FACTORS INFLUENCING THE EFFECTIVENESS OF FIRE CONTROLLING SERVICE DELIVERY BY FIRE AND DISASTER RISK MANAGEMENT COMMISSION: THE CASE OF ADDIS ABABA CITY ADMINISTRATION

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A THESIS SUBMITTED TO ADDIS ABABA UNIVERSITY COLLEGE OF BUSINESS AND ECONOMICS IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS IN PUBLIC MANAGEMENT AND POLICY

ADDIS ABABA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

DEPARTMENT OF PUBLIC ADMINISTRATION AND DEVELOPMENT MANAGEMENT

June, 2021

ADDIS ABABA, ETHIOPIA

ADDIS ABABA UNIVERSITY COLLEGE OF BUSINCES AND ECONOMICES

DEPARTMENT OF PUBLIC ADMINISTRATION AND DEVELOPMENT

MANAGEMENT

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DECLARATION

I, TayeTomoshkeToha, hereby declare that this thesis is my own work. It is submitted for the partial fulfillment of the degree of Masters of Art in to the Department of Public Administration and Development Management, Addis Ababa University and that it had not been submitted before for any other degree or examination in any other university, and that all sources I have used or quoted have been indicated and acknowledged by complete references.

DEDICATION

This research thesis is dedicated to Addis Ababa Fire Disaster Risk Management Commission employees especially for firefighters who are sacrifice their life and body's to spare and saving the life and property of the others, and employees who are isolated by retire without any respect and recognition, also those who are lose their golden life and bodies on time of operation.

ACKNOWLEDGEMENTS

First of all, I would like to thank God, Lady of the Son and St. Micheal. Then, I would like to express my gratitude to my advisor, Shumey Berhie (PhD), for his professional comments, encouragement and suggestions. I say God richly bless you and replenish your efforts.

I am also highly grateful to my friend, Eng. Icon Abebe who gave me unceasing guidance throughout manipulating SPSS version 20.00 and statistical analysis of this research thesis.

Secondly, I am also indebted to thanks all my friends for their moral supports for the success of this paper, who supported me in data collection.

Thirdly, I would like to acknowledgement my thanks to Addis Ababa fire disaster risk management commission special for fire station head, commanders, shift leaders, team leaders, firefighters, and fire truck drivers from Arada, Addis Ketema, Bole, and Kirkosi fire stations who participated in providing the necessary data for this study.

Finally, I would like to acknowledgement my sister w/or Buzunesh Tomoshke and my brother Tewodros Teferi and by repetai Eng. Icon Abebe for all their support, encouragements and enthusiasms throughout my work.

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ABSTRACT

This study investigates factors influencing the effectiveness of fire controlling service delivery by Addis Ababa fire and disaster risk management commission; the researcher used mixed method research approach and applied the concurrent design. The total population size was 320 with the sampling size 110 selected from the various strata which were the heads of fire station, fire station commanders, shift leaders, team leaders, firefighters and fire truck drivers. Data was collected using self-administered questionnaire and interview guide. The collected data was analyzed using Statistical Package for Social Scientist Software (SPSS). The results of the study were analyzed using descriptive statistics and the results were presented using tables and charts. The findings of the study revealed that factors that influencing the effectiveness of the fire controlling service delivery are the fire staff skills, the work environment, top management influence and support and the conditional external pressure. The study further provides recommendation on improvements and policy measures like fire safety syllabus at secondary and technical a vocational school level. all top managers with political performance should not be appointed, and follow the international fire safety standard procedures before establishing any kind of basic development projects on fire service delivery at the Addis Ababa city level will be introduced. the commission should enforce the one-third gender rule, conducive working environment through work effort and job satisfaction, specialized fire safety training and create relationship with stakeholders.

Key Word: Firefighting, service delivery, effectiveness, Addis Ababa

CHAPTER ONE

INTRODUCTION

1.1. BACKGROUND OF THE STUDY

Factors influencing the effectiveness of fire controlling service delivery by fire and disaster risk management commission are the influences of staff skills, work environment, top management influence and support and conditional external pressures are some of factors influencing the fire controlling service delivery. Fires have been a major threat to property and life throughout the history of civilization (Ramachandran & Charters, 2011, p. 7). In the modern world, many governments use some portion of their resources to help protect the public from the threat of fires, Ethiopia one of them. Fire is a greater threat to most of Africa than to America or Europe but the fire services available to them are understaffed and under-equipped.

A fire occurs when the elements i.e. heat; fuel, oxygen, and chemical chain reaction are present and combined in the right mixture. A fire can be prevented or extinguished by removing any one of the elements in the fire tetrahedron. Essentially all four elements must be present for fire to occur, heat, fuel, oxygen, and a chemical chain reaction. The industrial revolution and the commercial need of the late eighteen and early nineteenth centuries led to the municipalization and creation of a paid fire service in the UK. Shane Ewen (2010) explains in his history of the British Fire Service, the 'Great Fire' of Edinburgh in 1824 and the appointment of James Braidwood as Master of Fire Engines led to significant structural and functional improvements in the city's firefighting capacity and ultimately to the creation of the first truly organized paid fire service.

Braidwood also explained the four principles of effective firefighting, which he later disseminated through the publication of his first manual 'On the Construction of Fire Engines and Apparatus, the Training of Firemen and the Method of Proceeding in Cases of Fire' in (Braidwood 1830). These four principles, which became known as the 'Edinburgh model', would generally be recognizable by the service today. Those principles are the principles of; Centralized control of the service, Standardized appliances and equipment, Identification of the source of a fire and tackling it at source if possible, Deployment of a disciplined, well-trained, and regularly drilled body of firemen.

Emergencies outlined in fire service delivery definition, are not mere events striking each particular time but the results of various processes (Department for International Development (DFID), 2010). Auran (2007) notes that the growth of mega-cities exposes them to mega-risks like earthquakes that capture headlines in local and international news agencies while far more lives are lost in urban areas due to everyday disasters including poor sanitation and fires. Uncontrolled urban growth increases the severity of fire hazards and vulnerability (UN-HABITAT, 2007) as nearly half of the world population lives in urban centers and numbers are accelerating with more than half residing in slums (Pelling and Wisner 2009).

Addis Ababa, the capital city of Ethiopia, both the cultural and commercial hub of the country. Tourists from all over the world come to the city to learn more about Ethiopian culture and get a taste of the delicious cuisine. Even though Addis Ababa is one of the top destinations in Africa among tourists, it is always important to keep safety in mind. and also educational and administrative center for Ethiopia. Addis Ababa is the site of Addis Ababa University (1950) and contains several training college and technical schools. Also there is Museum of the Institution of Ethiopian Studies (operated by the University), the National School of Music, the National Library and Archives, Palaces of former emperors, and governmental ministries and now day bigger different spiritual places, recreational areas, oil and kerosene amass, commercial center and insurances institution, etc. are located in the city. Especial from any time off now several national and international organizations build their headquarters in the city; the most important are Africa a Union and United National Economic Commission for Africa, both of them are located in Africa Union Hall. So active fire controlling service delivery is a key to serve life and property of the city residence.

However, to control and prevent these human life and propriety and different enormous environmental, political, social, and economic institution, the government established the first fire service institution by the name of fire extinguish service in early 1926 E.C by Russians volunteer of Mr. Tutire Chanenovi and latterly city administration Addis Ababa house of council with proclamation number 37/2013 reorganized the commission with the prime objective of rehabilitating, mitigating, protecting public life, health, property, and preventing emergencies in Addis Ababa City Government. The name of the Commission changed six times from the early to now, but there was some limitation on the successfulness of effectiveness of fire controlling service delivery in the Addis Ababa fire and disaster risk management commission. So, this study would investigate the factor that influencing the

effectiveness of fire controlling service delivery by the Addis Ababa fire and disaster risk management commission.

1.2. STATEMENT OF THE PROBLEM

Government delivery's service like firefighting, education, health, transport, welfare, justice, and etc. on massive scale. The public service is the implementing arm of government. Everything that has to be done to develop our country and delivery service to the people. AAFDRMC firefighters have an enormous responsibility and play an important role to make service delivery for city dweller's. The firefighting service implemented by a public fire department is one of the most important aids for the fire victims. Through strict enforcement of the firefighting service, a public fire department can effectively reduce the damage and casualties. That means that the firefighting service provided by the public fire department has a very intimate relationship with peoples' lives and property (Jeng Deng, Charng Horn, et at 2001).

The unprecedented urban growth that Addis Ababa would face over the coming decades could create the agglomeration of people and economies that can catapult the city towards its long-term goals of 2025. But, without modern and strong fire station to prevent and control the life and property of the city residency from fire and fire related risk not possible to manage the risk, other ways city put under stresses. In Addis Ababa the responsibility for implementing the National Disaster Risk Management (NDRM) currently lies with AAFDRMC. There was a study conducted on fire service delivery especially on the improvement of the efficiency and effectiveness of AAFDRMC (Deribe Bekele 2018). But still AAFDRMC had under the influence of modern technologies and machines, the level of working environment, and in addition to this influences of staff skills, top managers and conditional external pressures are some of factors influencing the fire service delivery in the study area, which are not well addressed by the commission. Thus this study seeks to initiate a study to fill this gap by investigating the factors influencing fire controlling service delivery about the provision of effective fire services that leads to better intervention and advocacy in AAFDRMC. So this study would investigate factor influencing the effectiveness of fire controlling service delivery by AAFDRMC.

1.3. Research Questions

This, the study intends to answer the following research questions:

1. How does the fire station staff skill influence the effectiveness of fire controlling service delivery level of the Commission?
2. How does the work environment influence the effectiveness of fire controlling service delivery level of the Commission?
3. How does the top management support influence the effectiveness of fire controlling service delivery level of the Commission?
4. How do the conditional external pressures influence the effectiveness of fire controlling service delivery level of the Commission?

1.4. OBJECTIVE OF THE STUDY

1.4.1. General Objective

To investigate factors influencing the effectiveness of fire controlling service delivery by fire and disaster risk management commission: the case of Addis Ababa City Administration.

1.4.2. specific objective

1. To examine the influence of fire station skill in the delivery of fire service in Commission.
2. To establish the factors of the work environment in the delivery of fire service in Commission.
3. To examine the influence of top management influence and support in the delivery of fire service in Commission.
4. To determine the influence of conditional external pressure in the delivery of fire service in Commission.

1.5. SIGNIFICANCE OF THE STUDY

This study would have assumed to be the blueprint for the commission to achieve the goal of 2025 to create one of the model city in Africa by controlling Addis Ababa city dwells life and property and suitable city for residential and foreigner's and to know the factors influencing fire controlling service delivery and contribute to the literature. The researcher, therefore, hopes that this research would be contribute towards an understanding of the theoretical and conceptual framework surrounding fire service delivery. It provides a better understanding of a link between fire service delivery policies, accountability and legislations of the City government enhancing the sense of responsibilities and ownership of the mandate to both the

City Government and the Fire and Disaster Risk Management Commission and those how receiving the fire controlling services and stakeholders.

The research also used to provide a better sense of implementation and evaluation of fire service delivery programmers by City Government, in general, and Sub-City in particular. This could also be incorporated in the curricular of various institutions that deal in the field of National Disaster Risk Management Commission and the Department of Occupational Safety and Health Services (DOSHS). It also could be used in city government and academic training purposes for institutions that were responsible for capacity building and research cases related.

1.6. LIMITATIONS OF THE STUDY

The limitation of this study may return incomplete questionnaires, delay of responses. Since, there is no research work done on the study area (fire stations) in the context so far were the major limiting factors that are encountered during the data collection period. However, utmost effort should be made to attempt these problems by handling all the activities as per the schedule as well triangulating the different data collected using different instruments. In addition to that, some of the challenges of the selected employees of the commission might be; not given genuine answers to the questions they were asked. However, the unreserved effort would be made to overcome the limitations.

1.7. SCOPE OF THE STUDY

This research study would be conducted at Addis Ababa Fire and Disaster Risk Management Commission with in selected four branches from the nine branches offices based on the most frequent firefighting operations, established a little bit earlier and easily the researcher could obtain relevant data relative to other branches. So, researcher select Arada, Addis Ketema, Bole and Kirekos fire station. The Headquarter was located in, Arade Sub-City of Addis Ababa in front of St. George Church. The study would not include all internal customers (included only fire operation department) who are receiving services delivered by AAFDRMC.

1.8. ORGANIZATION OF PAPER

This research proposal was organized as follows. Chapter one covers the background of the study, statement of the problem, objectives of the study, significance, and limitations of the study, the scope of the study. Chapter two covers literature of past researches done concerning the factor influencing fire service in public service delivery. Chapters three discuss the methodologies used in this paper to reach the objectives set in chapter one and describe the variables. Chapter four discusses the findings of the result and discussion the major findings. The last chapter five deals with the summary, conclusions, and recommendation of the research.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

2.1.1 Definition

Fire service is taking place in dangerous, time-sensitive environments A slight delay in operations, especially when the first fire apparatus is arriving and positioning, can adversely affect subsequent operations and the outcome of the incident. Delays caused by poorly located fire hydrants, confusing fire alarm system information, and ineffective communication systems, or inaccessible equipment can have a ripple effect on other aspects of the operation. During these delays, the fire will likely grow exponentially, expanding the hazard for both occupants and firefighters (OSHA, 2015).

2.2 The factors influencing the effectiveness of the fire controlling service delivery

2.2.1. Fire station staff skills and fire service delivery

Fire stations need to attract new employees who will contribute to the station through their abilities and values (Armstrong, 2008). Stations require their fire service employees to have two Complementary capacities: fire service competencies and fire service inclination (Wilson, 2008).

Wilson (2008) states that "service competencies are the skills and knowledge necessary to do the Job" (p.282). In many cases, job applicants validate competencies, such as attaining the particular degrees and relevant professional qualifications (Wilson, 2008) can determine whether he or she has the necessary technical or professional competencies to perform well on the job (Sinclair, 2010).

But sometimes, service competencies may be related to basic intelligence or physical requirements rather than a relevant degree (Wilson, 2008). The fire response staff, who represents the station in the public eyes, can have an impact on the image and reputation of the station. When the response staff provides the accurate service the public desires can be met; the station gains a positive reputation hence attaining a higher market share and charge more than its competitors for fire service delivery (Wilson, 2008). The fire service employees, who are knowledgeable, understanding, and concerned about the customers' needs, also influence the five dimensions of service quality: reliability, responsiveness, empathy, assurance, and tangibles (Wilson, 2008). It is essential to understand and meet what

the customer wants and needs with service employees' abilities to deliver (Wilson, 2008). The lack of knowledge, therefore, on technical and operational skills is contributing factors that affect fire service delivery in most fire stations. In summary, there is a need for fire education. The Station commanders and the fire staff need to attend training programs that will enlighten them on an effective and efficient fire service delivery. Also, there is a general issue of skills and training. The skill deficiencies that appear in developing countries' fire stations are not only technical abilities but also management skills (Arendt, 2008).

Generally, fire stations do not develop training plans. Apulu and Latham (2009) note that in Tanzania, fire stations do not invest in training of their firemen as they are afraid that on completion of such training and having improved their qualification, these firemen will leave and find employment in large companies that offer better salaries. Nevertheless, fire stations need to conduct training sessions for staff as this will assist in creating awareness on the benefits of an efficient and effective fire service delivery (Arendt, 2008). According to Rule (2008) innovation diffusion theory targets fire stations in developing countries as there is a lack of knowledge and training to impart the necessary skills and technical know-how required in the fire service development process. Therefore, if the fire staffs have more knowledge and skills then they would be more likely effective and efficient in their operations.

Based on these discussions, the technical and acquired skills of the fire staff can be seen as the capabilities of the fire station. This will also define the fire station's efficiency by defining the internal standard of performance for its fire staff and is approximately the construct of doing the right things. According to Mohammad (2009), fire staff helps organizations by reacting to emergencies as well as providing salvage to their properties and employees in case of imminent dangers and emergencies. Fire personnel, therefore, contribute significantly to the extent of effectiveness and efficiency of fire service delivery.

Lack of skills is regarded as the most common barrier to efficient and effective fire service delivery (Johnson, 2012). The unfamiliarity with the fire equipment technologies amplifies the degrees of difficulties faced by fire responders during emergency responses.

The consequent loss in work efficiency and frustration over the foreign-based emergency technology directly attributes to a negative attitude to the fire staff and contributes to inefficiency in fire service delivery (Bankoff, 2004). Analoui (2007), found that lack of technical skills on fire service operations among fire station staff and lack of knowledge

regarding the benefits of improved technologies on fire service delivery is an inhibitor to effective and efficient fire service delivery among fire stations.

There is the inability to acquire new skills and expertise in new technologies and there is also a lack of training and education that form a significant barrier to a better fire service delivery (Analoui, 2007). Caldeira and Ward (2007) therefore conclude that for fire stations to successfully implement a strategically accepted and effective fire service system, the top command of the station and its staff must have a reasonable knowledge of the relevance to fire service operations. Mutula (2007) explained that the new problems, which are closely linked with the introduction of technology in fire service, include low computer literature among staff among other reasons. In agreement with this state of affairs, a low level of technical education in developing countries is the major factor that hinders the efficient utilization of fire service resources?

Ansell and Gash (2008) support that fire stations staff with technical skills training are more at ease in participating in technological advancement to improve fire service delivery. A study by Montazemi (2007) indicates that the level of fire staff technical skills correlates with their participation in the fire station development process and agenda. Effective fire station support and comprehensive fire staff education are dominant concerns when introducing a new system or technical equipment within the station.

2.2.2. Work environment and fire service delivery

Yoon and Suh (2003) showed that employees in a better work climate indicated by job satisfaction are more likely to work harder and provide better services. Employees who are satisfied with their jobs tend to be more involved in their employing organizations, and more dedicated to delivering services with a high level of quality. Previous research has also suggested that loyal employees are more eager to and more capable of delivering a higher level of service quality (Loveman 1998, Silvestro, Cross 2000 and Benard Lango 2014)

In the context of social exchange theory, when the fire station offers a favorable service climate that makes fire service employees satisfied, the latter will in return tend to be committed to making an extra effort to the organization as a means of reciprocity for their employer (Wayne, 1997, Flynn 2005), leading to a higher level of fire service delivery quality. Research in consumer psychology has shown that exposing customers to happy employees resulting in customers having a positive attitudinal bias towards fire service products (Howard and Gengler, 2001). Likewise, research in organizational behavior has

revealed that the hostility of fire service employees has a direct impact on the hostile mood of the recipient of fire services (Doucet, 2004), leading to customer dissatisfaction regardless of the performance of the core tasks of the fire services delivered to fulfill customer needs. Fire service staff with a high level of job satisfaction will appear to the customer more balanced and pleased with their environment, leading to a positive influence on the level of customer satisfaction (Homburg and Stock 2004). Therefore, this study was to investigate the influence of the work environment on fire service delivery focusing on job satisfaction and work effort.

2.2.3. Top management influence and support and fire service delivery

This study considered the originality of the top management in supporting fire service delivery. The originality of senior commanders and the officers refers to the willingness of the top executives to support fire service delivery programs bearing the risks of originalities. When the fire station commanders and the top county (City) executives are familiar with fire service delivery, the county fire stations reduce the uncertainty concerning the support for the station and increase the willingness of the station to provide the fire services. The top executive of the county stations is a leader and an entrepreneurial figure that is crucial in determining the support attitude of the small business (Rizzoni, 2007). This is because the leader's quality is the determinant of the overall management style of the business.

The leader must support his juniors and be aware of knowledge requirement to fulfill the delivery of the service. With regard to knowledge, the degree of uncertainty involved in fire service delivery support will diminish, resulting in less risky support for the service delivery (Mohamad, 2009). Chan and Ngai (2007) further observes that this is consistent with the findings of other studies which reported that the lack of knowledge of the fire service delivery process and insufficient awareness of the potential benefits may be inhibiting fire stations from undertaking efficient and effective fire service delivery. To the extent the leader can lower the knowledge inadequacies; it will facilitate the process of fire service delivery. Dewar and Dutton (2007) also found out that extensive knowledge is important for the top executive of fire stations in support of the fire service delivery programs.

Research has also explored several characteristics of executives that influence effective fire service delivery. Rogers (2008) suggest that originality in fire service delivery is related to fire service delivery new decision process. When the knowledge of the support is gathered, an attitude will be formed towards the innovation as to whether to adopt or to reject a fire service delivery program. Top station commanders always make the final decisions on fire service delivery based on the internal needs of the organization or environmental changes

(Damapour and Schneider, 2007). Fire station commanders also take the responsibility of managing and use of technological innovation which is vital in supporting fire service delivery within the fire stations (Pinheiro, 2010).

The fire station's strategic decisions on fire service delivery often reflect the personal characteristics of its top commanders; hence researchers have examined the top executives' support factors that influence fire service delivery. In examining top management support in fire service delivery, Thong and Yap (2007) considered fire stations commander's innovativeness, attitude towards change and knowledge amongst others. Damapour and Schneider (2007) investigated manager's age, gender, education level, tenure in position and attitude towards efficient and effective service delivery while at the same time focusing on the organizational, environmental and top manager's effect on the phases involved in fire service delivery within the fire stations.

The fire station commander's perception of fire service delivery plays an important role in the efficiency and effectiveness of a service delivered to the public. Top fire station commander innovativeness and favorable attitude of fire service delivery affects in a positive way the reception of the service to the local residence and also assists in all the stages of a new service delivery adoption. In initial stages of delivering a fire service to the people, the fire station commander helps in developing awareness among the crew members, in preparation stage they are responsible for allocating necessary resources and in the implementation stage they create an environment for smooth dispensation of the fire services (Rogers, 2008).

Mehrtenset. Al (2007) found a direct link between the fire stations commanders' positive attitude towards fire service delivery improvement and its success. Every fire service delivery process is associated with uncertainty; however, a fire station commander with more positive attitude challenges these risks and continues to maintain their enthusiasm by committing increasing amount of resources. Fire station commander's tenure refers to the length of time the commander has been in their current job. Researchers have found contradicting results when examining commanders' tenure. Experienced commanders with their fire stations "know how" can facilitate a smooth fire service delivery that is more efficient and effective and at the same time use their authority to establish an atmosphere for successful implementation of various processes and procedures. Commanders with longer tenure have a better knowledge of the station operations and would be more competent in handling unforeseen events that arise during fire service delivery activities that are usually uncertain.

Hence more experience fire station commanders are favored for an efficient and effective fire service delivery (Damanpour and Schneider, 2009).

In an empirical study Sharma and Rai (2007) found that fire stations with commanders on a short tenure hard a high service delivery rate. The majority of the studies that investigated commander's tenure verified a significant influence of technology and its adoption (Damanpour and Schneider, 2009). Hence, the research predicts a positive association for the relationship between commander's tenure and the efficient and effective service delivery. Individual characteristic of a commander plays an important role in the delivery of fire services. Amongst these commanders, technology knowledge was found to have a strong correlation with effective and efficient fire service delivery (Thong and Yap, 2007; Chan and Ngai, 2007).

A commander with more technological knowledge is able to assess the benefits of a new technology and more likely to ensure the fire service delivery is efficient and effective. Lack of efficiency and effectiveness creates uncertainty and it is only the awareness through knowledge that resources will be committed to efficient fire service delivery. Commanders can influence fire service delivery by virtue of their innovativeness and interest towards change. Due to the dominants role of the fire station commander, these aspects are essential in fire service delivery. Commander's willingness to embrace change and technology dictates how efficient and effective the fire service delivery would be (Thong and Yap, 2007).

Craig and King (2007) discussed the role of fire station commander as a product champion. In small businesses, the chief executive officer is usually the owner and the sole decision maker and the executive officer's originality and involvement contributes to the success of the business as they are willing to take risks and would prefer solutions that have not been tried before (Thong, 2008). Past literature found fire station commander's originality significantly and positively influencing how services are delivered within their jurisdiction (Thong and Yap, 2007; Thong, 2007, Mirchandani and Motwani, 2010). Thong (2007) found out that there is a positive relationship between the top management support and the service delivery in this case the fire service delivery. Hung et al (2010) also found a positive relationship between originality of senior executives and the efficiency and effectiveness of fire service delivery.

2.2.4. Influence of conditional external pressure in fire controlling service delivery

External pressure refers to the influences that fire stations receive from sources external to fire and fire related emergences happened area.

In city settlements which are closer to areas where employment may be available will typically be denser, whilst those further out are often less dense, leading to less severe fire (Walls and Zweig, 2016). Informal settlements are inherently unstructured in nature, lack of adequate services, regularly have high population densities, and can experience social problems. Thus, fires can easily propagate rapidly through such areas, leaving thousands homeless in a single fire (Richard Walls 2019). Fires within informal settlements are frequent and they spread with devastating speed. In February 2011, for example, a fire left 10,000 homeless in Bahay Toro, Philippines, in just three hours (Twigg et al., 2017). Conversely, dwellings in cities utilize discarded steel sheeting more commonly, making techniques for applying products to steel sheeting more suitable. Electricity usage in the settlements has a wide variety of safety issues as inhabitants will often use faulty electrical wiring and/or overload plug points with a number of appliances resulting in the increasing frequency of fires (Zweig et al., 2018). These illegal connections can easily cause short-circuits leading to increased fire risks. Furthermore, the presence of such cables limits access for responding fire services in that (a) they cannot easily drive fire trucks into areas due to the low-hanging cables, and (b) need to turn off electrical supplies to an area before they can safely use hoses. Furthermore, certain communities culturally prefer the use of open fires over electricity, due to social interactions. Firefighting activities can be difficult due to limited access to the area.

where the fire is occurring (including structural limitations of dwelling spacing's, overhead power lines), challenges in locating fires due to settlements having few road names and street numbers, tensions between residents and firefighters, limited water supplies, safety concerns and people evacuating settlements with their possessions which blocks access ways (ImizamoYethu fire in 2017). during firefighting operations multiple hoses were cut by residents, such that residents might redirect water onto their own burning dwellings. This greatly compromises firefighting operations, as water and hose systems have to be reinstated and cut hoses use the water in a less efficient manner. Furthermore, due to a variety of reasons firefighters may be attacked (African News Agency, 2016), which can influence response times and the ability of brigades to enter certain areas. The use of emergency numbers in uncontrolled fire is a critical requirement to mobilise the fire services. fire trucks can only be useful when they reach the scene of an emergency. Narrow driveways, steep

grades, soft shoulders, and hairpin turns can all contribute to disastrous results if your home or business should catch on fire (Botetourt, VA 2020).

Development stages of the fire whilst the fire and emergency services mobilise to respond can reduce the level of damage and potential injury from the fire. Community Emergency Response Teams (CERTs) have been trained for this purpose by several fire services (Chauke, 2017). Frightening is considered that often it can take many minutes for a resident to notice a fire, to contact the local fire brigade (often the wrong number is called), a fire truck to be dispatched and then possibly has to drive a long distance, for fighters to find the burning dwellings (in the midst of a settlement with no street names), to setup and finally extinguish the fire (Stellenbosch university 2020).

The stakeholders engaging in managing successful events, it is essential to engage event stakeholders throughout the event planning process to gain community satisfaction and support for the event: resulting in competitive advantage (Gupter, 2015). AAFDRMC had Stakeholders form Addis Ababa city administration and federal government (citizen charter 2018). Fire departments face a number of unique challenges in service delivery, including the fact that is extremely difficult to predict with any certainty when requests for services will be received, resulting in varying call volumes and unscheduled service delivery. Many of the incidents to which fire departments respond require time-critical services with immediate service consumption. These services are typically labor-intensive.

The expectations of fire department stakeholders fall into the following categories: accessibility, completeness, consistency, convenience, courtesy, effectiveness, efficiency, image, professionalism, responsiveness, safety and timeliness. Stakeholders expect that when they request the fire department to respond to an emergency, the fire department will be available to respond and that the fire department will deliver the services necessary to resolve an emergency situation. They further expect that regardless of the day or time of the response, consistent services will be delivered, and that fire department personnel will be courteous and professional in enacting their responsibilities.

The commercial and residential influences on fire service delivery Urbanization and increasing population density are leading to increased number of high rise buildings in the cities for both commercial as well as residential purposes. Despite fire safety provisions specified in building codes, implementing fire safety has become a serious challenge. These challenges arise because of:

- modern buildings having high fuel (fire) load which is hard to limit;
- highly combustible nature of room contents due to more plastic and cellulose based materials in modern houses;
- open space architecture and use of too much glass (which is poor for fire compartmentation);
- use of new construction materials with poor fire performance; and

Longer response times for firefighting due to adverse traffic conditions, narrow lanes and irregularly planned cities. Due to enhanced standard of living, there is abundant carbon rich fuel (for example wood furniture, stationary, clothes, and other flammable items) in most of the modern buildings. Such high intensity of fuel load plays a key role in faster fire propagation, shorter flashover time, and rapid changes in fire dynamics. A full scale experimental study aimed at characterizing fire development in modern and legacy rooms concluded that flashover point can occur as fast as within 5 min of fire in modern rooms, and after 29 min in case of legacy rooms (Kerber, 2012). The development of room temperatures in case of legacy and modern rooms. It can be clearly observed that temperature rises rapidly for relatively shorter duration in case of all modern room fires, thus, represent increased fire severity. Further, modern buildings are designed with open architecture glazing with transparent glass windows and false ceilings to facilitate larger open office spaces for comfort and aesthetics. These open spaces, false ceilings, and large openings do not provide required compartmentation for fire safety. Thus, the probability of fire spread from one floor to another via large openings increases as compared to normal buildings, as glass windows and false ceiling are prone to failure at high temperatures. Breaking of such large sized windows can provide immense supply of oxygen to fire, thus, aggravating the fire severity as well. Therefore, combination of high fuel load density and open architecture create ideal conditions for intense and rapid-fire spread in modern buildings.

In recent years, new construction materials are being developed to achieve high performance in terms of strength, stiffness, ductility and cost. Examples include, ultra-high-performance concrete with 6-8 times greater compressive strength than that of conventional concrete; high performance steel; and fiber reinforced polymers (FRP) which are non-corrosive, extremely lightweight, and stronger than steel. These new materials are often used in high rise buildings and have better strength and stiffness than conventional construction materials at normal temperatures. However, most of these materials undergo rapid degradation in structural properties (usually faster than conventional materials) at elevated temperatures which leads to lower fire resistance (Kodur, 2014; Firmo *et al.*, 2015). Also, modern buildings consist of

large quantities of plastic and vinyl-based materials which have high combustion toxicity, and therefore, increase risk to life safety.

Further, due to narrow streets, high traffic volume, and irregularly planned cities the response time for firefighting operations is significantly longer in most of the developing countries. This longer response time along with extreme reduction in flashover time in modern buildings [5 min vs 29 min (Kerber, 2012) provides insufficient time for evacuation and firefighting operations, and significantly exacerbates the risk to life and structural safety. However, the current adopted fire safety provisions based on prescriptive based approach do not account for these factors.

With the advancement of building and fire codes into the comprehensive set of codes and regulations that exist today, the need to implement these requirements is greater than ever. Although fire protection for the commercial occupancy has been in place for some time, many of the same requirements have only recently become a part of the model code for residential homes.

It is vital that the importance of fire prevention inspections be communicated throughout the fire service, such that it is acknowledged and accepted as the primary emergency mission of the entire department. Research continues to support the efforts of fire suppression personnel in performing fire prevention functions. These efforts not only benefit the community, but also directly benefit the firefighter with a safer working environment during emergency response.

In order to reduce the occurrence and severity of fires in the commercial area, there must be a cultural change within the fire service throughout the nation. The cultural change must focus on effectively delivering a fire prevention program to the community. Within most jurisdictions throughout the country, the fire service is responsible for enforcing the fire code requirements. However, until support is gathered from key stakeholders as well as the community, we will continue to experience unacceptable fire loss. While this report focused on the commercial area, a parallel can also be drawn to the residential occupancy. As is common in most countries, the majority of fires and fire related deaths takes place in the home despite the significant differences in homes and construction throughout various countries.

2.3 Theoretical Framework

The theories that have been used in the study of factors affecting fire service delivery include the emergency management theory. This model provides a sound basis for supporting the emergence of emergency management theory utilizing the management process from planning, organizing, leading and controlling (Fayol 1916, Mintzbert 1973, Katz 1974, Koontz 1984). Taylor (1911) considered management a process and one that "if approached scientifically" would lead to success. His principles of scientific management initiated a revolution in how we viewed both the process and position of the fire station manager. Many early writers in emergency management contended that there was a right way of organizing work and accomplishing tasks (Gilbreth 1911) while others built on the engineering approaches to acknowledge the impacts of bureaucracies (Weber 1947).

Lango Benard (2014) suggested that this theory had a major contribution to strategic planning process which is applied to management of fire service delivery in the need to monitor the nature and changing characteristics of external forces and how they impact on the operations of the fire station.

However, the model does not provide information on how to access the external forces

Characteristics, furthermore it has been criticized for its lack of specificity, Bertalanffy (1972).

System theory has also been used by researchers to explain why fire service delivery may or may not be efficient and effective (Bertalanffy, 1972). It hypotheses that everything is part of a larger, independent arrangement and it is centered on clarifying the whole, its parts, and the relations between them. Fire service delivery encompasses many parts which includes local, regional, national, public, private and non-profit units. Bertalanffy further suggests that system theory acknowledges that effective fire service delivery requires response time that is at par, knowledge and skills of the responders, support of the top management and the competition from outside quotas within the fire station. These systems are open not only in relation to their environment but also in relation to themselves; the interactions between components affect the system as a whole. A series of studies found that System theory is the best model in examining the factors that influences fire service delivery because it is specialized in service delivery, it is well research, it uses psychometric measurements and it is dominant model for investigating service delivery in the emergency arena (Bedeian, 1989).

Freemont (1985) developed a framework for organizational adoption based on Contingency Theory of Organizations. The theory postulates an effective organization should have a

structure which is consistent with its environment needs. The effectiveness of an organization is based upon its fitness towards both internal and external factors such as environment, organization size, and organization strategy and response time to make a decision. In this framework key determinants are identified as external environment which includes, the response time, the organization formal and informal knowledge and finally, the top management support (Tosi et al, 1984). Therefore, decision makers should take into account the response time, top management support, the external environment and organization skills.

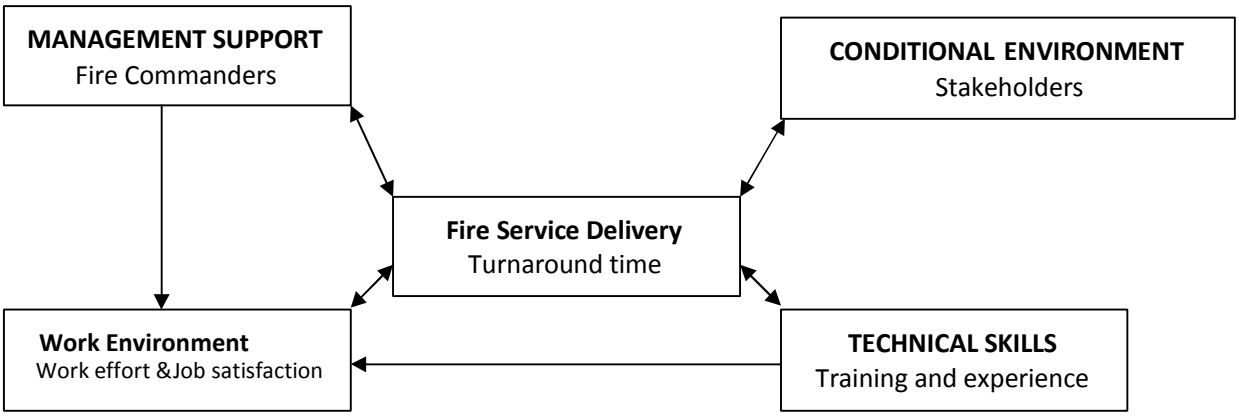


Figure 1: Fire service delivery framework

Source: Tosi (1984)

Fire commanders responsible for carrying out the day to day tasks of running a firefighting fire stations. Such include supervising other officers and firefighters at an emergence scene and recruiting, training, and equipping them for their respective duties to service the city dweller's effectively, senior firefighter share their skill and experience to junior firefighter's. top management introducing a new system or technical equipment within the station, work environment more dedicated for work effort and job satisfaction to delivering services with a high level of quality and active stakeholders facilitate the area to firefighters easily and effectively to control the happen emergence, so, this are positive relationship used to reduce response time rate.

This framework has been adapted in emergency service delivery studies in the past and it provides a useful analytical framework that can be used for studying the factors that influences fire service delivery (Oliveira and Martins, 2011).

According to Scott (2011) institutional theory has also been used in the past studies which emphasizes that institutional environments are crucial in shaping the fire stations structure

and actions. Fire stations decisions are not driven purely by rational goals of efficiency but also by social and cultural factors and concerns for legitimacy. Fire stations as organizations are supported by cultures, structures and routines while operating at multiple levels (Scott, 2011).

The theory claims that firms in the same field tend to become homologous over time, as competitive and customer pressures motivate them to copy industry leaders. Institutional theories tend to be variance theories and are therefore better in explaining among types of fire stations. This study modified the fire service delivery framework which considers response time, informal settlement, and stakeholders, and community attitudes and working environment, top management support and station staff skills as factors that influence fire service delivery.

2.4 Conceptual Framework

The conceptual framework below shows the relationship between the dependent and the independent variables.

Independent Variables **Moderating Variable**

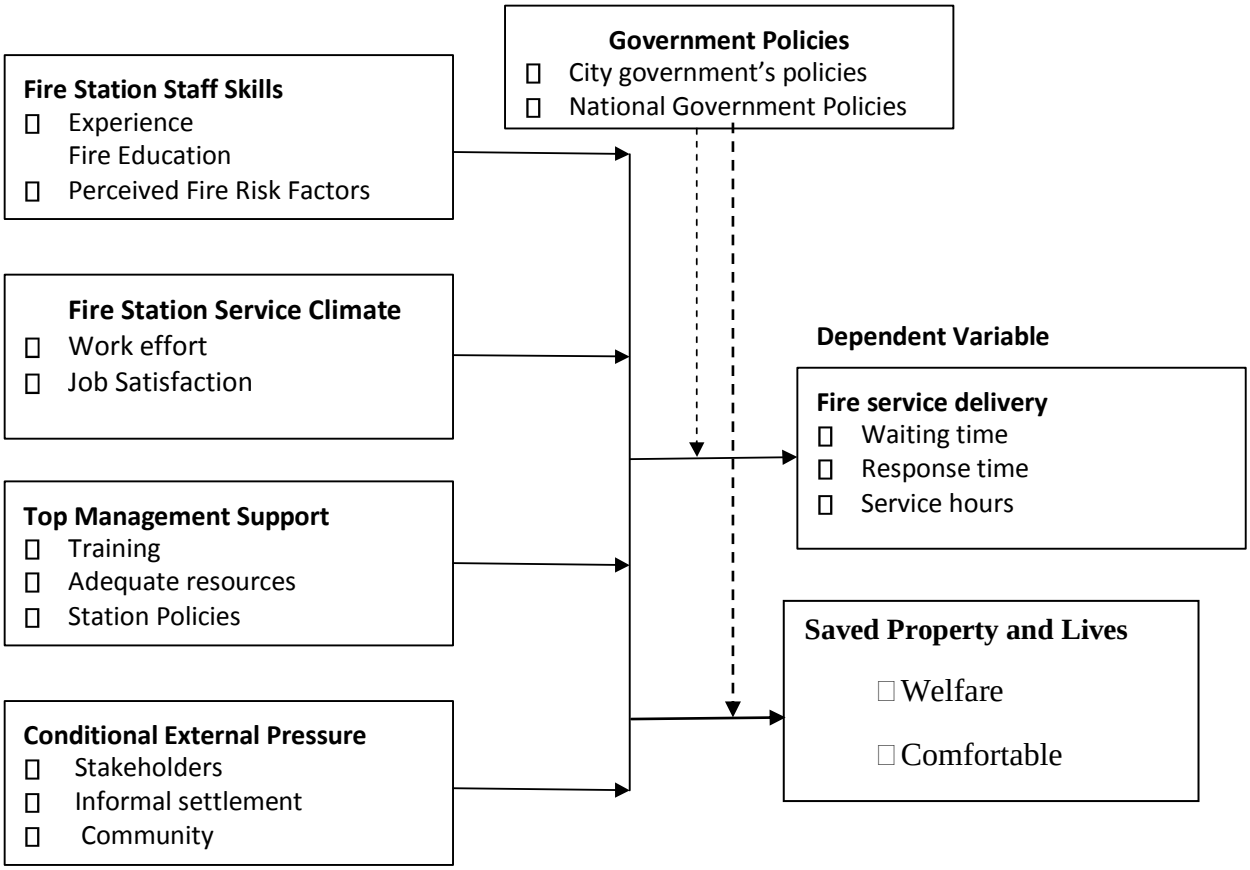


Figure 2: conceptual framework.

Source: (Lango Benard 2014).

The conceptual framework illustrate how fire station staff skills influences the adoption of fire service delivery in terms of experience, fire education and perceived fire risk factors within the fire stations. The work environment influence on fire controlling service delivery will be illustrated in terms of the work effort and the job satisfaction levels of the fire staff. The top management influence on fire service delivery will be illustrated on the basis of training, adequate resources and station policies support. The influence of conditional external pressure will be illustrated on the basis of conditions posed by stakeholders, informal commercial and residence house and community attitude. waiting time, response time and service hours are determined by independent variables on fire station service delivery.

2.5. Definition of Significant Terms

Firefighting: is the act of attempting to prevent the spread of and extinguishes significant unwanted fires in buildings, vehicles, and woodlands.

Effectiveness: means how efficiently an operation or activity is at achieving its goal and the commission overall objective.

Response time: the time it takes from the vehicle rolling to arrival on the scene.

City Government: This is a sphere of government in its own right and has distinct functions from other spheres.

External Pressure: This refers to influence on the firm from the organizational environment through stakeholders and imposition by partner organizations, informal and commercial residence houses and community attitude.

Fire Service delivery: This refers to taking of fire services to the people by the public fire Stations to ensure public safety and health and at the same time protecting property from loss.

Public Fire Stations: This will comprise of all fire stations that are run either by the Addis Ababa city administration or federal government.

Size of Fire Stations: This refers to the number of fire service responders a fire station has.

CHAPTERTHREE

RESEARCH METHODOLOGY

3.1.Introduction

This chapter presents the research design which would be applied, the target population for the study, and the sample size that would be used. It also explains the data collection procedure, analysis, and research instruments the study would adopt. It also focuses on the validity and reliability of instruments and ethical issues.

3.2. Research Approach

A mixed research approach (qualitative and quantitative) was employed in the study. These should be done to create a better understanding of the research problem. In other words, whereas the qualitative method was conducive to study the selected issues in-depth and to assess attitudes, behaviors, and opinions of the respondents, the quantitative method helps the researcher to study the selected issue in the breath. Therefore, studded the issue in-depth and breadth was providing a quality finding

3.3. Research Method

This study adopts descriptive and explanatory research methods to identify factors influence fire controlling service delivery and organizational performance. The rationale behind chose this design was to explain and describe the existing situation about the respondent's view about fire controlling service delivery.

Thus, this study would assess the main factors influence fire controlling service deliveries on the performance of the Commission from the selected four fire stations and the mechanisms had been taken to improve their services to enhance the capacity of the commission performance of the fire service delivery to the Addis Ababa city.

3.4. The Population of the Study

The population of the study covers those employees who work in AAFDRMC. These bodies include Firefighters, shift leaders, Fire Station Commander, heads of fire stations, Fire team leaders, and Fire truck drivers.

According to AAFDRMC report the populations of the various fire stations in Addis Ababa are distributed in table3.1:

No.	Employees	Arada	Addis Ketema	Bole	Kirkos	TOTAL
1	Head of fire station	1	1	1	1	**4**
2	Fire Station Commander	1	1	1	1	4
3	Shift leader	3	3	3	3	**12**
4	Fire team leader	11	10	9	12	**43**
5	Fire Truck Driver	11	10	11	11	**43**
6	Fire fighters	59	51	57	49	**207**
	TOTAL	**85**	**76**	**82**	**77**	**320**

Table 3.1:TargetPopulation

3.4.1. Sampling Frame

The sampling frame of this studded included Firefighters, shift leaders, Fire Station Commander, heads of fire stations, Fire team leaders, and Fire Truces drivers from four branches.

3.5. Sample technique and Sample Size Determination

The sampling frame contains 4 branches of employees (320), 83 from the Arada branch, 75 from Addis Ketema, 83 from Bole, and 79 from Kirkos, based on the most frequent firefighting operations, established a little bit earlier and easily the researcher could obtain relevant data relative to other branches and The researcher used a simple random sampling technique to select employees in each sector and used a formula set by Cochran (1963:75).

The techniques were used and conducted as follows by considering the level of acceptable margins of error at 7%. Therefore, the sample sizes are calculated as follows:

In N>10,000 then, sample size $n_o = \frac{z^2 pq}{d^2}$

If N<10,000 then, sample $n = \frac{no}{1+\frac{no-1}{N}}$

Where, N=population size, n=desired sample size, z= confidence level (93%=1.81), p=estimated

Characteristics of study population (0.5), q=1-P, d=level of statistical significance set /margin of error (0.07).

To get n, n0 =$\frac{z^2 pq}{d^2}$, where=1.81,p=0.5, q=1-0.5, d=0.07

n_o=$((1.81)2x(0.5)x(0.5))/((0.07x0.07) = 167$

However, since the total population of the study is, which is below10, 000, the sample size using 93% level of confidence is,

n=$\frac{no}{1+\frac{no-1}{N}}$, N=320

Therefore, n=110 and $_{no}$=167

3.6. Source of Data

In this research, both primary and secondary data sources were, the study utilizes first-hand information to assess the perception of the respondent for the research question and published and unpublished working manuals, procedures, and performance report the secondary resources

3.6.1. Primary Source

Primary data sources include information obtained from respondents by dispatching multi-response questionnaires and conducting interviews.

3.6.2. Secondary Source

Secondary data sources include a manual of human resources, performance reports of branch offices, annual sectorial reports of AAFDRMC, research would be done by various sources, the internet, and different statistical reports.

3.7. Data Collection Techniques and Instruments

Data would be collected through instruments such as questionnaires and key informant interviews with distributed questionnaires and by interviewed key respondents. Semi-structured questionnaires would be designed, because the respondent to explain his/her idea on some interested issues and disseminated to the sampled respondents. These multi-response questionnaires were first constructed in English and then translated into Amharic with similar meanings for betters understanding. The interview would be conducted with key informants. Semi structure questionnaires would be designed and administered. These key respondents were firefighters, fire shift leaders, Fire Station Commander, heads of fire stations, Fire team leaders, and Fire truck drivers.

3.8. Data Analysis

The collected data would be analyzed used both quantitative and qualitative data analysis techniques. The qualitative analysis employs the help of open, axial, and selective coding of ideas, opinions, and suggestions of the sample population. While the quantitative techniques would be used with the help of frequency and percentage to present, analyze and interpret figurative data. The quantitatively analyzed data would be displayed by used tables and also the research might use SPSS version 20.00 and MS excel to analyze the collected data.

3.9 Operational variables

Table 3.4: Operationalization of variables

Objectives	Variables	Indicator	Measurement Scale	Methods of data Collection	Data Analysis Technique
Independent Variables					
To examine the influence of effectiveness on fire stations staff skills in services delivery Addis Ababa City Administration.	Fire staff Skills	Profession Fire education Perceived fire risk factors	Nominal Nominal	Administering questionnaire Indepth Interview	Frequencies and percentage
To determine the vulnerability factors that influence effectiveness of fire service delivery in Addis Ababa City Administration.	Vulnerability Factors	Social Force Cognitive forces	Nominal Nominal	Administering Questionnaire	Frequencies and percentage
To establish the influence of top management support in the fire service delivery in Addis Ababa City Administration.	Top Management Support	Training Adequate Resources Policies	Nominal Nominal Nominal	Administering Questionnaire In depth Interview	Frequencies and percentage

To establish the influence of conditional external pressure in fire service Addis Ababa City Administration.	External Pressure	Stakeholders Common sense Community attitude	Ordinal Ordinal Nominal	Administering Questionnaire In depth Interview	Descriptive Descriptive Descriptive
Dependent Variables					
To investigate factors Influencing effectiveness of the fire service delivery	Fire Service delivery	Number of hours Waiting time Response Time	Ratio Ratio Nominal	Administering Questionnaire In depth Interview	Descriptive Descriptive
Status of fire service delivery level in the fire station	Fire Service delivery	Improving Average declining	Ordinal Ordinal Nominal	Administering Questionnaire In depth Interview	Descriptive Descriptive

3.10. Ethical Consideration

In this study, the researcher considers the rights of respondents and organizations as well as the ethical principles that had to be followed in conducting research. Generally, the researcher given great attention and respect to the dignity of respondents and organization without any preconditions. Hence, the study would be carried out in line with research ethics that mainly include providing adequate information and explanation to all participants about the research, its objectives, methodologies, actively and potential benefit to various bodies; ensure their right and promises to all participants to keep their anonymity and confidentially of the personal information they given was during the interview and the information they given were insured by using a code system to refer to the data of specific participants, and not personal names and finally the researcher expected to aware that participants had the right to be informed of the research findings.

UNIT FOUR

DATA ANALYSIS, PRESENTATION, AND INTERPRETATION OF FINDINGS

4.1. Introduction

The chapter presents the data analysis, presentation, and interpretation of the findings on the factors that influence fire service delivery. The data was collated and reports produced in form of descriptive tables and charts.

4.2 Questionnaire Return Rate

Out of the one hundred ten (110) questionnaires administered, one hundred and ten (110) constituting 100% response rates were collected. Out of this 1 fire station head, 1 fire station commander, 3 shift leader, 6 team leaders, 4 fire truck drivers, and 17 firefighter's total 32 fire staff were from Arada station. 1 fire station head, 1 fire station commander, 3 shift leader, 3 team leaders, 2 fire truck driver, and 14 firefighters total of 24 fire staff were from Addis Ketema, 1 fire station head, 1 fire station commander, 3 shift leader, 7 team leaders, 4 fire truck driver, and 12 firefighters total 28 fire staff were from Bole fire station and 1 fire station head, 1 fire station commander, 3 shift leader, 4 team leaders, 4 fire truck driver, and 13 firefighters total 26 fire staff were from Kirekos fire station.

The response rate from the various strata is given in table 4.1:

Table 4.1: Level of Response Rate

No.	Employees	Arada	Addis Ketema	Bole	Kirekos	TOTAL
1	Head of fire station	1	1	1	1	**4**
2	Fire Station Commander	1	1	1	1	4
3	Shift leader	3	3	3	3	**12**
4	Fire team leader	6	3	7	4	**20**
5	Fire Truck Driver	4	2	4	4	**14**
6	Fire fighters	17	14	12	13	**56**
	TOTAL	**32**	**24**	**28**	**26**	**110**

Source: Filed Survey 2021

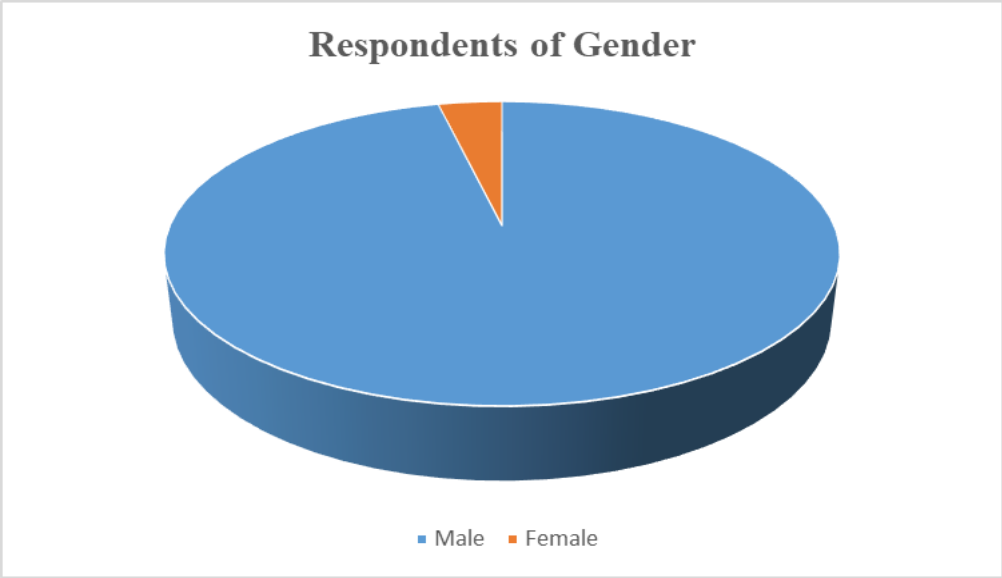
According to American Association for Public Opinion Research (AAPOR, 2008), above 93.5% from the respondent which is a high response rate from a random sample of 110 is considered preferable.

4.3 Characteristics of the Respondents

This section gives an analysis, presentation, and interpretation of the respondent's gender, age, and level of education.

4.3.1 Gender of Respondents

Chart 4.1: shows the gender of respondents in all, 96.4% of the respondents were male and 3.6% female, indicating an unbalanced gender distribution at the fire stations from the respondent.



Source: Filed Survey 2021

4.3.2 Age of Respondents

Table 4.2 shows the distribution of the fire station staff according to their age.

Table 4.2:Distribution of Age of Respondents

Age	Frequency	Percentage
18 –30	48	43.6
31 –40	37	33.6
41 –50	21	19.1
51and above	4	3.7
Total	**110**	**100**

Source: Filed Survey 2021

The highest percentage of respondents (43.6%) was between the age 18-30 and 33.6% was between 31-40, older youth (41-50) years near the old age at 19.1%. While the lowest was 51 and above years are at 3.7%.

4.3.3 Level of Education of Respondents

Table 4.3 shows the level of education that the fire station staff had attained before employed at their current workstation.

Table 4.3: Distribution of level of education of respondents

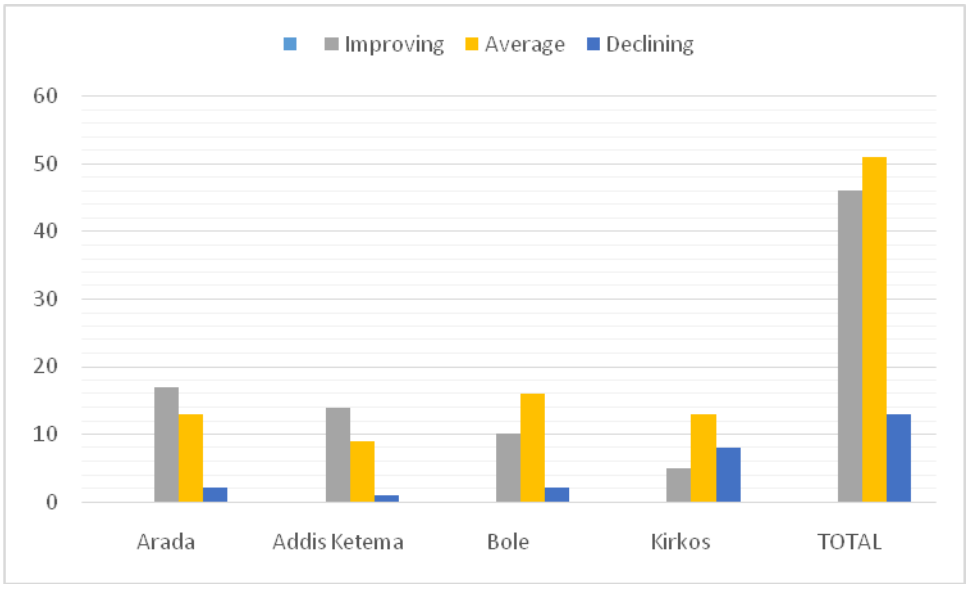
Level of education	Frequency	Percentage
Primary	6	5.5
Secondary	23	20.9
Diploma	60	54.5
Degree and above	21	19.1
None	0	0
Total	110	100

Source: Filed Survey 2021

Table 4.3 presents the levels of education of the fire station staff. It indicates that all of them were educated. From the respondent 54.5% diploma graduators, 20.9% the secondary school completers, while 19.1 holding a first degree and above and only 5.5 % educated under the secondary school. So, Uneducated from the respondent of fire station none. All of the respondent from the fire station staff had joined from basic primary formal education up to high-level Ethiopian education.

4.3.4 Status of fire service delivery

Chart 4.2 shows the percentage rating of the status of fire service delivery in the various stations.



Source: Filed Survey 2021

Chart 4.2: Status of fire service delivery

The current status of the Commission with fire service delivery 46.4% of the respondents stated that the status of the fire service delivery is average. While 41.9% of the respondent's opinion that the status of fire service delivery is improving and from the respondent, only 11.7% felt that the status of fire service delivery is declining.

4.3.5 The average turnout time

The average turns-out time is critical for every fire station as it determines the fire station's efficiency and effectiveness in responding to emergency calls. Table 4.4 presents the percentage analysis for the average turn-out time of the fire station.

Table 4.4: Average turn out time of the fire stations.

Average turnout time	Arada	Addis Ketem	Bole	Kirekos	TOTAL	%
Lessthan10minutes	19	14	17	15	**65**	**59.1**
10minutes	8	7	6	4	**25**	**22.8**
Morethan10minutes	5	3	5	7	**20**	**18.1**
TOTAL	**32**	**24**	**28**	**26**	**110**	**100**

Source: Filed Survey 2021

The majority 59.1% of the respondents confirmed that the average turnout time for the fire stations was less than 10 minutes and 22.8% of the respondents giving a view that the average turnout time is exactly 10 minutes while a small minority at 18.1% felt that the average response time for the fire stations was more than 10 minutes.

4.4 Influence of staff skills and fire service delivery

This section gives the analysis, presentation, and interpretation of responses on the influence of staff skills on fire service delivery. The responses were distributed to cover fire staff experience, their education, and the perceived fire risk factors.

4.4. 1 Experience in fire service

Table 4.5 shows the experience of the fire staff at the various fire stations within the City Government of Addis Ababa Fire and Disaster Risk Management Commission.

Table 4.5: Distribution of level of experience of respondents

Level of experience	Arada	Addis Ketem	Bole	Kirekos	TOTAL	%
Lessthan1year	0	0	0	0	**0**	**0**
1 –3years	17	12	15	13	**57**	**51.9**
4 –6years	6	4	5	6	21	**19**
Morethan6years	9	8	8	7	**32**	**29.1**
TOTAL	**32**	**24**	**28**	**26**	**110**	**100**

Source: Filed Survey 2021

Out of the 110 respondents who returned the questionnaire, 57 which represent 51.9% had experienced between 1 up to 3 years with those with less than one year zero. The respondents also reported 19% for those with between 4 up to 6 years' experience and

29.1% for those with more than 6 years' experience. From the data, it can be noted that the AAFDRMC fire station staff have no more adequate experience.

4.4.2 Knowledge of fire service delivery

Table 4.6: Distribution of knowledge of respondents on fire service delivery

Knowledge	Arada	Addis Ketem	Bole	Kirekos	TOTAL	%
General knowledge on fire safety	26	20	23	20	**89**	**80.1**
Specialized Emergency Care	0	0	0	0	**0**	**0**
Trainer of Trainers	1	2	1	0	**4**	4.4
Knowledge of emergence work record information	5	2	4	6	**17**	**15.5**
TOTAL	**32**	**24**	**28**	**26**	**110**	**100**

Source: Filed Survey 2021

According to data analyzed in table 4.6, most of the fire staff respondents have general knowledge on fire safety (80.1%) and knowledge of emergence work records management (15. 5%).trainer of trainers (4.4 %) and while those with specialized emergency care is none.

4.4.3 Training needs in fire service delivery

Table 4.7 shows whether respondents are aware of a system in place to help the fire staff in identifying their training needs in fire service delivery.

Table 4.7: Training needs assessment of respondents on fire service delivery

A system on training needs assessment	Arada	Addis Ketem	Bole	Kirekos	TOTAL	%
Yes	25	19	20	17	**81**	**73.7**
No	7	5	8	9	**29**	**22.3**
TOTAL	**32**	**24**	**28**	**26**	**110**	**100**

Source: Filed Survey 2021

The majority of respondents (73.7%) confirmed that there was a system in place within the fire stations to enable fire staff in identifying their training needs to aid in fire service delivery while only (22.3%) of the respondents confirmed there was no system in place.

4.4.4 Perceived fire risk factors on fire service delivery

Regarding perceived fire risk factors on fire service delivery, more than half of the respondents spoke about risks. The most prevalent themes raised included inadequate facilities, lack of training, and poor remuneration. This is given the table 4.8 below.

Table 4.8: Perceived risk factors by the respondents on fire service delivery

Perceived risk factor	**Frequency**	**Percentage**
Inadequate facilities	88	80
Poor remuneration	93	84.5
Poor Infrastructure	79	71.8
No answer	2	0.2
Total	**110**	100

Source: Filed Survey 2021

From the table, it can be observed that the most prevalent risk according to the majority of respondents is poor remuneration (84.5%). while inadequate facilities (80%) and poor infrastructure of the respondents (71.8 %) also indicated that poor infrastructure affects service delivery. 2% of the total sample that returned the questionnaire did not answer the question.

From the analysis and presentation, therefore, staff skills influence fire service delivery concerning staff experience at the various stations. AAFDRMC, from the analysis, indicates that the staffs are no well experienced as indicated by (29.1%) of the respondents. Fire staff knowledge also influences fire service delivery as indicated by table 4.7. Most of the fire staff have general knowledge (80.1%) without any significant specialization (zero %), Knowledge of emergence work record information (15.5%). Without specialization in knowledge and knowledgeable of emergence records information, then fire service delivery is negatively influenced. Finally, perceived risks by the fire staff on fire service delivery also influence fire service delivery. The respondents identify the most prevalent perceived risks influencing fire service delivery as inadequate facilities (80%), poor remuneration (84.5%), and poor infrastructure (71.8%).

4.5 Work environment and fire service delivery

To answer research question number 3, which sought the responses on the influence of work environment on fire service delivery as indicated by work effort and job satisfaction, the sampled fire staff were asked to rate the statements that included staff remuneration, monthly salary influences employees promotion, relationship with each other in staff, provided with the required equipment's to undertake their job, the work environment is conducive for fire service delivery and free from political interference, supervisor always understands and follow you what trying to do and to apply, organized for customer care service, Fire stations attends public forums to publicize the station response services to improve and modernize, fire station comfortable for employees, station enough working space both for the fire tenders and officers and finally, that the station compensates for extra time worked. The ratings were done using a 5-point Likert scale whose numerical values were in ascending order ranked from 1-to-5 with decreasing order of strength of the level of agreement assigned to each of the corresponding statement- factors are given. Strongly Agree and Agree were combined into one scale while strongly disagree and disagree were also combined into one scale. After the data were coded and analyzed, findings from the sampled staff responses were presented as shown in table 4.9.

Table 4.9: Distribution of influence of work environment on fire service delivery

Scale	The combined Likert	Frequency	Percentage
10 – 20	Agree	63	57.3
21 –32	Neutral	11	10
33– 50	Disagree	36	32.7
	Total	**110**	**100**

Source: Filed Survey 2021

As shown in Table 4.9, more of the 57.3 percent of the sampled fire staff agree that work environment influences fire service delivery AAFDRMC.

The mean given by SPSS as 24.72 was on a scale of 10 - 20 and therefore can be interpreted to denote the fact that most of the sampled fire staff agreed that work environment influences fire service delivery AAFDRMC.

The standard deviation value was used to determine the variability of the responses. The standard deviation given by SPSS was 12.09 therefore an indication that there was no significant variation in the responses among the sampled respondents.

4.5.1 Motivation

The respondents were asked to state in their own opinion what they feel encourages them within the fire station in their routine job to achieve efficient and effective fire service delivery.

Table 4.10 presents the analysis of the findings in percentage.

Table 4.10:Motivational factors contributing to fire service delivery

Motivation factor	**Arada**	**Addis Ketema**	**Bole**	**Kirkos**	**TOTAL**	**%**
Monthly Salary	13	9	15	12	**49**	**44.5**
Passion for the job	10	11	6	9	**36**	**32.8**
Public Appreciation	8	4	5	4	**21**	**19.1**
Appreciation by colleagues	1	0	2	1	**4**	**3.6**
Total	**32**	**24**	**28**	**26**	**110**	**100**

Source: Filed Survey 2021

From Table 4.10 it can be confirmed that the majority of the respondents agrees that monthly salary (44.5%) is a motivational factor in fire service delivery while firemen/women passion for the job (32.8%) and public appreciation (19.1%) is also taking into consideration by the majority of the respondents. Appreciation from colleagues (3.6%) was mentioned by a few respondents and is not to a large extent a motivation by many.

4.6 Influence of top management on fire service delivery

The respondent's responses on the influence of top management on fire service delivery were analyzed and are presented focusing on measures put in place to improve work effort and job satisfaction.

4.6.1 Attendance to fire training programmers

Table 4.11 shows the percentage of respondents who had been through fire safety training programmers before and after joining the fire station.

Table 4.11: Attendance to fire training programmers

Attendance to training programmers	**Arada**	**Addis Ketema**	**Bole**	**Kirkos**	**TOTAL**	**%**
Yes	5	3	2	7	**17**	**15.5**
No	27	21	26	19	**93**	**8 4 . 5**
TOTAL	**32**	**24**	**28**	**26**	**110**	**100**

Source: Filed Survey 2021

The percentage of respondents who revealed to have been through a fire safety training program by the fire station before induction was only 15.5 %, while 84.5% of the respondents had not. This could perhaps be due to the existence of fewer training programmers within the study area.

4.6.2 New systems and technologies

New systems and technologies are critical in fire service delivery to ensure the sustainability of the stations. Table 4.12 shows the level of top management support for new systems and technologies.

Table 4.12: The top management support on new systems and technologies

Support on new systems &technologies	**Arada**	**Addis Ketema**	**Bole**	**Kirekos**	**Total**	**%**
By hiring peoples with technology knowledge	6	4	3	11	**24**	**21.9**
By preparing a fund for innovation & system improvement	0	0	2	0	**2**	**1.8**
Training responders on emerging trends	25	20	23	15	**83**	**75.5**
Gives recognition to creative workers	1	0	0	0	**1**	**0.8**
TOTAL	**32**	**24**	**28**	**26**	**110**	**100**

Source: Filed Survey 2021

Table 4.12 shows the top management support for new systems and technologies within the fire station. According to table 4.12 that the majority of the responders are satisfied with the management support on training responders on emerging trends (75.5%). According to the

responders, a good effort is also being seen in top management supporting by hiring peoples with technology knowledge (21.9%). However, table 4.12 analysis also indicates that the top management has not given more attention to preparing funds for innovation and systems improvement (1.8%) and recognition to creative workers, from the responders only (0.8%).

4.6.3 Fire service delivery phases

Table 4.13 shows respondents' views on the most important phases of fire service delivery supported by the top management.

Table 4.13 Phases of fire service delivery supported by top management

Phases of fire service delivery	Arada	Addis Ketem	Bole	Kirkos	TOTAL	%
Job rotation	10	6	7	5	**28**	**25.5**
Coaching	21	18	20	21	**80**	**72.8**
Promotion	1	0	1	0	**2**	**1.7**
TOTAL	**32**	**24**	**28**	**26**	**110**	**100**

Source: Filed Survey 2021

The majority at 72.8% are satisfied with the top management on coaching when asked which are the important phases supported by the top management. It can also be noted that there is little effort being done on job rotation (25.5%). However, according to the respondents, there is no significant effort in place to support promotion (1.7%) of the fire service staff.

4.6.4 Authority to implement fire service delivery policies

Table 4.14 shows the respondents' view on whether the top management had the authority to implement fire-service policies.

Table 4.14: Top management authority to implement fire service delivery policies

Authority to implement fire service delivery policy	Arada	Addis ketem	Bole	Kirekos	Total	%
Yes	5	7	8	4	**24**	**21.9**
No	27	17	20	22	86	**78.1**
TOTAL	**32**	**24**	**28**	**26**	**110**	**100**

Source: Filed Survey 2021

The majority of the respondents 78.1% disagree that the top management no has the authority to implement fire service delivery policies. The remainder 21.9% who agreed that the top management has authority to implement fire service delivery.

4.6.5 Feedback response mechanism

Emergency feedback response is critical in the operations of the fire station to determine its fire service delivery status. Table 4.15, therefore, shows the fire station feedback response mechanism in fire service delivery.

Table 4.15: Fire station feedback response mechanism in fire service delivery

The commission feedback mechanism	**Arada**	**Addis ketema**	**Bole**	**Kirkos**	**Total**	**%**
Letter box provided for feedback within station.	0	1	0	0	1	**0.1**
E-mail address provided to employees.	0	0	0	0	0	**0**
Appraisal done regularly.	28	21	27	25	101	**92.7**
Never answered the question.	4	2	1	1	8	**7.2**
Total	**32**	**24**	**28**	**26**	**110**	**100**

Source: Filed Survey 2021

The majority of the respondents 92.7% thought that their fire station undertakes appraisals regularly to monitor feedback response from the fire staff on fire service delivery. Only 0.1% of the respondents indicated that a letterbox is provided by the station for feedback within the station, while no indicated that an e-mail address is provided to employees for feedback response on matters of fire service delivery. It can also be noted that 7.2% of the respondents did not answer the question.

4.7 Influence of conditional external pressure on fire controlling service delivery

Conditional pressure is an essential element in the working of fire stations in terms of innovation, efficiency, and widening of choice in the fire service delivery. This section, therefore, reports the analysis of fire service delivery in terms of pressures from stakeholders, Residential and Commercial Housing, and a community point of view.

4.7.1 Stakeholders on Fire Service Delivery Pressure

Table 4.16 shows that the respondent's view on stakeholder's influence on fire service delivery.

Table 4.16: Influence of stakeholders on fire service delivery

Stakeholders influence in the fire service delivery	Arada	Addis ketem	Bole	Kirkos	TOTAL	%
Yes	32	23	25	26	**107**	**97.3**
No	0	1	2	0	**3**	**2.7**
TOTAL	**32**	**24**	**28**	**26**	**110**	**100**

Source: Filed Survey 2021

The majority of respondents 97.3% indicate that the stakeholders influencing fire service delivery. While only 2.7% indicate no have to influence in fire service delivery.

4.7.2 Residential and Commercial Housing household

Table 4.17 shows the level of residential and commercial housing household in influence fire Service delivery.

Residential and commercial housing household in fire service delivery	Arada	Addis Ketema	Bole	Kirkos	Total	%
Being a homeowner complex	13	9	10	8	**39**	**35.5**
Adequate access to and from an emergency vehicle	16	8	15	13	**52**	**47.3**
By making the danger fire spread faster	3	7	3	5	**19**	**17.2**
TOTAL	**32**	**24**	**28**	**26**	**110**	**100**

Source: Filed Survey 2021

Table 4.17 reveals that 47.3% indicated that adequate access to and from an emergency vehicle influences fire service delivery while 35.5% agreed that being a homeowner complex influences fire service delivery. 17.2% of the respondents indicated that making the fire spread faster influences fire service delivery.

4.7.3 Problem with the Fire Truck on the Roads

The road of Addis Ababa influences fire service delivery. According to the respondents' opinion of the AAFDRMC.

Table 4.18: problem with the fire truck on the roads

The problem with the fire truck on the roads	Arada	Addis Ketema	Bole	Kirekos	Total	%
Absence of road traffic on time	12	8	9	10	**39**	**35.5**
Road excavation and narrowing	5	4	7	9	**25**	**22.7**
Not giving priority to other motorists	15	12	12	7	**46**	**41.8**
TOTAL	**32**	**24**	**28**	**26**	**110**	**100**

Source: Filed Survey 2021

The majority of the respondents 41.8% believed that not giving priority to other vehicles influences fire service delivery.35.5% of the respondents indicated that absence of road traffic on time and while 22.7% Road excavation and narrowing influencing fire service delivery.

4.7.4 The community attitude influence in fire service delivery

Table 4.19: From a community point of view, this has the greatest impact on fire service delivery

community point of view	**Arada**	**Addis ketem**	**Bole**	**Kirkos**	**TOTAL**	**%**
Ignorance of phone number	16	5	13	12	**46**	**42**
Not calling soon	9	8	10	7	**34**	**30.1**
Do not open the area to firefighters	6	11	4	5	**26**	**23.7**
No answer	1	0	1	2	**4**	4.2
TOTAL	**32**	**24**	**28**	**26**	**110**	**100**

Source: Filed Survey 2021

Of the respondents of 42% thought that Ignorance of phone number fire service delivery, the respondents 30.1% indicated that not calling soon and 23.7while indicated that do not open

the area to firefighter's influence's fire controlling service delivery. from the respondent 4.2% did not gave answer the question in this section.

CHAPTER FIVE

SUMMARY OF FINDINGS, DISCUSSIONS, CONCLUSIONS, AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a summary of the findings, discussion, conclusions reached, and recommendations following the objective of the study. Fire controlling service delivery has been taunted as a major contributor to a safe environment. This study set to investigate the factors that influence fire controlling service delivery by focusing on the fire staff skills, work environment, and the influence of conditional external pressure.

5.2 Summary of the findings

Relying on the responses given by the respondents, the researcher came up with findings that were used to make conclusions and give recommendations. The main findings as based on the result of data analysis in chapter four are given below:

Summary of findings

Demographic Characteristics with finding

Gender

Majority 96.4% of the respondents were male, but female was only 3.4% indicating a high unbalance gender distribution from the respondent of the fire stations.

Age

The highest percentage of respondents (43.6%) was between age 18-30 and 33.6% was between 31-40. There is also an indication that as the older youth (41-50) years nears the old age, their number decreases at 19.1%. while the lowest was 51 and above years and stood at 3.7%. from the point of the respondent this is an indication that the younger youth are more engaged in fire service delivery rather than the older youth and the elderly.

Level of education

It indicates that all respondents were educated. From the respondent 54.5 % diploma graduators, the secondary school completers 20.9%, while 19.1 holding first degree and above and only 5.5 % educated under the secondary school. So, from the respondent of the fire station staff had joins at formal education. the respondent of fire station staffs in city government of Addis Ababa fire and disaster risk management commission are educated from primary to degree and above.

Fire service delivery status

The current status of the Commission with fire service delivery 46.4% of the respondents stated that the status of the fire service delivery is average while 41.9% of the respondents of the opinion that the status of fire service delivery is improving and from the respondent only 11.7% felt that the status of fire service delivery is declining.

Average turnout time of the station

The majority 59.1% of the respondents confirmed that the average turnout time for the fire stations was less than 10 minutes with 22.8% of the respondents giving a view that the average turnout time is exactly 10 minutes while a small minority at 18.1% felt that the average response time for the fire stations was more than 10 minutes.

Objectives with finding

To examine the Influence of fire stations staff skills in delivery of fire services in AAFDRMC.

The majority 51.9% of fire station respondent between 1 to 3 years. Fire stations with experience of more than six years stood at only 29.1% and between 4 to 6 experience of the employ 19% but less than one year was no respondent. This indicating the great gap in the fire station because majority of them less than 6 years' experience.

Vast majority at 80.1% had only general knowledge on fire safety indicating lack of specialization in fire service delivery. 22.3% of the respondents at confirmed that there is no system in place to enable fire staff in identifying their training needs. most significant risk factors are inadequate resources and poor remuneration.

To determine the influence of work environment in delivery of fire services in AAFDRMC

The majority (61.4%) confirmed that the fire stations do not have a customer care department or office. The majority of the respondents at 77.2% confirmed that the fire station does not have enough space for the fire tenders and offices. 73.3% confirmed that the fire station environment is conducive and not influenced by politics. This can be attributed to better structures in recruitment process 80.2% agree that the station at least has tried to provide the basic fire safety equipment's

To establish the influence of top management supports in the fire service deliver in AAFDRMC

84.5% of the respondents confirmed to not having access to fire safety training programmers. Most were of the opinion that these trainings have never been organized by the management.

The majority (75.5%) Training responders on emerging, only 1.8% respondent by preparing a fund for innovation &system improvement Study also noted that coaching has been effected at the fire stations scoring 72.8% while job rotation 25.5% has been implemented at the stations and promotion only scoring 1.7%. The Most respondents agreed at 78.1% that the top management had no the authority to implement fire service delivery policies while 21.9% agrees with this point of view. The majority (92.7%) appraisal done regularly, the fire station has no more implemented public feedback response mechanisms which include letter box (0.1%) and no e-mail address distribute to station worker and 7.2% no give answers.

To establish the influence of conditional external pressure in fire service in AAFDRMC.

The majority of respondents 97.3% indicate that the absence of stakeholders influencing fire service delivery. While only 2.7% indicate no have influence in fire service delivery, but this is attributed to inefficient service delivery47.3% indicated that the adequate access to and from an emergency vehicle influences fire service delivery while 35.5% agreed that the Being a homeowner complex fire station influences fire service delivery. 17.2% of the respondents indicated that making the danger spread faster influences fire

The majority of the respondents 41.8% were of the opinion that not giving priority to other motorist's influence fire service delivery.35.5% of the respondents indicated that absence of road traffic on time and while 22.7% Road excavation and narrowing influencing fire controlling service delivery. From the respondents of 42% were of the opinion that Ignorance of phone number fire service delivery, 30.1% of the respondents indicated that not calling soon and 23.7while indicated that do not open the area to firefighter's influence's fire service delivery. 4.2% not answered the question.

5.3 Discussions of the findings

This section given a detailed discussion of the findings from this study.

5.3.1 Fire station staff skills

The provision of training on fire safety skills is critical for effective and efficient fire service delivery. Schoof (2006) has suggested that fire safety skills are crucial in assisting fire staff to develop fire service attributes and behavior's hence efficient and effective fire service delivery. But only (29.1%) of fire staff had experience of more than 6 years, most had a general knowledge of fire safety at 80.1%. trainer of trainers 4.4% and knowledge of emergence work information 15.5%, but who had no specialized emergency care. Schoof (2006), notes that specialization in the delivery of services improves the service delivery by making it efficient and effective. All of the respondent's blame that lack of specialization on

a system in place within the fire station to enable fire station staff to identify their training needs.

Studies by Satterthwaite (2006) have reported that in developing countries such as in Africa, a high proportion of the population work in the informal economy and live in poor quality and overcrowded housing in an informal settlement with high fire risks. Perceived fire risk levels are increased by the lack of infrastructure and services in many areas. The shortcomings in fire service delivery in most of Addis Ababa fire stations lack of fire engines, inadequate equipment, insufficient personnel with inadequate training and firefighting facilities.

5.3.2 Work environment influence

The results in table 4.9 showed that the mean score and standard deviation for items in the work environment showed that the fire service delivery is influenced by the work environment as perceived by the fire station responders. The study findings show that work effort and motivation have a major influence on fire service delivery. This finding concurs with those of Chugunta (2001) in a survey carried out in Zambia which revealed that the overwhelming majority of the respondents cited work effort and motivation in terms of relationship with supervisors, remunerations, compensation for extra time, promotional opportunity, and provision of required equipments as the major reason for motivation of service employees.

5.3.3 Influence of top management on fire service delivery

According to Carman (1990), top management in an organization is the pillar of activities within the same organization and can either make or break the organization depending on their decisions and changes they bring to the organization. The finding of this study shows that fire station staffs have not undergone any training by the fire station at a significant 84.5%. Fire safety training is critical for the delivery of fire services in line with the changing needs, therefore according to these findings; access to training is still quite low at 15.5%.

Emerging trends in fire service delivery contribute to improvement in the delivery of the same services Schoof (2006). The finding of this study has revealed that the top management is committed to training responders on emerging trends (75.5%) and also a provision of technology-savvy equipment's which including fire engines and firefighting appliances, hiring peoples with technology knowledge (21.9%). However, the low score on

setting up preparing a fund for innovation &system improvement (1.8%) and giving recognition to creative workers (0.8%) is a clear indication according to Schoof (2006) that there is no alignment in the station policies to cover all areas of fire service delivery. For fire service delivery to be consistent without interruption through senior employees leaving the station Schoof (2006) bits of advice that job coaching and promotion are important in ensuring continuity in fire service delivery. The findings of this research showed that the top management has supported rotation of junior staff at only 22.5%, relatively coaching indicated 72.8% was better and promotion 1.7% of staff. These findings reveal that should the top fire station officers leave the station then there would be a crisis as there is no job rotation and the promotion is insignificant. If effective feedback response is designed into a performance management program, the fire staff and response team will improve on fire service delivery hence making the station more efficient and effective (Carman, 1990). Carman (1990) further notes that with effective feedback response processes, the fire staff will not be working blind but will have coordinated functions that meet the needs of the clientele of the station. The findings of the stations showed that the only appraisal regularly 92.7% of the fire station personnel is given attention by the top management with other feedback mechanisms like provision of letterbox at 0.1% and all of them had no knowledge of the emails address and the commission no have an official email address, So the AAFDRMC not given more attention to different effective feedback response mechanism.

5.3.4 Influence of conditional external pressure

According to this study, the majority 97.3% of the respondents confirmed that the stakeholders have a great influence on fire service delivery. Engaging Stakeholder groups in managing successful events, it is essential to engage event stakeholders throughout the event planning process to gain community satisfaction and support for the event: resulting in competitive advantage (Gupter, 2015). 47.3% indicated that adequate access to and from an emergency vehicle influences fire service delivery informal settlements are inherently unstructured, lack adequate services, regularly have high population densities, and can experience social problems. Thus, fires can easily propagate rapidly through such areas, leaving thousands homeless in a single fire (Richard Walls 2019). While 35.5% agreed that being a homeowner complex fire station influences fire service delivery. from the 17.2% indicated that making the danger spread faster influences fire (Richard Walls 2019).

Most of the respondents 41.8% thought that not giving priority to other motorist's influence fire service delivery, a fire truck to be dispatched and then possibly has to drive a long

distance, for fighters to find the burning dwellings (amid a settlement with no street names), to set up and finally extinguish the fire (Stellenbosch university 2020). 35.5% of the respondents indicated that Lack of road traffic on time and while 22.7% Road excavation and narrowing influencing fire service delivery. Challenges in locating fires due to settlements having few road names and street numbers, tensions between residents and firefighters, limited water supplies, safety concerns, and people evacuating settlements with their possessions which blocks access ways (ImizamoYethu in 2017).

Even though Table 4.4 reveals that the average turnout time of the fire stations is less than 10 minutes (59.1%), other studies by (Benard Longo 2014) revealed that due to communication problems, also revealed in this study, it's the police who receive fire calls who in turn informs the fire brigade which delays the reporting process. Consequently, firemen arrive late at the service delivery point and are met by angry and violent crowds. This again depends on the motivation of the fire staff as revealed in Table 4.5 of this study report.

5.4 Conclusions of the study

The following conclusions were made from the findings of this study.

From the demographic characteristics of the study, it is evident that the fire stations to a large extent only recruit men according to females. At the same time, their level of education is from the respondent largely diploma holders and secondary school level, but there had limitation of the level of work experience. It can also be concluded from the characteristics that the fire station fire service delivery status is average with a turnout time of fewer than 10 minutes.

Results of a 5-point Likert scale showed that work environment influences fire service delivery. The factors that contribute to the work environment are concluded as staff remuneration, promotional opportunity, relationship with fellow workers good working environment, established customer care service, attendance to public forums to publicize the station, employee leaves implementation, enough working space for fire engines, and offices and finally, fire station compensation for extra time worked.

Top management strongly influencing the effectiveness fire controlling service delivery in terms of having attendance to specialized fire safety training programs, support to new and emerging technologies, setting funds for fire systems upgrade, job rotation and coaching, appraisal, and implementation of feedback response mechanism. It can be concluded from

the findings that the top management, has never conducted specialized training, there is no fund set aside to address issues of innovation and systems upgrade, the promotion has not been embraced and there are no feedback response mechanisms in fire stations.

Stakeholders and informal settlement and commercial houses centers and community attitudes influence fire service delivery to a large extent. Stakeholders mean indirect firefighters so; play a great role in fire service delivery. Residential and Commercial Housing more represent by Being a homeowner complex, Adequate access to and from an emergency vehicle and By making the danger spread faster are influence the fire station. According to the community's point of view (attitude), Ignorance of phone numbers, not calling soon, and do not open the area to firefighters are other challenges for firefighters during fire service delivery.

5.5 Recommendations of the study

Based on the conclusions of this study, the following recommendations were made.

The commission should require a progressive realization of the enforcement of the one-third gender rule to ensure that women are represented at the fire stations as not only a requirement of the law but also balance decision making. To analyze fire service delivery internalization, the government of Ethiopia should introduce a fire safety syllabus at the secondary and technical vocational school level and as one filed at university level give based on the physical performance and interest of the student. The city government of Addis Ababa should stop appoint all top management with political performance to AAFDRMC. So, fire stations should capitalize on knowledge gained by a graduate in fire safety by restricting top management levels to graduates only. The improvement on fire service delivery of the fire stations, which is currently, average. The fire stations should therefore consider the recommendations below in addition.

The city fire stations should improve on the fire stations work environment by focusing on the work effort and job satisfaction through ensuring improved staff remuneration, elaborate promotional opportunity, encouraging relationship between workers, improved working conditions, establishing a customer care service, attending public forums for publicity, implement employees leave, enough working space for fire tenders and office and compensating staff for extra time.

To ensure that top management positively influences fire service delivery, the management should conduct specialized fire safety training for its staff to meet the needs of the diversity

of the environment. The national disaster risk management commission committee with its representative from the fire station of top management so should prepare funds for upgrading the fire station systems and innovation improvement. A policy should be introduced at the city government of Addis Ababa Assemblies that makes it mandatory for promotion and feedback response mechanisms to be established at the city government fire stations.

To address the issue of stakeholders from the city and the federal government should play a significant role in fire service delivery, so AAFDRMC create a great relationship special with the Ethiopia electric service of Addis Ababa district, Addis Ababa water, and sewerage authority, traffic police, Addis Ababa and federal police commission. Also, the city mastery plan commission and house development office should follow the international fire safety standard before establishing any kind of institution, big projects, and different kinds of road, etc. by considering fire truck roads. In addition to this the fire prevention office should develop the attitude of the community by using mass media, distributing different paint materials, by writing emergence phone number back on the dweller identification card, AAFDRMC should maintain GPS in each fire station fire trucks and should buy qualitative hand radios and should give training about utilization of radio.

5.6 Suggested area for further research

The study proposes the following areas for further study:

1. An investigation into the factors influencing fire controlling service delivery case of the regional city of Ethiopia

2. An investigation of the factors influencing fire controlling service delivery in Ethiopia Mountain and monastery wildfire.

3. An investigation of the absence of private fire station impact on public fire station service delivery: The cause of Addis Ababa city administration.

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APPENDICES

APPENDIX1: LETTER OF TRANSMITTAL

TAYE TOMOSHKE
Mobile: 0910803914/0940470546
tayetomoshke21@gmail.com

TO WHOM IT MAY CONCERN

Dear Sir/Madam;

RE: LETTER OFREQUEST TO CONDUCT RESEARCH

I am a post graduate student at the University of Addis Ababa Masters of Arts Degree in Public Administration and Development Management. I am currently undertaking a research on the Factors Influencing the Effectiveness of Fire controlling Service Delivery by Fire and Disaster Risk Management Commission: The Case of Addis Ababa City Administration.

I am pleased to inform you that you have been selected to participate in the study and I therefore request you to provide information through the questionnaire provided. I request for your honesty and good will as this will make the research data useful hence the whole study and its meaning.

The information provided will be treated with at most confidence and data provided will be used for academic purposes only.

I thank you in advance for your active participation.

Yours Sincerely;

Taye Tomoshke

APPENDIX2: Questionnaire for the Fire Station Responders

Instruction:

SECTION II: Fire station staff skills and fire service delivery

6. How many years have you been in fire service sector?

Less than a year ☐ 2 –3years ☐

5 –6 years ☐ More than 6 years ☐

7. What is your knowledge status on fire service delivery do you currently hold? (Multiple answers allowed)

General knowledge on fire safety ☐

Specialized emergency care knowledge ☐

Trainers of Trainers ☐

Knowledge of emergence work record information ☐

Any other specify: …….

8. Have you ever under taken any of these fire service delivery continuous training in the last one year?

Service delivery training ☐

Training of groups volunteers ☐

Private Training ☐

Any other Specify…….

If not, why……...

9. Have a situation to help the fire staff in explain their training needs in fire service delivery?

Yes ☐ No ☐

Identify……. …….....

…….

10. In your own opinion, what do you understand as fire risks challenges in fire service delivery?

…….

…….

…….

……

SECTION III: Work environment and fire service delivery

- ✓ *(Tick) the place your opinion on the influence of the following attributes on fire service delivery*

11. How would you at the following service climate factors influence on the fire service delivery?

	Influence of fire station service climate	Strongly	Agree	Neutral	Disagree	Strongly Disagree
A.	Monthly salary influences fire service delivery					
B.	Employees promotion influence fire service Delivery					
C.	Relationship with each other at the fire station Influences fire service delivery					
D.	Commission are provided with the required equipment's to undertake their job					
E	Work environment is conducive for fire service delivery and free from politics interference					
F	fire station has organized for customer care service					
G	Fire stations attends public forums to publicize the station response services to improve and modernize fire service delivery					
H	Supervisor always understand and follow you what trying to do and to apply					
I	the fire station is comfortable for employees					
J	Station has enough space for both the fire tenders and offices					
K	Station compensates for extra time worked hence Improving on service delivery					

SECTION IV: Influence of Top Management on Fire Service Delivery

12. Did you attend a firefighting training before induction in the fire station?

Yes ☐ No ☐

13. How does the top management support new systems and technologies in fire service delivery?

By hiring peoples with technology knowledge ☐

By preparing a fund for innovation &system improvement ☐

Training responders on emerging trends ☐

Gives autonomy to creative workers ☐

Any other specify……

14. Which one the most relevant phases of fire service delivery supported by top management?

Job rotation ☐ Coaching ☐ Promotion ☐

15. Top management has power to implement fire service delivery policies?

Yes ☐ No ☐

If you say yes, list down policies implemented in the last one year by fire station:

……..……

……

16. What are feedback response mechanisms in fire service delivery?

Letter box provided for feedback within the station ☐

E-mail address provided to employees ☐

Appraisal done regularly ☐

Any other specify: ……

SECTION V: Influence of conditional external pressure on fire service delivery

17. Does the stakeholders influence fire service delivery process?

Yes ☐ No ☐

18. How does residential and commercial housing household influence fire service delivery process?

Being a homeowner complex ☐

Adequate access to and from an emergency vehicle ☐

By making the fire spread to fast ☐

19. What is the problem faces with the fire truck on the roads?

Absence of road traffic on time ☐

Road excavation and narrowing ☐

Not giving priority of other vehicle to fire truck ☐

20. From a community point of view, which has the greatest impact on fire service delivery?

Ignorance of phone number ☐

Not calling soon ☐

Do not open the area to firefighter ☐

Specify any other ……

SECTION VI: Status of Fire Service Delivery

21. What is the current performance of fire service delivery?

Improving ☐ Average ☐ Declining ☐

22. What is the average turnout time of the fire station?

Less than 10minute ☐ More than 10 minutes ☐ 10 minutes ☐

Otherspecify……

……

……

23. What reasons would you attribute this average turnout time to:

…….

…….

24. In your opinion what are encourages you within the fire station in your routine job:

…….

…….

25. What are challenges facing you on time of influence fire service delivery?

…….

…….

26. What would you recommend for implementation to improve fire service delivery?

APPENDIX 3: Interview Guide for Questionnaire for the Fire Station Responders

Instruction:

Section I: Fire Station Background Information

1. Name of Station…….

2. Sex of respondent…….

3. Employ Age……...

4. Job Title……

5. Your level of education ……

SECTION II: Fire Station Staff Skills and Fire Service Delivery

6. When did you join in the fire service sector?

……
……

7. Describe currently you holding knowledge in fire service station (*Multiple answers allowed*)

……

8. From the above you listed one which is continuous training in the last one year?

……

9. Is there fire station select the type of training to give for the station staff?

……

10. Do you think challenges have as fire risks facing fire service delivery?

……

SECTION III: Work Environment and Fire Service Delivery

(Seek the opinion of the interviewee on the following employment satisfaction attributes)

11. How would you rate the following service climate factors influence on the fire service delivery?

a) Monthly salary influences fire service delivery

b) Employs promotional influence fire service delivery

c) Relationship with each other in their fire station influences fire service delivery

d) Commission is provided with the required equipment's to undertake their job

e) Work environment is conducive for fire service delivery and free from politics interference

f) Fire station has organized for customer care service

g) Fire stations attend public forums to publicize the station response services to improve and modernize fire service delivery

h) Supervisor always understands and follows you what trying to do and to apply

i) The fire station is comfortable for employees

j) Station has enough space for both the fire tenders and offices

k) Station compensates for extra time worked hence improving on service delivery

SECTION IV: Influence of top management on fire Service delivery

12. Did you attend a firefighting training before induction in the fire station?

13. How does the top management support new systems and technologies in fire service delivery?

14. Which one the most relevant phases of fire service delivery supported by top management?

15. Top management has power to implement fire service delivery policies? For example, list down implemented police in the last one year

16. Do you have feedback response mechanism? What are feedback response mechanisms in fire service delivery?

SECTION V: Influence of conditional external pressure on fire service delivery

17. Does the stakeholders influence the fire service delivery process?

18. How does residential and commercial housing household influence fire service delivery system?

19. What are the problem face with the fire truck on the roads?

20. From a community point of view, which are the greatest impacts on fire service delivery process?

SECTION VI: Status of Fire Service Delivery

21. What is the status of fire service delivery?

22. What is the average turnout time of the fire station?

23. What reasons would you attribute this average turnout time to

24. In your opinion what encourages you within the fire station in your routine job

25. What challenges are you facing that influence fire service delivery?

26. What would you recommend for implementation to improve fire service delivery?

APPENDIX 4: THE STUDY AREA

This study would be in Addis Ababa Fire and Disaster Risk Management Commission (AAFDRMC). The Head Office of AAFDRMC was located in the Centre of Addis Ababa City specifically in front of the St. Georges Church, Piazza. AAFDRMC were established in 1926 E.C with the core objective of preventing fire and other emergencies in the City Administration. It's established by the first name of 'Fire Extinguish Service', by the way, the Commission changed their name from the begging to now six times. Gradually improve the capacity of controlling and preventing fire and risk, at the time of establishment, there were 100 employees. Further, the resources or equipment used were; two water boat cars, one manual water pump, two ladders, and other handicraft tools like; ax, hammer, etc. The method of response and receiving incident notification was through a physical and cultural sound system known as 'Tirumba' but emergency vehicles are usually equipped with sirens and warning lights and painted in bright and red colors with recognizable markings. Currently, Fire & Disaster Risk Management Commission has nine stations, one training institute, and seven cores administrative support processes. The manpower increased to its current level of One Thousand Five Hundred Twenty-Eight Modern equipment also increased: Sixty-Eight Fire Trucks with full accessories like cutting machines, foams, ladders, and so on. Thirty-Three emergence ambulances, and five sky lift ladders machinery, five water boat cars, ten buses, and other modern vehicles like command cars. The Commission has also established its own training Center in Akaki kality sub-city. But in Ethiopia widespread confusion regarding which number to use remains a problem. Most of the time, during fire hazards, happen the community gives dial for the police emergency services number, but due to response time delay of police stations to deliver emergency information as soon as happened for fire stations there is a time gap between to take action for the required service delivery. To address these problems, the commission advertising-free emergency number 939 and center dispatcher number 0111555300 and different branch fire stations emergency numbers, but still the community not as much as awarded widely in case of a fire emergency number in Addis Ababa city.

Even though the manpower and equipment for preventing and controlling emergencies are increasing from time to time through the gradual development of the City Administration, there were still gaps in fulfilling the need of the population. Further, the rapid economic and social changes observed in the city needs further precautions in the prevention of risks and

emergencies. There was a need for capacitating, strengthening, and organizing the commission, which was capable of protecting the safety of the city by conducting different scientific researches in a modernized way.

CURRICULUM VITAE

1. Personal Information

Name		Taye Tomoshke Toha
Sex		Male
Marital Status		Single
Place of Birth		Addis Ababa
Date of Birth		Jul16,1992
Address		Addis Ababa, Ethiopia
Region		Addis Ababa
Zone		Addis Ababa
Town		Addis Ababa
Health		Normal
Nationality		Ethiopian
Contact Address	Tel.	+251-910-80-39- 14(Mobile)
	E-mail	tayetomoshke21@gmail.com

2. Academic Profile

Institution	Duration (E.C)	School	Field of study	Medium of Instruction
Higher Institution (**MA)**	2012-2013	Addis Ababa University	Public Administration	English
Higher Institution (**BA**)	2008 - 2010	Gage College	Management	English
Higher Institution (**Diploma**)	2000-2002	Arba Minch Teachers' College	Geography	Amharic and English
High School	1996-1999	Chencha Secondary and Preparatory School	High School Level Education	Amharic and English

3. Experience:

1. *July 12, 2002 E.C –Jul 01, 2004 E.C* ***Konso kashale primary school.***
2. *Sep 25,2005-Nov 11-2006E.C* ***Arada Sub city women and children's Affairs Office, Addis Ababa***
3. *May13, 2006 Up to present* ***,Fire Disaster Risk Management Commission ,Addis Ababa***

4. Skills:

- Identify problems.
- Strong team work ability.
- Teaching different grade level
- Helping ,Teaching and treating visually impaired people
- Fire Safety ,Firefighting And Fire Protecting
- Giving Training about fire safety and fire fighting
- GIS reading and interpreting
- Driving

5. Hobbies:

- Participating in research activities to discover new things
- Watching Video Tutorials, Reading books and journals
- Search new idea and event mostly related with my field from internet.
- Listening to the interest of peoples and giving a response to them.
- Make good co- operation with co-workers.
- Participating problem solver teams.
- Participating in sport events and activity

6. Qualification:-

- MA in Public Administration
- BA in Management
- Diploma in Geography

7. References:

- Shumey Berhie Teshome, Ph.D.

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