Influence of Principals' Adherence to Infrastructure Standards and Disaster Management on Disaster Management in Public Secondary Schools in Nyeri County, Kenya

Hawa Omari, Dr. Susan Chepkonga, Dr. Justus Mochama Gori, Dr. Mwaura Kimani
School of Education, Maasai Mara University P.O Box 861-20500, Narok, Kenya

***Abstract*: The objective to the study was establishing the influence of adherence to infrastructure standards on disaster management on safety standards on disaster management in public secondary schools in Nyeri County, Kenya. The researcher used the descriptive survey research design. This work targeted 208 public secondary schools which comprised of 208 principals and 1040 heads of departments in Nyeri County. 15% was used to select 21 principals and 21schools for interviewing and observation checklist respectively. To validate research instruments, a pilot study was carried in 21 schools (10%) of the targeted 208 Schools. Reliability of the research instruments was done using test-retest method. A sample of 30% for heads of department and 10% for principals was considered effective to the study. Stratified sampling method and a mixed method approach were used. Qualitative data was collected from the principals using interview schedule while Quantitative data were collected using questionnaires from head of departments and the checklist was used to confirm the availability of safety policies, infrastructure and equipment. Pearson Correlation Coefficient was used to analyse hypothesis one, two, three, four and five. All ethical issues pertaining to research were observed. SPSS was used to compute the data. The study established that staff awareness of safety and adherence of infrastructure standards had a negative and strong significant level while training of staff and policy implementation of safety standards had a significant contribution to disaster management. Monitoring and evaluation of safety standards had positive and strong significant contribution to disaster management. The following recommendation was that the MoE and TSC ought to ensure that the principals implement the safety policy in schools which may lead to adherence to infrastructure standards on disaster management.**

***Keywords*: Principals' Involvement, Adherence to Adherence to Infrastructure Standards, Disaster Management**

I. INTRODUCTION

Disaster awareness and preparedness in secondary schools leads to reduced risk of losing property, reduced chance of death, reduced personal injuries, increased institutional resilience to adverse conditions and minimal interruption of learning in schools (Muthiani, 2016). Buildings and infrastructure systems, also referred to as the built environment, play critical roles in community resilience. Governments spent large amount of money in improving physical infrastructure in school. Education plays a crucial role in preparing the young for their roles in society (Republic of Kenya, 2012). A disaster is stated to be that major misfortune or calamity which disrupts the basic fabric of a society causing widespread human, material and/ or environmental losses (UNO, 2008).

II. BACKGROUND OF THE STUDY

School planners have always wrestled with the question of how to create a school that will best facilitate the educational process. Threats to the safety of schools can come from both inside and outside the school buildings. It is easy to imagine how distracting it would be for students, teachers, and parents if, for example, the school's structure may not withstand the next earthquake, or if its electrical wiring is exposed, its window glass is broken, or its bathrooms are a source of contamination instead of being sanitary (RoK, 2010). If school buildings are prone to be flooded by intensive rains, swept away by high winds, exposed to hazardous materials, or decaying for lack of maintenance, it hinders both teaching and learning, making it harder to produce the level of academic results that are possible in a safe and healthy building. Buildings, classrooms, laboratories, and equipment- education infrastructure - are crucial elements of learning environments in schools (RoK, 2012). . There is strong evidence that high-quality infrastructure facilitates better instruction, improves student outcomes, and reduces dropout rates, among other benefits. Although education policymakers are increasingly focusing on the quality of education and school learning environments, many countries use a fragmented or piecemeal approach to investing in their education infrastructure.

Globally countries are striving towards achieving the goal of providing education to its citizens, Education For All (EFA) without any discrimination. Participants in the World conference on Education for All assembled in Jomtien Thailand from 5th to 9th March 1990, recalled that education is a fundamental right for all people, women and men of all ages throughout the world (RoK, 2012). Amutabi, (2003) recommends that clear rules governing the minimum standard of infrastructure to be approved before any educational institution is established or run. In addition, the ownership of

the school or institutional land and inspection of infrastructure should be included in appropriate legislation even though such standards might vary from one area to another. Concerning basic education, the government is recently focusing on quality, access, equity, and relevance of education. In particular, the policy framework sought to achieve Education For All (EFA) by 2015, ensuring the right of children to basic education as underscored in the Children's Act (2001). Therefore, increasing access, equity and relevance of basic education as well as effectively and efficiently delivering quality services at all times and levels (RoK, 2005). Finally, the Safety Standards Manual enumerates standards and instructions for use in all over schools in Kenya (RoK, 2010).

III. STATEMENT OF THE PROBLEM

Disasters in schools can interrupt education and eventually cause psychological trauma. Under the UN convention on the rights of the child (CRC) children have an inalienable right under all situations including disasters. Kenyan government is trying to put safety and security situation in schools under control by providing safety and security guidelines. Furthermore, it has formulated a National Policy on Disaster Management to institutionalize mechanisms for addressing disasters; however, the objective has not been achieved. In various legislative documents the National Disaster Management Policy Legal Framework of 2004 is available. Despite formation of several educational committees, task forces, and commissions to address multiple challenges affecting our education sector and specifically those that are related to safety at schools, students and teachers are still exposed to work related injuries and poor working conditions that emanate from unsafe conditions (RoK, 2015).

In Kenya, following the unprecedented levels of school fire breakouts and unrest witnessed in the country frequently, the issue of students' safety and security has received great attention. In 2012, about 48 cases of fire outbreaks in schools lead to deaths of 14 students and 3 teachers, while in 2008 about three cases resulting to deaths of students were associated with student's unrest in various learning institutions. This was witnessed at a time when the country had just suffered damaging post-election violence (PEV). Afterward, various schools have continued to experience property destruction as well as loss of lives. For instance, in 2012, the following schools suffered incidences of fire disasters, school property destruction andsome lost lives. Malindi High School in Malindi District, fire caught deputy principal's house at night claiming his life, wife, and 6 children , Emmanuel High School in Uasin Gishu County, the boys' dormitory caught fire at night, Kathigiriri Girls Mixed Boarding School in Meru County, a dormitory caught fire which destroyed school and pupil's properties. In August 2012, fire broke out in a dormitory in Asumbi Boarding Primary School in Homa Bay County, leading to 8 deaths, and only one pupil survived. This incidence was attributed to an electric fault.

Secondary schools in the Nyeri County are striving in safeguarding security and safety their students as per the Government regulations. The fire tragedy in 2009 at Nyeri High School that left four students dead has not been a lesson to school administrators to ensure safety strategies are implemented to avert the disasters. Previous studies done by (Gichuhi 2013 and Nganga 2016) on fire disasters and safety compliance respectively have pointed out the need for implementing safety strategies in but what is yet to be established is why the strategies have not been applied by the school principals. Herein, the researcher aimed to uncover the administrative strategies influencing disaster management in public secondary schools in Nyeri County, Kenya.

IV. RESEARCH HYPOTHESIS

This study was guided by the following hypothesis:
HO_1 There is no significant relationship between principals' adherence to infrastructure standards and disaster management in public secondary schools in Nyeri County, Kenya.

V. REVIEW OF RELATED LITERATURE

5.1 Adherence to Infrastructure Standards and Disaster Management

The integral part of disaster planning and school safety involves how schools are secured, built and maintained. Based on design, students, surrounding community and location, each school buildup is unique. Given this background, its thus important that when mitigating hazards in school facilities should be carried out by those who have best knowledge about the school and the community. A number of tools to help with facilities assessment are available. However, it's imperative to tailor the various tools to meet school needs. According to Albritton, Mathews and Anhalt, (2019) proactive measures have been taken by the New Jersey Department of Education to safeguard the safety and security of all staffs and students. On other hand, in New Jersey, all school districts must have a school safety and security plan. Particularly, each plan should be developed locally with the involvement of various key stakeholders namely law enforcement, public health officials, and emergency management among others. All plans must be reexamined and updated on a yearly basis (Muthiani, 2016). These plans encompasses protocols on how to respond to critical incidents such fires, bomb threats, gas leaks and even an active shooter situation. "The effectiveness of a school safety plan is measured in the precious lives of children, teachers and administrators that are left unharmed following an incident of school based violence, an accident, a natural disaster or other hazards" (School safety and security manual best practices guidelines – New Jersey). Apart from developing plan and procedures to respond to disaster circumstances in schools, a plan must also be developed to support staff as well as students recovers from the physical, emotional or psychological trauma associated with tragic events. This plan must provide clearly immediate help and referral procedures

to staff, students, and parents who may be suffering significantly from the crisis (Kirui, Mbugua, & Sang, 2011).

Disaster protection systems are key elements within the school. However, according to a study by Nderitu (2009), noted that numerous schools lacked adequate fire fighting equipment as well as reliable alarm systems. In preparation for disasters in schools and other public places, safety equipment must be readily available. This equipment comprises of "fire blanket, alarms, fire extinguishers, sand, water points and hoses". A study by Mwangi (2008) opined that if the resources for disasters are readily available, they play a crucial role in ensuring timely and efficient delivery of disaster response efforts. The Kenyan government has disbursed funds to all provincial boarding secondary schools to purchase fire-fighting equipment in its efforts to assist schools prepare for disasters. Other equipment such as smoke detectors may save lives by sensing and warning people in cases of fires.

In another study by Ng'ang'a (2013) revealed that students population violated compliance with safety standards based on poor spacing of beds in dormitory and lockers in classrooms. In addition, according to Otieno et al. (2010), the Principal Kisumu girls high school with a student capacity of about 1,045, was quoted saying that "the school has fire extinguishers which are not enough and even the few which are available are expensive to maintain". Recently, Kenyan government was forced to disburse 810 million shillings to schools in purchase of fire equipment due to the increasing incidents of fire outbreaks. During the disbursement of this money, the Director of Higher Education by then Mr. David Siele was quoted to have said that "there have been many incidents of fire outbreaks in schools and that they should ensure these situations come to an end" (Ayonga, 2016). Consequently, 810 million shillings were disbursed to all 717 provincial boarding schools by the Ministry of Education Science and Technology (MOEST) to purchase fire equipment. These categories of schools were selected on the basis of boarding facilities and high enrolment (RoK, 2012). On the other hand, District schools were left out because in most cases they are day schools, whereas the National schools were left out because they had previously received similar funds (Chepkonga, 2014). Lastly, other places in the school that requires firefighting equipment includes offices, laboratories, dormitories, classrooms, workshops and kitchen.

Elsewhere, it was recommended that in each school building should have at least had one fully stocked and conveniently located first aid cabinet Creswell and Newman, 1989). In addition to at least one complete cabinet in the building; each classroom may have a first aid kit. This kit should be regarded primarily as a health education aid and secondly as a device for first aid. A responsible person should be in charge of first aid cabinet, kits, and supplies and adequate supplies should be at hand all times. Buildings should be as per the recommended standards, that is, adequate entrances and open outwards be for emergency purposes, and must never be locked from outside at any time when learners are inside. Additionally, windows should be easy to open and without grills. This may have prevented the death cost by fire at Stephjoy Boys High School in Limuru (Leftie, 2016). A student from the school, Denis Baiya said, "I was awoken by screams from fellow students and realised the dormitory was on fire. The students were running helter-skelter, trying to force open the door, which was locked from inside. Realizing that there could be a stampede at the door with everybody trying to force his way out, I rushed to the window and screamed for help. That is when students from the other dormitories came to our rescue." School administrators must assess the school surrounding on a daily basis, and also have in place feedback mechanisms so as to ensure processes and policies are effective. They must provide multiple ways in which students can communicate to teachers and also critically determine any prevention and management programs to ensure that they are theoretically sound, unbiased and evidence based in terms of content, pedagogy and delivery. It was stated that "effective leadership should make school safety and overall wellbeing of students a top priority. It should work harmoniously with teaching staff to develop and implement strategies and a whole school behavior management plans that are embedded in schools student code of conduct and focus on prevention and management". The MOE Safety Standards Manual for Schools recommends that every school must establish school safety committee whose primary function will be to ensure safety in schools (RoK, 2008). Kitheka, (2016) emphasized that duties and roles of safety committees and other representatives should be well summarized. Basically, the roles should include safety inspection, audit and prevention of accident.

VI. RESEARCH METHODOLOGY

Research design shapes and determines the success of the study. The researcher applied the descriptive survey research design in this work. Bryman (2012) defines descriptive survey research design as that "which entails the collection of data on more than one respondents (usually quite a lot more than one) and at a single point at a time in order to collect a body of quantitative and qualitative data. Descriptive survey research design is parallel with data collection at a single point (Nyeri County) within a period of time. Conversely, this design allowed the interviewing of principals alongside using a checklist**.** The design allows the examination of relationships between different variables. This is so because the data on them was collected more or less simultaneously and the researcher could not manipulate the variables (Gay, Mills &Airasian, 2006; Bryman, 2016).

6.1 Target Population

Bryman (2014) defines population as the universe of units from which the sample is to be selected. On the other hand, Mugenda and Mugenda (2003) referred to target population as "the population which the researcher wants to generalize results of a study." Target population refers to all members of a real hypothetical set of subjects or people or events for

which a researcher wishes to generalize the results of the study (Borg & Gall, 2007; Glass 1996). The study targeted 208 public secondary schools which comprised of 208 principals and 1040 heads of departments in public secondary schools in Nyeri County, Kenya as at December 2015 (CDE, Nyeri, 2015).

6.2 Sample Size and Sampling Procedures

Sampling is a method of selecting part of a group to represent the total population (Bryman, 2016). Additionally, Mugenda and Mugenda (2003) refer to a sample as a small group retrieved from the studied population. Mulusa (1999), states that "one third of the target population is representative enough to make estimate of characteristics being investigated." The researcher used stratified sampling where the population was characterized into 8 strata based on the number of sub-counties in Nyeri County so as to ensure equal representation. From each stratum, 30% of the schools were chosen through systematic random sampling. This was because some sub-counties had more schools than others and equal representation was necessary. By use of systematic random sampling, every 3rd school was sampled to get 62 Schools. This method ensured that there was an equal opportunity for any member of the population to be studied (Gay, Mills & Airasian, 2006). This ensures validity of the data. The researcher further used 30% of the target population of the HoDs (1040) for study. Using 30% of the HoDs the researcher sampled 310 HoDs as respondents for this work. The researcher selected 21 principals for interviewing in this study who formed 10% of the target population. Based on a study by Mugenda and Mugenda (2003), a sample size of 10% of the target population is considered adequate for descriptive study. Sampling saves on time, money and allows generalization to be made for the entire population. Out of 208 principals, the researcher sampled 21 principals and 310 HODs. The researcher observed and used observation checklists in the schools where the principals were interviewed.

6.3 Validity and Reliability of Instruments

Reliability according to Fraenkel and Wallen (2011) is the level of internal consistency or stability over time, of a measuring instrument. (Kothari, 2011). The reliability of the instruments was determined using test-retest technique. The Pearson's product-moment correlation (r) coefficient formula was used to compute the reliability coefficient (Best & Kahn, 2011).

$$r = \frac{\Sigma(x-x)(y-y)}{\sqrt{[\Sigma(x-x)^2][\Sigma(y-y)^2]}}$$

x=the score of the independent variable
Y=the score of dependent variable
X=the mean score for independent
Y=the mean score for dependent variable

Source: Elifson, Runyon and Haber (1990)

The researcher employed Cronbach's alpha index to assess the questions reliability. According to Bryman, (2014) and Orodho, (2009) calculation of correlation yields a figure called coefficient that varies between 0 (no correlation and therefore no internal consistency) and1 (perfect correlation and therefore complete internal consistency). Then a result of ≥ 0.80 reflects acceptable level of internal reliability although many writers work with a lower figure that goes to .70. The figure that was arrived at after testing the questions based on Cronbach's Alpha gave the degree to which the questions were reliable. The reliability coefficient/index finding was 0.78, greater than 0.7, which is universally accepted as reliable; otherwise the instruments would have needed to be revised (Cortina, 1993; Kothari, 2011). Reliability of interview schedules was checked by highly restructuring interview questions at the time of design and consistently (using same language and gestures) using similar questions to different interviewees.

Orodho (2010) and Tyler (1971) said that "this is a judgment made better by a team of professionals and in this connection the researcher established content validity by seeking expert judgment from his supervisors while developing and revising the research instruments." "This was done by holding discussions, making relevant comments and suggestions that were synchronized with a view of either reviewing them or adopting them for pilot study."This was guaranteed by discussions with the research supervisors and peers, in addition to ensuring that all the items were related to the set research objectives.

6.4 Data Analysis Techniques

Data from questionnaires were analyzed using descriptive and inferential statistics. Descriptive analysis involved the use percentages, means and standard deviations to show the relationships between the independent and dependent variables of the study. Data was analysed using the responses from principals and Heads of departments. The researcher used the Pearson's Correlation analysis method to explore relationship between the dependent and independent variables as stated in the research hypotheses. This involved the use of means and standard deviations, .05 alpha levels, and degrees of freedom (df). Alpha (.05) is the probability of making type 1. Qualitative data was analyzed thematically. The analysis focused on all the individuals' responses to each question. The data was organized by question across all respondents and their answers.

VII. PRESENTATION OF DATA ANALYSIS AND INTERPRETATION OF HYPOTHESIS

In this research, questionnaires were administered to 290 participants to react to items which were measuring various variables involved in the main theme of the relationship between principals' administrative strategies influencing disaster management in public secondary schools in Nyeri County, Kenya**.** The data collected were scored, coded and analysis done using the SPSS statistical data-analysis package.

Reliability of questionnaire items that were used was estimated using Cronbach's alpha and found to be .860. Analysis of data collected quantitatively was done by carrying out Pearson's correlation analysis. The hypotheses were tested at an alpha level of .05, df of 288 (290-2) while *p* value, and *r* value were used for the establishment of relationships among variables that were used in this study. Study variables, means, standard deviations, and *df* are shown in Table 9.

Interviewing of 21 principals was also done using 8 structured questions and data collected was analyzed using focus by question analysis method. Reliability of interviews was ascertained by highly structuring of the interview with the same format and sequence of words and questions for each interviewee. Results from Pearson's correlation analysis and thematic were presented using tables before interpretation of results was done. Study variables, means, standard deviations are shown in Table1.

Table 1

Study Variables' Means and Standard Deviations Principals' Administrative Strategies Influencing Disaster Management in Public Secondary Schools in Nyeri County, Kenya

Statement	Mean	Std. Deviation
Principals' staff awareness safety strategies	1.61	0.37
Principals' adherence to infrastructure standards	1.81	0.33
Principals staff training on safety strategies	1.57	0.53
Principals' policy implementation of safety strategies	1.56	0.46
Principals' monitoring and evaluation of safety standards	1.63	0.41
Disaster management	1.65	0.29

The findings in Table 1 show that on Principals' staff awareness safety strategies (M=1.61, SD=0.37), Principals' adherence to infrastructure standards (M=1.81, SD=0.33), Principals staff training on safety strategies(M=1.57, SD=0.53), Principals' policy implementation of safety strategies (M=1.56,SD=0.46) Principals' monitoring and evaluation of safety standards(M=1.63,SD=0.41) and the dependent variable disaster management (M=1.65,SD=0.29) respectively.

7.1 Principals' Adherence to Infrastructure Standards Safety Strategies and Disaster Management

The second objective of the study was to explore the principals' adherence to infrastructure standards and disaster management in public secondary schools in Nyeri County, Kenya. On this second variable HoDs were asked to respond to items related to principals' involvement in adherence to infrastructure standards and disaster management. The responses of heads of departments to the adherence of infrastructure standards are depicted in Table 2

The findings in Table 2 shows on school has institutional policy majority 27.0% agree while 26.0% strongly disagree. This is supported by the Kenyan government on National Policy and Disaster Management which is provided for enactment by Parliament for a legislative provision for effective Disaster Management by the establishment of an institutional framework that is legally recognized and embedded within the Government structures. Innovative ways of mobilizing resources, managing them and accounting for them properly have also been provided for, together with a rigorous monitoring and evaluation framework not only to monitor the progress in the implementation of this policy but also to undertake

Table 2: Head of department responses on the adherence of infrastructure standards

	Statement	Strongly Agree F %	Agree F %	Disagree F %	Strongly Disagree F %	Total F %
1	School has institution Policy	63 21.0	78 27.0	73 25.3	75 26.0	289 100
2	School adheres to safety strategies	73 25.3	80 27.7	66 22.8	70 24.2	289 100
3	School infrastructure on safety strategies	79 27.3	92 31.8	54 18.7	64 22.1	289 100
4	School has institutional Security	63 21.8	73 25.3	77 26.6	76 26.3	289 100
5	School has information safety procedures	68 23.5	81 28.0	61 21.1	79 27.3	289 100
6	School has built an emergency exit	64 22.1	79 27.3	78 27.0	68 23.5	289 100
7	School has fire Extinguishers	61 21.1	79 27.3	55 19.0	94 32.5	289 100
8	The school has an evacuation centre	60 20.8	60 20.8	92 31.8	77 26.6	289 100

regular disaster risk profiling and monitoring to be more prepared for disasters. On School adheres to safety strategies majority 27.7% agree while 25.3% strongly agree. On School infrastructure on safety strategies majority, 31.8% agree while 27.3% strongly agree. On whether School has institutional security majority 26.6% disagree while 26.3% strongly disagree. On School has information safety procedures majority 28.0% agree while 27.3% strongly disagree. On School has built an emergency exit majority 27.3% agree while 27.0% disagree. On School has fire extinguishers majority 32.5% strongly disagree while 27.3% agree. The school has an evacuation centre majority 31.8% disagree while 26.6% strongly disagree. Table 12 shows the mean on the adherence of infrastructure standards. The findings from the HODs was complimented by the observation schedules where majority 18(85%) of the schools observed had

emergency exits which were not usable. These exits were either permanently welded or secured with a padlock. In cases where padlocks were used, the occupants of such rooms were ignorant of the keys' location. Again, most windows had grills. This shows that they were not useful in case of a disaster.

The principals were interviewed on adherence of infrastructure standards and disaster management and their responses were as follows:

Principal No 11:

"My school has the disaster management manual that is in operation however, teachers are reluctant to familiarize themselves with the contents and have to be pushed to read the contents."

Principal No 5, 8, 15 had similar response:

"We do not have all the required safety and security infrastructure and equipment in this school due to financial constraints."

Principal No 10:

"Since the required safety and security infrastructure and equipment are very expensive, we are in the process of soliciting for funds to buy them although we have a few and insufficient"

Principal No 1:

"We have sufficient and security infrastructure and equipment in this school since the government and other stakeholders have adequately funded this school."

Data was analyzed by comparing responses got from different interviewees' verbatim. The responses of the principals on the variable "adherence to infrastructure standards on disaster management" show that some principals adhere to infrastructure standards while others do not due of lack of sufficient infrastructure in schools. The responses of the principals show that no form of adherence to infrastructure standards that was undertaken in schools on disaster management and also it was identified that only three schools had fire alarm detectors while fencing was adhered to by all the schools however there were only three schools which had ramps on the entrance of the dormitories. The ramps were not available on the entrance to toilets and bathrooms this showed that the adherence of safety standards was still wanting and this was in hand with the checklist where some schools did not have fire extinguishers and fire assembly points. These results concur with studies carried out by Wanyama, (2011) and Nyakundi, (2012) who established that, "the number of enrolled students influence adherence to safety standards guidelines in school."

To test the relationship, a Pearson r Product Moment correlation analysis was done to determine adherence of infrastructure standards (M=1.81, SD=0.33) and disaster management (M=1.65, SD=0.29) as indicated in Table 2.

$H_0$1 There is no significant relationship between adherence of infrastructure standards and disaster management in public secondary schools in Nyeri County, Kenya

The researcher having analysed the data using descriptive statistics went further to use Pearson r Product Moment so as to triangulate with the verbatim responses from principals and results from observation checklist. The aim of this information was to establish Correlation analysis and assess the association between the adherence of infrastructure standards and emergency/disaster management. The correlation findings are summarized in Table 3 which shows the correlation matrix for adherence to infrastructure strategies and disaster management.

Table3: Correlation matrix between principals' adherence to infrastructure standards and disaster management

		Adherence to Safety Standards	Disaster management
Adherence to Safety Standards	Pearson Correlation	1	.624*
	Sig. (2-tailed)		.000
	N	290	290
Disaster management	Pearson Correlation	.624*	1
	Sig. (2-tailed)	.000	
	N	290	290
*. p<.05(2-tailed); df=288;alpha=0.05			

With 290 degrees of freedom (df) at an alpha level of 0.05, the computation between principals adherence to safety standards and disaster management produced an *r* of .624 and a *p*-value of .000. From results displayed on table 13, p-value of .000 is less than the chosen alpha (.05). The results displayed in Table 13 indicate that there is a positive correlation between principals' adherence to safety standards and disaster management in public secondary schools in Nyeri County. The two variables were moderately correlated

(r (289) = .624, p < .05).

From the results of the analysis done to test Hypothesis 1 (see Table 3), it was found that there is a significant relationship between principals adherence to safety standards and disaster management in public secondary schools in Nyeri County. With a Pearson's correlation value of .624, it means that the relationship was significant. The results also indicated that the *p*-value of .000 was less than .05 that was used to determine the rejection or retention of the null hypothesis in this study. This means that null hypothesis 2 was rejected and could now read "There is a significant relationship between principals adherence to safety standards and disaster management in public secondary schools in Nyeri County".

This means that the fewer adherences of infrastructure standards take place the more disaster is done. These results concur with studies carried out by Mutunga in Nderitu, (2009) resources for disasters, once they are ready, play a critical role in ensuring timely and efficient delivery of disaster response efforts. According to Oguye (2012) in his study titled an assessment of the implementation of safety standards in public secondary schools in Borabu District, Nyamira County, Kenya he found out that majority of head teachers and teachers felt that their schools were in the process of ensuring safe physical infrastructure since they indicated the item as partly implemented. Further a small percentage of teachers interviewed indicated that unsafe infrastructures existed in their schools and the observation schedule indicated lack of emergency exits in their buildings. Another study by Ayonga (2016) on an investigation of fire emergency preparedness in Kenyan schools: a case study of public secondary schools in Nairobi found out that most schools had no fire safety procedures and the ones which had, had only one concurred with the results found. According to the observation schedule on Ayonga (2016) study, most schools were not fully equipped to deal with fire disaster. This is in terms of Fire Fighting equipment, safety plans and skills. This implied that most schools in Nairobi County were not prepared in case of fire disasters.

VIII. SUMMARY OF THE FINDINGS

The purpose of this study was to investigate the principals' administrative strategies influencing disaster management in public secondary schools in Nyeri County, Kenya. Specifically, the study examined the influence of principals' staff awareness safety strategies, principals' adherence of infrastructure standards, principals' staff training, and principals' safety policy implementation, and principals' monitoring and evaluation safety standards on disaster management in public secondary schools in Nyeri County, Kenya. The literature review focused on the concept of disaster management, adherence of infrastructure standards.

Interview schedule, observation checklist and questionnaires were used as the main tools for data collection. The interview schedule was used to collect data from the principals while questionnaires were used to collect data from head of departments. Observation checklist was used to collect data on physical and available records. After data collection the data was cleaned by identifying incomplete or inaccurate responses which were corrected to improve the quality of the responses. After data cleaning, the data was coded and entered into computer for analysis using the Statistical Package for Social Sciences (SPSS). The quantitative data was analyzed using descriptive statistics such as frequencies, percentages, means, and standard deviation while inferential statistics analysed using Pearson correlation. The findings of the study showed that principals' administrative strategies had tremendous influence on disaster management in public secondary schools in Nyeri County. After the computation on Pearson r product moment was done, results that showed that the relationship was significant.

The findings on principals' administrative strategies influencing disaster management show that out of 310 questionnaires administered to the heads of departments, 290 (93.5%) were returned and 21(100%) of the principals were interviewed. Both the response rate was above 70%. Creswell, (2014) asserts that a response rate of 70% and above is adequate to validate the findings of a study. Therefore, the researcher was able to validate the results. To find out if there was any relationship between principals' staff awareness of safety strategies and disaster management, the researcher used hypothesis "There is no significant relationship between principals' staff awareness of safety strategies and disaster management in public secondary schools in Nyeri County, Kenya. The findings on principals' adherence of infrastructure standards influencing disaster management show that out of 310 questionnaires administered to the heads of departments, 290 (93.5%) were returned and 21(100%) of the principals were interviewed. Both the response rate was above 70%. The findings on observation schedules showed that most schools had emergency exits which were not usable. These exits were either permanently welded or secured with a padlock. In cases where padlocks were used, the occupants of such rooms were ignorant of the keys' location. Again, most windows had grills. To find out if there was any relationship between principals' adherence of infrastructure standards and disaster management, the researcher used hypothesis "There is no significant relationship between principals' adherence of infrastructure standards and disaster management in public secondary schools in Nyeri County, Kenya

After testing Hypothesis one on the relationship between principals' adherence of infrastructure standards and disaster management in public secondary schools in Nyeri County, Kenya using Pearson r the results showed that the P value was less than alpha value 0.05 which was used to determine the acceptance or rejection of the null hypothesis, $P< 0.05$ (0. 000 < 0.05). Majority of the heads of departments 171(69.1%) agreed that disasters in schools had lessened since the introduction of principals' adherence of infrastructure standards.

After the principals were interviewed, their views and opinions concurred with the head of departments' views that there was a significant relationship between principals' adherence of infrastructure standards and disaster management in public secondary schools in Nyeri County, Kenya. For instance, principal 10 was asked to give his opinion on the interview question item 4 *"Do you have the required safety infrastructure and equipment in this school?* The respondent gave a positive response that *"We have sufficient safety infrastructure and equipment in this school since the government and other stakeholders have adequately funded this school".* Findings from both the principals and heads of departments' teachers showed that there was a great association between principals' adherence of infrastructure

standards and disaster management. Therefore, this led to the rejection of the null hypothesis and to the acceptance of the Alternative hypothesis. "There is a significant relationship between principals' adherence of infrastructure standards and disaster management in public secondary schools in Nyeri County, Kenya. This showed that the more principals are involved in adherence of infrastructure standards the less disaster is done (Kemunto, Elizabeth, and Yona, 2015).

IX. CONCLUSION

Based on the findings of the study, it can be concluded that:

Principals' adherence of infrastructure standards had a significant contribution to disaster management and that there is a significant coefficient on School has institution policy, School has fire extinguishers, School has information safety procedures, School infrastructure on safety strategies respectively. This implies that the fewer adherences of infrastructure standards the more the disasters occur. These conclusions indicate that there has been remarkably little attention devoted to disaster management in schools which exposes the school community members to disasters some of which can be averted**.**

X. RECOMMENDATIONS

The recommendations made from the study are given in the following sections:

Recommendations for Policies

Based on the findings the study made the following recommendations:

Disaster management courses should be introduced and made mandatory for each teacher to attend per term.

Recommendations for management practice

Principals should ensure that all infrastructure in school adhere to the safety standards by ensuring all the necessary equipment are functional and available in school for instance emergency exit, windows have no grills, fire extinguishers and an assembly point.

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