

DISASTER MANAGEMENT CYCLE AND PERFORMANCE OF COMMUNITY HEALTH PROJECTS: A CASE OF KANGEMI INFORMAL SETTLEMENT, NAIROBI COUNTY KENYA.

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A Research Project Report Submitted in Partial Fulfilment of the Requirement for the Award of Degree of Master in Arts in Project Planning and Management of the University of Nairobi

2021

DECLARATION


This research project report is my original work and has not been presented for any award in any other university.

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The research project report has been submitted for Examination with my approval as University Supervisor

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DEDICATION

I am dedicating this research project to my dear partner Dr. Rajan Parikh, who gave me ample time and encouraged me to pursue this course, my son Ansh Parikh and daughter Lavanya Parikh who put up with my absence and my family for their prayers and encouragement throughout this course.

ACKNOWLEDGEMENT

I deeply appreciate the University of Nairobi for offering me the opportunity to take this course and the complete lecture team for guiding me to be a better project manager. My gratitude is to Professor Raphael Nyonje, my supervisor for mentoring me through this endeavor. In addition I am grateful to my classmates for overwhelming support and lastly, I salute my class president Zadock Munayi and Rhoda for their leadership.

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LIST OF ABBREVIATIONS AND ACRONYMS

CDC:	Centre for Disease Control
CHEW:	Community extension worker
CORPs:	Community Owned Resource Person
COVID-19:	Corona Virus Disease 2019
FEMA:	Federal Emergency Management Agency
HiAP:	Health in All Policies
ICS:	Incident Command System
ISDR:	International Strategy for Disaster Reduction
KEMRI:	Kenya Medical Research Institute
KPLC:	Kenya Power and Lighting Company
NC2A:	Nairobi Call to Action
NGO's:	Non- governmental Organizations
OCHA:	Office for the Coordination of Humanitarian Affairs
SAR:	Search and Rescue
SDG's:	Sustainable Development Goals
SDH:	Social Determinant of Health
TRA:	Theory for Reasoned Action
UN:	United Nations
UNDP:	United Nations Development Programme
USAID:	United Nations States Agency for International Development
WHO:	World Health Organization

ABSTRACT

Community health is the health of a specified group of people, as well as the public and private activities and circumstances adopted to improve, preserve, and conserve their health (McKenzie, Pinger and Kotecki 2005) Health of a community is a product of their environment that is a community where the population have access to safe homes, quality education, adequate employment, physical activities, nutrition, quality healthcare and transportation. According to World health organization (WHO) defines Health as the process of empowering people to take charge and improving their health. In a community different segments of a community contribute to health promotion and therefore share the responsibility for its protection. To improve the health of a community, the population must change the physical, social, organizational, and political environments so as to minimize factors contributing to health hazards and introduce new aspects which promote improved health such as introducing new programs, changing attitudes, beliefs and norms, policies and organization infrastructure. The urban population explosion has been accompanied by overwhelming rate of poverty due to the rising number of people living in informal settlements and has led to poor health outcomes. This study aimed on establishing the disaster management cycle and performance of community health projects a case of Kangemi informal settlement in Nairobi County. This was reviewed through the four stages of disaster management cycle which are identified as: - disaster mitigation, disaster preparedness, disaster response and disaster recovery. All these stages were reviewed in relation to how each one of them influences the performance of community health projects. The study was anchored on the domino theory and theory of reasoned action. Further, the study sought to identify the association amongst independent variables involved and how they influence on performance of health promotion projects. The study used descriptive survey design with a target population of 100,000. A sample size of 390 was drawn from the target population using the Krejcie and Morgan formula and further adopting a proportionate sampling technique. Data was obtained using semi-structured questionnaires and interview guides. The instruments were pilot tested using 39 questionnaires that were administered to Kawangware informal settlement residents who have similar characteristics as the study area. The collected data was analysed with the aid of a Statistical Package for Social Sciences (SPSS) for both descriptive and inferential statistics and then presented in form of description. Cronbach's alpha coefficient was adopted to ascertain for reliability that was obtained through split-half technique. Simple linear regression was applied in testing for the strength of the association amongst the various variables for instance establishing how the dependent variable was influence by the independent variable. It was established that disaster mitigation with has a strong positive significant influence on performance of community health projects. The study also established a positive relationship between disaster preparedness and performance of community health projects. The study findings showed that disaster response influences performance of community health projects; and also a positive relationship between disaster recovery and performance of community health projects was established. The conclusion according to the study was that catastrophe mitigation, disaster preparedness, disaster response, and disaster recovery all have an impact on the efficacy of community health programs. The research recommended that there is need to adequately enhance sensitization of disaster management strategies during project planning. The research suggested that environmental studies in project management and social analysis should be carried out in informal settlement areas in Kenya.

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Health of a community is a product of their environment that is a community where the population have access to safe homes, quality education, adequate employment, physical activities, nutrition, quality healthcare and transportation (Ashby 2012). Community health is the health condition of a defined group of people, actions and conditions taken both public and private to advance, protect and conserve their health (McKenzie, Pinger and Kotecki 2005). All human beings are part of a community and any decision we make significantly affect those around us. Therefore, improving one's community should be a top priority. A holistic health concept acknowledges the influence of psychological, social, economic and environmental well-being of community on population (WHO 2017). According to World health organization (WHO) health promotion on Ottawa charter as the activities that are used to empowering people in order to be in charge and better their health. A person or group must recognize the desire to meet their needs, modify or adapt with their environment in order to achieve complete physical, mental and social health. Health promotion therefore does not just represent a health sector obligation but exceeds lifestyles to well-being. The requirements for health are sustainable resources, stable ecosystem, income, food, shelter, peace, education, social justice and equity.

Canada since 1974 has had an international reputation for health promotion, Canada has given rise to healthy cities and community movements. This leadership was recognized in 1986, when WHO hosted the first worldwide conference on health promotion in Ottawa, launching the Ottawa Charter. and "Achieving health for all": a framework for health promotion. Few years after release of these documents were characterized by remarkable health promotion advancements in many areas. Healthy communities' networks were established and most of the provinces in Canada established commissions to recommend health reforms strategies. In British Columbia health promoting at workplace and innovative healthy school programs were established, a community health public policy was published, impact assessment guideline and toolkit on health promotion was developed. In Ontario health promotion offices were established and focused on community mobilization for health reduction in tobacco use,

healthy lifestyles and cardiovascular health. In Quebec formal association by municipalities that embraced healthy community projects were established (Health promotion international 2019).

On the other hand in sub Saharan Africa health of the people is a global concern as healthcare has not been prioritized as a policy concern even as international donors are moving their aid towards health (Deaton A S and Tortora R 2015.). For the last 20 years, significant development has been achieved in health promotion in Africa. Steady pace in health promotion has been achieved thus increasing societal responsibility. (Nyamwaya 2003) Diverse approaches have been used with the aim of finding out the root causes of health problems. Communities and non-governmental organizations (NGOs) are emphasizing on allowing people to take charge over their health through alliances, partnerships, multicultural collaboration and networks. (African Medical Research Foundation 2000). Though a lot of progress has been seen a fair number of challenges has been experienced, low level of education and poverty is a key challenge in sub Saharan Africa. Advocacy for health promotion is also not well established.

In 2009 WHO and the republic of Kenya held the 7th global conference on health promotion in Nairobi which gave rise to The Nairobi call to action (NC2A) for bridging the implementation gap in health promotion. The duty for NC2A was to build and apply knowledge, mainstream health promotion, enhance participatory process, strengthen leadership and workforces and empowerment of communities and individuals. Over the years Kenya has looked for ways to manage the major health problems, in so doing Kenya has committed to embracing Health in All Policies (HiAP) which ensures all development sectors take into account social determinants of health (SDH). The SDH report shows the significance of involving NGOs government agencies and the community in health promotion. (Mauti et al., 2019)

A community refers to as a grouping of people or individuals who interact and support one another and share a sense of belonging, experience and closeness (Cobigo, Martin, & Mcheimech, 2016). Health promotion in disaster management comprises working with people to prepare for, prevent, and respond to disasters so as to reduce risk, enhance resilience, and lessen the negative health effects of disasters (WHO 2002). In a community different segments of a community contribute to health promotion and therefore share the responsibility for its protection. Community participation is the foundation of successful

health promotion. In order to enhance the health of the community, the population has to modify the environment in physical, social, organizational and political terms to minimize health problems and bring new features to better health, for example introducing new programs, changing attitudes, beliefs and norms, policies and organization infrastructure (Healthy People 2020).

Informal settlements or slums is a global phenomenon that accompanies urban populations. Informal settlements are residential areas on the periphery of urban areas and inhabitants face challenges such as lack of security of tenure of the land or the place they dwell- for instance, they may squat or rent informally, the locality has absence of basic services and city infrastructure, the housing are not in accordance to building and planning regulations and are in geographically and environmentally sensitive areas. (UN-Habitat, 2015b; Brown, 2015) Over 65 million of India's population are in urban slums which are typified by unhealthy living conditions such as over-crowding, poverty and poor urban public health setup . The physical environment of these slums is catalyst to disease transmission. Many slums in India are built along sewers and railways, with no proper drinking water, sewage, or waste disposal facilities. Slums are densely populated areas that can make social isolation difficult in this Corona Virus pandemic, with studies indicating that more than 1 million individuals live per square kilometre. The poor living conditions and overcrowding in the slums has in the past lead to infectious disease for example H1N1 swine flu 2015, or the dengue and chikungunya outbreak in 2015-16, The public health system serving urban slum dwellers are under-equipped to handle health crisis. (Dr Vikas and Vijay)

According to the World Health Organization, 71.8 percent of urban people in Sub-Saharan Africa live in slums, the greatest proportion in the world. Slum dwellers are mainly exposed to the consequences of increasing urbanization and climate change. Inadequate sanitation, electricity and clean potable water, as well as overcrowding and substandard housing aggravates spread of avoidable diseases and deaths (Red Cross). Slums are a cause of low life expectancy. As per the UNDP, over 80% of Mali's population do not have adequate housing, resulting in a life expectancy of average 51 years. Most slums are at risk of spontaneous fires. In2007, an evaluation study by the World Meteorological Organization and the United Nations Environment Program cautioned that 'climate change and urbanization can operate in synergy to exacerbate the burden of illness.'

Nairobi slum comprise of over 50% of population yet occupy 5% of residential land. (Nairobi_slum_inventory). Slum inhabitants live in deplorable conditions, with limited access to clean drinking water, healthcare, sanitation, schools, and other vital public services. Nairobi's slums are likewise constantly threatened with eviction. The experience of slum-dwellers illustrates poor people are deprivation and trapped in poverty by being denied a say, segregated from the rest of society, and vulnerable to insecurity and violence (amnesty international). Nairobi's informal settlement faces a lot of health issues that need to be dealt with accordingly. Some of the health issues are poor drainage systems, illegal electric power connections of houses, no accessible roads, few numbers of toilets and latrines, illegal health centres, overcrowding, inadequate access to safe drinking water and insecurity. For a very long time the informal settlements in Nairobi have been ignored and no proper planning is done. This poses threat to the community health and leads to breeding ground for disaster. Nairobi informal settlement has had a fair share of disaster. A lot need to be done both by the government and the communities to better their health.

Disaster management cycle is an effective tool to reducing the impact of disaster and promoting community resilience. Disaster preparedness in Kenya is deemed to be fragmented and often better at reactive rather than pro-active action. The health sector is seen to have limited ability to respond to health emergencies particularly at the county level (development initiates report 2017). Continuous disaster management practice can help the community become disaster resilient. Minimizing the cost of disasters further safeguards national finance through supporting growth, fiscal stability and offering of government services and safeguard funds used for relief to invest for development (International Strategy for Disaster Reduction (ISDR))

1.2 Statement of the problem

The urban population explosion has been accompanied by overwhelming rate of poverty due to the rising number of people living in informal settlements and has led to poor health outcomes. Despite easy access to health services by urban population, life in slums is linked with poor health indicators such as poor sanitation, inadequate access to safe and clean water, lack of electricity or illegal power connection, violence, unwanted pregnancy and nutrition. In a report issued by Chaffinch supporting children in Kenya 2017, the average life

expectancy in Kenya slum is thirty years of age with high infant mortality rate of 19% of children having to die before their fifth birthday.

Urbanization is linked to poverty in Africa According to Raman 2009. Climate change is progressively felt in slums. On the intergovernmental panel fourth report on climate change 2007 asserts that climate change and urbanization may work synergistically and increase disease burden. During rainy seasons the slums are flooded, drainage overflow, and ditches filled with water thus perpetuate cholera, malaria, yellow fever and other infectious diseases which are precipitated by the dense population and overcrowding. Outdoor air pollution in urban areas is accountable for 49,000 premature deaths annually. Most slums are located near busy roads and factories therefore exposing its inhabitants to respiratory diseases leading to increased admission for asthma, chronic obstructive pulmonary diseases, pneumonia and premature mortality (Dieter 2012). With the present Corona Virus Disease (COVID -19) pandemic life in the slums becomes even harder due to the limited health services and resources. According to Kenya Medical Research Institute (KEMRI) the daily cost to treat a Covid 19 patient ranges from Kshs 21,359 for a symptomatic patient to Kshs 51,684 for a critical patient in ICU. These amounts is very costly for an average Kenyan and it is even worse for slum dwellers who are mainly low income earners living from hand to mouth especially if the spread can't be controlled. The need to employ disaster management initiative to this community is of paramount importance.

Despite the key disaster management initiatives undertaken in Kenya over the past two decades, a sufficient level of preparedness in addressing its outstanding risk profile has not been attained. Initiatives have been undertaken in an inharmonious, inconsistent, uncoordinated, and reactive manner due to absence of a unified policy framework. Adoption of disaster management practices will need community commitment, understanding of restrictions and limitations, and creative solutions. Laws on risk prevention, disaster occurring reduction and facilitation of relief activities can be beneficial in reducing the impact of disasters and health emergencies, and also critical in empowering communities to deal with most urgent circumstances of vulnerability. (Nabutola 2012). Therefore, this study seeks to find out how disaster management cycle can improve the performance of community health projects a case of Kangemi informal settlement in Nairobi County.

1.3 Purpose of the study

The study purpose was to investigate the influence of disaster management cycle on performance of community health projects on informal settlement a case of Kangemi informal settlement in Nairobi County.

1.4 Objectives of the Study

The study was guided by the below specific objectives: -

- I. To examine the influence of mitigation measures on performance of community health projects on informal settlement in Nairobi county
- II. To assess the extent to which disaster preparedness influences the performance of community health projects on informal settlement in Nairobi county
- III. To determine the influence of disaster response on performance of community health projects on informal settlement in Nairobi county
- IV. To establish the extent to which disaster recovery influences performance of community health projects on informal settlement in Nairobi county

1.5 Research Questions

The study aimed to respond to the following questions: -

- I. To what extent does mitigation measures influence performance of community health projects on informal settlement in Nairobi county
- II. How does disaster preparedness affect performance of community health projects on informal settlement in Nairobi county
- III. How does disaster response influence performance of community health projects on informal settlement in Nairobi county
- IV. To what extent does disaster recovery influence the performance of community health projects on informal settlement in Nairobi county

1.6 Significance of the Study

The study aimed to broaden the understanding of the influence of disaster management cycle on performance of community health projects on informal settlement in Nairobi county

The findings of the study are aimed at helping the county government of Nairobi minimize the impact of disaster through early warning and timely intervention. Moreover, the findings of the study may help planners in disaster management unit in better land planning of the area and similar areas. It is also hoped that the findings will sensitize the Kangemi residents in being aware of their environment and participate in community health activities. The research will also point out the areas of weaknesses in disaster management practise and propose how improvement can be achieved

1.7 Limitations of the Study

The study was limited to the government rules and regulation on Covid -19 virus the limitation was overcome by strictly observation of Covid 19 regulations by washing hands, sanitizing, wearing mask and keeping social distance. Another limitation was respondent knowledge of disaster management cycle. This limitation was addressed by acquiring information from respondents by using simple and clear language that was understandable, a pilot test of data collection was done to determine the effectiveness of the tools before actual data collection process.

1.8 Delimitation of the Study

The study was focusing on community health projects and how disaster management cycle namely; disaster mitigation, disaster prevention, disaster response and disaster recovery influences community health promotion projects on informal settlements within the geographical area of Kangemi informal settlement in Nairobi county. Kangemi informal settlement is located in a small valley on the western part of Nairobi 8 kilometres away from the centre of Nairobi, with an estimated population of 100,000people.

1.9 Basic Assumptions of the Study

The study basic assumptions were that the respondents have some knowledge of disaster management therefore they will be cooperative and will give true and accurate information. The researcher also presumed that the respondents will observe the Covid 19 rules.

1.10 Definition of Significant Terms

Disaster: An event with unfortunate consequences

Disaster management : A systematic procedure that uses administrative decisions, operation skills, organisation and capacities to to implement strategies, policies and coping of the society.

Hazards: Phenomenon that present negative consequences on economy, society and surrounding

Disaster Mitigation: Measures undertaken in eliminating or reducing impacts and risks of hazards before disaster occurs.

Disaster Preparedness: Ability of governments, Individuals, communities and organizations to anticipate and put in place mechanisms that effectively respond to disaster

Disaster Recovery: Rebuilding after disaster occurrence and returning the community to normalcy.

Disaster Response: Rescue of people and property from immediate danger

Risks : Prospective loss of life, property or injury that can take place to a society or community in a definite period of time.

Vulnerability: Decreased capacity of an individual or a group in anticipating, coping with, resisting and recovering from the impact of a hazard.

1.11 Organization of the Study

This study is made up of five chapters. The first chapter comprises of background of the study, statement of the problem, objectives of the study as well as study research questions, significance of the study, delimitations and limitations of the study, assumptions of the study and definition of significant term used in the study. The second chapter will provide relevant as well as previous studies done on the topic that concerns the urban water and sanitation projects including the relevant theories that are associated with such projects. The third chapter will show clearly the methodology that will be used to collect as well as process data while the fourth chapter will show the study findings from the analysis as well as their

interpretations. The last chapter will analyse and summarize the findings as well as give a conclusion to the study. This chapter also shows recommendations that this study provides. Finally, references and appendices used in the study is provided at the end of all the five chapters.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews the literature associated to the disaster management and community health promotion concepts. This has been reviewed through the four stages of disaster management cycle which are recognized as: - disaster mitigation, disaster preparedness, disaster response and disaster recovery. All these stages are reviewed in relation to how each one of them influences the performance of community health promotion projects

2.2 Performance of Community health promotion projects

Health issues are better addressed in a holistic approach by empowerment of individuals and communities to take charge for their own health, building better healthy policies, promoting inter-sectorial actions and creating sustainable health systems (Sanjiv Kumar and GS Preetha). Project performance is the confirmation that resources intended for projects have been appropriately utilized to achieve the project target and goals. Nonetheless most projects fail to realize this expectations (Baily 2012). Many projects fail to materialize due to poorly managed project team, demotivation, low morale and commitment (Kezner 2013). Top management is of paramount importance to any project (Jason 2016).

Since the signing of the Ottawa charter in the first international conference on health promotion the main strategies revealed were: to advocate (by boosting factors that motivate health), enable (empower people in achieving health equity) and mediate (through alliance across all sectors). Many organizations at the international level, national level county level and community level have been on the fore front advocating for good health for all. In the year 2015 United nations members state adopted global goals also denoted to as 'The sustainable development goals (SDGs) as a call to end poverty protect the world and promoting peace and prosperity is enjoyed by all by the year 2030. The achievement of goal 3 on good health and wellbeing can impact positively multiple SDGs for example ending poverty and hunger, gender equality and empowering of women, reducing inequality and access to justice (UNDP Healthy cities 2017)

Community health services have been employed worldwide to deal with provision of wholesome health needs. In Australia Victoria state community health service offers an array of primary health, community-based support and human services to handle local community

needs. According to the department of health and human services in the state government of Victoria Australia, they have established eighty-six services where thirty-one services that are independently managed community health centres and fifty five community health services. The services are provided universally as well as targeted for vulnerable groups which include alcohol and drug, disability, home and community care, community rehabilitation and mental health services.

Most developing countries are in health transition phase (Anugwom 2020) in his book “*Health Promotion and Its Challenges to Public Health Delivery System in Africa*”. High population growth, rapid urbanization, communicable diseases social and economic development have become of concern. This development has brought with them problems like poverty, poor living conditions and illiteracy which are more urgent to satisfy. According to Govender RD most Africans have poor health status therefore it is difficult in promoting and maintaining health of the people. In spite of the challenges, Africa has made considerable improvement in health promotion. In DRC Congo community health is part of holistic approach to community development. The major community health provider is RECO. In the year 2016 Hamana people to people with the help of USAID, eleven thousand household were supported in prevention and treatment of diseases. There has been remarkable progress in community health improvement in Kenya over the recent years which is rooted in within primary, secondary and tertiary health care attainment that provides integrated healthcare needs. To achieve an effective healthcare service , community participation, intersectoral coordination, appropriate technology and support mechanisms have been made available.(Maria Mona).The strategic plan in health sector for the year 2005-2006 in Kenya introduced community based primary health care services which was geared in engaging households and communities to better their own health. Community care unity was established to serve five thousand people with the help of community owned resources persons (CORPs) each served twenty households. Community extension worker (CHEW) was in charge of every twenty-five CORPS. (Patric Chege 2014).

Disaster pose challenge in health system because of their physical, economic and psychosocial impacts on community thus disrupting the system that has significant demands on its scarce resources. Many disasters are unexpected events that catch the world off guard. For example, the global risk report of the world economic forum’s 2020 had not included pandemic in the 10 most likely risks (Omar H Amuch 2021). However, while pandemic was unforeseen it is inevitable. In developing a program that seeks to improve the health of the

community, there are factors that need to be considered relating to the community circumstances. Such factors include competing needs, resources and capabilities, health concerns, social and political perspectives. So as to effectively enhance the health of the community, the members of the community need to be involved.

2.3 Disaster mitigation and performance of community health promotion projects

Mitigation is all about prevention or risk reduction and it regarded as the cornerstone of disaster management’’. (Connor 2014). Mitigation measures minimizes the probability of a hazard risk before a disaster occurs. Mitigation is action taken to reduce or prevent risk to hazard (FEMA). Mitigation seeks to make a hazard less probable to occur or to minimize the impact of disaster. Traditionally, mitigation was perceived to be a practice by wealthy nations. Yet, financial and technical assistance by international organizations and non-profit organizations, many of the poorer nations are recognizing and benefiting from its practice (Coppola 2011)

The term mitigation entails to activities such as construction of stronger buildings, to the procedural activities such as standard approaches for including hazard assessment in land-use planning. The understanding of how a natural hazard or an accident convert to disasters help us in forecasting chances of it happening. Vulnerability to the hazard and the likely elements to be affected by hazard can locate where mitigation is practical. (Spence, Pomoni 1994)

Understanding the nature of the hazards which may occur is the first step in mitigation. Each country and region have different list of hazards that are likely to occur, mapping helps to identify significant hazards in an area. Understanding each hazard implies understanding its causes, distribution, severity, and likelihood of it occurring Resources should be used on the most vulnerable elements and where it will be most effective. Vulnerability assessment is critical in successful mitigation planning since it indicates both sensitivity to physical and economic damage as well as a shortage of funds for speedy recovery. Physical vulnerability can be mitigated by strengthening weak elements. While in social institution infrastructure need to be modified.

The authority needs to regulate and control all the development and use of land to advance the health, welfare and safety of the community. The land use in hazardous areas should be controlled (Rumbach 2019). Land use planning is proactive to long-term goals and objectives. Many countries focus on promoting development however, these developments brought with

them negative impacts on development. (Ochola et al., 2019). In informal settlement housing are in areas where there are no key infrastructure and where legal land ownership is unclear. Mitigation through land use planning significantly reduces the prospects and severity of certain natural hazards including landslides, bush fire, flood etc. The regulatory frameworks for buildings ensure that infrastructure and buildings are constructed and designed in accordance to the set standards. A study on housing market dynamics in Africa it was found that continued urbanization will pressure African governments resulting to cities characterized by large scale informal settlements, dysfunctional urban economies and lack of security. Disaster mitigation can be accomplished by eliminating the sources of the threat or lowering the consequences of the hazard if it occurs. In slums Oftenly, the only safe and practical option is relocating population from hazardous sites such as landslide and flood-prone areas. (Bah, Faye. Geh 2018).

One of the most pressing issue that needs to be addressed in informal settlements is housing. Good housing attracts economic investments thus leads to community development. A safe home contributes to the health of the family and community at large by limiting the spread of diseases for instance cholera and other communicable diseases. The houses in slums are in terrible state, most of them are made of iron sheets and timber. In case of fire most of the houses will be set ablaze like in the case of Kibera and Mathare slums in the year 2012 where more than 700 homes were destroyed and the fire also claimed lives of more than 75 people. In Singapore expandable houses (“‘rumah tambah’ in Bahasa Indonesia, or ‘rubah’ for short”) tries to respond to the need of affordability and uses less space. (Wang 2013).

Natural resources are considered as natural features of environment, this represent the actual or potential sources of wealth in natural state such as water, fertile land , timber, wildlife and minerals. Natural resources are considered as renewable resources that can be replenished by natural process to its rate of consumption yet still its considered non-renewable when it is in fixed amount and cannot be regenerated comparative to its consumption(Eha connect) Restoration of the ecosystem and sustainable usage of natural resources enhance the ability to prevent, cope, and recover from disasters. Conservation of natural resources is intended to increase community economic enterprise, maintain sustainability of environmental ecosystem and control environmental pollution. In a study that was conducted in a slum settlement in Makassar city, south Sulawesi in Indonesia the findings were that community behaviour development of slum and poverty significantly influences the environment. Through conservation and management of the slum, natural resources will be protected if

followed by active community participation. In Nairobi and other places in East Africa, the solid waste increases as the urban population increases and this is quite detrimental to the environment and human beings. Many of the dumpsites that are normally not checked are the basis for greenhouse gases which contribute to global climate change. During, storing, collecting, transportation and final disposal of waste in urban settings, the biggest challenge encountered in waste management. [Rotich et coll., 2006]. The waste composition is mostly decomposable organic materials in metropolitan centers in East Africa. Illegal power connection is rampant in slums. Many of the fires experienced in slums is due to power surge that results from illegal electric power connection and sometimes it has resulted to death. The electric wire sprawl in slums like webs and some electric live wires are left bare lying on the ground but because electricity theft is illegal this goes unreported. In January 2020 the Kenya power and lightning company (KPLC) conducted a mass disconnection of illegal power connection in Soweto slums and mukuruweini slums leaving more than 700 homes without electricity. Cheap and legal power connection should be availed in slums to curb the illegal and dangerous power connection. (Ombuor 2016). A study on *Disaster Management: Empirical Study of 2009 Jeddah Flood* in Saudi Arabia conducted by Abdullah and Othman in the year 2009 found that the underdeveloped neighbourhood were the most affected by the floods due to the poor sewage system. Due to absence of disaster management policy the impact was severe therefore policy makers should formulate a policy that could be effective at any time disaster hits.

2.4 Disaster preparedness and performance of community health promotion projects

United Nations International Strategy for Disaster Reduction (UNISDR) characterizes disaster preparedness as actions by governments, organizations communities and individuals in anticipating, responding and recovering effectively from disaster. Therefore, disaster preparedness is seen as actions taken beforehand to ensure appropriate response to disaster impacts. Disaster preparedness is conducted by many parties and each one has a unique role to play when disaster strikes which include the government in early warning systems, international agencies, communities in training and field exercises, businesses and individual in household actions like stockpiling. The activities that constitute disaster preparedness is expansive and these actions determine whether disaster response was successful (Emily Chan and Janice Ho 2015)

Today, scientists can accurately predict disasters. They have capacity to know areas prone to floods, earthquakes and wildfires. However, in spite of advance warnings, new challenges may be experienced every time a disaster hit. Thus, need for emergency preparedness involving coordination and cooperation to meet urgent needs with the resources available. The reason for disaster preparedness is ability to meet pressing needs efficiently and with scarce resources available. (INTOSSAI community). FEMA (2015) states that preparedness is the readiness for action during a disaster, preparedness is best thought of as a process – a continuing sequence of plan development, analysis and team performance skills acquired through critiques, drills, training and exercise (Kartez & Lindell,). During an emergency, quick and effective action is to be taken which depends on preparedness plans or else lives may be lost. The elements of disaster preparedness consist of risk assessment, planning, early warning system, training and exercise.

Risk assessment is the process of evaluating risk in relation to a threat or hazard (Jakob, 2009). It ensures that risk are identified, analysed, evaluated, treated and monitored. Risk assessment influences the actions to be taken for the other elements of disaster preparedness, it also identifies and determine the risk categories that poses as potential threat to the safety of the community such as environmental, social, technical, economic and other categories. The lifestyle in slums across the globe are almost similar so are the challenges. One of the major risks experienced in Kangemi slum is health risk this is due to poor sanitation. The overcrowding in slums leaves no room for amenities such as toilet and gabbage pits, dwellers are forced to tolerate living with clutter which later affects their health. Child malnutrition and mortality is a threat to slum dwellers (Fotso 2006). In 2000 childhood mortality rate in Kenya slums was estimated to 151deaths per 1000 children compared to 95 children for the non-slum areas of Nairobi.(African population and health research centre 2002).

Barbara Cliff in “*A study of disaster preparedness of rural hospitals in the united states*” in 2007 found that a standardised method to uniformly measure the level of preparedness across all hospital will be effective in disaster preparedness. There should be close coordination and exchange of information among organizations both internally i.e. within departments or ministries and externally i.e. with other stake holders. Disaster preparedness planning is a process of combining activities and documenting plans that serves as a procedure to disaster response and recovery and mobilise resources. During planning roles and responsibilities are determined, resources identified, policies developed. The main aim of preparedness planning is to ensure effective response system in the event of disaster. (IFRC 2000). Planning also needs to maintain continuity while managing crisis. Good planning results to effective emergency operation which improves the overall preparedness

(Chartoff; et all 2020.). Though during planning the details of disaster remain unclear, the plan should anticipate problems likely to be encountered in case of a disaster and be designed effectively to save maximum lives and enable affected population to recover within a short period.

Early warning system play a very key role in disaster preparedness as it is the capacity to generate and disseminate meaningful warning information in a timely manner that enables individuals and community prepare to act accordingly and in advance to reduce the impact of threat(UNSDR 2012) As indicated by international federation of Red cross and Crescent societies in order to identify the early warning signs, one needs to understand the risks faced and how the risks evolve through time, the response capabilities, and how the warning information can be effectively disseminated to the population. This involves gathering, processing and presenting of information in a meaningful manner (Malero ,Cola 2016).

In 2015 a study conducted by Roman Hoffman and Raya Multarack in “*A tale of disaster experience in two countries* found that education effectively provides protection against natural disaster threats because educated people have logical reasoning, higher cognitive ability and abstraction skills and can anticipate harm Training and exercising is a very crucial part of disaster preparedness. Training is provided for the personnel responsible for responding to emergencies while exercising is a simulation to validate systems and procedures for emergency response (WHO). Exercise must be simple based on actual emergency situation yet carried out in a serious and professional manner. Exercise examines operational plans and procedures while identifying areas that need improvement that is it reveals the gap between plans and capabilities (McCraith 2017). Exercises can be table-top, live, drill, or discussion-based (journal for epidemiology and community health vol 32, 2007). Training is distinct from exercise because it is about increasing the skills, capability and competence of response personnel be mobilised for emergency.

2.5 Disaster response and performance of community health promotion projects

Response activities are undertaken immediately following a disaster to provide immediate assistance to victims (Federal Emergency Management Agency). This stage often attracts the most attention and resources and highly depends on the preparedness stage.Crisis affects people differently, globally there is an increasing number of people who are in need of humanitarian assistance due to disaster caused by violent conflict, food shortages, displacement of people due to floods or to pave way for development, fragile economic,

terrorist attack and many more. Whenever there is an emergency the priority is safety, survival and recovery (Diakonia 2009). Relief workers provide the victims with humanitarian services that are essential for survival. Moreover, how this stage is conducted and managed will influence the recovery stage. Many activities are performed during this stage such as need assessment, coordination, lifesaving needs and requesting for additional assistance from the government and mutual aid partners. In a study of challenges and hurdles to information sharing and coordination during multi-agency disaster response: Field Exercise proposal by Bharisa and Janseen (2010), The results were that relief employees are interested not just to provide information to others who may benefit, but to receive information.

In any emergency response the first step is to assess the needs and the degree of vulnerability. The purpose of this assessment is to enable effective planning and response (James Darcy and Charles Hofmann). This assessment can be done through rapid assessment which is taken immediately after disaster, detailed assessment carried after rapid assessment is done especially if the situation is changing and extra information is needed and continual assessment where the information is continually updated to cater for evolving needs (IFRC annual report 2017). Studies show that need assessment enhances trust in disaster response. Identification of these needs do not exist in isolation, a joint inter-sectorial approach provides a holistic understanding of relationship between the current needs, causes and underlying vulnerabilities, these enables effective response (OCHA). In the event of emergency control command and coordination structure should be established. Command is a structure dedicated to ensuring maintenance of authority throughout the response activity. This defines the chain of communication (Moynihan 2008). Disaster response depend greatly on command and control management (Neal and Phillips 1995). The main role of incident command system (ICS) is to plan and manage responding partners work in a systematic and coordinated way by assigning one central coordinator commander (Edwards 2009) control is the limit of command of an official or agency. In a study conducted by David M. Neals and Brenda D Phillips in *effective emergency management reconsidering the bureaucratic approach* in the year 1995 found that a firm bureaucratic control approach to emergency situation lead to an ineffective disaster response. Flexible organizational structure are more effective in disaster response. Coordination is the mechanisms to ensure appropriate handling of incident by assembling agencies and resources for effective emergency response. The main function of coordination is to establish and maintain control in disaster response, effective sharing of information and appropriate allocation of resources.

The main objective of disaster response is to save lives, some of the lifesaving functions are search and rescue (SAR). This is an operation conducted by emergency services and well trained volunteers to find someone in distress, lost, injured, under debris of a collapsed building and even washed away by floods (Button 2016). Majority of SAR activity is conducted in the initial moments of disaster by family, friends and neighbours who might not be trained therefore exposing themselves in greater risks. In spite of this it is estimated that the first six hours of disaster are very crucial in SAR therefore citizen contribution is very significant. Another lifesaving activity is first aid medical treatment which is the procedure that can manage minor crisis until one can access proper medical treatment (Brouhard 2014). Evacuation is another lifesaving activity which is defined as the immediate movement away from a threat to a safe place (Lindell 2018). Evacuation might either be urgent or planned. Urgent evacuation occurs when there is no time to do anything than react, like during terrorist attack, riots, explosions or mudslide. Planned evacuation occurs when one has days to evacuate before disaster occurs like during hurricane, rising floodwaters like in Turkwell dam in October 2020 where there was early warning for evacuation before the dam breaks its banks and volcanic eruptions (Bedford 2013).

Emergency relief is a vital function in disaster response. During crisis the normal way of life is interrupted for example during floods the homes are washed away, or houses set ablaze during explosion, this calls for emergency relief. Relief is defined as provision of essential humanitarian assistance to the people affected by disaster to keep them alive (Crutchfield 2013). The Red cross organization are the frontline providers of this kind of relief. This can be in form of food, shelter, clothing, blankets, medicine and hygiene products. Emergency relief may continue for a long time or end very fast. In the case of 2007 post-election violence in Kenya, the internal displaced people (IDPs) needed emergency relief for more than two years.

2.6 Disaster recovery and performance of community health promotion projects

Disaster recovery is a dynamic interactive process and not static and linear process (Mileti, Nigg 2004). Restoration, reconstruction, rehabilitation and reconstruction are words which can be used interchangeably with disaster recovery of people than things, reinstatement is restoration of rightful owners and reconstruction focuses on physical rebuilding of

communities. Recovery is inclusive term referring to movement of disaster affected the health condition of a community (Dynes & Quarantelli 2008). Disaster recovery is best seen as a process of regaining normal operation following a disaster (Sungard 2017). Recovery process entails activities planned ahead of occurrence of disaster and the ones improvised after disaster (Lindell 2018) Since disaster are unexpected it therefore takes time to recover. Recovery activities includes measures taken to remedy negative impacts, enhance resilience and restore social units. Recovery from disaster will be viewed through the following parameters: household recovery, psychosocial recovery, business recovery and community recovery.

Disaster can have multiple effects on a household for example injury, death, loss of livelihood, physical loses of property, disruption in personal and social relations, relocation and household indebtness (Bollin 1993, Drabek and key 1984). Household recovery is influenced by financial status of the household, ability to get help from family friends and insurance coverage. Household recovery can be measured by objective indicators of the pre and post physical and material possession of disaster victims such as the size of the house, the material possession, the household income, major appliances etc. (Trainer and Bolin 1978, Bates 1982). Acquisition of shelter housing by the disaster victims is a major step in household recovery process (Quarantelli 1982, Bollin and Stanford 1991). How victims react to issues of shelter and housing depends on socio cultural, political economy, ecological and historical factors of a community. According to Quarantelli 1982 there is a chronological order of post disaster sheltering. Emergency shelter is an immediate shelter given to the victims. It is always viewed as unplanned and spontaneously sought shelter arrangement. This shelter may be occupied for only some hours. Many at times these shelters transforms to temporary shelters because some victims have nowhere to go thus settle in for longer period. Temporary housing is the third phase where household routine is re-established though not on permanent quarters and lastly is permanent housing. In a study conducted by Heri Istanto on *household level recovery after volcanic eruption in Indonesia: empirical evidence based on an asset based approach (2019)* suggests that the government should consider household initial assets when allocating aid for affected household

Psychological or mental health of the disaster victims is a dimension that recovery can be measured. Disasters are traumatic in nature as they temper with emotions and normal responses. The impacts of disaster can produce negative mental effect on the victims. The people affected by disaster often have strong reaction and are sensitive to environment for

example loud noise, they have strained interpersonal relationships and have unpredictable feelings. How the victims react can be due to suddenness of the disaster, threat of recurrence and exposure to death of others (Berien et al 1989, Bollin 1988, Quarantelli 1985 and Warheit 1985). Most people recover over time. In a study conducted by Christopher Enrich et al 2019 on *Measuring social equity in flood recovery funding* implies that there will be more recoveries when disaster recovery programs in future focuses on physical and social damages. Counselling plays a major role in psychosocial recovery of the victims. Support groups also help survivors realize that they are not alone. Having a permanent housing is very crucial part in individual psychosocial recovery and community recovery.

Business sectors are crucial in community prosperity by providing tax revenues, jobs, goods and services. When disaster hits many businesses are interrupted. Brief business interruption can lead to loss of customers and reduced revenues. The worst disaster is when income generating activities have been severely affected. (Davies and Walters 1998). In developing countries small businesses tend to be located in hazard prone areas and with limited human and financial resources. Local businesses and sole proprietorship are more vulnerable to disaster than non-local businesses. There need to be a plan to ensure all critical businesses continue successfully in the event of disaster (Alexander 1992). Disaster recovery plan (DRP) is a solution to successful business recovery after major disaster. (Paradine 1995). Many companies close down or go bankrupt in the first year after disaster (Hardly, Kathy, Roper and Kennedy 2009) therefore insurance cover cushions businesses from financial loss (Paradine 1995). Insurance is a form of disaster preparedness (Almanand 2013).

While individual victims rebuild homes, businesses and recover emotionally the community faces a lot of challenges due to interruption caused. Disaster disrupt ongoing social patterns, economic trends providing conditions for economic political and social change in the midst of crisis and loss (Bollin 1993). According to CDC community recovery is identifying facilities, assets and sectors that prioritize and guide recovery process. For the community to recover they should identify and monitor recovery needs, support public health recovery and related systems and implement corrective actions by reducing the impacts from future incidents (Dave Collins 2011). Communities should collaborate with other partners and stakeholders to facilitate and implement restoration of healthcare, human services and environmental health sectors and to better their functionality comparable to pre-incident levels. The recovery efforts can be short or long term contingent on the community and the destruction caused. The goal is to rebuild essential sectors like medical, public health, mental

health system and improve their standard where possible (Institute of medicine of the national academies). An organized system and working together with the government and community partners speeds up community recovery

2.7 Theoretical framework

The study was guided by the domino theory and theory of reasoned action

2.7.1 The Domino theory

The domino theory was coined by Herbert W. Heinrich in the year 1931. Heinrich saw circumstances of a preventable injury as the peak of chain of events that form a sequence, just like a series of dominos where collapsing of the first domino sequentially affects the second third and next, but by withdrawal of a key factor like unsafe act or unsafe condition averts the beginning of chain of reaction(H.W Heinrich 1941). Heinrich uses dominos labelled with accident causes. The first domino is social environment and ancestry which represent undesirable personality trait like recklessness, greed, stubbornness which can be inherited or developed from ones environment thus nature and nurture are key contributors of fault of an individual. The second domino is workers personal fault or carelessness. It also represents personal level of knowledge, attitude, physical and mental conditions. Personal faults contribute to unsafe acts which lead to unsafe conditions.The third domino is unsafe act, physical or mechanical hazard. This represents the behaviour of a person and unsafe job condition. Heinrich considers this domino as the central factor in cubing incidents and the easiest factor to rectify. People commit unsafe act due to physical unsuitability, improper attitude and lack of knowledge. The fourth domino is an accident which could have been prevented, caused by a chain of events or circumstances that invariably occur in a logical order. The last domino is injury or loss resulting from accident. The last domino is injury or loss resulting from accident. The theory asserts that most disasters can be prevented by anticipating the probable consequences of disaster to minimize the impact. (Lelisa Sena, Kifle Michael 2006). The unsafe acts or areas posing as hazard when removed from the community will improve the health of the community

2.7.2 Theory of reasoned Action.

This theory of Reason Action (TRA) was advanced in 1980 by Martin Fishbein and Icek Ajzen. It was developed to determine contrast amongst attitude and behaviour. The theory propose that ones behaviour is influenced by intent to perform a behaviour for example a smoker who intends to quit smoking he may or may not follow it through. Behaviours of social pertinency including health behaviours are deliberate or volitional control. TRA suggest that an indidual or population attitude or behaviour together with subjective norms of prominent people and groups can influence attitude. Attitude and behaviour influence intention which motivates behaviour. Many behaviours cannot be performed at will for they require opportunities, skills, cooperation and resources for effective execution. Ajzen and Martin imply that attitudes towards certain behaviours are influenced by our beliefs on aftermath of the behaviour and our evolution of the probable outcome. TRA is useful for anticipating health behaviours, planning, implementing disease prevention and programs and health promotion programs.

2.8 Conceptual framework

The schematic diagram below (Figure 1) exhibits the relationship between independent variables: disaster mitigation, disaster preparedness, disaster response and disaster recovery and their influence on performance of community health promotion projects expressed as depended variable.

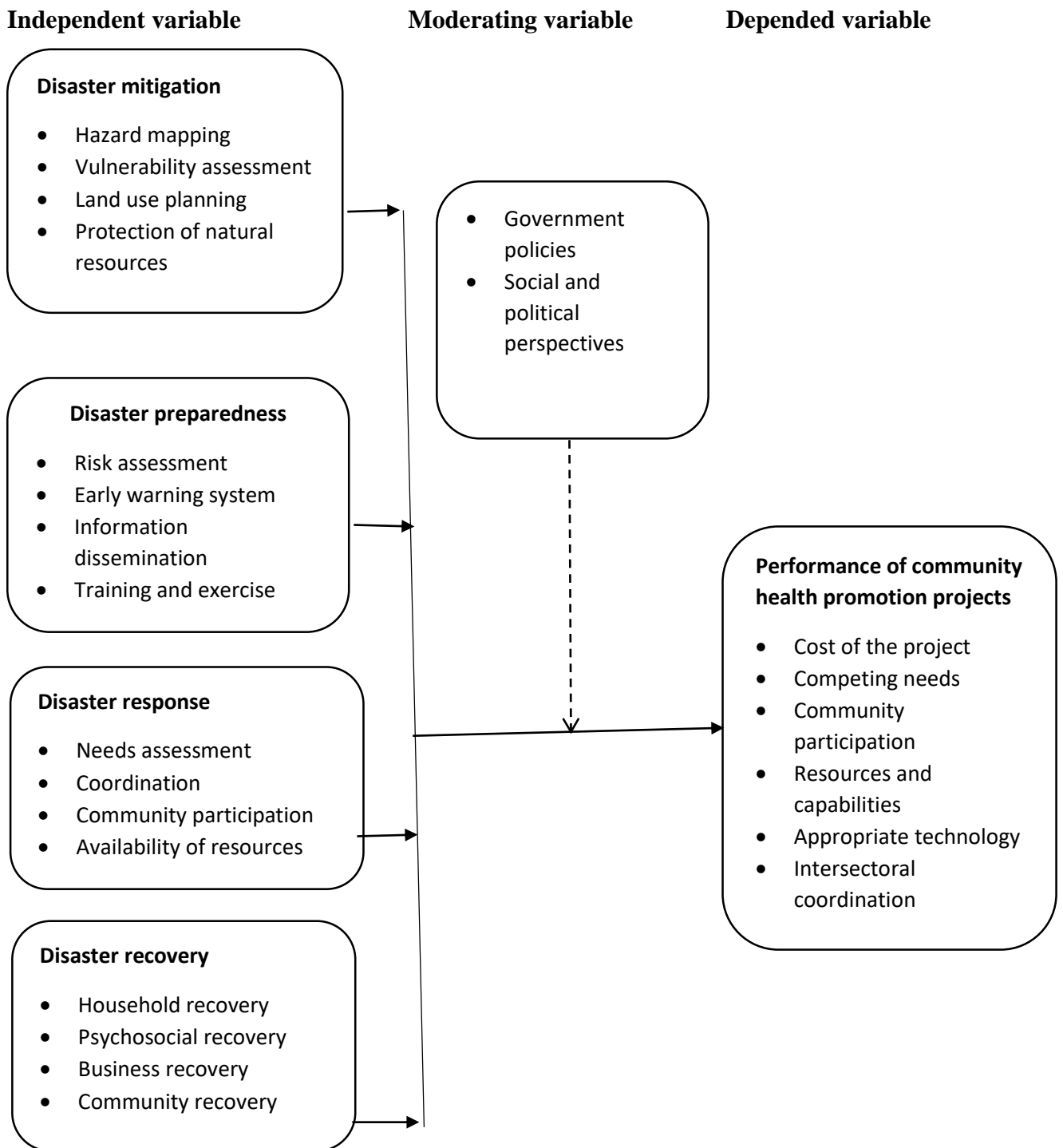


Figure 1: Conceptual framework

2.9 Knowledge gap

captured the areas with scanty information that need to be filled. Table. 1 below shows the areas of the study with gaps.

Table.2.1 Knowledge gap

Variable	Author and Year	Title of the Study	Findings	Knowledge gap
To examine the influence of mitigation measures on performance of community health promotion projects	El-hadj M. Bah, Zebebweliwai F. Geh, and Issa Faye 2018	Housing market dynamics in Africa	In slums Oftenly, the only safe and practical option is relocating population from hazardous sites such as landslide and flood-prone areas	Through planning and zoning development in flood and landslide prone areas should be avoided. There is need for the government ensure proper planning and zoning is done before allocating land to squatters.
To examine the influence of mitigation measures on performance of community health promotion projects	Abdullah, N. N. & Othman, M. 2015	<i>Disaster Management: Empirical Study of 2009 Jeddah Flood.</i>	policy makers should formulate a policy that could be effective at any time disaster hits.	Policies should reflect real time conditions and keep up with pace of change

<p>To assess the extent to which disaster preparedness influence the performance of community health promotion projects</p>	<p>Barbara cliff 2007</p>	<p>A study of disaster preparedness of rural hospitals in the united states</p>	<p>a standardised method to uniformly measure the level of preparedness across all hospital will be effective in disaster preparedness.</p>	<p>To consider disaster preparedness a success there is need to have performance indicators to rate the level of effectiveness</p>
<p>To assess the extent to which disaster preparedness influence the performance of community health promotion projects</p>	<p>Roman Hoffman and Raya Multarak 2015</p>	<p>Atale of disaster experience in two countries</p>	<p>education effectively provides protection against natural disaster threats because educated people have logical reasoning, higher cognitive ability and abstraction skills and can anticipate harm</p>	<p>Some disasters are difficult to predict there is need for policies that facilitate continuous improvement</p>
<p>To establish the influence of disaster response on performance of community health promotion projects</p>	<p>Nitesh Bharisa, Jinkyulee and Marijn Janseen 2010</p>	<p>Challenges and obstacles in sharing and coordinating information during multi-agency disaster response: proposition from field exercise</p>	<p>Relief workers are more interested with gathering knowledge even than disseminating it to those who may benefit.</p>	<p>Both receiving information and providing information are equally important in disaster management</p>

To establish the influence of disaster response on performance of community health promotion projects	David M. Neals and Brenda D Phillips 1995	effective emergency management reconsidering the bureaucratic approach	Flexible organizational structure are more effective in disaster response	Relating to the nature of disaster, too much flexibility may lead to confusion. There is need to have a chain of command
To establish the extent to which disaster recovery influences performance of community health promotion projects	Heri Istanto 2019	Household level recovery after volcanic eruption in Indonesia: empirical evidence based on an asset based approach	the government should consider household initial assets when allocating aid for affected household	Recovery takes time, there is need to consider all the victims equally and not by their prior assets.
To establish the extent to which disaster recovery influences performance of community health promotion projects	Christopher T Enrich, Eric Tate, Sarah Harson and Yao Zhou 2019	Measuring social equity in flood recovery funding	that there will be more recoveries when disaster recovery programs in future focuses on physical and social damages	As both physical and social recovery are important complete recovery will be achieved when there is economic and community recovery

2.10 Summary of literature review

The chapter has discussed in detail how performance of community health projects can be influenced by disaster management cycle through disaster mitigation, disaster preparedness, disaster response and disaster recovery. To achieve an effective community health project, community participation, intersectoral coordination, appropriate technology and support mechanisms have to be made available. The study was grounded on domino theory and theory of reasoned action. A conceptual framework was applied in determining the association

amongst the independent variable moderating variable and the depended variable. The knowledge gap has captured the areas with scanty information that need to be filled.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter lay out information on the methodology and techniques that will be employed in the study to gather primary data. It consists of research design, sample size, sample design, target population, data collection instruments, data collection analysis and procedures, pilot testing, validity and reliability of the research instruments, operationalization of variables and ethical considerations addressed in the study.

3.2 Research Design

The research has adapted descriptive survey research design. This was due to the fact that descriptive research design describes or explains multiple variables and also establish relationships between variables (Wambugu, Kyalo, Mbi and Nyonje, 2015). Descriptive studies can either be purely descriptive or descriptive comparative (Sandra L. Siedlecki 2020). This design was preferred for its description and expiation of behaviour, knowledge and attitudes of the respondent. It is less time consuming and easy to conduct on the preferred target group.

3.3 Target Population

Target population is a grouping of individual or items that the study data are to make inferences to.(Paul J. Lavrakas 2008). The target population was public health officer, national disaster operation Center officer, slum residents in Kangemi.

Table 3.1: Target population

Category	Target population
national disaster operation center officer	3
Public health officer	3
Slum residence in Kangemi	100000
Total	100,006

Source: *Kenya population and housing census report 2020*

3.4 Sample Size and Sampling Procedure

3.4.1 Sample Size

As per the census of the year 2019 the population in Kangemi slum was 100,000 residents. The study will adapt a sample size formula by Krejice and Morgan (1970) which is as follows:
 $s = \frac{X^2 NP(1-P)}{d^2(N-1) + X^2 P(1-P)}$

s= Sample size required.

X²= table value of chi-square for 1 degree of freedom at desired confidence level (3.841)

N=Total population size

P= Population proportion (Estimated to be 0.5 as this will give maximum sample size)

d=Accuracy degree expressed as a proportion (0.05)

Therefore the sample size is:

$$s = \frac{3.841 * 100000 * 0.5 (1-0.5)}{0.05(100000-1) + 3.841 * 0.5(1-0.5)} = 384 \text{ respondents}$$

Table 3.2: Sample Size

Category	Target population	Sample size
national disaster operation center officer	3	3
Public health officer	3	3
Slum residence in Kangemi	100000	384
Total	100,003	390

Source: *Kenya population and housing census report 2020*

3.4.2 Sampling Procedure

The study applied systematic sampling of the household in Kangemi slum and the business community in Kangemi. Only the adults in the household and business premises

participated. Systematic sampling will be used because this process guarantees that the population is evenly sampled and the data acquired was used for generalization. The key informants were sampled by use of purposive sampling according to their level of operation.

3.5 Research Instruments

This study employed semi structured questionnaires and interview guide in collecting data. The semi structured questionnaire was divided into six sections the first section tried to obtain the general demographic information of the population , the second section found out about the performance of community health promotion projects, the third section identified disaster mitigation the fourth section ascertains disaster preparedness the fifth section determines disaster response and the last section identifies disaster recovery. The questionnaire was used for uniformity, anonymity, wide coverage and puts less pressure on the respondent. The interview guide was used on the key informants to obtain detailed information.

3.5.1 Piloting of the instruments

This is a small study conducted to test the feasibility of data collecting instruments (Schattner and Mazza 2006). A pilot study will be undertaken in ascertaining the feasibility of the approach to be used in the main study. A pilot sample study ought to amount to 10% of the projected sample for the main study (Connely 2008). 39 questionnaires was used for pilot studies this translates to 10% of the actual sample size and took place in Kawangware which is the neighbouring village to Kangemi and has similar characteristics to Kangemi. The pilot study used systematic sampling because it ensures equal probability of being selected thus the data acquired can be used for generalization . The pilot research participants must not be included in the main study

3.5.2 Validity of the instruments

Validity implies to what degree an instrument measures what is required to be measured (Field 2005). The study employed both construct and content validity. Construct validity according to (Ginty 2013) is the extend measurements used test the theory they are measuring. This entails whether questionnaires and interview guide effectively cover dependent,

independent and moderating variable. Content validity is the suitability of the instruments content. This study therefore greatly depends on the supervisor's expert judgement.

3.5.3 Reliability of the instruments

The degree to which a research instrument delivers consistent and steady results is referred to as its reliability (Dudovskiy 2016). This study applied Cronbach's Alpha range test in measuring reliability of tool using the data obtain from the pilot study. Cronbach's Alpha value range from 0 to 1 where the higher the value the more reliable the research instrument. The values of 0.7 and above are considered reliable whereas the values below 0.7 are considered unreliable.

3.6 Data collection procedure

The process of data collection begun after obtaining a certified letter of data collection, approval from the department of extra mural studies in the University of Nairobi and a data collection permit from NACOSTI. Data collection permission was also sought from National disaster Operation Centre and public health institution in Kangemi. Appointments were booked prior to the interviews. Questionnaires were dropped, and ample time was given before retrieving them.

3.7 Data Analysis Techniques

Data analysis is a process of collecting, modelling and analysing data to get insight that help in decision making (Bernidita Calzon 2021).The study used semi structured questionnaires and interview guides. Qualitative data was obtained from open ended questions while quantitative data was obtained from close-ended questions. The analysis used statistical and logical procedures to obtain data. More so, descriptive statistics was applied to analyse the data in form of mean standard deviation and percentages. On the other hand, inferential statistics employed Pearson correlation to convey the association of independent variable and depended variable. The questionnaires collected was entered into SPSS program for analysis. Interview guide and open-ended questions were analysed through content analysis. Close-ended questions was analysed through five-point Likert scale by identifying the strength of the attitude

3.8 Ethical Considerations

The study was done within ethical practises. NACOSTI permit was sought in order to collect data and also permission was sought from different authorities before collecting data. Participants were informed of the purpose of the study and the type of information they were to provide willingly and assured of complete discretion and their responses was also handled with confidentiality. Participant will also be informed that the information provided is solely for academic purposes

3.9 Operationalization of variables

The operational indicators that were applied in the study are as shown in the table 3.2 below. The table summarizes variables, their indicators, the scale is applied measuring them, the data analysis approach, and the analytic tools.

Table 3.2 Operationalization of variables

Research objective	Variables	Indicators	Scale of measurement	Data analysis technique	Tools of analysis
Performance of community health promotion projects	Dependent variable	<ul style="list-style-type: none"> • Cost of the project • Competing needs • Community participation • Resources and capabilities • Appropriate technology • Inter-sectorial coordination 	ordinal	Descriptive statistics Inferential statistics Content analysis	Standard deviation mean median person correlation
Establishing the influence of mitigation measures on performance of community health promotion projects	Independent variable disaster mitigation	<ul style="list-style-type: none"> • Hazard mapping • Vulnerability assessment • Proper housing • Waste management 	ordinal	Descriptive statistics Inferential statistics Content analysis	Standard deviation mean median person correlation
To assess the extent to which disaster preparedness influence the performance of community health promotion projects	Independent variable Disaster preparedness	<ul style="list-style-type: none"> • Risk assessment • Early warning system • Information dissemination • Training and exercise 	ordinal	Descriptive statistics Inferential statistics Content analysis	Standard deviation mean median person correlation

To determine the influence of disaster response on performance of community health promotion projects	Independent variable Disaster response	<ul style="list-style-type: none"> • Needs assessment • Coordination • Community participation • Availability of resources 	ordinal	Descriptive statistics Inferential statistics Content analysis	Standard deviation mean median person correlation
To establish the extent to which disaster recovery influences performance of community health promotion projects	Independent variable Disaster recovery	<ul style="list-style-type: none"> • Household recovery • Psychosocial recovery • Business recovery <p>Community recovery</p>	ordinal	Descriptive statistics Inferential statistics Content analysis	Standard deviation mean median person correlation

CHAPTER 4

DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSION

4.1 Introduction

In this chapter introduces thematic areas as follows: the questionnaire return rate, demographic characteristics of the respondents, performance of health promotion projects, disaster mitigation and performance of community health promotion projects, disaster preparedness and performance of community health promotion projects, disaster response and performance of community health promotion projects and disaster recovery and performance of community health promotion projects.

4.2 Questionnaire Return Rate

From a sample population of 390 respondent 334 respondent were able to successfully complete the questionnaires issued as illustrated on table 4.1.

Table 4.1: Questionnaire Return Rate

Responses	Frequency	Percentage
Returned Responses	334	85.6
Non-Responses	56	14.4
Total	390	100.0

The return rate of questionnaires was 85% which is considered conventionally acceptable for a social science research according to Mugenda & Mugenda, 2003 who recommended a return rate of 70% and above as acceptable for data analysis to progress.

4.3 Demographic Characteristics of Respondents

The social demographic information of the respondents entailed the gender categories of respondents, age and level of education, this provides details regarding the overall characteristics of the respondent. The data is presented in the table 4.2

Table 4.2: Demographic Characteristics of the Respondents

Variable	Frequency	Percentage
Gender		
Male	209	62.6
Female	125	37.4
Total	334	100.0
Age Bracket		
Below 25 years	21	6.3
26 – 30 years	48	14.3
31 – 35 years	59	17.7
36 – 40 years	94	28.1
41 – 45 years	56	16.8
46 – 50 years	33	9.9
Above 51 years	23	6.9
Total	334	100.0
Highest level of Education		
Primary level education	65	19.5
Secondary level education	142	42.5
Diploma	77	23.0
Degree	35	10.5
Master	15	4.5
PhD	0	0
Total	334	100.0

The study results in the Table 4.2 on gender indicate that 209(62.6%) of the respondents were male with 125(37.4%) of the rest of the respondents were female. These findings show that majority of the respondents involved in community health promotion projects were males implying that performance of community health promotion projects could be related to the high number of males participating in community health promotion projects.

On the distribution of respondents by age, the study findings indicated that out of the 334 respondents who participated in the study, those below 25 years were 21(6.3%), between 26 – 30 years 48(14.3%), between 31 – 35 years were 59(17.7%), between 36 – 40 years were 94(28.1%) while those between the ages 41 – 45 years 56(16.8%), between 46 – 50 years 33(9.9%) and finally respondents above 51 years were 23(6.9%). The findings indicate that community health promotion projects attracts respondents of different ages but specifically those heavily involved were between the ages of 30 – 45 years hence this implies that the respondents were mature enough to respond to issues pertaining performance of community health promotion projects.

4.4 Performance of Community Health Promotion Projects

The dependent variable sought to obtain responses on performance of community health promotion projects. The respondents were requested to give their feedback on the statements provided. The study employed 5 point Likert scale in measuring the response variable where; 1= Strongly Disagree (SD), 2= Disagree (D), 3= Neutral (N), 4= Agree (A) and 5= Strongly Agree (SA). Table 4.3 below details the findings.

Table 4.3: Performance of Community health Projects

Statements	5	4	3	2	1	Mean	SDV
	F (%)	F (%)	F (%)	F (%)	F (%)		
1. Financial support for health promotion projects are available in time and are well budgeted for before implementation of the projects	198 (59.3)	92 (27.5)	18 (5.4)	17 (5.1)	9 (2.7)	334	0.627
2. Health promotion projects are regarded as one of the most important projects that saves lives in the area	190 (56.9)	95 (28.4)	22 (6.6)	15 (4.5)	14 (4.2)	334	0.557
3. The community has always been engaged in social analysis and implementation of the projects.	196 (58.7)	99 (29.6)	22 (6.6)	9 (2.7)	8 (2.4)	334	0.667
4. The health promotion projects implemented are of modern technology	195 (58.4)	97 (29.0)	21 (6.3)	14 (4.2)	7 (2.1)	334	0.652
5. beneficiaries are trained on how to use the new technology before handing over of the project	189 (56.6)	85 (24.5)	25 (7.5)	15 (4.5)	20 (5.9)	334	0.718
6. The projects in the area are carried out by collaboration of organizations	190 (56.9)	95 (28.4)	13 (3.9)	24 (7.2)	12 (3.6)	334	0.541
7. The government actively participate with private companies and non-profit organization in health promotion projects	186 (55.7)	109 (32.6)	16 (4.8)	15 (4.5)	8 (1.8)	334	0.588
Composite Mean and Composite Standard Deviation						3.96	0.547

Table 4.3 exhibits the outcomes from the analysis on performance of community health promotion projects in Kangemi informal settlement in Nairobi. The researcher computed a composite mean and standard deviation for comparison with the mean line item of each statement developed from the indicators of the response variable. Where the line item mean was found to be lower than the composite mean, the statement contributed negatively to the outcome of the variable and where the line item standard deviation in comparison to the

composite standard deviation was found to be lower, there was an indication of divergent views on the statement.

Statement number one, estimated Financial support for health projects are available in time and well budgeted for before implementation of the projects, the results obtained were as follows; 198(59.3%) of the respondents indicated strong agreement, 92(27.5%) were in agreement, 18(5.4%) were neutral, 17(5.1%) were in disagreement whereas 9(2.7%) of the respondents strongly disagreed. The mean score obtained was 3.98 and standard deviation 0.517 which were both higher than the composite mean and standard deviation. The results show that most of the respondents agreed with the statement being represented by 86.8%. The findings from the key informants also suggested that financial support is available in time and though not sufficient enough. In a case study in the Detroit area the findings indicated that strategic budgeting ultimately influences the outcome of project (Taylor and Rafai, 2003)

The study obtained responses on statement number 2, on community health projects are regarded as one of the most important projects that saves lives in the area. The results indicate that 190(56.9) strongly agreed, 95(28.4%) agreed, 22(6.6%) were neutral, 15(4.5%) disagreed and 14(4.2%) strongly disagreed with a mean and a standard deviation of 3.97 and 0.547 respectively. The statement when compared to the composite mean 3.96, implies that there were convergent views on health projects considered as the most important project that saves lives in the area . The statement has a positive contribution on the variable because the statement mean is higher than the composite mean and as supported by 85.3% of the respondents who agreed. Findings from the key informants agrees with the statement as community health projects has saved a lot of lives. In a study by WHO indicated that strengthened health systems saves lives. (WHO 2015)

Statement number three, that the community has always been engaged in social analysis and implementation of the projects, the findings obtained were; 196(58.7%) strongly agreed, 99(29.6%) agreed, 22(2.7%) were neutral, 9(2.7%) disagreed and 8(2.4%) strongly disagreed with a mean and a standard deviation of 4.06 and 0.667 respectively. The mean score of the line item was 4.06 above the composite mean that suggested that community engagement in social analysis and implementation of the projects positively contributes to the variable which as compared to the composite mean 3.96 is greater than the composite mean The findings from the key informants suggested that most of the projects launched engaged the community

before implementation. Engagement of members of disadvantaged communities in health projects reduces health inequities (Mara et al., 2015).

The findings on the fourth line item statement revealed that health promotion projects implemented are of modern technology. The line item mean indicated 4.05 with standard deviation of 0.652. The findings however show that majority of the respondents (87.4%) agreed on the statement. The results indicate that 195(58.4%) strongly agreed, 97(29.0%) agreed, 21(6.3%) were neutral, 14(4.2%) disagreed and 7(2.1%) strongly disagreed with a mean and a standard deviation of 3.96 and 0.547 respectively. This implies that most of the respondents were in agreement that health promotion projects implemented are of modern technology. The findings from key informants also agreed with the statement that the projects implemented are of current technology and solve the current problems of the community

The findings obtained from the fifth statement sought to find out if beneficiaries are trained on how to use the new technology before handing over the project. The findings were as follows; 189(56.6%) strongly agreed, 85(24.5%) agreed, 25(7.5%) were neutral, 15(4.5%) disagreed and 20(5.9%) strongly disagreed with a mean and a standard deviation of 3.91 and 0.518 respectively. Findings from key informants agree with the statement that handing over of the project is done in an orderly manner by training the beneficiaries before withdrawal. Handing over should be carried out in a successful and a sustainable way by implementing a set of activities that require long time framework just like developmental process Strachan (1996)

The findings obtained from the sixth statement on whether the projects in the area are carried out by collaboration of organizations. The results obtained were as follows; 191(57.2%) strongly agreed, 89(26.6%) agreed, 28(8.4%) were neutral, 26(7.8%) disagreed. The mean and a standard deviation of the line item were 3.93 and 0.541 respectively. The composite mean and standard deviation ($M=3.94$, $SD=0.547$) were higher than the line item implying that there were divergent views pertaining the line item statement and the contribution to the variable. The findings indicate that the statement has a negative contribution on the variable. Findings from the key informants agrees with the statement that various organizations collaborate to ensure success of projects implemented A study by Mayo 2016 indicated that collaboration of various teams capitalizes on variety of skills, knowledge and abilities thus potential to surpass what a single team can achieve yet again there are some barriers to collaboration like prioritization of resources that can affect the performance of the project.

The seventh statement gathered data on active participation by the government and other private and non-profit organizations in health promotion projects. The results were as follows; 186(55.7%) strongly agreed, 109(32.6%) agreed, 16(4.8%) were neutral, 15(4.5%) disagreed and those who strongly disagreed 8(1.8%) with a mean and standard deviation of 3.98 and 0.568 respectively. This implies that the statement contributes positively to the variable being supported by 84.2% of the respondent. Findings from key informants agrees with the statement that the government has been actively participating in project implementation and has also engaged some private and non-profit organizations. This is in agreement with Tang et al. (2004). The government has responsibility to protect and improve the interests of the society which includes delivery of high quality health care which requires strong relationships with private sectors

4.5 Disaster mitigation and performance of community health promotion projects

This theme introduces the first objective of the study that sought to establish how disaster mitigation influences performance of community health promotion projects in informal settlement of Kangemi in Nairobi county. To achieve this, the respondents were required to give their opinions in their level of agreement or disagreement with the statement using a Likert scale of 1 – 5 where 1 = Strongly Disagree (SD), 2 = Disagree (D), 3 = Neutral (N), 4 = Agree (A) and 5 = Strongly Agree (SA). The results are presented in the Table 4.4.

Table 4.4 Disaster mitigation and performance of community health promotion projects

Statement	5 F (%)	4 F (%)	3 F (%)	2 F (%)	1 F (%)	n	Mean	SDV
1. Some areas are more prone to recurring hazards than others	204 (61.1)	82 (24.6)	30 (8.9)	18 (5.4)	0 (0.0)	334	4.17	0.376
2. There have been recurring hazards in the area over the years	197 (58.9)	91 (27.2)	26 (7.8)	16 (4.8)	4 (1.2)	334	4.06	0.538
3. Pregnant women, children and the aged are at more risk in case of an emergency	183 (54.8)	89 (26.6)	33 (9.9)	20 (5.9)	9 (2.7)	334	3.91	0.710
4. There are no sufficient medical facilities in the area in case of an emergency	192 (57.5)	92 (27.5)	28 (8.4)	15 (4.5)	7 (2.1)	334	3.93	0.609

5. Most families in the area are overcrowded and live in sub-standard building	201 (60.2)	88 (26.3)	24 (7.2)	19 (5.7)	2 (0.1)	334	4.11	0.444
6. There is poor/no drainage system in the area and poor solid waste disposal	195 (58.4)	97 (29.0)	21 (6.3)	14 (4.2)	7 (2.1)	334	4.13	0.412
Composite Mean and Composite Standard Deviation							4.05	0.515

Statement 1 of the variable disaster mitigation obtained the following descriptive statistical findings; 204(61.1%) strongly agreed, 82(24.6%) agreed, 30(8.9%) were neutral and 18(5.4%) disagreed that Some areas are more prone to recurring hazards than others. The statement drew a mean of 4.17 and a standard deviation of 0.376 respectively. The findings indicate that the line item has a positive contribution to the predictor variable as compared to the composite mean of 4.05 and also supported by 85.7% of the respondents. The findings from the key informants agree with the statement that some areas especially the sloppy areas, areas near the river and areas near the dumping sites are more prone to disaster than others. Although disaster occur in all parts of the universe, some zones are more vulnerable to certain hazards than others. World Meteorological Organization (2021)

The statement number 2 on whether there have been recurring hazards in the area over the years, data obtained indicated that; 197(58.9%) strongly agreed, 91(27.2%) agreed, 26(7.8%) were neutral, 16(4.8%) disagreed and those who strongly disagreed 4(1.2%) with a mean and standard deviation of 4.06 and 0.538 respectively. This implies that the statement contributes positively to the variable as supported by 86.1% of the respondents. Findings from key informants concurs with the statement that the hazards are recurring in nature and most of them go with season. Small but frequent disasters happen both in urban and rural setting especially in low and middle class areas (UNISDR Global Assessment Report 2015)

The findings obtained from the third statement on pregnant women, children and the aged are at more risk in case of an emergency. The findings gathered were; 183(54.8%) strongly agreed, 89(26.6%) agreed, 33(9.9%) were neutral, 20(5.9%) disagreed and 9(2.7%) strongly disagreed with a mean and a standard deviation of 3.91 and 0.710 respectively. The findings indicate that the statement negatively contributes to the variable which as compared to the composite mean 4.05 falls below the line item statement implying that the statement could be reviewed to enhance the predictor variable. The findings gathered from key informants agree

with the statement that pregnant women, children and the aged are the most vulnerable due to the nature of dependency. Disaster discriminates along gender and generational lines, children and women are at greater risk of survival and recovery after disaster Vidili (2018)

The statement number 4 of the variable sought to establish whether there are no sufficient medical facilities in the area in case of an emergency. The results from the Table 4.4 indicated that 192(57.5%) strongly agreed, 92(27.5%) agreed, 28(8.4%) were neutral, 15(4.5%) disagreed and 7(2.1%) strongly disagreed with a mean and a standard deviation of 3.93 and 0.609 respectively. The statement when compared to the composite mean (4.05), implies that the line item had insignificant influence on the variable. The key informants agree with the statement that the medical facilities in the area are limited especially due to the overpopulation of the area. The findings is in agreement with Muga et al.(2005). Despite having focused national health reform agenda and policies on improving healthcare services, Kenyans still struggle in accessing health care services especially for those living in rural areas and densely populated slums.

On the fifth statement, the study recorded the following results on whether most families in the area are overcrowded and live in sub-standard building; 201(60.2%) strongly agreed, 88(26.3%) agreed, 24(7.2%) were neutral, 19(5.7%) disagreed and 2(0.1%) strongly disagreed with a mean of 4.11 and a standard deviation of 0.444 respectively. The statement when compared to the composite mean (4.05), implies that the statement has a positive contribution to the variable disaster mitigation and therefore contributes to influencing the response variable as supported by 86.5% of all the respondents who agreed. The findings from the key informants concurs with the stamen that the housing in the area is of poor condition and also overcrowding in the limited space. The living standards of slum dwellers are significantly poor characterised by substantial housing and living in overcrowded conditions Khan et al.(02015)

The sixth statement of the variable sought to find out whether there is poor/no drainage system in the area and poor solid waste disposal. The descriptive statistics obtained were; 195(58.4%) strongly agreed, 97(29.0%) agreed, 21(6.3%) were neutral, 14(4.2%) disagreed and those who strongly disagreed 7(2.1%) with a mean and standard deviation of 4.13 and 0.412 respectively. The findings imply that the line item should be reviewed as it positively contributes to the variable disaster mitigation as compared by the composite mean (M=4.05) and the line item (M=4.13). The findings from the key informants suggest that the area has poor and unplanned drainage system that is a threat to the community at large.The findings

concur with Absence of suitable drainage in informal settlement is a failure of the local government in providing appropriate health services to the population (Armitage 2021)

4.5.1 Correlation Analysis between Disaster mitigation and Performance of community health promotion Projects

The researcher aimed on determining the association amongst disaster mitigation and performance of community health promotion projects using the Pearson Correlation Coefficient. This enables in establishing the strength and direction of the association amongst disaster mitigation and performance of community health promotion projects. Table 4.5 following exhibits the results.

Table 4.5: Correlation Analysis between Disaster Mitigation and Performance of community health projects

Variable		Disaster Mitigation	Performance of Community Health promotion Projects
Disaster mitigation	Pearson Correlation	1	0.808**
	Sig. (2-Tailed)		0.000
	n	334	334
Performance of community health promotion projects	Pearson Correlation	0.808**	1
	Sig. (2-Tailed)	0.000	
	n	334	334

** . Correlation is significant at the 0.05 level (2-tailed)

The correlation findings on Table 4.5 between disaster mitigation and performance of community health promotion projects. The outcomes revealed that there is a strong positive correlation of 0.808 between disaster mitigation and performance of community health promotion projects, that mean that a significant relationship exists having a p value Of 0.000 that is less than 0.05 significance level. This shows that disaster mitigation influences performance of community health promotion projects. By provision of specific mitigation measures and insisting on key components providing vital services to be in place affects the hehalth of the population before, during and after disaster.(Pan American health organization 2007)

Table 4.6: Model Summary for Disaster Mitigation and Performance of community health Projects

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.808 ^a	0.653	0.659	0.89517

a. Predictors (Constant), Disaster Mitigation

Table 4.6 results shown above gives an indication of the level that the predictor variable above is accountable for the change in the overall model. The R Square produced was 0.653 showing that disaster mitigation contributes to 65.3% of the variations of the dependent variable performance of community health projects. This means that additional factors that were not taken into consideration in this model accounted for 34.7 percent of the total. According to the findings of the study, disaster mitigation has a substantial impact on the performance of community health programs. Though disaster mitigation is a vital stage in health projects, not all risks can be mitigated especially those that are natural in nature.

Table 4.7: Coefficients of Disaster Mitigation and Performance of community health Projects

Variables	Un-standardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	0.346	0.281		1.231	0.000
Disaster mitigation	0.778	0.082	0.808	9.487	0.000

a. Dependent Variable: performance of community health projects

The findings in Table 4.8 yielded a standardized beta value of 0.808, suggesting that an increment in disaster mitigation with a unit related to an 80.8 percent growth in the variability of performance of community health initiatives. With the $p < 0.05$ this model was considered suitable in predicting the performance of community health projects in disaster mitigation. The regression model would be as such;

Performance of community health projects = $0.346 + 0.808 (\text{Disaster mitigation}) + e$; $t = 9.487$; $p < 0.05$.

The findings of the study demonstrated that disaster mitigation has a notable impact on performance of community health projects. The findings of the current study on the first

variable disaster mitigation ($R^2 = 0.653$) explains 65.3% of the variations in performance of community health projects.

4.6 : Disaster Preparedness and Performance of community health promotion projects

The second variable of the study sought to examine how disaster preparedness influences performance of community health promotion projects in Kangemi informal settlement in Nairobi county. To achieve this, the respondents were required to give their opinions in their level of agreement or disagreement with the statement using a Likert scale of 1 – 5 where 1 = Strongly Disagree (SD), 2 = Disagree (D), 3 = Neutral (N), 4 = Agree (A) and 5 = Strongly Agree (SA). The results are presented in the Table 4.9.

Table 4.8: Disaster Preparedness and Performance of community health promotion projects

Statement	5	4	3	2	1		Mean	SDV
	F (%)	F (%)	F (%)	F (%)	F (%)			
1. Epidemic might occur due to poor waste management	193 (57.8)	89 (26.6)	12 (3.6)	23 (6.9)	17 (5.1)	334	3.93	0.609
2. Overcrowding in the area is a risk due to corona virus pandemic	155 (46.4)	78 (23.4)	37 (11.1)	33 (9.9)	31 (9.3)	334	3.71	0.872
3. A warning is sent to the people before onset of disaster and people respond accordingly.	170 (50.9)	100 (29.9)	28 (8.4)	18 (5.4)	18 (5.4)	334	3.82	0.731
4. Disaster warning information is disseminated in a way people understand and reaches the targeted population	187 (55.9)	77 (23.1)	35 (10.5)	15 (4.5)	20 (5.9)	334	3.80	0.718
5. The trainings and emergency drills performed have a positive impact on residents	192 (57.5)	92 (27.5)	28 (8.4)	15 (4.5)	7 (2.1)	334	3.93	0.609
6. There is need for training and exercise in both primary and secondary schools in the area	194 (58.1)	87 (26.1)	29 (8.7)	14 (4.2)	10 (2.9)	334	3.89	0.614
Composite Mean and Composite Standard Deviation							3.85	0.692

Statement one on the second variable obtained information on epidemic might occurrence due to poor waste management. The results were as follows; 193(57.8%) strongly agreed, 89(26.6%) agreed, 12(3.6%) were neutral, 23(6.9%) disagreed and 17(5.1%) strongly disagreed with a mean and a standard deviation of 3.93 and 0.609 respectively. The statement when compared to the composite mean (3.85), this implies that the statement contributes positively to the variable disaster preparedness. This is as compared to the line item mean (M=3.93) against the composite mean (M=3.85). The findings from key informants concur with the statement and actually there has been a number of erupted epidemic diseases that was caused by improper waste management in the area. The findings agrees with the previous findings Improper waste management creates serious negative impact on health and environment Owusu (2010)

The second statement highlighted on overcrowding in the area as a risk due to corona virus pandemic. The study obtained the following results; 155(46.4%) strongly agreed, 78(23.4%) agreed, 37(11.1%) were neutral, 33(9.9%) disagreed and those who strongly disagreed 31(9.3%) with a mean and standard deviation of 3.71 and 0.872 respectively. This implies that the statement negatively contributes to the variable and should be further reviewed.

The third statement indicated whether a warning is sent to the people before onset of disaster and people respond accordingly. As per the findings, 170(50.9%) strongly agreed, 100(29.2%) agreed, 28(8.4%) were neutral about the statement, 18(1%) disagreed and strongly disagreed with a mean and standard deviation of 3.82 and 0.731 respectively. Findings from the key informants points out that the area has experienced several cases of corona that go unreported and due to overcrowding in the area the spread has been fast. The findings indicate that the statement has a negative contribution on the variable and should be reviewed.

The study found out on whether disaster warning information is disseminated in a way people understand and reaches the targeted population. The results indicate that 187(55.9%) strongly agreed, 77(23.1%) agreed, 35(10.5%) were neutral, 15(4.5%) disagreed and 20(5.9%) strongly disagreed with a mean and a standard deviation of 3.80 and 0.718 respectively. The statement when compared to the composite mean (3.85), implies that the statement should be reviewed as the mean and standard deviation of the line item are less than the composite mean. The key informants agreed with the statement that disaster warning is disseminated in a way people easily understand to the targeted population especially now that most of the members of the family have some level of education and could understand easily.

Statement number 5 of the variable obtained the following results; 192(57.5%) strongly agreed, 92(27.5%) agreed, 28(8.4%) were neutral, 15(4.5%) disagreed and 7(2.1%) strongly disagreed with a mean of 3.93 and a standard deviation of 0.609. The findings imply that the trainings and emergency drills performed have a positive impact on residents has a positive contribution on the variable in comparison to the composite mean 3.85. This is also supported by most of the respondents who agreed (85%). The findings from the key informants suggested that trainings and emergency drills has plaid an important role in disaster preparedness. Emergency drills is very important when conducting emergency evacuation, the training drill assist people to know their roles and responsibilities in case of an emergency Irwin et al.(2013)

The last statement gathered data the need for training and exercise in both primary and secondary schools in the area. The results were as follows; 194(58.1%) strongly agreed, 87(26.1%) agreed, 29(8.7%) were neutral, 14(4.2%) disagreed and those who strongly disagreed 10(2.9%) with a mean and standard deviation of 3.89 and 0.614 correspondingly. This implies that the statement contributes positively to the variable and has an influence on the response variable being supported by 84.2% of the respondents. Findings from key informants suggested that training and exercise is of paramount importance and should be stated at the primary school level. Disaster risk are a common occurrence with Kenyan schools therefore the Kenyan government should develop a curriculum on risk management and train teachers, students, managers and communities. Munyiri et al. (2019)

4.6.1 Correlation Analysis between Disaster Preparedness and Performance of community health promotion projects

The researcher aimed on determining the association amongst disaster Preparedness and Performance of community health promotion projects using the Pearson Correlation Coefficient. This enables in establishing both the direction and strength of the association amongst disaster Preparedness and Performance of community health promotion projects. Table 4.10 gives the outcomes of the correlation.

Table 4.9: Correlation Analysis between Disaster Preparedness and Performance of community health promotion projects

Variable		Disaster Preparedness	Performance of Community Health Promotion Projects
Disaster Preparedness	Pearson Correlation	1	0.712**
	Sig. (2-Tailed)		0.000
	n	334	334
Performance of Community Health Promotion Projects	Pearson Correlation	0.712**	1
	Sig. (2-Tailed)	0.000	
	n	334	334

** . Correlation is significant at the 0.05 level (2-tailed)

Table 4.10 displays the outcomes amongst disaster preparedness and performance of community health promotion projects. The results revealed that there is a strong positive correlation of 0.712 disaster preparedness and performance of community health promotion projects, that mean that a significant relationship exists having a p value Of 0.000 that is less than 0.05 significance level. This shows that disaster preparedness influences performance of community health promotion projects. .Disaster preparedness plays a key role in health sector by ensuring that procedures, systems and resources are readily available in case of disaster and provide a rapid and effective support to victims thus enhancing relief activity and restoration of services. Pan American Health Organization (2014)

Table 4.10: Model Summary for Disaster preparedness and Performance of community health Projects

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.712 ^a	0.507	0.501	0.82623

a. Predictors (Constant), disaster preparedness

Table 4.10 results shown above gives an indication of the level that the predictor variable above is accountable for the change in the overall model. The R Square produced was 0.507 showing that disaster preparedness contributes to 50.7% of the changes of the dependent variable performance of community health projects. This indicates that about 49.3% of other factors were not accounted for in this model. According to the findings of the study, disaster preparedness has a substantial impact on the performance of community health programs.

Table 4.11: Coefficients of Disaster preparedness and Performance of community health Projects

Variables	Un-standardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	0.233	0.143		1.629	0.001
Disaster Preparedness	0.774	0.048	0.712	15.500	0.000

a. Dependent Variable: performance of community health projects

The outcomes in Table 4.13 gave a standardized beta value of 0.712 showing that an increment in disaster preparedness with a unit led to 71.2% growth in the changes of performance of community health projects. Overall model was suitable in predicting performance of community health projects given project preparedness at $p < 0.05$. The regression model derived was as follows;

Performance of community health projects = $0.233 + 0.712$ (Disaster preparedness) + e; $t = 15.500$; $p < 0.05$.

Thus, the study deduced that Disaster preparedness has a significant influence on performance of community health projects. The current findings of the study indicated that the predictor variable disaster preparedness significantly influences performance of community health projects in Kangemi informal settlement Nairobi County. These findings ($R^2 = 0.507$) can be applied explaining 50.7% of the changes in the response variable performance of community health projects

4.7 Disaster Response and Performance of Community Health Promotion Projects

The third variable sought to determine how disaster response influences performance of community health promotion projects in informal settlement of Kangemi in Nairobi County. To achieve this, the respondents were required to give their opinions in their level of agreement or disagreement with the statement using a Likert scale of 1 – 5 where 1 = Strongly Disagree (SD), 2 = Disagree (D), 3 = Neutral (N), 4 = Agree (A) and 5 = Strongly Agree (SA). The results are presented in the Table 4.14.

Table 4.12: Disaster Response and Performance of community health promotion projects

Statement	5 F (%)	4 F (%)	3 F (%)	2 F (%)	1 F (%)	n	Mean	SDV
1. Whenever disaster hits the number of the victims is always submitted to the authorities	196 (58.7)	99 (29.6)	22 (6.6)	9 (2.7)	8 (2.4)	334	4.06	0.667
2. Access to basic needs like food and shelter is a problem then there is an emergency	193 (57.8)	91 (27.2)	30 (8.9)	11 (3.3)	9 (2.7)	334	4.03	0.608
3. The local authority intervenes whenever there is an emergency and there is a protocol to follow whenever there is an emergency	200 (59.9)	89 (26.6)	22 (6.6)	13 (3.9)	10 (2.9)	334	4.10	0.681
4. The community religious institutions, private organizations and nonprofit organizations are actively involved in disaster rescue operations	189 (56.6)	94 (28.1)	20 (5.9)	16 (4.8)	15 (4.5)	334	3.94	0.544
5. A team of expertise reach in the minimal time on emergency	174 (52.1)	102 (30.5)	33 (9.9)	12 (3.6)	13 (3.9)	334	3.97	0.561
6. Rescuing is always conducted in an orderly manner	191 (57.2)	89 (26.6)	28 (8.4)	26 (7.8)	0 (0.0)	334	3.91	0.541
Composite Mean and Composite Standard Deviation							4.00	0.600

The first statement under the third variable sought to find out whenever disaster hits the number of the victims is always submitted to the authorities. The findings show that majority of the respondents 196(58.7%) strongly agreed with the statement, 99(29.6%) agreed while 22(6.6%) were neutral, 9(2.7%) disagreed and 8(2.4%) strongly disagreed. The statement drew a mean and a standard deviation of 4.06 and 0.667 respectively. This implies that the statement had a positive contribution on the variable disaster response since when compared to the composite mean (4.00), the statement had a greater mean (4.06). The findings from key informants points out that the number of disaster victims is first submitted to the area chief who informs other government bodies. Disaster victim identification is used to identify the victims and it's the duty of the national authorities to issue accurate reports on the status (Kwon 2020)

The study obtained responses on statement number 2, access to basic needs like food and shelter is a problem when there is an emergency. The results indicate that 193(57.8) strongly agreed, 91(27.2%) agreed, 30(8.9%) were neutral, 11(3.3%) disagreed and 9(2.7%) strongly disagreed with a mean and a standard deviation of 4.03 and 0.608 respectively. The statement

when compared to the composite mean 4.00, implies that access to basic needs like food and shelter is a problem then there is an emergency is a challenge and as supported by 85% of the respondents who agreed. The findings from key informants suggest that in as much as the government has tried in responding to disaster sometimes the victims are many that the resources provided are inadequate. Persons who have been forced to flee from their homes due to a crisis experience inadequate basic needs like food water and shelter (Pascal 2019)

The third statement sought to find out whether the local authority intervenes whenever there is an emergency and there is a protocol to follow whenever there is an emergency, the study obtained the following results; 200(59.9%) strongly agreed, 89(26.6%) agreed, 22(6.6%) were neutral, 13(3.9%) disagreed and those who strongly disagreed 10(2.9%) with a mean and standard deviation of 4.10 and 0.681 respectively. This implies that the statement contributed positively to the variable disaster response. This is evident when comparing the composite mean (M=4.00) to the line item mean (M=4.10). Findings from key informants agree with the statement that the government intervenes whenever a disaster occurs and protocols of disaster response are adhered to. The local government develop and maintain local disaster management plan (Nowel 2018)

The findings for the fourth statement indicate that the community religious institutions, private organizations and non-profit organizations are actively involved in disaster rescue operations. The descriptive findings from the Table 4.14 indicate that 189(56.6%) strongly agreed, 94(28.1%) agreed, 20(5.9%) were neutral about the statement, 16(4.8%) disagreed and 15(4.5%) strongly disagreed. This implies that 84.7% of the respondents agreed with the line item statement. The composite mean however was greater than the line item mean implying that the statement negatively contributed to the variable disaster response. The key informants totally agree with the statement that church organizations, private and non-profit institutions have been very helpful in responding to disaster by ensuring the disaster victims are properly taken care of.

Statement number five of the variable sought to find out whether A team of expertise reach in the minimal time on emergency. The results from the Table 4.14 indicate that 174(52.1%) strongly agreed, 102(30.5%) agreed, 33(9.9%) were neutral, 12(3.6%) disagreed and 13(3.9%) strongly disagreed with a mean and a standard deviation of 3.97 and 0.561 respectively. The statement when compared to the composite mean (4.00), implies that the line item negatively contributes to the predictor variable since the statement mean (M=3.97) is less than the composite mean. The findings from the key informants indicate that a team of

expertise arrive in the shortest time possible but still there is a challenge of accessibility to the slum that delays the response whenever there is an emergency.

The findings obtained from the sixth statement on rescuing is always done in an orderly manner whenever there is a disaster. The results obtained were as follows; 191(57.2%) strongly agreed, 89(26.6%) agreed, 28(8.4%) were neutral, 26(7.8%) disagreed with a mean and a standard deviation of 3.91 and 0.541 respectively. The findings indicate that the statement has a negative contribution on the variable. The key informant concur with the statement that disaster response is mostly done in an orderly manner to avoid further damages and accidents. The findings however indicate that a majority of the respondents agreed (84.2%).

4.7.1 Correlation between Disaster Response and Performance of Community Health Promotion Projects

Correlation analysis using Pearson Product Moment Correlation was done to establish the relationship between disaster response and performance of health promotion projects. The values obtained from the correlation analysis range from perfect negative association to perfect positive association. This was done to establish the strength and direction of the association amongst the predictor and the response variable. The correlation results are presented in the Table 4.15.

Table 4.13: Correlation for Disaster Response and Performance of Community Health Promotion Projects

Variable		Disaster Response	Performance of Community Health promotion Projects
Disaster Response	Pearson Correlation	1	0.783**
	Sig. (2-Tailed)		0.000
	n	334	334
Performance of Community Health promotion Projects	Pearson Correlation	0.783**	1
	Sig. (2-Tailed)	0.000	
	n	334	334

** . Correlation is significant at the 0.05 level (2-tailed)

The outcomes of the correlation on Table 4.15 between Disaster response and performance of community health promotion projects shows that there was statistically significant correlation between disaster response and performance of community health promotion projects since the p-value of 0.000 was smaller than the alpha value 0.05. This indicates that

disaster response has a significant influence on performance of water and sanitation projects. Effective strategies of disaster response is key in saving and improving the lives of disaster victims. Li et al. (2019)

Table 4.14: Model Summary for Disaster Response and Performance of Community Health Projects

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.783 ^a	0.613	0.611	0.88124

a. Predictors (Constant), Disaster Response

Table 4.17 results shown above gives an indication of the level that the predictor variable above is accountable for the change in the overall model. The R Square produced was 0.613 showing that Disaster response contributes to performance of community health projects by 61.3% and other factors not incorporated in the model justified 39.7% of the changes. The study showed that disaster response has a substantial beneficial impact on the success of community health programs.

Table 4.15: Coefficients of Disaster Response and Performance of Community Health Projects

Variables	Un-standardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	0.748	0.296		2.527	0.000
	0.654	0.066	0.783	9.909	0.000

a. Dependent Variable: performance of community health projects

Table 4.18 results gives a standardized beta value of 0.783 showing the when disaster response increases with a unit it will lead to a 78.3% increment in the changes of performance of community health projects. The overall model was considered suitable in predicting performance of community health projects given disaster response at $p < 0.05$. The regression model would be as such;

Performance of community health projects = $0.748 + 0.783 (\text{Disaster Response}) + e$; $t = 9.909$; $p < 0.05$. This demonstrates that disaster response has a significant influence on performance community health projects.

4.8 Disaster Recovery and Performance of Community Health Promotion Projects

The fourth variable of the study aimed on assessing how disaster recovery influence performance of community health promotion projects in informal settlement of Kangemi in Nairobi County.

To achieve this, the respondents were required to give their opinions in their level of agreement or disagreement with the statement using a Likert scale of 1 – 5 where 1 = Strongly Disagree (SD), 2 = Disagree (D), 3 = Neutral (N), 4 = Agree (A) and 5 = Strongly Agree (SA). The results are presented in the Table 4.19.

Table 4.16: Disaster Recovery and Performance of community health promotion projects

Statement	5 F (%)	4 F (%)	3 F (%)	2 F (%)	1 F (%)	N	Mean	SDV
1. Disaster victims get help from the government in rebuilding their homes	193 (57.8)	91 (27.2)	20 (5.9)	14 (4.2)	16 (4.8)	334	3.94	0.877
2. There is sufficient provision of food, water and health services	197 (58.9)	98 (29.3)	18 (5.4)	15 (4.5)	6 (1.8)	334	4.01	0.732
3. The support groups in the area has positive influence in minimizing panic attack whenever there is an emergency	195 (58.4)	93 (27.8)	29 (8.7)	9 (2.7)	8 (2.4)	334	3.95	0.825
4. Most businesses in the area are not insured therefore take time to recover after disaster while others shift to a less disaster-prone areas	189 (56.6)	94 (28.1)	20 (5.9)	16 (4.8)	15 (4.5)	334	3.87	0.899
5. Communal activities help in rebuilding social connections	184 (55.1)	97 (29.0)	28 (8.4)	12 (3.6)	13 (3.9)	334	3.89	0.881
6. The community has enough resources to support community resilience in minimal time	194 (58.1)	88 (26.3)	24 (7.2)	24 (7.2)	4 (1.2)	334	3.94	0.821
Composite Mean and Composite Standard Deviation							3.93	0.839

Statement number 1 for the last variable study sought to find out disaster victims get help from the government in rebuilding their homes. The results from the Table 4.19 indicate that 193(57.8%) strongly agreed, 91(27.2%) agreed, 20(5.9%) were neutral, 14(4.2%) disagreed and 16(4.8%) strongly disagreed with a mean and a standard deviation of 3.94 and 0.877 respectively. The statement when compared to the composite mean (3.93), implies the line item of the variable has a positive contribution on the predictor variable as supported by 85%

who agreed. Findings from key informants indicate that most genuine disaster victims get help from the government in rebuilding their homes. Disaster survivors get help from churches, national and international NGOs in rebuilding their homes Carrasco (2018)

Statement number 2, there is sufficient provision of health services, the study obtained the following results; 197(58.9%) strongly agreed, 98(29.3%) agreed, 18(5.4%) were neutral, 15(4.5%) disagreed and those who strongly disagreed 6(1.8%) with a mean and standard deviation of 4.01 and 0.732 respectively. The key informants agree with the statement that there is sufficient provision of health services with the available resource that help speed up the healing process. This implies that the statement contributes positively to the variable and has an influence on the predictor variable being supported by 88.2% of the respondents.

The third statement obtained the following results as per the findings on Table 4.19; 195(58.4%) strongly agreed, 93(27.8%) agreed, 29(8.7%) were neutral about the statement, 9(2.7%) disagreed and 8(2.4%) strongly disagreed with a mean and standard deviation of 3.95 and 0.825 respectively. The findings indicate that the support groups in the area has positive influence in minimizing panic attack whenever there is an emergency. This is because the line item positively contributes to the predictor variable as compared to the composite mean 3.93. Findings from the key informants indicate that support groups in the area has played a major role in disaster victims in their recovery process. Support groups are set to support each other by sharing similar experiences and interest this provides emotional support (Cohen 2002)

The findings on the fourth line item statement revealed most businesses in the area are not insured therefore take time to recover after disaster while others shift to a less disaster-prone areas. The line item mean indicated 3.87 with standard deviation of 0.899. The findings however show that majority of the respondents agreed on the statement. The results indicate that 189(56.6%) strongly agreed, 94(28.1%) agreed, 20(5.9%) were neutral, 16(4.8%) disagreed and 15(4.5%) strongly disagreed with a mean and a standard deviation of 3.87 and 0.899 respectively. Findings from the key informants agrees with the statement that most businesses in the area are uninsured though they have the information that is the reason why when most businesses are hit they go under. The percentage of slum dwellers with no any type of insurance is high (Kimani 2012)

The findings obtained from the fifth statement sought to find out if communal activities help in rebuilding social connections. The findings were as follows; 184(55.1%) strongly agreed, 97(29.0%) agreed, 28(8.4%) were neutral, 12(3.6%) disagreed and 13(3.9%) strongly

disagreed with a mean and a standard deviation of 3.89 and 0.881 respectively. communal activities help in rebuilding social connections. The line item has a negative contribution to the predictor variable since the composite mean (M=3.89) is less than the line item mean at 3.93. The findings from the key informants agrees with the statement that its true communal activities help in rebuilding social activities and also helps in peace building amongst members of the community.

The sixth statement of the variable on whether the community has enough resources to support community resilience in minimal time. The descriptive statistics obtained was; 194(58.1%) strongly agreed, 88(26.3%) agreed, 24(7.2%) were neutral, 24(7.2%) disagreed and 4(1.2%) strongly disagreed with a mean and a standard deviation of 3.94 and 0.821 respectively. The outcomes indicate that the line item has a positive influence on the predictor variable as supported by 84.4% of the respondents. Findings from the key informants suggest that with proper management team there is sufficient resources to support community resilience. The national and local government share resources when necessary and build disaster resilience (Wilkins and Margot 2009)

4.8.1 Correlation Analysis on Disaster Recovery an Performance of Community Health Promotion Projects

The researcher sought to determine the association amongst disaster recovery and performance of community health promotion projects using the Pearson Correlation Coefficient. This assists in establishing the strength and direction of the association amongst disaster recovery and performance of community health promotion projects. The correlation outcomes are shown in the Table 4.20.

Table 4.17: Correlation Analysis on Disaster Recovery an Performance of Community Health Promotion Projects

Variable		Disaster Recovery	Performance of Community Health Promotion Projects
Disaster Recovery	Pearson Correlation	1	0.544**
	Sig. (2-Tailed)		0.001
	n	334	334
Performance of Community Health Promotion Projects	Pearson Correlation	0.544**	1
	Sig. (2-Tailed)	0.001	
	n	334	334

** . Correlation is significant at the 0.05 level (2-tailed)

The outcomes of the correlation on Table 4.20 between disaster recovery and performance of

community health promotion projects. The outcomes revealed that there is a moderate positive correlation of 0.544 amongst disaster recovery and performance of community health promotion projects. With the p value being 0.001 that is lower than 0.05 significance level showed that a significant association exists. This shows that disaster recovery has a significant influence on performance of Community health promotion projects. A healthy community approach to disaster recovery greatly influences health of the population (Costa 2018)

Table 4.18: Model Summary for Disaster recovery and Performance of Community Health Projects

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.544 ^a	0.296	0.294	1.101

a. Predictors (Constant), disaster recovery

Table 4.22 results shown above gives an indication of the level that the predictor variable above is accountable for the change in the overall model. The R² produced is 0.296 showing that disaster recovery contributes to about 29.6% of the changes in the dependent variable performance of community health projects. According to the data, additional factors that were not addressed in this model accounted for 70.4 percent of the variance. The study concluded that disaster recovery has a positive significant influence on performance of water and sanitation projects.

Table 4.19: Coefficients of Disaster recovery and Performance of Community Health Projects

Variables	Un-standardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	0.653	0.218		2.995	0.000
	0.538	0.032	0.544	16.813	0.001

a. Dependent Variable: performance of community health projects

Table 4.23 gave a standardized beta value of 0.544 showing that an increment in disaster recovery with a unit led to 54.4% increment in the variations of performance of community health projects. Overall model was fit to predict performance of community health projects given disaster response at $p=0.001 < 0.05$. The regression model would be as such;

Performance of water and sanitation projects = $0.653 + 0.544 (\text{disaster recovery}) + e$; $t = 16.813$; $p < 0.05$.

The findings of the study show that disaster recovery ($R^2=0.296$) explains 29.6% of the variations on performance of community health projects in Kangemi informal settlement, Nairobi County. This therefore concludes that disaster recovery has a significant influence on performance of community health projects.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

In this chapter, the findings in the previous chapter are summarized and conclusions and recommendation are derived in line with the research objectives.

5.2 Summary of the Findings

The summary focused on the major findings obtained from the variables and gave a summary of the findings as per the findings in of the variables in chapter four:

5.2.1 Disaster mitigation and performance of community health projects

The study first objective was seeking to examine the influence of mitigation measures on performance of community health projects on Kangemi informal settlement in Nairobi County. The mean of mean and the standard deviation of the variable were 4.05 and 0.515 respectively. Correlation between disaster mitigation and performance of community health projects indicated existence of a strong correlation of 0.808 thus disaster mitigation influences the performance of community health projects

5.2.2 Disaster Preparedness and Performance of community health projects s

Secondly, the study aimed on assessing the extent to which disaster preparedness influences the performance of community health projects on Kangemi informal settlement in Nairobi County. The mean of mean and the standard deviation of the variable were 3.85 and 0.692 respectively. Correlation between disaster preparedness and performance of community health projects shown that there is a strong positive correlation of 0.712 thus disaster preparedness influences the performance of community health projects

5.2.3 Disaster Response and Performance of Community Health Projects

The third objective of the study sought to determine the influence of disaster response on performance of community health projects on Kangemi informal settlement in Nairobi county. The mean of mean and the standard deviation of the variable were 4.00 and 0.600 respectively. Correlation between disaster response and performance of community health promotion projects indicated that there was a moderate positive correlation of 0.783 thus disaster response influences the performance of community health projects.

5.2.4 Disaster Recovery and Performance of community health projects

The fourth variable aimed on establishing the degree that disaster recovery influences performance of community health projects on Kangemi informal settlement in Nairobi county. The mean and the standard deviation of the variable were 3.93 and 0.839 respectively. Correlation between disaster recovery and performance of community health projects indicated that there is a moderate positive correlation of 0.544 between disaster recovery and performance of community health projects thus, disaster preparedness influences the performance of community health projects

5.3 Conclusions

The research study focused on investigating disaster management cycle and performance of community health projects in Kangemi informal settlement, Nairobi. The first objective aimed on examining the mitigation measures on performance of community health projects on Kangemi informal settlement in Nairobi county. As indicated by the research findings, it was established that there was a strong positive correlation amongst disaster mitigation and performance of community health projects. By hazard mapping and avoiding the areas regarded as hazard zones, better land planning and protection of natural resources influences performance of community health projects

The second objective of the study sought to assess the extent to which disaster preparedness influences the performance of community health projects on Kangemi informal settlement in Nairobi County. The study findings established that a strong positive association amongst disaster preparedness and performance of community health projects. This implied that proper communication to a targeted group, timely warning, training exercises and emergency significantly influence performance of community health projects.

The findings on the third objective of the research study demonstrated that disaster response influenced performance of performance of community health projects on Kangemi informal settlement in Nairobi county. The results concluded that there was a strong positive correlation between disaster response and performance of community health projects. The study concludes that availability of resources, local authority in collaboration with other institutions, community participation and a team of expertise that are timely significantly influences performance of community health projects on Kangemi informal settlement in Nairobi county.

The fourth objective aimed on establishing the extent to which disaster recovery influences performance of community health projects on Kangemi informal settlement in Nairobi County. The results from the study concluded that there was a moderate positive correlation between disaster recovery and performance of community health projects. This implied that involvement of the government in collaboration with other institutions, support groups, insurance agencies and the community at large in recovering process significantly influence performance of community health projects on Kangemi informal settlement in Nairobi County.

5.5 Recommendations

The researcher derived the below recommendations;

1. The research established that disaster mitigation is an important factor in performance of community health projects. The study henceforth gives a recommendation that it is crucial to use all the available resources in disaster mitigation of community health projects in order to reduce the chances of going to the next stage of disaster management cycle.
2. There is need to adequately be prepared in case of a disaster since it's difficult to mitigate all the natural disasters., all systems in disaster preparedness should work together to achieve the best results
3. The research established that disaster response significantly influences performance of community health promotion projects. The study further recommends that the National government, the county government and NGOs dealing with disaster response programs increase funding, expertise and training so as to avail the necessary resources that will help in responding to disaster that cannot be mitigated .
4. The study also established that disaster recovery significantly influences performance of community health projects. The study recommends that there should department set aside to monitor how victims from disaster progress in their recovery and the government should have a yearly budget for disaster recovery.

5.6 Suggestions for Further Research

The researcher identified the below as areas needing further research;

1. Application of project management methodologies in disaster management programs in Kenya.
2. Environmental issues in project management and social analysis should be carried out in informal settlement areas in Kenya.

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APPENDICES

Appendix 1: Letter Request for Transmittal of data

Esther Tolometi

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Phone 0728323365

TO WHOM IT MAY CONCERN

I am a master's student from the university of Nairobi carrying out research project as partial requirement for the award of master's degree in project planning and management. The study seeks to establish the influence of disaster management cycle and performance of community health projects a case of Kangemi informal settlement, Nairobi county.

Through this letter I request you to participate in this study as a respondent by completing the attached questionnaire/ interview guide (where applicable) as precise as possible. The findings will strictly be used for academic purposes with no disclosure of respondent names. Your sincere participation will be greatly appreciated.

Thanking you

Esther Tolometi

L50/270624/2019

University of Nairobi, School of Open and Distance Learning.

Appendix II: Questionnaires for residents

The objective of this questionnaire is to collect information on the influence of Disaster management cycle and performance of health promotion projects, a case of Kangemi informal settlement, Nairobi. The information collected will be used for academic purposes and will be handled with professionalism and confidentiality. Please fill accordingly in each section.

Section A: Demographic Information

1. Gender

Male { }

Female { }

2. Age

Below 25 years

26-30 years

31-35 years

36-40 years

41-45 years

46-50 years

Above 51 years

3. Highest level of education attained

i. PhD

ii. Master's Degree

iii. Bachelor's degree

iv. Diploma

v. Certificate

vi. Others (please specify)

4. Are you a resident of Kangemi slum?

Yes { } No { }

If yes above, how long have you been living in the area?

Section B: Performance community health promotion projects

5. Are you aware of any community health promotion projects in Kangemi informal projects?

Yes { } No { }

6. What are some of the impacts of community health promotion projects that you have noted? (Positive and negative impacts)

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7. Please rate level of agreement with the below statements in a scale of 1-5 where; 5 – Strongly Agree; 4 – Agree; 3 – Neutral; 2 – Disagree; and 1 – Strongly Disagree

Statements	5	4	3	2	1
Financial support for health promotion projects are available in time					
Health promotion projects are well budgeted for before implementation of the projects					
Health promotion projects are regarded as one of the most important projects in the area					
Most lives have been saved by health promotion projects in the area					
Social analysis has always been carried out before project implementation					
The community has always been engaged in implementation of the projects					
The health promotion projects implemented are of modern technology					
The beneficiaries of the projects are educated on how to use the new technology before handing over of the projects					
The projects in the area are carried out by collaboration of organizations					
The government actively participate with private companies and nonprofit organization in health promotion projects					

Section C: Disaster Mitigation

Kindly rate the extent to which you agree to the following statements on a scale of 1-5 where 5 – Strongly Agree; 4 – Agree; 3 – Neutral; 2 – Disagree; and 1 – Strongly Disagree

Statements	5	4	3	2	1
Some areas are more prone to hazard than others					
There have been recurring hazards in the area over the years					
Pregnant women, children and the aged are at more risk in case of an emergency					
There are no sufficient medical facilities in the area in case of an emergency					
Most families in the area live in sub-standard building					
I consider most household as overcrowded					
There is poor/ no drainage system in the area					
There is poor solid waste disposal in the area					

Section D: Disaster Preparedness

Kindly rate the extent to which you agree to the following statements on a scale of 1-5 where 5 – Strongly Agree; 4 – Agree; 3 – Neutral; 2 – Disagree; and 1 – Strongly Disagree

Statements	5	4	3	2	1
Epidemic might occur due to poor waste management					
Overcrowding in the area is a risk due to corona virus pandemic					
A warning is sent to the people before onset of disaster					
People respond accordingly to the warning sent					
Disaster warning information is disseminated in a way people understand					
The means of communication used reaches the targeted group					
The trainings and emergency drills performed have a positive impact on residents					
There is need for training and exercise in both primary and secondary schools in the area					

Section E: Disaster Response

Kindly rate the extent to which you agree to the following statements on a scale of 1-5 where 5 – Strongly Agree; 4 – Agree; 3 – Neutral; 2 – Disagree; and 1 – Strongly Disagree

Statements	5	4	3	2	1
Whenever disaster hits the number of the victims is always submitted to the authorities					
Access to basic needs like food and shelter is a problem then there is an emergency					
The local authority intervenes whenever there is an emergency					
There is a protocol to follow whenever there is an emergency					
The community is actively involved in disaster rescue operations					
Religious institutions, private organizations and non profit organizations helps in provision of essential needs					
A team of expertise reach in the minimal time on emergency					
Rescuing is always conducted in an orderly manner					

Section F: Disaster Recovery

Kindly rate the extent to which you agree to the following statements on a scale of 1-5 where 5 – Strongly Agree; 4 – Agree; 3 – Neutral; 2 – Disagree; and 1 – Strongly Disagree

Statements	5	4	3	2	1
Disaster victims get help from the government in rebuilding their homes					
There is sufficient provision of health services					
Most people in the area get panic attack whenever there is an emergency					
There are support groups in the area has positive influence on the residents					
Most businesses in the area are not insured therefore take time to recover after disaster					
Most businesses shift after disaster to a less disaster-prone areas					
Communal activities help in rebuilding social connections					
The community has enough resources to support community resilience in minimal time					

Appendix III: Interview Guides for Key Informants

This questionnaire is for collection of information on disaster management cycle and performance of health promotion projects a case of Kangemi informal settlement in Nairobi county. The obtained information is exclusively utilized for academic reasons and conclusions are expected to make an important contribution to implementation of health promotion projects. Data collected will be treated professionally and confidentially. Kindly assist with the interview.

Section A: Specific Information

1. Do you know of any health promotion projects around?
2. What are your views on the quality of health promotion projects?
3. Would you say that the health promotion projects implemented have been effective to the people?
4. What are the mitigation measures taken to improve the health of the people?
5. What are the challenges faced when implementing mitigation measures?
6. What are some of the preparation put in place in readiness to handle?
any disaster that might occur
7. Do you budget before hand for an emergency that might occur
8. Do you receive help from the government/private organizations and non profit organization in case of an emergency?
9. What are the challenges faced when responding to emergencies?
10. After disaster do you do a follow up on the victims and for how long.
11. What are the challenges faced during recovery stage?






Appendix VI: Krejcie and Morgan Table

<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	100000	384

Note.—*N* is population size. *S* is sample size.

Source: Krejcie & Morgan, 1970

Appendix V: Nacosti Research Permit

 REPUBLIC OF KENYA	 NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION
Ref No: 584012	Date of Issue: 01/October/2021
RESEARCH LICENSE	
	
This is to Certify that Ms. Esther Naliaka Tolometi of University of Nairobi, has been licensed to conduct research in Nairobi on the topic: "Disaster Management Cycle and Performance of Community Health Projects: A case of Kangemi Informal Settlement, Nairobi County." for the period ending : 01/October/2022.	
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