

Emergency Preparedness in Public Elementary Schools: Examining the Influence of Personnel Characteristics and Institutional Factors in Cantilan District, Surigao Del Sur

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ABSTRACT

Emergency preparedness is a critical component of educational resilience, ensuring the safety of learners and personnel while maintaining continuity of school operations during crises and disasters. This study examined the profile of school personnel, assessed the level of emergency preparedness of public elementary schools, and determined the relationship between respondents' profile variables and school emergency preparedness in Cantilan District, Surigao del Sur, Philippines. Using a quantitative descriptive-correlational research design, data were collected from 211 respondents, consisting of 22 school heads and 189 teachers, through a validated and reliable survey questionnaire. Descriptive statistics, weighted mean, and Pearson Product-Moment Correlation were utilized in the analysis of data. Findings revealed that the respondents were predominantly female, married, and experienced educators serving mostly in small schools. The overall level of emergency preparedness was rated as "Often Experienced," with coordination with external agencies obtaining the highest rating and resource availability receiving the lowest rating. Teachers consistently perceived higher levels of preparedness than school heads, suggesting differences in awareness of institutional capacities and challenges. Furthermore, sex, marital status, school type, and designation were found to have significant relationships with selected dimensions of emergency preparedness, while age, years in service, and workload showed no significant associations. The study concludes that although public elementary schools have established foundational emergency preparedness mechanisms, improvements in resource allocation, preparedness training, and stakeholder engagement are necessary to strengthen school resilience. It is recommended that educational authorities enhance resource provision, institutionalize regular capacity-building programs, and develop targeted interventions that address the varying needs of school personnel and school contexts to ensure comprehensive emergency preparedness.

Keywords: Emergency Preparedness, Disaster Risk Reduction, School Resilience, Elementary Schools, Crisis Management

INTRODUCTION

Emergency preparedness has become a critical concern in educational institutions worldwide due to the increasing occurrence of natural disasters, public health emergencies, and other crisis situations that disrupt school operations and threaten the safety of learners and personnel. International frameworks such as the United Nations Office for Disaster Risk Reduction emphasize the importance of preparedness planning, capacity building, and inter-agency coordination in reducing disaster risks within schools. In the Philippines, the Department of Education has institutionalized disaster risk reduction and management programs to strengthen school resilience and ensure continuity of education during emergencies. Despite these initiatives, variations in preparedness levels remain evident across schools, particularly in geographically diverse and hazard-prone areas. In Cantilan District, Surigao del Sur, where schools are exposed to various environmental and disaster-related risks, understanding the current state of emergency preparedness is essential. Hence, this study aims to investigate the profile of school personnel in terms of years of experience, training related to crisis management,

position, and geographical location of the workplace; assess the level of emergency preparedness of elementary schools; and determine the relationship between respondents' profiles and school emergency preparedness.

In the Philippine context, school emergency preparedness is anchored on the Department of Education's Disaster Risk Reduction and Management (DRRM) framework, which promotes safe learning environments through preparedness planning, capacity building, risk assessment, and stakeholder collaboration. Studies have shown that schools with established DRRM mechanisms demonstrate stronger response capacities and greater institutional resilience during emergencies and disasters (Mutch, 2015; Johnson et al., 2014). Furthermore, preparedness initiatives that involve regular drills, resource mobilization, and community partnerships significantly improve schools' ability to protect learners and personnel while ensuring continuity of educational services during crises.

Previous studies have emphasized the significance of emergency preparedness in educational settings. According to FEMA (2023), effective school preparedness requires comprehensive emergency planning, regular training and drills, adequate resources, reliable communication systems, and strong partnerships with external agencies. Similarly, Johnson et al. (2022) found that schools with well-established preparedness mechanisms were more capable of responding effectively to emergencies and minimizing disruptions to educational processes. Shaw et al. (2021) further argued that disaster preparedness in schools is influenced by the knowledge, experience, and training of educational personnel, highlighting the importance of human factors in disaster risk reduction efforts. These findings suggest that both institutional capacities and individual characteristics play significant roles in shaping school preparedness.

Although previous studies have examined disaster preparedness and disaster risk reduction practices in schools, limited research has explored how personnel characteristics and school-related factors influence emergency preparedness within Philippine elementary schools. Most investigations have focused on infrastructure, policies, and preparedness programs rather than on the demographic and professional characteristics of individuals responsible for implementing these measures. Consequently, there remains a need to determine whether personal and institutional factors contribute to variations in preparedness levels among educational personnel in disaster-prone communities.

This study contributes to the frontier of knowledge by providing empirical evidence on the relationship between selected respondent characteristics and school emergency preparedness in a local educational context. The findings are expected to enrich the growing body of literature on disaster risk reduction and educational resilience by identifying factors associated with preparedness levels among school personnel. Furthermore, the study may serve as a basis for policymakers, school administrators, and disaster risk reduction practitioners in designing targeted interventions, capacity-building programs, and preparedness strategies that address the specific needs of schools and educational personnel, ultimately strengthening the resilience of elementary schools against future emergencies and disasters.

MATERIALS AND METHODS

This study employed a quantitative research approach using a descriptive-correlational research design to determine the profile of the respondents, assess the level of emergency preparedness of elementary schools, and examine the relationship between the respondents' profile and the schools' emergency preparedness in Cantilan District, Surigao del Sur. Data were gathered through a structured questionnaire administered to school heads and teachers.

To establish the validity of the instrument, the questionnaire underwent content and face validation by a panel of experts in educational management, disaster risk reduction and management, and research methodology. Their recommendations were incorporated to improve the clarity, relevance, comprehensiveness, and alignment of the instrument with the objectives of the study.

To ensure reliability, a pilot test was conducted among teachers and principals who were not included in the actual study. Internal consistency was assessed using Cronbach's alpha, and the results indicated excellent

reliability, with all indicators obtaining values above the acceptable threshold of 0.70. These findings confirmed that the instrument was suitable for gathering consistent and dependable data.

The study was conducted in the elementary schools of Cantilan District, Surigao del Sur, Philippines. The locale was selected because of its unique geographical and educational characteristics, which provided an appropriate setting for examining crisis communication practices and emergency preparedness among schools.

The respondents consisted of 22 elementary school principals and 189 teachers, for a total of 211 participants. Using stratified random sampling, teachers were selected from the participating schools, while all school principals were included through complete enumeration. The respondents represented the various elementary schools within Cantilan District and provided diverse perspectives regarding crisis communication practices and school emergency preparedness.

The data-gathering process followed a systematic and organized procedure. Approval to conduct the study was first secured from the appropriate educational authorities and school heads. Upon obtaining the necessary permissions, informed consent was secured from all respondents. The researcher then administered the questionnaires and retrieved them upon completion. The collected data were subsequently organized, tabulated, analyzed, and interpreted to address the objectives of the study.

Frequency and percentage distribution were used to describe the profile of the respondents in terms of years of experience, training related to crisis management, position, and geographical location of workplace. Weighted mean was employed to determine the level of emergency preparedness of the schools in terms of emergency planning, training and drills, resource availability, communication systems, and coordination with external agencies. Pearson Product-Moment Correlation was utilized to determine the significant relationship between the respondents' profile and the level of emergency preparedness of the schools.

Ethical considerations were strictly observed throughout the conduct of the study. Participation was voluntary, and respondents were informed of the purpose, procedures, benefits, and possible risks of the research. Confidentiality and anonymity of responses were maintained, and respondents were assured that the information gathered would be used solely for academic and research purposes. Participants were likewise informed of their right to withdraw from the study at any stage without penalty.

RESULTS AND DISCUSSION

This section presents and discusses the findings on the respondents' profile, the level of emergency preparedness of public elementary schools, and the significant relationship between respondents' profile variables and the schools' emergency preparedness.

Profile of the Respondents

The teaching staff have a demographic profile that is predominantly mature, with the majority in the middle and older age groups and school heads heavily weighted towards the oldest age group.

Table 1. Profile of the Respondents

Variable/Category	Teachers		School Heads		Over-all Frequency	Over-all Percentage
	Frequency	Percentage	Frequency	Percentage		
Age						
25-29	15	8%	0	0%	15	7%
30-39	65	34%	6	27%	71	34%
40-49	79	42%	3	14%	82	39%
50-above	30	16%	13	59%	43	20%
Total	189	100%	22	100%	211	100%
Sex						
Male	55	29%	6	27%	61	29%

Female	134	71%	16	73%	150	71%
Total	189	100%	22	100%	211	100%
Marital Status						
Single	55	29%	0	0	55	26%
Married	129	68%	22	100%	151	72%
Widows/Widower	5	3%	0	0	5	2%
Total	189	100%	22	100%	211	100%
Years in Service						
1-5 years	20	11%	0	0%	20	9%
6-10 years	55	29%	3	14%	58	27%
11-15 years	40	21%	9	41%	49	23%
16-20 years	44	23%	0	0	44	21%
21 years above	30	16%	10	45%	40	19%
Total	189	100%	22	100%	211	100%
Designation						
Small	114	60%	14	64%	128	61%
Medium	70	37%	8	36%	78	37%
Big	5	3%	0	0%	5	2%
Total	189	100%	22	100%	211	100%

This age distribution represents a very experienced educational workforce but also has major implications for leadership succession and institutional renewal. There is a large segment of the administrative leadership approaching retirement age and the majority of the school heads are of the older generation. Absent focused mentoring and succession planning, this could lead to loss of institutional knowledge and governance. On their side, the teaching force, also seasoned, has a good number in their thirties and forties who represent a potential source of future leaders, if they get the professional development, leadership exposure to get them ready for administrative posts. The low numbers of younger staff in both groups raises questions about the pipeline of new entrants into the profession which may impact on long term sustainability and the injection of contemporary pedagogical approaches.

While increased female representation can positively influence school culture and provide diverse role models for learners, gender diversity across educational roles remains important for fostering inclusive decision-making and organizational effectiveness. Research by Hallinger and Heck (2010) suggests that diverse leadership structures contribute to improved school performance through collaborative decision-making processes and broader perspectives in policy implementation. Consequently, there is a need for targeted recruitment strategies and supportive environments that also attract and retain more male educators, ensuring that students are exposed to a diverse set of role models and perspectives. Previous studies suggest that personal and family circumstances may influence career trajectories, job commitment, and professional engagement among educators. Day and Gu (2014) emphasize that teachers' professional lives are shaped not only by workplace conditions but also by personal and family-related factors that affect career development and resilience. However, this pattern may unintentionally disadvantage single or differently situated educators by fostering implicit biases in promotion and leadership selection. Schools and educational authorities should be mindful of these dynamics, striving to create inclusive support systems that recognize diverse personal circumstances and promote fair opportunities for all educators, regardless of their marital status.

Howley and Howley (2004) suggest that smaller school environments often foster stronger interpersonal relationships, greater flexibility in role assignments, and closer interactions between staff and students, which can contribute to positive educational outcomes. However, the broader scope of responsibilities in such settings may also increase workload and stress among educators. Educational leaders should recognize these unique challenges and opportunities by providing tailored support and professional development to staff in smaller schools, ensuring that they are equipped to manage diverse responsibilities while maintaining well-being and effectiveness.

Level of the Emergency Preparedness as Experienced by the Elementary Schools

The assessment of emergency preparedness reveals a consistent pattern where teachers report higher levels of experienced readiness across all indicators compared to school heads, yet both groups collectively rate every dimension as only "often experienced" rather than fully institutionalized.

Table 2. Level of the Emergency Preparedness as Experienced by the Elementary Schools

Indicators	Teachers		School Heads		Grand Mean	Over-all Adj Rating
	Mean	Adj Rating	Mean	Adj Rating		
Emergency Planning	4.052	Often Experienced	3.873	Often Experienced	3.963	Often Experienced
Training and Drills	3.993	Often Experienced	3.755	Often Experienced	3.874	Often Experienced
Resource Availability	3.707	Often Experienced	2.764	Often Experienced	3.236	Often Experienced
Communication Systems	4.106	Often Experienced	3.509	Often Experienced	3.808	Often Experienced
Coordination with External Agencies	4.182	Often Experienced	3.800	Often Experienced	3.991	Often Experienced
Over-all Mean	4.008	Often Experienced	3.540	Often Experienced	3.774	Often Experienced

This convergence in categorical rating suggests that while basic emergency frameworks exist, they have not reached a level of comprehensive integration that would warrant a higher designation. The most striking divergence appears in resource availability, where school heads' ratings are notably lower, pointing to a possible disconnect between administrative awareness of logistical constraints and the frontline staff's perception of available support.

Communication systems and coordination with external agencies also show considerable gaps, indicating that school heads may be more acutely aware of the challenges in maintaining reliable information flow and inter-agency partnerships during crises. These disparities imply that those in leadership positions are more cognizant of systemic weaknesses, while teachers may be evaluating preparedness based on their immediate, more controlled experiences rather than the full operational picture. The implication of these findings is that emergency preparedness in elementary schools, while present, remains superficial and inconsistent, requiring deliberate strengthening to move from passive "experience" to active, assured readiness. Ultimately, the findings call for a shift from treating emergency preparedness as a compliance activity to embedding it as a core institutional priority, ensuring that all stakeholders, whether teachers or school heads, experience the same level of confidence and capability when faced with real-world threats.

According to Gooding et al. (2022), strong coordination and partnerships among organizations involved in emergency preparedness and response enhance information exchange, facilitate access to specialized expertise, and improve the mobilization of resources needed to manage crises effectively, thereby contributing to greater institutional resilience. As emphasized by Mutch (2015), disaster preparedness initiatives are often limited by inadequate resources, insufficient training, and weak institutional support, which can hinder the effective implementation of emergency plans and preparedness activities. The implications of these findings are substantial. First, the high level of coordination with external agencies indicates that schools recognize the importance of collaborative crisis management and are proactive in seeking external support. The low scores in resource availability underscore a critical area for improvement. Without adequate resources, even the most well-devised plans and external partnerships may fall short in practice. This gap can lead to delays in response, increased administrative burden, and compromised student safety, as Kano et al. (2007) found that schools with greater preparedness funding and dedicated emergency coordinators demonstrated higher levels of emergency readiness, resource availability, and interagency coordination.

Significant Relationship between the Profile of the Respondents and Emergency Preparedness of the School's Understudy

The results show that all tested variables have a statistically significant relationship with the school's emergency preparedness, but the strength of these relationships varies.

Table 3. Significant Relationship between the Profile of the Respondents and Emergency Preparedness of the School's Understudy

Variable Tested		Computed r	P-value	Decision	Conclusion
Emergency Planning	Age	0.088	0.230	Failed to reject Ho	Not Significant
	Sex	0.137	0.60	Failed to reject Ho	Not Significant
	Marital Status	0.127	0.081	Failed to reject Ho	Not Significant
	Years in Service	0.057	0.436	Failed to reject Ho	Not Significant
	Type of School	0.156	0.032	Reject Null Hypothesis	Significant
	Designation	0.054	0.462	Failed to reject Ho	Not Significant
	Workload	0.027	0.713	Failed to reject Ho	Not Significant
Training & Drills	Age	0.071	0.334	Failed to reject Ho	Not Significant
	Sex	0.201	0.006	Reject Null Hypothesis	Significant
	Marital Status	0.211	0.004	Reject Null Hypothesis	Significant
	Years in Service	0.063	0.390	Failed to reject Ho	Not Significant
	Type of School	0.041	0.574	Failed to reject Ho	Not Significant
	Designation	0.191	0.008	Reject Null Hypothesis	Significant
	Workload	0.065	0.377	Failed to reject Ho	Not Significant
Resource Availability	Age	0.036	0.622	Failed to reject Ho	Not Significant
	Sex	0.245	0.001	Reject Null Hypothesis	Significant
	Marital Status	0.356	0.000	Reject Null Hypothesis	Significant
	Years in Service	0.118	0.105	Failed to reject Ho	Not Significant
	Type of School	0.060	0.410	Failed to reject Ho	Not Significant
	Designation	0.015	0.840	Failed to reject Ho	Not Significant
	Workload	0.095	0.195	Failed to reject Ho	Not Significant
Communications Systems	Age	0.007	0.919	Failed to reject Ho	Not Significant
	Sex	0.132	0.070	Failed to reject Ho	Not Significant
	Marital Status	0.150	0.039	Reject Null Hypothesis	Significant
	Years in Service	0.071	0.332	Failed to reject Ho	Not Significant
	Type of School	0.138	0.058	Failed to reject Ho	Not Significant
	Designation	0.087	0.232	Failed to reject Ho	Not Significant
	Workload	0.013	0.864	Failed to reject Ho	Not Significant
Coordination with External Agencies	Age	0.042	0.568	Failed to reject Ho	Not Significant
	Sex	0.225	0.002	Reject Null Hypothesis	Significant
	Marital Status	0.177	0.015	Reject Null Hypothesis	Significant
	Years in Service	0.123	0.092	Failed to reject Ho	Not Significant
	Type of School	0.203	0.005	Reject Null Hypothesis	Significant
	Designation	0.036	0.625	Failed to reject Ho	Not Significant
	Workload	0.025	0.730	Failed to reject Ho	Not Significant

The relationship between respondent profiles and emergency preparedness reveals that demographic factors like age, years in service, and workload have virtually no bearing on how schools plan for or respond to crises, as these variables consistently failed to reach significance across all indicators. This suggests that emergency planning and communication systems are standardized across the board, treating all personnel uniformly regardless of their tenure or position. However, the consistent significance of marital status across multiple dimensions, particularly in training, resource availability, and communication, implies that family responsibilities may shape how individuals perceive or engage with preparedness activities.

For instance, a married teacher with young children might pay closer attention to evacuation drills or resource stockpiles because they mentally translate school safety into family safety, while single personnel may not feel the same urgency. Similarly, the significance of sex in training, resource availability, and external coordination points to gendered differences in risk perception or role expectations, where female staff may be more attuned to nurturing and support functions during emergencies, while male staff might focus more on logistical or command aspects, influencing how each group experiences preparedness differently.

The most practically significant finding is the role of school type and designation, which affects emergency planning and coordination with external agencies, respectively. For example, a large national high school with hundreds of students will inevitably have more complex evacuation routes and communication needs than a small rural school, making planning inherently more challenging and thus more dependent on institutional scale. Likewise, the significance of designation in training and drills suggests that teacher-in-charge, who are often the first responders within their classrooms, experience drills differently from school heads who oversee the entire operation, potentially leading to gaps in role-specific training.

Research conducted in disaster-prone communities indicates that household and individual characteristics significantly influence disaster preparedness. Studies have shown that married individuals often report higher levels of preparedness due to greater family responsibilities, stronger social support systems, and increased risk awareness (Ejeta et al., 2015; Levac et al., 2012). Gender-related differences in preparedness have also been documented, with women frequently demonstrating greater participation in preparedness activities and risk-reduction behaviors, while men may exhibit different patterns of hazard perception and response (Enarson & Morrow, 1998; Fothergill, 1996). Regarding institutional factors, previous research suggests that school characteristics, including school type, organizational structure, and leadership support, significantly influence the implementation of disaster risk reduction and management initiatives, with schools possessing stronger institutional capacities generally demonstrating higher levels of preparedness and compliance with safety standards (Mutch, 2015; Johnson et al., 2014).

CONCLUSION

Effective emergency preparedness is essential in ensuring the safety, security, and continuity of educational operations during times of crisis. As schools face increasing risks from natural disasters, health emergencies, and other unforeseen events, the ability of educational institutions to anticipate, prepare for, respond to, and recover from emergencies has become a fundamental responsibility of school leadership and personnel. A well-prepared school environment not only minimizes risks and potential damages but also fosters confidence among stakeholders that appropriate measures are in place to protect lives and sustain learning during adverse situations.

The findings of the study revealed that public elementary schools generally exhibited a satisfactory level of emergency preparedness, as reflected in the overall rating of "Often Experienced" across the dimensions of emergency planning, training and drills, resource availability, communication systems, and coordination with external agencies. Among these dimensions, coordination with external agencies obtained the highest rating, indicating that schools have established collaborative relationships with relevant organizations that can provide assistance during emergencies. Conversely, resource availability received the lowest rating, suggesting the need for greater investment in emergency equipment, facilities, and other essential resources necessary for effective crisis response. The results further showed that teachers consistently perceived a higher level of preparedness than school heads, indicating possible differences in awareness and perspectives regarding existing preparedness mechanisms and institutional challenges.

Moreover, the study established that certain respondent profile variables significantly influenced specific dimensions of emergency preparedness. While age, years in service, and workload generally showed no significant relationship with preparedness indicators, variables such as sex, marital status, school type, and designation were found to be significantly associated with selected aspects of emergency preparedness. These findings imply that personal and institutional characteristics may affect how preparedness measures are perceived and implemented within schools. Therefore, it can be concluded that although public elementary schools have developed foundational emergency preparedness practices, continuous improvement is necessary

to strengthen resource availability, enhance preparedness programs, and ensure that all stakeholders possess a shared understanding of emergency protocols. Strengthening these areas will contribute to building safer, more resilient, and more responsive school communities capable of effectively managing future emergencies and crises.

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