

**FACTORS INFLUENCING COMPLIANCE WITH
DISASTER RISK REDUCTION GUIDELINES IN PUBLIC
PRIMARY SCHOOLS IN KIAMBAA DIVISION, KIAMBU
COUNTY, KENYA**

Gicharu Charles Waweru

**A Research Project Submitted in Partial Fulfilment of the Requirements
for the Award of the Degree of Master of Education in Educational
Administration**

University of Nairobi

2015

DECLARATION

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

Gicharu Charles Waweru

E55/67489/2013

This research project has been submitted for examination with our approval as university supervisors.

Jeremiah M. Kalai, PhD

Senior Lecturer

Department of Educational Administration and Planning

University of Nairobi

Mr. Edward N. Kanori

Lecturer

Department of Educational Administration and Planning

University of Nairobi

DEDICATION

I wish to dedicate this report to my late parents, Mr Jackson Gicharu and Mrs Grace Nyambura Gicharu whose unconditional love, support, encouragement and understanding have always served as the pillar from which I draw my strength.

Thanks to my wife Anne for her moral support and encouragement and our children, Jack, Grace, Caroline and Winnie.

ACKNOWLEDGEMENT

Honour and glory to the Almighty God, your grace is sufficient for me. I am greatly indebted to the University of Nairobi fraternity for the kind provision of services that has gone a long way in assisting not only in my studies but also in my research work. I am especially grateful to my two supervisors, Dr. Jeremiah Kalai and Mr. Edward Kanori for their patience and dedicated support that they have given a blossoming academic mind in the process of developing this project, and without which the preparation of this project would not have gone this far. Their direction and counsel no doubt provided the impetus that I required to move on.

I wish to express my appreciation to the County Commissioner and the County Director of Education, Kiambu County, for authorizing the research study, without whose authority, this project work would not have proceeded. I also wish to thank the headteachers and the teachers, who, despite the tight schedule, went out of their way to accord the study time for data collection, as well as diligently fill the questionnaires. None of this work would have seen the light of day had it not been for the love and encouragement of my family.

May God Bless You All!

TABLE OF CONTENTS

Content	Page
Declaration.....	ii
Dedication.....	iii
Acknowledgement	iv
Table of contents.....	v
List of tables	x
List of figures.....	xii
Abbreviations and acronyms	xiii
Abstract.....	xiv

CHAPTER ONE

INTRODUCTION

1.1 Background to the study	1
1.2 Statement of the problem.....	8
1.3 Purpose of the study.....	9
1.4 Research objectives	9
1.5 Research questions.....	10
1.6 Significance of the study	10
1.7 Limitations of the study	11
1.8 Delimitations of the study.....	11
1.9 Basic assumptions of the study.....	12
1.10 Definition of significant terms.....	12
1.11 Organisation of the study.....	14

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction.....	15
2.2 Concept of disaster risk reduction	15
2.3 School size and disaster risk reduction in schools.....	17
2.4 Structural condition of physical infrastructure and disaster risk reduction in schools	19
2.5 Availability of financial resources and disaster risk reduction in schools..	21
2.6 Community participation and disaster risk reduction in school	22
2.7 Summary of the literature review	24
2.8 Theoretical framework.....	25
2.9 Conceptual framework.....	27

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction.....	29
3.2 Research design	29
3.3 Target population.....	30
3.4 Sample size and sampling procedure.....	30
3.5 Research instruments	30
3.6 Instrument validity.....	31
3.7 Instrument reliability	32
3.8 Data collection procedures	33
3.9 Data analysis techniques.....	33
3.10 Ethical considerations.....	34

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction.....	35
4.2. Instrument return rate	35
4.3 Demographic characteristics of the respondents	36
4.3.1 Distribution of respondents by duration served in schools.....	37
4.3.2 Distribution of respondents by academic qualifications.....	38
4.3.3 Distribution of respondents by gender.....	40
4.4 Availability of Safety and Standards Manual (2008) in schools	41
4.5 Extent of compliance with disaster risk reduction guidelines	43
4.6 School-based policies & disaster risk reduction in public primary schools	44
4.7 Occurrence and types of disasters in primary schools.....	46
4.8 School size and safety of pupils.....	48
4.9 Contribution of Free Primary Education to high school enrolment	51
4.10 High enrolment as a hindrance to compliance with disaster risk reduction guidelines	52
4.11 Conducting spot checks on condition of school physical infrastructure ..	53
4.12 Involvement of professionals in the construction and maintenance of buildings in schools	54
4.13 Provision & servicing of disaster preparedness facilities and equipment	56
4.14 Provision of emergency funds in case of a disaster	58
4.15 Provision of finances for safety fittings and equipment in schools	60
4.16 Lack of financial resources as a hindrance to compliance with disaster risk reduction guidelines.....	61

4.17 Rapport between schools and the community	63
4.18 Community participation in disaster risk reduction activities in schools and frequency of participation	65
4.19 The need for disaster risk reduction in the school development plan.....	67
4.20 General status of safety of pupils in schools	68
4.21 Cross tabulation on compliance with disaster risk reduction guidelines in primary schools.....	69
4.22 Assisting schools in full compliance with disaster risk reduction guidelines	73

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction.....	75
5.2 Summary of the study	75
5.3 Conclusions	79
5.4 Recommendations.....	82
5.5 Suggestions for further research	83

REFERENCES	85
-------------------------	-----------

APPENDICES.....	90
------------------------	-----------

Appendix I:Letter of introduction.....	90
--	----

Appendix II:Questionnaire for headteachers	91
--	----

Appendix III:Questionnaire for the teachers	95
---	----

Appendix IV:Observation schedule.....	99
---------------------------------------	----

Appendix V:List of public primary schools in the study location.....	100
--	-----

Appendix VI:Disaster risk reduction guidelines.....	101
---	-----

Appendix VII:Research permit.....	105
Appendix VIII:Authorization letter from the National Commission for Science, Technology and Innovation	106
Appendix IX:Authorization letter from the County Director Of Education Kiambu County	107

LIST OF TABLES

Table 4.1 Distribution of respondents by duration served in schools.....	37
Table 4.2 Distribution of respondents by academic qualifications.....	39
Table 4.3 Availability of Safety and Standards Manual (2008) in schools.....	42
Table 4.4 Level of compliance with disaster risk reduction guidelines in schools	43
Table 4.5 School-based policies and disaster risk reduction in public primary schools	45
Table 4.6 Types of disasters in primary schools	47
Table 4.7 School size and safety of pupils.....	49
Table 4.8 Class size and safety of pupils.....	50
Table 4.9 Congestion in classrooms and safety of pupils.....	50
Table 4.10 Contribution of FPE to high school enrolment	52
Table 4.11 High enrolment as a hindrance to compliance with disaster risk reduction guidelines	53
Table 4.12 Conducting spot checks on the condition of school physical infrastructure	54
Table 4.13 Involvement of professionals in the construction and maintenance of buildings in schools.....	55
Table 4.14 Availability of disaster preparedness facilities and equipment	56
Table 4.15 Frequency of servicing of disaster preparedness facilities and equipment in primary schools.....	57
Table 4.16 Provision of finances for safety fittings and equipment in schools.	60

Table 4.17 Lack of financial resources as a hindrance to compliance with disaster risk reduction guidelines.....	62
Table 4.18 Extent to which lack of financial resources constitute a major hindrance to compliance with disaster risk reduction guidelines	63
Table 4.19 Rapport between schools and the community	64
Table 4.20: Frequency of community participation in disaster risk reduction activities in schools	66
Table 4.21 Addressing the need for disaster risk reduction in the school development plan.....	68
Table 4.22 General status of safety of pupils in schools.....	69
Table 4.23.1 Comparing small and big schools in relation to compliance with disaster risk reduction guidelines.....	70
Table 4.23.2 Comparing schools with satisfactory and unsatisfactory physical infrastructure in relation to compliance with disaster risk reduction guidelines	71
Table 4.23.3 Comparing schools rated as having adequate and inadequate financial resources in relation to compliance with disaster risk reduction guidelines	72
Table 4.23.4 Comparing schools that involve community and those that do not in terms of compliance with disaster risk reduction guidelines	73

LIST OF FIGURES

Figure 2.1 Maslow’s Hierarchy of Needs Model.....	26
Figure 2.2.The conceptual framework on compliance with disaster risk reduction guidelines in primary schools	28
Figure 4.1 Distribution of respondents by gender	40
Figure 4.2 Occurrence of disasters in primary schools	46
Figure 4.3 Allocation of emergency funds in the event of a disaster.....	59
Figure 4.4 Community participation in disaster risk reduction activities in schools	65

ABBREVIATIONS AND ACRONYMS

ACRWC – African Charter on the Rights and Welfare of Children

BOM – Board of Management

COGSS – Coalition on Global School Safety

CRC – Convention on the Rights of the Child

CWS – Church World Service

DFID – Department for International Development

EFA – Education for All

FEMA – Federal Emergency Management Agency

FPE – Free Primary Education

ICSS – International Conference on School Safety

MDG – Millennium Development Goals

MOE – Ministry of Education

OAU – Organization of African Unity

UNCRD – United Nations Centre for Regional Development

UNICEF – United Nations International Children Education Fund

UNISDR – United Nations International Secretariat for Disaster Reduction

UPE – Universal Primary Education

WCEFA – World Conference on Education for All

WEF – World Economic Forum

ABSTRACT

The purpose of the study was to investigate factors influencing compliance with disaster risk reduction guidelines in public primary schools in Kiambaa Division, Kiambu County, Kenya. The study aimed to achieve this by assessing the extent to which school size, structural condition of physical infrastructure, availability of financial resources and community participation influenced compliance with disaster risk reduction guidelines. Abraham Maslow's Hierarchy of Needs Theory was reviewed. The study adopted a descriptive survey design. The target population was 23 headteachers and 372 teachers from 23 public primary schools in Kiambaa Division. The study sampled 21 headteachers. To get a total of 189 teachers, nine teachers were picked randomly from each of the 21 public primary schools in the Division. Questionnaires for the headteachers and teachers and an observation schedule were used to collect information on factors influencing compliance with disaster risk reduction guidelines. Descriptive statistics including percentages and frequency counts were used to analyse the quantitative data obtained. Data was presented in form of tables, graphs and pie-charts. The study found out that no school in Kiambaa Division had fully complied with disaster risk reduction guidelines as confirmed by all the headteachers and all the teachers. All the respondents confirmed that there was congestion in their schools which posed a challenge to compliance with disaster risk reduction guidelines. The physical infrastructure in 85.7% of the schools was in fair condition. The doors open outwards and there was enough lighting. However, windows were grilled as witnessed in all the schools which poses a safety threat in case of a disaster. Professionals like architects, quantity surveyors, contractors, Ministry of Public works and Ministry of Health were not involved in the construction and maintenance of school physical infrastructure as recommended in the Safety and Standards Manual for Schools (2008) by the Ministry of Education. Schools in the study had financial difficulties. The government does not provide money for disaster risk reduction in primary schools as confirmed by all the headteachers. Majority of the headteachers (81.0%) and a majority of the teachers (81.0%) were of the opinion that lack of financial resources affected compliance with disaster risk reduction guidelines. There was poor rapport between the schools and the community as confirmed by 52.7% of the teachers. The study concluded that school size, lack of financial resources and poor school-community relationship are a threat to children's safety in schools. The study recommended expansion of the existing school facilities to ease congestion. School administrators should raise the level of awareness of disaster risk reduction issues among the teachers. Healthy working relationship with the community should be fostered so as to be able to involve the community in disaster risk reduction programmes. The Ministry of Education should enforce school safety programmes by ensuring all schools institute school safety sub-committees to implement safety policies.

CHAPTER ONE

INTRODUCTION

1.1 Background to the study

Disaster means an emergency event that occurs with little or no warning, causing extensive destruction of property, lives and disruption of normal operations (Ministry of Education, 2008). Disaster risk reduction refers to actions designed to minimize death, destruction of property and disruption of normal operations (MOE, 2008). It is a systematic approach to identifying, assessing and reducing the risk of disasters with the aim of reducing socio-economic vulnerabilities to disasters as well as dealing with hazards that trigger them. From the global, regional and national perspectives, school safety standards for disaster risk reduction is a far sighted option with alot of emphasis being put on school infrastructural requirements, emergency preparedness, compliance with safety standards, enactment of various legislation to enforce compliance to safety standards for disaster risk reduction and adequacy of infrastructure (Njogu, 2014).

Many school children have died especially in earthquake prone areas. The Kashmir Earthquake in Pakistan killed 18,000 pupils in October 2005. In May 2008, the Wenchuan Earthquake in China killed 7,000 students (Patel, 2008). Many school buildings in these areas are located in zones with slumping soils, and as a result they are likely to collapse under seismic waves. Schoolbuildings in Pakistan consist of brick-works up to 4 storeys in old constructions(UNCRD,

2009). Between 1st and 3rd September 2004, 186 children died in a terrorist attack in Beslan School in Russia. In July 2004, 94 children died when fire broke out in a school in Kumbakonam, India. The death of these children was blamed on failure to fully follow safety norms. The school building was overcrowded and had only one exit. There were no fire-fighting equipment (Reuters, as cited by Kanyi, 2014). School tragedies in India, including the 1995 school fire, which led to the death of 400 students, are blamed on failure by regulatory authorities to enforce safety norms. In USA, the Collinwood School fire tragedy of 1908 killed 172 students. The dormitory was made of wood and there were no fire escapes. The Bath Township bomb massacre of 1927 killed 38 pupils (Dotinga, 2012). In the Columbine High School Massacre of 1999, two students shot dead 12 students. Following this incident, schools in USA instituted new security backpacks, metal detectors and computer generated identity cards (Kimathi, 2011).

The United Nations International Secretariat for Disaster Reduction (UNISDR) campaigned for two years from 2006 to 2007 with the main theme as “Disaster Risk Reduction Begins at School” (UNCRD, 2009) The crusade was instrumental in mainstreaming school safety in disaster risk reduction initiatives in many countries and has resulted in many global initiatives such as the Thematic Platform on Knowledge and Education by UNISDR and the Coalition on Global School Safety (COGSS) initiatives (UNCRD, 2009). This endeavour yielded a significant mobilization effort in raising school safety and the integration of disaster risk reduction in schools’ curricular. On 17th May 2008, an international conference on school safety was held in Islamabad to address

the weakness of school buildings. This conference aimed to highlight the major risks inherent in the design and construction of current schools structures (UNCRD, 2009).

In South Africa, measures have been put in place to facilitate safe school environments due to the threats posed by the culture of violence that is rampant in the society (Kinnes, 2007). In 2000, the South African Education Department launched a safe school project that promotes safety at schools, develops discipline and behaviour codes and provides learners with training and after-school safety activities (Leandri, 2011). In 2013, the South African Government published the “Legally Binding Norms and Standards for School Infrastructure.” It made into law that every school must have water, electricity, internet, toilets and safe classrooms with a maximum of 40 pupils (Davis, 2014). Although the document did not lay down concrete timeframes, it holds the government accountable in case the schools fall short of the legal minimum.

In Uganda, in 2008, a fire at Buddo Primary School left 19 girls and two adults dead. The affected lacked provisions for a house mother. The doors were locked from outside. Investigations revealed that classrooms had been converted into dormitories without consulting the district engineer and the health officers as required by the law (Hirano, 2009). After this tragedy, Uganda implemented the Safe School Contact as one of the identified interventions which strengthens the role of teachers, learners and parents in disaster risk reduction.

In Kenya, disasters have resulted to the deaths of many school children. The St. Kizito Secondary School tragedy of 1991 left 19 girls dead and 71 others were

raped by male students. The Ministry of Education attributed this incident to inadequate protection of girls and the poor attitude of teachers towards the security of students (Daily Nation, 13/7/2005). In 1998, the Bombolulu Secondary School fire tragedy killed 26 girls. The dormitory was overcrowded. In 1999, four prefects were burnt to death in Nyeri High School by fellow students. The 2001 Kyanguli Secondary School fire tragedy, the worst in Kenya, killed 68 boys. Both doors of the dormitory were locked (Kimathi, 2011). In the St Teresa's Asumbi Primary School fire tragedy of 2012, eight pupils died. The door was locked from outside and when the community responded to the distress call, the watchmen tried to block them. The Riruta's Le Pic Academy fire tragedy of 2012 left five pupils dead. In all the above cases, the dormitory windows had grills installed (MOE, 2012).

According to Wanyama (2011), there are policy frameworks that demand governments to ensure young children learn in schools that are caring, friendly, child-centred, inclusive, gender equitable and effective in enhancing excellence in acquisition of mental, physical and psychological skills. Towards the realisation of the set goals, the Government of Kenya has developed various interventional strategies to ensure safe and secure school environments which includes coming up with safety documents that are intended to ensure student safety. Some of these safety documents include:

Education Act Cap 211 – The enactment of the Education Act Cap 211 in 1967 defines what a school is as well as the registration requirements. Part III provides for school-community collaboration in the management of schools in

Kenya through school committees.

Public Health Act Cap 242 – The act explains how to ensure hygiene especially on sanitation and drainage aspects. No physical infrastructure should be constructed or occupied without consultations with and approval of the Ministry of Health (Public Health Department). The Public Health Department ensures that schools have adequate safe storage facility for food items.

Ministry of Works Building Regulations – The regulations define the construction requirements. It defines the whole process of putting up a building. All school buildings should comply with the provisions of the Ministry of Public Works building regulations/standards.

The Children Act 2001 – The act stipulates the rights of the child. All learning institutions should provide safe and accessible physical environment. They should minimize the risk of physical injury by making sure that adequate safety measures are put in place.

Circular No. G9/1/169 Republic of Kenya (2001) – This document has several safety requirements for schools. Some of the requirements are: school heads to reside in schools, fire drills to be held at least twice a year, emergency doors to be created in dormitories and special rooms, safety instructions to be prominently displayed in laboratories and workshops, fire fighting equipment to be provided, involvement of professionals in site planning, designing, construction and maintenance of school buildings, prevention of overcrowding in classrooms and dormitories, one toilet for every 30 learners and clearly

demarcated school grounds with proper fencing and secure gates.

In 2008, the MOE in collaboration with Church World Service (CWS) developed the Safety Standards Manual for Schools in Kenya (2008). This is a comprehensive policy whose objective is institutionalizing and mainstreaming school safety for all children. It provides the necessary guidelines and instruments needed in design, implementation and evaluation of school safety programmes. It aims at enhancing the physical, emotional, psychological, mental and social health, safety and welfare of the learners. It was to serve as a blueprint for enhancing the safety of schools in the republic. All stakeholders are compelled to review their institution's safety status and implement guidelines on safety standards in all education institutions (Wanyama, 2011).

Despite the measures taken by the government to reduce disasters in schools, learners continue to die, get injuries or lose property in the same environments which are supposed to provide safety and security to the same learners as evidenced by media reports. Media reports indicate that school tragedies are still occurring in schools. On 7th March 2015, three pupils from SDA Labuiywo Academy in Nandi County perished when fire gutted their dormitory (Jelimo, 2015). On 11th March 2015, a pupil from Kiseveni Primary School in Kitui died after falling into a pit latrine (Nzengu, 2015). Such tragedies highlight gaps in both policy and practice of safety and injury prevention as well as principles of preparedness that might have prevented tragic deaths and injuries.

Occurrence of tragedies in schools seems to suggest that schools are not adequately prepared to deal with disasters. Most schools have not complied in

the area of disaster risk reduction (Wanyama, 2011). A research from a study carried out in Githunguri, Kiambu County, shows that the safety policy in reference to the Safety Standards Manual of 2008 is not sufficiently implemented due to limitation of funds (Nderitu, 2009). Financial priorities go to programmes that enhance academic performance rather than students' welfare (Simatwa & Omollo, as cited by Mburu, 2012).

According to Ngaroga (2006), the move towards Free Primary Education was implemented without a strategic plan. Following this measure, there was a rapid increase in enrolment which outstripped the available resources. Increased enrolment without a commensurate increase in learning spaces led to congestion in classrooms and dormitories. The Safety Standards Manual recommends promotion of comfortable conditions in order to facilitate quality learning. Teachers should aspire to ensure that learner-teacher ratio in their respective classrooms remains at the official recommended proportion of 1:50 in order to avoid congested classrooms.

The Safety Standards Manual for Schools in Kenya (MOE, 2008) encourages schools to liaise with members of the community and other partners in order to increase awareness about issues related to school safety. For learners, school staff, parents and other members of the local communities to share the same vision regarding the role of the school, certain attitudes and behaviours are expected from each. School management should develop linkages with communities around schools. Learners and school staff should behave with respect towards members of the local communities and their culture. Schools

should organise regular joint meetings on academic matters as well as co-curricular and cultural activities with parents or guardians and learners. Communities should be encouraged to use their administrative structures and authority to resolve school-community conflicts (MOE, 2008). One of the indicators of a safe school is a high level of interaction between school and the community as well as the active participation of the community in school programmes (Atkinson, 2002).

1.2 Statement of the problem

Kiambaa Division is made up of villages. With a population of 188,055 people (638 persons per square kilometre) and an annual growth rate of 2.56, it is one of the most densely populated rural divisions in Kenya (2009 census). With 23 public primary schools only, the classrooms and play areas are congested. There is scarcity of land for expansion. Research on school safety has been conducted in Kiambu County in other divisions like Githunguri (Kimathi, 2011), Kikuyu (Wainaina, 2012) and Limuru (Mburu, 2012). These researches concentrate on secondary schools. According to the National Assessment System for Monitoring Learner Achievement (NASMLA), schools in Kiambu County and other counties across Kenya have inadequate classroom facilities. Thus, it is important to ensure adequate provision of school physical infrastructure like classrooms and toilets for they can contribute to better performance of pupils in their learning achievements, high retention and completion rates (KNEC, 2010).

Kiambaa Division has many social problems that can have both direct and indirect effect on the security of schools and school children. Such problems

include high crime rate, high level of unemployment, drug and substance abuse, high population, family instability and rising cases of child abuse and neglect (Dumena, 2014). Many primary schools are vulnerable to disasters due to the tender age of the pupils, congestion in classrooms, old buildings and indiscipline of pupils especially in urban primary schools. The researcher took cognizance of the safety breaches in primary schools and sought to investigate the factors influencing compliance with disaster risk reduction guidelines in public primary schools in Kiambaa Division, Kiambu County, Kenya.

1.3 Purpose of the study

The purpose of the study was to investigate factors influencing compliance with disaster risk reduction guidelines in public primary schools in Kiambaa Division, Kiambu County, Kenya.

1.4 Research objectives

The study was guided by the following objectives:

- i. To examine whether school size influences compliance with disaster risk reduction guidelines in public primary schools in Kiambaa Division, Kiambu County, Kenya.
- ii. To examine whether the structural condition of physical infrastructure influences compliance with disaster risk reduction guidelines in public primary schools in Kiambaa Division, Kiambu County, Kenya.
- iii. To determine whether availability of financial resources influences compliance with disaster risk reduction guidelines in public primary

schools in Kiambaa Division, Kiambu County, Kenya.

- iv. To establish whether community participation influences compliance with disaster risk reduction guidelines in public primary school in Kiambaa Division, Kiambu County, Kenya.

1.5 Research questions

The study was guided by the following questions:

- i. What is the influence of school size on compliance with disaster risk reduction guidelines in public primary schools in Kiambaa Division, Kiambu County, Kenya?
- ii. What is the influence of the structural condition of physical infrastructure on compliance with disaster risk reduction guidelines in public primary schools in Kiambaa Division, Kiambu County, Kenya?
- iii. What is the influence of availability of financial resources on compliance with disaster risk reduction guidelines in public primary schools in Kiambaa Division, Kiambu County, Kenya?
- iv. What is the influence of community participation on compliance with disaster risk reduction guidelines in public primary schools in Kiambaa Division, Kiambu County, Kenya?

1.6 Significance of the study

The findings of this study may provide the Ministry of Education with valuable insight into the factors that influence compliance with disaster risk reduction guidelines. This would provide a basis for effectively addressing future

challenges facing implementation of safety standards in schools. The Ministry of Education may also plan programmes that integrate disaster risk reduction into school programmes and develop a policy framework on provision of emergency facilities. The study may further encourage headteachers, teachers and BOM to perceive disaster risk reduction as relevant and urgent enough in schools and develop comprehensive school strategies and policies in order to improve the safety status of school pupils. The study might also add to the growing pool of knowledge on disaster risk reduction in schools. This could be critical in catalysing future exploration by other researchers.

1.7 Limitations of the study

The field of safety is sensitive in terms of honesty and integrity with regard to compliance with disaster risk reduction guidelines. Some of the respondents in the sampled schools, especially the headteachers, wanted to create an impression of having satisfied the requisite guidelines and expected standards thus giving overrated information. The researcher overcame this challenge by using an observation schedule to confirm the expected requirements.

1.8 Delimitations of the study

The study narrowed its scope to disaster risk reduction and left out other safety areas as indicated in the School Safety and Standards Manual (MOE, 2008). The study was confined to four factors that influence compliance with disaster risk reduction guidelines. Other factors were left out in order to obtain manageable data for analysis and interpretation. The study solicited data from

public primary schools only in Kiambaa Division, Kiambu County and left out all other learning institutions in other divisions in the county.

1.9 Basic assumptions of the study

This study assumed that:

- i. All public primary schools in Kiambaa Division were conversant with the safety standards for schools in Kenya set by the Ministry of Education in 2008.
- ii. The responses given by the respondents were honest to the best of the ability of the respondents.
- iii. The sampled population was quite representative of the whole population under study.

1.10 Definition of significant terms

The following are the definitions of significant terms:

Availability of financial resources refers to monetary capital that can be obtained and utilised for the benefit of the school especially in disaster risk reduction.

Community refers to the members living within the school catchment area which includes the parents of that particular school.

Community participation refers to the involvement of the members living within the school catchment area in school activities which includes disaster

risk reduction activities.

Compliance refers to the act of conforming to the disaster risk reduction guidelines as laid down by the Ministry of Education (2008).

Compliance with disaster risk reduction guidelines refer to the state of conformity with the recommended practices with the aim of lessening tragedies in schools.

Disaster refers to serious disruption of the functioning of a given community or society causing widespread human, material or environmental losses which exceed the ability of the affected population to cope.

Disaster risk reduction refers to actions designed to minimise destruction of life, property and disruption of normal operations in a school.

Guidelines refers to the recommended practices that schools should undertake to meet the safety standards suggested by the Ministry of Education in the Republic of Kenya

Physical infrastructure refers to any built facility for use in primary schools to facilitate the teaching and learning process like classroom, dormitory or toilet.

School size refers to the number of pupils enrolled in a school in relation to compliance with disaster risk reduction guidelines.

Structural condition of physical infrastructure refers to the physical state of buildings or constructions in a school in relation to compliance with the already

established safety standards.

Primary school refers to a formal education institution handling children aged between six and fourteen years.

1.11 Organisation of the study

The study was divided into five chapters. Chapter one, introduction, focused on the background of the study, statement of the problem, purpose of the study, objectives of the study, research questions, significance of the study, limitations of the study, delimitations of the study, basic assumptions of the study, definition of significant terms and organisation of the study. Chapter two, literature review, included introduction, concept of disaster risk reduction, effects of school size on disaster risk reduction in schools, structural condition of physical infrastructure and disaster risk reduction in schools, availability of financial resources and disaster risk reduction in schools, community participation in disaster risk reduction in schools, summary of the literature review, the theoretical framework and the conceptual framework. Chapter three, research methodology, focused on introduction, research design, target population, sample size and sampling techniques, research instruments, data collection procedures, data analysis techniques and ethical considerations. Chapter four was on data analysis, presentation and interpretation. Chapter five presented a summary of the study, conclusions, recommendations and suggestions for further research.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter involves review of literature related to factors influencing compliance with disaster risk reduction guidelines in public primary schools. It explores: concept of disaster risk reduction, school size and disaster risk reduction in schools, structural condition of physical infrastructure and disaster risk reduction in schools, availability of financial resources and disaster risk reduction in schools, community participation in disaster risk reduction in schools, summary of the literature review, the theoretical framework and the conceptual framework.

2.2 Concept of disaster risk reduction

Safety for children is both a human and a constitutional right. It is an important component of child-friendly schools. Strategies have been developed globally, regionally and locally to address the issue of security of school children. Governments have signed treaties in international conventions that promote the rights of children like the Convention on the Rights of the Child (CRC) and other frameworks such as the World Conference on Education for All (WCEFA, 2000), the Millennium Development Goals (United Nations, 2000), International Conference on School Safety (ICSS) of 2008 and for African states, the African Charter on the Rights and Welfare of Children (ACRWC) (UNICEF 1990). These policy frameworks demand governments to ensure

young children learn in caring, child-friendly schools that are child-centred, inclusive, gender equitable and effective in enhancing excellence in acquisition of mental, physical and psychological skills.

The main disasters that face school children can be in form of car accidents, armed violence, fires, floods, lightning, landslides and earthquakes. Fire incidences are a major disaster in schools and have resulted to loss of many lives and injuries. Floods have historically killed more people than any other form of natural disaster (Bradshaw, Sodhi, Peh and Brook, 2007). In Pakistan, over 5,500 schools have been damaged across the country while 5,000 others are being used as shelters for displaced families. This has affected 8.6 million children (Muzaffargarh, 2010). Lightning is a leading cause of storm deaths and also inflicts severe injuries on many more (Cooper, 1995). In 1966, a landslide buried a school in Aberfan, Wales, killing 148 people, mostly young pupils (Bennet, 2010). Earthquakes cause serious damage to buildings, injuries and massive loss of life to pupils and staff.

Not all disasters are rapid or sudden. Some disasters develop over time and there is usually a lead time to receive information and react to early warnings. Careful monitoring and early warnings are useful if they help to avert potentially dangerous events or circumstances that can lead to a disaster or if they lead to actions taken to minimize damages. Early warning mechanisms will provide the school community with relevant information to enable them make informed decisions for evacuation or relocation. There needs to be a disaster risk strategy if the effects of disasters are to be minimized. The risk

reduction strategy calls for the establishment of crises response team with the mandate to prevent, mitigate and effectively prepare against potential disasters (Wanyama, 2011).

School safety is an integral component of Government of Kenya policies. This makes it compulsory and a legal requirement for all schools to adopt the school safety policies. The legislation of the rights on children's safety can be inferred from the Constitution of Kenya (2010) Bill of Rights (Cap 4). The Government of Kenya has also translated and enacted the recommendations of the global frameworks into the Children's Act No. 8 of 2001 as a legal instrument to safeguard and promote the rights and welfare of children in Kenya. Article 23:2 (a) and (b) of the Children's Act, for instance, accentuates the significance of safe and secure environment to the children (Wanyama, 2011).

The Ministry of Education (Kenya) has established an emergency unit under the Directorate of Basic Education to mitigate and coordinate the effects of emergencies. The emergency unit's concern is on emergencies brought about by disasters such as floods, armed conflict, food insecurity and strong winds. The unit plays a critical role in normalising the environment for children and significantly helping them to overcome the psychological impact of disasters. It also provides a protective environment for children who are more vulnerable to exploitation and abuse during emergencies (MOE, 2010).

2.3 School size and disaster risk reduction in schools

In recent years, Kenya has experienced continued growth in student population

in primary schools as a result of the introduction of FPE which the government introduced in 2008 (MOE, 2008). This is in accordance with the Kenyan law and the MDGs of the year 2000 that seek to achieve UPE by 2015 (Ng'ang'a, 2013). The author further observes that, while FPE has increased participation and access, it has exacerbated the problem of teaching and utilization of learning facilities. As a result of the high influx of new pupils, classrooms are congested. In his study on factors influencing compliance with safety standards in public secondary schools in Nyeri Central District, Nyeri County, Ng'ang'a (2013) observed that 72% of the principals agreed that high student enrolment influenced compliance with safety standards. All class teachers confirmed that there was congestion in their schools.

The government of Kenya's pledge towards Education for All and Millennium Development Goals has resulted to increased enrolment in schools. According to Ngaroga (2006), Free Primary Education (FPE) was implemented without a strategic plan. Following this measure, there was a rapid increase in enrolment which outstripped the available resources. Physical facilities like classrooms, dormitories and toilets were overstretched hence compromising safety of school children. A study conducted in Buuri District on institutional factors influencing adherence to safety standards guidelines in secondary schools (Kirimi, 2014), the research established that, the number of enrolled students influence adherence to safety standards guidelines in schools. The principle behind UPE, EFA and FPE is not just about getting children to school. There are several factors that need to be addressed so as to achieve quality education. Focus must be made to ensure that school environments are favourable for

teaching and learning.

2.4 Structural condition of physical infrastructure and disaster risk reduction in schools

Physical infrastructure includes structures such as classrooms, dormitories, offices, toilets, libraries, laboratories, kitchens, water tanks and playground equipment among others (MOE, 2008). These facilities can be either permanent or temporary. Such physical structures should be appropriate, adequate and properly located, devoid of any risks to users or to those around them. The school should ensure classrooms, dormitories, offices, kitchens, toilets, and other physical structures are clean, well maintained, safe and properly utilised.

The main task of a school is to provide education that involves a series of programmes and activities. The success of these programmes and activities depends mainly upon the availability of proper infrastructure in the school. A healthy school environment should include structures that protect the pupils and the staff. Poorly designed school buildings and play areas may present serious safety risks.

In 1995, the US Government Accounting Office released a report indicating that more than half of US schools have infrastructural deficiencies that adversely affect indoor air quality. In addition to triggering asthma attacks in susceptible children, poor air quality causes drowsiness, inability to concentrate and lethargy hence compromising learning (Lyons, 2001). According to UNICEF (2009), school infrastructure issue remains a challenge in many

schools. Interviews and focus groups with headteachers and parents in South Africa and Nicaragua indicate that many schools struggle with the maintenance of school buildings. The School Building Organization in Greece is responsible for the design, construction, planning and management of property and equipment of all schools(Baltas, 2004).

There are laws in Kenya that articulate the reasonable standards for school infrastructure. These laws constitute a code of safety expectations for all schools in Kenya. In the construction of structures, all learning institutions in Kenya must comply with the provisions of the Education Act Cap 211, Public Health Act Cap 242, Ministry of Works Building Regulations, the Children Act (2001), Circular No. G9/1/169 Republic of Kenya (2001), the Occupational Safety and Health Act (2007) and the Safety Standards Manual for Schools in Kenya (2008) (Wanyama, 2011). No physical infrastructure should be constructed or occupied without consultation with and approval of the Ministry of Public Works and the Ministry of Health (MOE, 2008).

The Kenya Projects Organisation (KENPRO) (2010) reports that, the quality of Kenya education has been affected by the increase in student enrolment. The report also says that most schools do not have adequate facilities to accommodate the large number of enrolled learners under the Free Primary Education programme. There has been a problem of funds to construct enough and proper infrastructure in schools. Njogu (2014) suggests that, the school management should solicit funds for the construction of safe infrastructure and purchase of equipment necessary in disaster risk reduction.

2.5 Availability of financial resources and disaster risk reduction in schools

According to studies conducted in Kenya, the issue of availability of funds has not been left out as a reason for not complying or partial compliance with the Safety Standards Manual (2008). Examples of such studies include the ones conducted in Kisii (Nyakundi, 2012), Githunguri (Nderitu, 2009) and Kimathi (2011), Kikuyu (Wainaina, 2012), Kisumu (Simatwa& Omollo, as cited by Mburu, 2012) and Limuru (Mburu, 2012).

In Pakistan, the government has seen the need to increase funding to learning institutions to cater for security needs due to the frequent attacks in school. This was especially after the Peshawar school attack which left 130 pupils and teachers dead and scores injured in December 2014. Financial resources previously allocated to school management committees for maintenance and repair needs, learning materials, furniture, hiring teachers and other ongoing costs have been repurposed for security and infrastructure. In Khyber Pakhtunkhwah province, 15 million US dollars earmarked for school sanitary facilities and drinking water has been repurposed to assist in implementing new security measures at schools (DFID, 2015).

Leandri (2011) investigated on safety and security measures in secondary schools in Tswana, South Africa and found out that funds are needed to install safety gadgets in schools, put security plan policies and procedures on and follow on their adherence. In Nigeria, business leaders collaborate with donors, UN agencies, business and government to launch a Safe Schools Initiative with an innovative financing model combining resources from the private sector,

government, and international donor agencies (DFID, 2015).

Nyakundi (2012) revealed that inadequate funds were possible constraints in the implementation of safety standards. Nderitu (2009) reported that some schools are poor and cannot afford fire extinguishers and have relied on untrained watchmen since they cannot afford to employ trained security personnel. Simatwa and Omollo's (2010) study of the assessment of the implementation of safety policies in public secondary schools in Kisumu East and West Districts revealed that 86.67% of headteachers decried inadequate funds for poor implementation of safety policies in schools. Wainaina's (2012) study on safety measures in secondary schools in Kikuyu District, Kiambu County established that lack of funds and capacity building were the major barriers in the implementation of the safety policy. Scrutiny of the various voteheads of the ministerial budgetary allocation reveals that there are no funds allocated for purchase of safety equipment except for the payment of the school watchman (Mburu, 2012). Kimathi's (2011) study on disaster preparedness in public secondary schools in Githunguri District, Kiambu County revealed that most schools did not set aside funds for emergencies in the event of a disaster.

2.6 Community participation and disaster risk reduction in school

Atkinson(2002) stresses the importance of viewing natural hazards as a possible component of the local community education package that should be integrated into the broader context of a learning process that builds community resilience to natural hazards. Successful school programmes should integrate student learning with community risk preparedness programmes through learning

extensions at home and the encouragement of child-parent and teacher-parent communication. It is critical to appreciate that school safety is not provided by fences and walls but by the community as a whole.

In Bangladesh, the Disaster Risk Reduction Initiative passed the Disaster Management Act 2012. The initiative included new articles and advocacy papers highlighting the importance of community level consultation and participation during the legislative process (Njogu, 2014). In Philippines, the Centre for Disaster Preparedness stresses that schools are fundamental institutions that are very much embedded in communities and thus it is important to develop schools to become centres for disaster risk reduction for both the school and the community.

In Rwanda, for instance, it was observed that strengthening and establishing collaboration between schools, families, children and the community helps to create a keydimension of safe schools. The communities should be involved throughout the decision-making process. Safe schools have an orderly purposeful atmosphere free from the threats of physical, psychological or emotional harm. These schools form a partnership with the community which is given an opportunity to play important roles in the school. They build trust and communicate openly with the community which supports the school basic mission (MOE-Rwanda, as cited by Njue, 2013).

In Kenya, community participation in school affairs has been limited to raising school funds, attending meetings convened by teachers or limited membership in the management board. Comprehensive involvement programmes is essential

for meeting the safety challenges faced by the education sector. Creating safe and secure schools is about commitment and community will. No school safety strategies can succeed without community participation. Disaster risk reduction requires a broad-based effort by the entire community. By adopting a comprehensive approach to addressing school safety focussing on prevention, intervention and response, schools can increase the safety and security of children (Atkinson, 2002).

The Kenya Basic Education Act (2012) provides for school-community collaboration in the management of schools in Kenya through school management boards. The Safety Standards Manual for Schools (MOE, 2008) encourages schools to liaise with the the community in order to increase awareness about issues related to school safety. One of the indicators of a safe school is a high level of interaction between the school and the community and active participation of community in school programmes.

2.7 Summary of the literature review

In Kenya and the world all over, disasters have proved to be a major challenge. Most of the disaster response initiatives in Kenya are uncoordinated and the measures taken are short-term. The literature reviewed has highlighted that the government on its part has stipulated several safety measures in educational institutions through various legal instruments namely: the Education Act (Cap 211), Public Health Act (Cap 242), Ministry of Public Works Building Regulation and Children's Act 2001, (Republic of Kenya, 2008). The literature has also showed that school size, structural condition of physical

infrastructure, availability of financial resources and community participation have a role to play in disaster risk reduction in schools.

While reviewing the literature, the researcher identified several gaps in existing studies. Studies on school safety have been conducted in other counties like Nyeri (Ng'ang'a, 2013), Kisii (Nyakundi, 2012) and Kilifi (Njoroge, 2014). In Kiambu County, such studies have been conducted in other divisions like Githunguri (Kimathi, 2011), Kikuyu (Wainaina, 2012) and Limuru (Mburu, 2012). These studies ignore primary schools. Heavy loss of life and property in public primary schools has persisted in parts of the country. This points to a low level of compliance with disaster risk reduction guidelines in schools in Kenya. The media continue to report occurrence of disasters and the devastating impacts of these disasters on schools. This raised the researcher's interest in examining the factors that have influenced compliance with disaster risk reduction in schools. Most studies have focused on gaps in training of stakeholders in fire disaster preparedness in secondary schools. Very few studies have focused on the under-lying factors influencing compliance with disaster risk reduction in primary schools in Kenya, despite concerns for the safety of pupil in primary schools. The study intended to fill the gaps by investigating the factors influencing compliance with disaster risk reduction guidelines in public primary schools in Kiambaa Division, Kiambu County.

2.8 Theoretical framework

The study was based on Abraham Maslow's Hierarchy of Needs Theory (Okumbe, 2001). It has physiological needs, safety needs, love needs, esteem

needs and self actualization needs at the top. Physiological and safety needs are categorised as basic or existence needs. The others are secondary needs.

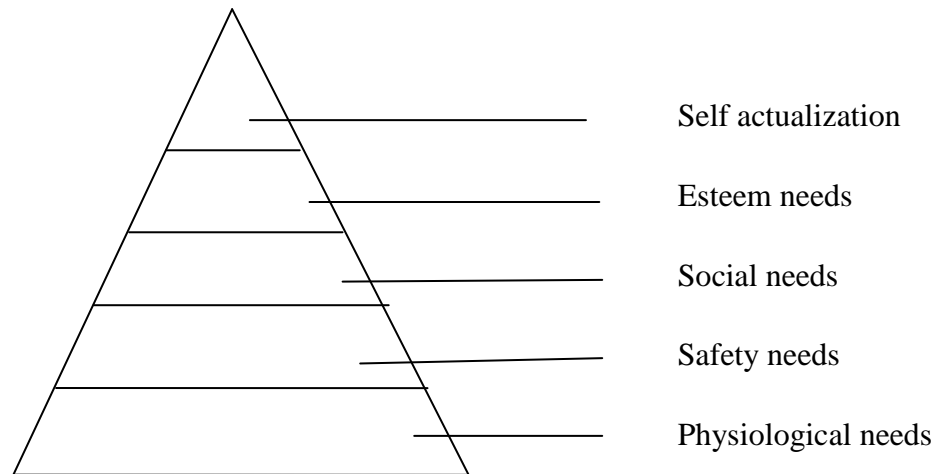


Figure 2.1 Maslow's Hierarchy of Needs Model

Physiological need is the need for food, water, air and sex. Safety need is the need for protection against dangers and deprivation of physiological needs. Social need is the need for love, affection and acceptance in a group. Esteem need is the need to have a stable, firmly based high evaluation of oneself (self esteem) and to have respect of others (prestige). Self actualization (self fulfilment) is the need to develop potentialities and skills to become what one believes is capable of becoming.

Maslow's theory states that when a lower need is satiated, the next highest becomes dominant and one's attention is directed to satisfying the higher need. The theory has been critiqued for its little proof to bear its hierarchical aspect. For instance in some cultures, communal needs are placed before other needs. Poor people are capable of higher needs such as love and belongingness. The

theory has been termed subjective because it used the biographical analysis method. There is little proof that people are motivated to gratify only one level at a time. Life experiences may cause an individual to fluctuate between levels of the hierarchy. However, the theory is important to this study because it identifies safety need as being imperative to the well being of human beings. After meeting the physiological needs, children need to be assured of their security. On the basis of this theory then, the school safety and security policy underscores the government commitment to the safety and overall welfare of learners and especially children. Education stakeholders must foster safe environments to facilitate learner enrolment, retention, completion and hence attainment of quality education.

2.9 Conceptual framework

A conceptual framework is a model of relationship where researchers present the relationship between variables in a study and show the relationship graphically or diagrammatically. It gives an idea of the variables to be covered by the study (Best & Kahn, 2011). According to Orodho (2008), a conceptual framework assists the researcher to quickly see the proposed variables. Ideally, schools should put into place disaster management strategies in order to enhance the safety of children as shown in figure 2.2.

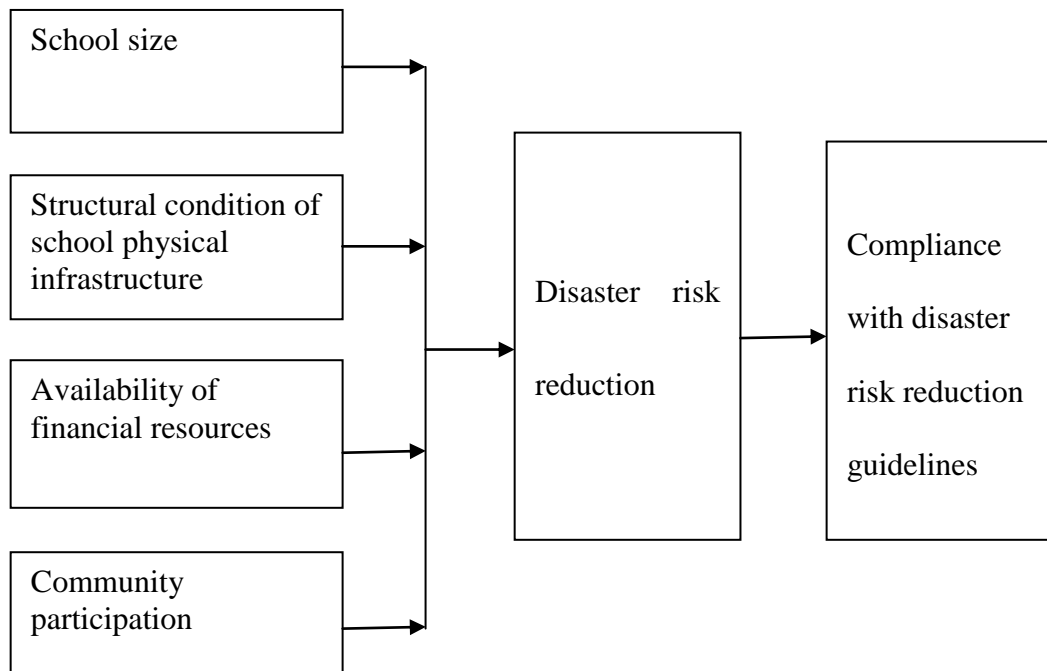


Figure 2.2. The conceptual framework on compliance with disaster risk reduction guidelines in primary schools

This conceptual framework focuses on assessing the outcome of compliance with disaster risk reduction guidelines (dependent variable) and the factors that influence it (independent variables). The independent variables are school size, structural condition of school physical infrastructure, availability of financial resources and community participation. High enrolment results to congestion. School physical infrastructure should be safe and healthy. Financial resources are needed for the purchase of fire fighting equipment, emergency kits and construction of more classrooms. The community provides the required resources for disaster risk reduction in schools. Satisfaction of the mentioned preconditions in public primary schools in Kiambaa Division, Kiambu County will lead to compliance with disaster risk reduction guidelines.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter gives a detailed outline of how the study was carried out. It focuses on research methodology under the following subheadings: research design, target population, sample size and sampling procedures, research instruments, instrument validity, instrument reliability, data collection procedures, data analysis techniques and ethical considerations.

3.2 Research design

The study adopted a descriptive survey design that provided both qualitative and quantitative data that appropriately described the factors influencing compliance with disaster risk reduction guidelines in public primary schools in Kiambaa Division, Kiambu County. A survey is an attempt to collect data from members of a population in order to determine the current status of that population with respect to one or more variables (Mugenda and Mugenda, 2003). A descriptive survey is intended to provide statistical information about aspects of education that interest policy makers in education (Borg and Gall, 1989). This design can be used to collect information about people's attitudes, opinions or habits (Kombo and Tromp, 2006). It allows the researcher to describe, record, analyze and report conditions that exist or existed.

3.3 Target population

A population is the entire group of individuals having common observable characteristics to which the researcher wants to generalize the results of a study (Mugenda & Mugenda, 2003). Since there are 23 schools in Kiambaa Division, the target population consisted of 23 headteachers and all the 372 teachers in the 23 public primary schools in the division.

3.4 Sample size and sampling procedure

Sampling is the process of selecting a suitable representative part of a population, for the purpose of determining parameters or characteristics of the whole population. According to Krejcie and Morgan's table for the determination of sample size, a sample of 21 headteachers and 189 teachers is appropriate (Krejcie and Morgan, 1970). This left out two schools which were used during piloting. In order to meet a sample of 189 teachers, the researcher sampled nine teachers from each of the 21 schools.

3.5 Research instruments

In this study, questionnaires and an observation schedule were used to collect data. A questionnaire has a lot of information, is less expensive and can be used by a large population (Mugenda & Mugenda, 2003). Two sets of questionnaires were used. There was a questionnaire for the headteachers (Appendix II) and for the teachers (Appendix III) comprising part A and B. Part A consisted of the respondents' personal information. Part B consisted of both closed and open ended questions on the concept of disaster risk reduction. The questionnaires

were used to get information on the impact of school size on disaster risk reduction, the state of school physical infrastructure in relation to disaster risk reduction, the impact of financial resources on disaster risk reduction and how the school-community relations affects disaster risk reduction in schools.

An observation schedule (Appendix IV) was used for direct observation of the disaster risk reduction compliance factors. It consisted of a structured guideline using the Likert type rating scale with three responses – perfect condition, fair condition and poor condition – which helped observe and qualitatively and quantitatively describe school disaster risk reduction compliance variables which included fire extinguishers, emergency kits and classroom conditions among others. Direct observation presents data in its natural form, makes the observer an active participant in the study and permits time to think about what is occurring rather than on how to record it (Kombo & Tromp, 2006). It also enhances the accuracy of the study, minimizes bias and supplements data from the questionnaires (Mugenda & Mugenda, 2003). The two instruments were appropriate to the study because, as Verma and Mallick (1999) posit, the results from one form of data helps to inform and refine the other data for meaningful, precise and representative conclusions.

3.6 Instrument validity

Validity of an instrument refers to the ability of that instrument to measure what it is supposed to measure (Borg & Gall, 1989). It is the degree to which the research instruments will appropriately and accurately measure what they are supposed to measure (Verma & Mallick, 1999). The research instruments

were validated through the application of content validity procedures. The researcher established content validity by seeking expert judgment from the supervisors with a view to improve on the instruments' accuracy, format and content. This was done by holding discussions, making relevant comments and suggestions that were synchronized with a view to either reviewing them or adopting them for the study. Two schools with similar characteristics with the schools to be sampled were piloted. Piloting is important because it helps in revealing deficiencies in a questionnaire (Mugenda & Mugenda, 2003). This ensured classification and improvement of content in the instruments administered in the study. Some of the improvements made included leaving the questionnaires with the teachers and collecting them the following day since the researcher discovered that waiting for the teachers to fill them would take a lot of time. This also gave the teachers opportunity to fill in a relaxed manner.

3.7 Instrument reliability

Gay (1981) defines reliability as the degree to which a test consistently measures whatever it measures. The researcher used test-retest technique to ascertain the instrument reliability. This involved administering the same instrument twice to the same group of respondents, allowing a time lapse of one week. Sampled responses from the test and the retest were analyzed using frequencies and percentages to produce scores which helped check whether the two processes gave similar results. The scores from both testing periods were then correlated using the Pearson Product Moment Correlation Coefficient formula:

$$r_{xy} = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{[n\sum x^2 - (\sum x)^2][n\sum y^2 - (\sum y)^2]}}$$

Where, x is the scores from the first test

y is the scores from the second test

n is the number of scores within each distribution

Orodho (2008) considers a correlation coefficient of 0.8 acceptable for a study. The procedure helped in modifying and removing a few ambiguous responses or weaknesses and hence produced revised instruments which were used in the actual study. For this study, the teachers' instrument's reliability yielded a correlation coefficient of 0.82 which was quite reliable for the study.

3.8 Data collection procedures

A research permit was obtained from the National Commission for Science, Technology and Innovation (NACOSTI). The researcher then reported to the County Commissioner and the County Director of Education, Kiambu County, to obtain authorization to do the study. The researcher also paid a courtesy call to the headteachers. The respondents were issued with the questionnaires which were collected a day later.

3.9 Data analysis techniques

The questionnaires were cross-checked to ascertain their accuracy, completeness and uniformity of information. Descriptive statistics including

percentages and frequency counts were used to analyze the quantitative data obtained. Bell (1993) maintains that when making the results known to a variety of readers, simple descriptive statistics such as percentages have a considerable advantage over more complex statistics. Qualitative data generated from the questions were organized into themes, patterns and categories pertinent to the study. It was presented thematically in line with the objectives of the study using frequency distribution tables and percentages.

3.10 Ethical considerations

The researcher observed ethical considerations throughout the study, particularly during the process of data collection, to ensure that the study remained original in content and design. The researcher sought written permission from the relevant authorities, first from the National Commission for Science, Technology and Innovation (NACOSTI), then from the County Commissioner and the County Director of Education, Kiambu County. Consent to carry out the study in the primary schools was sought from the headteachers. Other peoples' works were acknowledged. During the actual data collection, the researcher informed all the respondents of their freedom of choice of participation in the study. The respondents were assured of confidentiality, and that any information gathered from them would be used for the purpose of the study only. Having thus ascertained the respondents' informed consent, the researcher proceeded to administer the research instruments. The respondents were guided in filling the questionnaire.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter presents and discusses the findings of the study on factors influencing compliance with disaster risk reduction guidelines in public primary schools in Kiambaa Division, Kiambu County, Kenya. The findings presented include the response rate, the bio data of the headteachers and the teachers as well as findings related to the four study objectives. The study was carried out in Kiambaa Division, Kiambu County and it sought to find out factors influencing compliance with disaster risk reduction guidelines in Kiambaa Division, Kiambu County, Kenya. The study sought to establish whether school size, structural condition of physical infrastructure, availability of financial resources and community participation influence compliance with disaster risk reduction guidelines. Data was collected using questionnaires for headteachers and teachers as well as an observation schedule on disaster risk reduction variables. The collected data was compiled into frequencies and percentages, and then presented in tables, graphs and pi-charts. Interpretation of the findings was also given.

4.2. Instrument return rate

The researcher used two sets of questionnaires, one for the headteachers and

one for the teachers. In this study, 21 headteachers and 189 teachers were targeted. The researcher had also developed an observation schedule to enable observation of disaster risk reduction variables in the 21 schools. All headteachers' questionnaires (100%) and 182 teacher's questionnaires (96.3%) were returned. A total of 203 questionnaires were returned representing an average response rate of 96.7%. All the returned instruments were well filled and useful for the study. The researcher considered this response rate to be satisfactory to answer the study's questions. The data was therefore analyzed based on 203 respondents.

The researcher had also developed an observation schedule (Appendix iv) to enable observation of disaster risk reduction variables as well as confirming some of the responses in the questionnaires. The disaster risk reduction variables included presence of fire fighting equipment, emergency kits condition of classrooms and fencing. All the 21 schools were visited and observation was done in all those schools. This represents a 100% observation rate.

4.3 Demographic characteristics of the respondents

Personal information of the headteachers and the teachers was sought to give an insight on the respondents' characteristics, which included gender, length of time in the institution and highest level of academic qualification. This information was important in order to establish the characteristics of those responsible for implementing the disaster risk reduction guidelines in schools.

4.3.1 Distribution of respondents by duration served in schools

The study sought to find out the duration of stay of the headteachers and teachers in their schools. This information was important in order to establish the level of familiarity with the disaster risk reduction policies in the schools as well as other disaster risk reduction variables. The more experience one has in a certain field, the more he is better equipped to deal with various issues in their line of duty (Mungai 2011). The findings on duration of headteachers' and teachers' stay in their schools are as shown in table 4.1.

Table 4.1 Distribution of respondents by duration served in schools

Number of years	Headteachers		Teachers	
	F	%	F	%
1 – 4 years	6	28.6%	64	35.2%
5 – 10 years	10	47.6%	90	49.4%
Over 10 years	5	23.8%	28	15.4%
Total	21	100%	182	100%

Most of the headteachers and teachers had been in their current stations for five to ten years. Teacher transfers are not frequent in Kiambu County. Most of the headteachers and teachers go to work from their homes. In some cases, transfers are perceived as ways of destabilizing families. In situations where transfers have been recommended, both the headteachers and teachers have resisted those transfers. Most of those with less than five years are either newly promoted headteachers or newly employed teachers. From the research findings, the

headteachers had enough experience to oversee compliance with the Ministry of Education school safety regulations. The teachers had served in the schools long enough to be aware of the school's disaster risk reduction policies and preparedness situations. A similar scenario was witnessed in Uranga Division, Siaya County, Kenya (Tallo, 2014).

4.3.2 Distribution of respondents by academic qualifications

The study sought to analyze the academic qualifications of the headteachers and teachers. According to Kirtiraj (2012), education is one of the most important characteristics that might affect the person's attitudes and the way of looking and understanding any particular phenomena. In a way, the response of an individual is likely to be determined by his educational status and therefore it becomes imperative to know the educational background of the respondents. It has been shown through research in different organizations, schools included, that training improves employee awareness of emergency preparedness, and this is an essential determinant to enhance safety performance (Law, Chan & Pun, 2006). Therefore it was important to establish the level of knowledgeability of those responsible for implementing the disaster risk reduction guidelines in schools. Table 4.2 is a summary of the findings.

Table 4.2 Distribution of respondents by academic qualifications

Academic qualification	Headteachers		Teachers	
	F	%	F	%
Primary	0	0%	1	0.5%
Secondary	3	14.3%	66	36.3%
Diploma	6	28.6%	66	36.3%
B.Ed	12	57.1%	49	26.9%
Master Degree	0	0%	0	0%
Others	0	0%	0	0%
Total	21	100%	182	100%

Majority of the headteachers had a Bachelor of Education degree as the highest academic qualification. The response is indicative of teachers who have taken the initiative to further their education for their good and for the objective of achieving career progression. One reason for teachers obtaining higher academic qualifications is that they are favoured by the fact that they have three holidays that coincide with university's school-based programmes where students are taught during the school holidays. There is also the quest for better pay. No teacher had a master degree. This may be due to the fact that although one spends a lot of money to acquire this degree, the teachers' employer, Teachers Service Commission, does not have a scheme of service for postgraduate teachers. School administrators in public primary schools in Kiambu County were academically knowledgeable to enable them implement

the safety standards manual. Most of the teachers had either a secondary certificate or a diploma. Those teachers who had a Bachelor of Education degree were 49. The teachers were found qualified enough to give relevant information on compliance with disaster risk reductions guideline in public primary schools in Kiambaa Division, Kiambu County, Kenya.

4.3.3 Distribution of respondents by gender

It is well stipulated in the Safety Standards Manual that attention should be paid to fair gender representation in the school safety sub-committee. It was therefore important to determine whether there were enough male and female teachers for fair representation in the school safety sub-committee. The respondents were asked to indicate their gender. The findings are as shown in figure 4.1.

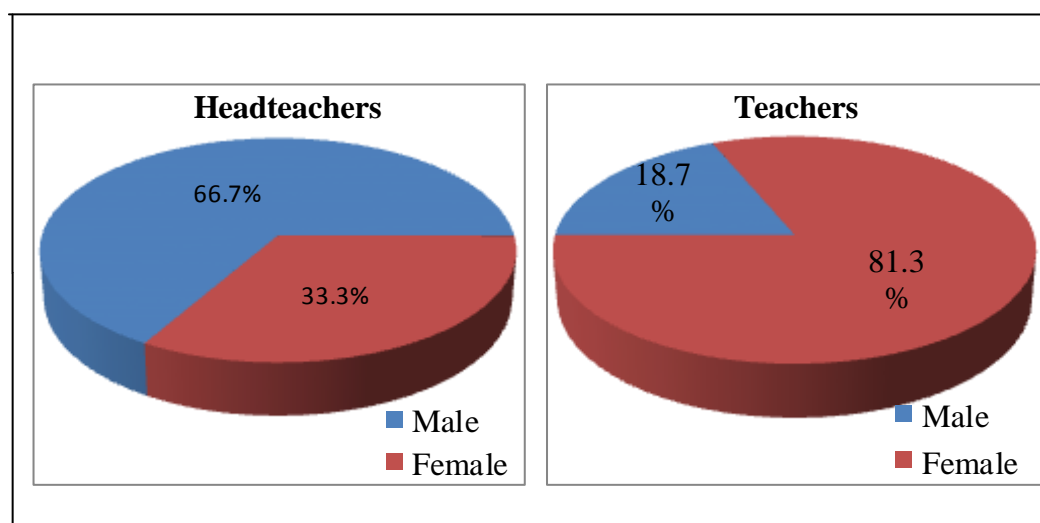


Figure 4.1 Distribution of respondents by gender

The study found that of the 21 headteachers who were interviewed, two-thirds

of them were males whereas only a third of them were females. Male teachers were 34 while female teachers were 148. Although both genders were represented in the study, there were more males in administration than females whereas the opposite is true with teachers. For one to earn promotion to be a headteacher, he or she must have served as a deputy for a period of time. Female teachers tend to shy away from the post of the deputy headteacher since being the one in charge of discipline in the school, this post calls for a lot of commitment and dedication. On the side of teachers, there are more men than women leaving the teaching profession for more lucrative jobs especially after acquiring higher qualifications while others leave the profession for business engagements. Having more female teachers than males in Kenya primary schools is a characteristic of towns and high potential areas whereas the opposite is true in remote and hardship areas. Men are considered more adaptive in such areas than women.

4.4 Availability of Safety and Standards Manual (2008) in schools

Both the headteachers and teachers were asked to confirm whether their schools had a copy of the Schools Safety and Standards Manual (2008) in their schools. The Ministry of Education requires all learning institutions to have a copy of the Schools Safety and Standards Manual and implement the recommendations therein. The responses were as shown in table 4.3.

Table 4.3 Availability of Safety and Standards Manual (2008) in schools

Responses	Headteachers		Teachers	
	F	%	F	%
Yes	14	66.7%	21	11.5%
No	7	33.3%	57	31.3%
I don't know	0	0%	104	57.1%
Total	21	100%	182	100%

A majority of the headteachers said they had a copy of the School Safety and Standards Manual while 33.3% of them responded in the negative. A majority of teachers said they did not know whether their schools had a copy while 31.3% of them said their schools did not have a copy. This lack of awareness among teachers could be as a result of negligence or failure on the part of the headteachers to distribute information. This confirms sentiments by Maoulidi (2008) who found out that lack of regular communication to sensitize various stakeholders on their roles hampers smooth implementation of safety policies. Low awareness could also be attributed to lack of interest and negative attitudes among the teachers. This low awareness among members of the teaching staff is perturbing because they are the persons expected to enforce the safety standards and create awareness among the students. These findings are in agreement with findings from Muigai's (2011) study which found that the knowledge of the Ministry of Education safety guidelines among the institutional teachers was poor.

4.5 Extent of compliance with disaster risk reduction guidelines

The study sought to find out the extent of compliance with disaster risk reduction guidelines in public primary schools in Kiambaa Division, Kiambu County. It is a recommendation by the Ministry of Education that all learning institutions in Kenya should comply fully with disaster risk reduction guidelines as stipulated in the Safety Standards Manual for Schools in Kenya (2008). The headteachers and teachers were asked to state the level of compliance with disaster risk reduction guidelines. The findings were as shown in figure 4.4.

Table 4.4 Level of compliance with disaster risk reduction guidelines in schools

Responses	Headteachers		Teachers	
	F	%	F	%
Fully	0	0%	0	0%
Partially	20	95.2%	112	61.5%
Not at all	1	4.8%	70	38.5%
Total	21	100%	182	100%

No headteacher or teacher attested to full compliance with disaster risk reduction guidelines. Majority of the respondents indicated that their schools had complied partly with disaster risk reduction guidelines while 4.8% of the headteachers and 38.5% of the teachers indicated total non-compliance. This discrepancy may be due to the fact that the headteacher may be aware of some safety aspects in the school which the teachers may not be aware of. These

aspects may include issues related to finances and policies. There is therefore need to share information related to disaster risk reduction. Disasters are rare in day primary schools in Kiambu County and therefore the school management does not see the need to spend money on disaster risk reduction. The money is instead used for academic activities. It is important for headteachers and teachers who are the implementers of education policies to embrace safety standards and guidelines fully. Partial implementation of safety measures in some schools must be a major concern to education policy makers.

4.6 School-based policies and disaster risk reduction in public primary schools

In 2001, the MOE issued Circular No. GP/1/169 to all educational institutions requiring them to implement the safety guidelines and specifications as per the circular. This was followed later in 2008 by the Safety Standards Manual for Schools in Kenya. Owing to this, the researcher sought to find out whether there were disaster risk reduction policies in place in public primary schools in Kiambaa division. Respondents were asked whether their schools had school-based policies on disaster risk reduction. They responded as shown in table 4.5.

Table 4.5 School-based policies and disaster risk reduction in public primary schools

Responses	Headteachers		Teachers	
	F	%	F	%
Yes	16	72.2%	14	7.7%
No	5	23.8%	168	92.3%
Total	21	100%	182	100%

On the question whether schools had school-based policies on disaster risk reduction, majority of the headteachers responded in the affirmative. However, majority of the teachers responded in the negative. Like in the case of availability of the Safety Standards Manual for Schools in Kenya, there seems to be a great contradiction between the headteachers' and the teachers' responses. Such a scenario can be due to either the headteachers' negligence or lack of interest and negative attitude on the side of the teachers. Maybe these policies do exist in schools but the teachers are not aware of their existence. Teachers, including those who are newly posted or transferred to the school should be made aware of the existence of school-based policies on disaster risk reduction in those schools. Creating awareness in disaster risk reduction is the work of the administration and success can only be achieved through proper communication (Maoulidi, 2008). Lack of school based policies in some schools could be attributed to lack of finances necessary for their implementation despite all other positive implications the safety policies may have. Schools should institute safety agenda that would see a well co-ordinated effort in creating

awareness to the school fraternity that would consequently facilitate the prevention of potential threats to the students and the school at large.

4.7 Occurrence and types of disasters in primary schools

Despite the government's efforts to reduce disasters in schools, media reports indicate that school children are getting injuries or even dying in the same environments which are supposed to act as safe havens for the same children. . On 7th March 2015, three pupils from SDA Labuiwo Academy in Nandi County perished when fire gutted their dormitory (Jelimo, 2015). On 11th March 2015, a pupil from Kiseveni Primary School in Kitui died after falling into a pit latrine (Nzengu, 2015). The research sought to establish whether schools had encountered disasters of any kind in the last ten years. The responses are as indicated in figure 4.2.

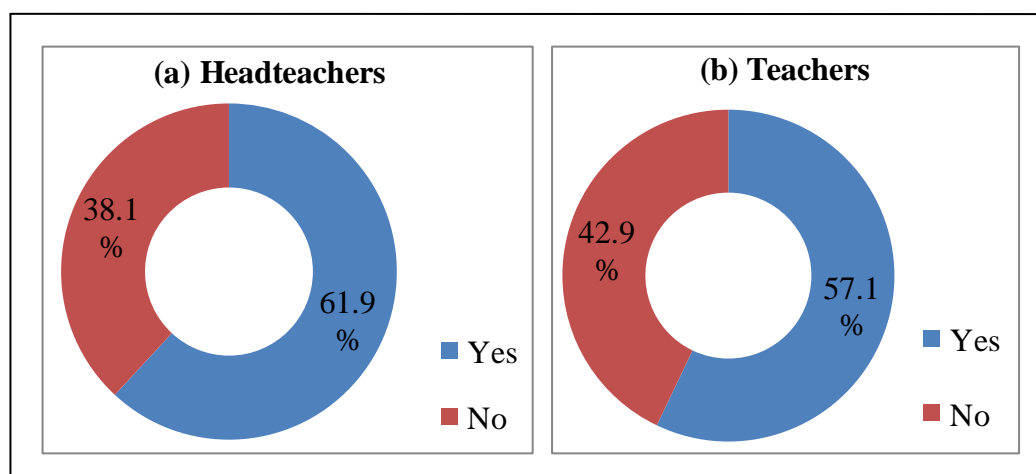


Figure 4.2 Occurrence of disasters in primary schools

The findings of the research showed that majority of the headteachers and teachers responded in the affirmative, reporting having had experienced a

disaster of some kind in their schools in the last 10 years. Kiambaa Division has many social problems that can have both direct and indirect effect on the security of school children. Such problems include high crime rate, high level of unemployment, drug and substance abuse, high population, family instability as well as rising cases of child abuse and neglect. Many primary schools are vulnerable to disasters due to the tender age of the pupils.

Disasters have devastating effects on the safety of pupils in the school. Identification of the most common types of disasters can go a long way in mitigating disasters in schools. Therefore, it was important to look at the most reported disasters in primary schools. The responses were as show in table 4.6.

Table 4.6 Types of disasters in primary schools

Type of disaster	Headteachers		Teachers	
	F	%	F	%
Fire	0	0%	0	0%
Building collapse	0	0%	0	0%
Strike	0	0%	0	0%
Flooding	0	0%	0	0%
Robbery	13	61.9%	104	57.1%
Disease outbreak	0	0%	0	0%
Transport (road accident)	0	0%	0	0%

According to table 4.6, robbery is the only disaster that has been experienced in Kiambaa Division, Kiambu County in the last ten years, having been experienced in 13 schools. Robbery makes schools incur huge financial burden. Parents who are the main financiers of schools suffer financial loss to funds that can be used to improve the academic programmes in schools. This was also observed in Githunguri through a study on implementation of safety guidelines for schools in the district (Nderitu, 2009). No fire, building collapse, strike, flooding, disease outbreak or road accident has been experienced in public primary schools in Kiambaa Division in the last ten years. This may partly be due to the fact that all public primary schools in Kiambaa Division are day schools and none of them owns a school bus. This may partly explain why most schools were not overzealous with disaster risk reduction issues like installation and maintenance of disaster preparedness facilities and equipment. However, lack of seriousness in enforcing the stipulated rules to facilitate promotion of education policies is a serious contravention of Ministry of Education expectations of school managers.

4.8 School size and safety of pupils

Researches conducted elsewhere indicate that school size influences compliance with disaster risk reduction. This includes researches conducted in Nyeri County (Ng'ang'a, 2013) and Kilifi County (Njoroge, 2014). Headteachers were requested to indicate the school enrolment levels. They responded as shown in table 4.7.

Table 4.7 School size and safety of pupils

Enrolment	Frequency	Percentage
300 – 449	7	30.4%
450 – 599	8	34.8%
600 – 749	3	13.0%
750 – 899	3	13.0%
900 and above	2	8.7%
Total	21	100%

Table 4.5 reveals that most of the schools had 450 - 599 pupils. Seven schools reported that they had 300 - 449 pupils. Three schools had an enrolment of between 600 and 749 while other three schools had an enrolment of between 750 and 899. Two schools registered an enrolment of 900 and above. The high enrolment in schools is due to the fact that Kiambaa is a high potential area with high population. Schools with high enrolment tend to have more casualties during a disaster due to the ensuing panic and confusion (Kimathi, 2011).

Apart from stating the total number of pupils, the headteachers were also asked to state the number of classrooms in the school. This enabled the researcher to determine the average number of pupils in the classrooms. The results were as shown in table 4.8.

Table 4.8 Class size and safety of pupils

Class population	Frequency	Percentage
30 – 34	1	4.8%
35 -39	1	4.8%
40 – 44	2	9.5%
45 – 49	4	19.0%
50 -54	8	38.1%
55 -59	3	14.3%
60 and above	2	9.5%
Total	21	100%

In addition, both headteachers and teachers were asked to state whether there was congestion in their schools in terms of pupil population. The responses were as shown in table 4.9.

Table 4.9 Congestion in classrooms and safety of pupils

Responses	Headteachers		Teachers	
	F	%	F	%
Yes	21	100%	182	100%
No	0	0%	0	0%
Total	21	100%	182	100%

From table 4.6, it is clear that most of the schools have a class population of

between 50 and 54 pupils which means the classrooms are congested. This is in agreement with figure 4.5 where all the headteachers and teachers indicated that there was congestion in the classrooms. The recommended class size in Kenya is 40 pupils per class (MOE, 2001). Desks were also very few in classes. In some cases four pupils squeeze on a two-seater desk. This scenario is due to high pupil enrolment without a commensurate number of classrooms. This forced the pupils to share the few classrooms which were available. In one school, a class was partitioned with plywood in order to accommodate pupils from different classes. Congestion in classrooms can be dangerous in the event of occurrence of a disaster. In his research on implementation of safety standards and guidelines in public secondary schools in Nyeri Central District, Nyeri County, Ng'ang'a (2013) found out that increasing student population has a high effect on compliance with safety standards. Congestion in schools poses a challenge to compliance with safety standards.

4.9 Contribution of Free Primary Education to high school enrolment

The year 2003 saw the inception of Free Primary Education in Kenya as the country sought to achieve Universal Primary Education by 2015. The FPE saw primary school gross enrolment rate rise from 6,062,763 in 2002 to 8,563,821 in 2008 (MOE, 2009). The researcher sought to find out whether FPE has contributed to high enrolment rate in public primary schools in Kiambaa Division, Kiambu County. The responses were as represented in table 4.10.

Table 4.10 Contribution of FPE to high school enrolment

Responses	Headteachers		Teachers	
	F	%	F	%
Yes	21	100%	182	100%
No	0	0%	0	0%
Total	21	100%	182	100%

All the headteachers and teachers agreed that Free Primary Education has contributed to congestion in classrooms. Free Primary Education has enabled more children to access primary school education resulting to a significant increase in enrolment. This has led to poor spacing in classrooms. The increasing pupil population is a challenge to successfully complying with disaster risk reduction guidelines because of congestion among the pupils. The findings are in agreement with Ng'ang'a (2013) who in his study had found that increasing school population ultimately stresses the schools' resources and facilities compromising both the quality of education as well as the safety of the students. According to Ngaroga (2006), the move towards Free Primary Education was implemented without a strategic plan. This resulted to a rapid increase in enrolment which outstripped the available resources. Physical facilities were overstretched hence compromising the safety of school children.

4.10 High enrolment as a hindrance to compliance with disaster risk reduction guidelines

The respondents were required to give their opinion on whether enrolment rate

constitute a major hindrance to compliance with disaster risk reduction guidelines in their schools. Their responses were as represented in table 4.11.

Table 4.11 High enrolment as a hindrance to compliance with disaster risk reduction guidelines

Responses	Headteachers		Teachers	
	F	%	F	%
Yes	14	66.7%	120	65.9%
No	7	33.3%	62	34.1%
Total	21	100%	182	100%

A majority of the headteachers and teachers responded to this question in the affirmative. High enrolment of pupils has been found to be the major challenge straining physical facilities. As a result of the high influx of new pupils, classrooms are congested. These results are in agreement with Ng'ang'a (2013) who observed that high students enrolment influenced compliance with safety standards.

4.11 Conducting spot checks on the condition of school physical infrastructure

The Safety and Standards Manual for Schools recommends that the school physical infrastructure should be under constant inspection. The researcher sought to find out whether both headteachers and teachers conduct regular spot checks on the condition of their school physical infrastructure. The responses

are summarized in table 4.12.

Table 4.12 Conducting spot checks on the condition of school physical infrastructure

Responses	Headteachers		Teachers	
	F	%	F	%
Yes	21	100%	120	65.9%
No	0	0%	62	34.1%
Total	21	100%	182	100%

All the headteachers and a majority of the teachers responded to this question in the affirmative. Disaster risk reduction involves having safe and secure school physical infrastructure which should be under constant inspection in order to note any risks early enough so as to take the appropriate action. Continuous inspection of physical facilities is a powerful tool in terms of checking breaches and ensuring conformity with standard. Inspection activities should always be undertaken in collaboration with all the statutory agencies mandated to carry out the tasks.

4.12 Involvement of professionals in the construction and maintenance of buildings in schools

According to the MOE (2008), no physical infrastructure should be constructed or occupied without consultation with and approval of the Ministry of Public Works and the Ministry of Health. The study therefore sought to find out

whether schools involved professionals in the planning, construction and maintenance of buildings. Table 4.13 is a summary of the findings.

Table 4.13 Involvement of professionals in the construction and maintenance of buildings in schools

Responses	Headteachers		Teachers	
	F	%	F	%
Architects	4	19.0%	2	1.1%
Quantity surveyors	2	9.5%	2	1.1%
Contractors	16	76.2%	6	3.3%
Ministry of Public Works	8	38.1%	11	6.0%
Ministry of Health	13	61.9%	7	3.8%
I don't Know	0	0%	154	84.6%

Majority of the headteachers sought the services of contractors and the Ministry of Health in the construction and maintenance of buildings in their schools. Contractors are necessary in the actual construction of buildings. Public health officers provide free services. Architects and quantity surveyors are expensive to hire. Majority of the teachers did not know whether professionals were consulted in the construction and maintenance of buildings in their schools. Those who knew seemed to agree with the headteachers by confirming that the Ministry of Health was involved. In such a scenario it would not be possible to justify the safety of the school infrastructure. Safety requirements start with the approval of building plans. Having plans and following of the statutory provisions anchors the facility on a safe and sound footing, (Koriang, 2009). The procedural requirements and certification that the buildings are structurally

sound give an assurance that the specifications set by the Ministry of Public Works are met with regard to classroom sizes, corridors, railings and provision for sanitation facilities.

4.13 Provision and servicing of disaster preparedness facilities and equipment

The MOE (2001) issued health and safety standard guidelines to educational institutions to help them enhance disaster preparedness. One of the policy guidelines was on fitting schools with sufficient fire fighting facilities and equipment. The researcher sought to establish whether schools are fitted with disaster preparedness facilities and equipment. The results were as shown in table 4.14.

Table 4.14 Availability of disaster preparedness facilities and equipment

Facility	Headteachers		Teachers	
	F	%	F	%
Lightning arresters	0	0%	0	0%
Fire extinguishers	0	0%	0	0%
Smoke detectors	0	0%	0	0%
Fire alarms	0	0%	0	0%
Emergency kits	5	23.8%	19	10.4%

There is no public primary school in Kiambaa Division with either lightning arresters, fire extinguishers, smoke detectors or fire alarms. Only five schools

had first aid kits. This was also confirmed by 19 teachers. However in some schools where the emergency kits were available, the teachers were not aware of this fact. Lack of disaster preparedness facilities and equipment in schools can be attributed to the fact that occurrences of disasters in primary schools in Kiambaa Division are rare.

It is recommended that disaster preparedness facilities and equipment should be serviced at least quarterly. The respondents were asked the frequency in which disaster preparedness facilities and equipment were serviced. Their responses are shown in table 4.16.

Table 4.15 Frequency of servicing of disaster preparedness facilities and equipment in primary schools

Interval	Headteachers		Teachers	
	F	%	F	%
Once per month	0	0%	0	0%
Once per term	0	0%	0	0%
Once per year	3	14.3%	1	0.5%
Not at all	2	9.5%	18	9.9%
Not applicable	16	76.2%	163	89.6%
Total	21	100%	182	100%

Majority of the headteachers and teachers indicated not applicable since disaster preparedness facilities and equipment did not exist in their schools. Where there were first aid kits, most of the headteachers and teachers indicated that they

were never serviced or repaired. Any servicing beyond three months is not good. A similar situation was established in Githunguri (Nderitu, 2009). This was also supported by Kanyi (2014) who found out that fire fighting facilities are rarely inspected or serviced. This shows lack of disaster risk reduction preparedness in schools. Disaster preparedness facilities and equipment need to be serviced and repaired regularly so as to perform optimally when the need arises.

4.14 Provision of emergency funds in case of a disaster

Funds are needed for the purchase, installation and maintenance of safety facilities and equipment as well as employing trained security personnel. Without funds, it becomes difficult to comply with disaster risk reduction guidelines. The researcher sought to find out whether schools have emergency funds put aside in the event of a disaster. The findings were as presented in Figure 4.3.

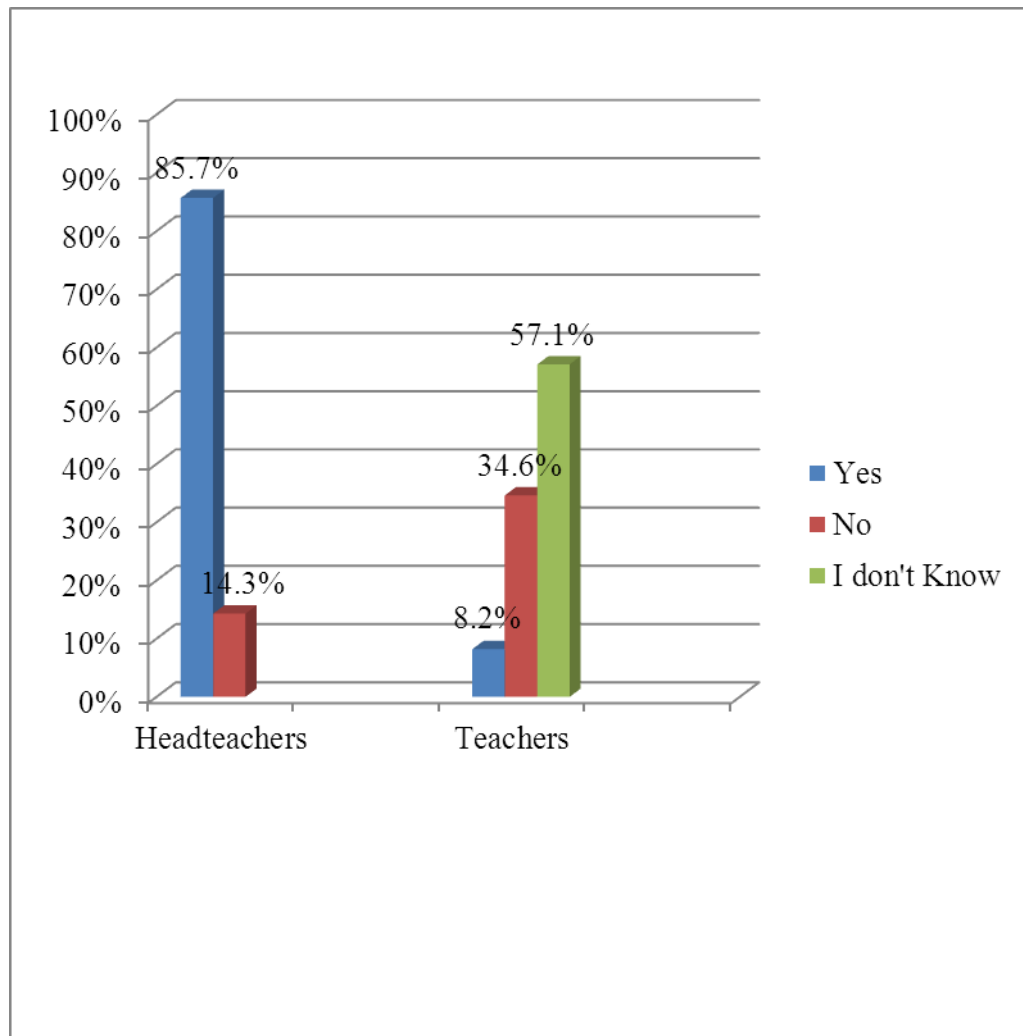


Figure 4.3 Allocation of emergency funds in the event of a disaster.

There seemed to be a very great contradiction between the headteachers' and the teachers' response on the question whether schools had emergency funds set aside in the event of a disaster. A majority of the headteachers confirmed that their schools had money set aside in the event of a disaster while only a mere 8.2% of the teachers were positive about this. A majority of the teachers did not know whether or not their schools had emergency funds put aside in the event of a disaster. From the above information it is clear that teachers are not brought to awareness of safety issues in their schools. Most schools had emergency

fundspit aside in the event of a disaster but the teachers were not aware of this fact. This may be due to the headteachers' negligence or lack of interest and poor attitude on the side of teachers. There is need to improve communication in schools between the administration and the teachers.

4.15 Provision of finances for safety fittings and equipment in schools

The Kenya government in its efforts to assist schools prepare for disasters, disbursed funds to all provincial boarding secondary schools to purchase fire-fighting equipment. During the launch of the Ministry of Education Safety Standards Manual for Schools in Kenya on 19th August, 2008, the then Education Minister, Professor Sam Ongeru said that each school had been allocated between 150,000 and 350,000 shillings for the purchase of fire fighting equipment. The researcher sought to find out whether the government has ever provided finances for the purchase of safety fittings and equipment in public primary schools. The responses were as shown in table 4.16.

Table 4.16 Provision of finances for safety fittings and equipment in schools

Responses	Headteachers		Teachers	
	F	%	F	%
Yes	0	0%	0	0%
No	21	100%	62	34.1%
I don't know	0	0%	120	65.9%
Total	21	100%	182	100%

According to the headteachers' responses, the government has never provided finances for the purchase of safety equipment and fittings in public primary schools in Kiambaa Division, Kiambu County. All the headteachers and 34.1% of the teachers responded to the question in the negative. However, majority of the teachers indicated that they did not know whether the government provided finances for the purchase of safety equipment and fittings. This means that although the government has set the minimum safety standards that are to be complied with by all schools, it created a financial gap which it was not ready to fill. This is not in line with the true meaning of Free Primary Education. The government has an obligation to provide money to public primary schools for the purchase of safety equipment and fittings if its recommendations in the Safety Standards Manual are to be implemented.

4.16 Lack of financial resources as a hindrance to compliance with disaster risk reduction guidelines

Funds are needed to install safety gadgets in schools, put security plan policies and procedures in place and follow on their adherence (Leandri, 2011). The respondents were asked to give their opinion on whether financial resources constitute a major hindrance to compliance with disaster risk reduction guidelines in their schools. The responses were as shown in table 4.17.

Table 4.17 Lack of financial resources as a hindrance to compliance with disaster risk reduction guidelines

Responses	Headteachers		Teachers	
	F	%	F	%
Yes	17	81.0%	170	93.4%
No	4	19.0%	12	6.6%
Total	21	100%	182	100%

Majority of the headteachers and teachers were of the opinion that financial resources constitute a major hindrance to compliance with disaster risk reduction guidelines. This is because finances are required in the purchase, fitting and maintenance of disaster risk preparedness equipment as well as in the employment of trained security personnel. For those who responded in the affirmative, they were required to indicate the extent to which financial resources constitute a major hindrance to compliance with disaster risk reduction guidelines in their schools. The responses are as shown table 4.18.

Table 4.18Extent to which lack of financial resources constitute a major hindrance to compliance with disaster risk reduction guidelines

Responses	Headteachers		Teachers	
	F	%	F	%
Greatly	0	0%	144	79.1%
Moderately	17	81.0%	17	9.3%
Slightly	0	0%	9	4.9%
No response	4	19.0%	12	6.6%
Total	21	100%	182	100%

All the headteachers were of the opinion that the extent to which financial resources constitute a major hindrance to disaster risk reduction guidelines was moderate. However majority of the teachers opined that financial resources greatly constitute a major hindrance to compliance with disaster risk reduction guidelines. This is in agreement with observations made in Kisii County by Nyakundi (2012) who revealed that inadequate funds greatly hindered the implementation of safety standards and guidelines. Disaster risk reduction cannot succeed without finances. This explains why the government provided funds to provincial boarding secondary schools in 2008 for the purchase and installation of fire fighting equipment.

4.17 Rapport between schools and the community

Threats to school safety can emanate internally within the school environment or externally from the community. The Education Act (CAP. 211) Part III

provides for school-community collaboration in the management of schools in Kenya. School management should develop linkages with communities around schools. It was therefore important for the study to examine the rapport between schools and the community. The respondents rated the rapport as shown in table 4.19.

Table 4.19 Rapport between schools and the community

Responses	Headteachers		Teachers	
	F	%	F	%
Very good	0	0%	0	0%
Good	12	57.1%	56	30.8%
Satisfactory	9	42.9%	30	16.5%
Poor	0	0%	96	52.7%
Total	21	100%	182	100%

Majority of the headteachers said the school-community relationship was good. Majority of the teachers said the school-community relationship was poor. There seems to be a contradiction between the headteachers' and the teachers' responses. This may be due to the fact that the headteacher is the member of the institution who interacts most with the community in parents' meetings, school management committee meetings and other school visits. Building strong bonds between the school and the community ensures child safety in and out of school. Good school-community relationship can help prepare the school community to respond to emergencies in case they occur in schools.

4.18 Community participation in disaster risk reduction activities in schools and frequency of participation

The School Safety and Standards Manual (MOE, 2008) encourages schools to liaise with the members of the community in order to increase awareness about issues related to school safety. The researcher sought to find out whether the community participated in disaster risk reduction activities in schools. Figure 4.4 summarizes the headteachers' and the teachers' responses.

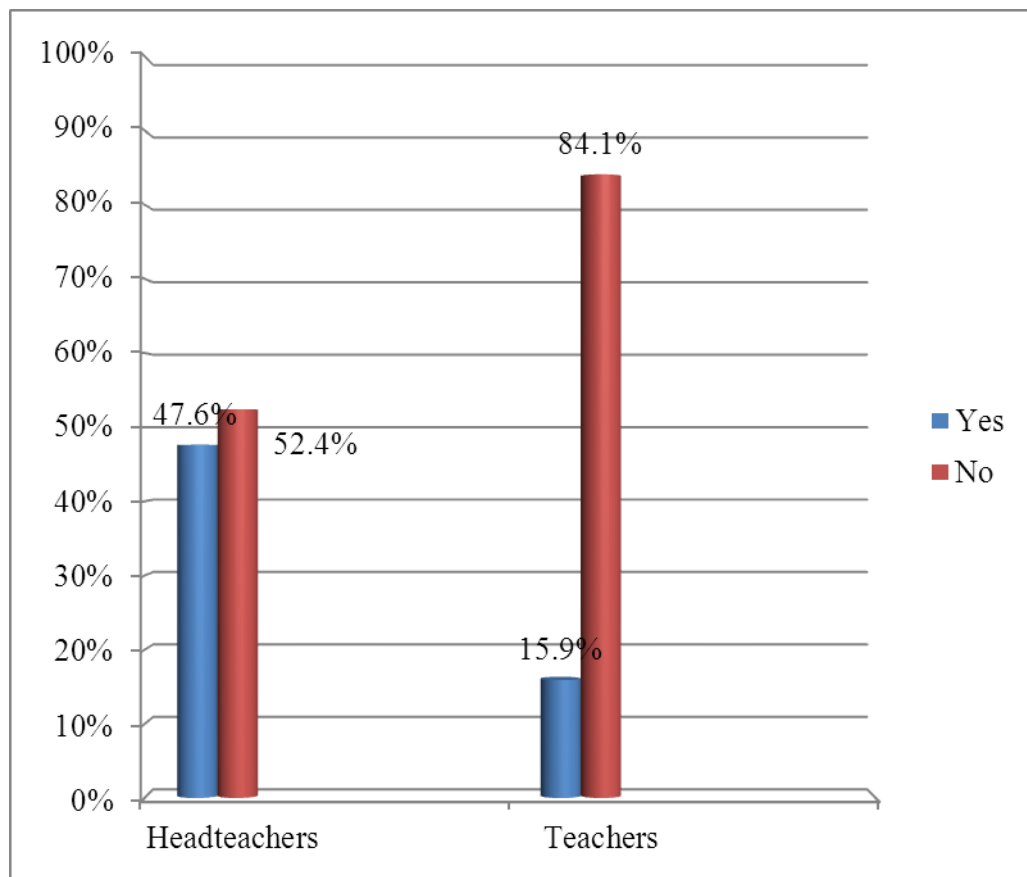


Figure 4.4 Community participation in disaster risk reduction activities in schools

Majority of the headteachers and teachers responded to this question in the

negative. The community is not involved in disaster risk reduction activities in schools. This may be due to the fact that disaster risk reduction requires raising funds and the parents are of the notion that primary education is free. Disaster risk reduction is a collective responsibility. The parents' involvement in creating awareness is important as the most common disaster in Kiambaa Division, robbery, is a function of the community. Sherer and Coldien (as cited by Mburu, 2012), support a model in which leadership is the responsibility of all members of the school community.

One indicator of a safe school is a high level of interaction between the school and the community and active participation of community in school programmes (Atkinson, 2002). The study therefore sought to establish the frequency of community participation in disaster risk reduction activities. Table 4.20 is a summary of the findings.

Table 4.20: Frequency of community participation in disaster risk reduction activities in schools

Responses	Headteachers		Teachers	
	F	%	F	%
Rarely	3	14.3%	17	9.3%
Often	10	47.6%	11	6.0%
Quite often	2	9.5%	1	0.5%
No response	6	28.6%	153	84.1%
Total	21	100%	182	100%

Most of the headteachers said that community often participated in disaster risk reduction in their schools. Majority of the teachers did not respond to this question since they had indicated earlier that the community did not participate in disaster risk reduction activities in their schools. However, for those who responded to this question, most of them said community rarely participated in disaster risk reduction activities in their schools. The primary school community has in the past and to a certain extent in the present not treated the increasing cases of disasters in schools as a priority (Perumal, 2006). This could possibly be because of not understanding fully the concept of Free Primary Education. Disaster risk reduction requires finances which some parents are not ready to provide. The parents are not involved in decision-making and this discourages them from involvement in implementation of safety policies. The communities should be involved throughout the decision-making process.

4.19 The need for disaster risk reduction in the school development plan

All schools should have development plans tailored to address the needs of pupils holistically. The basic planning and design requirements that make a good school are the foundation on which further elements can be used to turn them into safe schools (UNICEF, 2010). It is in this respect that the study sought to find out whether schools' development plans address the need for disaster risk reduction. The responses were as shown in table 4.21.

Table 4.21 Addressing the need for disaster risk reduction in the school development plan

Responses	Headteachers		Teachers	
	F	%	F	%
Yes	4	19.0%	20	11.0%
No	17	81.0%	162	89.0%
Total	21	100%	182	100%

Majority of the headteachers and teachers responded to this question in the negative. This means that majority of the schools do not have strategies to address the need for disaster risk reduction in their development plans. Schools need to embrace a safety programme aimed at helping them attend promptly to emergency cases. In planning for the annual development plans they should ensure funds are set aside to facilitate safety awareness programmes.

4.20 General status of safety of pupils in schools

There are policy frameworks that demand governments to ensure young children learn in caring, child-friendly schools. The WCEFA, (1990) and WEF (2000) recommend school environments that serve as protected sanctuaries for life-long learning. The researcher therefore sought to find out the general status of safety of pupils in primary schools. Both the headteachers and the teachers were required to state the general status of safety of both pupils and property in their schools in terms of very high, high, low or very low. The responses are as shown in table 4.22.

Table4.22 General status of safety of pupils in schools

Responses	Headteachers		Teachers	
	F	%	F	%
Very high	0	0%	0	0%
High	16	76.2%	20	11.0%
Low	5	23.8%	63	34.6%
Very low	0	0%	99	54.4%
Total	21	100%	182	100%

Majority of the headteachers rated the safety of pupils and school property as high while majority of the teachers rated the safety of pupils and property as very low. This may be due to the fact that the headteachers wanted to create the impression that they have complied with disaster risk reduction guidelines. They would not like to be blamed for lack of adherence to safety guidelines. It is clear that there exist security gaps in primary schools that need to be filled.

4.21 Cross tabulation on compliance with disaster risk reduction guidelines in primary schools

There was a need to compare and contrast schools on the grounds of compliance with disaster risk reduction guidelines based on the objectives of this study. The researcher compared and contrasted small and large schools in relation to compliance with disaster risk reduction guidelines. The cross tabulation was presented in Table 4.23.1.

Table 4.23.1 Comparing small and big schools in relation to compliance with disaster risk reduction guidelines

School size	Safety status of pupils			
	High	%	Low	%
300-449	7	43.8%	1	20.0%
450-599	3	18.8%	0	0%
600-749	3	18.8%	1	20.0%
750-899	2	12.5%	1	20.0%
900 and above	1	6.3%	2	40.0%
Total	16	100%	5	100%

When asked the general status of safety of pupils in their schools, 16 headteachers responded high while five responded low (table 4.23). Out of those who responded high, most of them (43.8%) were from schools with a population of between 300 and 449. For those who indicated low, most of them (40%) were from schools with a pupil population of 900 and above. This is an indication that pupils in smaller schools had a higher safety status than those in bigger schools.

The researcher also compared and contrasted schools with satisfactory and unsatisfactory physical infrastructure in relation to compliance with disaster risk reduction guidelines. Table 4.23.2 is a summary of the findings.

Table 4.23.2 Comparing schools with satisfactory and unsatisfactory physical infrastructure in relation to compliance with disaster risk reduction guidelines

State of physical infrastructure	Safety status of pupils			
	High	%	Low	%
Satisfactory	11	68.8%	2	40.0%
Unsatisfactory	5	31.3%	3	60.0%
Total	16	100%	5	100%

Majority of the headteachers who responded high (70.6%) were from schools whose condition of physical infrastructure was satisfactory. For those who indicated low, majority of them (60%) were from schools whose condition of physical infrastructure was unsatisfactory. This is an indication that pupils in schools whose condition of physical infrastructure was satisfactory had a higher safety status than those in schools with unsatisfactory physical infrastructure.

The researcher compared schools rated as having adequate or inadequate financial resources in relation to compliance with disaster risk reduction guidelines. Table 4.23.3 is a summary of the findings.

Table 4.23.3 Comparing schools rated as having adequate and inadequate financial resources in relation to compliance with disaster risk reduction guidelines

Availability of financial resources	Safety status of pupils			
	High	%	Low	%
Adequate	14	87.5%	0	0%
Inadequate	2	12.5%	5	100%
Total	16	100%	5	100%

Majority of the headteachers who responded high (87.5%) were from schools whose financial resources were rated as adequate. For those who indicated low, all of them (100%) were from schools whose condition of physical infrastructure was unsatisfactory. This is an indication that pupils in schools whose availability of financial resources was rated as adequate had a higher safety status than those in schools whose availability of financial resources was rated as inadequate.

The researcher compared schools that involve the community and those that do not in terms of compliance with disaster risk reduction guidelines. The results were as shown in table 4.23.4.

Table 4 .23.4 Comparing schools that involve community and those that do not in terms of compliance with disaster risk reduction guidelines

Community involvement	safety status of pupils			
	High	%	Low	%
Yes	10	62.5%	1	20.0%
No	6	37.5%	4	80.0%
Total	16	100%	5	100%

Majority of the headteachers who responded high (62.5%) were from schools that involved the community in disaster risk reduction activities. For those who indicated low, majority of them (80%) were from schools that did not involve the community in disaster risk reduction activities. This is an indication that pupils in schools that involved community in disaster risk reduction activities had a higher safety status than those in schools that did not involve the community in disaster risk reduction activities.

4.22 Assisting schools in full compliance with disaster risk reduction guidelines

The headteachers and the teachers were asked to give suggestions on how the schools can be assisted in ensuring complete compliance with disaster risk reduction guidelines. All the headteachers (100%) said that more funds should be made available by the government specifically for safety programmes. Mburu (2012) obtained similar results in Limuru District. These funds will help in the purchase, installation and maintenance of safety equipment as well as

employing trained security personnel. It would also help in involving professionals in the construction of buildings. Sixteen headteachers (76.2%) said that the community should be more active in ensuring safety for their children both in and out of school through greater involvement in school affairs, talking to their children on matters of safety as well as providing the most required funds for the safety kitty. Similar results were obtained in a study conducted in Kikuyu District (Njue, 2013) The Kenya Institute of Curriculum Development should include teaching of safety in the curriculum in schools and teacher training colleges as asserted by 18 headteachers.

A total of 61 teachers (33.5%) held the opinion that schools can be made safer by allocating specific individuals duties and responsibilities and holding them accountable. Security in schools should be provided by trained security personnel as asserted 152 teachers (83.5%). Teachers from Nyeri Central Division were of a similar opinion (Ng'ang'a, 2013)A total of 51 teachers (28.0%) said that schools should have an active school safety sub-committee to deal with school safety issues like identifying school safety needs, mobilising resources, monitoring and evaluating various school safety aspects as well as forming sustainable networks with other stakeholders. Thirty seven teachers (20.3%) said that finances meant for disaster risk reduction should be managed by the school safety sub-committee. This will make sure that money meant for disaster risk reduction is not diverted to other voteheads. Seventeen teachers (9.3%) asserted that, the headteacher should ensure proper implementation of school safety policies by coordinating all phases of programme implementation.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of the findings of the study, conclusions and recommendations arrived at. It also gives suggestions for further studies.

5.2 Summary of the study

The purpose of the study was to investigate factors influencing compliance with disaster risk reduction guidelines in public primary schools in Kiambaa Division Kiambu County, Kenya. The objectives of the study were: to examine whether school size influences compliance with disaster risk reduction guidelines in Kiambaa Division Kiambu County, Kenya; to examine whether the structural condition of physical infrastructure influences compliance with disaster risk reduction guidelines in Kiambaa Division, Kiambu County, Kenya; to determine whether availability of financial resources influences compliance with disaster risk reduction guidelines in Kiambaa Division, Kiambu County, Kenya and to establish whether community participation influence compliance with disaster risk reduction guidelines in public primary schools in Kiambaa Division, Kiambu County, Kenya. The study was based on Maslow's Hierarchy of Needs Theory. The study adopted a descriptive survey design. Questionnaires for headteachers and teachers were used as well as an observation schedule to collect data on disaster risk reduction variables. Test-retest method was used to test the reliability of the tools. The study had a target

population of 23 headteachers and 372 teachers. A sample of 21 headteachers and 189 teachers was used in the study. A total of 21 headteachers and 182 teachers returned the questionnaires and therefore the data was based on the 21 headteachers and 182 teachers. Data was presented in frequencies and percentages in the form of tables, graphs and pi-charts. The following are the major findings of the study.

On the extent to which school size influences compliance with disaster risk reduction, majority of the headteachers asserted that the increasing pupil population influenced compliance with disaster risk reduction. All the headteachers confirmed that there was congestion in their respective schools which posed a challenge to compliance with disaster risk reduction (table 4.9). All the headteachers and all the teachers were in agreement that Free Primary Education has contributed immensely to congestion in classrooms posing a threat to the security of the pupils (table 4.10).

The second objective was to examine whether the structural condition of the physical infrastructure influences compliance with disaster risk reduction guidelines in public primary schools in Kiambaa Division, Kiambu County, Kenya. According to the findings disaster risk reduction guidelines have been partially implemented in most of the schools. Although the majority of the headteachers and teachers agreed that the physical infrastructure was constructed and occupied in consultation with the approval of Ministry of Public Health, the doors opened outwards and that there was adequate lighting in the classrooms, it was evidently reported by the majority of the headteachers

and teachers that most of the disaster risk reduction guidelines had not been complied with. The windows were grilled. There were no fire-fighting equipments. Spot-checks of the state of physical infrastructure was not as regular as is it ought to be. From the study findings, majority of the head teachers seek the services of contractors (76.2%) and the Ministry of Health (61.9%) in the construction and maintenance of buildings in their schools because contractors are necessary in the actual construction of buildings while the public health officers are readily available within. Architects and quantity surveyors are the least popular because seeking their services is expensive.

Majority of the teachers said they did not know whether professionals were consulted in the construction and maintenance of buildings in their schools. However those who knew seemed to support the headteachers' sentiments with 18.1% confirming that the Ministry of Health was involved. In such a scenario it would not be possible to justify the safety of the school infrastructures. The findings concur with Nyakundi (2012) who recommended that policy makers should follow up, monitor and evaluate safety situations in all school to sustain school safety as recommended in the Safety Standards Manual for Schools in Kenya (MOE,2008).

On whether availability of financial resources influences compliance with disaster risk reduction guidelines in public primary schools in Kiambaa Division, Kiambu County, Kenya, it is clear that financial resources greatly constitute a major hindrance to compliance with disaster risk reduction guidelines. Funds are needed to buy, install and maintain safety equipment as

well as employing trained security personnel. It also helps in involving professionals in the construction of buildings. The Kenya government in its efforts to assist schools prepare for disasters, disbursed funds to all provincial boarding secondary schools to purchase fire-fighting equipment. In this programme, primary schools were left out. With the concept of Free Primary Education in the mind of many parents, it becomes difficult for headteachers to get money for disaster risk reduction from parents.

On whether community participation influences compliance with disaster risk reduction guidelines in public primary school in Kiambaa Division, Kiambu County, Kenya, 84.1% of the teachers confirmed that the community did not participate in disaster risk reduction activities in schools. In those schools where the community participated in disaster risk reduction activities, there is no spirit of commitment and dedication among the community members. The relationship between the schools and the community is poor as evidenced by 52.7% of the teachers. The primary school community has in the past and to a certain extent in the present not treated the increasing cases of disasters in schools as a priority. Lack of involvement in decision-making on matters pertaining to disaster risk reduction activities in schools discourages the community from active participation.

The study established that most of the schools did not have school-based policies on disaster risk reduction according to the teachers. Contrary to this, 76.2% of the headteachers confirmed that they did exist. Most primary schools are ill prepared in case of a disaster. Most of them do not have disaster

preparedness facilities and equipment. This can be evidenced from table 4.15. There are no fire extinguishers, lightning arresters, smoke detectors fire alarms, fire caution or sand baskets. Very few schools have emergency kits and where they exist, they are in very poor conditions. Where these disaster preparedness facilities exist, they are not serviced or repaired.

There is a general lack of awareness among the teachers on issues pertaining to safety in their schools. Majority if the teachers do not know whether their schools have a copy of the Schools Safety and Standards Manual (2008) from the Ministry of Education. Majority of the teachers do not know whether their schools have emergency funds put aside in the event of a disaster. Majority of the teachers do not know whether the government has ever provided finances for the purchase of safety equipment and fittings in their schools. When asked whether their schools involved professionals in the construction and maintenance of buildings, 84.6% of them responded that they did not know. Findings revealed that performance of the administrative tasks by the headteachers such as receiving the safety documents, prioritizing safety issues in school development plans and budget as well as creating awareness among various stakeholders is below average.

5.3 Conclusions

Based on the study findings, the study came up with the following conclusions:

School size influences compliance with disaster risk reduction guidelines in public primary schools in Kiambaa Division, Kiambu County, Kenya. High

enrolment of pupils is a major challenge straining physical facilities. There is congestion in classrooms as evidenced by all the respondents. Free Primary Education has contributed immensely to congestion in classrooms posing a threat to the security of the pupils.

Lack of financial resources negatively affects compliance with disaster risk reduction guidelines in public primary schools. Schools do not have adequate financial resources allocated for the emergency preparedness. The government has not been able to provide finances to cater for disaster risk reduction in primary schools. This is despite the fact that it has come up with guidelines which the schools must comply with. The government has also encouraged greater enrolment in primary schools though without commensurate financial resources to cater for disaster risk reduction in schools. Schools need money to purchase disaster risk reduction equipment, construction of classrooms and employment of trained security personnel.

Physical infrastructure is not a great threat to disaster risk reduction in public primary schools. The school physical infrastructure is safe as evidenced by 100% of the headteachers and 48.4% of the teachers. They are under constant check by both headteachers and teachers. Doors in most schools opened outwards. However, when school buildings and other structures are being built, the headteachers do not seek the services of professionals such as architects and quantity surveyors. Disaster risk reduction involves having safe and secure school physical infrastructure which should be under constant inspection in order to note any risks early enough so as to take the appropriate action.

School-community relations influence compliance with disaster risk reduction guidelines in Kiambaa Division, Kiambu County, Kenya. The study revealed that there is poor school-community relations with majority of schools and hence low level of community participation in disaster risk reduction activities which has significantly contributed to the low compliance level of disaster risk reduction in schools. The community is not involved in decision-making on matters pertaining to disaster risk reduction in public primary schools. This discourages them from active participation in safety matters.

There is a general lack of awareness of teachers on safety standards issues which is an indicator of negligence, poor attitude and lack of proper communication between the administration and the teaching staff. Teachers do not know whether disaster risk reduction policies or the Safety Standards Manual for Schools do exist in their schools. This is a challenge to compliance with safety standards because students need to be taught by their teachers the knowledge on how to prevent themselves from harm in case of an emergency.

Findings from the study showed that most schools do not have disaster preparedness equipment and policies. Contrary to the Ministry of Education policy which requires that all schools have a copy of the Safety Standards Manual for and implement the safety standards and guidelines to prevent occurrence of disasters, some schools do not have their own copies. A few schools had emergency kits which were rarely inspected meaning that they might be non-functional and in case of fire disaster they might not help. The windows had grills on them. It can therefore be concluded that schools have not

made enough effort to improve on disaster risk reduction.

5.4 Recommendations

Schools should lay down strategies that promote the rights of children as provided in the CRC (1989) and Children's Act (2001). These strategies should be aimed at eliminating risky conditions or threats in schools that may instigate accidents, bodily injuries or emotional and psychological anguish to school children. A safe school should have a strong focus on disaster risk reduction so as to enhance the physical, intellectual, social and psychological development of school children. The Safety and Standards Manual for Schools in Kenya (MOE, 2008) exists as a general guideline on comprehensive school safety from where disaster risk reduction has to be inferred. Based on the findings and conclusions of the study, the researcher made the following recommendations:

- i. The Ministry of Education, in collaboration with the parents should provide funds for the expansion of existing schools in order to ease congestion in schools.
- ii. School administration should ensure inspection of the condition of physical infrastructure as well as servicing of disaster preparedness equipment as a way of monitoring and appraising the safety status of the schools. They should be inspected and serviced at least once in a term.
- iii. The headteachers and teachers should foster a healthy working relationship with the community through involvement in decision-making so as to encourage them to participate in disaster risk reduction activities.
- iv. School administrators should raise the level of awareness of disaster risk

reduction issues among the teachers.

- v. In planning for the annual development plans, the headteachers should ensure that funds are set aside to facilitate safety awareness programmes.
- vi. The Ministry of Education should organize frequent workshops and seminars for school community members to teach them on how to manage disasters as well as how to perform simple first aid to injured people.

5.5 Suggestions for further research

The following are the recommendations for further research:

- i. This research is on factors influencing compliance with disaster risk reduction guidelines in Kiambaa Division, Kiambu County, Kenya. Additional research concerning these factors and other factors in other counties is recommended.
- ii. This research dealt with one area of safety i.e. disaster risk reduction. There are other safety areas in the Safety Standards Manual for Schools that need to be researched upon. Such areas include; safety on school grounds, health and hygiene safety, safety in school environment, food safety, safety against drug and substance abuse, socio-cultural environment of the school, safety of children with special needs/ disabilities, safety against child abuse and transportation safety.
- iii. A further study on the relationship between safety standards and academic performance should be carried out.

- iv. A comprehensive study should be carried out on the level of awareness on safety issues among the teaching staff.

REFERENCES

- Atkinson, A. (2002). *Fostering school-law enforcement partnerships*. Portland: Northwest Regional Educational Laboratory.
- Baltas, E. (2004). Safety of school buildings in Greece: Lessons in danger. *Journal for the International Conference on School Safety and Security*. Paris.
- Bell, A. W (1993). *Educational Research*. New York: N.Y Publishers.
- Bennet, B.L. (2010). Mud buries school in Wales. A & E Television Network. Retrieved on 2/1/2015 from [<http://www.aetv.com>].
- Best, J. W. & Kahn, J. (2011). *Research in Education*. New Delhi. PHI Learning.
- Borg, R. W. & Gall, M. D. (1989). *Educational research: An introduction*. New York: Longman Publishers.
- Bose, D. (2009). Causes of student violence in schools. Retrieved January 15, 2015 from www.buzzle.com/articles
- Bradshaw, C.J., Sodhi, N.S., Peh, S.W., & Brook, B.W. (2007). *Global evidence that deforestation amplifies flood risk and severity in the developing world*. Unpublished journal: New York.
- Chabari, E. B. (2010). Challenges facing effective implementation of free secondary education in public secondary schools in Kangundo District, Kenya. Unpublished M.Ed project: Chuka University College.
- Cooper, M.A. (1995). Emergent care of lightning and electrical injuries: *Seminars in Neurology* Volume 15 No. 3.
- Davis, R. (2014). Equal education to SA government: Lay down basic standards for schools. Retrieved on 16/7/2015 from www.dailymarverick.co.za/article.
- Dotinga, J. (2012). America's deadliest school violence. Retrieved on 16/7/2012 from www.tuko.co.ke/news_portal_#1.
- Dumaea, J. (2014, June 25). Women in Kiambu against illicit brew. *The People Daily*, p. 6.

- Federal Emergency Management Agency (2007). How schools can become more disaster resistant. Retrieved on 2/5/2015 from www.fema.gov/kids.shtm
- Frederiksen, M. (2011). *Challenges facing the Kenyan school system*. Nairobi: Canada Community Education Services.
- Gay L.R. (1981). *Educational Research competencies for Analysis and Application*. Columbus: Ohio A Bell and Howell Company.
- Hirano, S. (2009). Child friendly schools and infrastructure. Unpublished journal. Kigali.
- Jelimo, R. (2015, March 8). Three pupils burnt to death as fire razes dormitory at Labuiywo Academy. *The Standard*, p.4.
- Kanyi, P. M. (2014). Factors influencing implementation of fire disaster risk reduction in public secondary schools in Nyandarua South District, Kenya. Unpublished M.Ed project, University of Nairobi.
- KENPRO, (2010). Challenges facing the implementation of Free Primary Education in Kenya. Nairobi: KENPRO.
- Kenya National Examination Council (2010). National Assessment for Monitoring Learner Achievement. Nairobi: Uwezo Kenya.
- Kimathi, J. (2011). Disaster preparedness in public primary schools in Githunguri District, Kiambu County. Unpublished M.Ed project, Kenyatta University.
- Kirimi, K. K. (2014). Institutional factors influencing adherence to safety standard guidelines in secondary schools in Buuri District, Kenya. Unpublished M.Ed project, University of Nairobi.
- Kirtiraj, D. C. (2012). Profile of the respondents. Retrieved on 16/7/2015 from [www.shodhganga.inflibnet.ac.in>bistream](http://www.shodhganga.inflibnet.ac.in/bistream).
- Kombo, D.S. & Tromp, D.L.A. (2006). *Proposal and thesis writing: An introduction*. Nairobi: Paulines Publications Africa.
- Koriang, B. (2009). Factors affecting implementation of safety standards in secondary schools, a survey of Turkana South District. Unpublished M.Ed dissertation, Kenyatta University.

- Krejcie, R. & Morgan, D. (1970). Determining sample size for research activities. Retrieved on 15/1/2015 from <http://www.kenpo.org/sample-size-determination-using-krejcie-and-morgan-table/>
- Law, W., Chan, A. & Pun, K. (2006). *Prioritizing the safety management elements: A hierarchical analysis for manufacturing enterprises*, *Industrial Management & Data Systems*, vol. 106, no. 6, pp. 778 – 792.
- Leandri, V. J. (2011). A study on safety and security measures at secondary schools in Tswane, South Africa. Retrieved on 23/10/2014 from <http://www.ncpc.org>
- Lyons, J. (2001). Do school facilities really impact a child's education: An introduction to the issue. Retrieved on 28/10/2014 from www.sdpl.coe.uga.edu/articalsandpapers/lyons.htm.
- Macharia, H. (2012). Influence of school playground safety on the participation of pre-school children in outdoor activities in Central Division, Naivasha District. Unpublished M.Ed. thesis, University of Nairobi.
- Maoulidi, M. (2008). Education needs assessment for Kisumu City, Kenya. Columbia Earth University: Millennium Cities Initiatives.
- Mburu, D.M. (2012). Factors influencing the implementation of safety standards in secondary schools in Limuru District, Kiambu County, Kenya. Unpublished M.Sc. thesis, University of Nairobi.
- Ministry of Education, Kenya (2008). *Safety Standards Manual for Schools in Kenya*. Nairobi: The Government of Kenya.
- Ministry of Education, Kenya (2009). Education facts and figures 2002-2008. Nairobi: Government printer.
- Mugenda, O. & Muganda, A. (2003). *Research methods: Qualitative and quantitative approaches*. Nairobi: ACTS Press.
- Muigai, W. G. (2011). Assessment of the level of implementation of safety standards guidelines in public secondary schools in Ngong division, Kajiado District, Kenya. Nairobi. Unpublished M.Ed project, Kenyatta University.

- Mungai, E.K. (2011). Public procurement policy and its impact on teaching and learning in secondary schools in Thika West District. Unpublished M.Ed thesis, Kenyatta University.
- Muzaffargarh, (2010). Pakistan: Flood damaged schools lead to education worries. Retrieved on 22/10/2014 from www.irinnews.org.
- Nderitu, C. (2009). Implementation of safety standards guidelines in secondary schools in Githunguri Division, Kiambu District. Unpublished M.Ed project, Kenyatta University.
- Ng'ang'a, A., (2013). Implementation of safety standards and guidelines in public secondary schools in Nyeri Central District, Nyeri County. Unpublished M.Ed project, University of Nairobi.
- Ngaroga, J. (2006). *Primary teacher education revision series: Education for primary teacher education*. Nairobi: EAEP.
- Njogu, J.W. (2014). Governance factors influencing implementation of disaster risk reduction guidelines in Meru South District, Kenya. Unpublished M.Ed project, University of Nairobi.
- Njoroge, W. (2014). Implementation of safety standards guidelines in secondary schools in Kaloleni and Rabai Districts; Kilifi County, Kenya. Unpublished M.Ed. project, Kenyatta University.
- Njue, D. K. (2013). Factors influencing the implementation of child-friendly school programme in public primary schools in Kikuyu District, Kiambu County, Kenya. Unpublished M.Ed project, University of Nairobi.
- Nyakundi, O., (2012). Implementation of safety standard and guidelines in public secondary schools in Marani District, Kisii county, Kenya. M.Ed. thesis, Kenyatta University.
- Nzengu, M. (2015, March 12). Pit latrine caves in, kills girl. *The star*, p.3
- Okumbe, J.A. (2001). *Human resource management: An educational perspective*. Nairobi. Sunlitho Limited.
- Orodho, J.A. (2008). *Techniques of writing research proposals and reports in education and social sciences*. Maseno: Kenezja HP Enterprises.

- Patel, M. (2008). *Disaster prevention for schools: Guidance for education sector decision-makers*. Geneva: UNISDR.
- Perumal, P. (2006). The effect of substance abuse by senior primary school learners on their development. Unpublished PhD thesis, University of Zululand, Durban.
- Republic of Kenya. (1980). Education Act. Nairobi: Government Printer.
- Republic of Kenya. (2001). Childrens' Act. Nairobi: Government Printer.
- Republic of Kenya (2010). Constitution of Kenya. Nairobi: Government Printer.
- Tallo, G. O. (2014). Factors influencing implementation of flood disaster safety standards in public primary schools in Uranga Division, Siaya County, Kenya. Unpublished M.Ed Project, University of Nairobi.
- Department for International Development (2015). A world at school. Karachi: Global Business Coalition for Education.
- United Nations (1989). Convention on the Rights of the Child. New York: United Nation
- United Nations Centre for Regional Development (2009). Reducing vulnerability of school children to earthquakes. Hyogo: United Nations.
- United Nations International Children Education Fund (2009). Child friendly schools manual. New York: UNICEF.
- Verma, G. K. & Mallick, K. (1999). *Researching education: Perspectives and techniques*. London: Falmer Press.
- Wainaina, W. W. (2012). Factors affecting the implementation of safety measures in secondary schools: a case of Kikuyu District, Kiambu County. Unpublished M.Ed thesis, University of Nairobi.
- Wanyama, J. F. (2011). Level of compliance with health and safety standards for the emergency response in secondary schools in Sabatia District, Kenya. Unpublished M.Ed project, University of Nairobi.
- World Conference on Education for All (2000). Education for all: From Jomtien to Dakar and beyond. Washington DC: World Bank

APPENDICES

APPENDIX I

LETTER OF INTRODUCTION

University of Nairobi

P.O. Box 30197

NAIROBI

1st June 2015

To the Headteacher,

..... Primary school

Dear

Sir/Madam,

**RE: REQUEST FOR CONSENT TO COLLECT DATA FROM YOUR
SCHOOL**

I am a Master of Education student in the University of Nairobi specialising in Educational Administration. I am currently carrying out a research on *Factors influencing compliance with disaster risk reduction guidelines in public primary schools in Kiambaa Division, Kiambu County, Kenya*. Your school has been selected to participate in this study. I would like to request for permission to collect data from your school. The information given will be treated with utmost confidentiality and will be strictly for the purpose of this study.

Thanking you in advance

Faithfully yours,

Gicharu W. Charles

APPENDIX II

QUESTIONNAIRE FOR HEADTEACHERS

The purpose of this questionnaire is to collect data on factors influencing compliance with disaster risk reduction guidelines in public primary schools in Kiambaa Division, Kiambu County. Kindly answer the questions to the best of your knowledge. Put a tick () where appropriate.

Section A

1. How long have you been in this school?

1-4 years () 5-10 years () Over 10 years ()

2. What is your highest level of academic qualification? Primary ()

Secondary () Diploma () BED () Master () Others(specify).....

3. What is your gender? Male () Female ()

4. What is the school enrolment? Boys _____ Girls _____ Total _____

5. What is the total number of classrooms in the school? _____

Section B

6. Does your school have a copy of the School Safety and Standards Manual

(2008) from the Ministry of Education? Yes () No ()

7. To what extent has your school complied with the disaster risk reduction

guidelines? Fully () Partly () Not at all ()

8. Does your school have school-based policies on disaster risk reduction?

Yes () No ()

9. (a) Is the school fitted with disaster preparedness facilities and equipment? (i)

Lighting arresters () (ii) Fire extinguishers () (iii) Smoke detectors ()
(iv) Fire alarms () (v) Emergency kits () (vi) Others (specify)
.....

(b) For those which are available how often are they serviced or repaired?

(i) Once per month () (ii) Once per term () (iii) Once per year () (iv)
Not at all ()

10. (a) Has this school experienced any disaster in the last ten years?

Yes () No ()

(b) If yes, what sort of disaster(s) was it/were they?

(i) Fire () (ii) Strike () (iii) Building collapse () (iv) Flooding
() (v) Transport (road accident) () (vi) Robbery () (vii) Disease
outbreak () (viii) Others specify.....

11. Is the school congested in terms of pupil population? Yes () No ()

12. Has FPE contributed to high enrolment rate in the school?

Yes () No ()

13. (a) In your opinion, does enrolment rate constitute a major hindrance to
compliance with disaster risk reduction guidelines in your school?

Yes () No ()

(b) If yes, to what extent? Greatly () Moderately () Slightly ()

14. Does your school have emergency funds put aside in the event of a disaster? Yes () No ()
15. (a) In your opinion, do financial resources constitute a major hindrance to compliance with disaster risk reduction guidelines in your school?
Yes () No ()
- (b) If yes, to what extent? Greatly () Moderately () Slightly ()
16. Has the government ever provided finances for the purchase of safety equipment and fittings in your school? Yes () No ()
17. How would you rate the relationship between your school and the community? Very good () Good () Satisfactory () Poor ()
18. (a) Does the community participate in disaster risk reduction activities in the school? Yes () No ()
- (b) If yes, how often? Rarely () Often () Quite often ()
19. To what extent does community participation influence compliance with disaster risk reduction guidelines in your school?
Greatly () Moderately () Slightly ()
20. (a) Do you conduct regular spot checks on the condition of the school physical infrastructure? Yes () No ()
- (b) If yes, how regularly? Weekly () Monthly () Once per term ()
Yearly ()

21. How would you rate the level of safety of physical infrastructure in your school during a disaster?

Highly safe () Safe () Unsafe () Highly unsafe ()

22. Do you involve the following in the construction of buildings in the school?

Tick where applicable. (i) Ministry of Public Works () (ii)

Architects () (iii) Quantity surveyors () (iv) Contractors () (vi)

Ministry of Health ()

23. Does the school development plan address the need for disaster risk reduction holistically? Yes () No ()

24. What is the general status of the safety of pupils and property in the school?

Very high () High () Low () Very low ()

25. In your opinion, how can schools be assisted in ensuring complete compliance with disaster risk reduction

guidelines?.....

.....

.....

.....

Thank you very much for your participation.

APPENDIX III

QUESTIONNAIRE FOR THE TEACHERS

The purpose of this questionnaire is to collect data on factors influencing compliance with disaster risk reduction guidelines in public primary schools in Kiambaa Division Kiambu County. Kindly answer the questions to the best of your knowledge. Put a tick () where appropriate.

Section A

1. For how long have you been in this school?

1-4 years () 5-10 years () Over 10 years ()

2. What is your highest level of academic qualification? Primary ()

Secondary () Diploma () BED () Master Degree ()

Others (specify).....

3. What is your gender? Male () Female ()

Section B

4. Does your school have a copy of the School Safety and Standards Manual

(2008) from the Ministry of Education? Yes () No () I don't know ()

5. To what extent has your school complied with the disaster risk reduction

guidelines? Fully () Partly () Not at all ()

6. Does your school have school-based policies on disaster risk reduction?

Yes () No ()

7. (a) Is the school fitted with disaster preparedness facilities and equipment?

(i) Lighting arresters () (ii) Fire extinguishers ()

- (iii) Smoke detectors () (iv) Fire alarms ()
(v) Emergency kits () (vi) Others (specify).....

(b) For those which are available how often are they serviced or repaired? (i)

- Once per month () (ii) Once per term()
(iii) Once per year () (iv) Not at all ()

8. (a) Has this school experienced any disaster in the last ten years?

- Yes () No ()

(b) If yes, what sort of disaster was it? (i) Fire () (ii) Building collapse ()

- (iii) Strike () (iv) Flooding () (v) Robbery ()
(vi) Disease outbreak () (vii)Transport (road accident)() (viii)
Others, specify.....

9. Are the classrooms congested in terms of pupil population? Yes () No ()

10. Has Free Primary Education (FPE) contributed to high enrolment rate in the school? Yes () No ()

11. In your opinion, does enrolment rate constitute a major hindrance to compliance with disaster risk reduction guidelines in your school?

- Yes () No ()

12. Does your school have emergency funds put aside in the event of a disaster? Yes () No () I don't know ()

13. Has the government ever provided finances for the purchase of safety equipment and fittings in your school? Yes () No () I don't know ()
14. (a) In your opinion, do financial resources constitute a major hindrance to compliance with disaster risk reduction guidelines in your school?
Yes () No ()
- (b) If yes, to what extent? Greatly () Moderately () Slightly ()
15. How would you rate the relationship between your school and the community? Very good () Good () Satisfactory () Poor ()
16. (a) Does the community participate in disaster risk reduction activities in the school? Yes () No ()
- (b) If yes, to what extent? Rarely () Often () Quite often ()
17. To what extent does community participation influence compliance with disaster risk reduction guidelines in your school?
Greatly () Moderately () Slightly ()
18. (a) Do you conduct regular spot checks on the condition of the school physical infrastructure? Yes () No ()
- (b) If yes, how regularly? Weekly () Monthly ()
Once in a term () Yearly ()

19. How would you rate the level of safety of physical infrastructure in your school during a disaster?

Highly safe () Safe () Unsafe () Highly unsafe ()

20. Do you involve the following in the construction and maintenance of

buildings in the school? Tick where applicable.(i) Architects () (ii)

Contractors () (iii) Quantity surveyors () (iv)

Ministry of Public Works ()

(v) Ministry of Health () (vi) I don't know ()

21. Does the school development plan address the need for disaster risk

reduction holistically? Yes () No ()

22. What is the general status of the safety of pupils and property in the school?

Very high () High () Low () Very low ()

23. How can schools be assisted in ensuring complete compliance with disaster risk reduction guidelines?

.....
.....
.....
.....
.....

Thank you very much for your participation.

APPENDIX IV

OBSERVATION SCHEDULE

Item	Presence		Comment
	Yes	No	
			1. Perfect condition 2. Fair condition 3. Poor condition
Fire extinguishers			
Fire assembly points			
Spacing in classrooms			
Fire cautions in strategic places			
Classroom doors opening outwards			
Classroom windows without grills			
Fence around the school			
School gate			
Sand buckets			
Emergency kit			
Direction sign posts			
No trespassing signs			
Grass covered Playground			
Lighting in the classrooms			

APPENDIX V

LIST OF PUBLIC PRIMARY SCHOOLS IN THE STUDY LOCATION

1. Gacharage Primary School
2. Gachie Primary School
3. Gatatha Primary School
4. Kamuiru Primary School
5. Karura Primary School
6. Karuri Primary School
7. Kawaida Primary School
8. Kiambaa Primary School
9. Kibathi Primary School
10. Kibubuti Primary School
11. Kihara Primary School
12. King'othua Primary School
13. Lower Kihara Primary School
14. Mayuyu Primary School
15. Muchatha Primary School
16. Muthurwa Primary School
17. Muya Primary School
18. Mwongoiya Primary School
19. Ndenderu Primary School
20. Njenga Karume Primary School
21. Thimbigwa Primary School
22. Waguthu Primary School
23. Wangunyu Primary School

APPENDIX VI

DISASTER RISK REDUCTION GUIDELINES

- Every school should post evacuation maps at every entrance and exit.
- The school should schedule practice drill sessions for fire, earthquake, lockdown, shelter-in-place and other situations that the safety committee determines necessary to practise. Fire drills are required once a month.
- Every school should develop a telephone tree list.
- Every school should maintain school emergency kit(s).
- School management need to ensure that schools are safe from disaster.

Items in the emergency kit will include: first aid kit, whistles, fire blankets, flash torches, fire extinguishers and blueprints of school buildings.

Flood safety

- During floods, parents should keep in touch with the local authorities to determine whether it is safe for their children to go to schools.
- In case sections of the route to school are flooded, learners should not attempt to wade through floodwater on their own.
- After the onset of floods, school authorities should ensure all the electrical lights, sockets and appliances are carefully checked.
- School authorities should ensure that drinking water is boiled at all times.
- The school should have all the physical structures like classrooms, toilets, dormitories, and administrative block checked by competent authorities before they are declared safe for use by learners and staff.

Safety during landslides

- During heavy rains, schools in landslide-prone areas should be on the lookout for signs of unusual land movement.
- On detection of unusual land movement, alternative learning facilities should be used until the threat ends.
- Rapid evacuation measures should be implemented when a landslide occurs.

Safety during thunderstorms and lightning

- During thunderstorms, learners should remain in the school and stay indoors.
- During thunderstorms, learners should be seated inside school buildings.
- Learners should be warned that during thunderstorms, they should never take shelter under trees or walk in the rain.
- In areas prone to thunderstorms and lightning, school authorities should install lightning arresters.

Safety during an Earthquake

- When learners are inside the classroom and an earthquake occurs, they should take cover under desks or tables.
- Where evacuation is necessary learners should have clearly stated (standing) procedures on how to move out of the buildings.

- If learners are in the open and an earthquake occurs, they should move away from buildings.

Safety during strong winds

- If learners are inside a classroom, windows should be closed immediately.
- Learners should be advised to seek shelter under a desk or table.
- In open grounds, learners should lie flat on the ground or in trenches.

Fire Safety

Fire prevention

- All kinds of trash should be discarded as they tend to quickly catch fire.
- Inflammable substances such as petroleum, paint, chemicals etc should be stored in tightly closed cans or containers away from any source of heat.
- An electrician should regularly check the electrical wiring and replace any that is weak, broken or worn out.
- Learners should not carry or play with matches.
- The use of hurricane lamps in the dormitories should be regulated.
- The teachers should sensitise learners about the dangers of fire.
- The school should invite the local fire department to give talks and demonstrations to learners about fire prevention in a school context.
- Learners and staff should undertake periodic fire drills, at least twice a term.
- Fire extinguishers should be located in strategic places in the school.

What to do in case of a fire:

- The learners should leave the room immediately without any panic rush.
- Learners crawl on the floor when going through a smoky area or room as smoke and heated gases tend to rise.
- Doors that feel hot should not be opened as the fire on the other side could be blazing fiercely or one could get killed by the burst of heat and smoke.
- One should not run in clothes that are on fire. Running helps to fan and spread the flames. One should roll on the floor to smother the flames.
- Learners should not return to the classroom, dormitory, or any other building after they have escaped for whatever reason.

Safety during poisonous chemical emissions/severe pollution

- If poisonous gas or chemical leakages/emissions that are likely to pose a threat to learners and staff occur, school authorities should be notified immediately.
- Once notified, school authorities should immediately contact relevant experts on gas or chemical risks.
- School authorities should quickly implement evacuation plans for all persons in the school.
- For affected individuals, school authorities should seek immediate emergency treatment at the nearest medical facility.

APPENDIX VII

RESEARCH PERMIT

THIS IS TO CERTIFY THAT: MR. CHARLES WAWERU GICHARU of UNIVERSITY OF NAIROBI, 682-219 Karuri, has been permitted to conduct research in Kiambu County

Permit No : NACOSTI/P/15/6398/6111 Date Of Issue : 28th May, 2015 Fee Received :Ksh 1000

on the topic: FACTORS INFLUENCING COMPLIANCE WITH DISASTER RISK REDUCTION GUIDELINES IN PUBLIC PRIMARY SCHOOLS IN KIAMBAA DIVISION, KIAMBU COUNTY, KENYA.

for the period ending: 31st July, 2015

Applicant's Signature



Director General National Commission for Science, Technology & Innovation

CONDITIONS

- 1. You must report to the County Commissioner and the County Education Officer of the area before embarking on your research. Failure to do that may lead to the cancellation of your permit
2. Government Officers will not be interviewed without prior appointment.
3. No questionnaire will be used unless it has been approved.
4. Excavation, filming and collection of biological specimens are subject to further permission from the relevant Government Ministries.
5. You are required to submit at least two(2) hard copies and one(1) soft copy of your final report.
6. The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice.



REPUBLIC OF KENYA



National Commission for Science, Technology and Innovation


RESEARCH CLEARANCE PERMIT

Serial No. A 5226

CONDITIONS: see back page

APPENDIX VIII

AUTHORIZATION LETTER FROM THE NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION


**NATIONAL COMMISSION FOR SCIENCE,
TECHNOLOGY AND INNOVATION**

Telephone: +254-20-2213471,
2241349, 310571, 2219420
Fax: +254-20-318245, 318249
Email: secretary@nacosti.go.ke
Website: www.nacosti.go.ke
When replying please quote

9th Floor, Utalii House
Uhuru Highway
P.O. Box 30623-00100
NAIROBI-KENYA

Ref. No. Date:

28th May, 2015

NACOSTI/P/15/6398/6111


Charles Waweru Gicharu
University of Nairobi
P.O Box 30197-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on “*Factors influencing compliance with disaster risk reduction guidelines in public primary schools in Kiambaa Division, Kiambu County, Kenya.*” I am pleased to inform you that you have been authorized to undertake research in **Kiambu County** for a period ending **31st July, 2015.**

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

On completion of the research, you are expected to submit **two hard copies and one soft copy in pdf** of the research report/thesis to our office.


DR. S. K. LANGAT, OGW
FOR: DIRECTOR GENERAL/CEO

Copy to:

The County Commissioner
Kiambu County.

The County Director of Education
Kiambu County.

National Commission for Science, Technology and Innovation is ISO 9001: 2008 Certified

APPENDIX IX

**AUTHORIZATION LETTER FROM THE COUNTY DIRECTOR OF
EDUCATION KIAMBU COUNTY**

**MINISTRY OF EDUCATION SCIENCE & TECHNOLOGY
State Department of Education**

Telephone: Kiambu (office) 020-2044686
FAX NO. 020-2090948
Email: directoreducationkiambu@yahoo.com
When replying please quote



COUNTY DIRECTOR OF EDUCATION
KIAMBU COUNTY
P. O. Box 2300
KIAMBU

KBU/CDE/HR/4/1/ (105)


2nd June, 2015

The Sub-County Director of Education
KIAMBAA SUB-COUNTY

RE: RESEARCH AUTHORIZATION
MR. CHARLES WAWERU GICHARU

The above cited student has been authorized to carry out research on **"Factors influencing compliance with disaster risk reduction guidelines in public primary schools"** in your sub-county for a period ending 31st July 2015.

Please accord him the necessary assistance.


BONIFACE N. GITAU
COUNTY DIRECTOR OF EDUCATION
KIAMBU COUNTY

Copy to

✓ **CHARLES WAWERU GICHARU**
University of Nairobi
P.O. Box 30197-00100
NAIROBI