Strategies Employed In Nairobi County Incident Command Systems Of Selected Organizations Influencing Disaster Response Operations

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Abstract- Response to disasters among response organizations reveal exceptionally complex management scenarios contributing to delay in response due to lack of Incident Command System. Previous disasters reveals that there no management structure that discuss, analyze, and describe complex disaster scenarios and response under exceptional circumstances as a single system by various response organizations. Therefore, the article assess the strategies employed on Nairobi County incident command systems of selected organizations influencing disaster response operations. The study adopted conceptual framework. Contingency theory and goal theory guided the study. Descriptive research design was used. A stratified sampling technique was used to determine sample category of 155 respondents from, Red Cross Society, Kenya Police Service, Nairobi Fire Brigade and National Youth Service. The instruments of data collection were questionnaire, focus group discussion and interview guides. The SPSS version 27 was used to analyze data then presented it on tables and graphs. Validity was determined using content validity while reliability using test and retest technique. The study found that Nairobi Fire Brigades and National Youth Service had no formalized ICS but were only using one improvised by other response organizations and this becomes a challenge in response due to lack of ICS training. That lack of training contributes to mismatch between response agencies during joint response. Therefore, the study recommends that there should be joint training and mock exercises to understand each organization capabilities and resources available through use of Incident Command System.

Index Terms- Emergency relief; incident command system; response operation

I. INTRODUCTION

1.1 Background to the study

Incident Command System (ICS) has become a primary tool used to reduce the impact of non-recurrent disasters due to their effects. Longer incident response time comes with notable delay to Humanitarian relief organizations and this increases the likelihood of a secondary incident that is often more severe than the initial incident. The traditional incident management approach is a systematic approach, largely performed independently with limited coordination among involved agencies. To minimize the incident response time, Incident command system has ensured that every agency involved in the response operation work effectively and efficiently (Zobel and Khansa, 2011).

The impetus for the development of these systems at global level was the disastrous and devastating in the 1970 fire season in Southern California. Individual Command Posts and fire camps were established by multiple agencies for the same incident. Response resource availabilities reached critically low levels. The number of fires burning at the same time taxed the organizational capability to protect live property, and the environment, especially where wilderness bordered urban communities, creating a dangerous wild land-urban interface. These fires, over 13 days, resulted in 16 deaths, 700 destroyed structures, more than 500,000 acres burned, and over $234 million in damage (Tatham and Pettit, 2010).

The aftermath of the 9/11 terrorist attacks and the dissemination of anthrax in 2001, the ability of the U.S. healthcare system to provide an effective and coordinated response to mass casualty or complex incidents came under intense scrutiny. The devastation caused by Hurricane Katrina and the mass disruption of public health and medical services along the Gulf Coast spotlighted the need for cohesive strategies that focus on management systems for major public health, medical and other humanitarian organizations response. The needs of management structure that will allow U.S to discuss, analyze, and describe complex disaster scenarios and response under exceptional circumstances as a single system. Examinations of major emergencies reveal exceptionally complex management scenarios. This is true for all hazard types, natural disasters, infectious diseases, terrorism, large-scale explosives and is apparent even in events without large numbers of physically injured or ill patients (Olowu, 2010).

Disasters experienced in recent years have had significant impact on people, property and the environment, and this widespread impact has informed the review of policies, measures and approaches in managing them. Despite response arrangements such as multi-agency response, military efforts and various other international efforts, disasters continue to have a negative impact on communities across the world. Human history shows that disaster has been with humanity for time immemorial (Haddow *et al.*, 2011). Many of these disasters or occurrences of unprecedented scale of emergency have found their cause in

climate change, globalization, human-activity, and rapid urbanization (Perrow, 2011). Therefore, a comprehensive disaster emergency management framework may be very useful. Such a framework should include plans and support structures for road networks to ensure easy access to emergency help zones, good quality hospitals to address emergency needs of flood victims, rapid response capacity of police and firefighters, and rapid response capacity to disaster emergencies (Olowu, 2010).

In Africa, response to the 2014–2015 Ebola virus disease (EVD) outbreak in Sierra Leone overwhelmed the national capacity to contain it and necessitated a massive international response and strong coordination platform. Due to lack of effective establishment of the incident command system, led to competition and duplication of efforts between the numerous coordination groups, slow resource mobilization, inadequate capacity of staff for health coordination, and an overtly centralized coordination and decision-making system as the main coordination challenges during the outbreak (Nassos, 2014).

Kenya has had a fair share of disasters some have been natural like floods, famine, drought, hurricanes and man-made disasters like terrorist bombings that have become common today in our society. The Sachang'wan fuel Tanker fire of 31st January 2009, Kenya Defense Forces, Nakuru municipal fire brigade and Kenya Red Cross volunteers coordinated the evacuation of the injured to Molo and Nakuru hospitals. The Ministry of Health with assistance from Kenyatta National Hospital and other medical suppliers provided medical assistance at Molo District Hospital and the Provincial General Hospital, Nakuru though their uncoordinated rescue efforts and lack of medical staff on duty, medical supplies and equipment is thought to have contributed to the death of 113 people (Okobie, 2012). The fire was the second in Kenya in the same week, after Nakumatt supermarket fire in Nairobi which caused the deaths of 25 people. The Kenyan media critized the government for its poor safety standards and inadequate disaster preparation (Okobie, 2012). The act of unpreparedness by government of Kenya to respond to these incidents showed lack of centralized incident command system for effective preparedness.

Nabutola (2012), noted that despite many important disaster management initiatives undertaken in Kenya over the past two decades, adequate level of preparedness required to address its significant risk profile has not been achieved. Initiatives have been undertaken in an inconsistent, unharmonious, reactive and uncoordinated manner due to lack of a unified policy framework. That disaster systems and risk management are still centralized and tall neck beauracracies which have not been devolved to the counties. Although Kenya's economy and by extension its population could be classified as highly vulnerable to natural and man-made disaster risks, the country does not have a comprehensive disaster management framework and strategies guided by appropriate policy and legislative provisions. The country is fortunate to have been able to sort of manage from one emergency to another, without an effective disaster management system (Nabutola, 2012). She further noted that the frameworks and legislations to facilitate the coordination of disaster management activities from the central level to local level have not been institutionalized.

The continued lack of disaster preparedness is a development challenge in Kenya. Poor collaboration and coordination efforts from all stakeholders including government departments have led to poor responses to flood incidents in Kenya. The United Nations Office for Coordination of Humanitarian affairs (2013), indicates that 170 people died and 22,500 people were displaced due to the March-April-May enhanced rains in 2013 that impounded parts of Kenya. According to the Famine Early Warning Systems Network, these rains were enhanced by more than 200%. These negative effects of enhanced rainfall, coupled with infrastructural destruction have called for cross border disaster risk reduction and flood mitigation response measures.

In Nairobi County, the response to Westgate shopping mall terrorists attack on Saturday 21, September 2013, which lasted 80 hours and resulted in at least 67 deaths and wounding more than 175 people in the mass shooting, McConnell (2015), was a result of fatal friendly fire between response agencies undermining their response and left the attackers free to prolong their slaughter (Sageman, 2004). According to Dron (2013), Kenyans have questioned the ability of forces both in terms of operations and skills to effectively respond to daily threats when they occur. The most evidence of operational decay was during the pipeline fire which was caused by an explosion secondary to fuel, at least 122 casualties were admitted in Kenyatta National Hospital with severe burns (O'Keeffe, 2013) and the August 2013 fire at Jomo Kenyatta International Airport (JKIA) in Nairobi. What was initially a small fire escalated into a full-blown inferno that gutted the international arrivals lounge (Dron, 2013). The JKIA fire was an indicator of the dangerous limitations of disaster management system, thus need to assess the strategies employed in Nairobi County incident command systems of selected organizations influencing disaster response operations.

1.2 Statement of the problem

Despite lesson learnt from the previous disasters in Nairobi County, response still appears to be more reactive rather than use of incident command system as depicted from the background of the study. Over the past years, various disasters have taken place in Nairobi County, for instance the Westgate shopping mall terrorists attack 2013 and Jomo Kenyatta International Airport (JKIA) fire in august, 2013 (Dron, 2013).

Regardless of these disasters, the need for developing an incident command system that can coordinate response activities has not been embraced by the response agencies. Most response have been undertaken in an inconsistent, inharmonious, reactive and uncoordinated manner due to the multiplicity of response organizations. Under normal circumstance, the previous terrorists attack could have been a case for identification of response organizations preparedness challenges for future preparedness for effective response and coordination. Nikbakhsh and Farahani (2001), noted that the scale and complexity of emergencies in Nairobi County strongly suggests the need for appreciating the role of incident command system for effective response to these emergencies. Yet, preparedness of incident command system for effective humanitarian disaster response operation has not been adequately assessed.

The needs for management structure that can discuss, analyze, and describe complex disaster scenarios and response under exceptional circumstances as a single system is paramount. Examinations of major emergencies reveal exceptionally complex management scenarios contributing to delay in response to emergencies, infighting and incompetence among response agencies during disasters due to lack of incident command system (Katzenback and Smith, 2015).

The Kenya government has formulated a draft in relation to emergency management in relation to training for effective response, the draft on National Disaster Management Policy to emphasize proactive and preventive strategies in addressing disaster situations to date yet finalized and yet it still needs revision to reflect the requirements of the Constitution of Kenya 2010 (Aparna, 2006). Therefore, the study investigated on preparedness of Nairobi County incident command systems of selected organizations influencing disaster response operations.

Scholars like Jensen and Junior (2014), asserts that there is no documented research describing specific preparedness of incident command systems for effective humanitarian disaster response operations. While ICS has been used by emergency responders for nearly four decades, there has not been much scientific research on the effectiveness of the system. That in a recently published paper, there was only 14 scholarly, peer-reviewed journal articles reporting the findings of empirical research on ICS in the United States but were not again addressing on the issue of preparation effectiveness of the systems. It's in view of this that this study investigated on preparedness of Nairobi County incident commands system for effective humanitarian disaster response operations.

1.3 Objective of the study

The objective of the study was to assess the strategies employed on Nairobi County incident command systems of selected Organizations influencing disaster response operations.

1.4 Research Question

What strategies are put in place in incident command system on effective disaster response operation?

1.5 Justification of the Study

Effective management of all disasters in Nairobi depends on the incident command system put in place for response. However, although there is extensive preparedness in disaster response, different organizations train differently highlighting the need for incident command system for coordinative response. Most of disasters are not effectively responded to due to confusion from responding agencies. The West gate terrorist attack (Blair, 2013), highlights the role of incident command system on effective response to disaster incidents. This prompted the study to understand preparedness of Nairobi County incident command systems of selected organizations influencing disaster response operations.

1.5.1 Academic Justification

There seem to be very little research conducted on this topic and particularly no study has been done on preparedness of Nairobi County incident command systems of selected organizations influencing disaster response operations yet the issue of disasters management is a global issue. The study findings bridges that gap and contribute to the general field of knowledge, which may be of utmost importance to other researchers doing their research in disaster management field. The research findings will also assist response organizations in assessing their training curriculum so that they can make changes on aspects that seem to be lacking for effective response to disasters.

1.5.2 Policy Justification

The study findings will be useful to the Kenya government in formulation of policies, plan for revamping and improving on existing policies and practices in relation to emergency response to disasters. The findings may also be useful to any disasters First Responder organizations and NGOs interested in planning and directing of response to disasters or providing their services, towards saving life in case of disaster in Nairobi County.

II. 2.1 Strategic Framework for Emergency Preparedness and Response

Intervention to address disasters has evolved through time into a complex policy subsystem, and disaster policy is implemented through a set of functions. Modern approaches to emergency management and response involve multidimensional efforts to reduce our vulnerability to hazards, diminish the impact of disasters and to prepare for, respond to, and recover from those that occur. These responsibilities present formidable challenges for governments because of the extraordinary demands disaster events impose on the decision making systems and service delivery infrastructure of the communities they affect (Akhtar *et al.*, 2012).

In the context of Incident Command System, when the capacities of the response may be viewed to be affected due to multiagency response, the applicability of it may help in solving such problems. Disasters are dynamic events and they evolve as they progress, and they change in response to human actions and natural forces. This makes it imperative that response strategies be flexible and argues for the value of analysis in helping responders understands and adapt to the changing conditions they face (Caplice and Sheffi, 2004). Managing these phenomena can thus be a highly technical endeavor requiring specialized expertise for both policy development and policy implementation.

These inherent qualities of disasters leave governments in a quandary about what to do to manage them. More specifically, the magnitude, scope, uncertainty, dynamism, and infrequency of disasters give rise to some important questions on the type of Incident Command System to develop which can effectively provide assistance to those who have been affected through development of a common operating picture and common situational awareness shared by all emergency responders or through better search and rescue procedures. Thus, both policy issues and practical issues are the baseline that forms strategic framework for emergency preparedness and response working towards reducing risk to which our populations are exposed and to protect people and infrastructure (Bennett, 2011).

To address these and other issues and challenges related to response, the emergency services professions have specified a host of activities aimed at assuaging the losses that disasters

inflict. The degree to which these activities have been identified, assigned to responsible parties, and coordinated has evolved over time into a broad framework first defined in a 1979 National Governors Association report on its study of emergency preparedness known as Comprehensive Emergency Management which specifies four phases of modern disaster management: preparedness, response, recovery, and mitigation (Jamieson, 2005).

Each of these phases levies particular demands on emergency managers and responders, and each can be informed and improved by the application Incident Command System.

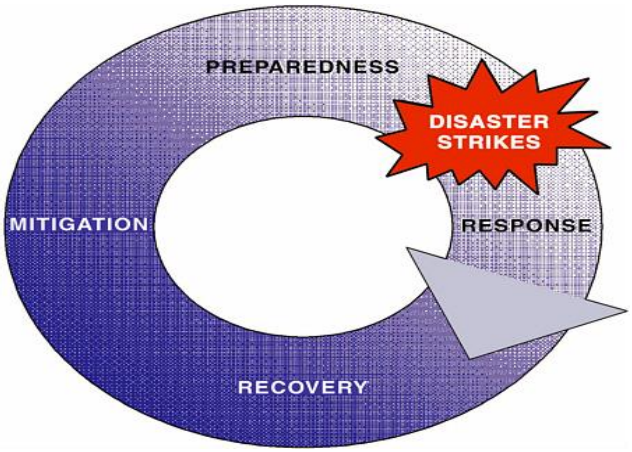

Figure 1: Emergency Management Cycle
Source: Emergency Management Framework (2007)

According to Locke and Latham (2000), planning, training and exercises may be conducted by agencies in isolation, but they are more powerful when conducted jointly so that interfaces can be resolved. Perhaps the most important result of joint planning and exercising is the relationships developed between those who will be involved in response. In the best instances, these processes develop trust among those who will be called upon to work together during an event.

Dara *et al* (2005), asserts that in test of implemented framework, model of event scenarios is used either in the development of single or multiagency response plans or as part of exercises designed to test agency preparedness and the adequacy of those plans in relation to incident command system. These scenarios are essential in developing the master scenario events lists that enable exercise designers and controllers to test critical aspects of response plans and to develop additional modifications of the course of events during an exercise with the guide of the Incident Command System.

The ability to organize multiagency efforts continues to improve, some of the actions that have traditionally been thought of as recovery activities are now beginning at essentially the same time as the response with use of incident command system. A modification of this paradigm is used for acts of terrorism where awareness, detection, deterrence, and prevention are seen as the key elements in reducing or eliminating the impacts or even the occurrence of events. Specific emergency management activities may differ for those described above as they are influenced by the intelligence and security communities, but the sequence is analogous to that followed for natural disasters and has elements that parallel what is required for technological disasters which can only be achieved through coordination (Decker, 2011).

According Baltic (2004), the catastrophic nature of disasters means that all levels of government and all sectors of society share responsibility for dealing with them. In general, disasters are managed through a national structure of responsibilities and resources, where discretion and authority for management reside with the affected jurisdictions, and where requests for resource support travel upward from those jurisdictions until enough are garnered to stabilize the incident.

As jurisdictions are overwhelmed, neighboring jurisdictions may assist through the provision of mutual aid. Nongovernmental organizations (both private and nonprofit) also supplement response with a range of assistance from providing shelter and food to helping manage donations of money, goods, and services, to tracking and serving populations with special needs which can only be effective through use of Incident command system to coordinate these agencies (Balcik *et al.*, 2010).

2.2 Incident Command System hazard approach to incident management

One critical function of emergency responders at all levels of government is incident management. It is usually effected through a functionally oriented incident command system (ICS) that can be tailored to the type, scope, magnitude, complexity, and management needs of the incident and can operate at all levels of government. An ICS is employed to organize and unify multiple disciplines, jurisdictions, and responsibilities on-scene under one functional organization. Balcik *et al* (2010), acknowledges that the ICS establishes lines of supervisory authority and formal reporting relationships, but allows for team-based leadership approaches. In particular, the ICS may include the adoption of a formal unified command, a multiagency governance structure that incorporates officials from agencies with jurisdictional or functional responsibility at the incident scene and allows them to provide management and direction jointly within a commonly conceived set of incident objectives and strategies. Regardless of whether the ICS is configured as a unitary or a unified command, the ICS organization develops around five major functions that are required for any incident whether it is large or small (Moynihan 2009).

While the concept of incident command has been developed over more than three decades and is broadly employed, different disciplines and jurisdictions understand and implement ICS differently, this makes implementation of a coherent command structure for a large-scale disaster a challenge. Very often, multiple, overlapping, duplicative, and even conflicting command processes and structures emerge. This, in turn, makes coordination and application of resources difficult. The National Incident Management System attempts to address these tensions by incorporating longstanding ICS and unified command principles into a common incident management operating philosophy (Akhtar *et al*, 2012).

2.3 Strategies employed on Nairobi County incident command systems of selected Organizations influencing disaster response operations

The need for Strategic management in an organization in management of an organization's resources to achieve its goals and objectives is essential in Nairobi County. This involves setting objectives, analyzing the competitive environment, analyzing the internal organization, evaluating strategies, and ensuring that management rolls out the strategies across the organization. The skills and competencies of employees, and organizational structure are all important factors that influence how an organization can achieve its stated objectives. Inflexible companies may find it difficult to succeed in a changing business environment. Creating a barrier between the development of strategies and their implementation making it difficult for managers to determine whether objectives have been efficiently met among disaster response organizations in Nairobi County (Nag *et al.*, 2007).

While an organization's upper management is ultimately responsible for its strategy, the strategies themselves are often sparked by actions and ideas from lower-level managers and employees. An organization may have several employees devoted to strategy rather than relying solely on the manager for guidance. Organizational leaders focus on learning from past strategies and examining the environment at large. The collective knowledge is then used to develop future strategies and to guide the behavior of employees to ensure that the entire organization is moving forward (Porter and Michael, 1996).

For these reasons, effective strategic management requires both an inward and outward perspective among disaster response organizations in Nairobi County. According to John (2006), strategic management extends to internal and external communication practices as well as tracking, which ensures that the organization meets goals as defined in its strategic management plan.

Incident Command System (ICS) has become a primary tool used to reduce the impact of non-recurrent disasters due to their effects. Longer incident response time comes with notable delay to response organizations and this increases the likelihood of a secondary incident that is often more severe than the initial incident. Incident management and clearance involve multi-agency emergency response including representatives from the state department of fire service, emergency medical service, towing, and hazardous-spill cleanup services. The traditional incident management approach is a step-by-step approach, largely performed independently with limited coordination among involved agencies (Ozdem, 2011). To minimize the incident response time, Incident command system has ensured that every agency involved in the response operation work effectively and efficiently which lacks among response organizations responding to disasters in Nairobi County.

2.3.1 Unity of command

Each individual participating in the operation reports to only one supervisor. This eliminates the potential for individuals to receive conflicting orders from a variety of supervisors, thus increasing accountability, preventing freelancing, improving the flow of information, helping with the coordination of operational efforts, and enhancing operational safety. This concept is fundamental to the ICS chain of command structure (Bharosa *et al.*,2010).

2.3.2 Common terminology

Individual response agencies previously developed their protocols separately, and subsequently developed their terminology separately. This can lead to confusion as a word may have a different meaning for each organization.

When different organizations are required to work together, the use of common terminology is an essential element in team cohesion and communications, both internally and with other organizations responding to the incident (Bigley and Roberts, 2001).

An incident command system promotes the use of a common terminology and has an associated glossary of terms that help bring consistency to position titles, the description of resources and how they can be organized, the type and names of incident facilities, and a host of other subjects. The use of common terminology is most evident in the titles of command roles, such as Incident Commander, Safety Officer or Operations Section Chief which should always apply to all disaster response organizations.

2.3.3 Flexible and modular organization

Incident Command structure is organized in such a way as to expand and contract as needed by the incident scope, resources and hazards. Command is established in a top-down fashion, with the most important and authoritative positions established first. For example, Incident Command is established by the first arriving unit (Dara *et al.*, 2005).

Only positions that are required at the time should be established. In most cases, very few positions within the command structure will need to be activated. For example, a single fire truck at a dumpster fire will have the officer filling the role of IC, with no other roles required. As more trucks get added to a larger incident, more roles will be delegated to other officers and the Incident Commander (IC) role will probably be handed to a more-senior officer.

Only in the largest and most complex operations would the full ICS organization be staffed. Conversely, as an incident scale down, roles will be merged back up the tree until there is just the IC role remaining (Decker, 2011).

2.4.4 Span of control

To limit the number of responsibilities and resources being managed by any individual, the ICS requires that any single person's span of control should be between three and seven individuals, with five being ideal. In other words, one manager should have no more than seven people working under them at any given time. If more than seven resources are being managed by an individual, then they are being overloaded and the command structure needs to be expanded by delegating responsibilities by defining new sections, divisions, or task forces. If fewer than three, then the position's authority can probably be absorbed by the next highest rank in the chain of command but lack of adhering to the span of control during response to emergencies in Nairobi County by response organizations leads to confusion among responders in conflicting issuing of command (Dara *et al.*, 2005).

2.4 Conceptual model aspects of the study

2.4.1 Contingency model

The contingency theorists presented an open system view and rationalized that the organization in itself is not a closed system but an open one in which the organization is dependent on other external variables such as the environment (Burns and Stalker, 2013). Contingency theory is concerned with how an organization can systematically achieve a good fit with its environment, how it can adapt to changing environmental circumstances, how it can ensure that internal relations are in balance and appropriate and what it means in operational terms. Contingency theory is predictive, thus providing guidance for leaders as to how to deal with certain situations. Morgan (2007) claims that there is no best way to organize a corporation or to make decisions. Instead, the optimal course of action is contingent (dependent) upon the internal and external situation. A contingent leader effectively applies their own style of leadership to the right situation. Being flexible in choosing and adapting to succinct strategies to suit change in situation at a particular period in time in the running of the organization which also fits the characteristics of the effective incident command system (Donaldson, 2001). A contingent theory related the external and internal factors that an organization can face when implementing strategies in response to any scenario in the organization which can be in assistance of incident command system.

The core of the theory is that contingency variables are present that "moderate" the relationship between two other variables. Originally, three main contingency variables were introduced: the environment, the organizational structure (size), and the organizational strategy. A fit between these variables would lead to better performance. The theory answered a call from practitioners for theories and frameworks that would explain the complexity of the context in which they were operating. The theory received support from empirical evidence in the late 1960s, particularly from studies by Lawrence and Lorsch (2001) that identified different environmental characteristics organizations needed to cope with in order to prosper.

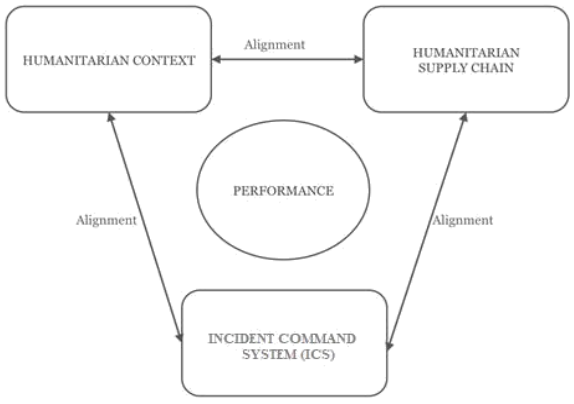

Figure 2: Theoretical Approach to Contingency Theory

Source: (NIMS, 2008)

The development of a contingency model soon after Burns and Stalker (2013), is an extended version of contingency theory. In this model, sub-systems exist in organizations and a good fit between the sub-systems which then influences the function ability of the theory. Friedberg (2007), argued that some subsystems have a more extensive need to find a fit with the environment while other sub-systems do not thus calling the managers to make them fit in the system through improvised strategies for effective and normal running of the organization. According to Bourgeois (2012), expand on the model and state that strategic choices are made internally (in spite of the environmental characteristics) in an organization; therefore, they include aspects of organizational culture and values in the classical contingency model in relation to adaptation of contingency theory to disaster response organizations context with aid of incident command system.

2.5.2 Goal setting model

Bass (2000), states that goal theory provides four leadership styles: directive, supportive, participative, and achievement-oriented. The intervening variables are subordinate expectations and valences. Situational moderator variables include characteristics of task and environment and the characteristic of subordinates. Goal setting theory emphasizes on the relationship between the incident command system and the characteristics of the subordinates and the work setting. Of particular interest with path-goal are the situational moderator variables. In the study at hand, the situational variables involved emergency conditions. According to Northouse (2001), the theory provides explanation for understanding how different leadership behaviors affect subordinate satisfaction and performance. The theory helps leaders decide which leadership style to use based on the demands of the situation and type of subordinate handling the task.

Goal-setting theory can further illuminate the concept of performance and strategy when presenting contingency theory in relation to mission of the disaster response organizations for instance, when responding to disasters in Nairobi County. Locke and Latham (2000), stated that organizations should strive to set challenging, yet attainable, goals. That the performance of an organization is enhanced by setting (measurable) goals, theorized the importance of setting goals and actions for organizations in the 1960s. The definition of a goal was the aim of an action that one consciously desired to achieve or obtain. Goal-setting theory consequently suggests that a conscious goal will regulate behavior which will then change the mindset of the first responders in Nairobi County to work towards their goal (Locke and Latham, 2000). Duke and Long (2007), have implemented goal-setting theory in the humanitarian sector, for example, to predict success in achieving sustainable agricultural systems in developing communities. Latham (2004), argued that the enhanced performance outcome could not be achieved if several goals were set at the same time, since a focus on one goal could lead to difficulties in achieving another. According to Lathman (2004), trade-offs between goals can include trade-offs between quantity versus quality. The same effect has been identified when goals are measured. In operational performance management literature, the effect of individuals being too focused on one goal, thus leading to a blurred understanding of other goals, is discussed as a dysfunctional behavior among disaster response organizations (Bourne *et al.*, 2000). While goal setting theory explains the relationship between goal setting and performance, performance management strives to explain the relationship between goals and the strategic management of activities and performance towards these goals. Figure 3 showing the interaction of the variables

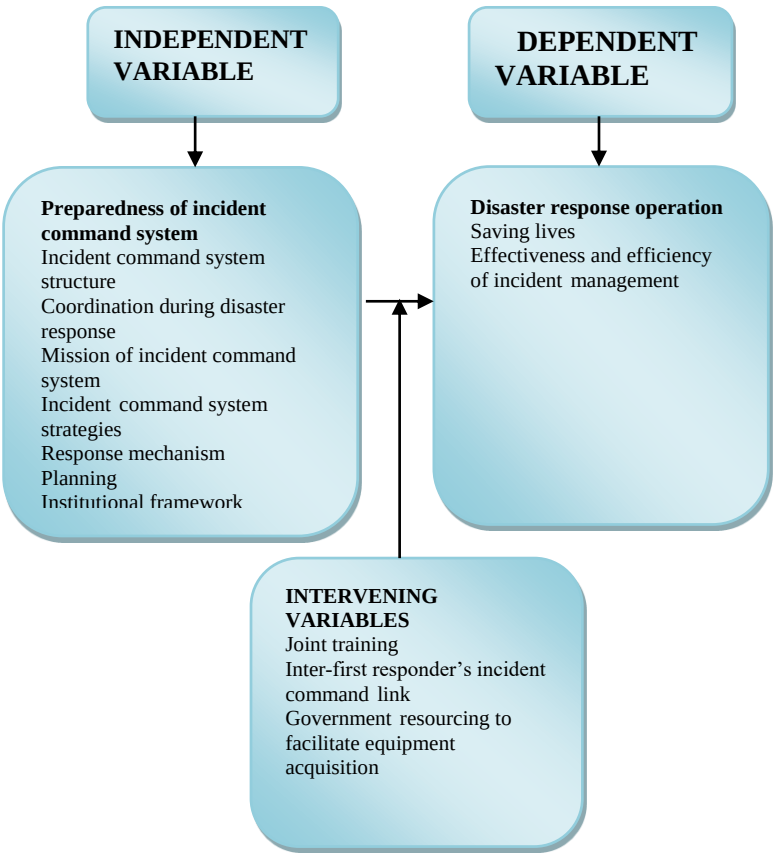

Figure 3: Conceptual framework model showing variables interactions
Source: Researchers (2019)

III. Material and Methods

3.1 Research Design

Descriptive survey research design was used in making a detailed examination in the study due to homogeneous nature of the population under the study, in which both qualitative and quantitative research techniques applied. The design involved gathering data by describing events and then organizes it, depicts, opinions, attitudes, or previous experiences through asking questions. Descriptive research design was applied in the study to obtain information concerning the current state of the phenomenon to describe what exists with respect to specific variables. Kothari (2008), describes this design as a systematic empirical inquiry into which the researcher does not have direct control of independent variables as their manifestation has already occurred or they inherently cannot be manipulated. Descriptive design enabled the researcher to describe different scenarios in relation to assessment of the strategies employed in incident command system for effective disaster response operations using qualitative analysis approach. The design was also utilized since it enabled use of purposive sampling in selecting respondents relevant to the research questions (Kothari, 2008). A part from emphasizing on qualitative aspect, quantitative approach was applied to enhance the reliability and validity of the findings thus avoiding bias.

3.2Target population, Sampling Technique and Sample Size

The study population of the research comprised respondents from organizations responsible for disaster response operations Nairobi County; 1,240 from Red Cross Society personnel, 1,225 National Youth Service, 900 Kenya Police Service, 550 from Nairobi Fire Brigade, totaling to 3,915.

The study utilized purposive sampling to determine the settings and the participants. Whereas quantitative studies strive for random sampling, qualitative studies often used purposive sampling, that is, a sample that has a characteristic relevant to the research question (Knight, 2000).

The selection of the sample size was based on those trained to respond to emergencies and on organizations that have been mostly responding to disasters in Nairobi County. These comprised of: Red Cross Society, Kenya Police Service, Nairobi Fire Brigade and the National Youth Service. Therefore, the sample selected for the study was derived from a Simplified Formula for Proportions as employed by Thulin (2014) in selecting 155 respondents.

3.3 Data Collection instruments

The study used structured questionnaires to collect data. 5-point Likert Scale was used to standardize the way data was collected for easy analysis. Validity of research instruments was done by presenting the instrument to the supervisors to evaluate the applicability and appropriateness of the content, clarity, and adequacy of the instrument. Any suggestions they put forward led to the instrument being modified appropriately. Reliability of the research instrument was determined with the aid of SPSS version 27.

3.4 Data Analysis

Quantitative data collected was analyzed using the statistical package of social science (SPSS) version 27. This was done by tallying responses, computing percentages of variations in response as well as describing and interpreting the data with the study objectives and assumptions. Content analysis was also used to test data that is qualitative in nature. According to Baulcomb (2003), content analysis uses a set of categorization for making valid and replicable inferences from data to their context. The study used frequency on single response question and Likert scale in collecting and analyzing data where a scale between 5 points to 7 points was in computing the means and standard deviations. The findings were then presented in tables, graphs and charts.

IV. Results

4.1 The existence of Incident Command System in various organizations and its updating

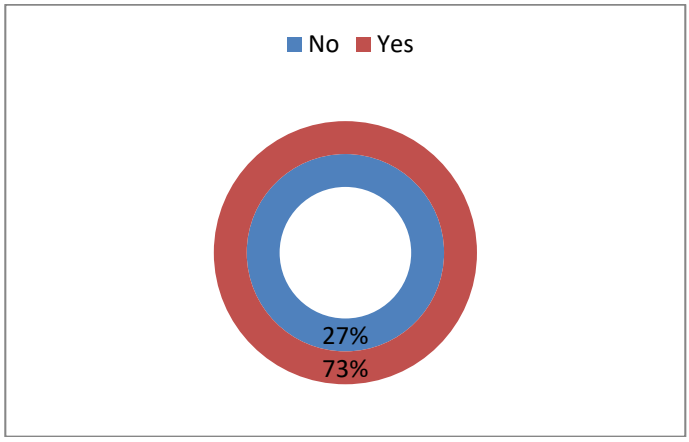

Figure 4: The existence of Incident Command System in various organizations and its updating
Source: Field data (2019)

From figure 4, 113 (73%) of the respondents under "Yes' response from various organizations indicated that their organizations had Incident Command System which they normally use during response to humanitarian relief assistance. 42 (27%) of the respondents under "No" response indicated that their organizations was not using incident Command System. In response to the department which the respondents indicated to be coming from, from background information, it was evident that those who were using ICS were; Red cross, Kenya Police Service and Nairobi Fire Department, while National Youth Service department did not use ICS, but were only using the one improvised by other response organization, though it becomes a challenge to them due to lack of training (Dara *et al.*, 2005). Further, upon interrogating some of the respondents, one of the National Youth Service respondents asserted that;

"We have participated in various emergency responses in the country, mostly through joint operation with other respondents but we are normally assigned the role of securing the scene of emergency as outer cordon." (Interview with a key informant from National Youth Service in Nairobi, August, 2019).

On further determining how often these organizations updates their Incident Command System, those agencies which were using it responded that they were updating it through training and also joint training with other organizations to identify the flaws from each organizations so that they can improve in response to humanitarian relief assistance with use of Incident Command System.

According to Mendonca and Wallace (2004), ICS system has proven itself over time and provides a solid base on which to build response. However, we need to be less rigid in how we employ it, focusing on ICS principles rather than just structure and being open to adjustments based on organizational needs. Just because your organizational chart is built on the ICS structure doesn't mean you're really using ICS. As Mendonca and Wallace puts it, being proficient at ICS doesn't mean that you have the supporting plans and processes that you need to be successful. Generic ICS checklists won't cut it when you really have to deal with a crisis, but always has to be updated for the system to be effective.

4.2 Incident Command System Strategies that assist in effective disaster response operations in Nairobi County

On understanding the strategies that assist in effective humanitarian disaster response operations while using Incident Command System**,** respondents were asked if the strategies laid down in Incident Command System contributed to effective humanitarian disaster relief operations. Their response is captured in figure 5.

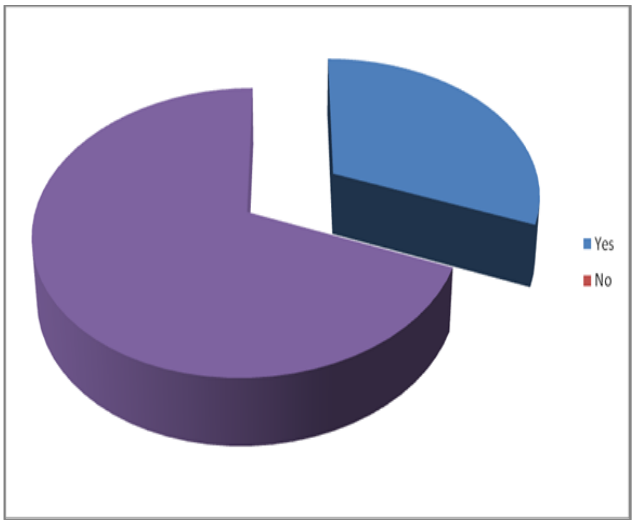

Figure 5: Incident Command System Strategies that assist in effective disaster response operations
Source: Field data (2019)

Basing on the findings, 85 (54%) of the respondents agreed that the strategies that their organization put in place assisted in effective humanitarian disaster relief operation in Nairobi County, while 45 (29%) of the respondents disagreed that the strategies that their organization put in place did not assist in effective humanitarian disaster relief operation in Nairobi County. The findings obtained were not in agreement with the expectations of the Researcher since the total response rate was not obtained. 25 (17%) of the respondents did not contribute in participation on this question, but because the response rate was above 50%, the views of the respondents could be captured during the study. In logic, response findings under "No" response indicated that some organizations were not using incident command system, lack of Incident Command system use make these organizations not to come up with strategies that can assist in effective humanitarian disaster relief operation (Bigley and Roberts, 2001).

Strategic planning is important to an organization since it provides a sense of direction and outlines measurable goals. In relation to the findings on figure 4, McEvily and Chakravarthy (2002), observes that it is a tool that is useful for guiding day to day decisions and evaluating progress and changing approaches when moving forward. In order to make the most of strategic planning, organization should give careful thought to the strategic objectives it outlines, and then back up these goals with realistic, thoroughly researched, quantifiable benchmarks for evaluating results. These measurable goals set specific, concrete objectives expressed in terms of quantities and timelines.

Prahalad and Hamel (1990), further affirmed that the definition of the company mission, strategic planning assists in

synthesing and distilling the overarching idea linking its practical strategies, enabling management and employees to align the specifics of their actions and decisions with a clearly defined vision and direction in relation to the findings on figure 2. Define your strategic mission in a way that is broad enough to guide both management and employees, and narrow enough to focus their efforts.

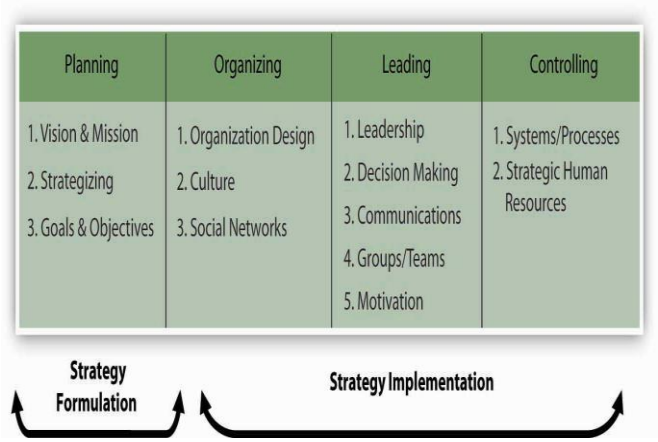

Figure 6: Organization strategic mission
Source: strategy formulation app (2013)

An organization is generally established with a goal in mind, and this goal defines the purpose for its existence. All of the work carried out by the organization revolves around this particular goal, and it has to align its internal resources and external environment in a way that the goal is achieved in rational expected time which is done through the strategies put in place and this becomes a necessary factor for successful working internally, as well as to get feasible returns on the expended resources by the organization (Hambrick and Fredrickson, 2001). Strategy implementation in an organization normally incorporates preparation for future opportunities, response to risks. This makes way for the firms to analyze, examine and execute administration in a manner that is most likely to achieve the set aims. As such, strategizing or planning must be covered as the deciding administration factor.

4.3 Rating various incident command system strategies on effective disaster response operation

The study sought to assess specific Incident Command system strategies on effective humanitarian disaster relief operation, these were; standard management hierarchy and procedures, common terminologies and inter-grated communication. Findings are presented in the table 1.

Response rate was on a likert scale where (1 means= very effective, 2 = effective, 3=undecided, 4 = ineffective and 5= very ineffective).

Table 1: Rating various incident command system strategies on effective disaster response operation

Aspect	1	2	3	4	5
Standard management hierarchy and procedures	55	70	13	15	2
Common terminologies	59	75	9	12	0
Intergrated communication	30	73	6	0	46

Source: Field data (2019)

Findings from table 1 indicated that, 55 (35%) of the respondents had opinion that Standard management hierarchy and procedures as an aspect of incident command system strategy was very effective on humanitarian disaster relief operation. 70 (45%) of the respondents indicated that the standard management hierarchy and procedures as a strategy of incident command system was effective on humanitarian disaster relief operation in Nairobi County. 13 (8%) of the respondents were undecided if standard management hierarchy and procedures as a strategy of Incident Command system contribute to effective disaster operations in Nairobi County, while 15 (11%) of the respondents indicated that standard management hierarchy and procedures as a strategy of Incident Command system was ineffective while 2 (1%) of the respondents indicated that standard management hierarchy and procedures strategy of Incident Command system was very ineffective affecting effective humanitarian disaster relief operations.

According to John *et al* (2003), the ICS is a management system designed to enable effective and efficient domestic incident management by integrating a combination of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure, designed to enable effective and efficient domestic incident management. It is used to organize both near-term and long-term field level operations for a broad spectrum of emergencies, from small to complex incidents, both natural and manmade. An area command in this case may be established to oversee the management incidents. Standard management hierarchy and procedures enable emergency responders within a single jurisdiction, and direct supporters of emergency responders.

The study findings agrees with David and Giles (2010) study on "Evacuating the Houston-Galveston Region in Advance of Hurricane Rita", where they noted that standard management hierarchy and procedures helps in responding to diverse

emergencies. That incident that begin with a single response discipline within a single jurisdiction may rapidly expand to multidiscipline, multijurisdictional incidents requiring significant additional resources and operational support. Whether for incidents in which additional resources are required or are provided from different organizations within a single jurisdiction or outside the jurisdiction, or for complex incidents with national-level implications the standard management hierarchy and procedures provides a flexible core mechanism for coordinated and collaborative incident management. When a single incident covers a large geographical area, multiple local ICS organizations may be required. Effective cross-jurisdictional coordination using processes and systems described in the NIMS is absolutely critical in this instance. The NIMS requires that field command and management functions be performed in accordance with a standard set of ICS organizations, doctrine, and procedures, which is commonly achieved by use of standard management hierarchy and procedures.

According to Jamieson (2005), it is important to develop a standard management hierarchy and procedures whereby organizations who have jurisdictional responsibility, such as a local government, federal government, and provincial government, can contribute in: determining response strategy and objectives; planning and tactical activities; and sharing of resources.

Decker (2011), asserts that Incident Command structure is organized in such a way as to expand and contract as needed by the incident scope, resources and hazards. Command is established in a top-down fashion, with the most important and authoritative positions established first. For example, Incident Command is established by the first arriving unit. Only positions that are required at the time should be established. In most cases, very few positions within the command structure will need to be activated. For example, a single fire truck at a dumpster fire will have the officer filling the role of IC, with no other roles required. As more trucks get added to a larger incident, more roles will be delegated to other officers and the Incident Commander (IC) role will probably be handed to a more-senior officer (Decker, 2011).

In relation to the incident command system strategies, Bigley and Roberts (2001), ICS consists of a standard management hierarchy and procedures for managing temporary incident(s) of any size. ICS procedures should be pre-established and sanctioned by participating authorities, and personnel should be well-trained prior to an incident. That ICS includes procedures to select and form temporary management hierarchies to control funds, personnel, facilities, equipment, and communications. Personnel are assigned according to established standards and procedures previously sanctioned by participating authorities. A system designed to be used or applied from the time an incident occurs until the requirement for management and operations no longer exist Bigley and Roberts (2001).

Dara *et al* (2005), observes that Emergency Managers determine the existing management structures frequently unique to each agency, did not scale to dealing with massive mutual aid responses involving dozens of distinct agencies and when these various agencies worked together their specific training and procedures clashed. As a result, a new command and control paradigm collaboratively developed to provide a consistent, integrated framework for the management of all incidents from small incidents to large, multi-agency emergencies basing on the standard management hierarchy and procedures.

On common terminology as a strategy contributing to effective disaster response operation, 59 (38%) of the respondents indicated that it was very effective, supported by 75 (48%) of the respondents who indicated that it was effective. 9 (6%) of the respondents were undecided if common terminology can contribute to effective humanitarian disaster relief operations. 12 (8%) of the respondents indicated that common terminology as a strategy to ineffectively contributed to humanitarian disaster relief operation.

Basing on the findings under common terminology as a strategy, the ability to communicate within ICS is absolutely critical. Using standard or common terminology is essential to ensuring efficient, clear communication. ICS requires the use of common terminology, meaning standard titles for facilities and positions within the organization and that it can includes use of "clear text" that is, communication without the use of agency-specific codes or jargon (Donini and Norah, 1994). ICS establishes common terminology, standards, and procedures that enable diverse organizations to work together effectively including a standard set of predesignated organizational elements and functions, common names for resources used to support incident operations, common typing for resources to reflect specific capabilities, and common identifiers for facilities and operational locations used to support incident operations. This acts as an interactive management component that set the stage for effective and efficient incident management and emergency response (Jaffin, 2008).

Individual response agencies previously developed their protocols separately, and subsequently developed their terminology separately. This can lead to confusion as a word may have a different meaning for each organization (Werman *et al*., 2014).

Further, Jamieson (2005) observes that when different organizations are required to work together, the use of common terminology is an essential element in team cohesion and communications, both internally and with other organizations responding to the incident. An incident command system promotes the use of a common terminology and has an associated glossary of terms that help bring consistency to position titles, the description of resources and how they can be organized, the type and names of incident facilities, and a host of other subjects. The use of common terminology is most evident in the titles of command roles, such as Incident Commander, Safety Officer or Operations Section Chief (Jamieson, 2005).

On aspect of integrated communication in table 1, 30 (19%) of respondents indicated that integrated communication was very effective strategy in effective response to humanitarian disaster relief operations in Nairobi County, 73 (47%) of the respondents indicated that it was effective while 6 (4%) of the respondents were undecided whether integrated communication strategy contributed to effective humanitarian disaster relief operations in Nairobi County. 46 (30%) of the respondents indicated that integrated communication was very ineffective

strategy in response to humanitarian disaster relief operations. Command and control is predicated on a communications infrastructure ensured by the Public Information Officer, who serves as the conduit for information to internal and external stakeholders, including the media or other organizations seeking information directly from the incident or event. In the event that communications are destroyed by an emergency, agency sectors should have equipped to set up cell towers for emergency communications.

Research findings are in agreement with Katzenbach and Smith (2015), every incident requires a Communications Plan. Incident communications are facilitated through the development and use of a common communications plan and interoperable communications processes and architectures. This integrated approach links the operational and support units of the various agencies involved and are necessary to maintain communications connectivity and discipline and enable common situational awareness and interaction. Preparedness planning must address the equipment, systems, and protocols necessary to achieve integrated voice and data incident management communications. Communications should include the systems that transfer information, planning for the use of all available communications frequencies and resources, the procedures and processes for transferring information internally and externally.

Communications needs for large incidents may exceed available radio frequencies. Some incidents are conducted entirely without radio support. In such situations, other communications resources; cell phones, alpha pagers, email, and secure phone lines may be the only communication methods used to coordinate communication and to transfer large amounts of data efficiently. Okari (2013), note that with substantial numbers of military or paramilitary personnel on site, the authorities had not yet established a clear command and control structure. With no radio communications between army and police units, KDF soldiers opened fire on what they thought was an armed suspect yet was a police officer.

Chain of command cannot be realized without integrated communication since it contributes to the orderly line of authority within the ranks of the incident management organization. Unity of command means that every individual has a designated supervisor to whom they report at the scene of the incident. These principles clarify reporting relationships and eliminate the confusion caused by multiple, conflicting directives. Incident managers at all levels must be able to control the actions of all personnel under their supervision which is done through clear communication (Katzenbach and Smith, 2015).

Developing an integrated voice and data communications system, including equipment, systems, and protocols, must occur prior to an incident (Moynihan, 2009). That effective ICS communications include three elements: Modes: The hardware systems that transfer information, planning: Planning for the use of all available communications resources and networks: The procedures and processes for transferring information internally and externally.

4.4 Effectiveness of training as a component of disaster preparedness for effective command transfer during emergencies

On understanding the effectiveness of training as a component of disaster preparedness for effective command transfer during emergencies, respondents were asked if training contributed to effective command transfer during humanitarian disaster relief operations. Their response was captured in figure 5.

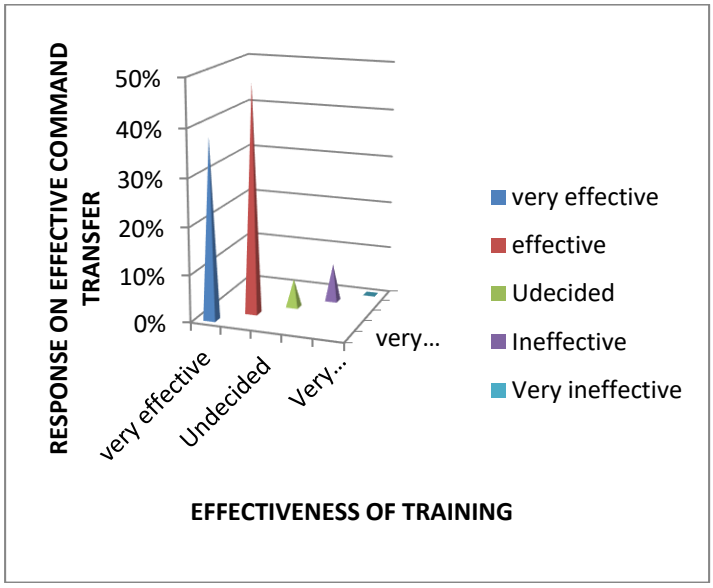

Figure 7: Effectiveness of training as a component of disaster preparedness for effective command transfer during emergencies
Source: Researcher (2019)

Study findings indicated that, 59 (38%) of the respondents had opinion that training was very effective in relation to effective command transfer during emergencies. 75 (48%) of the respondents indicated that training was effective in relation to effective command transfer during emergencies. 9 (6%) of the respondents were undecided while 12 (8%) of the respondents indicated that training was ineffective in relation to effective command transfer during emergencies.

The findings are in agreement with Hage (2011) who affirms that training is teaching, or developing in oneself or others, any skills and knowledge or fitness that relate to specific useful competencies. Training has specific goals of improving one's capability, capacity, productivity and performance. Training also refers to the development of physical fitness related to a specific competence.

Jahre and Jensen (2010) compliments Hage (2011), observations that organizations responsibilities and level of expertise can be achieved through standardized training. All trained employees follow same methods and techniques of production and hence there can be little variation in output and standards produced by different employees. By using standardized methods, it effectively contributes to effective command transfer. Increased morale of employees because of reduction in dissatisfaction at work, reduced complaints, and increased interest in work during the post-training period. Heightened morale results in increased loyalty to the organization response to emergencies and easy transfer of command since trained employee knows what job he has to do and how to do that job and require no guidance and supervision (Jahre and Jensen, 2010).

Training is central assets in modern societies, but their impact on disaster relief operations remains mostly associated with interest of different response organizations to explore the need of it in relation to organizations mission (Akhtar *et al.,* 2012). The emerging literature on cascading disasters tries to look on training as one of the strategies being used by the incident command system for effective humanitarian relief operation.

4.5 The level of preparedness of organization incident command system in response to the disasters

The study sought to assess the level of preparedness of response organizations and applicability of the Incident Command system in response to various disasters in Nairobi County, this was based on Westgate attack, Fire break at 20th century building in Nairobi and Nairobi Market fire. These are some of the disasters that have occurred in Nairobi County which were responded to and which needed use of incident command system.Results are presented in table 2.

Response rate was on a likert scale where (1 means= very effective, 2 = effective, 3=undecided, 4 = ineffective and 5= very ineffective).

Table 2: The level of preparedness of organization incident command system in response to the various disasters in Nairobi County on effective disaster response operation

Aspect	1	2	3	4	5
West gate attack	2	15	13	70	55
Nairobi Market fire	59	75	9	12	0
Fire break at 20th century building	30	73	6	0	46

Source: Researcher (2019)

Findings from table 2, 2 (1%) of the respondents indicated that Westgate terrorist attack was very effectively responded to due to preparedness level of the response organizations that participated in rescue operation. 15 (11%) of the respondents indicated that response organization were effectively prepared in response to West Gate terrorist attack, 13 (8%) of the respondents were undecided whether the response organizations were prepared or not. 70 (45%) of the respondents indicated that preparedness of response organizations was ineffective in response to West Gate terrorist attack while 55 (35%) of the respondents had opinion that preparedness level of response organizations was very ineffective in response to West Gate terrorist attack in Nairobi. This was evident when first army units arrived on the scene, including infantry from the Embakasi base outside Nairobi and US-trained Kenyan rangers from their base in the Rift Valley. Behind the scenes, that a power struggle was emerging between the police chief David Kimaiyo and Julius Karangi from Kenya Defence Forces over whose forces would take the lead. This further contributed to shoot out between the security forces (Petrecca and Bhatti, 2013).

On Nairobi Market fire response, 59 (38%) of the respondents indicated response organizations were very effectively prepared in response to Nairobi Market fire, 75 (48%) of the respondents who indicated that preparedness was effective. 9 (6%) of the respondents were undecided on the level of preparedness of response organization in response to the terrorist attack. Twelve, 12 (8%) of the respondents indicated that response to Nairobi Market fire was ineffectively prepared.

On fire break at 20th century building in Nairobi in table 2, 30 (19%) of respondents indicated that preparedness of response organization was very effective in response to fire break at 20th century building, supported by 73 (47%) of the respondents who indicated that preparedness was effective while 6 (4%) of the respondents were undecided whether response organizations were prepared in response to fire break at 20th century building. 46 (30%) of the respondents indicated that preparedness for response to fire break at 20th century building was very ineffective. The findings concurs with Kagabo and Kihesi (2008), who observed that fire fighters arrived at the scene in split seconds and contained the fire. He further commends that this was achieved through preparedness and ready response to fire disasters. This disparity in response indicates the level of preparedness among different response agencies. Some agencies uphold the need for training, planning and need to acquire resources for equipping themselves for effective response to emergencies while others not. The level of preparedness depends on the role of the agencies and the assignment at hand that pushes it to prepare for it, and this brings disparities in level of preparedness between Response Agencies in Nairobi County.

V. Summary and Conclusion

On existence of Incident Command System in various organizations and its updating, presence of ICS in these organizations showed that there are strategies that are put forward to make Incident Command System effective for organizations to effectively respond to disaster response operation.

Nairobi Fire brigade and NYS had no formalized ICS, but were only using one improvised by other response organization, though it becomes a challenge to them due to lack of training. Lack of training contributed to mismatch between response agencies during joint operation.

VI. Recommendation

Training of all emergency responders on Incident Command System is recommended, mock exercises in joint training to understand each organizations capabilities and

resources available. Share each organization strategies put in place for effective use of Incident Command System.

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