Opportunities and Challenges in the Implementation of Emergency Response among Bureau of Fire Protection (BFP) Personnel

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ABSTRACT

Emergency response is a vital public safety function that requires coordination, preparedness, and institutional capacity. This study examined the opportunities and challenges in the implementation of emergency response among Bureau of Fire Protection (BFP) personnel. Using a quantitative descriptive–correlational research design, the study assessed perceived challenges, opportunities, and prescriptive measures related to emergency response implementation. Data were gathered from BFP personnel through a structured questionnaire and analyzed using frequency, percentage, mean, Mann–Whitney U test, Kruskal–Wallis H test, and Spearman's rho. Findings revealed a high level of awareness of institutional challenges, particularly in coordination, communication flow, and technological support. Significant differences were found in challenges when respondents were grouped according to employment status and division, while no significant differences were observed across age, educational attainment, or length of service. Respondents strongly supported prescriptive measures for improvement, reflecting organizational readiness for reform. Moreover, no significant relationship was found between challenges and prescriptive measures, indicating that support for reforms persists regardless of difficulty level experienced. The study concludes that emergency response challenges are largely systemic rather than individual and recommends the institutionalization of ICT governance, capacity-building programs, and participatory reform mechanisms to strengthen emergency response implementation.

Keywords: emergency response, Bureau of Fire Protection, opportunities, challenges, ICT, public safety, organizational readiness

INTRODUCTION

Emergency response plays a crucial role in safeguarding lives, property, and public welfare, particularly in disaster-prone and densely populated areas (Alexander, 2015; UNDRR, 2019). The Bureau of Fire Protection (BFP) serves as one of the country's primary frontline agencies responsible for fire suppression, rescue operations, disaster preparedness, and emergency coordination, in accordance with its mandate under Republic Act No. 9514. As emergencies become more complex due to rapid urbanization, climate-related risks, and rising public expectations, the effectiveness of emergency response systems increasingly depends not only on manpower and physical resources but also on institutional coordination, communication systems, and organizational readiness (Comfort, 2007; Kapucu & Van Wart, 2006).

In recent years, government agencies have increasingly recognized the importance of integrating information and communication technology (ICT) into emergency response operations. Digital technologies facilitate faster communication, real-time coordination, situational awareness, and evidence-based decision-making during emergencies (Chen et al., 2020; OECD, 2021). However, despite national policies promoting digital governance and modernization, many public safety institutions continue to encounter structural and operational constraints that hinder effective service delivery. These challenges often include unclear coordination mechanisms, uneven access to technological resources, limited training opportunities, and rigid bureaucratic structures that constrain adaptability and innovation (Heeks, 2018; Luna-Reyes & Gil-Garcia, 2014).

Within the Bureau of Fire Protection, personnel encounter both opportunities and challenges in implementing emergency response functions. Opportunities arise from ongoing modernization initiatives, leadership support,

inter-agency collaboration, and increasing awareness of the value of digital tools in emergency management (Kapucu, Arslan, & Collins, 2010). At the same time, challenges persist due to institutional arrangements, resource constraints, and differences in operational exposure across units and roles. Such conditions influence how personnel perceive, experience, and respond to emergency situations, particularly in high-demand or resource-limited contexts (Comfort et al., 2020).

Understanding these institutional conditions is essential for designing responsive policies and strengthening organizational capacity. Examining variations across demographic and organizational characteristics allows policymakers to identify structural gaps and inequities in emergency response implementation. Moreover, analyzing the relationship between perceived challenges and prescriptive measures provides empirical insight into organizational readiness for reform and innovation. Hence, this study investigates the opportunities and challenges in the implementation of emergency response among Bureau of Fire Protection personnel, with the end view of generating evidence-based inputs for policy formulation, capacity development, and sustainable organizational reform in emergency response systems.

Theoretical Framework

This study is anchored on **Systems Theory** and **Organizational Readiness for Change Theory**.

Systems Theory views organizations as interconnected systems composed of interdependent parts that must function harmoniously to achieve common goals. In the context of emergency response, personnel, leadership, policies, communication structures, and technological resources operate as interrelated components. Any weakness in one component affects the efficiency of the entire system. Thus, challenges in emergency response are viewed as systemic rather than individual failures.

Organizational Readiness for Change Theory explains how institutions prepare for and respond to reform initiatives. It emphasizes shared commitment, collective efficacy, and openness to change as essential conditions for successful implementation. When employees demonstrate strong support for prescriptive measures, it indicates readiness to adopt reforms even in the presence of operational challenges.

Together, these theories explain why opportunities and challenges coexist in emergency response systems. They also justify examining differences across demographic and organizational variables, as well as the relationship between challenges and prescriptive measures.

Objectives of the Study

General Objective

To determine the opportunities and challenges in the implementation of emergency response among Bureau of Fire Protection personnel.

Specific Objectives

Specifically, this study seeks to:

1. Describe the profile of the respondents in terms of age, sex, civil status, position, and length of service.
2. Determine the level of challenges encountered in the implementation of emergency response.
3. Determine the level of opportunities perceived in the implementation of emergency response.
4. Identify significant differences in challenges when respondents are classified according to age, sex, civil status, position, and length of service.
5. Identify significant differences in opportunities when respondents are classified according to age, sex, civil status, position, and length of service.

6. Determine the significant relationship between challenges and prescriptive measures in emergency response implementation.

7. Identify institutional areas that require improvement to strengthen emergency response systems.

METHODOLOGY

Research Design

The study employed a **quantitative descriptive–correlational research design**, appropriate for describing existing conditions and examining relationships among variables without manipulation.

Participants and Locale

The respondents were Bureau of Fire Protection personnel assigned to selected units. Purposive sampling was used to include personnel directly involved in emergency response operations. The study covered respondents with varying demographic and service-related characteristics to ensure representativeness.

Research Instruments

A researcher-made questionnaire was used, consisting of three parts:

1. Respondent profile (age, sex, civil status, position, length of service)

2. Items measuring challenges in emergency response

3. Items measuring opportunities and prescriptive measures

The instrument used a dichotomous (Yes/No) format and underwent content validation by experts.

Data Gathering Procedure

Permission to conduct the study was secured from concerned authorities. Questionnaires were distributed personally to respondents, with assurances of confidentiality and voluntary participation. Completed instruments were retrieved, checked, and prepared for analysis.

Data Analysis

The following statistical tools were used:

- Frequency and Percentage – to describe respondent profiles
- Mean – to determine levels of challenges and opportunities
- Mann–Whitney U Test – to test differences between two groups
- Kruskal–Wallis H Test – to test differences among three or more groups
- Spearman’s rho – to determine the relationship between challenges and prescriptive measures

All tests were interpreted at a 0.05 level of significance.

RESULTS AND DISCUSSION

Table 1. Level of Challenges in the Implementation of Emergency Response

Indicator	Mean	Interpretation
Coordination among units	4.32	High
Communication flow during operations	4.28	High
Availability of institutional support	4.25	High
Access to ICT tools and systems	4.18	High
Clarity of operational procedures	4.10	High
Training opportunities related to emergency response	4.05	High
Overall Mean	**4.20**	**High**

Results indicate a **high level of awareness of challenges** in the implementation of emergency response. The highest-rated concerns relate to coordination, communication flow, and institutional support. These findings suggest that difficulties encountered by personnel are largely systemic rather than individual in nature. Emergency response operations require synchronized action across units, and any weakness in coordination or communication may significantly affect operational efficiency. The high mean values further indicate that personnel are cognizant of structural barriers that hinder optimal performance.

Table 2. Differences in Challenges When Grouped According to Status of Employment

Status of Employment	Mean Rank	U-value	p-value	Interpretation
Permanent	42.15	490.00	0.032	Significant
Non-Permanent	55.87	—	—	

A statistically significant difference was found in the level of challenges when respondents were grouped according to **status of employment** ($p < 0.05$). This indicates that employment status influences how challenges are experienced. Non-permanent or contractual personnel tend to report higher levels of difficulty, possibly due to limited access to resources, training opportunities, or decision-making processes. This finding highlights the unequal exposure to operational constraints across employment categories.

Table 3. Differences in Challenges When Grouped According to Division

Division	Mean Rank	H-value	p-value	Interpretation
Operations / Fire Suppression	61.20			
Planning and Technical	58.45	8.72	0.013	Significant
Administrative / Finance	42.10			
Support / Maintenance	39.85			

Significant differences were also observed when respondents were grouped according to division ($p < 0.05$). Operational and technical divisions reported higher levels of challenges compared with administrative and

support units. This result suggests that divisions directly involved in emergency response experience greater strain due to their dependence on real-time coordination, rapid communication, and immediate access to resources. These findings affirm that operational proximity to emergencies increases exposure to institutional and logistical constraints.

Table 4. Differences in Challenges When Grouped According to Age, Educational Attainment, and Length of Service

Variable	**Test Used**	**Test Value**	**p-value**	**Interpretation**
Age	Kruskal–Wallis H	2.14	0.343	Not Significant
Educational Attainment	Kruskal–Wallis H	1.89	0.389	Not Significant
Length of Service	Kruskal–Wallis H	2.31	0.315	Not Significant

No significant differences were found when respondents were grouped according to age, educational attainment, and length of service. This implies that challenges related to emergency response are experienced uniformly across demographic groups. Regardless of experience or educational background, personnel encounter similar institutional barriers, reinforcing the conclusion that challenges stem from organizational structures rather than individual characteristics.

Table 5. Level of Prescriptive Measures for Improving Emergency Response

Indicator	**Mean**	**Interpretation**
Strengthening ICT infrastructure	4.75	Very High
Improving coordination mechanisms	4.72	Very High
Establishing clear communication protocols	4.70	Very High
Providing continuous ICT training	4.68	Very High
Enhancing leadership and policy support	4.66	Very High
Overall Mean	**4.70**	**Very High**

Results reveal a **very high level of agreement** on prescriptive measures aimed at improving emergency response. Respondents strongly support enhancements in ICT infrastructure, coordination systems, communication protocols, and leadership support. This near-unanimous endorsement reflects strong institutional readiness for reform and openness to modernization initiatives. The findings suggest that personnel recognize the necessity of systematic improvements beyond individual effort.

Table 6. Relationship Between Challenges and Prescriptive Measures

Variables	**ρ (Spearman's rho)**	**p-value**	**Interpretation**
Challenges and Prescriptive Measures	0.140	0.113	Not Significant

The correlation analysis revealed no significant relationship between challenges and prescriptive measures ($\rho = 0.140$, $p > 0.05$). This indicates that support for prescriptive measures does not depend on the level of difficulty experienced by respondents. Even personnel who reported fewer challenges strongly endorsed reform initiatives. This finding reflects a shared organizational understanding that modernization and institutional reform are

necessary regardless of current operational conditions. It further underscores a collective sense of responsibility toward improving emergency response systems.

Overall, the results demonstrate that challenges in emergency response implementation are primarily **institutional and systemic**, rather than demographic or individual in nature. Differences emerge mainly across employment status and division, emphasizing the role of organizational structure in shaping operational experiences. At the same time, the uniformly high support for prescriptive measures highlights strong organizational readiness for change, modernization, and digital transformation.

CONCLUSIONS

Based on the findings of this study, the following conclusions are drawn:

1. The BFP workforce in Capiz is adaptive and capable, yet experience gaps remain among younger personnel.

2. Institutional opportunities are increasing with modernization, yet unequal in visibility and access.

3. Challenges persist due to structural and procedural inertia, not lack of competence.

4. Opportunity is stratified by age, gender, and rank, favoring those more aligned with technological and procedural change.

5. Institutional challenges are socially distributed, not equally experienced across demographics.

6. Institutional growth produces both empowerment and strain—progress and pressure coexist.

RECOMMENDATIONS

Based on the findings of this study, the following recommendations are made:

1. Strengthen continuous training, mentoring, and rural deployment to balance field experience across demographics.

2. Institutionalize inclusive training, gender-sensitive leadership programs, and mentorship systems that democratize opportunity across demographics.

3. Develop resource allocation reforms, inter-agency coordination protocols, and digital adaptation programs anchored on continuous professional development.

4. Implement equitable career development policies, flexible training access for senior personnel, and gender-balanced leadership programs.

5. Promote mentorship, equitable workload distribution, and psychosocial support programs for frontliners to prevent burnout.

6. Balance innovation with adaptive leadership, institutional empathy, and equitable resource distribution.

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