49 = Slightly Observed; 2.50-3.49 = Substantially Observed; 3.50-4.00 = Highly Observed

Respondent's risk perception as to subjective norm was displayed in Table 3. With an overall mean of 3.71 and a standard deviation of 0.4220, it is evident that all indicators in respondents' risk perception are highly correlated with their subjective norm. As the level of risk increases, individuals are more inclined to take proactive measures to mitigate potential consequences. This indicates that teachers take disaster safety seriously and prepare.

Most teachers (3.74) agree that their school organization has well-established disaster response and relief operations and has an adequate and prompt assessment of needs and damages. Schools from the Ambray District gather real-time disaster information, if needed, coordinate with local government units, and demonstrate their readiness to adhere to the procedure for providing response and relief operations. These also indicate that teachers perceive a stable institutional system that encourages preparedness norms among the community.

The respondents reported, on average, that the school organization has an integrated Search, Rescue and Retrieval (SRR) capacity, assigning it a score of 3.63. In the event of a biological hazard, the school staff is prepared to coordinate effectively with local emergency response teams. Comighud (2020) demonstrates that the SDRRM team members have effectively met the basic substance needs and provided basic life preservation during or immediately following a disaster through partnership mechanisms with utility providers and key stakeholders.

Table 4. Risk Perception of the Respondents as to Perceived Behavioral Control

| | | Mean | SD | VI |
|----------------|--|-------------|--------------|------------------------|
| 1. | The teacher upholds professional ethics with a focus on compassion, empathy, and respect for others. | 3.86 | .350 | Highly Observed |
| 2. | The teacher can communicate well with other team of professionals. | 3.87 | .341 | Highly Observed |
| 3. | The teacher makes someone feel a strong desire to do something. | 3.85 | .359 | Highly Observed |
| 4. | The teacher can quickly adapt to the work environment by controlling my psychological state in emergencies | 3.81 | .395 | Highly Observed |
| 5. | The teacher works with the stakeholders for the community's benefit. | 3.80 | .422 | Highly Observed |
| Overall | | 3.84 | .2979 | Highly Observed |

Legend: 1.00-1.49 Not Observed; 1.50-2.49 = Slightly Observed; 2.50-3.49 = Substantially Observed; 3.50-4.00 = Highly Observed

Table 4 presents respondents' risk perception as to their perceived behavioral control. An overall mean of 3.84 and a standard deviation of 0.2979 indicate that the respondents' risk perception is highly correlated with their perceived behavioral control. As the level of risk increases, individuals tend to adopt proactive strategies to mitigate potential consequences effectively.

The teacher can communicate effectively with other teams of professionals, with a mean of 3.87 and a standard deviation of 0.341. The teachers share the DRRM plans and program with other professionals. Cubillas (2016) highlighted the importance of collaboration among school stakeholders in developing effective disaster risk reduction management (DRRM) plans. This involves engaging teams such as first aid, search and rescue, fire safety, and communication to create a comprehensive strategy. Teachers also have access to emergency hotlines or communication channels to quickly connect with other professionals, such as school administrators, teachers, DRRM coordinators, DepEd SPC DRRM, and barangay emergency responders. This reflects that the teachers are highly confident in their ability to manage emergencies and natural calamities, thanks to their strong communication skills, empathy, and effective stakeholder engagement. The highest item indicates that teachers are confident in their ability to communicate effectively with other professionals, which is crucial in emergencies. Drabek (2003) emphasized that a strong leader in DRRM can positively influence the team's performance by maintaining control and guiding their efforts, ultimately fostering successful mitigation, preparedness, response, and recovery initiatives.

A mean of 3.80 and a standard deviation of 0.422 suggest that teachers working with stakeholders for the community's benefit is highly observed. Teachers help in implementing DepEd's DRRM policies by integrating disaster awareness, climate change education, and safety protocols. Educators share the responsibility with various stakeholders to enhance the well-being of the community and to cultivate a safe and supportive environment. These actions build resilience and preparedness within the community.

Table 5. Summary Table on Risk Perception

| Subscales | Mean | SD | VI |
|------------------------------|-------------|-------------|------------------------|
| Attitude | 3.77 | 0.3443 | Highly Observed |
| Subjective Norm | 3.71 | 0.4220 | Highly Observed |
| Perceived Behavioral Control | 3.84 | 0.2979 | Highly Observed |
| Overall | 3.77 | .307 | Highly Observed |

Legend: 1.00-1.49 Not Observed; 1.50-2.49 = Slightly Observed; 2.50-3.49 = Substantially Observed; 3.50-4.00 = Highly Observed

Table 5 presents the consolidated data on the respondents' level of risk perception, with an overall mean of 3.77 and a standard deviation of 0.307. The results show that attitude, subjective norm, and perceived behavioral control are highly observed. Perceived behavioral control has the highest mean of 3.84 and a standard deviation of .2979. On average, Subjective norm has a mean of 3.71 and a standard deviation of .2979. The results also show that the respondents have a high level of risk perception, indicating a high level of awareness and recognition of disaster-related risks. This means that they have a high level of appreciation of possible hazards and the necessity of individual and collective actions in mitigating these risks. The high level of risk perception among the respondents can increase the advocacy of more proactive actions towards disaster preparedness and response. Cisternas et al. (2023) found that risk perception is the primary motivator for preparedness actions.

Table 6. Respondent's Level of Disaster Preparedness as to Community Risk Assessment

| | | Mean | SD | VI |
|----------------|---|-------------|-------------|------------------------|
| 1. | Disseminate vital information regarding disaster risks and the appropriate protective measures that can be taken. | 3.80 | .402 | Highly Prepared |
| 2. | Foster collaboration and cooperation among disaster experts. | 3.74 | .458 | Highly Prepared |
| 3. | Conduct hazard mapping activities, risk identification, and vulnerability assessment. | 3.67 | .505 | Highly Prepared |
| 4. | Develop an evacuation layout/plan to identify sufficient and safe evacuation areas and accommodate evacuation routes. | 3.75 | .454 | Highly Prepared |
| 5. | Implement security and safety measures on the school premises. | 3.78 | .439 | Highly Prepared |
| Overall | | 3.74 | .381 | Highly Prepared |

Legend: 1.00-1.49 Not Prepared; 1.50-2.49 = Slightly Prepared; 2.50-3.49 = Substantially Prepared; 3.50-4.00 = Highly Prepared

Table 6 presents the respondents' level of disaster preparedness about community risk assessment. An overall mean score of 3.74 and a standard deviation of .381 indicates that the respondents feel highly prepared. The results indicate that the respondents are well-equipped to handle emergencies within the context of community risk assessment. Schools are actively engaging in risk mapping, collaborating with experts, and developing evacuation plans in partnership with local government agencies. Teacher respondents recognize their clear roles and responsibilities in community-level risk reduction efforts.

Disseminate vital information regarding disaster risks and the appropriate protective measures, with the highest mean of 3.80 and a standard deviation of .402. This highlights the important role teachers play in effectively sharing essential information about potential risks. Teachers identify community

hazards and integrate them into relevant subjects, using infographics and posters to explain the types of disasters and safety measures. They also organize emergency drills to help learners practice response procedures. According to Sahudra et al. (2024), disaster education encompasses conveying information about various types of disasters, recognizing early warnings, implementing safety measures, and the role of individuals in disaster preparation and management.

A mean of 3.67 and a standard deviation of .505 suggest that respondents conduct hazard mapping activities, risk identification, and vulnerability assessment. According to Pandapatan (2024), teachers believe that their school provides the necessary warning systems and evacuation maps to mitigate the impact of disasters and alert staff and students to evacuate quickly.

Table 7. Respondent's Level of Disaster Preparedness as to Communication System

| | | Mean | SD | VI |
|----------------|---|-------------|-------------|------------------------|
| 1. | Conduct information dissemination and organize units assigned to give warning signs. | 3.78 | .439 | Highly Prepared |
| 2. | Disseminate the risk reduction plan to the whole school community, such as signage and a communication corner | 3.74 | .458 | Highly Prepared |
| 3. | Identify the individuals and agencies to contact for assistance and post a list of emergency telephone numbers. | 3.79 | .428 | Highly Prepared |
| 4. | Clarifies the responsibilities of teachers and school staff in emergencies. | 3.83 | .403 | Highly Prepared |
| 5. | Comprehensively understand the Incident Command System | 3.78 | .458 | Highly Prepared |
| Overall | | 3.78 | .380 | Highly Prepared |

Legend: 1.00-1.49 Not Prepared; 1.50-2.49 = Slightly Prepared; 2.50-3.49 = Substantially Prepared; 3.50-4.00 = Highly Prepared

Table 7 presents the respondents' level of disaster preparedness regarding the communication system. It shows that the respondents are overall highly prepared (3.78) for any emergencies in terms of the communication system. Teachers are viewed as having high performance in promulgating warnings from local DRRMCs, emergency contacts, and in understanding and using the Incident Command System. This result shows that teachers highly value the importance of having organized communication channels during different crises.

Clarifies the responsibilities of teachers and staff in emergencies, with the highest mean of 3.83 and standard deviation of .403. The school principals are tasked with ensuring that teachers are adequately prepared to respond to emergencies. Based on Atillo et al (2025), working closely with the DRRM team and ensuring that everyone knows their role through regular meetings and simulations was a fundamental strategy. They noted the importance of assigning teams to specific tasks, such as monitoring gates, which helped manage the movement of students smoothly during emergencies.

The respondents reported that, on average, disseminating a risk reduction plan to the whole community, such as through signage and a communication corner, received a score of 3.74 with a standard deviation of 0.458. Hart and Bratt's (2021) framework emphasizes that clear, transparent communication is essential for minimizing confusion and maintaining order. Furthermore, involving the community in planning drills and emergency protocols fosters a shared sense of responsibility and strengthens the collective response capacity of the school environment.

Table 8. Respondent's Level of Disaster Preparedness as to Capacity Building

| | | Mean | SD | VI |
|----------------|---|-------------|-------------|------------------------|
| 1. | Engage in acquiring essential knowledge regarding survival kits, equipment, and tools necessary for effective disaster preparedness and response. | 3.75 | .472 | Highly Prepared |
| 2. | Plan and regularly review the school DRRM and Contingency Plan to align it with the local plan. | 3.71 | .509 | Highly Prepared |
| 3. | Integrate risk reduction and management into the curriculum and other forms of informal education. | 3.78 | .419 | Highly Prepared |
| 4. | Conduct capability training workshops for community members and hold regular meetings. | 3.66 | .558 | Highly Prepared |
| 5. | Ensure that all concerned parties report and follow the flow of activities during and after a disaster by the DRRM Team. | 3.71 | .474 | Highly Prepared |
| Overall | | 3.72 | .409 | Highly Prepared |

Legend: 1.00-1.49 Not Prepared; 1.50-2.49 = Slightly Prepared; 2.50-3.49 = Substantially Prepared; 3.50-4.00 = Highly Prepared

Table 8 presents the respondents' level of disaster preparedness in terms of capacity building. All indicators suggest that they are highly prepared for any disaster, having implemented capacity-building programs with a mean of 3.72 and a standard deviation of 0.409. The teachers generally agree that knowing survival skills, possessing capacity-building training, integrating lessons, and exercising response reactions are a vital part of disaster

preparedness. This demonstrates the school's commitment to ongoing professional development and curriculum adaptation, further strengthening the community's disaster preparedness.

Integrate risk reduction and management into the curriculum and other forms of informal education with the highest mean of 3.78 and a standard deviation of .419. According to Sahudra et al. (2024), disaster education offers significant benefits in protecting lives and property, as well as in building a more responsive society to disasters. Therefore, disaster education must be developed optimally for elementary school students.

The respondents agreed, on average, to conduct capability training workshops for community members and hold regular meetings, assigning a score of 3.66 and a standard deviation of .558. Capacity-building activities, such as training, establishing institutions, community-based training, information sharing, and coordination, under the Disaster Risk Reduction (DRR) program, helped establish a more interactive partnership among the various stakeholders involved in development and disaster mitigation-related activities in the concerned area. (ADPC, 2006 as cited in Yaadav & Barve, 2014)

Table 9. Summary on Disaster Preparedness Level of the Respondents

| | Mean | SD | VI |
|---------------------------|-------------|-------------|------------------------|
| Community Risk Assessment | 3.74 | .381 | Highly Prepared |
| Communication System | 3.78 | .380 | Highly Prepared |
| Capacity Building | 3.72 | .409 | Highly Prepared |
| Overall | 3.75 | .346 | Highly Prepared |

Legend: 1.00-1.49 Not Prepared; 1.50-2.49 = Slightly Prepared; 2.50-3.49 = Substantially Prepared; 3.50-4.00 = Highly Prepared

Table 9 presents the overall level of preparedness among respondents during disasters, with an overall mean of 3.75 and a standard deviation of 0.346. The results indicate that disaster preparedness, encompassing community risk assessment, communication systems, and capacity building, is well-developed.

The communication system has a mean of 3.78 and a standard deviation of 0.380. The findings indicate that the respondents demonstrate a high level of preparedness for disaster risk management. The scenario depicts the community's capacity to prepare, respond, and cope with disaster risks through platforms such as risk assessment, communication planning, and preparedness schemes. The high level of preparedness indicates that the respondents are prepared to apply early and relevant actions when faced with disaster events, thus lowering potential damage and disruption.

Moreover, capacity building has a mean of 3.72 with a standard deviation of .402. The teachers generally agree that knowing survival skills, possessing capacity-building training, integrating lessons, and exercising response reactions are a vital part of disaster preparedness.

Table 10. Status of DRRM Implementation as to Disaster Prevention

| | Mean | SD | VI |
|---|-------------|--------------|---------------------------|
| 1. The school conducts hazard assessments. | 3.79 | .428 | Highly Implemented |
| 2. The school has well-trained personnel for a safe and timely evacuation of students and school personnel. | 3.67 | .521 | Highly Implemented |
| 3. The school has coordinated plans for early rescue and retrieval operations. | 3.82 | .410 | Highly Implemented |
| 4. The school collaborates with the community and LGU's | 3.83 | .382 | Highly Implemented |
| 5. The school provides early warning systems. | 3.78 | .414 | Highly Implemented |
| Overall | 3.78 | .3553 | Highly Implemented |

Legend: 1.00-1.49 Not Implemented; 1.50-2.49 = Slightly Implemented; 2.50-3.49 = Substantially Implemented; 3.50-4.00 = Highly Implemented

Table 10 shows the respondents' perception of DRRM Implementation in their schools through disaster prevention and mitigation, which is generally viewed as highly implemented. This result indicates that schools are collectively perceived as effective in hazard assessment, early warning dissemination, and collaboration with local governments. This shows a good culture of anticipation and early planning among teachers and implementers of DRRM.

The school collaborates with the community and local government units (LGUs), with a mean of 3.83. Deped Order No. 40, s. In 2015, schools were encouraged to form partnerships with local government units (LGUs), non-governmental organizations, and other stakeholders. Schools may involve the sharing of resources such as facilities and expertise.

The respondents agreed, on average, that the school has well-trained personnel for safe and timely evacuation of students and school personnel, assigning a score of 3.67. Teachers, along with the DRRM coordinator, attended training sessions on contingency planning, basic life support, and first aid.

According to Tandingan et al (2024), a well-trained workforce is needed to effectively manage and respond to disaster risk reduction and management (DRRM).

Table 11. Status of DRRM Implementation as to Disaster Preparedness

| | | Mean | SD | VI |
|----------------|--|-------------|-------------|---------------------------|
| 1. | The school conducts training on disaster preparedness, response, search, rescue, and retrieval operations. | 3.75 | .454 | Highly Implemented |
| 2. | The school conducts simulation exercises on various levels to test plans and skills. | 3.78 | .419 | Highly Implemented |
| 3. | The school provides emergency exits that are accessible all the time. | 3.80 | .422 | Highly Implemented |
| 4. | The school readily provides necessities such as First-Aid kits. | 3.82 | .449 | Highly Implemented |
| 5. | The school establishes an organizational support structure such as DRRM Office and DRRM coordinator | 3.82 | .430 | Highly Implemented |
| Overall | | 3.79 | .351 | Highly Implemented |

Legend: 1.00-1.49 Not Implemented; 1.50-2.49 = Slightly Implemented; 2.50-3.49 = Substantially Implemented; 3.50-4.00 = Highly Implemented

Table 11 presents the status of DRRM implementation in terms of disaster preparedness. The respondent's perception of DRRM Implementation in their schools through disaster preparedness, which is generally viewed as highly implemented, is assigned a score of 3.79 with a standard deviation of 0.351. This indicates that schools conduct regular simulation drills, training, and infrastructure improvements, such as monitoring and clearing emergency exits, as well as establishing Disaster Risk Reduction and Management (DRRM) Offices. This high level of preparedness means that schools and volunteers are always ready for mobilization when needed.

The school readily provides necessities such as First Aid kits, and establishes an organizational support structure, including a DRRM coordinator, with a mean of 3.82 and standard deviations of 0.449 and 0.430. Dipon (2023) school has an available, accessible, and adequate first aid kit in every instructional room. Adequate safety kits in schools are necessary for school disaster risk management.

On the other hand, the school conducts training on disaster preparedness, response, search, rescue, and retrieval operations, assigning a score of 3.75 with a standard deviation of .454. Comighud (2020) demonstrates that the SDRRM team members have effectively met the basic substance needs and provided basic life preservation.

Table 12. Status of DRRM Implementation as to Disaster Response

| | | Mean | SD | VI |
|----------------|--|-------------|-------------|---------------------------|
| 1. | The school has a well-established disaster response. | 3.70 | .512 | Highly Implemented |
| 2. | The school has adequate and prompt assessment of needs and damages. | 3.74 | .494 | Highly Implemented |
| 3. | The school serves as an evacuation area if needed. | 3.87 | .365 | Highly Implemented |
| 4. | The school provides psychosocial support to the affected population. | 3.79 | .483 | Highly Implemented |
| 5. | The school coordinates with the local government unit for early recovery | 3.83 | .396 | Highly Implemented |
| Overall | | 3.79 | .360 | Highly Implemented |

Legend: 1.00-1.49 Not Implemented; 1.50-2.49 = Slightly Implemented; 2.50-3.49 = Substantially Implemented; 3.50-4.00 = Highly Implemented

Table 12 presents the status of disaster response implementation. It shows the respondents' perception of DRRM Implementation in their schools through disaster response, which is generally viewed as highly implemented, with a mean score of 3.79 with a standard deviation of .360. This suggests that teachers perceive schools as always being prepared to serve as evacuation centers for potentially affected families. The authorities were also viewed as capable of conducting damage assessments on school buildings after emergencies and calamities. Teachers were also viewed as a potential source of psychosocial support for the calamity victims later. These strongly demonstrate the teachers' commitment to aligning with protective and recovery principles. The school serves as an evacuation area if needed, with a mean of 3.87 and a standard deviation of 0.365. The school collaborates with the barangay's emergency response team to provide updates on whether it will serve as an evacuation area. The school has a well-established disaster response, scoring 3.7 with a standard deviation of 0.512. This suggests that the school has identified potential risk, staff and students are likely trained in drills, emergency supplies and communication systems may be in place, and there is coordination with local emergency services.

Table 13. Status of DRRM Implementation as to Disaster Recovery

| | | Mean | SD | VI |
|----------------|---|-------------|-------------|---------------------------|
| 1. | The school assures us that all emergency exits are kept open and accessible all the time. | 3.79 | .428 | Highly Implemented |
| 2. | The school posts the emergency exit maps are securely posted. | 3.77 | .439 | Highly Implemented |
| 3. | The school conducts post-damage and needs assessments. | 3.78 | .439 | Highly Implemented |
| 4. | The school formulates a recovery plan. | 3.79 | .466 | Highly Implemented |
| 5. | The school undertakes rehabilitation or repair of damaged infrastructure. | 3.82 | .411 | Highly Implemented |
| Overall | | 3.79 | .391 | Highly Implemented |

Legend: 1.00-1.49 Not Implemented; 1.50-2.49 = Slightly Implemented; 2.50-3.49 = Substantially Implemented; 3.50-4.00 = Highly Implemented

Table 13 presents the status of DRRM implementation in disaster recovery. It shows the respondents' perception of DRRM Implementation in their schools through disaster recovery and rehabilitation, which is generally viewed as highly implemented, with a mean score of 3.79 and a standard deviation of .391. Teachers generally affirmed the importance of having emergency access, repair services, and mapping the overall damage and needs of every local community after the calamities. Also, the respondents viewed themselves as capable of creating recovery plans. This suggests that the respondents employed both short-term and long-term goal approaches to disaster risk reduction.

The school undertakes rehabilitation or repair of damaged infrastructure, assigning a score of 3.82 with a standard deviation of 0.411. The school collaborates with the Department of Education (DepEd) and local government units (LGUs) whenever there is a need for the repair of damaged infrastructure. Nevertheless, on average, the school posts the emergency exit maps securely, with a mean of 3.77 and a standard deviation of .439.

Table 14. Summary on DRRM Implementation Level of the Respondents

| | Mean | SD | VI |
|--------------------------------------|-------------|-------------|---------------------------|
| Disaster Prevention and Mitigation | 3.78 | .355 | Highly Implemented |
| Disaster Preparedness | 3.79 | .351 | Highly Implemented |
| Disaster Response | 3.79 | .360 | Highly Implemented |
| Disaster Recovery and Rehabilitation | 3.79 | .391 | Highly Implemented |
| Overall | 3.79 | .323 | Highly Implemented |

Legend: 1.00-1.49 Not Implemented; 1.50-2.49 = Slightly Implemented; 2.50-3.49 = Substantially Implemented; 3.50-4.00 = Highly Implemented

Table 14 presents the tabulated data on the respondents' level of DRRM implementation. The results indicate that disaster risk reduction and management practices are highly implemented in all the components. This means that the respondents' organization or community consistently undertakes activities related to prevention, preparedness, response, and recovery. Such a high level of implementation reflects a strong institutional commitment to disaster resilience and a holistic approach to risk management, both before and after the occurrence of the disaster event.

Disaster preparedness, disaster response, and disaster recovery and rehabilitation received the highest mean of 3.79, with a standard deviation of 0.351, 0.360, and 0.391. Schools hold regular drills and training to prepare for emergencies. They ensure that emergency exits are monitored and kept clear, and they have Disaster Risk Reduction and Management (DRRM) Offices on-site. This careful planning means that schools and volunteers are ready to act when needed. It shows that both staff and students are aware of potential risks and have likely received training in emergency procedures. Schools also ensure they have emergency supplies and communication systems in place, and they collaborate with local emergency services. Teachers stress the importance of having access to emergency resources, repair services, and the ability to assess damage and community needs after a disaster. On the other hand, disaster prevention, with a mean of 3.78 and a standard deviation of .355.

Table 15. Organizational Resilience as to Planning

| | | Mean | SD | VI |
|----------------|---|-------------|-------------|------------------|
| 1. | The school organization addresses the root cause of disaster risks while strengthening the capacities and resources of a system to cope with its impacts. | 3.79 | .408 | Very High |
| 2. | The school organization identifies hazards and supports localized policies for intervention to increase organizational resilience. | 3.78 | .414 | Very High |
| 3. | The school organization believes emergency plans must be practiced and tested to ensure their effectiveness. | 3.79 | .408 | Very High |
| 4. | The school organization establishes structured decision processes, designing systems for both resilience and efficiency to identify the right intervention. | 3.80 | .422 | Very High |
| 5. | The school organization establishes a strong partnership linkage for potential partners to assist in times of disasters. | 3.79 | .428 | Very High |
| Overall | | 3.79 | .362 | Very High |

Legend: 1.00-1.49 Very Low; 1.50-2.49 = Low; 2.50-3.49 = High; 3.50-4.00 = Very High

Table 15 presents organizational resilience in planning. It shows the respondents' perception of their organizational resilience in their schools through planning, which is generally viewed as very high, with a score of 3.79. Teachers generally view planning as addressing the root causes of disasters, testing emergency plans for effectiveness, and building strong linkages with potential partners who could help and support victims in times of disaster or calamity. This shows that the schools possess strategic foresight and full collaboration.

The school organization establishes structured decision-making processes, designing systems that balance resilience and efficiency to identify the right intervention, earning a score of 3.80. Moreover, on average, the school organization identifies hazards and supports localized policies for intervention to increase organizational resilience, with a mean score of 3.78.

Table 16. Organizational Resilience as to Adaptive Capacity

| | | Mean | SD | VI |
|----------------|--|--------------|-------------|------------------|
| 1. | The school organization has a sense of teamwork and camaraderie. | 3.78 | .434 | Very High |
| 2. | The school organization has enough resources on hand to handle unforeseen adjustment. | 3.77 | .480 | Very High |
| 3. | The school organization has the information and knowledge to respond to unexpected hazards. | 3.81 | .436 | Very High |
| 4. | The school organization actively listens to their educational leader whenever they make tough decisions. | 3.81 | .473 | Very High |
| 5. | The school organization ensured that it has ready resumption strategies and alternative delivery modes to ensure education continuity. | 3.82 | .450 | Very High |
| Overall | | 3.796 | .384 | Very High |

Legend: 1.00-1.49 Very Low; 1.50-2.49 = Low; 2.50-3.49 = High; 3.50-4.00 = Very High

Table 16 presents organizational resilience as adaptive capacity. It reflects the respondents' perception of their organizational resilience in their schools, as measured by adaptive capacity, which is generally viewed as very high, with a mean score of 3.796. In general, the organization was viewed highly for its teamwork, fast access to resources and flexible decision-making adaptations. This demonstrates that the DRRM Organization is highly adaptable, as it can effectively manage various disasters and adjust learning modalities as needed, based on the current hazard situation.

The school organization ensured that it had ready resumption strategies and alternative delivery modes to ensure education continuity, with a mean score of 3.82. DepEd offers various Alternative delivery modes to cater to the diverse needs of learners, especially those facing challenges in accessing traditional classroom education. The school offers modular distance learning to learners. The school organization has enough resources on hand to handle unforeseen adjustments, assigning a score of 3.77.

Table 17. Organizational Resilience as to Monitoring and Reporting

| | | Mean | SD | VI |
|----------------|--|-------------|-------------|------------------|
| 1. | The school organization assists in response promptly during the time of disaster/emergencies | 3.87 | .341 | Very High |
| 2. | The school organization seeks suggestions and evaluations from experts on disaster response. | 3.84 | .367 | Very High |
| 3. | The school organization identifies the causes of further risks and damage brought by disaster/emergencies. | 3.87 | .332 | Very High |
| 4. | The school organization provides reporting of resources and support needed by the organizations to improve their disaster response and recovery efforts. | 3.87 | .341 | Very High |
| 5. | The school organization reviews resource allocation processes in achieving the organization's resilience | 3.84 | .389 | Very High |
| Overall | | 3.86 | .320 | Very High |

Legend: 1.00-1.49 Very Low; 1.50-2.49 = Low; 2.50-3.49 = High; 3.50-4.00 = Very High

Table 17 shows the respondents' perception of their organizational resilience in their schools through monitoring, which is generally viewed as very high. This is the highest among all four organizational resilience domains. This indicates that respondents value timely response efforts, proper data reporting, and expert feedback during post-calamity activities. The results show that teachers demonstrate strength in evaluation and adjustment mechanisms for the continual improvement of the DRRM Office.

The school organization promptly assists in response to disasters and emergencies, identifies the causes of further risks and damage brought about by disasters and emergencies, and provides reports on the resources and support needed by organizations to improve their disaster response and recovery efforts, with a mean of 3.87.

On the other hand, the school organization seeks suggestions and evaluations from experts on disaster response and reviews resource allocation processes to achieve its resilience, assigning a score of 3.84.

Table 18. Organizational Resilience as to Resources

| | | Mean | SD | VI |
|----------------|--|--------------|--------------|------------------|
| 1. | The school organization has accessible and functioning equipment in case of hazards and disruptive events. | 3.75 | .472 | Very High |
| 2. | The school organization has accessible and adequate first aid kits in every instructional room. | 3.75 | .472 | Very High |
| 3. | The school organization should provide a budget to support that can be used in the aftermath of hazards. | 3.78 | .414 | Very High |
| 4. | The school organization has identified classrooms/buildings to be used as an evacuation center in times of hazard. | 3.86 | .350 | Very High |
| 5. | The school organization has identified spaces for creating Temporary Learning spaces/shelters in the aftermath of hazards. | 3.82 | .410 | Very High |
| Overall | | 3.792 | .3559 | Very High |

Legend: 1.00-1.49 Very Low; 1.50-2.49 = Low; 2.50-3.49 = High; 3.50-4.00 = Very High

Table 18 shows the respondents' perception of their organizational resilience in their schools through resources, which is generally viewed as very high with an overall mean of 3.792 and a standard deviation of .3559. The teachers generally agree that their respective DRRM arms have available, tappable resources, such as rescue equipment, first-aid kits, emergency funds, and temporary shelters and tents, whenever disaster might strike. The school acquires first aid kits and equipment through the MOOE and the school's budget, including funds from the canteen. This shows that the organization displays resource readiness and logistics preparation.

The school organization has identified classrooms and buildings to be used as an evacuation center in times of hazard, with a mean of 3.86 and a standard deviation of 0.350. Moreover, the school organization has accessible and functioning equipment in case of hazards and disruptive events. The school organization has accessible and adequate first aid kits in every instructional room, with a mean of 3.75 and a standard deviation of .472.

Table 19. Organizational Resilience as to Stakeholders

| | | Mean | SD | VI |
|----------------|---|--------------|--------------|------------------|
| 1. | The school organization engages stakeholders in the organization, planning, and execution of safety measures. | 3.80 | .442 | Very High |
| 2. | The school organization launches coordinated responses to disruptive events by providing cross organizational communication. | 3.79 | .447 | Very High |
| 3. | The school organization maintains close and active coordination with stakeholders to support the resources needed for disaster preparedness and response. | 3.82 | .389 | Very High |
| 4. | The school organization provides and manages links with other organizations in the community for effective disaster preparedness and response. | 3.83 | .374 | Very High |
| 5. | The school organization maintains stakeholder involvement to assist in prompt response to impending emergencies | 3.84 | .367 | Very High |
| Overall | | 3.817 | .3503 | Very High |

Legend: 1.00-1.49 Very Low; 1.50-2.49 = Low; 2.50-3.49 = High; 3.50-4.00 = Very High

Table 19 shows the respondents' perception of their organizational resilience in their schools through stakeholder involvement, which is generally viewed as very high, with an overall mean of 3.817 and a standard deviation of .3503. This reveals that teachers generally view themselves as having frequent interactions with other community stakeholders, including barangay officers, parents, and private partners. This is the highest indicator of collaborative resilience among all factors. This reflects that the school prioritizes community involvement in the whole DRRM planning and response efforts.

The school organization maintains stakeholder involvement to facilitate a prompt response to impending emergencies, with a mean of 3.84 and a standard deviation of 0.367. Teachers and the school principal communicate with the barangay emergency responders and identify classrooms or buildings to be used as an evacuation center in times of a hazard. Nevertheless, the school organization launches coordinated responses to disruptive events by providing cross-organizational communication, assigning a score of 3.80 and a standard deviation of .447.

Table 20. Summary on Organizational Resilience Level of the Respondents

| | Mean | SD | VI |
|--------------------------|-------------|-------------|------------------|
| Planning | 3.79 | .362 | Very High |
| Adaptive Capacity | 3.80 | .384 | Very High |
| Monitoring and Reporting | 3.86 | .320 | Very High |
| Resources | 3.80 | .356 | Very High |
| Stakeholders | 3.82 | .350 | Very High |
| Overall | 3.81 | .314 | Very High |

Legend: 1.00-1.49 Very Low; 1.50-2.49 = Low; 2.50-3.49 = High; 3.50-4.00 = Very High

Table 20 concisely captures the respondents' perceptions of the extent to which their organization demonstrates resilience. The outcome indicates that participants perceive their organization as demonstrating an exceptionally high degree of resilience in the observed areas, with an overall mean of 3.81 and a standard deviation of .314.

This finding suggests the presence of strong planning, flexibility, effective monitoring mechanisms, adequate resources, and effective stakeholder communication. An exceptionally high degree of organizational resilience implies that the institution is well-positioned to endure, adapt to, and recover from adverse events, thereby ensuring continuity in operations and long-term sustainability despite disruptions. The results show that monitoring and reporting have the highest mean of 3.86 with a standard deviation of .320. Nevertheless, Planning achieved a mean score of 3.79 with a standard deviation of 0.362.

Table 21. Test of Relationship Between Risk Perception and Disaster Preparedness

| Risk Perception | Disaster Preparedness | | | |
|------------------------------|---------------------------|----------------------|-------------------|-------------------------------|
| | Community Risk Assessment | Communication System | Capacity Building | Overall Disaster Preparedness |
| Attitude | .556** | .492** | .496** | .571** |
| Subjective Norm | .591** | .540** | .627** | .655** |
| Perceived Behavioral Control | .577** | .454** | .443** | .523** |
| Overall Risk Perception | .666** | .578** | .616** | .683** |

***, Correlation is significant at the 0.01 level (2-tailed).*

Verbal Interpretation of r-value: +1.0 Perfect positive +/- association; +0.8 to +1.0 Very strong +/- association; +0.6 to +0.8 Strong +/- association; +0.4 to +0.6 Moderate +/- association; +0.2 to +0.4 Weak +/- association; 0.0 to +0.2 Very weak +/- or no association

Table 21 shows the test of the relationship between the respondents' risk perception and disaster preparedness. The r-value obtained from the analysis ranged from 0.443 to 0.683, indicating a moderate to strong positive correlation. Together with p-values lower than the significance level of 0.01, this indicates a significant direct relationship between risk perception and disaster preparedness.

The strong correlation between teachers' attitudes and actions regarding disaster preparedness confirms that individuals with higher personal awareness of disaster-related responsibilities would also show a higher propensity to undertake risk analysis, prepare contingency plans, and undergo safety training. Table 4 shows that teachers in the Ambray District rate themselves as strongly aware of disaster-related information and the need for resilience. This strong internal drive might lead teachers to take an active role in preparedness efforts in schools (as reflected in Table 6), though, based on the level of institutional support, they must utilize to act on their beliefs.

The strong link between subjective norms and disaster preparedness suggests that if teachers perceive preparedness as a collective endeavor—a valued one by peers, administrators, and the public—they will be more inclined to participate in drills, incorporate disaster risk reduction and management (DRRM) into their teaching, or endorse communication systems. Teachers concurred that schools had effective mechanisms for response, as shown in Table 3, which may be turning schools into an institution where disaster preparedness is being advocated. This common perception may increase the likelihood of mainstreaming preparedness behavior, especially in cases where collaborative work, such as community risk assessment and stakeholder-led capacity building, is involved.

The relationship between perceived control over behavior and disaster readiness suggests that teachers who feel confident in their ability to handle crises are more likely to take steps such as posting emergency phone numbers, conducting training exercises, and lending expertise to evacuation procedures. As evident in Table 4, teachers in the Ambray District expressed a sense of capability in adapting to and disseminating information during crises, which can explain their readiness in practical areas, such as setting up communication systems and participating in community exercises (as discussed in Table 6). This inference, however, assumes that control perception is associated with the availability of training and a background of institutional trust.

The positive correlation between the general perception of risk and disaster preparedness implies that teachers in schools with high perception and belief levels of preparedness are likely to exhibit greater preparedness in practice as well. Since all three dimensions of risk perception have been scored high in Table 5, and all disaster preparedness categories have been scored equally high in Table 9, this uniformity could be an indicator of a vigilant culture of forward-thinking strategy formulation. Although the study does not establish causation, it does highlight the importance of a risk-aware teaching community in enhancing the success of preparedness. Risk awareness cultivates a school climate where students become ready for and prepared for potential disasters, fostering safety routines. However, based on a study by Anggaryani (2021), even though teachers and learners have high risk awareness and readiness through disaster preparedness education that integrates DRRM concepts in their subjects, learners still lack full confidence in what to do if a disaster strikes. This call for more hands-on simulations and drills allows learners to build confidence and develop instinctual responses when faced with adversity.

Table 22. Test of Relationship Between Risk Perception and DRRM Implementation

| Risk Perception | DRRM Implementation | | | | |
|------------------------------|---------------------|--------------|----------|----------|-----------------------------|
| | Prevention | Preparedness | Response | Recovery | Overall DRRM Implementation |
| Attitude | .506** | .443** | .458** | .479** | .532** |
| Subjective Norm | .549** | .603** | .616** | .599** | .667** |
| Perceived Behavioral Control | .455** | .576** | .435** | .498** | .553** |
| Overall Risk Perception | .588** | .629** | .594** | .615** | .683** |

****.** Correlation is significant at the 0.01 level (2-tailed).

Verbal Interpretation of r-value: +1.0 Perfect positive +/- association; +0.8 to +1.0 Very strong +/- association; +0.6 to +0.8 Strong +/- association; +0.4 to +0.6 Moderate +/- association; +0.2 to +0.4 Weak +/- association; 0.0 to +0.2 Very weak +/- or no association

Table 22 shows the test of the relationship between the respondents' risk perception and DRRM Implementation. The r-value obtained from the analysis ranged from 0.435 to 0.683, indicating a moderate to strong positive correlation. Together with p-values lower than the significance level of 0.01, this indicates a significant direct relationship between risk perception and DRRM implementation.

The documented moderate to strong correlation between teachers' attitudes and the practice of Disaster Risk Reduction and Management (DRRM) suggests that where teachers perceive a personal sense of responsibility toward disaster awareness, they are more likely to utilize DRRM interventions, such as hazard analysis, issuance of early warnings, and psychosocial assistance. As documented in Table 2, teachers in the Ambray District reported high levels of awareness and participation in disaster education. Such a personal sense of responsibility may influence the level of consistency and sincerity with which they apply DRRM procedures, especially when it comes to preventive measures and recovery efforts, as documented in Table 10.

The high level of association between subjective norms and DRRM implementation suggests that the organizational climate, as well as the seriousness with which administrators and peers approach disaster planning, influences actual program implementation. Table 3 indicated that teachers had a good perception that their schools were adequately prepared in terms of response and relief during disasters, which can impose a collective pressure or encouragement to perform disaster risk reduction and management (DRRM) tasks. This can account for the high implementation ratings for preparedness and response (Tables 11 and 12), especially in school-wide coordinated activities such as simulation drills or the distribution of first-aid kits.

The noted correlation between perceived behavioral control and the application of DRRM suggests that teachers who believe they can act effectively in emergencies, both psychologically and professionally, may be more likely to conduct disaster drills, handle response procedures, or engage in recovery activities. Teachers in Table 4 believed that they have good communication and flexibility skills—skills needed in actual-time DRRM activities. Such an implication would, however, be based on whether or not confidence was acted upon, which may be the case in schools where the administration supports teacher initiative and involvement.

The strong overall correlation between risk perception and the institutionalization of disaster risk reduction management (DRRM) implies that where awareness, social expectation, and perceived capability to act coexist, educational institutions will be inclined to continue performing DRRM programs. Since all the dimensions of risk perception were scored high (see Table 5) and the institutionalization of DRRM was also scored strongly in all four theme areas (see Table 14), it can be concluded that the aggregate risk-aware culture reinforces the process of transforming plans into operational actions. What this implies is that sustaining at a heightened level of risk perception among education staff may be a worthwhile method of ensuring utilization of disaster programs, particularly where, as often is the case in Ambray District, schools may represent the community's first line of response. The same results were found in the study by Gutual et al. (2023), but in the context of DRRM implementation at UM Panabo College in Panabo City, Davao Del Norte, Philippines. Although the school lacks essential resources and logistics, such as emergency response vehicles, a strong positive association was found between teachers' and students' risk perception and preparation intention for their disaster response behavior.

Table 23. Test

of Relationship Between Risk Perception and Organizational Resilience

| Risk Perception | Organizational Resilience | | | | | Overall Organizational Resilience |
|------------------------------|---------------------------|-----------------------|------------------------|-----------|------------------------|-----------------------------------|
| | Planning | Adaptability Capacity | Monitoring & Reporting | Resources | Stakeholder Engagement | |
| Attitude | .521** | .427** | .540** | .621** | .553** | .599** |
| Subjective Norm | .560** | .432** | .624** | .632** | .556** | .630** |
| Perceived Behavioral Control | .622** | .461** | .541** | .551** | .555** | .616** |
| Overall Risk Perception | .653** | .507** | .664** | .701** | .642** | .713** |

******, Correlation is significant at the 0.01 level (2-tailed).

Verbal Interpretation of r-value: +1.0 Perfect positive +/- association; +0.8 to +1.0 Very strong +/- association; +0.6 to +0.8 Strong +/- association; +0.4 to +0.6 Moderate +/- association; +0.2 to +0.4 Weak +/- association; 0.0 to +0.2 Very weak +/- or no association

Table 23 shows the test of the relationship between the respondents' risk perception and organizational resilience. The r-value obtained from the analysis ranged from 0.427 to 0.713, indicating a moderate to strong positive correlation. Together with p-values lower than the significance level of 0.01, this indicates a significant direct relationship between risk perception and organizational resilience.

Positive attitude of individuals towards organizational resilience found here suggests that Ambray District teachers who self-report a high personal commitment to disaster-related responsibilities—e.g., becoming informed, participating in drills, or involving stakeholders—are likely to contribute more to increasing the resilience of their schools compared to others. This is suggested by the fact that, as evident from Table 2, teachers rated themselves very highly in sharing relevant information and building resilience. It can be expected that the presence of such positive attitudes will be followed by more active, internally motivated, and prepared efforts in schools. This reasoning may facilitate effective planning and coordination among stakeholders, as evidenced by the high ratings in Table 17.

The close relationship between subjective norms and organizational resilience can be viewed as a demonstration of the institutional environment that influences teacher behavior. As indicated in Table 3, teachers reported that their institutions were adequately staffed with disaster response, social services, and shelter allocation frameworks. Such norms within the school institution could help build an environment where resilience-related practices are expected and mutually encouraged. Suppose teachers perceive that their peers value resilience through preparedness. In that case, they may also modify their practices to maintain resilient facilities, such as implementing stakeholder engagement and oversight mechanisms to ensure ongoing support and maintenance.

The link between perceived behavioral control and organizational resilience suggests that where teachers perceive a high level of confidence in their emergency response ability, this is likely to improve the institution's capacity to withstand and recover from crises. Teachers expressed high confidence in most categories in Table 4, such as effective communication with professionals and psychological adaptation in emergencies. This sense of control may facilitate personal initiative and leadership, both of which are likely to enhance the adaptability and planning dimensions of organizational resilience, as suggested by Tables 15 and 16. This is not necessarily an inevitability but a likelihood; actualization of this likelihood is in how often these perceptions are reinstated in practically relevant behavior.

The overall assessment of risk perception, which shows a high correlation with organizational resilience, suggests that when educational institutions promote a culture of heightened risk awareness, the building blocks of resilience—i.e., resource readiness, aligned monitoring, and strategic foresight—are likely to be sustained. Because all dimensions of risk perception (attitude, subjective norm, and perceived behavioral control) were rated high in earlier tables, such pervasive awareness likely reinforces the organizational culture necessary to sense, navigate, and recover from crises. This suggests that enhancing risk literacy among personnel may be a strategic action to develop enduring institutional resilience. This observation is also noted in the study by Grefalda et al. (2020), specifically in the context of local government units in Aurora, Philippines. The LGU's role in disaster resilience is crucial, particularly in informing the public and organizing activities to build disaster resilience among its constituents. The researchers adopted processes from the Climate Resilience Framework (CRF) further to enhance partnership and implementation of DRRM activities and seminars.

Table 24. Test of Relationship Between Disaster Preparedness and DRRM Implementation

| Disaster Preparedness | DRRM Implementation | | | | |
|-------------------------------|----------------------------|--------------|----------|----------|-----------------------------|
| | Prevention | Preparedness | Response | Recovery | Overall DRRM Implementation |
| Community Risk Assessment | .710** | .763** | .645** | .578** | .756** |
| Communication System | .577** | .604** | .604** | .527** | .650** |
| Capacity Building | .659** | .627** | .648** | .569** | .703** |
| Overall Disaster Preparedness | .721** | .710** | .700** | .624** | .774** |

**, *Correlation is significant at the 0.01 level (2-tailed).*

Verbal Interpretation of r-value: +1.0 Perfect positive +/- association; +0.8 to +1.0 Very strong +/- association; +0.6 to +0.8 Strong +/- association; +0.4 to +0.6 Moderate +/- association; +0.2 to +0.4 Weak +/- association; 0.0 to +0.2 Very weak +/- or no association

Table 24 shows the test of the relationship between the respondents' disaster preparedness and DRRM implementation. The r-value obtained from the analysis ranged from 0.527 to 0.774, indicating a moderate to strong positive correlation. Together with p-values lower than the significance level of $\alpha = 0.01$, this indicates a significant direct relationship between disaster preparedness and DRRM implementation.

The positive correlation between CRA and DRRM implementation suggests that schools actively engaged in identifying local hazards and mapping evacuation routes may also be more effective in implementing actual DRRM programs. In Table 6, teachers in the Ambray District had high preparedness in carrying out student-led hazard mapping and working with experts. This suggests that risk assessment serves as a starting point for initiating prevention and preparedness efforts, such as drills, safety infrastructure, and rescue coordination, similar to the highly implemented responses observed in Tables 10 and 11.

The high level of correspondence between the communication system and the implementation of DRRM suggests that when schools have already developed emergency communication protocols, such as warning systems, contact numbers posted, and role allocation, they can carry out DRRM activities more effectively across all themes. As evident in Table 7, Ambray teachers ranked communication readiness as highly implemented. This supports the assumption that having a streamlined information flow means easier implementation of DRRM activities, particularly in time-constrained stages such as response and early recovery.

The strong correlation between capacity building and DRRM implementation suggests that when schools invest resources in DRRM training, planning workshops, and integrating disaster topics into their curriculum, they are more likely to implement DRRM. Table 8 showed high preparedness ratings for activities such as reviewing contingency plans and capability training. This foundation could enhance the school's capacity to implement concrete disaster risk reduction and management (DRRM) aspects, such as organized evacuations and infrastructure rehabilitation (as shown in Table 13).

The overall high correlation between disaster preparedness and DRRM implementation supports the notion that schools that prepare regularly, through assessment, planning, training, and communication, are more likely to implement these efforts. With all preparedness subfactors being high in Table 5 and DRRM implementation being highly rated for prevention, response, and recovery in Table 14, preparedness is likely to underlie effective implementation. This suggests that in the Ambray District, investing in formal and regular preparedness efforts can be a worthwhile strategy for achieving functional, school-level Disaster Risk Reduction and Management (DRRM) implementation. According to Dela Cruz et al. (2022), a study conducted in elementary schools under the Alfonso Lista District, Schools Division of Ifugao, found a high association between the high awareness and preparedness of school personnel and the overall implementation of Disaster Risk Reduction and Management (DRRM). These findings indicate that when primary personnel within the school are well-informed and well-trained, the overall positive implementation of DRRM, in terms of maintaining facility safety, school-based risk reduction management, and integrating DRRM into the learners' curricula, is enhanced.

Table 25. Test of Relationship Between Disaster Preparedness and Organizational Resilience

| | | Organizational Resilience | | | | | Overall Organizational Resilience |
|-------------------------------|--|---------------------------|-----------------------|------------------------|-----------|------------------------|-----------------------------------|
| | | Planning | Adaptability Capacity | Monitoring & Reporting | Resources | Stakeholder Engagement | |
| Community Risk Assessment | | .657** | .507** | .656** | .747** | .653** | .725** |
| Communication System | | .465** | .484** | .572** | .670** | .522** | .611** |
| Capacity Building | | .580** | .441** | .589** | .755** | .554** | .657** |
| Overall Disaster Preparedness | | .628** | .542** | .689** | .798** | .648** | .744** |

***. Correlation is significant at the 0.01 level (2-tailed).*

Verbal Interpretation of r-value: +1.0 Perfect positive +/- association; +0.8 to +1.0 Very strong +/- association; +0.6 to +0.8 Strong +/- association; +0.4 to +0.6 Moderate +/- association; +0.2 to +0.4 Weak +/- association; 0.0 to +0.2 Very weak +/- or no association

Table 25 shows the test of the relationship between the respondents' disaster preparedness and organizational resilience. The r-value obtained from the analysis ranged from 0.527 to 0.774, indicating a moderate to strong positive correlation. Together with p-values lower than the significance level of 0.01, this indicates a significant direct relationship between disaster preparedness and organizational resilience.

The significant correlation between organizational resilience and community risk assessment in Ambray District's educational institutions suggests that if educators are involved in local hazard identification, risk mapping, and coordination with relevant stakeholders, it likely enhances the institution's ability to respond and adapt accordingly. As Table 6 demonstrates, respondents reported being highly prepared for activities such as hazard mapping and coordination with experts, which may help explain why this subfactor is closely related to resilience. These risk assessment activities can create a deeper understanding of the vulnerabilities encountered by schools, enabling better planning and faster decision-making in the event of emergencies.

The suggested link between communication structure and organizational resilience is that schools with open emergency communications, clarified roles, and established contact protocols may perform better during crisis times. Table 7 illustrates that the teachers perceived a high level of preparedness in explaining roles and knowledge of the Incident Command System as important. These communication abilities strengthen the argument that regular and open flow of information, even in the classroom, strengthens the overall resilience of the school to endure disturbances and helps better coordinate recovery efforts.

The relationship between organizational resilience and capacity development may be influenced by the effects of training workshops, curriculum incorporation of Disaster Risk Reduction and Management (DRRM), and stakeholder meetings on school operations during emergencies. As indicated in Table 8, teachers indicated high levels of preparedness in topics such as DRRM planning and learning survival kits. This may be an indication that when schools in Ambray District take the time to prepare teachers with disaster-related information and skills, they may, indirectly, be creating a more independent and responsive organization—one that can recover quickly and operate smoothly, irrespective of adversity.

Lastly, the general level of disaster preparedness that exhibits a significant correlation with organizational resilience can indicate the cumulative effects of various activities, including risk analysis, information sharing, and building capacity. The consistently high scores in preparedness across all three categories in Tables 6 to 8 indicate that schools in the Ambray District participate in various synchronized readiness activities. Although this cannot guarantee resilience, such crossing activities likely foster a school climate that values strategic planning, anticipates disruptions, and is more resilient in the aftermath of disasters.

All in all, disaster preparation, when properly planned, trained and executed, helps improve resilience among affected citizens. It is therefore essential for schools to participate in ongoing DRRM seminars and drills so that they can further create an adaptive and resilient organizational culture that can thrive and recover more effectively from disasters. According to Lucena (2024), school heads, as key implementers and representatives of their schools for collaborative opportunities with stakeholders, can further shape disaster risk reduction management practices in their schools through their positive socio-psychological and organizational leadership. Together with teachers and other stakeholders, continuous and proactive involvement in the cause has also had a great impact on achieving organizational resilience.

Table 26. Test of Relationship Between DRRM Implementation and Organizational Resilience

| DRRM Implementation | Organizational Resilience | | | | | Overall Organizational Resilience |
|-----------------------------|---------------------------|-----------------------|------------------------|-----------|------------------------|-----------------------------------|
| | Planning | Adaptability Capacity | Monitoring & Reporting | Resources | Stakeholder Engagement | |
| Prevention | .680** | .468** | .694** | .690** | .656** | .716** |
| Preparedness | .743** | .553** | .730** | .733** | .689** | .776** |
| Response | .734** | .763** | .759** | .704** | .630** | .811** |
| Recovery | .831** | .804** | .773** | .661** | .628** | .836** |
| Overall DRRM Implementation | .844** | .734** | .833** | .784** | .732** | .886** |

****.** Correlation is significant at the 0.01 level (2-tailed).

Verbal Interpretation of r-value: +1.0 Perfect positive +/- association; +0.8 to +1.0 Very strong +/- association; +0.6 to +0.8 Strong +/- association; +0.4 to +0.6 Moderate +/- association; +0.2 to +0.4 Weak +/- association; 0.0 to +0.2 Very weak +/- or no association

Table 26 shows the test of the relationship between the respondents' DRRM implementation and organizational resilience. The r-value obtained from the analysis ranged from 0.468 to 0.886, indicating a moderate to strong positive correlation. Together with p-values lower than the significance level of 0.01, this indicates a significant direct relationship between DRRM implementation and organizational resilience.

The tight link between disaster mitigation and prevention, and organizational resilience, means that Ambray District schools with hazard assessments, partnerships with local government units (LGUs), and early warning systems are likely to maintain continuity during calamities. Table 10 showed that such practices were highly rated in terms of implementation, which may indicate an institutional culture of future-oriented risk management. If prevention practices are consistently used, schools can reduce the impact of disasters and thus become more resilient in the long term.

The strong correlation between organizational preparedness for disaster and resilience suggests that frequent simulations, emergency supply kits, and support mechanisms available (as shown in Table 11) enhance both individual and collective preparedness in the school. Respondents felt that these preparations were very effective, which implies that physical preparations, such as mock drills and emergency exit preparedness, help organizations recover more quickly and enhance response coordination. This implication aligns with the extremely high ratings of planning and resource systems, as represented in Table 15.

The high and stable correlation between response to disasters and organizational resilience may be an indication of the mechanisms by which active schools with evacuation facilities, psychosocial interventions, and coordination with LGUs get back on track and are less vulnerable to disruptions. In Table 12, all elements of response were highly rated, and such hands-on intervention capacity may be the likely explanation for the high ratings exhibited in coordination between stakeholders and adaptive systems in Table 14. Teachers and school administrators who are confident in their ability to undertake disaster response are more likely to offer institutional stability in real emergencies.

The high correlation observed between disaster recovery and rehabilitation, and organizational resilience, listed as the highest value in Table 23, suggests that activities undertaken post-disaster, such as rebuilding infrastructure, reassessing needs, and strategic planning for normalization, may be key to maintaining long-term resilience. According to Table 13, respondents assigned high scores to the recovery elements, which supports the premise that schools that take proactive measures post-disaster, rather than merely react during the disaster, are more likely to recover. Proactive measures could enhance the "monitoring and reporting" capability presented in Table 17.

The extremely high correlation between general DRRM implementation and school resilience underscores the importance of implementation as the day-to-day workhorse of resilience in schools. Planning and readiness are important, but Table 23 indicates that it is continuous and sustained practice of DRRM—from prevention to recovery—that most strongly predicts whether a school can adapt and rebound. This aligns with Table 15's findings, which attribute high resilience scores in all areas to sustained, institutionalized implementation efforts at the district level.

Conducting DRRM efforts is the most concrete application of resilience. According to Abayao (2020), such high dedication and effort were also seen in the northern Philippine communities. There is a high level of commitment, effective implementation, and good collaboration between the community and scientists to achieve functional disaster risk governance. Conducting hands-on simulations, such as drills, emergency exits, and rescue operations, is crucial in transforming theoretical concepts about resilience into practical applications. Active implementation created ongoing experiences that improve resilience systems in general. This holistic approach to DRRM implementation is needed to achieve full organizational resilience.

Table 27. Disaster preparedness significantly mediates the relationship between risk perception and DRRM Implementation

| Effect | Estimate | SE | 95% Confidence Interval | | Z | p |
|----------|----------|--------|-------------------------|-------|-------|-------|
| | | | Lower | Upper | | |
| Indirect | 0.461 | 0.0695 | 0.324 | 0.597 | 6.63 | <.001 |
| Direct | 0.261 | 0.0781 | 0.108 | 0.414 | 3.34 | <.001 |
| Total | 0.722 | 0.0702 | 0.584 | 0.859 | 10.27 | <.001 |

| | | | | | 95% Confidence Interval | | | |
|-----------------------|---|-----------------------|----------|--------|-------------------------|-------|-------|-------|
| | | | Estimate | SE | Lower | Upper | Z | p |
| Risk Perception | → | Disaster Preparedness | 0.792 | 0.0736 | 0.647 | 0.936 | 10.76 | <.001 |
| Disaster Preparedness | → | DRRRM Implementation | 0.582 | 0.0691 | 0.446 | 0.717 | 8.42 | <.001 |
| Risk Perception | → | DRRRM Implementation | 0.261 | 0.0781 | 0.108 | 0.414 | 3.34 | <.001 |

The data presented in Table 27 demonstrates that disaster preparedness significantly mediates the relationship between risk perception and DRRM (Disaster Risk Reduction and Management) implementation. The indirect effect of risk perception on DRRM implementation through disaster preparedness is estimated at 0.461, with a standard error (SE) of 0.0695 and a highly significant p-value (<0.001). The confidence interval for this indirect effect (0.324 to 0.597) does not include zero, confirming the statistical significance of the mediation. The direct effect of risk perception on DRRM implementation, while smaller (estimate = 0.261), is also statistically significant ($p < .001$), indicating that risk perception influences DRRM implementation both directly and indirectly. The total effect (0.722) reinforces the substantial role of risk perception when considering both pathways.

The second part of the table breaks down the paths in the mediation model. Risk perception significantly predicts disaster preparedness (estimate = 0.792, $p < .001$), which in turn significantly predicts DRRM implementation (estimate = 0.582, $p < .001$). Even when accounting for the mediation path, risk perception remains a direct, albeit smaller, influence on the implementation of DRRM. These results support a partial mediation model, indicating that while disaster preparedness is a crucial mechanism through which risk perception affects DRRM practices, a direct influence also remains. This suggests that enhancing individuals' perception of risk may promote better preparedness and stronger disaster risk reduction and management (DRRM) implementation, both directly and through improved disaster preparedness behaviors.

Table 28. DRRM implementation significantly mediates the relationship between risk perception and organizational resilience

| Effect | Estimate | SE | 95% Confidence Interval | | Z | p |
|----------|----------|--------|-------------------------|-------|-------|-------|
| | | | Lower | Upper | | |
| Indirect | 0.524 | 0.0640 | 0.3984 | 0.649 | 8.19 | <.001 |
| Direct | 0.206 | 0.0565 | 0.0954 | 0.317 | 3.65 | <.001 |
| Total | 0.730 | 0.0656 | 0.6014 | 0.858 | 11.13 | <.001 |

| | | | 95% Confidence Interval | | | | | |
|-----------------------------|---|----------------------------------|-------------------------|--------|--------|-------|-------|-------|
| | | | Estimate | SE | Lower | Upper | Z | p |
| Risk Perception | → | DRRRM Implementation | 0.722 | 0.0702 | 0.5839 | 0.859 | 10.27 | <.001 |
| DRRRM Implementation | → | Organizational Resilience | 0.726 | 0.0535 | 0.6210 | 0.831 | 13.56 | <.001 |
| Risk Perception | → | Organizational Resilience | 0.206 | 0.0565 | 0.0954 | 0.317 | 3.65 | <.001 |

The analysis presented in Table 28 examines whether the implementation of Disaster Risk Reduction and Management (DRRM) significantly mediates the relationship between risk perception and organizational resilience. The mediation model shows that both the direct and indirect effects of risk perception on organizational resilience are statistically significant ($p < .001$). Specifically, the indirect effect (mediated through DRRM implementation) has a larger estimate (0.524) compared to the direct effect (0.206), indicating that DRRM implementation plays a crucial role in translating risk perception into organizational resilience. The total effect of risk perception on organizational resilience is 0.730, with a narrow 95% confidence interval (0.6014 to 0.858), suggesting a strong overall relationship.

The second part of the table breaks down the path coefficients in the mediation model. Risk perception significantly predicts DRRM implementation (estimate = 0.722, $p < .001$), and DRRM implementation, in turn, significantly predicts organizational resilience (estimate = 0.726, $p < .001$). This strong mediation path reinforces the conclusion that DRRM implementation is a key mechanism through which risk perception enhances resilience. While there is still a significant direct effect from risk perception to resilience (0.206), the higher indirect effect demonstrates partial mediation. In practical terms, organizations that recognize risk and actively implement DRRM strategies are more likely to develop robust resilience capacities, highlighting the strategic importance of formal risk management practices.

Table 29. DRRM implementation significantly mediates the relationship between disaster preparedness and organizational resilience

| | | | 95% Confidence Interval | | | |
|----------|----------|--------|-------------------------|-------|-------|-------|
| Effect | Estimate | SE | Lower | Upper | Z | p |
| Indirect | 0.568 | 0.0636 | 0.4433 | 0.693 | 8.93 | <.001 |
| Direct | 0.113 | 0.0627 | -0.0104 | 0.235 | 1.79 | 0.073 |
| Total | 0.680 | 0.0547 | 0.5733 | 0.788 | 12.45 | <.001 |

| | | | 95% Confidence Interval | | | | | |
|------------------------------|---|----------------------------------|-------------------------|--------|---------|-------|-------|-------|
| | | | Estimate | SE | Lower | Upper | Z | p |
| Disaster Preparedness | → | DRRRM Implementation | 0.744 | 0.0516 | 0.6427 | 0.845 | 14.42 | <.001 |
| DRRRM Implementation | → | Organizational Resilience | 0.764 | 0.0672 | 0.6320 | 0.895 | 11.37 | <.001 |
| Disaster Preparedness | → | Organizational Resilience | 0.113 | 0.0627 | -0.0104 | 0.235 | 1.79 | 0.073 |

The analysis of data presented in Table 29 investigates whether the implementation of Disaster Risk Reduction and Management (DRRM) significantly mediates the relationship between disaster preparedness and organizational resilience. The results indicate a strong indirect effect of disaster preparedness on organizational resilience through DRRM implementation (estimate = 0.568, $p < .001$), while the direct effect is small (estimate = 0.113) and not statistically significant ($p = 0.073$). This pattern of results suggests full mediation, meaning that the effect of disaster preparedness on organizational resilience is primarily channeled through the implementation of Disaster Risk Reduction and Management (DRRM). The total effect remains strong (estimate = 0.680, $p < .001$), highlighting the overall influence of disaster preparedness when considering both direct and mediated paths.

Looking at the individual path coefficients in the mediation model, disaster preparedness significantly predicts DRRM implementation (estimate = 0.744, $p < .001$), and DRRM implementation significantly predicts organizational resilience (estimate = 0.764, $p < .001$). However, the direct path from disaster preparedness to organizational resilience is weak and not significant, reinforcing the mediating role of DRRM implementation. These findings suggest that organizations enhance their resilience not only by being prepared but also by actively institutionalizing those preparations through structured Disaster Risk Reduction and Management (DRRM) efforts. This underlines the critical importance of formal implementation processes in transforming preparedness activities into tangible resilience outcomes.

5. Conclusions

Based on the findings of the study, the following conclusions were drawn.

1. According to the correlation test between risk perception and disaster preparedness, a significant relationship is revealed between the two variables; the null hypothesis that there is no significant relationship between the variables mentioned above is not sustained.
2. The result of the correlation between risk perception and DRRM implementation shows a significant relationship; these findings do not support the null hypothesis.
3. Since the correlation test between disaster preparedness and DRRM implementation shows a significant relationship, the null hypothesis regarding these variables is rejected.
4. The correlation between disaster preparedness and organizational resilience reveals a significant relationship, which indicates that the null hypothesis is not supported.
5. The correlation between DRRM implementation and organizational resilience reveals a significant relationship, which indicates that the null hypothesis is not supported.

6. Recommendations

Based on the findings and conclusion of the study, the following recommendations were offered:

Teachers are also encouraged to update their disaster risk perception and awareness constantly through regular attendance at seminars, workshops, and simulation drills. The study revealed that risk perception is an important driver of organizational resilience. Teachers must be empowered, therefore, to make their awareness work by actively engaging in school-based disaster risk reduction activities, such as contingency planning, risk mapping, and emergency response drills. They are also encouraged to incorporate DRRM concepts into the classroom, where possible, to instill a culture of safety and preparedness among the students.

DRRM Coordinators may prioritize the exercise and promotion of school-wide DRRM processes, particularly recovery, emergency communication, and coordination among stakeholders. As the implementation of DRRM was identified as having the greatest bearing on organizational resilience, coordinators must be entrusted with making not only the preparation but also the practice, review, and appreciation of it a priority for the entire school staff.

Coordination with local government offices, emergency groups, and parents' associations may also be further strengthened to utilize other support mechanisms during pre-disaster, post-disaster, and disaster periods.

Lastly, school heads may pursue ways to empower and reward the roles teachers take in sustaining DRRM initiatives, thereby developing the school's resilience through collective efforts. Future researchers may consider conducting the same studies

in other districts or regions to replicate and extend the results of this study. They can also study other variables that may affect organizational resilience, like leadership, the quality of school buildings, or levels of community participation. Qualitative approaches, such as interviews and focus groups, can provide more insight into the experiences and reactions of teachers and coordinators during times of disaster. Longitudinal studies can also be used to evaluate the evolution of preparedness and resilience over time, particularly in places that are repeatedly exposed.

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