STRATEGIC MANAGEMENT PRACTICES, INTERNAL ORGANIZATIONAL FACTORS AND DISASTER MANAGEMENT IN KENYA: A CASE OF NATIONAL GOVERNMENT DEPARTMENTS

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A Thesis Submitted to the Institute of Postgraduate Studies in Partial Fulfilment of the Requirement for the Award of Doctor of Philosophy Degree in Business Administration (Strategic Management)

KABARAK UNIVERSITY

OCTOBER, 2021

DECLARATION

The research thesis is my own work and to the best of my knowledge it has not been presented for the award of a degree in any university or college.

Signed: Date: 12/05/2021

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RECOMMENDATION

To the Institute of Postgraduate Studies Research:

The Research Thesis entitled "An Analysis of the Effects of Strategic Management Practices on Disaster Management in Kenya (A Study of National Government Ministries)" and written by Linah Chepkoech Boit is presented to the Institute of Postgraduate Studies of Kabarak University. We have reviewed the Research Thesis and recommend it be accepted in partial fulfilment of the requirement for award of the degree of Doctor of Philosophy in Business Administration (Strategic Management).

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DEDICATION

There are a number of people without whom, this thesis might not have been written, and whom I am greatly indebted to them. Every challenge needs self-effort as well as guidance of elders especially those who are very close to my heart.

My humble effort, I dedicate to my loving parents, Anna and Fredrick Boit, who have been a source of encouragement and inspiration to me throughout my life. Your affection, love and prayers make me able to get such success and honour. A very special thank you for providing me with unfailing support and continuous encouragement throughout my years of study and through the process of researching and writing this thesis. This accomplishment would not have been possible without you. Throughout my life, you have actively supported me in my determination to find and realise my potential, and to make this contribution to our country.

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ABSTRACT

In the past few decades, Kenya, like other African country, has reported a surge in the number of disasters. Kenya's response to disasters has been ad-hoc and uncoordinated. The institutional and legal frameworks on disaster management are fragmented. When a disaster strikes the end result has been loss of property, lives and livelihoods. WHO 2017 Framework for emergency preparedness identifies governance, planning, risk analysis and resources as elements of disaster preparedness. This research endeavored to analyse how strategic management practices affect disaster management in Kenya, with reference to national government departments. The study was based on social capital, protection motivation and contingency theories. The research philosophies applied were ontology and epistemology. The study adopted a census survey. The research design was descriptive survey and explanatory research. The target population was heads of departments in the Kenyan government ministries and the unit of analysis was the Kenyan government departments. The research studied a population of 128 respondents, a response rate of 82.8% was achieved. Data was obtained using semi-structured questionnaires. The data was analysed using descriptive and inferential statistics. Pearson product moment correlation was employed to assess the course and respective strengths of the linkage between environmental analysis, strategic planning, risk governance, resource management. Multiple regression analyses were employed to establish the effects of the factor variables and the moderating effect of internal organizational factors on disaster management in Kenya. The results indicate that there was a statistically significant effect of environmental analysis, strategic planning and strategic risk governance on disaster management in Kenya. However, there was no statistically significant effect of resource management strategies on disaster management in Kenya. Regression coefficients revealed a significant effect of strategic management practices on disaster management. Introduction of internal organizational factors showed that there was no statistically significant moderating effect of the factors on strategic environmental analysis and disaster management in Kenya. On the other hand, there was a statistically significant moderating effect of internal organizational factors on strategic planning, risk governance, resource mobilization and disaster management in Kenya. The study concludes that strategic management practices, particularly strategic environmental analysis, strategic planning and strategic risk governance are critical in disaster management. Internal organizational factors are also pertinent in the implementation of the strategic management practices for effective disaster management. The study recommends that in order to effectively carry out disaster management, national government departments ought to enhance environmental analysis, strategic planning, risk governance and resource management. The research findings imply the need to build up internal organizational structures to offer leadership on disaster mitigation in future. The findings are of benefit to the government of Kenya for policy decisions in the area of disaster management and to scholars for imparting knowledge to their students.

Keywords**:** *Disaster Management, Environmental Analysis, Internal Organization, National Government Ministries, Resource Management, Risk Governance, Strategic Management Practices and Strategic Planning*

TABLE OF CONTENTS

DECLARATION ..... **ii**
RECOMMENDATION ..... **iii**
COPYRIGHT ..... **iv**
DEDICATION ..... **v**
ACKNOWLEDGEMENTS ..... **vi**
ABSTRACT ..... **vii**
LIST OF TABLES ..... **xii**
LIST OF FIGURES ..... **xv**
LIST OF ABBREVIATIONS AND ACRONYMS ..... **xvi**
CONCEPTUAL OPERATIONAL DEFINITION OF TERMS ..... **xvii**
CHAPTER ONE **1**
INTRODUCTION **1**
1.1 Background of the Study 1
1.1.1 Strategic Management 1
1.1.2 Strategic Disaster Management 2
1.1.3 Disaster Management on the Global Scene 7
1.1.4 Case for African Region 9
1.1.5 Kenyan Situation 9
1.2 Statement of the Problem 11
1.3 Purpose of the Study 14
1.4 Objectives of the Study 15
1.4.1 General Objective of the Study 15
1.4.2 Specific Objectives of the Study 15
1.5 Research Hypotheses 15
1.6 Significance of the Study 16
1.7 Scope of the Study 17
1.8 Limitations of the Study 17
1.9 Assumptions of the Study 17
CHAPTER TWO **19**
LITERATURE REVIEW **19**
2.1 Introduction 19
2.2 Theoretical Framework 19

2.1.1 Social Capital Theory 19
2.2.2 Contingency Theory 23
2.3 Empirical Review 25
2.3.1 Strategic Management Practices and Disaster Management in Kenya 25
2.3.2 Environmental Analysis and Disaster Management in Kenya 28
2.3.3 Strategic Planning Practice and Disaster Management in Kenya 29
2.3.4 Risk Governance and Disaster Management in Kenya 33
2.3.5 Resource Management Strategies and Disaster Management in Kenya 36
2.3.6 Internal Organizational Factors on Strategic Management Practices and Disaster Management in Kenya 38
2.4 Conceptual Framework 44
2.4.1 Strategic Environmental Analysis on Disaster Management 46
2.4.2 Strategic Planning and Disaster Management 46
2.4.3 Risk Governance and Disaster Management 47
2.4.4 Resource Management Strategies and Disaster Management 48
2.4.5 Internal Organizational Factors and Disaster Management 49
2.4.6 Disaster Management 53
CHAPTER THREE 55
RESEARCH METHODOLOGY 55
3.1 Introduction 55
3.2 Research Philosophy 55
3.3 Research Design 57
3.4 Location of the Study 57
3.5 Sampling Procedure and Sample Size 57
3.6 Population of the Study 58
3.7 Data Collection Instruments 59
3.7.1 Data collection Procedure 61
3.7.2 Pilot Study 62
3.7.3 Instrument Validity 63
3.7.4 Reliability of the Instruments 63
3.8 Operationalization of Variables 65
3.9 Data Analysis 69
3.10 Assumption for Regression 73

3.11 Ethical Considerations 74
CHAPTER FOUR 76
RESEARCH FINDINGS AND DISCUSSION 76
4.1 Introduction 76
4.2 Response Rate 76
4.3 Data Screening and Cleaning 77
4.3.1 Missing Value Analysis 78
4.3.2 Outliers 78
4.3.3 Testing for Normality 79
4.3.4 Multi-collinearity Diagnostics 80
4.3.5 Test of Homogeneity of Variances 81
4.4.1 Demographic Information 82
4.4.2 Strategic Environmental Analysis 88
4.4.3 Strategic Planning 92
4.4.4 Strategic Risk Governance 95
4.4.5 Resource Management Strategies 100
4.4.6 Internal Organizational Factors 102
4.4.7 Disaster Management 104
4.5 Inferential Analysis 106
4.5.1 Strategic Environmental Analysis and Disaster Management 106
4.5.2 Strategic Planning and Disaster Management 109
4.5.3 Risk Governance and Disaster Management 112
4.5.4 Resource Management and Disaster Management 114
4.6 Hypothesis Testing 116
4.6.1 Strategic Environmental Analysis and Disaster Management 119
4.6.2 Strategic Planning Practice and Disaster Management 120
4.6.3 Strategic Risk Governance and Disaster Management 121
4.6.4 Resource Management Strategies and Disaster Management 123
4.6.5 Strategic Management Practices, Internal Organizational Factors and Disaster Management 124
CHAPTER FIVE 140
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS 140
5.1 Introduction 140

5.2 Summary of the Findings 140
5.3 Conclusion 143
5.4 Recommendations 147
5.4.1 Implications to Practice 149
5.4.2 Implications to Policy 150
5.4.3 Implications to Theory 151
5.5 Suggestions for Further Research 153
REFERENCES 155
APPENDICES 177
Appendix I: Questionnaire 177
Appendix II: Personal Letter of Introduction 182
Appendix III: Research Authorization letter 183
Appendix IV: Research Permit 184
Appendix V: Letter of Introduction from the University 185
Appendix VI: List of Ministries and their Directorates/Departments in the Government of Kenya 186

LIST OF TABLES

Table 1: Summary of Empirical Studies and Knowledge Gaps.....41

Table 2: Population.....59

Table 3: Reliability Coefficients.....65

Table 4: Operationalization of Research Variables.....67

Table 5: Response Rate.....76

Table 6: Residuals Statistics.....79

Table 7: Test for Normality.....80

Table 8: Multi-collinearity Diagnostics.....81

Table 9: Levene's Test for Homogeneity of Variances.....82

Table 10: Job Category in the Ministry.....83

Table 11: Disaster Management Plan.....85

Table 12: Strategic Environmental Analysis.....89

Table 13: Impact Risk Analysis and Internal Mechanisms for Detecting Disasters.....90

Table 14: Strategic Planning.....93

Table 15: Strategic Risk Governance.....95

Table 16: Reporting of Disaster Management Activities.....96

Table 17: Resource Management Strategies.....100

Table 18: External Sources of Funds.....101

Table 19: Internal Organizational Factors.....103

Table 20 Disaster Management.....104

Table 21: Strategic Environmental Analysis Subscale Correlation Matrix.....107

Table 22: Strategic Environmental Analysis Subscale Correlation: Model Summary.....108

Table 23: Strategic Environmental Analysis Subscale Regression: ANOVA.....108

Table 24: Strategic Environmental Analysis Subscale Regression: Coefficients.....109

Table 25: Strategic Planning Subscale Correlation Matrix.....110

Table 26: Strategic Planning Subscale Regression: Model Summary.....111

Table 27: Strategic Planning Subscale Regression: ANOVA 111

Table 28: Strategic Planning Subscale Regression: Coefficients 112

Table 29: Risk Governance Subscale Correlation Matrix 112

Table 30: Risk Governance Subscale Correlation: Model Summary 113

Table 31: Risk Governance Subscale Regression: ANOVA 113

Table 32: Risk Governance Subscale Regression: Model Summary.....114

Table 33: Resource Management Subscale Correlation Matrix 114

Table 34: Resource Management Subscale Regression: Model Summary.....115

Table 35: Resource Management Subscale Regression: ANOVA 115

Table 36: Resource Management Subscale Regression: Coefficients 116

Table 37: Correlation Matrix for Composite Variables.....117

Table 38: Regression Analysis for Composite Variables: Model Summary 118

Table 39: Regression Analysis for Composite Variables: ANOVA.....118

Table 40: Regression Analysis for Composite Variables: Coefficients.....118

Table 41: Moderating effect of internal organizational factors on the relationship.....125

between strategic management practices and disaster management: Model Summary 125

Table 42: Moderating effect of internal organizational factors on the relationship.....125

between strategic management practices and disaster management: ANOVA 125

Table 43: Moderating effect of internal organizational factors on the relationship.....127

between strategic management practices and disaster management: Coefficients.....127

Table 44: Moderating effect of internal organizational factors on the relationship between environmental analysis and disaster management: Model Summary 128

Table 45 Moderating effect of internal organizational factors on the relationship.....129

between environmental analysis and disaster management: ANOVA 129

Table 46: Moderating effect of internal organizational factors on the relationship.....130

between environmental analysis and disaster management: Coefficients 130

Table 47: Moderating effect of internal organizational factors on the relationship.....131

between strategic planning and disaster management: Model Summary 131

Table 48: Moderating effect of internal organizational factors on the relationship.....131

between strategic planning and disaster management: ANOVA.....131

Table 49: Moderating effect of internal organizational factors on the relationship between strategic planning and disaster management: Coefficients.....132

Table 50: Moderating effect of inter organizational factors on the relationship between risk governance and disaster Management-Model Summary.....133

Table 51: Moderating effect of inter organizational factors on the relationship between risk governance and disaster management-ANOVA.....133

Table 52: Moderating effect of inter organizational factors on the relationship between risk governance and disaster Management-Coefficients 134

Table 53: Moderating effect of inter organizational factors on the relationship between resource management and disaster management- Model Summary.....135

Table 54: Moderating effect of inter organizational factors on the relationship between resource management and disaster management- ANOVA 135

Table 55: Moderating effect of inter organizational factors on the relationship between resource management and disaster management- Coefficients 136

Table 56 Summary of Hypothesis Test Results 139

LIST OF FIGURES

Figure 1: Association among disaster preparedness and social capital and their outcomes ... 20

Figure 2: Conceptual Framework ... 45

Figure 3: Working Experience ... 84

Figure 4: Timeline Covered ... 85

Figure 5: Number of Disasters ... 86

Figure 6: Frequency of Review ... 87

Figure 7: Frequency of Risk Impact Analysis ... 91

Figure 8: Frequency of Reporting ... 97

Figure 9: Frequency of Induction ... 98

LIST OF ABBREVIATIONS AND ACRONYMS

ASAL	Arid and Semi-Arid Areas
DF	Degrees of Freedom
DRR	Disaster Risk Reduction
GOK	Government of Kenya
HFA	Hyogo Framework for Action
IFRC	International Federation of Red Cross and Red Crescent
NDMA	National Drought Management Authority
NGOs	Non-Governmental Organizations
PAHO	Pan African Health Organization
UN	United Nations
UNDP	United Nations Development Programme
UNDRR	United Nations Disaster Risk Reduction
UNISDR	UN Office for Disaster Risk Reduction
USAID	United States Agency for International Development
WHO	World Health Organization

CONCEPTUAL OPERATIONAL DEFINITION OF TERMS

Disaster Management: The management of disaster concerns the administration of information and resources aimed at mitigating and/or coping with a deleterious occurrence and is assessed based on how effectively and efficiently they are put to use (Jensen, 2018). In context, it refers to the ability to carry out environmental risk analysis, management of resources, risk governance and strategic planning in disaster management.

Environmental Risk Analysis: According to Zhang, Yan and Xuedong (2014)**,** environmental risk analysis is a procedure that assesses environmental hazards occasioned by natural disasters and human activities. In this study, environmental risk analysis is used to refer to an assessment of the suitable extent of interrelated precaution and measures of risk management to mitigate and reduce and risks, and associated negative effects.

Internal Organization: A structure normally comprising of numerous individuals working based on particular pre-arranged rules, with a view to realize an objective (Khady, 2017). In this study, disaster management is seen as dependent on the internal structures and systems existing within an organization.

National Government Ministries: National Government Ministries are organs responsible for policy development at the National Government level. They implement the decisions taken by the government, monitor and evaluate policies (Alessandro, Lafuente & Santiso, 2013).

Resource Management: The effective and efficient allocation and deployment of an institutional resources where and when they are required (Manesh, 2017). In this study resource management is taken to mean prudent use of resources such as human as well as material in disaster management.

Risk Governance: The mechanisms, rules, institutions, processes and conventions through which decisions concerning risks are implemented and taken (Walker, Tweed & Whittle, 2013). In this study risk governance is construed to mean the network of legal, policy and institutions frameworks which oversee, coordinate and guide disaster management and disaster risk reduction.

Strategic Management Practices: The definition of an organizations strategy and how management performs continuous appraisals of the business to ensure organizational goals are met (Njagi, 2017). It also incorporates development of long-term plans for efficient and effective management of threats and opportunities in line with the organizational weaknesses and strengths (Palladan & Adamu, 2018). Strategic management practices in this study are construed to mean plans that are in place to mitigate against the effects of disasters.

Strategic Planning: A strategy refers to the plan or pattern or that incorporates an institution's action sequences, policies, and major goals into a consistent whole (Shobaki, & Amuna, 2016). Strategic planning is in this study construed to mean appropriate infrastructure for integrated, coordinated decision making following a disaster.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The concept and practice of strategy development is possibly the most significant work of an active manager and is regarded as a unifying idea which links purpose and action (Vermaak & van Niekerk, 2017). Strategy stresses posing relevant questions and striving to arrive at answers. It therefore entails a combination of human activities in an organization to realize organizational goals. It endeavours to realize an equilibrium between stability and flexibility and therefore avoid either the anarchy of random and repeated alterations of direction or the restriction of extreme rigidity (Nakamura, 2015). Strategy entails a forward-looking approach, not just inferring what already occurred in the past or concentrating on the current. Strategy is multifaceted, concerning greatly complicated systems of effect and cause (Chong & Kamarudin, 2018).

1.1.1 Strategic Management

Globalization of economy has brought about revolutionary changes in the policy framework of both underdeveloped and developed countries. Liberalization on the other hand has removed artificial trade barriers and brought developments that gave rise to new paradigms in strategic thinking and business policies (Welukar, Chandra & Harichandan, 2014). The basic reasons of success and failure are the types of policies that the firm pursues.

Strategic management deals with envisioned and growing needs taken by managers on behalf of proprietors concerning deployment of resources to increase the performance of institutions in their external environments (Lynch, 2015). The tenacity of strategic management is to bring about the circumstances under which the institution will add value to its products and

services. The process of strategic management will also ensure that the organization acclimatizes to changing environments for its survival (Lynch, 2015). Strategic management is both a science and an art and no single strategy will apply in all cases. Success of strategic management process depends on culture and past experiences dictated by their background, environment and resources.

1.1.2 Strategic Disaster Management

The increasing global concern of the surging severity and frequency of disasters and natural hazards has necessitated nations world over to institute institutional policy, financial, technical, and legal measures which will decrease the deleterious impacts on the livelihoods and lives of communities and individuals (McMahon & Faen, 2017). The Hyogo Framework for Action 2015 (HFA, 2015) set out strategies to lessen considerably the negative effects of disasters in lives, environmental, economic and social assets of countries and communities. With a view to realize the specified results by the year 2015, HFA stressed a departure from responsive disaster aid to preventive Disaster Risk Reduction (DRR) in stages prior to disasters by mainstreaming preparedness, mitigation and prevention.

Disaster management encompasses administration of information and resources towards a catastrophic occurrence and is measured by how seamlessly, effectively and efficiently one governs this infrastructure (Modh, 2010). At the organizational and individual level, disaster management incorporates the concepts of risk assessment, communication, coordination, and planning (Khady, 2017). In the initial stages of the crisis life phases, the formulation of particular plans and strategies are requisite to limit or stop the effect of such inevitable occurrences Institutions dealing with disaster management ought to have the capability to set pre-disaster objectives (Shah & Bhat, 2015). The real problem however is to appreciate any

such occurrence at an opportune time and execute managing techniques to minimize their impact.

The World Health Organization (WHO) 2017 Strategic Framework for Emergency Preparedness provides a high level, strategic, and unifying framework that outlines what is needed for emergency preparedness. It identifies governance, resources, risk analysis and planning as elements of disaster preparedness. These elements were identified from an analysis of the following four strategic outcomes: Operational readiness to respond to emergencies; Health systems resilience; One Health and Whole-of-government/whole-of-society approach (WHO, 2017). The disaster management practices that will underpin the present study are environmental analysis, strategic planning, risk governance and resource management. According to Schipper & Pelling (2016), DRM joins these concepts through a management standpoint hence the need to analyse their effects on disaster management.

Environmental assessment and monitoring play a significant role in creating pertinent data which help disaster and environmental managers in finding out risks, opportunities and vulnerabilities to support resilience of communities (Karam, 2018). Observing and monitoring environmental features that indicate the coming of a disaster are essential to systems of early warning. Assessment of the environment results in targeted analyses of the environment through the documentation of anticipated, future as well as current conditions of the environment and establishing determinants of change of environment (Malalgoda, 2016). Data created by assessments of the environment are regularly entailed in systems of early warning for all disasters (Medford & Kapur, 2014).

Crisis and emergency management underscore that adequate recovery and emergency response is grounded on proper planning (PAHO, 2013-2018). The suitable resources for

coordinated and integrated decisiveness in the event of a disaster are provided by strategic planning (Capacity Building in Asia (CASITA), 2018). As such, the negative implications of a disaster may be lessened by approaching disaster management through strategic planning. A key significance of approaching disaster and emergency management by employing the process of strategic planning is the requirement of tracking the changing character and nature of environmental externalities and their implications on an organization's operations (Dillon, 2014). Lack of fundamental and comprehensive planning will bring unexpected, unpredictable and consequently detrimental repercussions (Chong & Kamarudin, 2018). Therefore, nations with no formal all-inclusive strategic planning process would be facing significantly greater challenges. Notwithstanding the unpredictability of disasters, nations with a strategic plan on disaster management can plan ahead of disasters to mitigate against the potential impacts (PAHO, 2013-2018).

Governance of disaster risks has developed in recent years as a prospective platform for reduction of risks and has further been provided within the five pillars of the HFA 2005-2015 (Gall, Gutter & Nguyen, 2014). The 2011 Global Assessment Report however indicates that apart from lessening the mortality caused by disaster, extant arrangements and capacities of risk governance commonly fail to realize their goals (UNISDR, 2011). The foregoing, together with rising losses propagated by upsurge in vulnerability and exposure reveals points to challenges in disaster governance currently in place (Gall, Gutter & Nguyen, 2014). Such dismal performance in structures of governance indicate the necessity of considering the range of presently obtainable regulatory, policy, institutional and administrative mechanisms for risk management (Jensen, 2018).

Disaster risk governance involves guaranteeing that adequate amounts of resources and capacity levels are availed to prepare for, prevent, recover from and manage disasters

(UNDP, 2013). It also involves processes and mechanisms for the citizenry to practice their obligations and legal rights as well as voice their interests. The principles and values of governance are significant in lessening risks of disaster and comprehending the failures, successes, and changes in disaster risk management practice and policy (Aysan & Lavel, 2014). There is need to acquire a comprehension of the contribution of governance of disaster risks and enlighten the policy conversation on future management of disaster risks and the processes and infrastructure for resolving them. This will help integrate and embrace new scopes of governance of disaster risk, and perceive governance of disaster risks as not just as a series of plans, policies, outputs and laws but as a process (Schipper & Pelling, 2016).

Management of resources is among the key most significant attributes in the management of disasters. Material and human resources, are nearly limited in every incidents of disaster that are massive in nature (Arculeo & Manesh, 2017). As stated in "Strategic National Action Plan for Disaster Risk Reduction 2008- 2013" for Cambodia, while the management of disaster risks is the principal government concern, predominant circumstances indicate a notable absence of resources and capacity for the management of disaster risks. This implies that the reduction of disaster risks could only be achieved by a new infusion of resources and energy from sources that are external especially international donor agencies and not-for-profit organizations (McEntire, 2017). Kellett, Caravani & Pichon (2014) argue that respecting and making economic obligations to reduction of risk is critical for significant progress. No quantity of strong DRR or good legislation models will make a change if adequate funding is not assigned to carry out the essential activities. Adequate use of available resources is a key objective in disaster management. To realize this goal, it is apparent that there ought to be appropriate capability assessment, precise mobilization of

resources, appropriate role allocation to procedures and plans to effectively and timely utilize resource in times of disaster (Linnerooth-Bayer, SurminskiLaurens & Mechler, 2018).

The internal organisational factors influence the direction and/or strength of the association between the predictor and outcome variables (Namazia & Namazib, 2016). It may be occurring naturally, determined or measured variables or may be created artificially by manipulation of factors and circumstances. In the context of strategic management internal organisational factors has been conceptualized in empirical literature as encompassing leadership style and past experience (Bahauddin & Iftakhar, 2017; Linnerooth-Bayer et *al*, 2018). Leadership is known to have the potential to improve overall performance and the attainment of goals. Proper leadership entails a multifaceted and delicate equilibrium of multiple elements such as decision-making, planning, teaching, judgement and listening (Bahauddin & Iftakhar, 2017). In the event of a disaster, leaders have to make intricate decisions between inevitable impulsiveness of actions and the necessity for cautious planning. It has been suggested that in settings such as emergency services, leadership dynamics will be greatly altered by the presence of smaller teams, multiple leaders and multiple disciplines requiring integration (Loughman, Bowron & Kalai, 2010). Leading before, during, and after the disasters needs various traits and competencies than other leadership types. Whereas leadership necessities may be different depending on the kind of environment, crisis, and type of sector, organization and extent of the crisis, flexibility in operations and decision making as well as adequate communication and adaptableness to disaster conditions with the public and other stakeholders are the most paramount leadership characteristics (Demiroz & Kapucu, 2012).

Traditional knowledge entails the experiences and methods established by a collection of society that comprehends the domestic surroundings developed from past generations. It

conserves the communal values that are cultural and assumes entrenched adaptation instruments as a way of survival of the community (Pratama & Sariffuddin, 2018). Around the globe, many local societies have been empowered with preparedness on the way to cope with and act in the event of a disaster by utilization of indigenous knowledge transferred from past generations. Based on experiences it can be deduced that practice leads to perfection and that expecting that everything will continue being appropriate and orderly during the management of disasters is unreasonable (Van, 2016). At best, affected communities and individuals can only hope to control the unfolding chaos. There is need for a plan that is communicated across the organization, and that it is revised continuously rather than relying on goodwill to manage mass casualties in a disaster (Lechat, 2017).

Disasters are becoming more frequent, growing more severe and affecting more people than ever before. The increasing frequency of disasters, coupled with a number of emerging threats and trends, are leaving more people vulnerable to the deleterious effects of disasters and inflicting greater damage and loss worldwide (IFRC, 2010). Developing strategies and best practices to manage disasters more effectively is becoming an increasingly urgent global priority (Teutsch, 2010). In this context, the nations all over need to have the capacity to alleviate, prepare for and respond to disasters at all levels; that is from household, community to national level. Effective disaster management requires provision of technology, tools and practices that enable response organizations to analytically manage information from multiple sources and collaborate effectively to assist survivors, mitigate damage and help communities to rebuild.

1.1.3 Case of Disaster Management on the Global Scene

An outstanding global tendency towards increasing economic losses and fatalities as a result of man-made and natural hazards is evident across the globe (Nojavan, Salehi, & Omidvar,

2018). Disasters in the present day are regularly exacerbated or created by human practices. Human activities are at the key most intense level altering the earth's natural balance, interfering with the oceans, atmosphere, forest cover, natural pillars as well as polar ice caps now more than ever before, all of which make the earth habitable (Caniff, 2017). In the event disasters take place, the impact is largely far-reaching because the incidence is in most cases unanticipated. The initial course of action of the responder is to attempt to resettle victims and save lives.

Kevin (2018) noted that more than 6,000 wildfires hit the State of California in the year 2018, burning an area of 580,100 hectares and causing damages worth more than $2.56bn. Irfan (2018) estimates that fires that occurred in September 2018 are 30% greater compared to the mean throughout the previous decade, rendering the year 2018 significantly worse than any other year in recorded history. In the United States, firefighters have out of past experience learned and developed rigorous tactics to fight fires, which is the reason why in spite of enormous fire disasters, the casualty statistics have over the years remained significantly low (Irfan, 2018).

Report by Martin, Petersen & Perraudin (2018) indicate that the December 22, 2018 Tsunami that was caused by an eruption of the Anak Krakatau volcano killed at least 373 people and many buildings were heavily damaged. According to Bociurkiw (2018), the tsunami that occurred on the Indian Ocean in the year 2004 introduced a fresh era of preparedness for disasters in countries such as Indonesia. Authorities in the countries affected have since in what was termed as "Build Back Better" technique vowed to present new strategies to reduce destruction and death from natural disasters in the future.

1.1.4 Case for African Region

The incidence of crises activated by hazards are on the rise in Africa. With a rapidly growing population and increasing impact of climate change, the impact of disaster in Africa will likely increase in the coming decades (CRED, 2019). Hazards that are hydro-meteorological in nature including wildfire, drought, windstorms, flood, landslides and tropical cyclones take place most persistently and account for the highest number of people impacted by the disasters in Africa (Akali, 2015). In 1998-2017, disaster-hit countries experienced direct economic losses valued at US$ 2,908 billion, of which climate-related disasters caused US$ 2,245 billion (United Nations Disaster Risk Reduction (UNDRR), 2018).

In spite of the legislation, plans and policy developments, reduction of disaster risks in Africa is still low (Niekerk, 2013). Majority of African countries have scarce infrastructure to channel into the reduction of disaster risks and limited fiscal leeway to finance recovery and relief efforts in the event of a great disaster. Despite the notable steps by regional organizations and African countries in reduction of disaster risks, disaster losses in Africa are still prevalent. The losses are attributed to increase in exposure and vulnerability, which are mostly associated with Africa's development level (Niekerk, 2013).

1.1.5 Kenyan Situation

In the Kenyan context, national government ministries are organs responsible for policy development at the national government level. They implement the decisions taken by the government, monitor and evaluate policies (Alessandro, Lafuente & Santiso, 2013). The Ministry of Interior is responsible for development and implementation of disaster management policies, among other functions. Through this ministry the Kenyan Government developed a disaster management policy, though this is still in draft, whose purpose was to

establish an institutional, policy and legal framework to effectively manage the full cycle of disasters (Nam, 2012).

According to Akali (2015), a diversity of disasters has occurred in Kenya similar to a number of other African countries. In the last century, the drought that occurred in 1999 – 2001 was the worst (Mbogo, Inganga & Maina, 2014). Over 4.5 million people lost their source of income and were forced to entirely rely on relief food. At the time some local leaders reiterated the need to have an emergency fund to mitigate against losses caused by natural calamities (Mbogo *et al*, 2014). Undoubtedly, terrorism is among the greatest difficulties the world in general and Kenya in particular is facing and poses a key threat to the economy and security. In the recent past, Kenya has gone through several terrorists attacks (Momanyi, 2015), among them is the attack on the Norfolk hotel, Nairobi in the year 1980 where 80 people were wounded and a staggering 20 individuals people perished; further in the 1998, the US embassy was bombed in Dar-Es-Salaam and Nairobi targeting US citizens claiming the lives of over 200 individuals.

Akali (2013) discusses some of the efforts made by the Kenyan Government to manage disasters as follows. Firstly, the National Disaster Operation Centre was instituted in January 1998 through an Act of Parliament to coordinate disaster emergencies and response. Secondly, the National Disaster Management Unit was instituted in August, 1999 to offer overall control, coordination, leadership and command before, during and after a disaster. Thirdly, the draft National Policy on Disaster Management was formulated to establish mechanisms of addressing disaster occurrences. It appreciates the necessity of acknowledging new notions including climate change and Disaster Risk Reduction (DRR). The policies of the HFA 2015 are ingrained in the draft Kenya Disaster Management Policy.

Though the Kenyan government has made efforts to put in place structures to manage disasters, there still exist gaps that render them ineffective. According to Nabutola (2012), the reduction of disaster risks structures have not yet been adequately established in the country. Disaster occurrences have also underscored an absence of knowledge and data associated with disaster impacts and management. The capability of individuals to carry out informed steps to guarantee their security in the event of disasters relies on obtainability of targeted and timely information on the reduction of disaster risks. Nabutola (2012) observed that a key gap in the reduction of disaster risks in Kenya is inadequate management of knowledge. Nations openly consider the protection of civilians from disasters as a major responsibility of governance. Decrease in disaster risks is a collective partnership and responsibility between the people, and the State and its adequacy relies on disaster responses' synchronization between them (Owuor, 2015).

1.2 Statement of the Problem

Kenya, like any other country in the world, has experienced a rise in the frequency of disasters causing a general rise in the rate of economic losses. Disasters have become one of the main obstacles to achieving sustainable development in the country (Owuor, 2015). Disasters take back years of development thus posing a major challenge to the achievement of the Sustainable Development Goals (USAID, 2018).

Strategic planning, risk assessment and governance, management of resources, putting in place the right infrastructure and ensuring up-to-date logistics, proper education and public awareness are key elements for disaster preparedness and response at all levels (Orindi & Ochieng, 2018). Low disaster preparedness leads to low resilience among the communities. Empirical studies indicate that Kenya lacks modern research approach geared toward disaster

management. The reactive approach evident in organizations means that managers are ignorant about disaster planning and communication. They do not integrate it within the organizations' strategic planning (Manyasi & Mukuna, 2016). Lack of planning means there are no preventive measures for disaster, and should a disaster occur, mitigation will be lacking.

According to a desk top review by Nam (2012), the institutional and legislative framework on DRR in Kenya is uncoordinated and fragmented, and most of the institutional directives overlap. Nam (2012) notes that apart from the National Disaster Response Plan and draft National Policy on Disaster Management, there is lack of laws regarding management of disasters, but on the contrary, there are series of Rules, Regulations and sectoral Acts which promote the management of disasters. Experts have, in the past, attributed poorly coordinated and unnecessarily expensive disaster responses in Kenya to the lack of a disaster management policy (Owuor, 2015). Such a policy would facilitate the creation of a national disaster management authority to coordinate all institutions' activities in disaster prevention, mitigation and response.

No quantity of good legislation or strong DRR structures will make a difference with inadequate financing. DRR is not about the availability of funding but rather about the priority attached to the need to fund (Kellett, Caravani & Pichon, 2014). Kenyan response to disaster has been ad-hoc and uncoordinated, and overly reliant on well-wishers (Owuor, 2015). The characteristic action has for long entailed the mobilization of considerable capital in a reactive manner after a disaster has already occurred as opposed to acting in a proactive manner. This has led to considerable loss of lives and property (Rotich, 2019)

An empirical study by Nasimiyu (2017) management of disaster seeks to avoid or reduce the anticipated losses from disaster threats, guarantee appropriate and prompt help for disaster victims and realize effective and speedy recovery. The elements studied here were mainly operational issues and not strategic matters. Mugambi (2010) studied the role of the military in disaster management in Kenya and found that the extant legal and policy frameworks may bring about misunderstanding as it presents several levels at which decisions can be made. A study by Nyakundi *et al*. (2010) on community perceptions and response to flood risks in Nyando District Kenya showed that majority of aid organizations were providing emergency foods but were not willing to invest in the post-disaster and pre-disaster stages. The major elucidation for the observation was the absence of financing for projects that are long-term. Rotich (2019) studied disaster management with a particular focus on developmental approaches to disaster in developing countries with reference to Kenya. The findings show that Kenya has put in place efforts towards disaster risk reduction, albeit inadequate and has not embraced modern approaches in disaster management strategies.

A descriptive review by Aluoch (2015) on essential leadership skills needed to respond effectively in the aftermath of man-made disasters found out that leadership skills are important in responding to disasters, hence the need to have the right skills. The study concludes with the need to have proper organizational structures and cultures apart from proper leadership skills. The study by Aluoch (2015) was a descriptive review with leadership skills as the main independent variable. In the present study is a field research and leadership is a moderating variable. Kemoni (2015) carried out an investigation into the role of disaster management in sustainable development in Kenya. The main focus was on types of disasters, disaster management activities and how they are linked to sustainable development, use of information communication technology and challenges faced in

undertaking disaster management activities. The study found out that to some extent the Government of Kenya links disaster management with sustainable development. The study, however does not elaborate on what disaster management activities are undertaken and how leadership, thereon, would influence implementation of these activities. Further the study did not look at disaster management from the strategic point of view.

None of the studies has focused on the effects of strategic management practices on disaster management in Kenya. There was therefore a compelling need to conduct this research as it aims to unbundle integrated practices for holistic solutions that would reduce impacts of disaster on lives and livelihoods of the people of Kenya. It is evident that without research, little information will be available in as far as disaster management is concerned. There is, therefore, the need to undertake this study in a bid to analyse the effects of strategic management practices on disaster management in Kenya. It is against this backdrop that the relevant institutions will be able to put in place policies and procedures to effectively manage disasters in Kenya.

1.3 Purpose of the Study

The study looked at an analysis of the effects of strategic management practices on disaster management in Kenya, with specific reference to national government departments. This analyzed the effects of environmental analysis, strategic planning practices, risk governance practice and resource management strategies on disaster management. An assessment of the moderating effect of the internal organizational factors on strategic management practices and disaster management in Kenya was also undertaken.

1.4 Objectives of the Study

The objectives of this study are outlined below.

1.4.1 General Objective

The general objective of this study was to analyze of the effects of strategic management practices and internal organizational factors on disaster management in Kenya.

1.4.2 Specific Objectives

The specific objectives of this study were to;

i. Examine the influence of strategic environmental analysis on disaster management in Kenya.
ii. Determine the effect of strategic planning practice on disaster management in Kenya.
iii. Examine the effect of strategic risk governance practice on disaster management in Kenya.
iv. Establish the effects of resource management strategies on disaster management in Kenya.
v. Assess the moderating effect of the internal organizational factors on strategic management practices and disaster management in Kenya.

1.5 Research Hypotheses

$H_0$1: There is no statistically significant effect of strategic environmental analysis on disaster management in Kenya.

$H_0$2: There is no statistically significant effect of strategic planning practice on disaster management in Kenya.

$H_0$3: There is no statistically significant effect of strategic risk governance on disaster management in Kenya.

$H_0$4: There is no statistically significant effect of resource management strategies on disaster management in Kenya.

$H_0$5: There is no statistically significant effect of internal organizational factors on strategic management practices and disaster management in Kenya.

1.6 Significance of the Study

The findings of this study are of great benefit to the Government of Kenya. It informs policy and decision makers in Kenya on strategic management practices. The government will be able to use the findings as a reference in developing policies with measures that are aimed at preventing disasters in order to save human lives and property. The Constitution of Kenya 2010 recognizes and guarantees the right to life of all its citizens. This includes the right to live healthy and ecologically balanced lives and the obligation to protect the environment for future generations. A contextualized analysis of the current and future gaps in disaster management will be linked to the vision for peace and security of the people of Kenya for continual national economic growth.

Scholars and universities will apply the information gathered to impart knowledge to their students on the management of disasters. This essentially enhances capacities to develop sustainable disaster management strategies leading to reduced loss of life and damage to property and environment.

The study will aid in further research as it becomes a reference document for researchers. It is important as it puts the work of other researchers in perspective. The researchers will be able to critique the research findings to justify their research topics. They will be able to identify research gaps and derive a new scope out of it.

1.7 Scope of the Study

This study covered an analysis of the effects of strategic management practices on disaster management in Kenya with reference to national government departments. It analyzed the effects of environmental analysis, strategic planning practices, risk governance practice and resource management strategies on disaster management. An assessment of the moderating effect of the internal organizational factors on strategic management practices and disaster management in Kenya was also undertaken. The researcher studied Kenya's national government ministries which are all located in the capital city, Nairobi. Data was collected over a three-month period from June to July 2019. The study suggests how these variables can be enhanced for successful disaster management.

1.8 Limitations of the Study

During the course of data collection, the main challenge that the researcher encountered was that of some respondents were not ready to share information. The researcher had to assure the participants that the data gathered would be treated as confidential. Some respondents did not understand the subject under investigation. The researcher used simple language to interpret sections of the questionnaire that the respondents did not understand. Further the study targeted senior government officers who are usually busy and not easily accessible and normally, one would be expected to book an appointment. The researcher remained consistent on visiting the departments in the ministries until sufficient data were collected.

1.9 Assumptions of the Study

One of the assumption was that disaster victims are left confused and unable to cope with life-threatening physical and psychological stress and that they are so demoralized and disoriented that they will passively wait for organized help from outside. Another assumption

was that the leaders and employees are not acquainted with disaster management matters and that they will not act to prevent or respond to a disaster.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The theoretical, empirical literature and conceptual underpinnings of the study problem are reviewed in this chapter. Under the theoretical framework, the chapter identifies and discusses pertinent theories, delving deep into the models and theories underpinning the study. The empirical literature further assesses previous studious work with regard to the research objectives of the present study. A conceptual framework is an investigative tool with numerous contexts and variations and it indicates how the identified gaps will be addressed. The main variables in the study were explored with regard to previous scholars' contribution as the gaps are explored. Finally, the chapter goes further to present a diagrammatic depiction of the association among the study concepts.

2.2 Theoretical Framework

Scholars coin theories with a view to articulate, understand, formulate and predict phenomena as well as to extend and challenge existing knowledge in light of critical bounding expectations. A theoretical model is the construction that can support or hold a particular study's theory (Vinz, 2015). It describes and introduces the theory that articulates the reason the current study is conducted. This section reviews the theories underpinning the study.

2.2.1 Social Capital Theory

According to Reininger, Rahbar, Lee, Chen, Raja, Pope & Adams (2013), the concept of social capital and its association with disaster preparedness has advanced in importance partly owing to a global necessity to more proactively and effectively react to natural disasters, viral epidemics, or terrorist attacks. The reference to social capital is an outcome of its great

extrapolative power in adequate disaster recovery and response at the individual and community levels. There is immense potential in social capital in resilience of persons, nations and community and disaster preparedness. Family ties during disasters are key to pliability since family normally serve as the primary providers of help (Sadeka, Mohamad, Reza, Manap & Sarkar, 2015). Greater social capital bonding levels can result in higher trust levels and more greatly shared standards among communities. Societies with high participation, networks, norms and trust were capable of more speedily recovery from crises. Disaster preparedness and social capital can thus communally work and help communities towards realizing sustainable livelihood as portrayed in Figure 1.

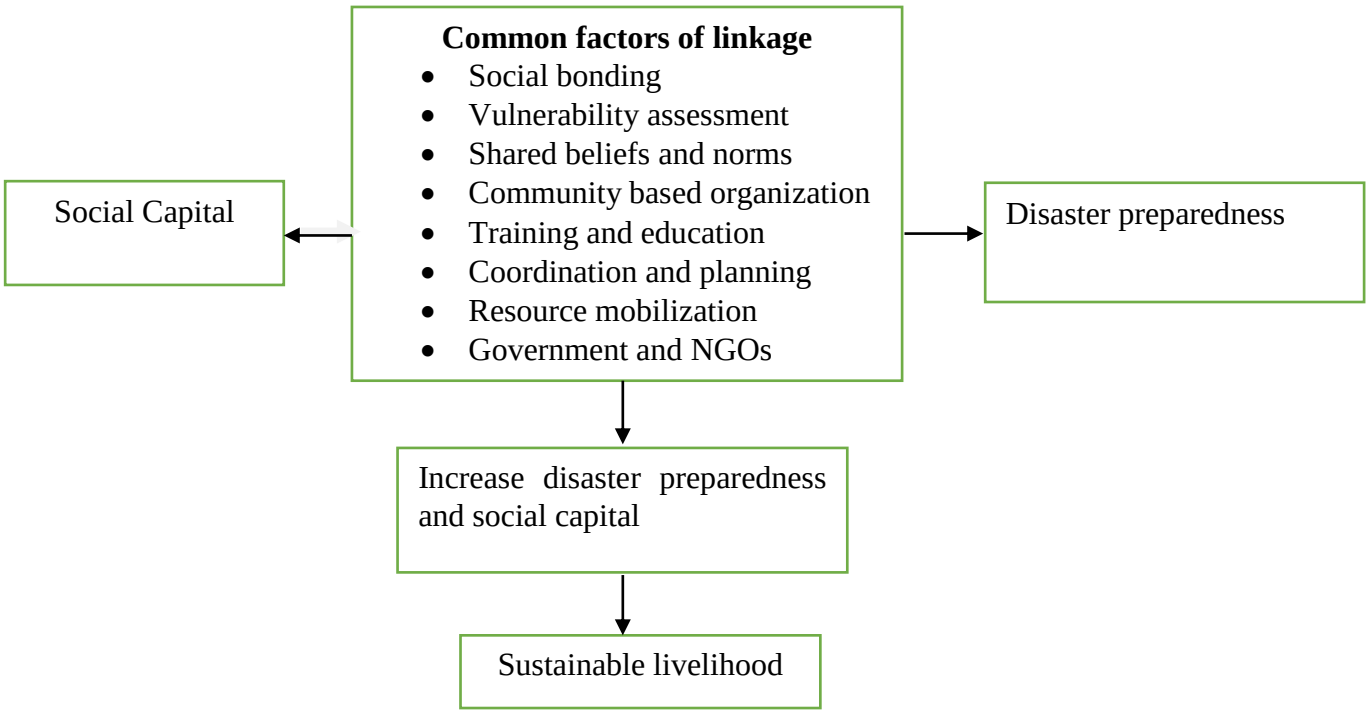

Figure 1: *Association among disaster preparedness and social capital and their outcomes*

Source: Sadeka *et al.* (2015)

Social capital resources and pre-existing social networks are often overlooked by policy makers in community disaster planning. Lalone (2012) argues that local level social capital

and traditional social networks are a vital part of community disaster management efforts, and greater consideration need to be given for the incorporation and application of social capital to aid disaster response and recovery planning programs. Community structure with decentralized decision making through social networks can lead to a more effective disaster response (Soler, 2019). Augmenting the existing community network and social structure makes it convenient for information flow during disasters and increases the efficiency of decisions. Wilson (2013) contests the idea of positive learning, sense of collective action and adaptation after a disaster. He argues that the continuing threat of disasters and their recurrence is gradually depleting community capacity and residents' ability to get prepared for the upcoming uncertainties.

When faced with a disaster, a community or citizens immediately look toward their local government for help and direction. The local authorities make an immediate response and depending on the size of the disaster, mutual aid from state and federal agencies is provided. State agencies may take longer to respond and assist in the recovery of a community, which leaves them vulnerable (Vorhaus, 2014). The nature of top-down policies requires massive amounts of time for going through the protocols, leaving those at the local level with no assistance. Many a times, community members come together to ensure that their needs are met simultaneously, while filling in the gap from the ground level. Previous disaster research studies show that the approach taken to reduce disaster risk frequently neglects the social systems of communities, ignoring the fact that social capital can be the catalyst to resilience (Aldrich & Meyer 2014). Top-down policies concerning disaster recovery do not include social capital and presume that money and guidance lead most efficiently to recovery, but that is not necessarily the case.

Aldrick & Meyer (2014) provide a theoretically and centrally grounded conceptualization of social capital as entailing a collective of potential or actual resources that are associated with ownership of a hard-wearing linkage of established association of shared recognition or acquaintance. Vorhaus (2014) conceptualized social capital as a people's capacity to work in collaboration for the realization of shared purposes in organizations and groups. Reininger *et al*. (2013), further note that social capital provides opportunities to work together and is therefore critical for government agencies and non-governmental organizations (NGOs) to take up several programmes and policies which could strengthen social linkages and raise the social capital attachment among community members. The most common and first kind of social linkage accessible to disaster-affected persons is leveraging social capital (Kim, Perreault & Foster, 2017). Socio-economic and political conditions determine the vulnerability of local communities, as well as their abilities to overcome the impact of disasters. Hence the importance of resource availability and social support to survive from disasters and rebuild the lives of vulnerable communities.

Critics of social capital theory are skeptical of the theory due to lack of clarification between foundations of social capital and how they can be used to achieve goals (Vorhaus, 2014). The concepts of social capital are seen as norms, networks, and trust; form of investment with expected returns concerning social capital; and as a resource woven into social relations and structure. Vorhaus (2014) noted that among each of these concepts of social capital there is inequality in access to both social capital and resources, which can have adverse effects. Mob mentality and high mistrust or disdain collectively are not useful in the event of a disaster.

There is an increasing relationship between disaster management and social capital. Social networks and norms of mutuality and honesty are very important as they hasten disaster preparedness and recovery. An individual's preparedness is determined through the amount

of resources available, the community-level preparedness, their social support networks and the ability of the community to access resources from those in power. Disaster preparedness and response activities create new types of social capital (Sadeka *et al.,* 2015). Social capital is related to a community's ability to plan for and respond to disasters. Linking social capital with disaster preparedness has been seen to be useful in reducing disaster impacts and sustainable livelihood. Social capital theory brings out the importance of planning, resource allocation, community preparedness and governance in disaster management. Social capital theory was thus used to advance the relationship between social capital and disaster management in this study.

2.2.2 Contingency Theory

Contingency theory opines that there exists no single most effective way of coordinating and that an institutional form which is adequate in some circumstances could prove inadequate in other circumstances (Ping, Cui & Pan, 2011). As such, the ideal style of organization is dependent upon a number of external and internal challenges. The contingency standpoint has set out to articulate wide generalizations concerning the official systems that best fit or are characteristically linked with the application of varying approaches.

Disaster management is tremendously full of improbability and complexities owing to the chaotic characteristics of disasters (Ping *et al.,* 2011). Forecasts are used extensively by both public and private sectors to predict future events and behaviour. The capability of a government's prediction plays an important role in crisis management. It is the determination of what disaster is going to occur and when it is going to occur that is key to minimizing the effects of a disaster. Once the disaster has been accurately predicted, prevention and preparation responses can be formulated and implemented (Ping *et al.,* 2011). Planning for contingencies is not an ingredient for assuring effective disaster management, but it is at the

same time not expendable. In the wake of destructive and unpredictable tendencies the world over, disaster still comes as a surprise. Public sector organizations need planning and robust plans all the time not only for operational reasons, but also for purposes that may be deemed dysfunctional (Erickson & McConnell, 2011). Contingency planning is needed by governments for political stability and societal reassurance purposes. In instances where the government is experiencing a disaster that necessitates change, a clear guidance can be provided by the contingency theory in disaster management.

Contingency theory offers that organizational governance practices and principles are reliant on circumstantial suitability (Oakleaf, 2016). Conventional techniques to administration were not essentially wrong, but in the present day, they lack adequacy. The required advancement for management practice and theory could be located in the contingency technique. Differing circumstances are peculiar and necessitate an administrative feedback which is grounded on particular variables and considerations. Oakleaf (2016) further cites that disaster managers ought to develop an organizational structure and culture which recognises that every disaster is peculiar. Consequently, a more dynamic institutional structure might be formalized depending on the kind of the hazard/problem and who requires to be engaged and the necessary steps taken. The key most principle of this viewpoint is that institutions are systems that are open and that they require governance in order to balance and satisfy internal needs (Ping *et al*., 2011).

DRR funding is erratic and more often reduction of disaster risk may not be the primary focus. Financing activities that build disaster resilience necessitates a combination of multiple sources and financial instruments (Watson, Caravani, Mitchell, Kellett & Peters, 2015). Complexities arise because not all sources are suitable for all activities or available at a particular place or time. The need for national institutions, policies and plans to manage the

implementation of DRR finance is paramount thus policy commitments to specific DRR interventions are paramount**.**

Eriksson & McConnell (2011) propose that the relationship between emergency planning and disaster management results is more complex than often assumed. Contingency planning may be successful in the pre-crisis stage but does not guarantee an effective emergency response. Similarly, contingency planning bottlenecks in the pre-crisis stage, does not automatically lead to a defective crisis response. This is mainly due to the multiple influences on disaster responses some of which can be anticipated and planned for. Eriksson & McConnell (2011) advocated for policy-oriented and analytical reflections which recognise the value of contingency planning. Consequently, expectations on contingency planners should not be too high neither should they be vilified for lack of adequate measures to contain the crisis.

Contingency planning allows mapping out a range of possible links between pre-crisis planning and crisis responses. Leadership in crisis comes with cognitive and emotional challenges and it involves operating beyond the plan (Erickson & McConnell, 2011). Contingency plans and planning processes operate within institutional settings and they exhibit enormous variations in goals, procedures, structure, resources, culture and power distribution. Contingency theory therefore helps leaders to plan, predict and prepare for a crisis. The theory clearly articulates importance of planning, leadership, resource management and governance in disaster management, hence its application in the study.

2.3 Empirical Review

2.3.1 Strategic Management Practices and Disaster Management in Kenya

Taabu (2014) assessed in a descriptive study the disaster management practices at the Ministry of Energy and Petroleum in Kenya and argues that adequate management of

disasters relies on force and rate of man-made and/or natural disasters. It is in this context that it is paramount to have the ability to effectively and promptly prepare for, prevent, respond to and recover from disastrous events. The study, however did not assess how disaster management is influenced by strategic management practices in Kenya, and more specifically national government departments, which this study sought to establish.

In another study, Morogo (2014) studied the efficacy of disaster management practices in the Kenya's National Assembly and the Senate with the target population being the staff of both houses and the Parliamentary Service Commission. The study collected primary data for the purpose of investigating the level of disaster management in parliament buildings and found that in both houses of parliament, the mechanisms in place for disaster response were moderate and that government agencies and parliament staff were the disaster response stakeholders. The study, however did not assess how disaster management is influenced by strategic management practices in Kenya, and more specifically national government departments, which this study sought to establish.

Ndegwa & Kinyua (2018) investigated the strategic measures employed by the National Drought Management Authority (NDMA) for drought mitigation in Kenya. The study adopted a correlational research design and primary data was collected from a random sample of NDMA employees. It was established that there is a relationship between drought monitoring and early warning systems and drought mitigation in Kenya. The study also revealed that there are challenges to drought mitigation which include lack of political goodwill or government support and persistence of illegal tree logging. According to this study the lack of a sound policy framework and the focus on short-term goals are also identified as challenges NDMA encounters in carrying out its mandate. The study was more specific on drought mitigation and did not assess how disaster management is influenced by

strategic management practices in Kenya, and more specifically national government departments, which this study sought to establish.

The study by Obwaya (2010) assessed the extent to which Jomo Kenyatta International airport (JKIA) is equipped to mitigate and respond to airport-related disasters in anticipation. The study employed descriptive research design targeting 340 respondents using proportional random sampling technique. The study revealed that JKIA has inadequate preventive and preparedness measures in place to minimize the potential effects of any fire disaster occurrence. It lacks mechanism to integrate the safety standards and practices of the different stakeholders in and around the airport. The research more specifically assessed the association among the growing complexity of airport disaster management, past experiences in preparedness of disasters, and the growing variety of disaster occurrences but did not assess how disaster management is influenced by strategic management practices in Kenya, and more specifically national government departments, which this study sought to establish.

The study carried out by Taabu (2014) was to determine the presence of a policy on disaster management in Kenya, with reference to the Ministry of Petroleum and Energy. The target population for the study was 208 members of staff from the Ministry of Energy and Petroleum and the sample comprised of top management, middle level managers, supervisors, clerks and staff working in resource centres. Purposive sampling technique was used to select sample size because the study targeted a particular group of people. The study established that there was no written policy on the governance of disaster management in the ministry. On the contrary, the ministry was relying on the Republic of Kenya national policy and disaster plan by the national disaster operation centre. The study assessed the presence of a policy on disaster which is only one variable of disaster management practices in Kenya under the national government departments that were studied.

2.3.2 Environmental Analysis and Disaster Management in Kenya

Chow, Andrášik, Fischer & Keiler (2019) assessed the application of statistical techniques to proportional loss data. The study described a workflow to support the continued development and assessment of empirical, multivariate physical vulnerability functions based on predictive accuracy where generalized linear models and their more complex alternatives were evaluated. Ground-survey based data acquisition was conducted supplementary data about pre-condition attributes. The study found out that whereas concerns abound regarding how the natural hazards' temporal and spatial pattern will be changed by climate change, it is agreeable that disaster losses cannot be generated by climate change itself and concluded that disaster risk is a function of an interaction among potent situations of the exposed factors and the physical process itself. Chow *et al*. (2019) argue that it is apparent that with a view to reduce and manage the hazards that are credited to an imminent natural process, it ought to be assessed (qualitatively or quantitatively) and to spatially visualize it. The study focused on knowledge about the cause of differential structural damages following the occurrence of hazardous hydro-meteorological events for purposes of more effective risk management and spatial planning solutions. The study by Chow *et al.* (2019) did not analyse the effects of strategic management practices on disaster management in Kenya, and more specifically national government departments, which this study sought to establish.

Hayes, Rovins, Wilson, Jensen, Dohaney, Mitchell, Johnston, & Davies (2015) conducted a study aimed at reviewing the significance of comprehending assessment of risks with reference to the management of disaster risk. The study outlines that the foundation for managing disaster risks is identifying the risks and assets to the risks, the susceptibility of people as well as exposure. The approaches were based on a wide range of experiences gathered from case studies. This was a desk top survey and lacked relevant input from the

would be subjects. The findings therefore cannot be construed to represent the actual situation due to the dynamic nature of the environment. The foregoing study discussed above did not asses how the disaster management is influenced by strategic management practices in Kenya, and more specifically national government ministries, which this study sought to establish by carrying field research.

Hoffman & Muttarak (2017) argue in their study on the impacts of education and experience on disaster preparedness in the Philippines and Thailand that by understanding and quantifying the hazards and forestalling the possible effects of risks, individuals, communities, and governments can develop knowledgeable decisions towards managing risk. Data analysis was based on face to face surveys of adult population. The study focused on two variables that is education and experience, whereas disaster management includes a wide host of factors. The study was conducted in Philippines and Thailand, hence the need to study the effects of strategic management practices on disaster management at the local level. The study therefore sought to find out the effects of strategic management practices in Kenya and more specifically national government departments.

2.3.3 Strategic Planning Practice and Disaster Management in Kenya

The Draft National Disaster Management Programme Proposal (2009) views the preparedness of disaster as among the strategies of disaster management that entail timely practices aimed at reducing the impacts of a disaster and the function of a system of early warning. Disaster preparedness is one of the preventive measures falling within a range of other activities of disaster management which vary from rehabilitation and relief to reconstruction and recovery.

Bailey (2020) estimated the impact of disasters on individual risk profiles. Disasters have become more frequent and a number of studies have evaluated their effects on risk attitudes. Using the meta-analysis process with random-effects models, the study examined the significance of the effect of different disasters on individual risk profiles. In the study a meta-analysis was performed from the results in these recent studies, allowing for comparisons across disasters and against results from laboratory experiments. The study revealed that subjects from developed nations exhibited increased risk behaviour in contrast to subjects from developing nations who displayed a risk averse behaviour. With Kenya being a developing country it was apparent that more information was sought in regard to the level of disaster preparedness by looking at the effects of disaster management strategies with reference to government departments which this study sought to find.

Zorn (2018) carried out a desk top review on less developed countries and natural disasters. The findings indicate that developing economies are greatly susceptible to natural calamities since individuals live in high-risk areas for natural disasters. The review reveals that in insecure urban areas, the dwelling units are ill constructed and are therefore easily destroyed in case a disaster strikes. Further, developing economies are not adequately resourced with systems of early warning and have insufficient social safety systems and assets to enable them handle crises. However, this was a desk top survey and lacked relevant input from the would be subjects. The findings by Zorn (2018) therefore cannot be construed to represent the actual situation due to the dynamic nature of the environment. The foregoing study discussed above did not asses how the disaster management is influenced by strategic management practices in Kenya, and more specifically national government departments, which this study sough to establish by carrying out field research.

Ndegwa & Kinyua (2018) studied the strategic measures employed by the National Drought Management Authority (NDMA) for drought mitigation in Kenya. The study was guided by strategic alliances theory and organizational adaptation theory to investigate the strategic measures that the NDMA has adopted and their effectiveness. It adopted a correlational research design and primary data was collected through sampling. The study established that there is an association between drought monitoring and early warning systems, and drought mitigation in Kenya. The study also revealed that there are challenges to drought mitigation which include lack of political goodwill or government support and persistence of illegal tree logging. Further, lack of a comprehensive policy framework and the focus on short-term goals are also identified as challenges that the NDMA encounters in carrying out its mandate. The study by Ndegwa & Kinyua (2018) focused on drought mitigation strategies adopted by NDMA, whereas disaster management includes a wide host of factors, hence the need to study the effects of strategic management practices on disaster management in Kenya, which this study sought to establish.

Mbogo, Inganga & Maina (2014) carried out a desk top review on drought conditions and management strategies in Kenya and established that Kenya is a greatly drought inclined country with only approximately 20% of the country receiving regular and adequate rainfall. The remaining 80% of the country is largely semi-arid and arid land with periodic droughts. The review also found that in spite of advancements to contingency planning and systems of early warning, management of drought in the country is still reactive as opposed to preventive and anticipatory approaches to risk management. The review revealed that shortcomings/gaps in the management of drought include the vagueness that exists between the government's ability to take action to lower hazards and data obtained from the systems of early warning concerning imminent hazards. This was a desk top survey and lacked

relevant input from the would be subjects. The findings by Mbogo *et al.* (2014) therefore cannot be construed to represent the actual situation due to the dynamic nature of the environment. The foregoing study discussed above did not asses how the disaster management is influenced by strategic management practices in Kenya, and more specifically national government departments, which this study sough to establish by carrying out field research.

Manyasi & Mukuna (2016) explored how planning and communication approaches are used in disaster management in organizations in Kenya. A multiple case study of five organizations was used with a sample size of twenty managers in the sampled institutions. Purposive sampling was used to select the five organizations and census survey used to select top managers. Interview guides and document analysis were used as instruments for data collection. The study found out that leaders in the sampled institutions did not embrace a proactive approach in management of disasters. Additionally, the leaders lacked knowledge about integrating disaster management into strategic planning processes and the importance of timely communication in disaster management. The foregoing study discussed above was limited to planning and communication as study variables in only five organizations hence its findings were not conclusive. The study did not asses how disaster management is influenced by other host of strategic management practices in Kenya, and more specifically in national government departments, which this study sough to establish.

A desk top review by Akali (2013) looks at disaster preparedness and response strategies in Kenya. The study findings conclude that there is absence of modern research techniques in Kenya aimed at disaster management planning to mitigate naturally occurring disasters. However, this was a desk top survey and lacked relevant input from the would be subjects hencethe findings by Akali (2013) cannot be construed to represent the actual situation due to

the dynamic nature of the environment. The foregoing study discussed above did not asses how the disaster management is influenced by strategic management practices in Kenya, and more specifically national government departments, which this study sought to establish by carrying out field research.

Ngaira (2013) carried out a desktop review on Kenya's disaster profile which indicated that Kenya's economy is based mainly on agriculture. The agriculture sector is highly dependent on climate, hence he concluded that Kenya's vulnerability to drought was a major cause to food insecurity. The study concludes that non-elaborate disaster management framework creates uncertainties and lack of focus in strategizing for disaster management. However, this was a desk top survey and lacked relevant input from the would be subjects. The findings by Ngaira (2013) therefore cannot be construed to represent the actual situation due to the dynamic nature of the environment. The foregoing study did not analyse the effects of strategic management practices on disaster management in Kenya, and more specifically national government departments, which this study sought to establish by carrying out a field research.

2.3.4 Risk Governance and Disaster Management in Kenya

Aysan & Lavel (2014) conducted a review of disaster risk governance (DRG) during HFA 2005-2014 to acquire a comprehension of evolution and progress of governance of disaster risks across the period 2005-2014. The review was made to enlighten the policy conversation on forthcoming difficulties in management of disaster risks and the corrective mechanisms in place. The emerging issues in disaster risk governance presented in this paper for future consideration were as follows: Firstly, DRG approaches are likely to become more disaster risk reduction centric rather than response/preparedness. Secondly, the weak social contract for disaster risk reduction that

often exists between a state and its citizens is an impediment to progress in DRG at local levels. Thirdly, the dominant discourse on mainstreaming DRR into development still suggests the notion of integration or the incorporation of DRR activities. However, this was a desk top survey which lacked relevant input from the would be subjects. The findings therefore cannot be relied upon to represent the actual situation due to the dynamic nature of the environment. Further, the foregoing study did not analyse the effects of strategic management practices on disaster management in Kenya, and more specifically national government departments, which this study sough to establish by carrying out a field research.

Thomalla, Boyland, Johnson, Ensor, Tuhkanen, Han, Forrester, & Wahl (2018) carried out a literature review to identify opportunities that have the potential to transform the relationship between development and disaster risk. The review aimed at contributing to breaking down barriers in policy, research and practice between climate change adaptation, disaster risk reduction and development. The study found out that development and disaster risk are closely interrelated. Based on these findings, Thomalla *et al.* (2018) argued that transformations are needed to move towards resilient, equitable and sustainable development pathways. However, the study was a desk top survey which lacked relevant input from the would be subjects. The findings therefore cannot be relied upon to represent the actual situation due to the dynamic nature of the environment. Further, the foregoing study did not analyse the effects of strategic management practices on disaster management in Kenya, and more specifically national government departments, which this study sought to establish by carrying out a field research.

Mugambi (2010) studied the role of the military in disaster management in Kenya. This study obtained both secondary and primary data employing use of library and field research using open ended questions respectively. The study established that the absence of a national disaster management policy is largely responsible for poor coordination of disaster management in Kenya. Furthermore, the extant legal and policy frameworks may bring about misunderstanding as it presents several levels at which decisions can be made. The foregoing study did not analyse the effects of strategic management practices on disaster management in Kenya, and more specifically national government departments, which this study sought to establish by carrying out a field research.

Kulatunga (2010) looked at the impact of culture towards DRR. The study examined the relationship between culture and disaster risk reduction through a comprehensive literature review. Culture and its components were analysed and evaluated in a series of case studies associated to disaster risk. The author concluded that culture may be a hindrance to adequate DRR activities and may also influence communities' survival from disasters. However, the study was a desk top survey which lacked findings from the would be subjects, hence the need to get relevant input from actual field study. The foregoing study did not analyse the effects of strategic management practices on disaster management in Kenya, and more specifically national government departments, which this study sough to establish by carrying out a field research.

A desk survey by Nam (2012) on law and regulations for the reduction of risk from natural forces in Kenya revealed that the institutions, policies and laws presently in operation indicate that the country is dedicated to reduce and minimize the impact and risks of natural disasters. However, the study being a desk top survey did not get relevant input from actual

field study as the findings from the would be subjects was lacking. The foregoing study did not analyse the effects of strategic management practices on disaster management in Kenya, and more specifically national government departments, which this study sought to establish by carrying out a field research.

Wafula (2012), conducted a review of the opportunities and challenges for integrated risk management and disasters in Kenya, with specific reference to regulations, legislation and policy. The review indicated that there was lack of integration and organization of resources, plans, and strategies at the local, county and national level. Additionally, there is absence of knowledge of and capacity to handle the management of disaster, specifically with executing mitigation and preventative measures; and there lacks incorporation of development planning into disaster management. However, the study being a desk top survey did not get relevant input from actual field study. Further the study did not analyse the effects of strategic management practices on disaster management in Kenya, and more specifically national government departments, which this study sought to establish by carrying out a field research.

2.3.5 Resource Management Strategies and Disaster Management in Kenya

The exploratory study by Heo, Park & Heo (2018) on sustainable disaster and safety management of government, a case of integrated disaster and safety budget system in Korea analyzed budget allocation procedures. The study surveyed and analyzed existing data as well as examined the related laws, classification system and prevailing matters. The study found out that the budget plans for the fiscal years of 2016-2017 were vague classification principles that made it hard to distinguish much more disaster-related programs and projects from less-related ones. Further, investment priorities of programmes and projects for safety and disaster management were controversial, due to the lack of objective standards and procedures.

However, this was a desk top survey and lacked relevant input from the would be subjects. The findings therefore cannot be construed to represent the actual situation as policies and procedures are dynamic. The foregoing study discussed above did not asses how the disaster management is influenced by strategic management practices in Kenya, and more specifically national government ministries, which this study sought to establish by carrying out field research.

Nyakundi, Mogere, Mwanzo, & Yitambe (2010) carried out a descriptive cross sectional study on flood risk response and community perceptions. The research adopted both quantitative and qualitative techniques using pre-tested household questionnaires, focus group discussions, desk reviews and in-depth individual discussions for key respondents. The study established that there is a greater level of knowledge of flood risk in the high risk areas as compared to low risk areas. The study further revealed that extant conventional flood awareness is mostly underused in the present strategies of flood management. The study by Nyakundi *et al.* (2010) also showed that a majority of aid organizations were providing emergency food but were not willing to invest in the post-disaster and pre-disaster stages. The major observation was the absence of financing for long term projects. The foregoing study did not asses how the disaster management is influenced by strategic management practices in Kenya, and more specifically national government departments, which this study sought to establish.

Akali (2013) notes that though the country has set up measures to guarantee adequate response and disaster preparedness, there is urgent requirement to marshal adequate infrastructure and take up modern disaster management technology and strategies. Obwaya (2010) undertook a descriptive survey study on disaster risk reduction strategies and

preparedness with reference to Jomo Kenyatta International Airport (JKIA). The study collected data using questionnaires (structured and unstructured) and key informant interviews. The study particularly analyzed the existing relationship between the increasing diversity of new disaster threats, increasing disaster management complexity and past disaster preparedness experiences at airports. The study established that the JKIA personnel, plans and facilities could not handle large-scale disasters. A rapidly increasing traffic of travelers has put a strain on existing capacity at JKIA. Consequently, existing hazards have become difficult to contain and new hazards continue to emerge. The foregoing study discussed above did not analyse the effects of strategic management practices on disaster management in Kenya, and more specifically national government departments, which this study sought to establish.

2.3.6 Internal Organizational Factors on Strategic Management Practices and Disaster Management in Kenya

Naser & Najim (2010) studied the effect of ineffective leadership on individual and organizational performance in Jordanian institutions. The research was based on a survey design and the respondents were managers in these institutions. Findings indicate that ineffective leadership influenced individual and organizational performance in Jordanian institutions. The study further found that the effectiveness of strategic planning relies on the support of top leadership. The foregoing study was interested in how leadership affects individual and organizational performance in Jordanian institutions. However, the study did not look at the relationship between leadership and disaster management, neither did it analyze the effects of strategic management practices on disaster management in Kenya, and more specifically national government departments which this study sought to establish.

Njuguna (2019) carried out an investigation into the role of leadership communication on management of crisis in the oil industry in Kenya with reference to Sinai fire tragedy. The target population was the Kenya Pipeline Company staff; Ministry of Mining and Petroleum officers and the residents of Sinai. The study adopted purposive s and convenience sampling techniques to respondents from Sinai and used questionnaires to collect primary data. The study established that communication skills are one of the most vital management contributions in most corporate entities when communicating to the public. The findings from the study revealed that the best way to approach the media is for oil industries to embrace honesty as the best policy practice by disclosing all the necessary information as transparency creates trust (Njuguna, 2019). The study concludes that the main contributions to the Sinai disaster were mainly linked to poor crisis management strategies that were employed by the Kenya Pipeline Company. The foregoing study was specifically interested in leadership communication as an independent variable. Further the study did not analyze the effects of strategic management practices on disaster management in Kenya taking leadership as a moderating variable on disaster management in national government departments, which this study sought to establish.

Becker *et al.* (2017) studied the role of prior experience in informing and motivating earthquake preparedness. The research explored the influence of experience on earthquake preparedness from the perspective of symbolic interactionism. It allowed for experience-related interactions to be explored with a view to explain how they relate to earthquake preparedness. A grounded theory approach was used for data collection and analysis. The research findings showed that experience has several different influences on preparedness process and these are: raising awareness and knowledge; prompting thinking and talking; helping individuals understand the consequences of a disaster; developing beliefs; influencing

emotions and feelings; developing preparedness; and prompting community interaction on disaster issues. The research study by Becker *et al.* (2017) elucidated the role of prior experience in informing and motivating earthquake preparedness. Preparedness is an element of strategic planning as a management practice on disaster management. There was therefore the need to look at holistically the effects of strategic management practices on disaster management, and more specifically by the Kenya's national government departments, which this study sought to establish.

Mutanda & Orindi (2018) carried out a desk top review on strengthening disaster management in Kenya. The research involved reviewing existing early warning systems on disaster management and disaster risk financing mechanisms. The review further carried out an audit of existing disaster management frameworks and governance preparedness structures. The findings revealed that disaster resilience among communities in Kenya is low and hence the need to enhance it at all levels. Further the study recommended that adequate resources and modern technologies need to be embraced in disaster management strategies. However, the study was a desk top review and the contribution from the would be subjects was lacking hence cannot be relied upon. There was therefore the need to look at holistically the effects of strategic management practices on disaster management, and more specifically by the Kenya's national government departments, which this study sought to establish by carrying out a field research. Table 1 gives a summary of empirical studies and knowledge gaps.

Table 1: ***Summary of Empirical Studies and Knowledge Gaps***

Authors &year	Topic of the study	Methodology	Findings	Knowledge gaps
Malalgoda, Amaratunga & Haigh (2016)	Overcoming difficulties experience by governments in developing resilient built environment in cities.	Descriptive survey	The study observed that, whereas some initiatives have been carried out in the aftermath of overwhelming Indian Ocean Tsunamis to institutionalize DRR, there still remain gaps in the Sri Lankan local government sector.	The study did not associate disaster risk reduction with concepts pertinent to strategic management
Banerji & Singh (2013)	Comparative Analysis of Disaster Management between Japan & India.	Desktop review	Data indicates that Japan is way ahead of India in disaster preparedness and management. India could learn lessons from Japan on disaster management.	The study was not based on primary data evidence as it relied on secondary data hence lacking insights from actual participants in both strategic management and disaster management practices. The study was focused on India and Japan which are socio-economically different contexts compared to Kenya.
Wafula (2012)	The Opportunities and Challenges for Integrated Risk and Disasters Management and with Reference to Legislation, Policy and Regulations in Kenya.	Desktop review	Data indicates that Kenya has in last two decades experienced an increasing extent of vulnerability to disaster risk.	The study was not based on primary data evidence as it relied on secondary data hence lacking insights from actual participants in both strategic management and disaster management

				practices.
Mener (2007)	Response to Disasters in the USA.	Desktop review	The study observed that response to disasters in the USA is hampered by bureaucratic hurdles	The study did not associate disaster response practices with concepts pertinent to strategic management
Tomekova (2011)	Strategic Management: Decision Making, Environmental Analysis	Desktop review	The decision making approaches adopted have an influence on the effectiveness of environmental analysis	The study was not based on primary data evidence as it relied on secondary data hence lacking insights from actual participants in both strategic management and disaster management practices.
Nam (2012)	Regulations on reduction of risk from natural forces in Kenya	Desktop review	National disaster policy yet to be implemented into lay, though it provides a comprehensive legal and institutional framework	The study did not associate disaster risk reduction practices with concepts pertinent to strategic management
Akali (2013)	Disaster preparedness and response Strategies in Kenya	Desktop review	The Country has instituted measures in place to guarantee adequate disaster response. There is however urgent need to embrace the take up of modern technology and mobilise resources in disaster management strategies	The study was general to Kenya and not specific to individual government ministries

Owuor (2015)	Kenya Natural Disaster Profile	Desktop review	Emergency management is still inadequate	The study was general to Kenya and not specific to individual government ministries. There was also no linkage of the disaster management practices with concepts pertinent to strategic management

2.4 Conceptual Framework

Conceptual framework shows the system of assumptions, concepts, expectations, theories and beliefs that informs and supports the research (Adom, Hussein & Joe, 2018). It shows how a specific issue operates or is associated with its sections (Linnerooth-Bayer *et al*, 2018). The model provides the grounds for articulating the correlational or causal patterns of interrelations across ideas, events, observations, knowledge, concepts, interpretations as well as other mechanisms. Those inferences then affect the nature of questions to be asked in a study (McEntire, 2017). Figure 2 shows the summary of the conceptual framework illustrating the hypothesized association among the variables explored in this study. The strategic management practices appear on the conceptual framework as environmental analysis, strategic planning, risk governance and resource management.

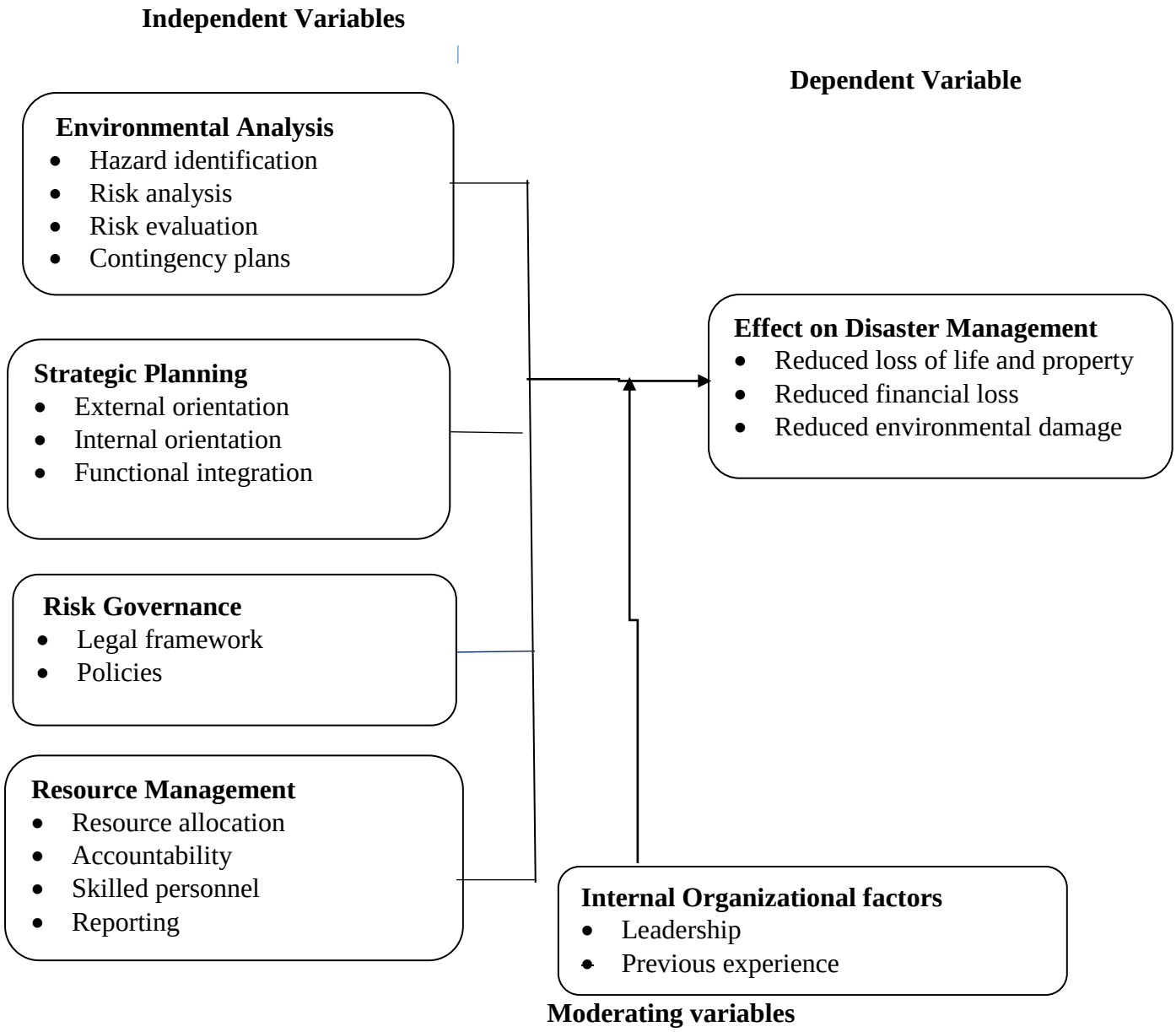

Figure 2: *Conceptual Framework*

Source: Research (2021)

The subsequent sections explain the interrelationships between study variables and how they work together towards influencing the outcome variable. The predictor variables have been presented as environmental analysis, strategic planning, risk governance and resource management. The internal organizational factors play the role of moderating variables. These include leadership and previous experience.

2.4.1 Strategic Environmental Analysis on Disaster Management

McMahon & Faen (2017) intimate that risk assessment entails hazard identification, risk analysis, and risk evaluation. Whereas, the environment and disasters are inherently linked; parts of environmental management include risk assessment and contingency planning. The overall objective of identification of hazards is to identify and record probable hazards which could be present in an environment, and the risk linked to the hazard is evaluated and analysed. This will help determine ways of eliminating the hazard, or controlling the risk when the hazard cannot be eliminated (Paté-Cornell, 2017).

Contingency planning enables an organization prepare to respond effectively to a disaster and its possible charitable impact (Obrien, O'Keefe, Rose & Wisner, 2016). Such planning constitutes an instrument of management, affecting all sectors, which will guarantee effective and timely provision of charitable aid to the most needful in the event of a disaster. The amount of time invested in contingency planning directly translates to time saved in the event of a disaster (Paté-Cornell, 2017). Establishing a contingency plan for disaster management entails decision making beforehand concerning the management of financial and human resources, communications procedures and coordination as well as being knowledgeable of a spectrum of logistical and technical responses necessary (Schipper & Pelling, 2016). Complexities arise because not all measures are suitable for all activities or available at a particular place or time. Contingency theory therefore offers that organizational governance practices and principles are reliant on circumstantial suitability (Oakleaf, 2016), hence the need for flexibility in handling disasters.

2.4.2 Strategic Planning and Disaster Management

Crisis and emergency management underscore that adequate disaster recovery and response is grounded on proper planning (Linnerooth-Bayer *et al* 2018). Strategic planning provides

the suitable resources for coordinated and integrated decision making in the event of a disaster (Nam, 2012). External orientation represents a potential revolution in the way institutions mobilize their talent to lead, innovate and succeed (Tran, 2015). They align their activities with pressing global issues and opportunities. Such institutions integrate disaster management strategies into their development blue print. On internal orientation, internal actions are seen to lead to stronger internal networks, bonding with employees, and social capital accumulated within the company (Van, 2016). According to Aldrich & Meyer (2014), social capital is the capacity of people to work in harmony for shared goals in organizations and groups. Social capital has a notable disaster preparedness potential and resilience of nations, community and individuals, thus provides opportunities to work together in the event of a disaster. Tran (2015) argues that effective organizations invest in incorporating economic, social, and environmental goals throughout the organization anticipating every operational area to know the impacts of their actions, accept the implementation responsibilities and develop practices and policies for realizing organizational objectives. This enables the continued arrangement of business activities within the dynamic business environment, particularly in the sphere of managing disaster.

2.4.3 Risk Governance and Disaster Management

Governance of risk entails the rules conventions, processes, mechanisms and institutions, through which decisions concerning risks are implemented and taken (Meerpoel, 2015). Governance entails institutions, processes and mechanisms by which groups and citizens exercise their legal rights, articulate their interests, mediate their differences and meet their duties (Lechat, 2017). Elements of governance include transparency, accountability, honesty and disclosure. Transparency plays a significant role in inducing flexible institutional

structures, where decision making can be decentralized at different levels with an outcome-oriented planning (McMahon & Faen, 2017).

Accountability in the reduction of disaster risks is envisioned to enable understanding and scrutiny of actions steps taken at various levels within the organization and those accountable for the activities (Vermaak & Niekerk, 2017). In spite of growing appreciation that reduction of disaster risk and good governance are equally helpful, the associated arrangements of risk governance still face numerous difficulties. Financing, institutional, and policy arrangements do not adequately give priority to reduction of disaster risks, or lack mechanisms of accountability to oversee their execution (UNDP, 2017). Onofere (2015) argues that using contingency theory means that no command structure, pattern or functions exist for all society, organizations or governments and that it depends on the prevailing circumstances in the organization. Sound and strong democratic organizations offer good governance in the processes of decision-making to lessen risks and susceptibility and respond to and prepare for disasters.

2.4.4 Resource Management Strategies and Disaster Management

From a resource-based point of view, an institution is seen as a pool of resources, both tangible and intangible, which can create competitive advantage and superior profits. It is argued that social capital features prominently among intangible resources (Chisholm & Nielsen, 2010). An explicit inclusion of the role of social capital strengthens the analytical powers of the resource-based view in relation to the relative merits of firms and markets as organizational forms, the rationale of inter-firm networks as an alternative to spot market exchanges and coordination by a single centralized authority, and the role of social capital as a governance mechanism.

Effective and efficient allocation and deployment of an institution's resources such as information technology, inventory, financial resources, production resources, or human skills is critical in the success of any organisation (Garcia, Perez, Rodriguez & Martinez, 2018). Institutions at strategic level require structures that help in allocating infrastructure so that, in view of scarce resources, they can decide which involvement strategies promise the most cost-effective outcome Garcia *et al* (2018). Different skills are requisite in every stage of the cycle of disaster-management, for an array of activities, from surveillance and monitoring, through mitigation and prevention, to recovery and relief (Khady, 2017). It is critical to guarantee that volunteers and professional staff have the awareness and skills necessary for pre and post- disaster actions (Jensen, 2018). Communication and reporting during and after disaster occurrence are essential because disasters have consequences in interconnected world (Medford, 2014). Communication is important in disaster prevention and management as disasters and risks cannot be managed efficiency and effectively without appropriate communication. There is need to reach the majority of population before, during and in the aftermath of disasters.

2.4.5 Internal Organizational Factors and Disaster Management

Lechat (2017) refer internal organizational factors as those variables that affect the organizational structure that could be adjusted or changed to suit its changing environment. Internal organizational factors that influence sustainability of an organisation may include leadership, organisational culture among others. They exert a great influence on a business' failure or success. Leaders and business owners have noted the effect of internal factors on a business and the organization's future (Paté-Cornell, 2017). Internal organizational factors on disaster management in this study are leadership and previous experience. These two factors act as moderator variables. Moderation takes place when the influence of a predictor variable

on an outcome variable differs with respect to the third variable's level named a moderating variable, with which the predictor variable interacts (Farooq & Vij, 2017).

Contingency theories propose that the success of a leader is dependent on the specific circumstances at hand. Certain factors come into play that define whether a particular leader or leadership style will be effective for the given situation (Peretomode 2012). Those factors include the personality of the leader, the task and the structure of the group that is meant to be led; its basic postulation is that leadership, success or failure, is situational.

Leadership as a process inspires individuals or a group to realize a shared objective (Quain, 2018). As such, one can perceive leadership as a social influencing process whereby one individual may recruit the support and aid of others with a view to achieve a common task. Leadership style is concerned with the control and command with a lengthy history which is grounded on the military framework of disaster response and preparedness (Bahauddin & Iftakhar, 2017). The extensive structural drawbacks, interrelations and the irregular impacts of disasters show that present control and command practices of leadership are inadequate due to complex occurrences (Bahauddin & Iftarkhar, 2017) argue that the transformative style of leadership promotes a sense of engagement, ownership and empowerment, within the society. This is necessary as it integrates an associational strategy which forms a linkage between follower and leader, with agency being exercised on both sides.

Leadership in management of disasters and emergencies has the ability to minimize the destruction imposed by a crisis while the absence of effective leadership worsens the effect (Nakamura, 2015). Leaders ought to have particular abilities and skills with a view to handle calamities based on the scope of the disaster, organizations they lead, and environmental conditions. Leadership qualities necessary in disaster management may be different with

respect to the stakeholders responsible for decision making, the level of leadership, environmental conditions and the kind of sector they function in (Linnerooth-Bayer *et al*, 2018). Nichols, Hayden & Trendler (2020) argue that in order to move forward in a crisis, leaders need to promote four behaviours in themselves and their teams. They must decide with speed over accuracy, adapt boldly, reliably deliver, and engage for impact.

Social networks provide avenues through which communities develop risk perception and get driven to take precautionary action. Subcultures are common in societies that have had repetitive experiences with specific disasters that have become a part of the annual calendar of community life (Sadeka *et al.* 2015). Norms and appropriate responses are already in place to cover the situation. Such subcultures tend to develop in communities where there is a considerable amount of useful knowledge based on previous experience. Previous experience has a direct influence on risk perception. Risk perceptions are often used as moderator to measure motivation or demotivation of preparedness level where it has effect on action to be taken. Chan, Yue, Lee & Wang (2016) argued that whereas risk perceptions may be lined to past exposure to disaster, their results show that in resource-poor and remote areas, preparedness for disaster could be linked to past experiences of disaster. It is thus paramount to determine the influence of previous experiences on disaster management.

There are numerous motives why more systematic study ought to be placed on experience. Among the reasons why there is need for more methodical inquiry into the association between preparedness and disaster experience as a requisite emanates from the recommendations of Sendai Framework for Action (2015), specifically with regard to the Build Back Better (BBB) directives. The BBB directives have ramifications that surpass the physical and entail the use of experience in disaster as a motivation for the establishment of DRR capabilities in the future. Despite the significance of personal preparedness, a most of

the studies report significantly low disaster preparedness levels even in areas that are disaster prone (Chong & Kamarudin, 2018).

In a majority of disaster-prone areas, NGOs, national and local governments have endeavored to offer emergency trainings and programs that are disaster educational with a view to increase household preparedness, promote self-reliance and increase awareness (Bryson, Crosby & Stone, 2016). How individuals can be inspired to take protective steps when prior experience in disaster is limited has been a key concern pointed out by researchers of risk communication and risk analysis. Whereas in some cases such educational programmes may boost preparedness to disaster, numerous research studies have recorded the dismal performance of these initiatives in advancing protective activities (Brinkerhoff, 2016).

Previous experience in a disaster may theoretically determine preparedness tendencies through similar paths as education. Risk perception and hazard awareness for instance are closely linked to disaster experience. Surviving and being directly impacted by a disaster could raise awareness concerning the possibility of destruction, enhance recovery knowledge and demonstrate advantages of evacuation in the event of disasters and how to mitigate subsequent threats of disaster (Hoffman & Muttarak, 2017). Whereas disaster experience seems to be a major determinant of crisis preparedness tendency, it is certainly not a desirable way to propagate individual/household take up of protective actions. The important question therefore concerns how to raise the awareness of risk among individuals who so far disaster has not impacted. Hoffman & Muttarak (2017) assert that knowledge can substitute experience in disaster in that educated persons can comprehend the risks associated with disasters and forestall the effects absent experience that is first-hand.

Experience in disaster makes preparedness and hazards more noticeable to individuals and more ready to participate in a communal manner and subsequently people's readiness to get involved in the aftermath of disasters (Blanco, 2015). Individuals' disaster experience offers an indicator for engagement with the community which is a significant determinant of augmented preparedness tendencies (Becker *et al*., 2017). Disaster response education programmes ought to provide for the use of "window of opportunity" in the aftermath of disasters to involve societies in participatory activities towards the reduction of disaster risks (Chong & Kamarudin, 2018).

2.4.6 Disaster Management

Strategies that are well-defined for reconstruction and recovery may decrease financial losses and human suffering by offering for speedy return to normalcy with respect to community operations (Ansell, Boin & Keller, 2016). Response to disasters could imply the difference between death and life. Crises exert deleterious impacts on communities' environmental, economic, and social fabric, and the problem is already being exacerbated by climate change. World over, communities are attempting to determine how well they can adapt or mitigate the impacts (Cunniff, 2017). Management of disaster risk entails the totality of all measures, programmes and activities that may be taken up before, during and after a disaster with a view to mitigate against its effects. The aim of management of disasters is to avoid or reduce the likely damages from threats, guarantee appropriate and prompt assistance to the affected individuals and communities, and realize effective and rapid recovery (Rotich, 2019).

Pre-disaster practices are carried out with a view to lessen property and human losses as a result of a potential threat (Chong & Kamarudin, 2018). For instance, conducting campaigns to raise awareness, reinforcing extant structures, preparation of plans for the management of disaster risks at community and household levels, among others. Such measures of risk

reduction carried out at this level are considered as preparedness and mitigation activities (Ansell *et al*., 2016). In case of a disaster, activities carried out help guarantee that the provisions and needs of the affected are met with minimal suffering. At this level, practices carried out are considered disaster response. Lastly, post-disaster activities are known as recovery and response activities and they entail practices carried out with a view to realize early rehabilitation and recovery of victims and communities, in the aftermath of a disaster (Vermaak & Niekerk, 2017).

The cycle of disaster management shows the continuing process through which civil society, businesses, and governments work to decrease the adverse effects of disasters, react immediately during and after a disaster, and carry out actions to recover in the aftermath (Rotich, 2019). Suitable activities across all sections in the cycle move towards better warnings, greater preparedness, prevention of disasters or reduced vulnerability. The full cycle of disaster management entails the modelling of public plans and policies that either mitigate the effects of disasters on infrastructure, property, and people or modify the causes.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

In this section, the research methodology and methods used to realize the study objectives are provided in detail. The techniques employed in the determination of samples, the tools used, as well as in collection and analysis of data are articulated and supported by literature.

3.2 Research Philosophy

Research philosophy constitutes researchers' perspective of the social world, the creation of knowledge, the type of knowledge created and imperative presumptions (Žukauskas, Vveinhardt & Andriukaitienė, 2018). There exist two main philosophies that inform how people come to know what they know, namely ontology and epistemology. Ontology refers to the logical study of becoming, the nature of being, reality or existence and the essential basic types of being and their associations (Al-Ababneh, 2020). It is concerned with inquiries regarding existing entities and the categorization of such entities, associated in hierarchy, and classified with respect to differences and similarities.

Epistemology on the other hand is the class of philosophy that deals with the scope and nature of knowledge which can also be considered as knowledge theory. It is concerned with what constitutes knowledge, how the knowledge may be obtained, as well as the degree to which pertinent knowledge to an entity or subject matter may be obtained (Al-Ababneh, 2020). The crucial query in the process of conducting a research study is what makes up knowledge that is usable in the social world. There are two main epistemological research paradigms on which social sciences are grounded and these are phenomenology and positivism. Positivism paradigm is grounded on the presumption that the researcher is self-determining of the measurement of phenomena and the problem under study is through

criteria that are objective as opposed to subjective. It believes that knowledge should be free from bias of the researcher and that truth are facts that can be proven (Ryan, 2018). Positivism is grounded on neutrality, real facts, validity and measurement of constructs. Positivist theorists utilize extant theory to state assumptions that are tested for confirmation or disproval, part or whole, thus informing and guiding further theory formation that can be put to test in further studies.

Phenomenology which is the other epistemological philosophy is subjective since it observes the phenomena and qualities which are perceptional in nature. Žukauskas *et al.* (2018) posit phenomenology as focusing individual interpretations, personal knowledge and immediate experience. It favors the use of qualitative approach in which people understand the social world surrounding them and it relies on perception. Phenomenology deals with the direct involvement and begins with the known then proceeds to the unknown. It focuses on seeking realities not pursuing truth (Qutoshi, 2018). It favors the use of qualitative approach in which people understand the social world surrounding them and it relies on perception.

This study adopted positivism philosophy of the natural sciences which only considers observable and measurable phenomena as knowledge. The study sought to be objective with facts by empirically testing relationships among variables. The present research was grounded on the paradigm of positivism since endeavored to observe facts objectively through determining associations among variables empirically. The study adopted the method of testing hypotheses which was grounded on facts that were acquired from the collection of data in which the assumptions were rejected or failed to reject. This formed the basis for future research. The researcher observed the principles of positivism by remaining neutral and external to the study.

3.3 Research Design

The present study adopted the cross-sectional descriptive survey design. The research design articulates the data that was required, methods used both for data collection and analysis, as well as how they answered the research question. A survey research design entails collecting data from the entire population or a representative sample with a view to develop descriptors that are quantitative of the population attributes in which members make up the entities (Avedian, 2014). Explanatory research design was used in this study to formulate the problem, clarify concepts and form hypotheses. The principal purpose of this design is to explain why phenomena occur and to predict future occurrences. Explanatory studies are characterized by research hypotheses that specify the nature and direction of the relationships between or among variables being studied. The explanatory study thus focuses on determining the why aspect of correlationship (Islamia, 2016). It provides information where a small amount of data exists and helps in more understanding of the problem.

This study applied both qualitative and quantitative design. The research aimed at describing the current situation as far as effects of strategic management practices on disaster management in Kenya is concerned and gave suggestions to improve the process.

3.4 Location of the Study

The study was conducted within the Nairobi city. The Government carries out its roles through its ministries which are all in the Capital city located at 36.82 longitude and-1.28 latitude and it located at a 1684 meters above sea level.

3.5 Sampling Procedure and Sample Size

Cramer & Howitt (2004) assert that a sample is a set of entities drawn from a population with the aim of estimating the characteristics of a population. According to Kothari (2004), the

sample should neither be too large, nor too small. The sample should also be greater than 10% which is the minimum sample as suggested by Gay (1981) as cited by Mugenda & Mugenda (2003).

The study covered all the twenty ministries in Kenya's national government. Sampling was not undertaken as the target respondents was based on job positions hence a census was carried out in all ministries to establish the number of departments in each ministry. The study size was 128 respondents. This was arrived at after a careful analysis of the current approved organization charts at the ministries. The research was conducted in all departments and the accessible population were heads of departments who deal with strategic development and implementation matters. Below these are operational staff who were not considered as respondents as they do not deal with policy matters.

3.6 Population of the Study

The target population is what the study seeks to generalize the study findings (Tashakkori & Teddlie, 2010). A census survey conducted on the twenty (20) national government ministries in Kenya gave a total of 128 departments (Appendix VI). The study population for this study was therefore all the 128 heads of departments as listed in Table 2. The unit of analysis was the departments in the national ministries of Kenya's national government, while the respondents were the heads of departments owing to their conversance with subject matter pertinent to the present study.

Table 2: ***Population***

	Ministry	Respondent(s)	Population
1	National Treasury	Heads of departments	5
2	Ministry of Interior and Coordination of National Government (National Disaster Management Authority)	Head of department	3
3	Ministry of Health	Heads of departments	6
4	Ministry of Agriculture , Livestock and Fisheries	Heads of departments	9
5	Ministry of Devolution, Planning and Special Programmes	Heads of departments	5
6	Ministry of Defense	Head of department	4
7	Ministry of Foreign Affairs and International Trade	Head of department	6
8	Ministry of Education	Heads of departments	9
9	Ministry of Transport and Infrastructure	Heads of departments	5
10	Ministry of Information Communication and Technology	Heads of departments	2
11	Ministry of Environment and Natural Resources	Heads of departments	4
12	Ministry of Water and Irrigation	Heads of departments	5
13	Ministry of Lands Housing and Urban Development	Head of department	6
14	Ministry of Sports Culture and Arts	Heads of departments	10
15	Ministry of Labour and East African Affairs	Head of department	12
16	Ministry of Energy and Petroleum	Heads of departments	5
17	Ministry of Industrialization and Enterprise Development	Heads of departments	15
18	Ministry of Public Service Youth and Gender Affairs	Heads of departments	3
19	Ministry of Tourism	Heads of departments	5
20	Ministry of Mining	Heads of departments	9
	Total		128

Source: Various National Government Ministries (2019)

3.7 Data Collection Instruments

Instruments of data collection imply the various techniques used by a researcher to collect data in a research study. The methods used to gather data are determined to a large extent by the research questions and objectives (Canal, 2017). The fundamental necessity for collecting data is to document evidence of quality which attempts to provide answers to every research

question posed. As a result of data collection the researcher can infer information of quality which is a precondition for informed decision making.

To obtain the data, semi-structured questionnaires were used in this research. The researcher formulated fixed and open-ended questionnaires. Fixed questionnaires saved much of respondents' time as this is a voluntary exercise where participants' time has to be considered. The researcher offered a far reaching spectrum of inquiries to harness variance of perspectives from study participants. The questionnaires formulated were related to the research questions under listed in the statement of the problem and overall problem in study.

The researcher was directed by the study variables, previous studies and theory in the development of the semi-structured questionnaires. A five-point Likert scale varying from lowest levels of disagreement denoted by number 1 to the highest level of agreement denoted by number 5 was used to address some of the items. Likert scale exhibits favorable perception on one extreme and unfavorable perception on the other towards an aspect of study (McLeod, 2019). Other items in the questionnaire were open ended and the respondents were expected to explain for clarification and support of the quantitative data. The questionnaire was developed by referencing studies similar to this study as well as other literature on the study concepts and context.

The tool was enhanced and corrected through advice by research experts. The questionnaire was categorized into two parts. Section A, collected data on the demographics of the respondents while section B collected data on the study variables. Section B was used to collect data on environmental analysis, strategic planning, risk governance, resource management, moderating variables and disaster management.

3.7.1 Data collection Procedure

Cooper & Schindler (2003) note that, the procedure of collecting data postulates the information of the assignment with reference to the data sought and their respective sources.

To be professional and to remain ethical, the researcher drafted a personal letter of introduction. The researcher also obtained a letter of authorization and a permit; and an introduction letter from the Institute of Postgraduate Studies of Kabarak University. Copies of these documents are attached as Appendix II, III, IV and V respectively.

The data collection instruments were overseen through "drop and pick later" method by the researcher assisted by two research assistants. Semi-structured questionnaires were used in this research. The researcher was guided by the research objectives to formulate questionnaires. The researcher provided a wide range of questions to harness divergence of views from various respondents.

The researcher was guided by the concepts of this study, theory and other previous studies to develop closed ended questionnaires and a few open ended ones. A five point Likert scale ranging from 1= not at all to 5 = very large extent or 1= strongly disagree to 5= strongly agree was used to address some of the items. Likert scale questions were most frequently used in this tool to test a respondent's opinion, perception or attitude. Likert scale exhibits favorable perception on one extreme and unfavorable perception on the other towards an aspect of study. Other items in the questionnaire were open ended and the respondents were expected to explain for clarification and support of the quantitative data.

The data collection tool was enhanced and corrected through advice by research experts. The questionnaire was divided into two sections. Section A collected data on the demographics of employees of Kenyan national ministries while section B collected data on the variables of

this study. Section B collected data on strategic environmental analysis, strategic planning, risk governance, resource management, internal organizational factors and disaster management. The key target respondents to this study were senior officers of the national government ministries of Kenya. Key informants should be knowledgeable about issues under study and they should be willing to respond to the questionnaires (Cossham & Johanson, 2019).

3.7.2 Pilot Study

According to Fraser, Fahlman, Arscott & Guillot (2018) a pilot study is aimed at testing sample recruitment strategies, data collection instruments, research protocols, as well as other research procedures in readiness for the main data collection exercise. Among the most imperative phases in an empirical study is a pilot study and carried out to establish possible deficiencies and problem areas in the research and data collection instruments prior to executing the main research. The benefit of carrying out a pilot study is its ability to offer warning in advance regarding where the main data collection exercise could fail, whether proposed instruments or methods are unsuitable or too complex as well as where study procedures may not apply (Fraser *et al.,* 2018). Pilot studies can further assist members of study team to familiarize with protocols in the research process as well as enable them choose between two opposing study techniques, for instance employing self-administered questionnaire as opposed to interviews.

The researcher carried out a pilot study at four parastatals to pre-test the data collection instrument. Parastatals are semi-autonomous agencies under the ministries and therefore their governance structures are heavily borrowed from the ministries. The average number of heads of departments in parastatals is five, hence a target respondents of the pilot study was twenty.

3.7.3 Instrument Validity

Validity shows extent of a research tool's accuracy in assessing as appropriate. It is the degree at which variations established in an instrument indicate actual differences among those being tested (Taherdoost, 2016). It is divided into various types, that is, construct, content, related and face validity. This study performed content and construct validity assessments. Content validity assessed the degree at which the tool effectively covered the research questions explored in the study. Content validity was tested by employing a panel of individuals who judged how adequate the research instrument met the metrics. They evaluated whether the questions effectively captured the topic under investigation. A pilot study was performed to pre-test the construct data collection instruments' validity. Construct validity measures what the calculated scores mean and if there can be generalized correlations to verify the relevance of the questions (Taherdoost, 2016). If the scores are highly correlated, then construct validity is supported.

Face validity considers how suitable the content of a test seems to be on the surface. It is similar to content validity but is more informal and a subjective measurement, hence it is often considered the weakest form of validity (Middleton, 2019). It may be used in the initial stages of developing a method. Criterion validity evaluates how closely the result of a test corresponds to the result of an external measurement, which is usually an established test that is considered valid ((Middleton, 2019). Face validity therefore was not tested.

3.7.4 Reliability of the Instruments

Kothari (2004) points out that reliability entails the assurance of dependable findings with recurrent assessments with the same data collection instrument and the same participant. Assessment of reliability is paramount since it implies the constancy across the sections of a

data collection instrument. A research instrument is deemed to bear high reliability when the scales in the questionnaire "hang together" and assess the same concept (Taherdoost, 2016). The Cronbach Alpha coefficient is the most widely employed measure of internal consistency as it is considered the most suitable reliability measure.

The researcher employed as a reliability measurement, Cronbach alpha as shown below. Cronbach's Alpha is an overall Kunder-Richardson (K-R) 20 equation fashion (Mugenda & Mugenda, 2003).

$$\text{The } KR_{20} = \frac{(K)\,(S^2 - \sum_s^2)}{(S^2)\,(K-1)} \qquad (1)$$

Whereby: K = Number of items used to measure the concept
KR_{20} = Reliability coefficient of internal consistency
s^2 = Variance of individual items
S_2 = Variance of all scores

$\alpha \geq 0.70$, that is, a high coefficient of data (70% and above) is acceptable (Mugenda & Mugenda, 2003). A great Cronbach coefficient indicates that scales in the questionnaire highly correlate among each other, in that, there exists constancy among the scales making up the questionnaire items. This is called data homogeneity. Kothari (2004) points out that, reliability is also concerned with the extent at which an error could be presented by different samples or various researchers. The research guaranteed that external variation sources including fatigue and boredom were reduced significantly by motivated and trained individuals to carry out the study, and by widening the item sample utilized. Table 3 presents the reliability coefficients for the reliability analysis.

Table 3: ***Reliability Coefficients***

Scale	Cronbach's Alpha	Number of Items	Decision
Strategic Environmental Analysis	0.884	13	Reliable
Strategic Planning Practice	0.700	8	Reliable
Strategic Risk Governance Practice	0.744	7	Reliable
Resource Management Strategies	0.937	6	Reliable
Internal Organizational Factors	0.713	6	Reliable
Disaster Management	0.976	9	Reliable

Source: Pilot Study, 2019

The reliability coefficients in Table 3 indicate that every scale was significant, recording a Cronbach alpha coefficient above the acceptable 0.7 threshold. Disaster management, with 9 items had the highest reliability coefficient (α=0.976) followed by resource management strategies (α = 0.937) also with 6 items, then strategic environmental analysis (α = 0.884) with 13 items while strategic risk governance practice had an Alpha value of 0.744. Internal organizational factors were also reliable at a coefficient of 0.713 with 6 items while strategic planning practice had a coefficient of 0.700. It was established in the study that the questionnaire items were reliable and thus suitable for use in data collection in the main study.

3.8 Operationalization of Variables

According to Agravante (2018), variables represent the measurable traits that can change over the course of a scientific study. A variable may change from group to group, person to person, or even within one person over time. The dependent variable for this study was disaster management measured by indicators of reduced loss of life and property, financial loss and environmental damage on a 5-point Likert scale according to respondent's perceptions. For an indicator to qualify as a measure of disaster management, it has to be high on the Likert scale. The independent variables were environmental analysis, strategic planning, risk governance and resource management. The moderating variable was internal

organizational factors and were measured on how they influenced disaster management. These are shown in Table 4.

Table 4: ***Operationalization of Research Variables***

Construct	Nature of variable	Operational variable	Supporting literature	Measurement	Scale	Questionnaire item
Environmental Analysis	Independent	• Hazard identification • Risk analysis • Risk evaluation • Contingency plans	McMahon & Faen (2017), Paté-Cornell (2017), Obrien, O'Keefe, Rose & Wisner, 2016, Oakleaf, 2016)	Level of agreement from the 5-point Likert scale on the questionnaire	Ordinal	B
Strategic Planning	Independent	• External orientation • Internal orientation • Functional integration	Nam, (2012), Tran (2015), Van (2016), Aldrich & Meyer (2014)	Level of agreement from the 5-point Likert scale on the questionnaire		C
Risk Governance	Independent	• Legal framework • Policies	Meerpoel(2015), Lechat (2017), McMahon & Faen, (2017), Vermaa& Niekerk (2017), Onofere (2015	Level of agreement from the 5-point Likert scale on the questionnaire	Ordinal	D
Resource management	Independent	• Resource allocation • Accountability • Skilled personnel • Reporting	Chisholm & Nielsen, (2010), Garcia *et al.* (2018), Khady, (2017), Jensen, (2018)	Level of agreement from the 5-point Likert scale on the questionnaire	Ordinal	E

Internal Organizational Factors	Moderating	• Leadership • Previous experience	Lechat (2017), Paté-Cornell (2017) Farooq & Vij (2017), Peretomode (2012)	Level of agreement from the 5-point Likert scale on the questionnaire	Ordinal	F
Disaster Management	Dependent	• Reduced loss of life and property • Reduced financial loss • Reduced environmental damage	Ansell *et al*. (2016), Cunniff, (2017) Rotich, (2019), Vermaa& Niekerk (2017).	Level of agreement from the 5-point Likert scale on the questionnaire	Ordinal	G

3.9 Data Analysis

Data analysis was done once all information was gathered, and it entailed checking the questionnaire, data processing, editing, entry, sorting, coding, cleaning, and interpretation of results. The data obtained was considered authentic enough to represent the population and the process of analysis was done. According to Mingala (2002), data is a collection of figures and facts associated with a specific activity, event or phenomena being studied. Information is valuable if it provides answers to a study problem and that can be realized by analysing the data that was collected. Leedy (2002) describes analysis of data as the entire procedure which comes after the collection of data and culminates at interpretation, processing and presentation of results.

Both descriptive and inferential statistics was employed in this study. Descriptive analysis is employed to articulate the behaviour of a data sample and to introduce quantitative analytics on a provided dataset. Descriptive analysis was also utilized to breakdown large data amounts into manageable simple data (Sharma, 2019). Further, descriptive analysis represents measures of central tendency and variability to aid in the comprehension of the implication of the data analysed to by way of graphs, tables and general discussion. Bar charts are used to visually compare values to each other. The trend or progress seen on a chart helps researchers and entrepreneurs analyse data more efficiently, which allows them to draw conclusions or make calculated decisions (Martinez, 2015). Frequency tables show relative frequency (fraction or percentage) of observations and help get a more comprehensible representation. Frequency tables further allow large amounts of data to be organised so that they can be described and communicated with others easily by summarizing the distribution of the cases across the features of a variable (Hess & Ofosu, 2017). Descriptive analysis is performed to

underscore the possible associations among variables and to provide a basic summary regarding various data sets (Sharma, 2019).

Descriptive statistics were used to analyse results on respondents' demographics including work experience, position in employment, existence of disaster management plans and review periods at the ministries. Other subjects of study under this section included environmental analysis, strategic planning, risk governance, resource management and disaster management. The study further required that respondents provide their viewpoint on what they would do differently to successfully implement disaster management initiatives and the overall impact of disaster management in their Ministry. This data was qualitative in nature was analysed by content analysis in which participants' responses were presented and analysed as research findings.

Inferential statistics comprised of correlation analysis and regression analysis. Inferential analysis is employed in testing hypotheses on which basis it is deduced if the hypotheses are rejected or accepted (Pandya, 2010). Inferential statistics are designed for generalizing the results from a sample to the entire population under study. It attempts to generate deductions that are beyond data observed and satisfy specific questions raised prior to the study (Kern, 2013).

For normality test, the researcher conducted skewness test and Kurtosis test. Test of normality is usually conducted to cure type I and type II errors. In statistics, normality tests are done to assess if a data set is distributed normally. Factors that lack normal distribution can misrepresent significance and relationships tests therefore causing challenges in multivariate regression analysis. All regression analyses presume that data are distributed normally and therefore the factors ought to be distributed normally.

The data obtained was analysed using the Statistical Package for the Social Sciences (SPSS) version 27. For closed-ended questions, quantitative data was analysed to assess how the response variable is affected by factor variables.

The hypothesis testing was done using multiple regression analysis. The study endeavoured to determine the effects of factor variables on response variables. Multiple Regression and Pearson's Product Moment Correlation analysis were employed to produce the degree of alteration and the coefficient of determination (R^2) and in the predictor variable. The Pearson product-moment correlation coefficient is a measure of the strength, direction and probability of a linear association amongst two variables and it tries to draw a line of best fit through the data of the two variables. The Pearson correlation coefficient takes a range of values from +1 to -1. Zero value indicates that there is no association between the two variables; value greater than zero indicates a positive association; while a value less than zero indicates a negative association (Chee, 2015). Pearson product-moment correlation coefficient allows a researcher to develop ideas about possible cause-effect relationships between variables. However, the crux of the nature and the problem with correlation is that, just because two variables are correlated, it does not mean that one variable caused the other. A strong relationship may be by chance where the variables appear to be related, but there is no true underlying relationship, or there may be a third lurking variable that makes the association appear stronger (or weaker) than it actually is (Chee, 2015).

In Multiple Regression model, it is assumed that a linear outcome exists between response and factor variables. Multiple regression models describe how a dependent variable Y is depended linearly on several independent variables. Regression analysis is undertaken to determine the correlation between two or more variables having cause effect relations and to

make inferences for the research topic by using the relation (Uyanik & Guler, 2013). Multiple regression analysis was applied to yield the coefficient of determination (R^2) which showed the degree of variance in the predictor variable as a result of a combination of a number of predictors.

The regression equation to be used is:

$$Y = a_0 + a_1X_1 + a_2X_2 + a_3X_3 + a_4X_4 + e \quad (4)$$

Where:
Y = Dependent variable (Disaster management)
a_0 = Constant term
X_1 = Environmental analysis
X_2 = Strategic Planning
X_3 = Risk governance
X_4 = Resource management
a_i =Coefficients of variable X_1, X_2, X_3, X_4,
e = Error term

Further, the study assessed the moderating effect of leadership and previous experience on disaster management. Moderation influences were assessed with hierarchical regression analysis. Variables are added or removed from the multiple regression model in multiple steps.

Leadership imperative is centred on facilitation, networking, coordination, influence and collective empowerment, not command and control. No two type of disaster can have similar experiences. Leaders must be are ready to challenge the status quo and initiate the change processes needed in the rescue and relief field (Bahauddin & Iftakhar, 2017). Experience is the past, present, and future at once. An experience is not a one-time occurrence. One can recall past experiences, reflect on them, and discover new intuitions. Past experiences can help navigate present ones, and current experiences may prompt one to re-examine past

experiences for new lessons. Future experiences don't merely happen but they can be shaped consciously seeking out opportunities to grow as a leader (Hollenbeck (2020). Based on this theory, the moderating variables were entered as additive variables to (4) above starting with past experience then next step with leadership.

The model used therefore was:

$$Y= a_{0} + a_1X_1 + a_2X_2 + a_3X_3 + a_4X_4 + a_5X_5 + a_6X_{5*}X_1 + a_7X_{5*}X_2 + a_8X_{5*}X_3 + a_9X_{5*}X_4 + e \quad (5)$$

Where:
Y = Dependent variable (Disaster management)
a_0 = Constant term
X_1 = Environmental analysis
X_2 = Strategic Planning
X_3 = Risk governance
X_4 = Resource management
X_5 = Internal organizational factors (Moderating variable)
a_i = Coefficients of variables X_1, X_2, X_3, X_4,X_5
e = Error term

The association between the predictor and predicted variables was measured assessed by hierarchical regression analysis illustrated as a model. The measurement results were then discussed using Multiple R, Coefficient of determination (R2), F-statistic, significance levels and coefficients of variables.

3.10 Assumption for Regression

The foregoing multiple regression analyses were performed with the presumption that: there is normal data distribution to avoid misrepresentation of significance tests and associations which was realized as the study did not find any outliers; and a linear association between the response and factor variables for estimation accuracy, which was realized as the study standardized coefficients were employed in elucidation.

Multi-collinearity occurs when two or more independent variables are highly correlated with one another in a regression model (Bhandari, 2020). When there is a perfect or exact relationship between the predictor variables, it is difficult to come up with reliable estimates of their individual coefficients (Joshi, 2012). This will result in incorrect conclusions about the relationship between outcome variable and predictor variables. The research tested for multi-collinearity by running correlations in a pairwise across the study variables and through visual inspection of correlation coefficients and variance inflation factors (VIF) which revealed they were within the acceptable set values. To further confirm that there was no multi-collinearity, tolerance values were checked and it was established that they were all below 1.0, which is the accepted standard.

To correct for possible multi-collinearity in data, the study dropped those variables that were suspected to be related to each. Multi-collinearity is deemed present if the model has several variables highly correlated among each other and with the outcome variable. This means that one factor may be predicted linearly from other factors. A rise in multi-collinearity leads to a rise in standard errors.

3.11 Ethical Considerations

A study conducted is only deemed effective if it offers answers to the study problem and all participants are contented. This study dealt with various ethical issues to safeguard the respondents' privileges and rights. Before the researcher commenced collecting data, the researcher obtained permission from the relevant authorities and guaranteed the participants that data gathered would be handled with greatest privacy and the information were used solely for the objective of this study. According to Akaranga & Makau, (2016), ethical values guard against the falsification or fabrication of data and hence enable the search for truth and knowledge which is the basic research goal. Ethical conduct is crucial for cooperative studies

since it supports a climate of mutual respect, accountability, and trust among academics. Ethical concerns entail but among others anonymity, informed consent, confidentiality and voluntary participation. This is particularly significant when deliberating on concerns regarding co-authorship, data sharing, confidentiality, and copyright guidelines.

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSION

4.1 Introduction

The general objective of the research was to analyze how disaster management is influenced by practices of strategic management in Kenya, with a focus on the national government ministries. Data analysis was performed by use of both descriptive and inferential statistics. Whereas descriptive analysis is used to lay the basis for the main inferences and arguments of the study, the inferential statistics present the main thesis by testing the foregoing set hypotheses.

4.2 Response Rate

The study sought participants' responses on disaster management issues such as existence of disaster management plan, frequency of review and what informs the need for review; environmental analysis; strategic planning; risk governance and resource management. Data were collected between June and July 2019 as planned, through distribution of questionnaires to respondents in national government ministries in Kenya and collecting them back. Table 5 presents the response rate.

Table 5: ***Response Rate***

Questionnaires	Frequency	Percent (%)
Returned	106	82.8
Unreturned	22	17.2
Distributed	128	100.0

Out of a population size of 128 respondents, a response rate of 82.8% was achieved (106 questionnaires returned). This shows an outstanding response rate as suggested by Abdulwahab, Dahalin & Galadima (2011) who agree that a response rate of 30% is sufficient. Collis and Hussey (2009) are also in agreement that a 70% and above is excellent; a 60%

response rate is good and a 50% response rate is acceptable for data analysis and reporting. Saunders, Lewis and Thornhill (2009) suggest a response rate of 30-40 per cent.

4.3 Data Screening and Cleaning

In any multiple regression analysis, screening data is critical and provides the basis for any significant outcome in conducting a study that is quantitative in nature. The output and quality of analysis of data are dependent on the initial data screening quality. Neglecting this assumption runs the risk of poor output and incorrectness of the data analysis being performed (Abdulwahab *et al.*, 2011). Data must be screened to ensure it is valid, reliable and usable for assessing relational assumptions. According to Chatfied & Collins (2013), the importance of the exercise of screening data is a fundamentally crucial level for analysing quantitative data through multivariate regression.

It is further essential to run the data for likely data entry errors and other possible errors with a view to correct and rectify the errors identified (Abubakar, Saidin & Ahmi, 2017). Whereas the process of screening data raises key difficulties to investigators, its crucial role on meaningful and quality analysis ought to be considered keenly (Gorondutse & Hilman, 2014). As such, it is likely that the magnitude of the researches' suggestive inference relies to a larger or greater extent on the investigator's capability to carry out a meaningful and thorough preliminary and data screening exercise (Abubakar *et al.*, 2017).

Preliminary diagnostic tests were performed to screen data for errors in preparation for both descriptive and inferential analyses. This included tests to determine missing values, outliers, normality, multi-collinearity as well as homogeneity of variances.

4.3.1 Missing Value Analysis

According to Creswell (2013) & Soley-Bori (2013) missing values are common in social research and that these values are known to affect the results of statistical analysis. The study analysed missing values with respect to cases and variables. The study employed the hot deck method for the missing value analysis. According to Sulis & Porcu (2017), the hot deck method is an imputation procedure to compensate for non-response in a study which involves ascribing missing values from a randomly selected similar record. A thorough assessment of the filled questionnaires revealed a few missing values randomly distributed across the data which were imputed using the hot deck method. The missing value is obtained from a "donor questionnaire" (nearest neighbour) in the same survey.

4.3.2 Outliers

An outlier is expressed as a point of data which distances itself from the model while the rest do fall within the range and seems distant from the remaining data (Collis & Hussey, 2013). This may exert a negative impact on the regression model, skewness and kurtosis of the data hence decreasing the accuracy of the findings and the statistical significance of the hypothesis. Therefore, outlier detection is important for effective modelling to present the accuracy of results. The data was analysed to detect the presence of multivariate outliers following the guidelines by Ary *et al.* (2010). The multivariate outliers were identified using Mahalanobis distance (D^2). A case is found to be an outlier if the probability linked with its (D2) is 0.001 or less (Collis and Hussey (2009). In the present study, only five statements were found to have probabilities associated with their (D2) as 0.001 and less hence considered outliers. These were checked and corrected because they are known to affect empirical results obtained which may in turn affect practical implications of the study (Kothari, 2004). Table 6 presents the residual statistics for the D^2 test.

Table 6: ***Residuals Statistics***

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	27.2209	46.3026	37.6509	2.75711	106
Std. Predicted Value	-3.783	3.138	.000	1.000	106
Standard Error of Predicted Value	.510	4.140	.998	.580	106
Adjusted Predicted Value	27.3023	62.0476	37.8187	3.63207	106
Residual	-13.34769	11.79882	.00000	4.73076	106
Std. Residual	-2.753	2.434	.000	.976	106
Stud. Residual	-2.913	2.620	-.012	1.037	106
Deleted Residual	-26.04757	13.66971	-.16772	5.63950	106
Stud. Deleted Residual	-3.029	2.701	-.012	1.053	106
Mahal. Distance	.170	75.590	4.953	8.836	106
Cook's Distance	.000	3.510	.046	.341	106
Centered Leverage Value	.002	.720	.047	.084	106

a. Dependent Variable: Disaster Management

4.3.3 Testing for Normality

Normality of distributions is assessed numerically through statistical tests particularly the Kolmogorov-Smirnov test, Shapiro-Wilk test and by examining kurtosis and skewness. According to Attua (2009), Shapiro-wilk tests is more adequate for small samples of less than 50 while Kolmogorov-Smirnov test is ideal for medium and small sample sizes ($n < 300$), and could not be reliable for greater sample sizes. To address the challenge of sample sizes, an alternative technique is normally used in which normality is assessed by use of kurtosis and skewness of the data spread, which is versatile and may be used for both large and small sample sizes (Kim, 2013).

The present study tested for normality using Kurtosis and Skewness. Skewness is employed to assess the evenness of a data spread while kurtosis is employed to measure the flatness or peakedness of a data spread.

As observed in the descriptive statistics in Table 7, all the variables were normally distributed. The kurtosis and skewness values indicate that the data spread was distributed

normally. Collis & Hussey (2009) opine as a rule of thumb, skewness statistics between -1.96 and 1.96 indicate symmetrical data distribution while statistics less than -1.96 or greater than 1.96 indicate high skewness. As such, the present data was found to be symmetrical as skewness statistics were within the recommended range. According to Tashakkori & Teddlie (2008), the standard normal distribution has a kurtosis between -2 and +2 and is termed as Mesokurtic while data with kurtosis of greater than 2 indicate longer and fat tailed distributions, termed as Leptokurtic. Data with kurtosis statistics of less than -2 are termed as Platykurtic and indicate shorter and thin tailed distributions. The present study was therefore found to be normally distributed with regard to Kurtosis as all statistics within acceptable range. Table 7 shows the results.

Table 7: ***Test for Normality***

	Skewness		Kurtosis	
	Statistic	*Std. Error*	*Statistic*	*Std. Error*
Strategic Environmental Analysis	-.993	.235	1.636	.465
Strategic Planning	-.469	.235	1.043	.465
Risk Governance	-1.053	.235	1.121	.465
Resource Management Strategies	-1.133	.235	.972	.465

4.3.4 Multi-collinearity Diagnostics

Multi-collinearity is deemed present if two or more predictor variables are correlated highly with each other as indicated by the correlation coefficients and has a value of Variance Inflation Factors (VIF) above 10 (Gomez, Gracia & Perez, 2020). In instances where there is an exact or perfect association between the independent variables, it is a challenge to develop reliable approximations of their coefficients individually and it will lead to inaccurate inferences regarding the association between the factor and the response variables. The study utilized the centering of independent variables prior to computing interaction terms to counter multi-collinearity. According to Gomez *et al.* (2020) tolerance is linked with every predictor

factor and varies from 0 as the lowest correlation to 1 as the highest correlation and it does not have a limiting cut-off point, but recommends a value under .40 is a reason for tolerance concern. According to Weisburd & Britt (2013), any value below .20 indicates multi-collinearity concerns in the regression model, that is to say for high tolerance there is low multi-collinearity and vice versa.

Multi-collinearity was tested through the visual inspection of correlation coefficients and VIF which revealed they were within the acceptable set values. To further confirm that there was no multi-collinearity, tolerance values were checked and it was established that they were all below 0.1, while the VIF values were all below 10 which is the accepted standard. The results are as shown in Table 8.

Table 8: ***Multi-collinearity Diagnostics***

Model	Collinearity Statistics	
	Tolerance	VIF
Strategic Environmental Analysis	.805	1.243
Strategic Planning	.813	1.231
Risk Governance	.823	1.215
Resource Management Strategies	.806	1.241

4.3.5 Test of Homogeneity of Variances

Homogeneity of Variances assumption is that within each of the populations, the variance is equal (Steyn, 2013). The study tested for homogeneity of variance which is an assumption and condition prior to conducting either Analysis of Variance or regression analyses. This was tested using the Levene statistic. Levene's test is used to test if samples have equal variances. As shown in Table 9, the study recorded P-values greater than 0.05 across the variables, indicating homogeneity of variance. The Levene's test of homogeneity of variances is thus not significant at $\alpha = 0.05$. The null hypothesis that there are equal variances in the data was therefore accepted hence the conclusion that there is homogeneity of variance in the data.

Table 9: Levene's Test for Homogeneity of Variances

	Levene Statistic	Sig.
Strategic Environmental Analysis	.630	.644
Strategic Planning	1.235	.313
Risk Governance	1.049	.421
Resource Management Strategies	1.125	.379
Internal Organizational Factors	1.140	.314

Df –Degrees of freedom

4.4.1 Demographic Information

The respondents' biographic detail is captured in this section including level of position in the ministry, length of service in the ministry, presence of a crisis management plan and the timeline covered, frequency of ministry's disaster management plan as well as the number of disasters experienced in the last ten years. Findings are as hereby presented and analysed.

4.4.1.1 Position at the Ministry

The study participants were required to specify their respective cadres in management with a view to ensure diversity in perspectives and representation thereof as informed by experiences in different levels of management. Two administrative cadres to this end, reached in the study owing purposively to their assumed conversance with pertinent information on the variables under study. The job category of respondents in the ministries was as shown in table 10.

Table 10: ***Job Category in the Ministry***

Job Category in the Ministry	Frequency	Percent	Valid Percent	Cumulative Percent
Senior manager	69	65.1	65.1	65.1
Middle-level manager	37	34.9	34.9	100.0
Total	106	100.0	100.0	

As portrayed in Table 10, the analysis indicated that most of the respondents (65.1%) were in the of top management cadre while 34.9% were in the middle management cadre. This shows the varied standpoints as informed by duties and tasks typical to the respective cadres in administration. The study deemed both cadres sufficiently represented for interpretation and drawing of pertinent inferences guided by the study objectives.

4.4.1.2 Working Experience

Owing to the study objectives, it was considered imperative to establish respondents' working experience as conversance with the subject matter was deemed directly dependent on work experience in the respective or similar institutions. The findings would further guarantee that data obtained in the study was richly informed by lengthy work experience. Working Experience was deemed to be indicative of the interaction among imagination (visualizing futures and generating ideas), information and respondents' knowledge (attitude, intuition and past experience).

As displayed in Figure 3, data indicates that most of the respondents (34.0%) had been working in their respective organizations for 6 to 10 years, 22.6% had worked for 11 to15 years while 18.9% of had been working in the organizations for below 5 years. Further, 17.9% of the respondents affirmed that they had worked for 16 - 20 years while a small percentage (6.6%) had worked for more than 20 years in their respective institutions. The

finding shows a rather inclined distribution in the length of employment among the study respondents. Since most of the study respondents affirmed that they had worked in their respective organizations for more than 5 years, it can be deduced that responses obtained were supported by the respondents' working experience.

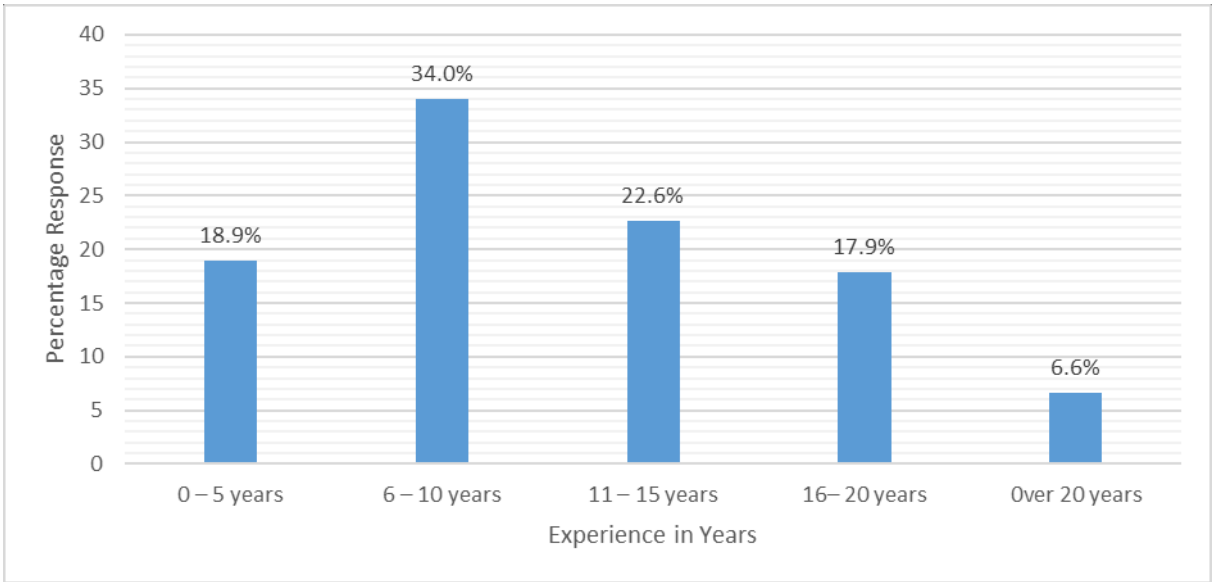

Figure 3: *Working Experience*

4.4.1.3 Existence of a Disaster Management Plan

The study endeavoured to determine whether respondents' ministries had a disaster management plan in place. The plan details the institution's strategy for handling disaster or emergency, offers essential data for business operations continuity, and establishes the required resources. Data in table 11 shows that majority respondents (84.0%) affirmed that there was a disaster management plan in their organizations. This finding is an indicator that majority of national government ministries surveyed have a disaster management plan in place.

Table 11: ***Disaster Management Plan***

Existence of Disaster Management Plan	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	89	84.0	84.0	84.0
No	17	16.0	16.0	100.0
Total	106	100.0	100.0	

4.4.1.4 Timeline Covered

The study also was interested in the length of time the disaster management plan covers. This would indicate the span of periodic review of the disaster management plans across the various ministries surveyed. The results showed that 74.6%, 17.9% and 7.5% of the organizations had their disaster management plans covering five years, three years and one year respectively (Figure 4). The findings imply that majority of the surveyed national government ministries review their disaster management plans every five years.

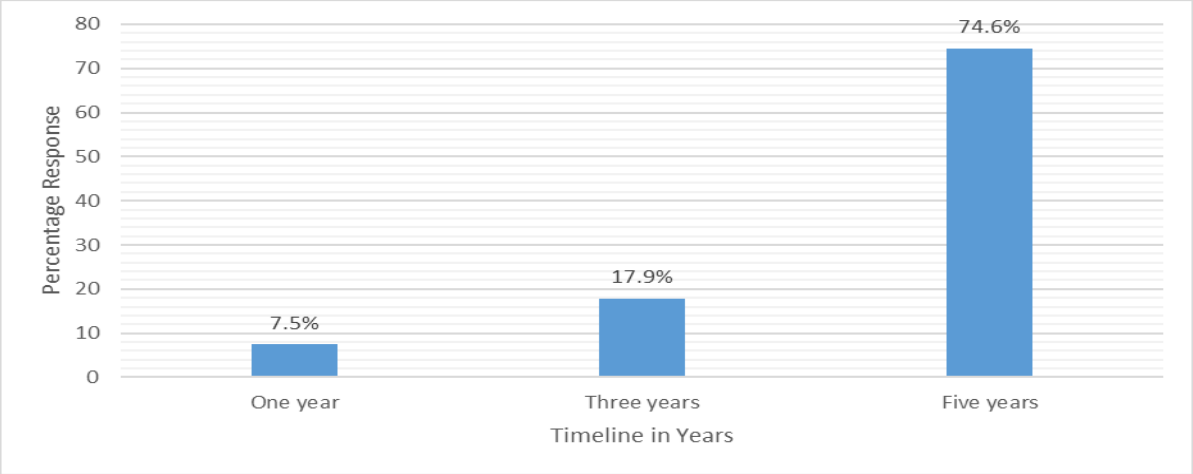

Figure 4: ***Timeline Covered***

4.4.1.5 Number of Disasters

The study was further was interested in establishing the number of disasters experienced from the respective ministries in the last 5 years. As portrayed in Figure 5, results indicate that majority (85.8%) of respondents indicated that their ministry had experienced less than 5

disasters over the last five years. It can be deduced from the finding that disaster occurrences among a majority of the national government ministries surveyed is minimal, totalling less than five on average for a majority of the institutions.

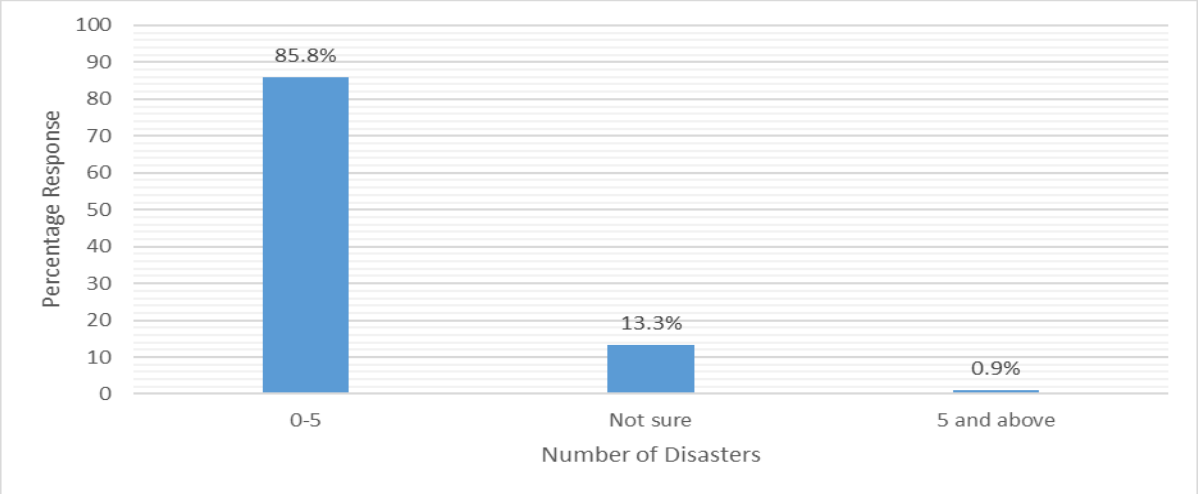

Figure 5: ***Number of Disasters***

4.4.1.6 Frequency of Review

The study endeavoured to determine the frequency of disaster management plan review, bearing in mind the dynamic environment and its implications. Most respondents (44.3%) indicated that their organizations reviewed their respective disaster management plans on an annual basis, followed by 29.2% who stated that their organizations reviewed their plans quarterly. The results are shown in figure 6.

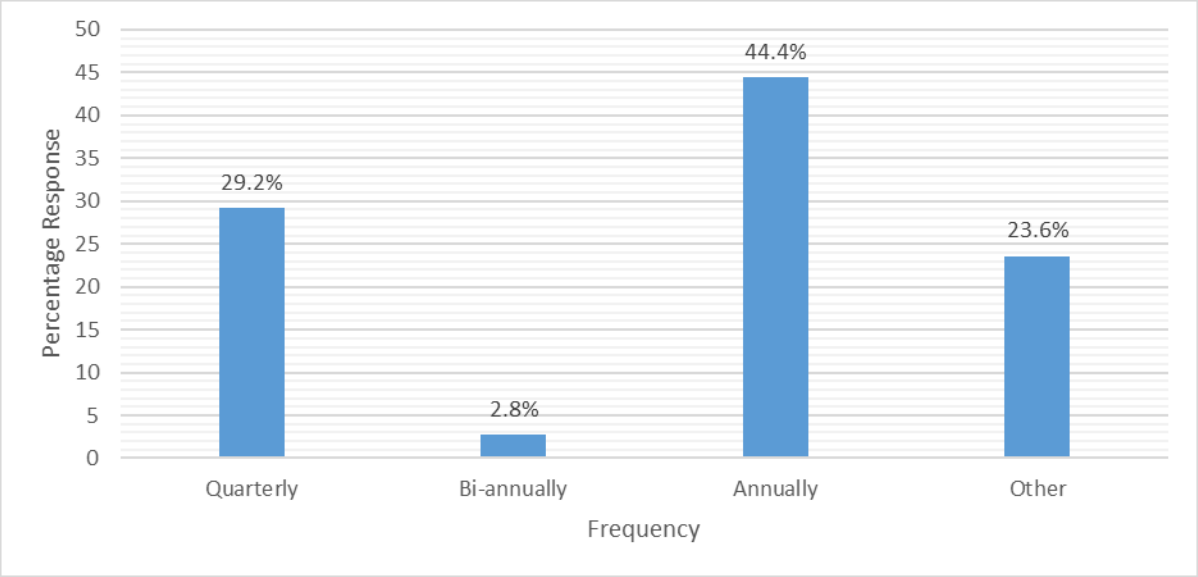

Figure 6: ***Frequency of Review of Disaster Management Plan***

It follows from the foregoing findings that indeed a majority of government ministries have disaster management plans in place. This is in line with the draft National Policy for Disaster Management in Kenya (GOK, 2009) that aims at underscoring the reduction of disaster risk in the process of development in Kenya across both the private and public sectors with a view to strengthen resilience in coping with potential disasters. The existence of a disaster management plan among most of the central government ministries indicates preparedness on the part of government in reduction of disaster risk. Consequently, Taabu (2014) explains that adequate management of disasters relies on force and rate of man-made and/ or natural disasters. It is in this context that it is paramount to have the ability to effectively and promptly prepare for, prevent, respond to and recover from disastrous events. According to Morogo (2014), governments typically respond to disasters by instituting appropriate organizations and policies. The management of disasters presuppose extra attempt for effective and proper teamwork when handling deleterious disasters.

Taabu (2014) further argues that the management of disaster seeks to avoid or reduce anticipated losses from disaster threats, guarantee appropriate and prompt help for disaster victims and realize effective and speedy recovery. The cycle of crisis management demonstrates the processes through which civil society, businesses, and governments plan to lessen the effect of disasters, and respond immediately during and after a disaster; as well as carry out necessary actions for recovery in the aftermath of a disaster. The findings also concur with Khan (2008) who contends that necessary action steps across the cycle of crisis management result in better warnings, greater preparedness, disaster prevention and reduced vulnerability. The whole crisis management cycle entails the information of public plans and policies that either mitigate the sources of disasters or reduce their impacts on infrastructure, property and people.

4.4.2 Strategic Environmental Analysis

The study first endeavoured to determine how disaster management is impacted upon by strategic environmental analysis in Kenya. This would give an overview of the extent to which the government conducts strategic environmental analysis with particular reference to hazard identification, risk analysis, risk evaluation and contingency plans. To this end, the study respondents were required to specify their agreement levels with relevant statements posed regarding the influence of strategic environmental analysis on disaster management as experienced in their respective ministries.

Responses were given on both a ‘No’ and ‘Yes’ basis and on a scale with 5 progressive levels varying from highest levels of disagreement denoted by number 1 to the highest level of agreement denoted by number 5. For ease of interpretation and data analysis, the resulting mean statistics have been categorized into three, including disagree, neutral and agree, obtained by rounding off to the nearest scale. For instance, means that fall within the range of

0≤2.4, have been taken to represent 'disagree' while means falling between 2.5≤ 3.4 have been taken to represent 'neutral'. Means within 3.5≤5.0 have on the other hand been taken to represent 'agree'. Tables 12 and 13 present the descriptive test statistics for strategic environmental analysis.

Table 12: ***Strategic Environmental Analysis***

	Mean	Std. Dev
Hazard identification		
The Ministry keeps and updates a risk register on workplace hazards	4.7170	.4526
Hazards are classified according to their severity and communicated to all staff in the Ministry	4.2358	.4265
Incident investigations are carried out as and when they occur	4.4811	.5020
Corrective actions are well documented and communicated to all staff in the Ministry	4.4028	.3046
Risk Analysis		
Existing and potential threats that that Ministry could face are identified	3.0849	.7330
The probability of the risk occurring is considered as a major event and all the necessary structures put in place to avert its occurrence	4.8019	.4047
The ministry has formulated ways of managing risks	4.6005	.378
Risk Evaluation		
Risk impact analysis is carried out by the Ministry	4.4883	.0182
The Ministry has put in place mechanisms to control risks	4.5189	.5022
The Ministry always implements recommendations of risk impact analysis	3.6604	.9245
Contingency Plans		
The Ministry has put in place mechanisms for receiving warnings on impending disasters	4.0000	.7559
Warnings are received in good time for necessary action to be undertaken	4.8740	.4004
The ministry has developed a well programmed risk management plan	3.9044	.6916
Composite Mean	**4.29**	

With respect to hazard identification, most study participants particularly highly agreed that the ministry keeps and updates a risk register on workplace hazards ($\bar{x}$=4.7170); incident investigations are carried out as and when they occur ($\bar{x}$=4.4811); corrective actions are well

documented and communicated to all staff in the ministry ($\bar{x}$=4.4028); and that hazards are classified according to their severity and communicated to all staff in the ministry ($\bar{x}$=4.2358). On risk analysis, a majority highly agreed that the ministry has formulated ways of managing risks ($\bar{x}$=4.6005); that the probability of the risk occurring is considered as a major event and all the necessary structures put in place to avert its occurrence ($\bar{x}$=4.8019); and that existing and potential threats that that Ministry could face are identified ($\bar{x}$=3.0849)

Most study respondents agreed that with regard to risk evaluation, their respective ministries had put in place mechanisms to control risks ($\bar{x}$=4.5189); risk impact analysis is carried out by the ministries (4.4883); and that their respective ministries always implement recommendations of risk impact analysis ($\bar{x}$=3.6604). The results further showed that most ministries received warnings in good time for necessary action to be undertaken (4.8740); have mechanisms in place for receiving warnings on impending disasters ($\bar{x}$=4.0000); and have a well programmed risk management plan ($\bar{x}$=3.9044). Results indicated that most respondents ($\bar{x}$=4.29) strongly affirmed that their respective ministries conducted strategic environmental analyses.

Table 13: ***Impact Risk Analysis and Internal Mechanisms for Detecting Disasters***

Impact Risk Analysis	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	82	77.4	78.5	78.5
No	24	22.6	21.5	100.0
Total	106	100.0	100	
Internal Mechanisms	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	82	77.4	77.4	77.4
No	24	22.6	22.6	100
Total	106	100.0	100.0	

The study probed to find out whether or not respective ministries carried our risk impact analysis to which a majority (77.4%) affirmed while 22.6% declined. Most study respondents (77.4%) further affirmed that their respective ministries had an internal mechanism in place

for detecting disasters while only 22.6% dissented. The study also was interested in the frequency with which risk impact analysis was conducted as portrayed in Figure 7. Most study respondents (81.1%) indicated that they conducted their risk impact analysis on a quarterly basis distantly followed by 8.5% who conducted their risk impact analysis bi-annually while 7.5% and only 2.8% conducted their risk impact analysis on an annual and a monthly basis respectively.

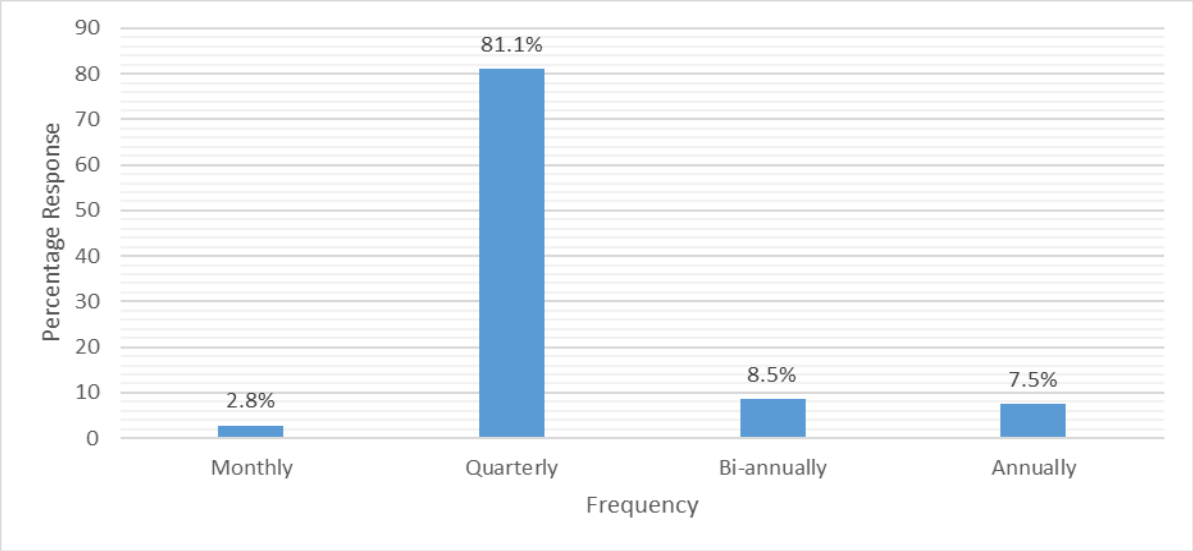

Figure 7: ***Frequency of Risk Impact Analysis***

The study infers based on the foregoing results that most national government ministries in Kenya ($\bar{x}$=4.29) include strategic environmental analysis as a strategic management practice with a view to manage disasters. A majority of ministries particularly practice hazard identification, risk analysis, risk evaluation and put in place contingency plans, which most study respondents highly affirmed to have managed to ward off disasters. The findings imply that in order to adequately manage disasters and keep the workplace safe and healthy, it is eminent to include as a strategic management practice, strategic environmental analysis to identify and classify hazards and document proper corrective actions; periodically analyse existing and potential risks and formulate corrective actions; evaluate risks and analyse their

potential impacts; and put in place contingency plans for detecting impending risks through early warning mechanisms and formulate well programmed risk management plans for taking necessary actions.

The findings are in agreement with Taabu (2014) who asserts that risk assessment categorizes potential risks according to their severity, from greatest to lowest. If the hazard poses a significant risk, for instance the probability of fire in a paper establishment, then suitable infrastructure can be used to establish the necessary guarantee, and insurance can shift the threat of loss. Where the possible risk is however ranked as low, then the manpower, resources and time necessary to lower this prospective risk ought to be assessed. Kohle *et al*. (2016) also agree that in order to reduce and manage risk, they ought to be assessed qualitatively or quantitatively, and visualized spatially.

4.4.3 Strategic Planning

The study also endeavored to examine how disaster management is impacted upon by strategic planning practice in Kenya. Responses were given on a scale with five progressive points varying from highest level of disagreement denoted by number 1 to the highest level of agreement denoted by number 5. The results are shown in table 14.

Table 14: ***Strategic Planning***

	Mean	Std. Dev
External orientation		
The Ministry collaborates with other ministries and agencies on matters of disaster management	4.0000	.9442
The ministry is flexible and adapts to evolving disaster management needs	4.5650	.0429
Internal orientation		.8592
Safety needs of all employees is guaranteed	3.0849	.3056
The Ministry has an insurance plan for its employees in the event of a disaster	4.6035	.3078
Functional integration		.9745
There is a department that deals with disaster management issues	4.4704	.6734
The department that coordinates disaster management activities has terms of reference clearly spelt out	4.5076	.0080
There is an active disaster coordination team specifically assigned to handle disaster management activities	4.2177	.5292
The disaster management team has skills required to carry disaster management activities	4.5189	.4212
Average Mean	4.4658	

Most study participants affirmed that with regard to external orientation, the ministry is flexible and adapts to evolving disaster management needs ($\bar{x}$=4.5650); and that the ministry collaborates with other ministries and agencies on matters of disaster management ($\bar{x}$=4.0000) to a great extent. On internal orientation, most study respondents also affirmed to a great extent the ministry has an insurance plan for its employees in the event of a disaster ($\bar{x}$=4.6035). To a moderate extent, however, safety needs of all employees is guaranteed ($\bar{x}$=3.0849).

On functional integration, most study participants indicated that to a great extent, there is a department that deals with disaster management issues ($\bar{x}$=4.4704); the department that coordinates disaster management activities has terms of reference clearly spelt out ($\bar{x}$=4.5076); that there is an active disaster coordination team specifically assigned to handle

disaster management activities ($\overline{x}$=4.2177); and the disaster management team has skills required to carry disaster management activities ($\overline{x}$=4.5189).

Strategic planning practice was thus found to be of great implication to disaster management ($\overline{x}$=4.4658) across a most of the national government ministries particularly with regard to functional integration. A majority of national government ministries orient their strategic plans both internally and externally by collaborating with other ministries and agencies on matters of disaster management and incorporating employee safety needs in their strategic plans in addition to having insurance plans for their employees. This may be attributed to the adoption of occupational safety and hazards policies and practices in addition to disaster management plans. Functional integration is also adequate in a most of the ministries as most have a department that deals with disaster management issues; an active disaster coordination team specifically assigned to handle disaster management activities; and a disaster management team with skills required to carry disaster management activities.

The foregoing findings are consistent with Karam (2018) who argues that organizations should incorporate disaster management into statements of corporate excellence and strategic planning processes. Karam (2018) particularly offers that the way teams are crucial in performing tasks in organizations, strategic planners ought to develop various teams of disaster management complete with well- defined tasks, which can change the organization to being crisis prepared from being crisis prone. Since most ministries lack a functional department dedicated to disaster management, most of them domesticate their disaster management plans and collaborate with other ministries and agencies on matters of disaster management. This is consistent with the Draft Disaster Management Policy (GOK 2009)

which emphasizes government role in the strategic planning and management of disasters in collaboration with development partners, international agencies and other bodies.

4.4.4 Strategic Risk Governance

The study endeavored to evaluate the effect of strategic risk governance practice on disaster management in Kenya. Respondents were to this end required to show their agreement levels with relevant statements relating to the influence of strategic risk governance on disaster management as experienced in their respective ministries. Responses were given on both a 'Yes' and 'No' basis and on a scale with five progressive point varying from highest levels of disagreement denoted by number 1 to the highest level of agreement denoted by number 5. The findings are presented in Table 15.

Table 15: ***Strategic Risk Governance***

	Mean	Std. Dev
Policy		
My Ministry has developed a disaster management policy framework	4.6201	.9431
My Ministry has copies of its disaster management policy framework distributed amongst all departments	4.6749	.5423
The ministry has elaborate procedures to be followed in an event of a disaster	3.5529	.8612
All staff in the Ministry have been inducted on the Ministry's disaster management framework	4.7734	.0617
Legal Framework		
My Ministry is aware of the Government legal framework that guide disaster management activities	3.8853	.9745
The disaster management coordination team is well versed with the Government legal framework	4.7457	.6734
The Government legal framework was used in the development of the disaster management policy at the ministry	4.1043	.0080
Composite Mean	4.3367	

With respect to policy, data indicates that a most of the ministries reached have to a great extent, inducted all staff on the ministry's disaster management framework ($\bar{x}$=4.7734); a

majority have copies of their disaster management policy framework distributed amongst all departments ($\bar{x}$=4.6749); a majority have developed a disaster management policy framework ($\bar{x}$=4.6201); and that elaborate procedures to be followed in an event of a disaster are in place to a moderate extent ($\bar{x}$=3.5529).

Further, with regard to legal framework, it was found that in a most of the ministries, the disaster management coordination team are well versed with the government legal framework to a great extent ($\bar{x}$=4.7457); that the government legal framework was used in the development of the disaster management policy at the ministry ($\bar{x}$=4.1043); and that a most of the ministries are aware of the government legal framework that guide disaster management activities only to a moderate extent ($\bar{x}$=3.8853). The findings indicate that most respondents affirmed that strategic risk governance is practiced in their respective ministries to a very great extent ($\bar{x}$=4.3367).

The study also set out to determine whether or not the department responsible for coordinating disaster management activities reported on activities and how regular the reporting was done (Table 16 and figure 8).

Table 16: ***Reporting of Disaster Management Activities***

Reporting	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	90	84.9	84.9	84.9
No	16	15.1	15.1	100.0
Total	106	100.0	100.0	

As tabulated in Table 16, it was found that in most of the ministries (84.9%) , the department responsible for coordinating disaster management activities reported such activities.

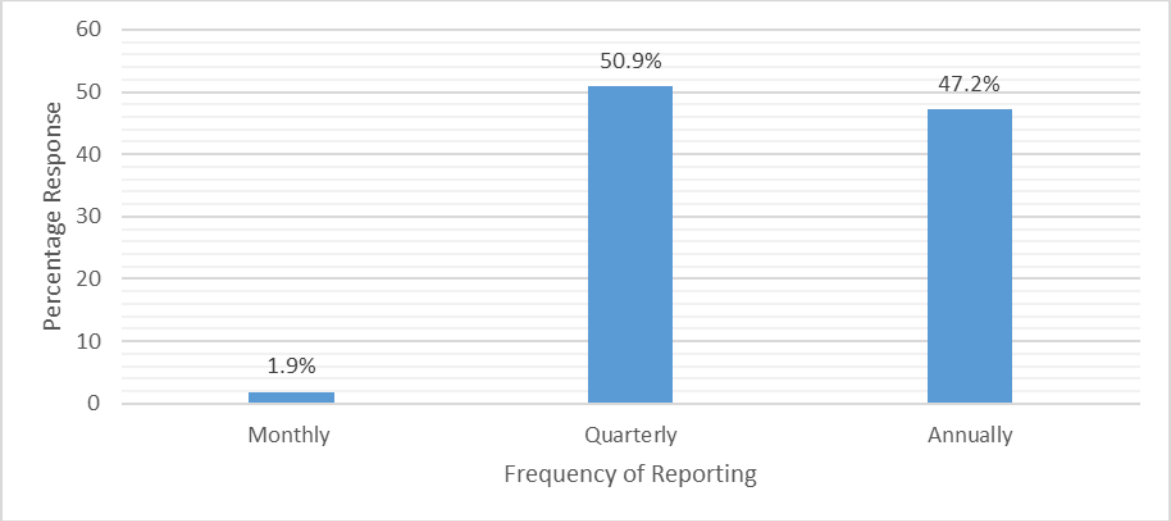

Figure 8: ***Frequency of Reporting***

As illustrated in Figure 8, majority of the institutions (50.9%) reported on a quarterly basis followed by 47.2% who reported annually while only 1.9% reported on a monthly basis (1.9%).

The study further endeavored to determine how often staff in respective ministries were inducted on the ministry's disaster management activities. A majority (65.1%) indicated that they were inducted annually, followed by 24.5% inducted bi-annually, 11.3% quarterly and 0.9% monthly (Figure 9).

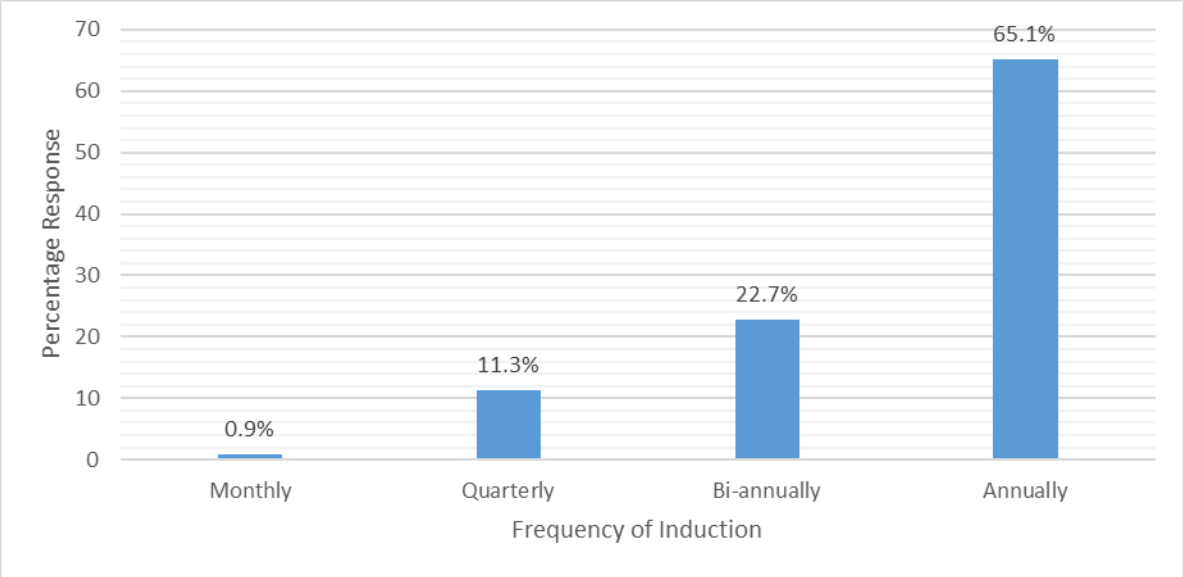

Figure 9: ***Frequency of Induction***

The study infers, based on the results, that there exist elaborate policy and legal frameworks governing disaster management with which most of the national government ministries align their strategic management practices ($\bar{x}$=4.3367). Most ministries have particularly developed a disaster management policy framework and have copies of their respective disaster management policy frameworks distributed amongst all departments. This supports the HFA which requires that nations should formulate institutional, legislative and policy frameworks for reduction of disaster risks. Nations are further required to follow up progress through development of measurable and specific indicators.

Findings further imply that most of the ministries rely heavily on the government legal framework in the development of their disaster management policies. Wafula (2012) recognizes that in spite of numerous significant initiatives in disaster management carried out in Kenya in the last two decades, sufficient preparedness levels necessary in mitigating significant risk profiles are yet to be realized. Interventions have been carried out in a manner that is inharmonious, inconsistent, uncoordinated and reactive owing to the absence of a

collective policy framework. Ngaira (2013) notes that the extant legal and policy frameworks may bring about misunderstanding as it presents several levels at which decisions can be made. It further offers a clear-cut process for the statement of a "state of disaster" and description of authority. In the ministries where disaster management coordination teams exist, they are versed with the government legal framework on disaster management. Enhanced mechanisms of accountability provided for in work processes and legislation, an active media, a free press and social audit processes, all result in enhancing the awareness of obligations and rights on all sides (UNISDR, 2011).

However, as observed by Mugambi (2010) and Nam (2012), disaster management by governmental institutions at various levels of interaction is nearly completely reactive. The complete spectrum requisite in the management of disasters including preparedness, prevention, mitigation, response and rehabilitation is not an essential part of the present systems of disaster management. On the contrary every disaster is regarded as a crisis, and necessary preparations are carried out to address only emergency circumstances.

Findings further indicate that reporting on disaster management activities is periodically done across most ministries, a majority of whom report on a quarterly basis. This is strategic as it keeps staff abreast with their workplace safety levels thus enhancing their motivation and commitment to work. This practice supports the HFA (2005-2015) requirements on the need for nations to analyze, record, disseminate and summarize statistical information on disaster occurrence, losses and impacts on a regular basis through local, national, regional, and international mechanisms. It is paramount to recognize that the beginning of culture promotion for resilience to disaster and reducing disaster risk lies in the awareness of hazards and the social, physical, environmental and economic susceptibilities to crises that a majority

of communities face, and of the ways in which vulnerabilities and hazards are changing in the long and short term, followed by activities carried based on the knowledge.

4.4.5 Resource Management Strategies

To establish how disaster management is impacted upon by resource management strategies in Kenya, the respondents were requested to affirm to various statements as appropriate relating to the influence of resource management strategies on disaster management as experienced in their respective ministries. Responses were given on both a 'No' and 'Yes' basis and on a scale with five progressive point varying from highest levels of disagreement denoted by number 1 to the highest level of agreement denoted by number 5. The results are as shown in table 17.

Table 17: ***Resource Management Strategies***

	Mean	Std. Dev
Financial Resources		
The Ministry has adequate budgetary allocation by the Government for disaster management activities	4.1975	.5360
There is accountability in resource management for disaster management in Kenya	3.6095	.5137
Personnel		
The Ministry has adequate personnel to coordinate disaster management activities	3.0544	.5587
The Ministry has skilled personnel on disaster management	4.3058	.5645
The disaster management coordinating team is always on high alert	4.0739	.4762
Disaster management team undergo regular training on disaster management	4.1345	.5765
Composite Mean	**3.8959**	

The results show that with reference to financial resources, most study participants greatly agree that their respective ministries have adequate budgetary allocation by the government for disaster management activities ($\bar{x}$=4.1975); and there is accountability in resource

management for disaster management in Kenya ($\bar{x}$=3.6095) to a moderate extent. With respect to personnel, most respondents moderately agreed that their respective ministries have skilled personnel on disaster management ($\bar{x}$=4.3058); disaster management team undergo regular training on disaster management ($\bar{x}$=4.1345); the disaster management coordinating team is always on high alert ($\bar{x}$=4.0739); and that that the ministry has adequate personnel to coordinate disaster management activities ($\bar{x}$=3.0544) only to a moderate extent. Results indicate that most institutions reached employ resource management strategies only to a moderate extent ($\bar{x}$=3.8959).

The research also set out to find out whether there are external sources of funds for disaster management and the findings are as tabulated in Table 18. Only 9.4% of respondents affirmed that in their ministry, there existed external sources of funds outside government funding, while a majority (90.6%) dissented. The finding implies that a majority of the national government ministries surveyed rely on the central government budgetary allocation for disaster management, which may be attributed to the low frequency of disaster occurrence deeming external funding unwarranted for most institutions.

Table 18: ***External Sources of Funds***

External Funds	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	10	9.4	9.4	9.4
No	94	90.6	90.6	100.0
Total	106	100.0	100.0	100.0

The findings are of the implication that strategic resource management in the context of disaster management is greatly observed ($\bar{x}$=3.8959). It is particularly notable that as most of the ministries have budgetary allocation by the government for disaster management activities and that accountability in resource management for disaster management in Kenya

is adequate. It can be deduced that the adequacy of functional integration within most of the national government ministries with regard to disaster management can be attributed to the budgetary allocation and accountability in resource management towards disaster management. Notably, t most of the ministries have adequate skilled personnel to coordinate disaster management activities and they undergo regular trainings on disaster management.

The findings agree with Chacko *et al.* (2014) who highlight in their study, that there exists a notable necessity to develop greater decision support systems to enable the management of the increasing complexity of disasters and the associated costs, especially in view of the resource challenges which are characteristically experienced by recovery and response organizations. The findings are also supported by Mugambi (2010) who observes that quite frequently, disasters take place across the globe while decision makers normally channel resources towards the most persistent present problems. The distress regarding crises is getting incrementally pertinent internationally, specifically in urban areas and cities.

4.4.6 Internal Organizational Factors

The study endeavoured to assess the internal organizational factors among the ministries surveyed. Respondents were to affirm to various statements relating to internal organizational factors as experienced in their respective ministries. Responses were provided on a scale with five progressive point varying from highest levels of disagreement denoted by number 1 to the highest level of agreement denoted by number 5.

Most respondents highly affirmed that lessons from previous experience positively impacted on disaster management in their organization ($\overline{x}$=4.5408); respondents indicated that lessons from previous experience are communicated to all members of staff at the ministry ($\overline{x}$=3.7734); and that lessons from previous experience are well documented ($\overline{x}$=3.8771).

With regard to leadership, most respondents moderately agreed that leadership style determines the commitment of workers for a successful response to an emergency strategy ($\bar{x}$=3.8538); leaders and workers at the work place always work together to create new action plans and policies to address emergencies ($\bar{x}$=4.3435); and that leaders share information and provide feedback for more coordinated response ($\bar{x}$=3.9151).

The study further established that internal organizational factors as indicated by leadership and past experiences have considerable implications on disaster management for most of the national government ministries ($\bar{x}$=4.44812). Most respondents highly agreed with pertinent statements posed with regard to internal organizational factors ($\bar{x}$=4.44812) (Table 19).

Table 19: ***Internal Organizational Factors***

	Mean	Std. Dev
Leadership		
Leadership style determines the commitment of workers for a successful response to an emergency strategy	3.8538	.40243
Leaders and workers at the work place always work together to generate new policies and action plans to deal with emergencies	4.3435	.04929
Leaders share information and provide feedback for more coordinated response	3.9151	.34532
Lessons from previous experience		
Lessons from previous experience are well documented	3.8771	.40385
Lessons from previous experience are communicated to all members of staff at the Ministry	3.7734	.40047
Lessons from previous experience positively impacted on disaster management at the Ministry	4.5408	.04940
Composite Mean	**4.44812**	

The findings imply that internal organizational factors, particularly leadership plays an important role in translating strategic practices into important milestones in disaster management. It is also apparent from the foregoing findings that leaders in most of the institutions strategically employ information sharing and communication as well as inspiring

staff commitment to positively impact disaster management. Documentation, communication and application of past experiences have also had considerable implications on disaster management among most of the ministries surveyed. The finding is in tandem with Takada and Yokota (2007) who regarded the prioritization of employee commitment in the workplace as a major aspect of an effective reaction to a crisis. Workplace executives operating in harmony to provide feedback and disseminate information on the outcome of activities carried out is significant in raising motivation and realizing a better organized response.

4.4.7 Disaster Management

The study endeavored to assess disaster management as experienced by the respective ministries in Kenya. Respondents were asked to affirm to various statements as appropriate pertaining to how disaster management is experienced in their respective ministries. Opinions were provided on a scale with five progressive point varying from highest levels of disagreement denoted by number 1 to the highest level of agreement denoted by number 5. The study established that in most of the ministries, disaster management has led to reductions in loss of life ($\bar{x}$=4.1413), environmental damage ($\bar{x}$=3.9450); and financial loss ($\bar{x}$=3.8574). Most respondents highly agreed that strategic management practices have a great effect on disaster management as indicated by the composite mean of 4.1457. These findings are illustrated in Table 20.

Table 20 ***Disaster Management***

	Mean	Std. Dev
Disaster management has led to reduced loss of life	4.1413	.69169
Disaster management has led to reduced financial loss	3.8574	.45261
Disaster management has led to reduced environmental damage	3.9450	.42655
Composite Mean	**4.1457**	

The findings imply that across the ministries surveyed, disaster management has had considerable reductions in loss of life, financial loss and environmental damage ($\overline{x}$=4.157). This is in agreement with Lima *et al.* (2013) who assert that response to disasters could imply the difference between life and death. Strategies that are well-defined for reconstruction and recovery may decrease financial losses and human suffering by offering speedy return to normalcy with respect to community operations. Canniff (2017) opines that crises exert deleterious impacts on communities' environmental, economic, and social fabric, and the problem is already being exacerbated by climate change. Across the country, communities are attempting to determine how to adapt and mitigate the impacts.

Households that have gone through damages and loss from crises and experienced the probable deleterious effects are in better positions to prepare beforehand for forthcoming disaster occurrences. People who have experienced floods, earthquakes, hurricanes have a higher likelihood of preparing for forthcoming disaster events. Hoffman & Muttarak (2017) note that past disaster occurrences could affect preparedness tendencies through means that are similar to awareness creation. Risk perception and hazard awareness for instance are closely linked to preceding disaster experiences. Surviving and being directly impacted by a disaster could raise awareness concerning the possibility for obliteration, enhance recovery knowledge and demonstrate advantages of evacuation in the event of disasters and how to mitigate subsequent threats of disaster. This in turn increases preparedness behaviour. Being directly impacted by a crisis leads to people acquiring the realization of the destruction that can be created by disasters and therefore gather information on what can be done to reduce the possibility of destruction (Hoffman & Muttarak, 2017).

4.5 Inferential Analysis

The Pearson product moment correlation analysis was performed to assess both the course and respective strengths of the linkage between pairs of subscales making up the independent variables which also served as indicators. The variable subscales were computed with the help of SPSS. According to Tashakkori & Teddlie (2008), a perfect fit is shown by a value of R^2 of 1.0, and therefore it is an extremely dependable framework for prediction, showing that the equation accounts for all observed variations. Howell (2002) argues that the goodness of fit measures ideally summarizes the inconsistency between the expected and observed values under the regression model. On the contrary, a zero correlation value shows that the equation fails to correctly outline the data completely. Multiple regression analyses were also performed to establish the impact of different variable subscales on the outcome variable. According to Katz (2006), regression analysis creates a model to articulate the statistical association between predictor variables and the outcome variable. R-square is a numerical assessment of how well the information is to a modelled line of regression (Chaplin, 2007).

4.5.1 Strategic Environmental Analysis and Disaster Management

The study set out to examine the influence of strategic environmental analysis on disaster management in Kenya. Strategic environmental analysis was measured by four (4) subscales including contingency plans, risk evaluation, hazard identification and risk analysis. The study sought to establish the correlation between the subscales under strategic environmental analysis with a view to determine the degree of linear association between the sub-constructs. Table 21 displays the data summary of the Pearson correlation analysis of the association between the various subscales under strategic environmental analysis. The data shows a positive correlation between each pair of subscale.

The strongest correlation was obtained between contingency plans and hazard identification which were also significantly and positively correlated (r=.985; p<0.05); followed by contingency plans and risk analysis (r = .896; p<0.05); risk analysis and hazard identification (r = .825; p<0.05); contingency plans and risk evaluation (r = .462; p<.05); risk evaluation and risk analysis (r = .455; p<0.05); and risk evaluation and hazard identification (r = .315; p<0.05). The correlation was performed at 95% confidence interval. The foregoing findings confirm the reliability results that strategic environmental analysis as a composite variable is internally consistent as most of the subscales are positively and significantly internally correlated.

Table 21: ***Strategic Environmental Analysis Subscale Correlation Matrix***

	Hazard Identification	Risk Analysis	Risk Evaluation	Contingency Plans
Hazard Identification	1			
N	106			
Risk Analysis	.825**	1		
N	106	106		
Risk Evaluation	.000			
N	.315**	.455**	1	
Contingency Plans	106	106	106	
N	.001	.000		
	106	106	106	
	.896**	.985**	.462**	1
	.000	.000	.000	
	106	106	106	106

**. Correlation is significant at the 0.01 level (2-tailed).

To determine how the impact of different strategic environmental analysis subscales on disaster management, a multiple regression analysis was performed with the presumption that there is normal data distribution to avoid misrepresentation of significance tests and associations which was realized as the study did not find any outliers; and a linear association between the response and factor variables for estimation accuracy, which was realized as the

study standardized coefficients were employed in elucidation. Multiple regression analysis produced the model summary, ANOVA and regression coefficients as shown in Tables 22, 23 and 24 respectively.

The results in Table 22 revealed a correlation value (R) of .839 that shows that a linear relationship exists between the factor variables and the response variable. The adjusted R-square of .703, the equation reveals that hazard identification, risk evaluation, risk analysis and contingency plans explain 70.3% of the variance in the disaster management variable whereas the remaining 29.7% was articulated by other variables not in the model.

Table 22: ***Strategic Environmental Analysis Subscale Correlation: Model Summary***

Model Summary

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate
1	.839[a]	.703	.694	.66228

a. Predictors: (Constant), Contingency plans, Risk Evaluation, Hazard identification1, Risk Analysis

The study performed the ANOVA at 95% confidence. ANOVA provides information about levels of variability within a regression model and forms a basis for tests of significance. The results in Table 23 shows p<0.000 significance probability value and this implies that the regression model can be relied upon.

Table 23: ***Strategic Environmental Analysis Subscale Regression: ANOVA***

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	105.988	4	35.329	80.549	.000[b]
	Residual	44.738	101	.443		
	Total	150.726	105			

a. Dependent Variable: Disaster Management

b. Predictors: (Constant), Contingency plans, Risk Evaluation, Hazard identification, Risk Analysis

The regression constant, which denotes the dependent variable' mean when all the independent variables are set at zero, is high owing to the high levels of agreement, and therefore mean ($\bar{x}$=4.1457) recorded in the variable, disaster management. The regression coefficients Table 24 reveals that individually, each subscale including hazard identification ($\beta = 3.910$, $t= 12.580$, $p <0.05$); risk analysis ($\beta = 1.697$, $t= 9.300$, $p <0.05$); risk evaluation ($\beta = 4.889$, $t= 12.622$, $p <0.05$) and contingency plans ($\beta = 5.148$, $t= 13.512$, $p <0.05$) have a significant influence on disaster management, keeping all other factors constant. The positive coefficients indicate that as the value of the independent variables increase, the mean of the dependent variable also increase.

Table 24: ***Strategic Environmental Analysis Subscale Regression: Coefficients***

		Unstandardized Coefficients		Standardized Coefficients		
Model		*B*	*Std. Error*	*Beta*	*T*	*Sig.*
1	(Constant)	82.205	4.551		18.064	.000
	Hazard Identification	3.967	.315	3.910	12.580	.000
	Risk Analysis	2.538	.273	1.697	9.300	.000
	Risk Evaluation	3.033	.240	4.889	12.622	.000
	Contingency Plans	3.194	.236	5.148	13.512	.000

a. Dependent Variable: Disaster Management

4.5.2 Strategic Planning and Disaster Management

The study sought to determine the effect of strategic planning practice on disaster management in Kenya. Strategic planning practice was measured by three (3) subscales including contingency plans, risk evaluation, hazard identification and risk analysis. The results of the Pearson correlations depicting the association between the various subscales under strategic planning are presented in Table 25. A positive correlation is seen between every pair of subscale. Significant and positive correlations were obtained between internal

orientation and external orientation measures of strategic planning (r = .762; p<.005); Functional integration and internal orientation (r = .875; p<.05); and functional integration and external orientation (r = .601; p<.05). The correlation was performed at 95% confidence interval. The finding also confirmed the reliability results that strategic planning as a composite variable is internally consistent as most of the subscales are positively and significantly internally correlated.

Table 25: ***Strategic Planning Subscale Correlation Matrix***

	External Orientation	Internal Orientation	Functional Integration
External Orientation	1		
N	106		
Internal Orientation	.762**	1	
	.000		
N	106	106	
Functional Integration	.601**	.875**	1
	.000	.000	
N	106	106	106

***. Correlation is significant at the 0.01 level (2-tailed).*

A regression analysis was also performed to assess the impact of various strategic planning subscales on disaster management. The model summary, ANOVA and regression coefficients were produced as portrayed in Tables 26, 27 and 28 respectively. The results as shown in Table 26 revealed a 0.839 correlation value (R) depicting a strong linear association between the response and factor variables. The model also shows that with the .694 adjusted R-square, external orientation, internal orientation and functional integration explain 69.4% of the variance in disaster management while 30.6 percent is accounted for by other variables excluded in the model.

Table 26: ***Strategic Planning Subscale Regression: Model Summary***

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate
1	.839[a]	.703	.694	.66228

a. Predictors: (Constant), Functional Integration, External Orientation, Internal Orientation

The study performed the ANOVA at 95% confidence. ANOVA provides information about levels of variability within a regression model and form a basis for tests of significance. The results in Table 27 show p<0.000 significance probability value and this implies that the regression model is reliable.

Table 27: ***Strategic Planning Subscale Regression: ANOVA***

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	105.988	3	35.329	80.549	.000[b]
	Residual	44.738	102	.439		
	Total	150.726	105			

a. Dependent Variable: Disaster Management

b. Predictors: (Constant), Functional Integration, External Orientation, Internal Orientation

The regression coefficients Table 28 further reveal that individually, each subscale has a significant influence on disaster management, keeping all other factors constant. These include external orientation ($\beta = 1.333$, $t= 9.873$, $p <0.05$), internal orientation ($\beta = 1.716$, $t= 15.168$, $p <0.05$) and functional integration ($\beta = 1.125$, $t= 10.374$, $p <0.05$). This can be attributed to both the conceptual interlinkage and application of the subscales in the implementation of strategic plans.

Table 28: ***Strategic Planning Subscale Regression: Coefficients***

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	*Std. Error*	*Beta*	*t*	*Sig.*
1	(Constant)	56.967	1.798		31.692	.000
	External Orientation	1.333	.135	.841	9.873	.000
	Internal Orientation	1.716	.113	2.132	15.168	.000
	Functional Integration	1.125	.108	1.182	10.374	.000

a. Dependent Variable: Disaster Management

4.5.3 Risk Governance and Disaster Management

The study sought to examine the effect of strategic risk governance practice on disaster management in Kenya. Strategic risk governance practice was measured by policy and legal framework. A Product moment assessment conducted to assess the direction and significance of the subscales under risk governance. From the findings shown in Table 29, a positive, strong and significant correlation is seen between policy and legal framework measures of risk governance ($r = .941$; $p<.05$). The correlation was performed at 95% confidence interval. The finding further confirms the reliability results that risk governance as a composite variable is internally consistent as both sub constructs are positively and significantly internally correlated.

Table 29: ***Risk Governance Subscale Correlation Matrix***

		Policy	Legal
Policy	Pearson Correlation	1	.941**
	Sig. (2-tailed)		.000
	N	106	106
Legal	Pearson Correlation	.941**	1
	Sig. (2-tailed)	.000	
	N	106	106

**. Correlation is significant at the 0.01 level (2-tailed).

A regression analysis was performed to assess the impact of various risk governance subscales on disaster management. The model summary, ANOVA and regression coefficients were produced as represented in Tables 30, 31 and 32 respectively.

The results as illustrated in Table 30 revealed a .767 correlation value (R) depicting a strong linear association between the response and factor variables. The model also shows with the .580, adjusted R-square, that legal and policy framework explain 58.0% of the variance in disaster management while 42.0% is accounted for by other variables excluded in the model.

Table 30: ***Risk Governance Subscale Correlation: Model Summary***

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate
1	.767[a]	.588	.580	.77621

a. Predictors: (Constant), Legal Framework, Policy

The study performed the ANOVA at 95% confidence. ANOVA provides information about levels of variability within a regression model and form a basis for tests of significance. The results in Table 31 show p<0.000 significance probability value and this implies that the regression model can be relied upon.

Table 31: ***Risk Governance Subscale Regression: ANOVA***

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	88.668	2	44.334	73.583	.000[b]
	Residual	62.058	103	.603		
	Total	150.726	105			

a. Dependent Variable: Disaster Management

b. Predictors: (Constant), Legal Framework, Policy

The regression coefficients table further reveals that individually, both policy (β = 2.352, t= 8.983, p <0.05) and legal framework (β = 1.164, t= 11.211, p <0.05) have a significant

influence on disaster management, keeping all other factors constant. This is illustrated in Table 32.

Table 32: ***Risk Governance Subscale Regression: Model Summary***

		Unstandardized Coefficients		Standardized Coefficients		
Model		*B*	*Std. Error*	*Beta*	*t*	*Sig.*
1	(Constant)	67.604	3.778		17.894	.000
	Policy	2.352	.262	1.679	8.983	.000
	Legal Framework	1.164	.104	2.096	11.211	.000

a. Dependent Variable: Disaster Management

4.5.4 Resource Management and Disaster Management

The study further sought to establish the effects of resource management strategies on disaster management in Kenya. Resource management strategies was indicated by two (2) sub-constructs including financial resources and personnel. A Pearson product moment correlation analysis was thus conducted to assess the direction and significance of the subscales under resource management. Results reveal correlations that are significant and positive between financial resources and personnel measures of resource management ($r = .733$; $p<.005$). The correlation was also performed at 95% confidence interval. This is shown in Table 33.

Table 33: ***Resource Management Subscale Correlation Matrix***

		Financial Resources	Personnel
Financial Resources	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	106	
Personnel	Pearson Correlation	.733**	1
	Sig. (2-tailed)	.000	
	N	106	106

**. Correlation is significant at the 0.01 level (2-tailed).

A regression analysis was performed to assess the impact of various risk governance subscales on disaster management. The model summary, ANOVA and regression coefficients were produced as portrayed in Tables 34, 35 and 36 respectively. The results in Table 34 reveal a .568 correlation value (R) depicting a strong linear association between the response and factor variables. The model also shows with the.309, adjusted R-square, that resource management explains 30.9% of the variance in disaster management while 69.1% is accounted for by other variables excluded in the model.

Table 34: ***Resource Management Subscale Regression: Model Summary***

Model	R	R^2	Adjusted R^2	Std. Error of Estimate
1	.568[a]	.322	.309	.99581

a. Predictors: (Constant), Personnel, Financial Resources

The study performed the ANOVA at 95% confidence. ANOVA provides information about levels of variability within a regression model and forms a basis for tests of significance. The results in Table 35 show p<0.000 significance probability value and this implies that the regression model can be relied upon.

Table 35: ***Resource Management Subscale Regression: ANOVA***

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	48.587	2	24.294	24.498	.000[b]
	Residual	102.139	103	.992		
	Total	150.726	105			

a. Dependent Variable: Disaster Management

b. Predictors: (Constant), Personnel, Financial Resources

The regression coefficients presented in Table 36 reveal that individually, both financial resource (β = .844, t= 4.468, p <0.05) and personnel (β = .384, t= 6.941, p <0.05) have a significant influence on disaster management, keeping all other factors constant.

Table 36: ***Resource Management Subscale Regression: Coefficients***

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	38.571	1.208		31.935	.000
	Financial Resource	.844	.189	.533	4.468	.000
	Personnel	.384	.055	.827	6.941	.000

a. Dependent Variable: Disaster Management

4.6 Hypothesis Testing

The product moment assessment was performed to determine both the respective direction and strengths of the linkage between the response and factor variables and among the independent variables. The composite variables were computed using the SPSS. The study further regressed the dependent variable against independent variables with a view to assess the effect of the study variables and hence test the study hypotheses.

The product moment assessment was first performed as presented in Table 37 to assess the linear association between the predictor variables including strategic environmental analysis, strategic planning practice, strategic risk governance practice and resource management strategies; and disaster management, which constituted the outcome variable. A statistically significant and positive and correlation was observed from the findings, between the outcome and predictor variables and between every pair of the predictor variables.

The study found the strongest correlation between strategic risk governance practice and disaster management ($r = .458$; $p < .01$) followed by environmental analysis and resource management, and disaster management which were significantly and positively correlated at respective correlation coefficients of .385 ($p<0.01$) and .373 ($p<0.01$); and strategic planning and disaster management at .297 ($p<0.01$). Strong, positive and significant correlations were also established between resource management and environmental analysis (.907**$p<0.01$);

strategic planning and environmental analysis (.926**p<0.01); resource management and strategic planning (.991**p<0.01); risk governance and resource management (.991**p<0.01); and strategic planning and risk governance (.977**p<0.01).

Table 37: ***Correlation Matrix for Composite Variables***

		Disaster Management	Environmental Analysis	Resource Management	Strategic Planning	Risk Governance
Disaster Management	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	106				
Environmental Analysis	Pearson Correlation	.385**	1			
	Sig. (2-tailed)	.000				
	N	106	106			
Resource Management	Pearson Correlation	.373**	.907**	1		
	Sig. (2-tailed)	.000	.000			
	N	106	106	106		
Strategic Planning	Pearson Correlation	.297**	.926**	.991**	1	
	Sig. (2-tailed)	.002	.000	.000		
	N	106	106	106	106	
Risk Governance	Pearson Correlation	.458**	.918**	.991**	.977**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	106	106	106	106	106

**. Correlation is significant at the 0.01 level (2-tailed).

A regression analysis was then performed to assess how disaster management is impacted upon by different practices of strategic management. The model summary, ANOVA and regression coefficients were produced as portrayed in Tables 38, 39 and 40 respectively. The findings were utilized in hypotheses testing.

The results revealed a .854 correlation value (R) depicting a strong linear association between the response and factor variables. The model also shows that with the .718 adjusted R-square, strategic environmental analysis, strategic planning practice, strategic risk governance

practice and resource management strategies explains 71.8% of the variance in disaster management while 28.2% is accounted for by other variables excluded in the model. These are illustrated in Table 38.

Table 38: ***Regression Analysis for Composite Variables: Model Summary***

Model	R	R^2	Adjusted R^2	Std. Error of Estimate
1	.854[a]	.729	.718	.63573

a. Predictors: (Constant), Resource management, Environmental Analysis, Risk Governance, Strategic Planning

The study performed the ANOVA at 95% confidence. ANOVA provides information about levels of variability within a regression model and form a basis for tests of significance. The results in Table 39 show $p<0.000$ significance probability value and this implies that the regression model is reliable and therefore may be applied to test the relationship between the response and factor variables as well as to make further deductions.

Table 39: ***Regression Analysis for Composite Variables: ANOVA***

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	109.907	4	27.477	67.985	.000[b]
	Residual	40.820	101	.404		
	Total	150.726	105			

a. Dependent Variable: Disaster Management

b. Predictors: (Constant), Resource management, Environmental Analysis, Risk Governance, Strategic Planning

Regression analysis further produced the regression coefficients presented in Table 40, which were used to test the stated hypotheses.

Table 40: ***Regression Analysis for Composite Variables: Coefficients***

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	*Std. Error*	*Beta*	*t*	*Sig.*
1	(Constant)	33.227	2.345		14.170	.000
	Environmental Analysis	.211	.068	.563	3.114	.002
	Strategic Planning	1.488	.216	4.026	6.878	.000
	Risk Governance	1.235	.216	3.070	5.730	.000
	Resource management	.306	.337	.810	.908	.366

a. Dependent Variable: Disaster Management

4.6.1 Strategic Environmental Analysis and Disaster Management

The study endeavoured to examine how disaster management is influenced by strategic environmental analysis in Kenya. This informed the first null hypothesis of the study ($H_0 1$) that states that there is no statistically significant effect of strategic environmental analysis on disaster management in Kenya. To test the hypothesis, a multiple regression analysis was conducted. The findings in Table 40 revealed that keeping other factors constant, strategic environmental analysis has a significant influence on disaster management ($\beta = .211$, $t= 3.114$, $p<0.05$). The study thus rejects the first null hypothesis and concludes that there is a statistically significant influence of strategic environmental analysis on disaster management in Kenya.

The findings can be attributed to the dependence of most of the ministries on such strategic environmental analysis as hazard identification, risk evaluation and analysis and development of contingency plans particularly with regard to early warning systems in the formulation and implementation of disaster management plans. This is in agreement with Hayes (2015) who identifies three steps in the risk assessment process including identification of risk, analysis of risk, and evaluation of the risk. Assessment of risk may also provide the ground for optimization of development planning and public investment as well as risk reduction

strategies. Further, the findings agree with Hayes (2015) who states that the perception of risk is the main aspect of collection and individual management of disaster risks. By raising public awareness of disaster risks, disaster managers and planners attempt to motivate individuals and communities to make adequate inquiries on disasters.

The significance of such actions are enshrined in the HFA. The Framework emphasises the preparation, review and periodic update of contingency plans and disaster preparedness as well as policies across all levels, with specific reference to the most vulnerable groups and areas. This is done through advancement of regular exercises of disaster preparedness, including drills, in order to guarantee effective and rapid response to disaster and availability of essential non-food and food aid supplies to local needs as appropriate. By understanding and quantifying the hazards and forestalling the possible effects of risks, individuals, communities, and governments can develop knowledgeable decisions towards managing risk. Such data may be employed in setting priorities for adaptation and development strategies, programs, sector plans, budgets and projects.

4.6.2 Strategic Planning Practice and Disaster Management

The study also endeavoured to determine the effect of strategic planning practice on disaster management in Kenya. This informed the second null hypothesis (H_02) that states that there is no statistically significant effect of strategic planning practice on disaster management in Kenya. To test the hypothesis, a multiple regression analysis was conducted. The findings in Table 40 revealed that keeping other factors constant, at 0.05 confidence level, strategic planning practice has a significant influence on Disaster Management ($\beta = 1.488$, $t= 6.878$, $p<0.05$). The study therefore rejects the second null hypothesis and concludes that there is a statistically significant effect of strategic planning practice on disaster management in Kenya.

The findings can be attributed to the cross-cutting nature of the concept and practice of strategic planning which entails identification of all the external and internal elements, which can affect the organization's disaster management. Strategic planning is also a stronger factor as it sets priorities, focus resources, strengthen operations and ensures that employees and other stakeholders are working toward common disaster management goals.

The findings are in agreement with Aljuhmani & Emeagwali (2017) who observe that strategic planning is characterized as organizational activities that systematically explore the competitive environment, discuss goals and mission, coordinate actions for execution across the whole organization and assess strategic alternatives. Further, the findings agree with Aljuhmani & Emeagwali (2017) who cherished that the objective of the strategic planning process includes coming up with strategies for competition which enable the organizations to identify its place in the market environment. Strategic management of disaster has become significant for institutions functioning in the present day. The goal of institutional disaster management is to take decisions with techniques informed by strategic thinking and facts when functioning under strange circumstances. Coombs (2014) also asserts that for appropriate responses, disaster management ought to still be subjected to proper planning in order to equip company workers with survival skills for prosperity.

4.6.3 Strategic Risk Governance and Disaster Management

The study further endeavored to evaluate the effect of strategic risk governance practice on disaster management in Kenya. This informed the third null hypothesis of the study (H_03) that states that there is no statistically significant effect of strategic risk governance on disaster management in Kenya. To test the hypothesis, a multiple regression analysis was conducted. The findings in Table 40 revealed that keeping other factors constant, at 0.05

confidence level, strategic risk governance has a significant influence on disaster management (β = 1.235, t= 5.730, $p<0.05$). The study therefore rejects the third null hypothesis and concludes that there is a statistically significant effect of strategic risk governance on disaster management in Kenya.

This can be attributed to the elaborate disaster management policy and legal frameworks governing disaster management with which most of the national government ministries align their strategic management practices. The findings are in tandem with the HFA (2005-2015) on disaster risk governance as reviewed by Aysan *et al.* (2014) who observe that the principles and values of governance are significant for realization of disaster risk reduction, and comprehending the faults, successes and changes in practice and policy on disaster risk management. The findings are also in line disaster risk governance as implicitly incorporated in the HFA under priority for action 2005-2015, on policy, institutional and legislative frameworks.

However, as observed by Nam (2012), the institutional and legislative framework on DRR in Kenya is uncoordinated and fragmented, and most of the institutional directives overlap. Apart from the national disaster response plan and draft national policy on disaster management, there is lack of regulations or laws particularly with regard to the management of disaster, but on the contrary, a series of rules, regulations and sectoral acts which promote the management of disasters. Ngaira (2013) argues that the existing legal and policy frameworks may bring about misunderstanding as it presents several levels at which decisions can be made.

4.6.4 Resource Management Strategies and Disaster Management

The study was also interested in the effect of resource management strategies on disaster management in Kenya. This informed the fourth null hypothesis ($H_0 4$) that there is no statistically significant effect of resource management strategies on disaster management in Kenya. To test the hypothesis, a multiple regression analysis was conducted. The findings in Table 40 revealed that keeping other factors constant, at 0.05 confidence level, resource management strategies do not have a statistically significant effect on disaster management (β = 306, t= .908, p>0.05). The study therefore fails to reject the fourth null hypothesis and concludes that there is no statistically significant effect of resource management strategies on disaster management in Kenya.

This can be attributed to most national government ministries being well resourced on disaster management, though with inadequate accountability in resource management. There also exist to a moderate extent adequately skilled personnel on disaster management across most of the ministries. Akali (2013) also concedes that though the country has set up measures to guarantee adequate response and disaster preparedness, there is urgent requirement to marshal adequate infrastructure and take up modern disaster management technology and strategies.

The findings are in tandem with HFA (2005-2015) which under priority 1 advocates for the necessity for resource allocation for the implementation and development of disaster risk management programmes, policies, regulations and laws on reduction of disaster risk in all authorities and relevant sectors at all administrative levels and budgets on the grounds of clearly prioritized actions. This will empower local authorities and communities to reduce and manage disaster risk through access to the requisite authority, resources and information to execute activities for reduction of disaster risks.

The results are also consistent with Akali (2013) who asserts that the government's capability to handle calamities is grounded on the notion that there exists sufficient capacity of institutions. In some instances, national systems do not have infrastructure and normally are not operational. Budgetary challenges often result in departments having inadequate capability to effectively respond with limited resources. In instances where disaster strikes, the allocation of funds normally takes a long time owing to tedious government procedures.

4.6.5 Strategic Management Practices, Internal Organizational Factors and Disaster Management

The study finally endeavored to assess the moderating role of the internal organizational factors on disaster management and strategic management practices in Kenya. This informed the fifth null hypothesis ($H_0$5) that states that there is no statistically significant effect of internal organizational factors on strategic management practices and disaster management in Kenya. To aid in the analysis, a composite variable that is strategic management practices was computed and a moderation test performed by interacting it with the variable, internal organizational factors and the resulting variable regressed against disaster management. Findings are as presented in Tables 41, 42 and 43.

The findings presented in Table 41 show that the correlation coefficient (R) in model 1, which is a direct regression between strategic management practices and disaster management, is .383. The coefficient increased to .415 and .439 with the introduction of internal organizational factors as an independent variable and as a moderator respectively. R^2 Change is also recorded accordingly from .147 to .172 then .193 implying an increment in the explanatory power of the variables on the dependent variable. A significant F change is also recorded across the models ($P<0.05$).

Table 41: ***Moderating effect of internal organizational factors on the relationship between strategic management practices and disaster management: Model Summary***

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate	Change Statistics R^2Change	F Change	df1	df2	Sig. F Change
1	.383[a]	.147	.139	1.11185	.147	17.926	1	104	.000
2	.415[a]	.172	.156	1.10069	.172	10.706	2	103	.000
3	.439[a]	.193	.169	1.09220	.193	8.117	3	102	.000

a. Predictors: (Constant), Strategic Management Practices
b. Predictors: (Constant), Internal Organizational Factors, Strategic Management Practices
c. Predictors: (Constant), Moderator, Strategic Management Practices, Internal Organizational Factors

ANOVA statistics further indicate significance in all the three models (P<0.05). This implies that all the models were significant and can be relied upon to make further inferences. This is illustrated in Table 42.

Table 42: ***Moderating effect of internal organizational factors on the relationship between strategic management practices and disaster management: ANOVA***

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	22.161	1	22.161	17.926	.000[b]
	Residual	128.566	104	1.236		
	Total	150.726	105			
2	Regression	25.941	2	12.970	10.706	.000[b]
	Residual	124.786	103	1.212		
	Total	150.726	105			
3	Regression	29.050	3	9.683	8.117	.000[b]
	Residual	121.676	102	1.193		
	Total	150.726	105			

a. Dependent Variable: Disaster Management
b. Predictors: (Constant), Strategic Management Practices

The Coefficients Table 43 reveals a significant effect of strategic management practices on disaster management (β = .383, t= 4.234, p<0.05). Upon the introduction of internal organizational factors, strategic management practices do not have a significant influence on disaster management (β = .844, t= 1.205, p>0.05) which does not meet conditions for

moderation. Further, the interaction between strategic management practices and internal organizational factors does not have a significant influence on disaster management (β = .268, t= 1.615, p>0.05) indicating no moderation. The study therefore fails to reject the null hypothesis 5 ($H_0$5) which states that internal organizational factors do not have a significant moderating effect of on the relationship between strategic management practices and disaster management.

Table 43: ***Moderating effect of internal organizational factors on the relationship between strategic management practices and disaster management: Coefficients***

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	31.877	1.288		24.747	.000
	Strategic Management Practices	.037	.009	.383	4.234	.000
2	(Constant)	32.269	1.294		24.930	.000
	Strategic Management Practices	.082	.068	.844	1.205	.231
	Internal Organizational Factors	.637	.361	1.238	1.766	.080
3	(Constant)	32.646	1.305		25.008	.000
	Strategic Management Practices	.065	.113	.668	.573	.568
	Internal Organizational Factors	.196	.628	.380	.312	.756
	Interaction	.425	.263	.268	1.615	.109

a. Dependent Variable: Disaster Management

The study failed to reject the null hypothesis 5 ($H_0$5) which states that internal organizational factors do not have a significant moderating effect on the relationship between strategic management practices and disaster management. Based on these results, the hypothesis was broken down into four to test for moderation between every predictor variable and the outcome variable. It was important to establish whether the internal organizational factors have a significant moderating effect on the relationship between the individual strategic management practices and disaster management in Kenya. This would give more insights into the study.

Moderating effect of internal organizational factors on the relationship between environmental analysis and disaster management was assessed. Tables 44, 45 and 45 present the test results for Hypothesis 5a ($H_0$5a) which state that internal organizational factors do not

have a significant moderating effect on the relationship between environmental analysis and disaster management.

The correlation coefficient (R) in model 1, which is a direct regression between environmental analysis and disaster management is .385. The coefficient increased to .403 and .418 with the introduction of internal organizational factors as an independent variable and as a moderator respectively. R^2 change is also recorded accordingly from .148 to .163 then .175 implying an increment in the explanatory power of the variables on the dependent variable. A significant F change is also recorded across the models ($P<0.05$). There are illustrated in Table 44

Table 44: ***Moderating effect of internal organizational factors on the relationship between environmental analysis and disaster management: Model Summary***

				Std. Error	Change Statistics				
			Adjusted	of the		F			Sig. F
Model	R	R^2	R^2	Estimate	R^2 Change	Change	df1	df2	Change
1	.385[a]	.148	.140	1.11107	.148	18.098	1	104	.000
2	.403[a]	.163	.146	1.10689	.163	10.010	2	103	.000
3	.418[a]	.175	.150	1.10442	.175	7.191	3	102	.000

ANOVA statistics further indicate significance in all the three models ($P<0.05$) as shown in Table 45. This implies that the regression model is reliable and thus can be used to make other inferences.

Table 45 ***Moderating effect of internal organizational factors on the relationship between environmental analysis and disaster management: ANOVA***

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	22.341	1	22.341	18.098	.000[b]
	Residual	128.385	104	1.234		
	Total	150.726	105			
2	Regression	24.529	2	12.265	10.010	.000[b]
	Residual	126.197	103	1.225		
	Total	150.726	105			
3	Regression	26.313	3	8.771	7.191	.000[b]
	Residual	124.414	102	1.220		
	Total	150.726	105			

The Coefficients table reveals a significant effect of environmental analysis on disaster management (β = .144, t= 4.254, $p<0.05$). Upon interaction with internal organizational factors, environmental analysis does not have a significant influence on disaster management (β = .225, t= 1.209, $p>0.05$) which does not meet conditions for moderation. These are illustrated in Table 46. The study fails to reject the null hypothesis 5a ($H_0$5a) which states that internal organizational factors do not have a significant moderating effect of on the relationship between environmental analysis and disaster management.

Table 46: ***Moderating effect of internal organizational factors on the relationship between environmental analysis and disaster management: Coefficients***

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	*Std. Error*	*Beta*	*t*	*Sig.*
1	(Constant)	29.489	1.842		16.011	.000
	Environmental Analysis	.144	.034	.385	4.254	.000
2	(Constant)	30.897	2.116		14.603	.000
	Environmental Analysis	.044	.082	.117	.532	.596
	Internal Organizational Factors	.151	.113	.294	1.336	.184
3	(Constant)	29.424	2.437		12.072	.000
	Environmental Analysis	.127	.107	.339	1.184	.239
	Internal Organizational Factors	.030	.151	.059	.200	.842
	Interaction1	.225	.186	.146	1.209	.229

a. Dependent Variable: Disaster Management

b. Predictors: (Constant), Environmental Analysis, Internal Organizational Factors

Tables 47, 48 and 49 present the test results for Hypothesis 5b ($H_0$5b) which states that internal organizational factors do not have a significant moderating effect of on the relationship between strategic planning and disaster management.

The correlation coefficient (R) in model 1, which is a direct regression between strategic planning and disaster management is .297. The coefficient increased to .769 and .839 with the introduction of internal organizational factors as an independent variable and as a moderator respectively. Adjusted R square (R^2) change is also recorded accordingly from .079 to .584 then .694 implying an increment in the explanatory power of the variables on the dependent variable. A significant F change is also recorded across the models ($P<0.05$). The results are illustrated in Table 47

Table 47: ***Moderating effect of internal organizational factors on the relationship between strategic planning and disaster management: Model Summary***

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate	R^2 Change	Change Statistics F Change	df1	df2	Sig. F Change
1	.297[a]	.088	.079	1.14961	.088	10.048	1	104	.002
2	.769[a]	.592	.584	.77301	.592	74.621	2	103	.000
3	.839[a]	.703	.694	.66228	.703	80.549	3	102	.000

The ANOVA statistics in Table 48 further indicate significance in all the three models (P<0.05) This implies that the model is reliable and can be used to make other inferences.

Table 48: ***Moderating effect of internal organizational factors on the relationship between strategic planning and disaster management: ANOVA***

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.279	1	13.279	10.048	.002[b]
	Residual	137.447	104	1.322		
	Total	150.726	105			
2	Regression	89.179	2	44.590	74.621	.000[b]
	Residual	61.547	103	.598		
	Total	150.726	105			
3	Regression	105.988	3	35.329	80.549	.000[b]
	Residual	44.738	102	.439		
	Total	150.726	105			

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The Coefficients Table 49 reveals a significant effect of strategic planning on disaster management (β = .110, t= 3.170, p<0.05). Upon interaction with internal organizational factors, both strategic planning (β = 2.452, t= 12.917, p<0.05) and the moderator (β = .923, t= 6.191, p<0.05) have a significant influence on disaster management. The study therefore fails to accept null hypothesis 5b ($H_0$5b) that states that internal organizational factors do not have a significant moderating effect of on the relationship between strategic planning and disaster management.

Table 49: ***Moderating effect of internal organizational factors on the relationship between strategic planning and disaster management: Coefficients***

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	*Std. Error*	*Beta*	*t*	*Sig.*
1	(Constant)	33.391	1.242		26.893	.000
	Strategic Planning	.110	.035	.297	3.170	.002
2	(Constant)	30.174	.882		34.197	.000
	Strategic Planning	-1.608	.154	-4.350	-10.429	.000
	Internal Organizational Factors	2.420	.215	4.700	11.270	.000
3	(Constant)	26.718	.940		28.429	.000
	Strategic Planning	2.452	.190	6.633	12.917	.000
	Internal Organizational Factors	3.713	.278	7.212	13.340	.000
	Interaction2	.923	.149	.543	6.191	.000

a. Dependent Variable: Disaster Management

b. Predictors: (Constant), Interaction2, Internal Organizational Factors, Strategic Planning

Tables 50, 51 and 52 present the test results for Hypothesis 5c ($H_0$5c) which states that internal organizational factors do not have a significant moderating effect of on the relationship between risk governance and disaster management.

The correlation coefficient (R) in model 1, which is a direct regression between risk governance and disaster management is .458. The coefficient increased to .767 and .839 with the introduction of internal organizational factors as an independent variable and as a moderator respectively. Adjusted R^2 Change is also recorded accordingly from .202 to .580 then .694 implying an increment in the explanatory power of the variables on the dependent variable. A significant F change is also recorded across the models ($p<0.05$). The findings are shown in Table 50.

Table 50: ***Moderating effect of inter organizational factors on the relationship between risk governance and disaster Management-Model Summary***

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate	R^2 Change	Change Statistics F Change	df1	df2	Sig. F Change
1	.458[a]	.210	.202	1.07027	.210	27.584	1	104	.000
2	.767[a]	.588	.580	.77621	.588	73.583	2	103	.000
3	.839[a]	.703	.694	.66228	.703	80.549	3	102	.000

ANOVA statistics further indicate significance in all the three models ($p<0.05$) implying that the model is reliable and can be used to make other inferences. The results are demonstrated in Table 51.

Table 51: ***Moderating effect of inter organizational factors on the relationship between risk governance and disaster management-ANOVA***

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	31.596	1	31.596	27.584	.000[b]
	Residual	119.130	104	1.145		
	Total	150.726	105			
1	Regression	88.668	2	44.334	73.583	.000[b]
	Residual	62.058	103	.603		
	Total	150.726	105			
1	Regression	105.988	3	35.329	80.549	.000[b]
	Residual	44.738	102	.439		
	Total	150.726	105			

The Coefficients Table 52 reveals a significant effect of risk governance on disaster management (β = **.**184, t= 5.252, p<0.05). Upon interaction with internal organizational factors, both risk governance (β = 3.341, t= 13.363, p<0.05) and the moderator (β = **.**590, t= 6.284, p<0.05) have a significant influence on disaster management. The study therefore rejects null hypothesis 5c ($H_0$5c) that which states that internal organizational factors do not have a significant moderating effect of on the relationship between risk governance and disaster management.

Table 52: ***Moderating effect of inter organizational factors on the relationship between risk governance and disaster Management-Coefficients***

		Unstandardized Coefficients		Standardized Coefficients		
Model		*B*	*Std. Error*	*Beta*	*t*	*Sig.*
1	(Constant)	31.641	1.085		29.171	.000
	Risk Governance	.184	.035	.458	5.252	.000
1	(Constant)	41.235	1.261		32.696	.000
	Risk Governance	2.922	.282	7.260	10.346	.000
	Internal Organizational Factors	-3.516	.361	-6.830	-9.733	.000
1	(Constant)	44.668	1.207		37.014	.000
	Risk Governance	3.341	.250	8.302	13.363	.000
	Internal Organizational Factors	-4.150	.324	-8.062	-12.796	.000
	Interaction3	.590	.094	.402	6.284	.000

a. Dependent Variable: Disaster Management
b. Predictors: (Constant), Interaction3, Internal Organizational Factors, Risk Governance

Tables 53, 54 and 55 present the test for Hypothesis 5d ($H_0$5d) which states that internal organizational factors do not have a significant moderating effect of on the relationship between resource management and disaster management.

The correlation coefficient (R) in model 1, which is a direct regression between Resource Management and Disaster Management is .373. The coefficient increased to .767 and .839

with the introduction of internal organizational factors as an independent variable and as a moderator respectively. Adjusted R^2 change is also recorded accordingly from .131 to .580 then .694 implying an increment in the explanatory power of the variables on the dependent variable. A significant F change is also recorded across the models ($p<0.05$). The results are illustrated in Table 53.

Table 53: ***Moderating effect of inter organizational factors on the relationship between resource management and disaster management- Model Summary***

				Std. Error		Change Statistics			
			Adjusted	of the	R^2	F			Sig. F
Model	R	R^2	R^2	Estimate	Change	Change	df1	df2	Change
1	.373[a]	.139	.131	1.11720	.139	16.762	1	104	.000
2	.767[a]	.588	.580	.77621	.588	73.583	2	103	.000
3	.839[a]	.703	.694	.66228	.703	80.549	3	102	.000

ANOVA statistics further indicate significance in all the three models ($p<0.05$) implying that the model is reliable and can be used to make other inferences. These results are demonstrated in Table 54.

Table 54: ***Moderating effect of inter organizational factors on the relationship between resource management and disaster management- ANOVA***

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20.921	1	20.921	16.762	.000[b]
	Residual	129.805	104	1.248		
	Total	150.726	105			
2	Regression	88.668	2	44.334	73.583	.000[b]
	Residual	62.058	103	.603		
	Total	150.726	105			
3	Regression	105.988	3	35.329	80.549	.000[b]
	Residual	44.738	102	.439		
	Total	150.726	105			

The coefficients Table 55 reveals a significant effect of resource management on disaster management ($\beta = .141$, $t= 4.094$, $p<0.05$). Upon interaction with internal organizational

factors, both resource management (β = 6.251, t= 12.856, p<0.05) and the moderator (β = .629, t= 6.284, p<0.05) have a significant influence on disaster management. The study therefore rejects null hypothesis 5d ($H_0$5d) that states that which states that inter organizational factors do not have a significant moderating effect of on the relationship between resource management and disaster management.

Table 55: ***Moderating effect of inter organizational factors on the relationship between resource management and disaster management- Coefficients***

		Unstandardized Coefficients		Standardized Coefficients		
Model		*B*	*Std. Error*	*Beta*	*t*	*Sig.*
1	(Constant)	33.728	.882		38.239	.000
	Resource management	.141	.034	.373	4.094	.000
2	(Constant)	-31.809	6.211		-5.122	.000
	Resource management	-5.843	.565	-15.485	-10.346	.000
	Internal Organizational Factors	8.171	.771	15.872	10.604	.000
3	(Constant)	-33.911	5.310		-6.387	.000
	Resource management	6.251	.486	-16.567	12.856	.000
	Internal Organizational Factors	8.616	.661	16.737	13.030	.000
	Interaction4	.629	.100	.404	6.284	.000

a. Dependent Variable: Disaster Management
b. Predictors: (Constant), Interaction4, Inter Organizational Factors, Resource management

The foregoing findings reveal a significant moderating role of organizational internal factors on the linkage between strategic planning (β = .923, t= 6.191, p<0.05), risk governance (β = .590, t= 6.284, p<0.05), and resource management and disaster management (β = .629, t= 6.284, p<0.05). However, internal organizational factors does not significantly moderate the

relationship between environmental analysis and disaster management (β = .225, t= 1.209, p>0.05).

The results can be attributed to the bureaucratic system of governance in the public sector which limits the leadership thereof to autonomously make decisions that could either enhance or inhibit the extent to which strategic management practices adopted influence disaster management. The departmental/directorate heads across the ministries for instance have limited influence on budgetary allocation to their respective departments/directorates which in turn affects resource allocation towards various strategic practices. Environmental analysis however negates the moderating effect of internal organizational factors owing to the ad-hoc nature and uncoordinated response to disasters. Mobilization of resources is done in a reactive manner as opposed to acting in a proactive manner prior to the occurrence of the disaster, to empower and prepare people in reduction of risks.

The results are consistent with Naser *et al.* (2010) who offer that institutional leaders significantly determine the effectiveness of strategic planning; and Rashid *et al.* (2016) who observe that leadership plays a critical role in organization towards achieving its goal. Further, Becker *et al.* (2017) argue that experience in disaster makes preparedness and management of hazards more noticeable to individuals and more ready to participate in a communal manner. Subsequently, more effective use of people's readiness to get involved in the aftermath of disasters. They all have however, secondary experience of minimal disaster occurrences that did not directly affect them. They include second-hand experience such as media reports of international or national events, life changing disaster experiences such as accidents and narrations of such events. All these have interdependent and independent roles to play in preparedness actions and future decision making.

According to Wafula (2012), the metrics for pronouncing a disaster area or disaster are vaguely conceptualized. Every case has in the past been perceived on its own qualities as opposed to in relation to well defined set of metrics. It is apparent from the findings that past experiences has inadequately prepared populations to deal with disaster situations. Public awareness initiatives for example are only initiated only after beginning of a disaster (Wafula, 2012). Experiences in the past have demonstrated that there exists a necessity for some level of risk reduction strategies at local, county and national levels. This is essential to guarantee that data collection, planning, expertise mobilization and institution of structures for disaster management can be carried out speedily as opposed to in a reactive fashion. More specifically, there is a need for various government ministries to develop combined proposals for aid throughout the country at a local level (Wafula, 2012).

Table 56 presents a summary of hypothesis test results.

Table 56 ***Summary of Hypothesis Test Results***

Hypotheses	Test Results	Conclusion
Hypothesis 1 ($H_0$1) There is no statistically significant effect of strategic environmental analysis on disaster management in the ministries of Kenya	β = .211, t= 3.114, p = .002	Rejected
Hypothesis 2 ($H_0$2) There is no statistically significant effect of strategic planning practice on disaster management in the ministries of Kenya	β = 1.488, t= 6.878, p = .000	Rejected
Hypothesis 3 ($H_0$3) There is no statistically significant effect of strategic risk governance on disaster management in the ministries of Kenya	β = 1.235, t= 5.730, p = .000	Rejected
Hypothesis 4 ($H_0$4) There is no statistically significant effect of resource management strategies on disaster the ministries of management in Kenya	β = .306, t= .908, p = .366	Failed to reject
Hypothesis 5 ($H_0$5a) There is no statistically significant effect of internal organizational factors on strategic environmental analysis and disaster management in the ministries of Kenya	β = .225, t= 1.209, p = .229	Failed to reject
Hypothesis 5 ($H_0$5b) There is no statistically significant effect of internal organizational factors on strategic planning and disaster management in the ministries of Kenya	β = .923, t= 6.191, p = .000	Rejected
Hypothesis 5 ($H_0$5c) There is no statistically significant effect of internal organizational factors on strategic risk governance and disaster management in the ministries of Kenya	β = .590, t= 6.284, p = .000	Rejected
Hypothesis 5 ($H_0$5d) There is no statistically significant effect of internal organizational factors on strategic resource management and disaster management in the ministries of Kenya	β = .629, t= 6.284, p = .000	Rejected

Source: Research (2021)

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The study sought to analyze of the effects of strategic management practices on disaster management in Kenya. More specifically, the study sought to analyse the effects of environmental analysis, strategic planning practices, risk governance practice and resource management strategies on disaster management. An assessment of the moderating effect of the internal organizational factors on strategic management practices and disaster management in Kenya was also undertaken. The data were analysed using descriptive and by inferential statistics.

5.2 Summary of the Findings

5.2.1 Strategic Environmental Analysis on Disaster Management in Kenya

First, the study endeavoured to examine how disaster management is influenced by strategic environmental analysis in Kenya. The respondents highly agreed that environmental analysis had a great effect on disaster management. The findings established that most respondents strongly affirmed that their respective ministries were involved in conducting strategic environmental analyses. With regard to hazard identification, most respondents highly agreed that their ministries keep and update a risk register on workplace hazards. On risk analysis, majority of the respondents highly agreed that the ministries had formulated ways of managing risks. Further, most respondents highly agreed that with regard to risk evaluation, their respective ministries had put in place mechanisms to control risks and that they received warnings in good time for necessary action to be undertaken.

5.2.2 Strategic Planning Practice on Disaster Management in Kenya

The study also endeavored to determine how disaster management is influenced by strategic planning practices in Kenya. The findings indicate that strategic planning practices have a great effect on disaster management. This is supported by responses which indicated that most of the ministries employed strategic planning practices to a great degree in disaster management. Most respondents affirmed that with regard to external orientation, their ministry was flexible and adapted to evolving disaster management needs. On internal orientation, most respondents also affirmed that to a great extent, the ministry has an insurance plan for its employees in the event of a disaster and that there is a department that deals with disaster management issues.

5.2.3 Strategic Risk Governance Practice on Disaster Management in Kenya

The study endeavored to evaluate how disaster management is impacted upon by strategic risk governance practice in Kenya. Most respondents highly agreed that strategic risk governance has a great effect on disaster management, with majority affirming that strategic risk governance was practiced in their respective ministries to a very great extent. More specifically, with regard to policy, the results indicate that most of the ministries had to a great extent inducted all staff on the ministry's disaster management framework. Further, with regard to legal framework, it was established that to a great extent, disaster management coordination teams were well versed with the government legal framework.

5.2.4 Resource Management Strategies on Disaster Management in Kenya

The study was also interested in how disaster management is impacted by resource management strategies in Kenya. The respondents highly agreed that resource management strategies had a great effect on disaster management. It was established that most institutions employed resource management strategies only to a great extent. With particular reference to financial resources, most respondents greatly agreed that their respective ministries had adequate government budgetary allocation for disaster management activities. On personnel, most study participants moderately agreed that their respective ministries had skilled personnel on disaster management.

5.2.5 Internal Organizational Factors on Strategic Management Practices and Disaster Management in Kenya

The study finally endeavored to assess the intervening role of internal organizational factors on disaster management and strategic management practices in Kenya. It was established that in most of the ministries, leadership and past experience affected implementation of disaster management practices, and that disaster management by government ministries had led to reduced loss of life, environmental damage and financial loss. Majority of respondents highly agreed with pertinent statements posed with regard to the influence of internal organizational factors. More specifically, most respondents highly affirmed that lessons from previous experience positively impacted on disaster management at the ministries; and that leadership style determined the commitment of workers for a successful response to an emergency strategy.

The product moment assessment was performed to determine both the respective course and strengths of the linkage between the response and factor variables and among the independent variables. A notable positive correlation was observed from the findings between the

outcome and predictor variables and between every pair of the predictor variables. The study found the strongest correlation between strategic risk governance practice and disaster management followed by environmental analysis, resource management and strategic planning, and disaster management.

Multiple regression analysis further reveals that strategic environmental analysis, strategic planning practice and strategic risk governance have a significant influence on disaster management. Resource management however didn't have significant influence on disaster management keeping other factors constant. The study finally established that internal organizational factors had a significant moderating effect on the relationship between strategic planning, risk governance and resource management, and disaster management. However, internal organizational factors didn't significantly moderate the relationship between environmental analysis and disaster management.

5.3 Conclusion

The study concludes that the Kenyan government should include strategic environmental analysis as a strategic management practice with a view to manage disasters as demonstrated by the government ministries. Most of the ministries were found to practice hazard identification, risk analysis and risk evaluation, and have put in place contingency plans. The majority of respondents highly affirmed the practice has managed to ward off disasters. Further, the study concludes that there is no statistically significant influence of strategic environmental analysis on disaster management in Kenya. The study attributes this to the dependence of strategic environmental analysis on other factors within the model including resource allocation and recruitment of adequately skilled personnel among others. The study concludes that the role of environmental management in DRR begins with the recognition of disasters as human processes interacting with the physical environment. Environmental

assessments, therefore, provides scientific and strategic insights into the risks and vulnerabilities that are associated with the implementation of policies, programmes and projects and move towards a culture of safety and prevention.

The study concludes that strategic planning practice is of moderate implication to disaster management in Kenya as demonstrated by most of the national government ministries. Majority of the ministries orient their strategic plans both internally and externally by collaborating with other ministries and agencies on matters of disaster management and incorporating employee safety needs in their strategic plans, in addition to having insurance plans for their employees. The study also concludes that there is a statistically significant effect of strategic planning practice on disaster management in Kenya and this is attributed to the cross-cutting nature of the concept and practice of strategic planning which entails identifying all the internal and external factors which can influence the Country's disaster management.

The study further concludes that there is an elaborate policy and legal frameworks governing disaster management in Kenya under which most of the national government ministries align their strategic management practices. The study also concludes that there is a statistically significant effect of strategic risk governance on disaster management in Kenya and this is attributed to the elaborate disaster management policy and legal frameworks governing disaster management with which most of the national government ministries have developed and aligned to their strategic management practices. Further, the study concludes that the underlying basis for strategic risk governance practice is the need for effective tools to enhance governance and accountability.

The study further found that strategic resource management in the context of disaster management in the ministries is only moderately observed. It was noted that budgetary allocation for disaster management activities was inadequate, though accountability of resources allocated is carried out, albeit to a moderate extent. The study also concludes that there is no statistically significant effect of resource management strategies on disaster management in Kenya. This is attributed to most national government ministries being poorly resourced on disaster management, both in terms of finances and skilled personnel. Further the concept of disaster management is not deeply ingrained in their operational plans, without which the relevance of disaster management is not seen as strategic. The study concludes that with inadequate resources, national governments will not be able to put in place proper structures for risk reduction and disaster management.

Internal organizational factors as indicated by leadership and past experiences have considerable implications on disaster management in most of the national government ministries surveyed. The study concludes that internal organizational factors have a significant moderating effect on the relationship between strategic planning practice, strategic risk governance practice and resource management, and disaster management in Kenya. However, internal organizational factors do not have a significant moderating effect on the relationship between strategic environmental practice and disaster management in Kenya. This is mainly attributed to the bureaucratic system of governance in the public sector which limits the leadership thereof to autonomously make decisions that could either enhance or inhibit the extent to which strategic management practices adopted influence disaster management.

The study therefore concludes that if the general purpose of management of disasters is to increasingly lessen the effect of the disasters on societies, susceptibility to crises can only be

lessened if the elements that lead to it are handled. Whereas a draft disaster management policy is in place, the key challenges for the government of Kenya is to propagate a culture of resilience, preparedness and prevention across various sectors. The aim of disaster management policy in Kenya is the strengthening and establishment of networking, partnerships and institutions in disaster management; mainstreaming the reduction of disaster risks in the process of development and to reinforce the vulnerable groups' resilience. The need to establish institutional frameworks, mainstream disaster management into the process of developmental planning, provide a positive regulatory environment and, guaranteeing effective identification and assessment of disaster risks, early warning systems and establishing contemporary forecasting is paramount. Establishment of legally mandated mechanisms to provide sustainable resources for disaster management cannot be overemphasized. These should include mechanisms not only under DRM/DRR legislation but also under sectoral legislation, the latter ensuring that financing for risk reduction is available and prioritized across all sectors.

Whereas leadership necessities may differ based on the kind of environment, type of sector or organization and extent of the crisis, flexibility in operations and decision making as well as adequate communication and adaptableness to disaster conditions with the public and other stakeholders are the most paramount leadership characteristics. The effectiveness of disaster management is grossly tied to leaders possessing and putting to practice requisite skills when necessary. As disaster leadership dynamics keep changing, prominence will move to organizational cultures and structures from leadership skills which determines to a greater extent the quality and bearing of the performance of leadership in management of disasters.

The people's experiences influence their understanding of how and whether they have to get ready for disasters. Personal experiences of disasters may be a significant preparedness

motivator. A majority of people may not have experienced directly a large magnitude disaster in the course of their lives, hence the importance of creating knowledge and raising awareness; helping persons appreciate the implications of a disaster; developing preparedness; developing beliefs; influencing feelings and emotions; and prompting community engagement on disaster issues.

Disaster management through strategic management practices will go a long way in minimising suffering and preserving life by providing timely and sufficient early warning information on probable crises that may end up in disasters. Disaster management through strategic management seeks to avoid or reduce the anticipated losses from disaster threats, guarantee appropriate and prompt help for disaster victims, and realize effective and speedy recovery.

5.4 Recommendations

The existing literature has implied that strategic environmental analysis, strategic planning, strategic risk governance and resource management play a very important role in successful disaster management. However, there are some gaps in the literature in relation to above variables and their impact on disaster management. This study has brought forth important findings that link strategic environmental analysis, strategic planning, strategic risk governance and resource management with disaster management. Based on the foregoing findings and the conclusions drawn, the following recommendations are made;

The study established that disaster management is significantly influenced by strategic environmental analysis in Kenya. As such, it is recommended that various stakeholders should work in collaboration towards the management of disasters in order to obtain the best coping mechanisms and practices. If knowledge management and information sharing

acquired in these institutions is to be enhanced, it critical that the institutions are keenly knit together. A system of these organizations will develop a shared avenue and allow its people and stakeholders to organize, capture, reuse and share the awareness created in the management of disaster. A programmatic technique has more sustainable and long-term advantages. There is therefore the need to shift strategically toward a programming model which will promote working together among agents and institutional partners.

The study has also established that disaster management is significantly influenced by practices of strategic planning in Kenya. Based on these findings, it is recommended that in order to effectively carry out disaster management, national government ministries ought to enhance their respective strategic planning practice with taking note of a combination of external orientation, internal orientation and functional integration. As part of strategic planning, awareness of disasters and its impacts is one of the preventive measures ranging from rehabilitation, relief, reconstruction to recovery.

Research findings indicate that extant mechanisms of risk governance in Kenya are inadequate and it is fundamental to reform them for purposes of risk reduction. The study recommends that accountability for management of disaster risks needs to rest with an office or ministry with sufficient authority to guarantee coherence of policy across various sectors. Enhanced mechanisms of accountability enshrined in legislation and work processes lead deeper understanding of the knowledge of rights and obligations of office bearers.

The study also established that strategic resource management is critical in disaster management in Kenya. It is recommended that there is need for more resource allocation including finances and personnel towards disaster management in national government

ministries and accountability should also be strengthened. Recruitment should focus on adequately skilled personnel in disaster management. Further, the ministries need to develop greater decision support systems that will enable management of the increasing complex disasters and costs. This will allow personnel in disaster management to function with superior efficiency thereby reducing direct human distress after the occurrence of a disaster.

5.4.1 Implications to Practice

This study established that environmental analysis, strategic planning, risk governance and resource management have practical implications for disaster management in Kenya. Whereas preparedness of disaster is a significant preventive development constituent, its effectiveness can be established only if the affected people are empowered and made aware of the potential risk. Disasters are threats to advancements and development issues, and that an adequate strategy of managing disaster presupposes a change in emphasis from short-term measures such as relief to a multi-sectoral, long-term and integrated approach which introduces recovery functions into extant programmes of development. The government needs to guarantee safety n of all employees by ensuring that they have insurance plans as this will offset the negative impacts of hazards. Insurance also mitigates the cost building back better after a disaster hence the need to insure properties against disasters as an initiative for ministries to survive and thrive after disasters.

Further, capacity building is a key focus of the HFA 2005-2015. The government, therefore, needs to highlight the necessity for capacity building across different levels in the ministries to deal with all stages of comprehensive management of disaster risks. Building resilience among staff in the ministries will help offer the structures for risk reduction activities and over time provide ownership of reduced susceptibilities.

Through its ministries, the Kenya government need to enhance their collaboration with other agencies on matters of disaster management and adopt flexibility to evolving disaster management needs. Teamwork among agencies and other development partners in pursuit of determined outcomes is an adequate channel to harmonized activities for measurable outcomes. Such partnership will decrease the probability of duplicated and parallel attempts.

The study also established that the relationship between strategic risk governance and disaster management in the Kenya's ministries is significantly influenced by internal organizational factors. Particularly, the study found out that lessons from previous experience are well documented. This notwithstanding, more resolutions ought to be put forth to enable institutions capture knowledge and take lessons from their experiences which can then be utilized in better planning and learning incorporated into manuals for training. Dissemination of hazard and risk information ought to be appropriate, accurate and timely. Informal and formal educational streams ought to be associated and indigenous knowledge utilized. There is need for knowledge exchange and management and to build utilization capacity of extant data and sharing as well as access to information. This will enhance community resilience and hence their contribution to disaster management practices.

5.4.2 Implications to Policy

This study revealed findings that bring on board policy implications. It was found that some national government ministries did not have a disaster management plan in place which exposes them to impending disasters. To address this, policies need to be instituted to make it mandatory for every national government ministry to have a disaster management plan in place and a specialized disaster management unit, section or department depending on the risk propensity of the services being discharged by the respective ministries. Policies ensure that the ministries have sound procedures and coordinated responses in an event of a disaster.

The study established that there is a statistically significant influence of strategic risk governance on disaster management in Kenya. The policy and legal frameworks in place need to be regularly reviewed to capture current developments in order to enhance their effectiveness. Institutional mechanisms and government policies ought to deal with problems associated with integrating sustainable development goals into the cycle of disaster management. Institutional weaknesses and legislative and regulatory gaps have remained persistent with regard to mitigating vulnerabilities to disasters. Policies, therefore, need to look at long term relief and response efforts, with a greater strategic focus on capacity building, preparedness and prevention. The ministries will harness the extant policy and legal frameworks to strengthen their compliance and enforcement capacities to be able adopt a proactive approach as opposed to reactionary and piecemeal.

5.4.3 Implications to Theory

The present study was anchored on the 'social capital theory' which stresses people's capacity to work in collaboration for the realization of shared purposes in organizations and groups. Iincorporation of resilience and disaster preparedness or creation of activities and new networks are aimed at sustainable livelihood and disaster management. Social capital has a notable disaster preparedness potential and resilience of nations, community and individuals, thus provides opportunities to work together in the event of a disaster. There is need to encourage social capital bonding as it enables persons to undertake preparations for disaster, receive warnings, locate supplies and shelter, and acquire recovery assistance and immediate initial aid. Family ties during disasters are key to pliability since family normally serve as the primary providers of help. It is therefore critical for government agencies and NGOs to take up several programmes and policies which could strengthen social linkages and raise the social capital attachment among community members. The said social capital would

help ministries integrate resilience and disaster preparedness and create new activities and systems with a focus on sustainable livelihood.

The study was also underpinned by the ’protection motivation theory’ (PMT) which affirms that individuals may be inspired to get involved in ideal health tendencies to avoid interpersonal or social risks as well as to evade health risks. People leverage on the process of threat-appraisal to assess possible harmful feedbacks such as maladaptive response which is inaction by not taking any step to guard your home and yourself from a threat. It is more so when the required protective behaviours are too costly. The PMT is supported by the findings of this study that affirm that allocating adequate resources towards disaster management, national government ministries will enable strategic management practices such as environmental analysis to identify, classify, evaluate and analyse risks in order to ward off impending disasters. The findings have important implications for future disaster management by the ministries.

The findings indicate that government ministries have insured their staff as a means of safeguarding their interests in the event of a disaster. In order to increase the resilience to disasters, the government needs to allocate sufficient resources towards insurance as the role of insurance providers cannot be over emphasized.

The study was also grounded on the ’contingency theory’ which suggests that there exists no single most effective way of coordinating and that an institutional form which is adequate in some circumstances could prove inadequate in other circumstances. Planning for contingencies is not an ingredient for assuring effective disaster management, but it is at the same time not expendable. In the wake of destructive and unpredictable tendencies the world over, disasters still come as a surprise hence the need for robust disaster management plans.

Contingency planning is needed by the Kenyan government ministries for stability and societal reassurance purposes.

The study shows that the government has developed contingency plans towards disaster management. Disaster management is tremendously full of improbability and complexities owing to the chaotic characteristics of disasters. In order to deliver adequately in the management of crises, the government ought to deliberate on both the internal conditions and the environmental circumstances. In instances where the government is experiencing a disaster that necessitates change, a clear guidance can be provided by the contingency theory. This is supported by the findings of this study that contingency plans particularly with regard to early warning systems have the potential to contribute significantly towards disaster risk reduction if adequate resource allocation is made. Further, the government need to ensure that there are structures charged with strategic planning to implementation, plus evaluation and feedback. This will ensure that the ministries have continual improvements from lessons learnt.

5.5 Suggestions for Further Research

The effects of strategic management practices on the management of disasters in Kenya has been explored in this study, with particular reference to national government departments. The analysis was on four direct factors namely strategic environmental analysis, strategic planning practice, strategic risk governance practice and resource management strategies all of which in combination account for only 71.8 percent of the variance in disaster management while 28.2 percent is explained by other factors not included in the model. This implies that there exists a host of other underlying factors that possibly influence disaster management. The study suggests that future studies be conducted with reference to a set of other direct and indirect variables in relation to disaster management in national government

departments. There is need for a study on environmental governance in relation to disaster management as it offers significant chances for prioritizing the reduction of disaster risks and consolidation of the environmental elements of reduction of disaster risks. Governance of the environment includes institutional structures, regulatory, legal and policy frameworks.

The study further suggests the need to study disaster management at the county government level. The role of counties in ensuring community preparedness to disaster is paramount. There is therefore the need to carry out a study focusing on disaster management at the county level as this will give an indication of how the Kenyan government, in general, has put in place structures to manage disasters and the level of implementation thereof.

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APPENDICES

Appendix I: Questionnaire

Dear Respondent,
This questionnaire is designed for data collection in all departments in ministries in the Government of Kenya on analysis of the effects of strategic management practices on disaster management in Kenya. The information hereby gathered will be treated with utmost confidentiality and used only for academic purpose. Kindly tick where appropriate and give the correct information to the best of your knowledge.

Section A
1. Name of your ministry (Optional) _____

2. What position do you hold in your department? _____

3. What level is your position? Senior manager [ ] Middle-level manager [ ]

4. For how long have you served at your department?
   0 – 5 years [ ]
   6 – 10 years [ ]
   11 – 15 years [ ]
   16– 20 years [ ]
   0ver 20 years [ ]

5. Is there a disaster management plan in the Ministry? **YES** [ ] **NO** [ ]

   a) If (5) above is **YES, w**hat timelines does the plan cover? **Tick one**.
   One year [ ] Two years [ ]Three years [ ] Five years [ ] Over five years [ ]

6. If (5) above is **YES**, how often is the Ministry's disaster management plan reviewed? **(Tick one)**
   Monthly [ ] Quarterly [ ] Bi-annually [ ]Annually [ ]Other (Specify) [ ]

   a) What informs the need for review?
   ……
   ……

7. How many disasters has the Ministry experienced in the last ten years?
   0-5 [ ] 5-10 [ ] 0ver 10[ ] Not sure[ ]

SECTION B: STRATEGIC MANAGEEMENT PRACTICES

I. Environmental Analysis

The following statements relate to the influence of strategic environmental analysis on disaster management. Please provide your opinions to the various questions in this section.

8. Please tick (√) your appropriate answer in the scale of 1 – 5, where 1= Strongly disagree, 2= Disagree, 3= Not sure, 4= Agree, 5= Strongly agree

	1	2	3	4	5
Hazard identification					
a. The Ministry keeps and updates a risk register on workplace hazards					
b. Hazards are classified according to their severity and communicated to all staff in the Ministry					
c. Incident investigations are carried out as and when they occur					
d. Corrective actions are well documented and communicated to all staff in the Ministry					
Risk Analysis					
a. Existing and potential threats that the Ministry could face are identified					
b. The probability of the risk occurring is considered as a major event and all the necessary structures put in place to avert its occurrence					
c. The ministry has formulated ways of managing risks					
Risk Evaluation					
a. Risk impact analysis is carried out by the Ministry					
b. The Ministry has put in place mechanisms to control risks					
c. The Ministry always implements recommendations of risk impact analysis					
Contingency Plans					
a. The Ministry has put in place mechanisms for receiving warnings on impending disasters					
b. Warnings are received in good time for necessary action to be undertaken					
c. The ministry has developed a well programmed risk management plan					

9. Does the Ministry carry out risk impact analysis? **YES** [ ] **NO** [ ]. If **YES**, how regular? **(Tick one)** Monthly [ ] Quarterly [ ] Bi-annually [ ] Annually [ ] Other (Specify) ……

10. Does your ministry have internal mechanisms for detecting disasters? **YES** [ ]**NO** [ ]
    a) If **NO,** where does then ministry receive warnings on impending disasters from? ……
    ……

II. Strategic Planning

The following statements relate to the effect of strategic planning practices on disaster management. Please provide your opinions to the various questions in this section.

11. Tick √ your appropriate answer in the scale of 1 – 5, where 1= Strongly disagree, 2= Disagree, 3= Not sure, 4= Agree, 5= Strongly agree

	1	2	3	4	5
External orientation					
a. The Ministry collaborates with other ministries and agencies on matters of disaster management					
b. The ministry is flexible and adapts to evolving disaster management needs					
Internal orientation					
a. Safety needs of all employees is guaranteed					
b. The Ministry has an insurance plan for its employees in the event of a disaster					
Functional integration					
a. There is a department that deals with disaster management issues					
b. The department that coordinates disaster management activities has terms of reference clearly spelt out					
c. There is an active disaster coordination team specifically assigned to handle disaster management activities					
d. The disaster management team has skills required to carry disaster management activities					

III. Risk Governance

The following statements relate to the effect of strategic risk governance on disaster management. Please provide your opinions to the various questions in this section.

12. Tick √ your appropriate answer in the scale of 1 – 5, where 1= Strongly disagree, 2= Disagree, 3= Not sure, 4= Agree, 5= Strongly agree

	1	2	3	4	5
Policy					
a. My Ministry has developed a disaster management policy framework					
b. My Ministry has copies of its disaster management policy framework distributed amongst all departments					
c. The ministry has elaborate procedures to be followed in an event of a disaster					
d. All staff in the Ministry have been inducted on the Ministry's disaster management framework					
Legal Framework					
a. My Ministry is aware of the Government legal framework that guide disaster management activities					
b. The disaster management coordination team is well versed with the Government legal framework					
c. The Government legal framework was used in the					

development of the disaster management policy at the ministry					

13. Does the department responsible for coordinating disaster management activities report on activities? **YES/NO**. If **YES**, how regular? **(Tick one)** Monthly[ ] Quarterly[ ] Bi-annually[ ] Annually[ ] Other[ ] (Specify)…….

14. How often are staff in the Ministry inducted on the Ministry's disaster management activities **(Tick one)** Monthly [ ] Quarterly[ ] Bi-annually[ ] Annually[ ] Other [ ] (Specify)…….

IV. Resource Management

Another aspect of this study is Resource Management. Please provide opinions to questions in this section to the best of your knowledge.

15. On a scale of 1-5 where 1= Strongly disagree, 2= disagree, 3= Not sure, 4= Agree, 5= Strongly agree, to what extent do the following statements apply with respect to disaster management.

	1	**2**	**3**	**4**	**5**
Financial Resources					
a. The Ministry has adequate budgetary allocation by the Government for disaster management activities					
b. There is accountability in resource management for disaster management in Kenya					
Personnel					
a. The Ministry has adequate personnel to coordinate disaster management activities					
b. The Ministry has skilled personnel on disaster management					
c. The disaster management coordinating team is always on high alert					
d. Disaster management team undergo regular training on disaster management					

16. Are there other sources of funds apart from the Government? **YES** [ ] **NO**[ ]
If **YES,** what are these other sources?
……
……

V. Internal Organizational factors

Another aspect of this study is internal organizational factors. Please provide opinions to questions in this section to the best of your knowledge.

17. Using a Scale of 1-5, where 1= Strongly disagree, 2= Disagree, 3= Not sure, 4= Agree, 5= Strongly agree, please tick the appropriate answer in the extent to which the following factors have led to successful disaster management in your Ministry.

Section VI: Disaster management

	1	2	3	4	5
Internal Organization Factors					
a. Leadership style determines the commitment of workers for a successful response to an emergency strategy					
b. Leaders and workers at the work place always work together to generate new policies and action plans to deal with emergencies					
c. Leaders share information and provide feedback for more coordinated response					
d. Lessons from previous experience are well documented					
e. Lessons from previous experience are communicated to all members of staff at the Ministry					
f. Lessons from previous experience positively impacted on disaster management at the Ministry					

The following statements relate to disaster management. Please provide answers to the various questions in this section

18. On a scale of 1-5 where 1= Strongly disagree, 2= disagree, 3= Not sure, 4= Agree, 5= Strongly agree, to what extent do the following statements apply with respect to disaster management. Please tick the appropriate answer.

	1	2	3	4	5
Disaster Management					
a. Environmental analysis has a great influence on disaster management					
b. Strategic planning has a great effect on disaster management					
c. Risk governance practices have a great effect on disaster management					
d. Resource management strategies have a great effect on disaster management					
e. Leadership style affects implementation of disaster management practices					
f. Past experience affects implementation of disaster management practices					
g. Disaster management has led to reduced loss of life					
h. Disaster management has led to reduced financial loss					
i. Disaster management has led to reduced environmental damage					

THANK YOU FOR PARTICIPATION IN THIS STUDY

Appendix II: Personal Letter of Introduction

Linah Boit
Kabarak University
P.O Private Bag 20157
KABARAK

May 28, 2018

Dear Respondent

LETTER OF INTRODUCTION

I am a PhD student at Kabarak university undertaking studies on Strategic Management. As part of the requirements, I am required to carry out research in my field of study. My research topic is "An analysis of the Effects of Strategic Management Practices on Disaster Management in Kenya (A Study of National Government Ministries)". I have obtained the requisite approvals from the relevant authorities to carry out this research (see attached letters from Kabarak University and National Commission for Science Technology and Innovation).

It is therefore my humble request that you fill out the questionnaires provided to the best of your knowledge. The information gathered will be treated with utmost confidentiality and used only for academic purposes.

Thank you for participating.

LINAH BOIT

Appendix III: Research Authorization letter

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone: +254-20-2213471, 2241349,3310571,2219420
Fax: +254-20-318245,318249
Email: dg@nacosti.go.ke
Website: www.nacosti.go.ke
When replying please quote

NACOSTI, Upper Kabete
Off Waiyaki Way
P.O. Box 30623-00100
NAIROBI-KENYA

Ref No: **NACOSTI/P/19/23360/31107**

Date: **7th June, 2019.**

Linah Chepkoech Boit
Kabarak University
Private Bag - 20157
KABARAK.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"An analysis of the effects of strategic management practices on disaster management in Kenya (A study of National Government ministries)."*** I am pleased to inform you that you have been authorized to undertake research in **Nairobi County** for the period ending **7th June, 2020.**

You are advised to report to **the County Commissioner and the County Director of Education, Nairobi County** before embarking on the research project.

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit **a copy** of the final research report to the Commission within **one year** of completion. The soft copy of the same should be submitted through the Online Research Information System.

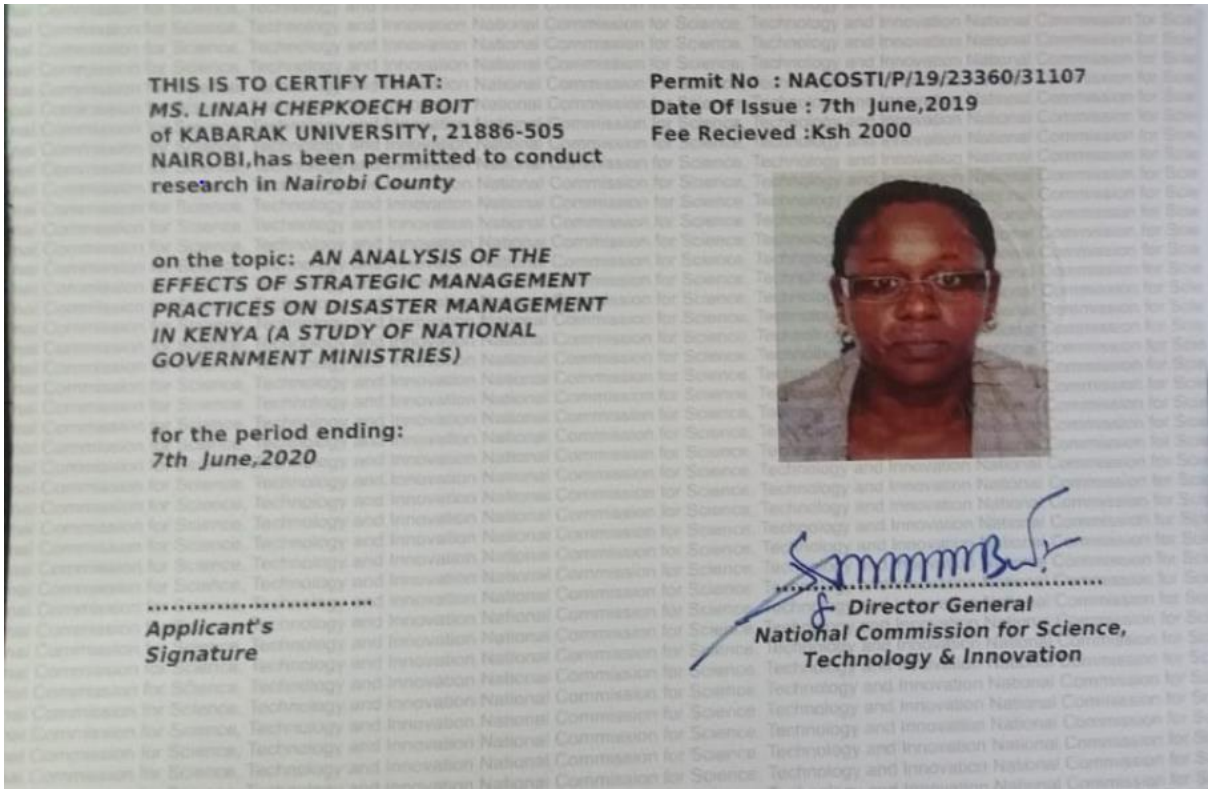
BONFACE WANYAMA
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The County Commissioner
Nairobi County.

The County Director of Education
Nairobi County.

Appendix IV: Research Permit



THIS IS TO CERTIFY THAT:
MS. LINAH CHEPKOECH BOIT
of KABARAK UNIVERSITY, 21886-505
NAIROBI,has been permitted to conduct
research in *Nairobi County*

on the topic: *AN ANALYSIS OF THE EFFECTS OF STRATEGIC MANAGEMENT PRACTICES ON DISASTER MANAGEMENT IN KENYA (A STUDY OF NATIONAL GOVERNMENT MINISTRIES)*

for the period ending:
7th June,2020

.....
Applicant's Signature

Permit No : NACOSTI/P/19/23360/31107
Date Of Issue : 7th June,2019
Fee Recieved :Ksh 2000

Appendix V: Letter of Introduction from the University

KABARAK UNIVERSITY

Private Bag - 20157
KABARAK, KENYA
http://kabarak.ac.ke/institute-postgraduate-studies/

Tel: 0773 265 999
E-mail: directorpostgraduate@kabarak.ac.ke

BOARD OF POSTGRADUATE STUDIES

4th June, 2019

The Director General
National Commission for Science, Technology & Innovation (NACOSTI)
P.O. Box 30623 – 00100
NAIROBI

Dear Sir/Madam,

RE: LINA CHEPKOECH BOIT- REG. NO. GDB/M/0889/09/14

The above named is a Doctor of Philosophy student at Kabarak University in the School of Business & Economics. She is carrying out research entitled ***"An Analysis of the Effects of Strategic Management practices on Disaster Management in Kenya (A Study of National Government Ministries)"***. She has defended her proposal and has been authorized to proceed with field research.

The information obtained in the course of this research will be used for academic purposes only and will be treated with utmost confidentiality.

Please provide her with a research permit to enable her to undertake her research.

Thank you.

Yours faithfully,

KABARAK UNIVERSITY DIRECTOR POST GRADUATE STUDIES 04 JUN 2019 PRIVATE BAG - 20157, KABARAK

Dr. Betty Jeruto Tikoko
DIRECTOR, POSTGRADUATE STUDIES

Kabarak University Moral Code
As members of Kabarak University family, we purpose at all times and in all places, to set apart in one's heart, Jesus as Lord. (1 Peter 3:15)

Appendix VI: List of Ministries and their Directorates/Departments in the Government of Kenya

	Ministry	Directorates/Departments
1	National Treasury	Public Debt Management
		Portfolio Management
		Accounting Services and Quality Assurance
		Budget , Fiscal and Economic Affairs
		Administrative and support services
2	Ministry of Interior and Coordination of National Government	Interior
		Correctional Services
		Independent Offices
3	Ministry of Health	Preventive and Promotive Health
		Curative and Rehabilitative Health Services
		Standards, Quality Assurance and Regulations
		Planning and Health Financing
		Health Sector Coordination
		Administrative Services
4	Ministry of Agriculture , Livestock and Fisheries	Irrigation, Technology, infrastructure Development and Mechanization
		Agricultural Policy Research and Regulations
		Crop Resources, Agri-business and Market Development
		Veterinary Services
		Livestock Policy Research and Regulations
		Livestock Resources and Market Development
		Aquaculture Technology and Development
		Fisheries Policy research and Regulations
		Fisheries resource Development and Marketing
5	Ministry of Devolution, Planning and Special Programmes	Intergovernmental Relations
		Special Programmes
		Administration- Devolution
		Arid and Semi-Arid Lands (ASAL)
		Administration- ASAL
6	Ministry of Defence	Kenya Army
		Kenya Air Force
		Kenya Navy
		Administration
7	Ministry of Foreign Affairs and International Trade	Protocol
		Africa and African Union
		Office of the Great Lakes Region
		Central Planning and Project
		Americas
		Asia, Australia and Pacific Island
8	Ministry of Education	Administration and Planning
		Basic Education
		Secondary and Tertiary Education
		Policy Partnership and East Africa Community

		Alternative Provision of Basic Education and Training
		Technical Education
		Higher Education
		Research Management and Development
		Youth Training
9	Ministry of Transport, Infrastructure, Housing, Urban Development and Public Works	Transport
		Infrastructure
		Marine and Shipping Affairs
		Public Works
		Housing and Urban Development
10	Ministry of Information Communication and Technology	Broadcasting and Telecommunication
		ICT and Innovation
11	Ministry of Environment and Natural Resources	Environment
		Forestry and Conservation
		Climate Change
		Administration and Support Services
12	Ministry of Water and Irrigation	Water Development
		Sanitation
		Water Resources
		Transboundary Waters
		Shared Services
13	Ministry of Lands and Physical Planning	Physical Planning
		Land Registration
		Land Valuation
		Land Administration
		Land Adjudication
		Administration and Support Services
14	Ministry of Sports Culture and Arts	National Archives and Documentation Service
		Culture
		Permanent Presidential Music Commission
		Library Services
		Film Services
		Sports
		Records Management
		Support Services
		Sports Registration
15	Ministry of labour and East African Affairs	Administration and Planning
		Economic Affairs
		Political Affairs
		Productive and Services
		Social Affairs
		Regional Development
		Northern Corridor Development
		Labour
		Trade Unions
		National Productivity and Competitiveness Centre

		Occupational Safety and Health Services
		National Human Resource Planning and Development
16	Ministry of Energy and Petroleum	Electrical Power
		Geo-Exploration
		Commissioner of Petroleum
		Renewable Energy
		Administrative Services
17	Ministry of Industrialization and Enterprise Development	Manufacturing and Industrialization Policy
		Business Environment and Private Sector Development
		Industrial Sector Support
		SME Development
		Delivery Unit
		Administration
		Portfolio Management/SAGAs Support
		Registration of Co-operatives
		Co-operative Finance and Banking
		Education and Training
		Co-operative Marketing
		Ventures and Marketing
		Internal trade
		International Trade
		Weights and Measures
18	Ministry of Public Service Youth and Gender Affairs	Public Service Management
		Youth Affairs
		Gender Affairs
19	Ministry of Tourism	Tourism Policy and Strategy
		Tourism Development
		Tourism Safety and Security
		Finance and Support
		Wildlife
20	Ministry of Mining	Mineral Management and Regulations
		Geological Surveys
		Mineral Promotion and Value Addition
		Mine Health, Safety and Environment
		Resource Surveys and Remote Sensing
		Corporate Affairs
		Geo-Data Centre and Minerals Certification Laboratory
		Mineral Audit Agency
		Policy, Strategy, Research, Legal and Capacity Building Agency