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THE QUEZON CITY FIRE DISTRICT RESPONSE TO EMERGENCY: AN EVALUATION OF OPERATIONAL EFFICIENCY AND EFFECTIVENESS

Mark Anthony N. Morales
Wilfredo R. Beralde

Saint Ferdinand College-City of Ilagan Campus, City of Ilagan, Isabela, Philippines

ABSTRACT

This study evaluated the operational efficiency and effectiveness of the Quezon City Fire District (QCFD) in responding to emergencies, particularly in emergency medical services, firefighting operations, fire safety enforcement, rescue services, and disaster management. Using the descriptive method of research, the study involved 190 respondents composed of Bureau of Fire Protection personnel, fire volunteers, barangay fire brigade members, and stakeholders from private companies, schools, and other sectors. Data were gathered through validated questionnaires distributed online and were analyzed using frequency, percentage, rank, weighted mean, analysis of variance, and Pearson r correlation. Findings revealed that BFP personnel, fire volunteers, and barangay fire brigade members perceived the QCFD as very effective in all five areas, while stakeholders assessed it as effective. Significant differences were found in respondents' perceptions when grouped according to age and training attended, but no significant differences were noted according to sex, educational attainment, and rank. Significant differences were also observed among respondent groups across the five operational areas. The major problems encountered were insufficient equipment for firefighting, rescue services, disaster management, emergency medical services, lack of fire trucks, limited coordination with other organizations, and inadequate mandatory training. A significant weak negative relationship was found between problems encountered and perceived effectiveness, indicating that increased operational problems lowered perceptions of emergency response effectiveness. Based on the findings, the study proposed an intervention program focused on improved community engagement, intensive fire safety education, stronger collaboration with stakeholders, enhanced training, and the provision of sufficient modern equipment to strengthen QCFD emergency response.

Keywords: *Quezon City Fire District, emergency response, operational effectiveness, firefighting operations, community engagement*

INTRODUCTION

The Bureau of Fire Protection's (BFP) mission is to protect lives and properties through the prevention and suppression of destructive fires, investigation of their causes, and provision of emergency medical and rescue services with the support of the public. The BFP also mobilizes the direct involvement and active participation of the civilian populace and private sector, with the assistance of Local Government Units (LGUs), in promoting fire safety, establishing and maintaining adequately equipped, manned, and highly efficient personnel, and inculcating fire safety awareness among the citizenry (Bureau of Fire Protection [BFP], n.d.; Republic Act No. 6975, 1990; Republic Act No. 11589, 2021).

As authorized by law, the BFP supports and assists fire volunteers, fire practitioners, and fire volunteer organizations in the Philippines who shall undergo mandatory fire suppression, inspection, rescue, emergency medical services, and related emergency response training and competency evaluations conducted by the BFP. In the case of fire practitioners, they shall undergo mandatory continuing professional education and competency evaluation of their expertise, knowledge, and skills in the area of fire science, engineering, and technology to be conducted by the BFP (Republic Act No. 9514, 2008).

Time and again, massive campaigns on fire prevention are conducted through seminars and training, actual demonstrations, and other information dissemination activities. In fact, March is observed as Fire Prevention Month to make people aware of the importance of fire safety prevention and the do's and don'ts during fire occurrences. This observance is consistent with the national policy of promoting safety consciousness and with the BFP's mandate to conduct monthly fire prevention campaigns and information drives in partnership with LGUs and other agencies (Proclamation No. 115-A, 1966; Republic Act No. 11589, 2021).

The number of fire incidents in the first two months of 2022 increased by almost 13 percent as compared to 2021. BFP spokesperson Supt. Annalee Carbajal-Atienza, in a radio interview, announced that a total of 2,103 fire incidents were recorded in January and February, 2022, an increase of 12.9 percent from only 1,863 incidents in the same period in 2021 (Caliwan, 2022).

Through the efforts of the Quezon City Government, the Quezon City Fire Stations has been a recipient of equipment necessary for fire service worth multi-million pesos. On top of this, training to support the city's advocacy in improving and modernizing their firefighting capability are being conducted. Operational efficiency and effectiveness, according to Maher, et al. (2019) may enable an organization to better utilize its resources, better implement its processes and achieve its mission and objectives. It is a central feature of the continuous improvement of functional performance.

Creativeness and innovativeness are just some of the characteristics a firefighter must possess to withstand the calling for efficient and effective delivery of public service and that is what the officers and personnel of BFP have been showing. The objective function of the BFP may be viewed as maximizing fire prevention, fire suppression, and other services.

The researcher, as a BFP personnel, observed some problems in the regular normal operations of QCFD. Without prejudice to the BFP Modernization Program which should be implemented over a period of 10 years effective upon the date of its approval on September 10, 2021, the existing fire protection equipment and services need serious upgrades through the acquisition of new and modern equipment, vehicles, and personal protective equipment (PPEs) (Republic Act No. 11589, 2021).

Thus, the researcher deemed it necessary to find out the operational efficiency of QCFD focusing on the five areas of operations - emergency medical services, firefighting operations, fire safety enforcement, rescue services and disaster management through Volunteer Fire Brigade, Barangay Fire Brigade, Stakeholder and the BFP personnel for a broader understanding of the problems affecting the QCFD's operational efficiency.

Research Questions

This study sought to assess how effective does the Quezon City Fire District respond to emergencies.

Specifically, the study sought answer to the following problems:

1. What is the profile of the respondents in terms of:
   a. age;
   b. sex;
   c. educational attainment;
   d. rank;
   e. training attended?
2. How do volunteer fire brigade, barangay fire brigade, stakeholders and the BFP personnel perceive the level of effectiveness of QCFD in responding to emergencies in terms of:
   a. Emergency Medical Services;
   b. Fire Fighting Operations;
   c. Fire Safety Enforcement;
   d. Rescue Services; and
   e. Disaster Management?
3. Is there significant difference in the respondents' perceptions on QCPD's level of effectiveness in responding to emergencies when grouped according to profile?
4. Is there significant difference in the respondents' perception on the QCFD's effectiveness along the five areas?
5. What are the problems encountered by the QCFD in responding to emergencies?

6. Is there significant relationship between the problems encountered by the four groups of respondents and QCFD's effectiveness in responding to emergencies?
7. What interventions can the QCFD devise to address the issues and concerns pertaining to emergency response?

METHODOLOGY

Research Design

The study employed descriptive method of research. Descriptive research, according to Siedlecki (2020), is a research method that describes the characteristics of the population or the phenomenon studied and primarily focuses on describing the nature of a demographic segment, focuses more on what of the research subject. The descriptive method of research was used in this study to describe the level of effectiveness of the QCFD in emergency medical services, the firefighting operations, the fire safety enforcement, the rescue services, and the disaster management.

Locale of the Study

The study was conducted in Quezon City, one of the rising cities in the heart of National Capital Region with the lot area of 161.11 km and composed of 142 barangays and has a population of 2,960.048 and 31 fire stations and sub stations. The researchers chose the place of implementation because it provided the researchers the needed information for people. The study was conducted during CY 2023.

Selection and Description of Respondents

The main source of data for this study are the respondents from the Bureau of Fire Protection Personnel, Fire Volunteers, Stakeholders (Private Company, School, others), and Barangay Fire Brigade. The respondents are all assigned and located within the vicinity of the QCFD.

The researcher considered the total population of the respondents for this study. The number of respondents per group is reflected in table 1 below.

Table 1
Frequency and Percentage Distribution of Respondents

Respondents	Frequency	Percentage
Bureau of Fire Protection Personnel	94	49.5
Fire Volunteer	34	17.9
Stakeholder (Private Company, School, others)	33	17.4
Barangay Fire Brigade	29	15.3
Total	**190**	**100.0**

Table 1 presents the frequency and percentage distribution of the respondents. About half or 49.5 percent of the respondents are BFP personnel, 17.9 percent are Fire Volunteers. Furthermore, 17.4 percent of the respondents come from a private company, school and other stakeholders and 15.3 percent are members of the Barangay Fire Brigade.

Data Gathering Procedure

Prior to the conduct of the survey, the researcher sought first the approval of the Dean of the Graduate School of St. Ferdinand College and his adviser. Upon approval, a letter request was sent to the head of the BFP of Quezon City to secure permission and approval for the researcher to distribute and retrieve the questionnaires to the volunteer fire brigade, barangay fire brigade, stakeholder and the BFP personnel.

A dry-run was administered to 30 BFP personnel who are not part of the actual respondents. Upon approval of the research adviser, the revised copy was distributed using online platform, specifically Google Forms. The respondents were invited and briefed through Messenger and Viber.

Statistical Treatment of Data

After the data was collected, tallied, grouped and collated, the following statistical tools were used to treat the data.

Frequency and Percentage. These statistical tools were utilized to analyze the profile of the respondents.

Rank. This tool was applied to analyze the problems encountered by the respondents in responding to emergencies.

Weighted Mean. This statistical tool was employed to measure the QCFD's level of effectiveness in responding to emergencies.

ANOVA. This tool was also employed to test the significant difference of the perception of the respondents when group according to profile. This statistical tool was also utilized to test the significant difference among the group of respondents' perceptions on QCFD level of effectiveness in its response to emergencies in terms of the five aforementioned aspects. This answered problems number three and number four of the study.

Pearson r Coefficient. This tool was utilized to determine if there is significant relationship between the problems encountered and the effectiveness of QCFD in responding to emergencies.

RESULTS AND DISCUSSION

1. What is the profile of the respondents in terms of:

a. Age

Table 2
Frequency and Percentage Distribution of Respondents According to Age

Age	Frequency	Percentage
22 to 26	47	24.74
27 to 31	42	22.11
31 to 36	41	21.58
37 to 41	21	11.05
42 to 46	27	14.21
47 to 51	5	2.63
52 to 56	7	3.68
Total	190	100

Table 2 shows the rank and frequency distribution of respondents according to age. It can be seen from the table that 47 of the respondents belong to the 22 to 26 age bracket. This is followed by those aged 27 to 31 with 42 respondents. Furthermore, 41 of the respondents are 23 to 26 years old. Only about four percent are between 52 to 56 years of age.

This implies that the personnel of the Bureau of Fire Protection are relatively young and are in their early and mid-adulthood stage. The age qualification standards for FO1 recruitment is 21 to 35 years old at the date/time of filing of application. Those who are 35 years old and older have been in the service for some time.

b. Sex

Table 3
Frequency and Percentage Distribution of Respondents According to Sex

Sex	Frequency	Percentage
Male	117	61.58
Female	73	38.42
Total	190	100

Table 3 presents the frequency and percentage distribution of respondents according to sex.

Data shows that the majority or 117 of the respondents are male and about 39 percent are female.

The findings confirm the statement made by Atienza that women comprise at least 26 percent of the country's firefighters. The FO1 recruitment process is open to all male

and female Filipino citizens , thus the presence of women in the QCFD. Firefighting is no longer a gender issue according to Atienza. Since its inception, the BFP has been receptive to the presence of women in its force (Philippine News Agency, 2022).

c. Educational Attainment

Table 4
Frequency and Percentage Distribution of Respondents According to Educational Attainment

Educational Attainment	Frequency	Percentage
High School Level	2	1.05
High School Graduate	34	17.89
Bachelor's Degree	136	71.58
Bachelor's Degree Holder with Master's Units	8	4.21
Master's Degree Holder	7	3.68
Master's Degree Holder with Doctorate Units	2	1.05
Doctorate Degree Holder	1	.54
Total	190	100

Table 4 displays the highest educational attainment earned by the respondents. It can be gleaned from the table that 136 of the respondents who have a bachelor's degree is 71.58 percent It is followed by high school graduates, with a frequency of 34. Only seven of the respondents are master's degree holders.

The qualification standard for Fire personnel is that one must possess a baccalaureate degree from a recognized institute of learning.

d. Rank

Table 5
Frequency and Percentage Distribution of BFP Personnel According to Rank

Rank	Frequency	Percentage
Inspector	3	3.19
Senior Fire Officer 4	5	5.32
Senior Fire Officer 3	6	6.38
Senior Fire Officer 2	11	11.70
Senior Fire Officer 1	10	10.64
Fire Officer 3	10	10.64
Fire Officer 2	9	9.58
Fire Officer 1	36	38.29
NUP	4	4.26
Total	190	100

Table 5 presents the rank and frequency distribution of the BFP Personnel in terms of rank. It can be viewed from the table that out of 94 fire personnel, 36 have the rank of Fire Officer 1; 10 personnel are Senior Fire Officer 1, and Fire Officer 3; 11 have the rank of Senior Officer 2. Nine are Fire Officer 2; six are Senior Fire Officer 3; five have the rank of Fire Officer 4; three are inspectors and four are non-uniform personnel.

e. Training

Table 6
Frequency and Rank Distribution of Training Attended by the BFP Personnel

Level	Frequency	Rank
Basic Life Support	28	1
Fire Inspection and Investigation Course (FIIC)	23	2
Standard First Aid	20	3
Fire Suppression and Control	17	4
HAZMAT	14	5
Incident Command System	11	6
Forensic Arson Investigation Course (FAIC)	10	7
Water Search and Rescue	7	8
Urban Search and Rescue (USAR)	5	9
Total	94	

The training attended by the BFP personnel is reflected in Table 6.

The table shows that Basic Life Support Training is the one most attended, followed by Fire Inspection and Investigation Course (FIIC), Standard First Aid, Fire Suppression Control. Other training attended are HAZMAT, Incident Command System, Forensic Arson Investigation Course, Water Search and Rescue and Urban Search Rescuer.

The BFP Operational Procedures Manual explicitly mandates that the BFP-Special Rescue Unit and BFP personnel must possess sufficient knowledge and skills in Collapse Structure Search and Rescue (CSSR), Urban Search and Rescue (USAR), Mass Casualty Incident Management, and other related disciplines (Bureau of Fire Protection [BFP], 2015).

The United Nations General Assembly Resolution 57/150 highlights that each state has the primary responsibility to take care of victims of natural disasters occurring within its borders, and that the affected state has primacy in the initiation, organization, coordination, and implementation of humanitarian assistance (United Nations General Assembly, 2003).

The Philippines as an archipelago is surrounded by water and often hit with strong typhoons during rainy season, as such water search and rescue is another crucial skill that should be possessed by responding rescuers.

According to BFP operations manual, water search and rescue operations is dangerous. Therefore, training, drills and equipage are necessary. Likewise, no untrained BFP personnel shall take part in this search and rescue operation due to its inherent risks. Constant situational awareness shall be observed (Philippine News Agency, 2022).

2. How do volunteer fire brigade, barangay fire brigade, stakeholders and the BFP personnel perceive the level of effectiveness of QCFD in responding to emergencies in terms of:

a. Emergency Medical Services (EMS)

The Emergency Medical Services (EMS) is the mandated functions of the BFP to provide pre-hospital care and/or transport to definitive care of patient with injuries (Philippine News Agency, 2022).

Table 7
Respondents' Perception of the Level of Effectiveness of the QCFD in Terms of Emergency Medical Services

Descriptors	BFP personnel		Fire Volunteer		Barangay Fire Brigade		Stakeholder (private company, school, others)	
	Mean	Description	Mean	Description	Mean	Description	Mean	Description
1. The QCFD personnel administer first-aid treatment and life-support care to sick or injured persons in the pre-hospital setting	4.51	Very Effective	4.26	Very Effective	4.66	Very Effective	4.12	Effective
2. The QCFD personnel can operate equipment such as electrocardiograms (ECGs), external defibrillators, and bag-valve-mask resuscitators in advanced life-support environments	3.95	Effective	4.24	Very Effective	4.34	Very Effective	4.06	Effective
3. The QCFD personnel perform emergency diagnostic and treatment procedures, such as stomach suction, airway management, and heart monitoring during the ambulance ride	4.12	Effective	4.12	Effective	4.28	Very Effective	4.09	Effective

4. The QCFD personnel attend training and seminars to update and enhance skills in first-aid	4.34	Very Effective	4.24	Very Effective	4.31	Very Effective	4.24	Very Effective
5. The QCFD personnel provide training and organize first-aiders in schools, business and industry establishments, and in the barangay level.	4.28	Very Effective	4.32	Very Effective	4.34	Very Effective	4.03	Effective
6. The QCFD Station provides PPEs during decontamination and contact tracing	4.38	Very Effective	4.38	Very Effective	4.41	Very Effective	3.91	Effective
Mean	4.26	Very Effective	4.26	Very Effective	4.39	Very Effective	4.07	Effective

Table 7 presents the level of effectiveness of the QCFD Emergency Medical Services as perceived by the respondents.

Data shows that the QCFD personnel perceived the administration of first-aid treatment and life-support care to sick or injured persons in the pre-hospital setting as "**Effective***"* with a mean of 4.12.

The QCFD personnel is perceived by both BFP Personnel and stakeholders to be "**Effective**" in operating equipment such as ECGs, external defibrillators, and bag-valve-mask resuscitators in advanced life-support environments with a mean of 3.95 and 4.06, respectively.

The Barangay Fire Brigade perceived the QCFD Personnel as "**Very Effective"** in emergency diagnostic and treatment procedures, such as stomach suction, airway management and heart monitoring during ambulance ride while the other stakeholders, fire volunteers, and BFP personnel perceive it to be "**Effective.**"

The stakeholders assess the QCFD to be "Effective" in providing training and organizing first-aiders in schools, business and industry establishments, and at the barangay level, and in providing PPEs during decontamination and contact tracing, with a mean of 4.05 and 3.91, respectively while the other respondents see it to be "Very Effective."

As a whole, the respondents except the stakeholders perceived the QCFD to be "Very Effective" in the aspect of Emergency Medical Services

The deficiencies or lack as uncovered in this finding can be complemented by R.A. 11589, which mandates the BFP to develop and implement a fire protection modernization program that includes the acquisition of modern fire equipment, the expansion of the BFP's manpower, and the provision of specialized training for firefighters.

In addition, the BFP 2015 Operational Procedures Manual states that the minimum training requirement for the BFP EMS ambulance crew is to have an emergency medical technician course. Administering medications other than those mentioned in this operations manual should be cleared with and approved by the medical control (Philippine News Agency, 2022).

As elaborated by Caliwan (2021), the new modernization law will help the BFP assume its new role as one of the lead agencies in disaster and emergency responses, aside from its traditional mandate of firefighting. With this law, the BFP will be funded with the assumption of its new role as the lead agency in disaster and emergency medical

b. Fire Fighting Operations

Table 8
Respondents' Perception of the Level of Effectiveness of the QCFDin Terms of Fire Fighting Operations

Descriptors	BFP personnel		Fire Volunteer		Barangay Fire Brigade		Stakeholder (private company, school, others)	
	Mean	Description	Mean	Description	Mean	Description	Mean	Description
1. The QCFD personnel lay-out hoses that are free from obstruction and kinking prior to application of water pressure	4.57	Very Effective	4.41	Very Effective	4.69	Very Effective	4.35	Very Effective
2. The QCFD personnel operate fire pump with appropriate water pressure during fire responses	4.69	Very Effective	4.47	Very Effective	4.48	Very Effective	4.18	Effective
3. The QCFD personnel maneuver fire trucks to strategic positions during fire response	4.59	Very Effective	4.32	Very Effective	4.59	Very Effective	4.18	Effective
4. The QCFD personnel supervise the tactical movement of the personnel and equipment at the fire ground	4.55	Very Effective	4.41	Very Effective	4.48	Very Effective	4.29	Very Effective
5. Personal Protective Equipment (PPE) is available for ALL personnel.	4.36	Very Effective	4.35	Very Effective	4.55	Very Effective	3.91	Effective
6. All QCFD responders wear appropriate PPE every single time.	4.51	Very Effective	4.29	Very Effective	4.41	Very Effective	4.09	Effective
7. All firefighting equipment are available	4.27	Very Effective	4.44	Very Effective	4.45	Very Effective	3.91	Effective

8. The responding unit has the exact number of personnel in controlling the critical areas of hot spot to extinguish the fire	4.21	Very Effective	4.38	Very Effective	4.66	Very Effective	3.94	Effective
9. The firefighting techniques and strategies applied during actual firefighting operation	4.51	Very Effective	4.50	Very Effective	4.55	Very Effective	4.18	Effective
10. The Ground Commander directs the firefighting units to extinguish the fire	4.60	Very Effective	4.50	Very Effective	4.62	Very Effective	4.26	Very Effective
11. The fire truck ratio is adequate in the fire scene or in any emergency responses	4.48	Very Effective	4.38	Very Effective	4.28	Very Effective	3.94	Effective
12. Casualty or injury are minimized	4.48	Very Effective	4.24	Very Effective	4.66	Very Effective	4.12	Effective
13. Damage to properties are minimized	4.38	Very Effective	4.32	Very Effective	4.52	Very Effective	4.00	Effective
14. The ground commander, together with the firefighting unit, conducts post firefighting operation analysis	4.47	Very Effective	4.35	Very Effective	4.62	Very Effective	4.15	Effective
Mean	4.48	Very Effective	4.38	Very Effective	4.54	Very Effective	4.11	Effective

The level of effectiveness of QCFD in firefighting operations is presented in Table 8.

It can be deduced from the data that the QCFD is perceived by the three (3) groups of respondents as "**Very Effective**" in all of the descriptors in firefighting operations.

On the other hand, the QCFD is perceived by the stakeholders as "**Effective**" in the operation of fire pump with appropriate water pressure during fire responses; maneuvering fire trucks to strategic position during fire response; and firefighting techniques and strategies applied during actual firefighting operation with the same mean of 4.18; availability of Personal Protective Equipment (PPE) for all personnel with a mean of 3.91; the wearing of appropriate PPE every single time by all QCFD personnel with a mean of 4-09; availability of all firefighting equipment with a mean of 3.91; responding unit has the exact number of personnel in controlling the critical areas of hot spot to extinguish the fire; and the adequacy of fire truck ratio in the fire scene or in any emergency responses with a mean of with a mean of 3.94; casualty or injury are minimized with a mean of 4.12; damage to properties are minimized with a mean of 4.00;

and The ground commander, together with the firefighting unit, conducts post firefighting operation analysis with a mean of 4.15.

In summary, the QCFD is perceived by the respondents in their firefighting operations as **"Effective"** with a mean of 4.11.

According to Pfeil et al. (2018), public service delivery requires a solid understanding of citizens' experiences, expectations, and key drivers of satisfaction, as well as a policy framework that places citizens at the center of decision-making processes rather than at the periphery. The organizing principle of public service delivery must be the needs of the public; therefore, the delivery of services to citizens must be responsive and equitable.

c. Fire Safety Enforcement

Table 9
Respondents' Perception of the Level of Effectiveness of the QCFD in Terms of Fire Safety Enforcement

Descriptors	BFP personnel		Fire Volunteer		Barangay Fire Brigade		Stakeholder (private company, school, others)	
	Mean	Description	Mean	Description	Mean	Description	Mean	Description
1. Fire drills among establishment are regularly conducted amidst the pandemic	4.36	Very Effective	4.35	Very Effective	4.34	Very Effective	4.15	Effective
2. Correct building plans of applicants for Building Permit are reviewed and prior to issuance of Fire Safety Inspection Certificate	4.51	Very Effective	4.41	Very Effective	4.48	Very Effective	4.18	Effective
3. Notice to comply, notice to correct violation, fire safety evaluation certificate, fire safety inspection certificate and order to pay fine are prepared and issued	4.50	Very Effective	4.44	Very Effective	4.52	Very Effective	3.97	Effective
4. Fire Code fees for the application of building and business permits are collected.	4.63	Very Effective	4.32	Very Effective	4.55	Very Effective	4.03	Effective
5. Program of instruction on fire safety for all types of	4.53	Very Effective	4.32	Very Effective	4.52	Very Effective	4.00	Effective

participants based on approved fire safety module are prepared.								
6. Fire Safety Inspectors meet the scheduled number of establishment to be inspected.	4.41	Very Effective	4.26	Very Effective	4.52	Very Effective	4.00	Effective
Mean	4.49	Very Effective	4.35	Very Effective	4.49	Very Effective	4.05	Effective

The respondents' perception of the level of effectiveness of QCFD in fire safety enforcement is presented in Table 2.3.

It can be deduced from the data that the QCFD is perceived by the BFP Personnel, the Volunteers, and the Barangay Fire Brigade as "**Very Effective**" in all of the descriptors in fire safety enforcement.

However, the stakeholders assessed the QCFD as "**Effective**" in all areas of fire safety enforcement.

This study confirms the findings of Singh et al. (2021), who emphasized that the conduct of fire drills was affected by the onset of the COVID-19 pandemic because emergency preparedness activities had to be modified to comply with health and safety protocols. Nevertheless, fire drills remain essential in any situation or condition because they test the readiness, alertness, evacuation procedures, and response capacity of residents or participants in the event of fire. Drills and simulation exercises are therefore conducted to assess community preparedness and identify possible gaps in emergency response. In the context of the Bureau of Fire Protection's Oplan Ligtas na Pamayanan, fire drills are especially intended for high-hazard sitios or puroks identified through OLP surveys (Bureau of Fire Protection [BFP], 2022; Singh et al., 2021).

Further, the BFP is authorized to issue implementing rules and regulations, and prescribe standards, schedules of fees, service charges and administrative penalties to designate a fire safety inspector through his/her duly authorized representative, who shall conduct an inspection of every building or structure within his area of responsibility at least once a year and every time the owner, administrator or occupant shall renew his/her business permit or permit to operate. Inspect at a reasonable time, any building, structure, installation or premises for dangerous or hazardous conditions or materials as set forth in the Fire Code, provided that in case of single family dwelling, an inspection must be upon the consent of the occupant or upon lawful order from the proper court Require the building owner/occupant to submit plans and specifications, and other pertinent documents of said building to ensure compliance with applicable codes and standards (Philippine News Agency, 2022).

Plan for fire and rescue services is necessary to ensure that available resources are utilized efficiently. The system must be flexible enough to account for different ways

of organizing fire services and must not use engines as standard units to define the resources (Granberg and Sardqvist, 2007).

Table 10
The Respondents' Perception of the Level of Effectiveness of the QCFD in Terms of Rescue Services

Descriptors	BFP personnel		Fire Volunteer		Barangay Fire Brigade		Stakeholder (private company, school, others)	
	Mean	Description	Mean	Description	Mean	Description	Mean	Description
1. Responders are very effective in performing rescue operations if there are trapped victims.	4.66	Very Effective	4.29	Very Effective	4.55	Very Effective	4.26	Very Effective
2. Lower victims from a burning or damaged building through high-angle rescue and hand-over, recover and dispose-off the bodies of the deceased	4.51	Very Effective	4.18	Effective	4.48	Very Effective	4.21	Very Effective
3. Verify that all authorized rescuers have been properly trained and proficient at performing facility-specific rescue	4.61	Very Effective	4.32	Very Effective	4.55	Very Effective	4.18	Effective
4. Identify the resources necessary to conduct a safe and effective rescue	4.62	Very Effective	4.29	Very Effective	4.41	Very Effective	4.06	Effective
5. Execute rescue procedures based on team plan and strategies	4.60	Very Effective	4.41	Very Effective	4.48	Very Effective	4.15	Effective
6. The Incident Commander activates and deploys Evacuation, Search and Rescue, EMS and HAZMAT response team/s, if needed	4.59	Very Effective	4.32	Very Effective	4.59	Very Effective	4.21	Very Effective

7. The responding personnel conduct rescue of victims in any fire incident	4.68	Very Effective	4.29	Very Effective	4.62	Very Effective	4.09	Effective
8. The QCFD Station provides a complete set of Personal Protective Equipment (PPE) kit, N95 masks, gloves and face shield	4.22	Very Effective	4.32	Very Effective	4.55	Very Effective	4.03	Effective
9. Guidance is provided to EMS teams who will serve as medical standby	4.51	Very Effective	4.29	Very Effective	4.45	Very Effective	4.03	Effective
Mean	4.55	Very Effective	4.30	Very Effective	4.52	Very Effective	4.13	Effective

The level of effectiveness of QCFD in rescue services is presented in Table 10.

As can be gleaned from the data, the QCFD is perceived by the BFP Personnel and Barangay Fire Brigade respondents as "**Very Effective**" in all of the descriptors in rescue services. The Fire Volunteer respondents likewise perceive the QCFD as Very Effective except for the descriptor on lowering victims from a burning or damaged building through high angle rescue and hand-over, recover and dispose-off the bodies of the deceased which they rated "**Effective**"

Moreover, the stakeholder respondents perceived the QCFD as "**Effective**" in verifying that all authorized rescuers have been properly trained and proficient at performing facility-specific rescue (4.18); identifying the resources necessary to conduct a safe and effective rescue (4.06); executing rescue procedures based on team plan and strategies (4.15); rescuing of victims in any fire incident by the responding personnel (4.09); providing a complete set of Personal Protective Equipment (PPE) kit, N95 masks, gloves and face shield; and Guidance to EMS teams who will serve as medical standby (4.03).

In summary, the rescue services of the QCFD are considered as "**Very Effective**" by the BFP Personnel, the Volunteers, and the Barangay Fire Brigade and "Effective" by the Stakeholders.

The law mandates that each Emergency Medical Services (EMS) shall be comprised of an ambulance with adequate medical equipment, with qualified and trained personnel. This may also be realized in accordance with Joint Circular No. 2015-01 and Section 13 of R.A. 9514, the twenty percent (20%) LGU share from all taxes, fees, fines collected by BFP shall be set aside and retained for use by the city concerned, which shall appropriate the same exclusively for the use of the operation (*e.g.,* EMS) and

maintenance of its local fire station, including the construction and repair of fire station (Philippine News Agency, 2022).

Table 11
The Respondents" Perception of the Level of Effectiveness of the QCFD in Terms of Disaster Management

Descriptors	BFP personnel		Fire Volunteer		Barangay Fire Brigade		Stakeholder (private company, school, others)	
	Mean	Description	Mean	Description	Mean	Description	Mean	Description
1. The Fire Marshal or his duly authorized representative formulates a Contingency Plan for typhoons and floods and orients his personnel about the said plan.	4.62	Very Effective	4.44	Very Effective	4.48	Very Effective	4.12	Effective
2. The Fire Marshal or his duly authorized representative advises the disaster response team with its equipment to standby.	4.69	Very Effective	4.38	Very Effective	4.52	Very Effective	4.06	Effective
3. The Fire Marshal or his duly authorized representative coordinates with other government agencies in the conduct of disaster response operation/support needed.	4.64	Very Effective	4.35	Very Effective	4.59	Very Effective	4.12	Effective
4. The Fire Marshal or his duly authorized representative raises the alert based on the prevailing situation in their respective Fire Stations.	4.64	Very Effective	4.38	Very Effective	4.48	Very Effective	4.06	Effective
5. The Fire Marshal or his duly authorized representative updates the Mayor/LDRRMC/IC on the availability of resources (personnel	4.64	Very Effective	4.35	Very Effective	4.59	Very Effective	4.09	Effective

and equipment) for the response or SAR operations.								
6. The responding personnel conduct emergency response in any disaster.	4.66	Very Effective	4.32	Very Effective	4.55	Very Effective	4.21	Very Effective
Mean	4.65	Very Effective	4.37	Very Effective	4.53	Very Effective	4.11	Effective

Table 11 exhibits the respondents' perception of the level of effectiveness of the QCFD in disaster management.

The three groups of respondents generally perceived the QCFD's disaster management as "**Very Effective**" in formulating of a Contingency Plan for typhoons and floods and orientation of personnel about the said plan and coordination with other government agencies in the conduct of disaster response operation/support needed. The Fire Marshal or his duly authorized representative is likewise "**Very Effective**" in advising the disaster response team with its equipment to standby, raising the alert based on the prevailing situation in their respective Fire Stations, updating the Mayor/LDRRMC/IC on the availability of resources for the response or SAR operations.

The Philippines is one of the world's most disaster-prone nations. Its exposure to disasters can be attributed to its geographical and physical characteristics. Earthquakes are common and volcanoes abound because the country is in the Pacific Ring of Fire. It also absorbs the full strength of typhoons that develop in the Pacific Ocean. Aside from natural causes, our country also experiences human-induced disasters (Philippine News Agency, 2022).

R.A. 10121 transforms and reforms the way to deal with disasters. Addressing the root cause of disaster risks can reduce the impacts of disasters. The government shifts focus from disaster response to disaster risk reduction. This puts more emphasis on strengthening the Filipinos' capacity to absorb stress, maintain basic functions during a disaster, and spring back better after disasters. The DRRM Act institutionalizes the best practices of local communities that have been implementing effective DRRM in their respective areas (Philippine News Agency, 2022).

According to Department of Energy (2018) the Philippine Development Plan (PDP) for 2011-2016 identified the BFP as one of the implementing agencies to achieve the highest standard of capability and preparedness against natural calamities and disasters. On the other hand, PDP for 2017-2022 envisions that the government will have better capability to ensure the safety and security of all Filipinos in the country and overseas from all forms of hazards. One of the government's strategies to ensure public safety is to improve capability of the fire protection services. This is aligned with the Sustainable Development Goal No. 11 of the global indicator framework making cities and human settlements inclusive, safe, resilient and sustainable (Philippine Statistics Authority, n.d.).

Table 12
Summary of the Level of Effectiveness of the Quezon City Fire District as Perceived by the Respondents

Areas	BFP personnel		Fire Volunteer		Barangay Fire Brigade		Stakeholder (private company, school, others)	
	Mean	Description	Mean	Description	Mean	Description	Mean	Description
Emergency Medical Services	4.26	Very Effective	4.26	Very Effective	4.39	Very Effective	4.07	Effective
Fire Fighting Operations	4.48	Very Effective	4.38	Very Effective	4.54	Very Effective	4.11	Effective
Fire Safety Enforcement	4.49	Very Effective	4.35	Very Effective	4.49	Very Effective	4.05	Effective
Rescue Services	4.55	Very Effective	4.30	Very Effective	4.52	Very Effective	4.13	Effective
Disaster Management	4.65	Very Effective	4.37	Very Effective	4.53	Very Effective	4.11	Effective
Mean	4.49	Very Effective	4.33	Very Effective	4.49	Very Effective	4.09	Effective

Table 12 presents the summary of the level of effectiveness of the Quezon City Fire District as perceived by the respondents

As reflected in the table, BFP Personnel, the Volunteers and the Barangay Fire Brigade assess the QCFD to be “Very Effective” in Emergency Medical Services, Fire Fighting Operations, Fire Safety Enforcement, Rescue Services, and Disaster Management while the Stakeholders consider these as “**Effective.**”

Enriquez (2013) pointed out that public service offers a person far more than merely a job. Magcuro (2006) argued while it is true that the quality of public service in our country leaves much to be desired, it is not necessarily a result of the unworthiness of the government employees. Government employees have been doing much more than what should be expected of them. It should be understood that they are also victims of a system of governance that is both politicized and so personalized.

Santiago (2012) found even though the fire station had an insufficient number of fire trucks and fire apparatus, the personnel still had an outstanding performance. Gazan (2006) found out that the highly positive attitude towards work and high capability of fire personnel resulted to an efficient work anytime day and night.

3. Is there a significant difference in the respondents’ perceptions of QCPD level of effectiveness when grouped according to profile?

Table 13
Result of the Test of Significant Difference in the Respondents' Perception of the Level of Effectiveness of the QCPD when Grouped According to Educational Attainment

Profile	Probability	Decision	Remarks
Age	.020	Reject Ho	There is Significant Difference
Sex	.177	Accept Ho	There is No Significant Difference
Educational Attainment	.782	Accept Ho	There is No Significant Difference
Rank	.432	Accept Ho	There is No Significant Difference
Training Attended	.003	Reject Ho	There is a Significant Difference

Table 13 shows the result of the test of significant difference in the respondents' perception of the level of effectiveness of the QCPD when grouped according to their profile using the Analysis of Variance F – test at 0.05 level of significance.

As shown in the table, the probability values of the respondents' perception of the QCFD's response to emergencies when grouped according to their profile sex, educational attainment, and rank are greater than 0.05, thus, the null hypothesis is accepted. This implies that there is no significant difference in the respondents' perception when grouped according to their sex, educational attainment, and rank.

In terms of age and training, the probability value is less than 0.05 which resulted to the rejection of the null hypothesis meaning, there is a significant difference in the respondents' perception when grouped according to their age and the training they have attended. Those with training related to firefighting have a different perception from those without training as shown by the result of the t-test at 0.05 level of significance.

This contradicts the argument of Almond and Verba (1989), that educational attainment appears to have the most important demographic effect on political attitudes (*e.g.,* a government agency's performance). Among the demographic variables usually investigated - sex, place of residence, occupation, income, age, etc. - none compares with the educational variable in the extent to which it seems to determine political attitudes. The uneducated man or the man with limited education is a different political actor from the man who has achieved a higher level of education.

4. Is there a significant difference in respondents' perception of the level of effectiveness on the five aspects?

Table 14
Result of the Test of Significant Difference in the Respondents' Perception of the Level of Effectiveness of the QCFD in Terms of Medical Services

Group	Mean	Probability	Decision	Remarks
BFP personnel	4.26	.008	Reject Ho	There is a Significant Difference
Fire Volunteer	4.26			
Barangay Fire Brigade	4.39			
Stakeholder (private company, school, others)	4.07			

Table 14 shows the result of the test of significant difference in the respondents' perception of the level of effectiveness of the QCFD in terms of medical services using the Analysis of Variance F – test at 0.05 level of significance. The table reveals that the computed probability is less than the critical level of significance of 0.05, thus, the null hypothesis is rejected. This means that there is a significant difference in the respondents' perception of the level of effectiveness of the QCFD in terms of medical services.

The Barangay Fire Brigade has the highest mean of 4.39 in responding to emergencies in terms of medical services; the BFP Personnel and the Fire Volunteers have a mean of 4.26, and the Stakeholders who are referred to as private companies, schools, and others, have the lowest mean of 4.07. According to Page et al. (2013), considerable knowledge, skill, and judgment are required to provide quality emergency medical services. High-quality emergency medical services and first responders are an important part of any healthcare system.

Table 15
Result of the Test of Significant Difference in the Respondents' Perception Of the QCFD Effectiveness in Fire Fighting Operations

Group	Mean	Probability	Decision	Remarks
BFP personnel	4.48	.001	Reject Ho	There is a Significant Difference
Fire Volunteer	4.38			
Barangay Fire Brigade	4.54			
Stakeholder (private company, school, others)	4.11			

Table 15 displays the result of the test of significant difference in the respondents' perception of the effectiveness of the QCFD's response to emergencies in terms of Fire Fighting Operation using the Analysis of Variance F – test at 0.05 level of significance.

The table reveals that the computed probability is less than the critical level of significance of 0.05, hence, the null hypothesis is rejected. This implies that there is a significant difference in the perception of the four groups of respondents on how effective is the QCFD in responding to emergencies in terms of firefighting operations. Data shows that the Barangay Fire Brigade and the BFP personnel have a better perception of the QCFD's response to emergencies in terms of firefighting operations with a mean of 4.54 and 4.48, respectively compared to that of the Fire Volunteers (4.38) and the Stakeholders (4.11.)

The findings of Aquino et al. (2017), are somehow related to the findings of this study. Their findings show that the BFP personnel are highly capable of rendering quality fire firefighting procedures. They can investigate all causes of fires. They have properly trained firefighters and adequate firefighting supplies, equipment, and vehicles thus being able to respond to emergencies. They are also responsible for the proper steps to be taken for fire prevention and any other suppression measures to secure the safety of life and property of the people in the community.

Table 16
Result of the Test of Significant Difference in the Respondents' Perception of the QCFD Fire Safety Enforcement

Group	Mean	Probability	Decision	Remarks
BFP personnel	4.49	.001	Reject Ho	There is a Significant Difference
Fire Volunteer	4.35			
Barangay Fire Brigade	4.49			
Stakeholder (private company, school, others)	4.05			

The result of the test of significant difference in respondents' perception of the QCFD's responses to emergencies in terms of fire safety enforcement using the Analysis of Variance F – test at 0.05 level of significance is presented in Table 16. The table reveals that the computed probability is less than the critical level of significance of 0.05 thereby rejecting the null hypothesis which means that there is a significant difference in the group of respondents' perception of the responses to emergencies in terms of fire safety enforcement aspect.

The BFP Personnel and Barangay Fire Brigade group have a better perception of QCFD's response to emergencies in terms of **fire safety enforcement** with the same mean of 4.49 than the Fire Volunteers' assessment with a mean of 4.35, and the Stakeholders (private company, school, others) with a mean of 4.05.

Section 7.0.2.1.A of the Revised IRR of R.A. 9514 mandates LGUs to render necessary assistance on the strict observance of the requirement of fire safety measures for the issuance of FSIC as a prerequisite in the grant of and renewal of business, occupancy, and other related permits/licenses. The LGU shall refrain from issuing such licenses and/or permits without the applicant first securing an FSIC from the BFP (Philippine News Agency, 2022).

Table 17
Result of the Test of Significant Difference in the Respondents' Perception of QCFD Rescue Services

Group	Mean	Probability	Decision	Remarks
BFP personnel	4.55	.001	Reject Ho	There is a Significant Difference
Fire Volunteer	4.30			
Barangay Fire Brigade	4.52			
Stakeholder (private company, school, others)	4.13			

Table 17 displays the result of the test of significant difference in the respondents' perception of the QCFD's response to emergencies in terms of **rescue services** using the Analysis of Variance F – test at 0.05 level of significance. The table reveals a computed probability value less than the critical level of significance of 0.05. With this, the null hypothesis is rejected. Hence, there is a significant difference in the respondents' perception of the QCFD's responses to emergencies in rescue services.

The BFP Personnel group claims that the QCFD is effective in responding to emergencies in terms of **rescue services** with a mean of 4.55; the Barangay Fire Brigade with a mean of 4.52; the Fire Volunteer with a mean of 4.30, and Stakeholder (private company, school, others) with a mean of 4.13. A challenge in fire and rescue services planning is to ensure that available resources are utilized efficiently. The system must be flexible enough to account for different ways of organizing fire (Granberg and Sardqvist, 2007).

According to the BFP 2015 Operations Manual, water rescue operations are dangerous thus training, drills, and equipment are necessary. Likewise, no untrained BFP personnel shall take part in this search and rescue operation due to its inherent risks. Constant situational awareness shall be observed (Department of Environment and Natural Resources, n.d.).

Table 18
Result of the Test of Significant Difference in the Respondents' Perception of the QCFD's Response to Disaster Management

Group	Mean	Probability	Decision	Remarks
BFP personnel	4.65	.001	Reject Ho	There is a Significant Difference
Fire Volunteer	4.37			
Barangay Fire Brigade	4.53			
Stakeholder (private company, school, others)	4.11			

Table 18 shows the significant difference in the respondents' perception of the QCFD's response to emergencies in terms of Disaster Management using the Analysis of Variance F – test at 0.05 level of significance. The table reveals a computed probability of .001 which is less than the critical level of significance of 0.05, thus, the null hypothesis is rejected. This implies that there is a significant difference in the way the respondents perceive QCFD's responses to emergencies in terms of **disaster management**.

The BFP Personnel group have a better perception of how the QCFD responds to emergencies in terms of **disaster management** than the Barangay Fire Brigade with a mean of 4.53, the Fire Volunteer with a mean of 4.37 and the Stakeholders (private company, school, others, with a mean of 4.11. According to Sto. Tomas (2012), assuming that agency performance standards have been set, then the next step is to establish a performance monitoring system. The progress of performance should not be difficult to monitor since performance milestones and distribution of costs are indicated in the work and financial plan submitted to DBM with the annual budgetary request. At the same

time, it should allow the public a way of making sound judgments on government agencies' performance.

5. What are the problems encountered by the QCFD in responding to emergencies?

Table 19
Problems Encountered by the BFP Personnel

Problems	Frequency	Rank
1. Lack of sufficient equipment for firefighting	43	1
2. Lack of sufficient equipment for rescue services	38	2
3. Lack of sufficient equipment for disaster management	35	3
4. Lack of sufficient equipment for emergency medical services	33	4
5. Lack of fire trucks	20	5
6. Lack of coordination with NGOs	14	6
7. No mandatory training	4	7.5
8. Slow fire response due to physically unfit personnel	4	7.5
9. Lack of personnel	2	9
10. Narrow roads, double parked vehicles during fire alarms, narrow alleys	1	10.5
11. Traffic congestion affects quick response	1	10.5
12. Lack of fire boots for BFP personnel (sizes 11-13 inches)	1	10.5
13. Lack of PPE (like fire boots, fire hood & fire gloves)	1	10.5
14. Defective firetrucks	1	10.5
15. Uncooperative LGUs	1	10.5

Table 19 shows the common problems encountered by the BFP Personnel. The top 6 problems include: Lack of sufficient equipment for firefighting with frequency of 43; lack of sufficient equipment for rescue services with frequency of 38; the lack of sufficient equipment for disaster management with frequency of 35; lack of sufficient equipment for emergency medical services with frequency of 33; lack of fire trucks with frequency of 20; lack of coordination with NGOs with frequency of 14. The problems was followed by no mandatory training; and slow fire response due to physically unfit personnel with the same frequency of 4.

The findings are in consonance with the study of Arnilla et al. (2019), where the problems encountered by the BFP personnel in fire suppression at Novaliches Quezon City in terms of personnel, logistics, funds, and traffic congestions were assessed as serious. The rest are not considered as much problem because R.A. 11589 authorizes the BFP to enter into memoranda of agreement with other departments, bureaus, agencies, offices and corporations of the government, as well as private institutions, in order to define areas of cooperation and coordination and delineate responsibility on fire prevention education, fire safety, fire prevention, fire suppression and other matters of common concern (Department of Environment and Natural Resources, n.d.).

Further, one of the many general powers and attributes of LGUs is the provisions of basic services and facilities. For a city, such as Quezon City, it extends support for education, police and fire services and facilities.

Table 20
Problems Encountered by the Barangay Fire Brigade

Problems	Frequency	Rank
1. Lack of sufficient equipment for emergency medical services	19	1
2. Lack of sufficient equipment for rescue services	18	2.5
3. Lack of sufficient equipment for firefighting	18	2.5
4. Lack of sufficient equipment for disaster management	17	4
5. Lack of fire trucks	16	5
6. No mandatory training	3	6

The problems encountered by the Barangay Fire Brigade in responding to emergencies are depicted in Table 20. The data reveals that the most prevailing problems encountered by them are the lack of sufficient equipment for emergency medical services, lack of sufficient equipment for rescue services, and lack of sufficient equipment for firefighting. The lack of sufficient equipment for disaster management, fire trucks, and the absence of mandatory training are also among the challenges they encounter.

TITLE III entitled BFP Modernization Program of REPUBLIC ACT NO. 11589 of 2021, An Act Strengthening and Modernizing the Bureau of Fire Protection and Appropriating Funds Therefore provides for the acquisition of new and modern equipment, vehicles, and personal protective equipment provided, that the acquisition of new equipment shall be synchronized with the phase-out of uneconomical and obsolete major equipment and systems in the BFP inventory. It further provides that the modernization program shall include the development of a comprehensive training program for BFP personnel and BFP volunteers, including mandatory training for new entrants and newly-appointed personnel of the BFP, and BFP volunteers, and establishment of training facilities.

The finding of this study shows that the law on BFP Modernization Program has not yet been fully implemented. The Barangay Fire Brigade are the first respondents to localized fire incidents (within barangay) while BFP responding firefighters are in transit. The provision of needed fire-fighting equipment and the conduct of mandatory training is essential.

Table 21
Problems Encountered by the Fire Volunteer

Problems	Frequency	Rank
1. Lack of sufficient equipment for disaster management	11	1

2. Lack of sufficient equipment for rescue services	10	2.5
3. Lack of sufficient equipment for firefighting	10	2.5
4. Lack of sufficient equipment for emergency medical services	8	4
5. Lack of fire trucks	7	5
6. No mandatory training	3	6
7. Lack of coordination with NGOs	1	7.5
8. Interruption of civilian and or house owners during firefighting operations	1	7.5

Table 21 exhibits the problems encountered by the fire volunteer in responding to emergencies. The data reveals that the top five problems include the lack of sufficient equipment for disaster management, firefighting emergency, medical services, and the lack of fire trucks.

The problems encountered by the Barangay Fire Volunteers are more on equipment and facilities. The lack of training, coordination and interruption of civilians during firefighting operations are also some of the problems encountered by them. R.A. No. 9514 mandates the BFP to support and assist fire volunteers, practitioners, and fire volunteer organizations in the Philippines to undergo mandatory fire suppression, inspection, rescue, emergency medical services and related emergency response trainings and competency evaluations to be conducted by the BFP. In the case of the fire practitioners, they shall undergo mandatory continuous professional education and competency evaluation of their expertise, knowledge, and skills in the area of fire science, engineering, and technology to be conducted by the BFP (Department of Environment and Natural Resources, n.d.). In the Philippines, the BFP is still in the process of modernization, and resources are inadequate to procure needed equipment for the safe and efficient delivery of services. For this reason, BFP personnel are at a much higher risk of facing different occupational hazards. Getting all the help available will be beneficial to the QCFD in general and the responding firefighter in particular.

Table 22
Problems Encountered by the Stakeholders

Problems	Frequency	Rank
1. Lack of sufficient equipment for rescue services	16	1
2. Lack of sufficient equipment for firefighting	12	3.5
3. Lack of sufficient equipment for disaster management	12	3.5
4. Lack of sufficient equipment for emergency medical services	12	3.5
5. Lack of fire trucks	12	3.5
6. Lack of coordination with NGOs	9	6
7. No mandatory training	5	7
8. Slow fire response due to physically **unfit** personnel	2	8
9. Insufficient number of BFP personnel	1	9

The problems encountered by the stakeholders are exhibited in Table 22. The data shows that the predominant problem encountered by the stakeholders pertain to the lack of equipment for rescue services, firefighting, disaster management, and emergency medical services. According to Granberg and Sardqvist (2007), a challenge in fire and rescue services planning is to ensure that available resources are utilized efficiently. The system must be flexible enough to account for different ways of organizing fire services and must not use engines as standard units to define the resources.

Without prejudice to the BFP Modernization Program which should be implemented over a period of 10 years effective upon the date of its approval on September 10, 2021, the existing fire protection equipment and services needs serious upgrading through the acquisition of new and modern equipment, vehicles, and personal protective equipment (PPEs).

5. Is there a significant relationship between the problems encountered by the respondents and the level of effectiveness in responding to emergencies?

Table 23
Result of the Test of Significant Relationship Between the Problems Encountered and the Level of Effectiveness of QCFD's Response to Emergencies

Variables	Mean	Probability	r value	Decision	Remarks
Problems Encountered	2.17	.001	-0.262	Reject Ho	There is a Significant Relationship
Level of Effectiveness	4.42				

Table 23 presents the result of the test of significant relationship between the problems encountered and the level of effectiveness of QCFD's response to emergencies measured using Pearson r correlation coefficient at 0.05 level of significance. Data reveals that a significant negative weak correlation exists between the problems encountered and the respondents' perception of the level of effectiveness as shown in the computed r is -0.262. The result implies that the more the problems encountered by the respondents , the lower they perceive the QCFD's effectiveness in responding to emergencies and vice versa.

R.A. 11589 mandates the BFP to develop and implement a fire protection modernization program that includes the acquisition of modern fire equipment, expansion of manpower, and provision of specialized training for firefighters. However, some of the problems encountered by respondents in terms of equipment and facilities were associated with procurement-related constraints, insufficiency of resources, bureaucratic processes, and political intervention. In the context of BFP operations, Echavaria and Espiritu (2024) identified several challenges affecting firefighting capability, including inadequacy of tools, PPEs, equipment, facilities, financial resources, and political intervention. Similarly, government procurement guidelines recognize that supplier delivery delays may affect the timely completion of procurement contracts and the availability of needed goods and equipment (Commission on Audit, n.d.; Echavaria & Espiritu, 2024). Damuag et al. (2017) found that BFP personnel encountered minor

unavailability of some firefighting equipment but were still able to competently address the needs of civilians in extinguishing fires through the cooperation and willingness of other firefighting personnel. The firefighting skills are dependent on the quality of the equipment used (Philippine Statistics Authority, n.d.).

6. What interventions can the QCFD devise to address the issues and concerns pertaining to emergency response?

To address the issues and concerns found in this study pertaining to emergency response, the researcher recommends the adoption of the Proposed Intervention Program as follows:

Title : Improved Community Engagement of the Quezon City Fire District (QCFD)

Vision

For QCFD to improve its operational efficiency and effectiveness in response to emergency.

Mission

Guided by the BFP Memorandum dated September 27, 2022, popularly known as Guidelines in the Resumption of Oplan Ligtas na Pamayanan (OLP) in improving QCFD operational efficiency and effectiveness in response to emergencies by improving community engagement thereby reducing fire incidents and its hazardous effects on lives and properties.

Objectives

The Intervention Program seeks to contribute to the improvement of QCFD community engagement with all stakeholders. Specifically, it aims to:

1. Increase collaboration with the volunteer fire brigade, barangay fire brigade, and other stakeholders (private company, school, others);
2. Update the knowledge of all stakeholders through intensive seminars and education;
3. Decrease fire incidents in critical areas by increased fire campaign and fire education.

Program Components

a. Increase Collaboration with Stakeholders

This component supports the BFP OLP in increasing collaboration between the QCFD and all stakeholders by improving the conduct of Community Fire Protection Plan Workshops as prescribed by the BFP. In each workshop, the following shall be undertaken:

- Fire Safety Lectures and Seminars in accordance with BFP OLP.
- The QCFD, in collaboration with the Barangay Officials, to increase collaboration with the community through initiatives such as:
- Educational campaign, targeting the importance of conducting regular fire drills wherein the fire drill should be treated seriously.

- Continuous coordination and cooperation between the QCFD and especially in the conduct of house-to-house visits.
- Regular monitoring, evaluation, and research every quarter. This may be performed by the assigned BFP personnel.

Partner Institutions

- QCFD Personnel
- Volunteer Fire Brigade
- Barangay Fire Brigade
- Stakeholders (Private Companies, Schools, Private Residences)
- Barangay Officials
- LGUs/Offices

Program Accomplishments/Status

The QCFD, in collaboration with the Barangay Officials, shall continue to coordinate and update its strategies to increase QCFD operational efficiency and effectiveness including the following:

1. Improve communication with all active stakeholders and the community in general.
2. Integrated and personal seminars and workshops to as many residents of District of Quezon City as possible.

The assigned BFP personnel shall continue to monitor and evaluate its effectiveness. The assigned BFP personnel may politely ask suggestions from the stakeholders.

Calendar of Activities

- Conduct of improved fire safety lectures and seminar workshops in accordance with BFP OLP. The lectures and seminar workshops will be facilitated twice a month (Third quarter, first training).
- Active participation on Fire Prevention Month.
- Program Implementation Reviews (quarterly).

Conclusions

The Quezon City Fire District is very effective and efficient in responding to emergencies, particularly in the areas of emergency medical services, firefighting operations, fire safety enforcement, rescue services, and disaster Management. The respondents' perception of the QCFD's level of effectiveness in its operations is significantly influenced by some variables like age, and training. Despite the QCFD's very effective response to emergencies, some challenges hinder full operations which include among others, the lack of necessary equipment and facilities, and the lack of mandatory training.

Recommendations

Based on the findings and conclusions of the study, the following provisions are highly recommended.

1. The QCFD should mandate its personnel to attend skills-improving training, especially training on Water Search and Rescue, and Urban Search and Rescue.

2. The services of the stakeholders and the community must be enhanced through improved communication with integrated interaction both with the stakeholders and the community.

3. Training and seminars for the three groups, especially the other stakeholders should be conducted if time and budget permit.

4. The QCFD should strengthen community engagement through intensive information dissemination/campaign, seminars, and education to as many residents of District 5 of Quezon City as possible to make them more aware of QCFD's programs in response to emergencies.

5. It is imperative for the part of the government and the QCFD to provide sufficient, and updated equipment for firefighting operations, rescue services, and emergency medical services

6. Finally, the researcher highly recommends that the QCFD adopt and implement the proposed intervention program.

Compliance with Ethical Standards

This study complied with the ethical standards required in the conduct of academic research. Prior to the administration of the survey, the researcher secured approval from the Dean of the Graduate School of Saint Ferdinand College, the research adviser, and the head of the Bureau of Fire Protection in Quezon City. Permission was obtained before the distribution and retrieval of questionnaires from the Bureau of Fire Protection personnel, fire volunteers, barangay fire brigade members, and stakeholders. The study involved 190 respondents and used questionnaires distributed through an online platform after the instrument had undergone a dry run with 30 BFP personnel who were not included in the actual respondents.

The respondents were properly informed about the purpose of the study, the nature of their participation, and the importance of their honest responses. Their participation was voluntary, and they were given the freedom to answer the questionnaire without pressure, coercion, or undue influence. The researcher ensured that the responses were used solely for academic and research purposes.

Confidentiality and anonymity were observed throughout the study. Personal information and individual responses of the respondents were treated with strict privacy.

Data gathered from the questionnaires were tallied, grouped, analyzed, and interpreted only in aggregate form to prevent the identification of individual respondents.

The researcher also observed objectivity and honesty in the treatment, analysis, and interpretation of the data. Appropriate statistical tools such as frequency, percentage, rank, weighted mean, ANOVA, and Pearson r coefficient were used to ensure accuracy and fairness in presenting the findings. Proper acknowledgment of all authors, laws, documents, and related studies used in the research was also observed to uphold academic integrity and avoid plagiarism.

No harm, risk, or discomfort was intentionally imposed on the respondents during the conduct of the study. The research focused only on the assessment of the Quezon City Fire District's operational efficiency and effectiveness in emergency response. The results were intended to contribute to the improvement of fire protection services, emergency preparedness, community engagement, and public safety.

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Corresponding author: *allucarhd@yahoo.com*