Global Scientific JOURNALS

GSJ: Volume 9, Issue 6, June 2021, Online: ISSN 2320-9186
www.globalscientificjournal.com

HAZARD PERCEPTION AND AWARENESS LEVEL OF TRADERS IN SELECTED MARKET CENTRES IN SOUTH-EASTERN NIGERIA

* Onuegbu, Williams, A.A. Obafemi, O.S. Eludoyin
Department of Geography and Environmental Management, University of Port Harcourt
* Corresponding Author: wilon4real@yahoo.com,+234 8033942863

ABSTRACT

The study investigated hazard perception and awareness level of traders in selected market centres in South-Eastern, Nigeria**,** in the areas of hazards perceptions and awareness level of stakeholders about fire disaster preparedness, examine the variation in disaster preparedness and analyse differences in risk reduction across the study areas. The research adopted a descriptive survey design. The target population was the traders and other stakeholders in the markets. Simple random sampling was used to give every subject an equal chance to be selected. Data were collected using questionnaires which were administered to the respondents through the drop and pick a method and the site observation checklist. Data collected from respondents were analyzed through descriptive statistics. The results were presented using frequency tables, mean and standard deviation. Basing on the study findings, the majority of the respondents reported that fire occurs frequently in the markets which are mostly caused by fault electricity, renovation, and inappropriate storage of flammable materials. This indicated a high level of fire disaster unpreparedness. On safety plans, most markets have no evacuation plans. All these are signs of fire disaster unpreparedness. On training in fire safety, most workers and other stakeholders have not been trained on appropriate responses in case of fire outbreak and most of them may not know what to do in case of fire disaster leading to fire disaster unpreparedness. Basing on the study findings, the market management should consider adding more firefighting facilities like a sprinkler system, reliable water supply, fire boots, suits, helmets, hoods, gloves, sacks of sands in buildings, fire blankets, fire fighters' outfits, fire protective clothing, fire hydrants, fire escape ladder, and self-contained breathing apparatus so that they become proportional to the number of

market buildings and people in the markets. It is also recommended that windows should not be grilled, and doors should open outwards. Also, market traders and stakeholders should be made aware of evacuation plans. Finally, all market traders and stakeholders should be trained on fire safety.

Keywords; Hazards, Stakeholders, Perception, Awareness, Fire

1 Introduction

Generally, fire is seen as a potential threat to sustainable development and growth because of its effect on ecosystems, its contribution to carbon emissions, and its impact on biodiversity (Tacconi, 2003). Fire, when discovered provided man with the first means of advancement. It provided man the opportunity to choose his food by enabling him to cook. It expanded his living range by providing him with an external source of heat and light; the fire was so significant to a primitive man that made it one of the few elements (earth, fire, air, and water) which made up his world. More so, as the primitive man discovered fire, fire also revealed to him its awesome distinctive power, which people are experiencing today. The primitive man worshipped fire and used it but, also lived in fear and was scared of its distinctive nature. Fire outbreak is one identified hazard in the community that can cause disaster, it has destroyed both lives and properties in very high magnitude.

Indeed, the occurrence of disasters and emergencies in Nigeria has increased in frequency and intensity in the last decade and especially in recent times. Rapid population growth and urbanization and socio-political issues compounded by ethnic plurality have been resulting in fierce competition for scarce resources leading to deteriorating livelihoods, social marginalization, crime, and general insecurity (NEMA, 2006).

Fire disasters particularly have become so incessant that they now occur daily, even though the risk of fire outbreaks is higher during the dry season, it is very scary the number of fire incidents that have occurred in quick succession across the nation. The statistics for the year ended 2012 coming from various states in the federation are equally frightening (Adamu, 2013). In Rivers State, for instance, the government has announced that 73 persons suffered different degrees of injuries and that no fewer than 230 persons lost their lives in 222 fire incidents in the state in 2012 alone (Ogunmosunle, 2013). Another statement from the Oyo State Fire Service Department indicated that about N1bn worth of property was destroyed and a total of 38 people were killed in 607 fire incidents last year. In just the first two weeks of 2013, the department has received 46 distress calls over fire disasters in different parts of the state in which three persons were killed (Ogunmosunle, 2013).

A market can be defined as a place where buyers and sellers meet to exchange goods and services and other relevant services, it is usually a beehive of activities where a large number of people are participants in these activities. In Nigeria traditional markets is a call point for all and sundry for business, the markets allow the buyer and seller to interact and bargain on the prices of the goods and services this is in contrast to the shopping mall/centers, supermarkets amongst

others where the prices of goods and services are fixed with no opportunity for the participants in business to bargain. Due to the influx of a large number of people as a result of population expansion the markets have become a haven characterized by so many vices amongst these vices are traffic congestion, improper waste disposal, chaotic circulation patterns, these factors combine to constitute considerable risk during fire outbreaks as a result of improper use of the facility.

Fire outbreaks in markets have led to the wanton loss of lives and properties worth billions of Naira across the country, this ugly sinister isn't mostly due to the natural cause but man-made. In this study, various prevention and control strategies would be investigated and assessed to establish the extent of application.

Vulnerability growth made in our cities and coasts; these hazards can lead to a disaster that is few worse than those seen to the date stated Ban Ki-moon the Secretary-General of the United Nation. And further stated that moral, social, and economic obligation to build resilience by 2015, camping out Hyogo Framework for action will also help to reach the Millennium Development Goals. The question now is 2015 has come and gone and the noble aspirations concerning fire hazards have not been achieved.

The fire which is a biophysical hazard is unpredictable, it renders the victims homeless and destroys both lives and properties, most times families and communities affected or threatened by fire often have little or no awareness of the hazard.

Considering the studies carried out by Mwangi (2014), Mutua (2016), Ayonga (2016) and Kihila (2017), there is a clear indication that markets are not yet prepared for fire disaster risk reduction. Mutua (2016) concurred with the studies carried out by Gichuru (2013), Mwangi (2014), and Ayonga (2016). The four studies clearly show that firefighting equipment is inadequate, traders and other stakeholders are not trained on fire disaster risk reduction, and some market building policies have not been adhered to. Ndibalema (2015) discovered the lack of awareness and preparedness of the Tanzanian public universities and the community as well to fight and manage the fire. Muindi (2014) revealed that the knowledge of the Kenya Medical Training College staff on fire safety preparedness was low and that the College had not adopted the OSHA, 2007 fire safety policy, which was missing in all its Campuses. Kihila (2017) discovered irregular servicing of the firefighting facilities, lack of identifiable fire assembly points, no training on firefighting and prevention in markets in Tanzania. Ben (2010) identified inadequate financing and improper instructions as the main hindrances to the market fire safety of both major and minor markets in Wakiso District. Makhanu (2009) concurred with the study carried out by Kukali (2009) which discovered that most traders and stakeholders have not been trained in fire disaster risk reduction. Lucheli and Masese (2009) concurred with the study carried out by Mwenga (2008) which indicated that the firefighting equipment was not proportional to the population of traders and stakeholders.

The reviewed literature revealed that fire disaster preparedness is essential in the market environment and those losses, injuries, or even fire-related deaths can be averted if market centers put in place measures to contain fire incidents. While some market institutions have bought Fire Fighting equipment and adjusted their structures to help fight fire disasters, others

have not. Some of the institutions with equipment have not fully trained traders on the way to use them, making the markets unprepared for fire hazards.

From the reviewed literature the areas that other researchers have not been properly addressed which this study consider gap to fill include:

From the above research work reviewed, none of the work looked at how frequently these fires occur; none consider the perception of market traders; the researchers have not also looked at the strategies adopted by markets and try to compare them with other markets.

Also, there are no known published journals on the market fire disaster in the south-eastern region of Nigeria. This implies that there is still a knowledge gap as far as fire disaster preparedness of market and reduction strategies is concerned, which makes it imperative to carry out this study.

2 Aim and Objectives of Study

This study aimed to analyze Hazard Perception and Awareness Level of Traders in Selected Market Centers in South-Eastern Nigeria

To achieve this aim, the following objectives were pursued:

1. Analyze the perceptions and awareness level of stakeholders about fire disaster preparedness
2. Examine the variation in disaster preparedness across states in the study area
3. Analyze differences in risk reduction across the study area

3 The Study Area

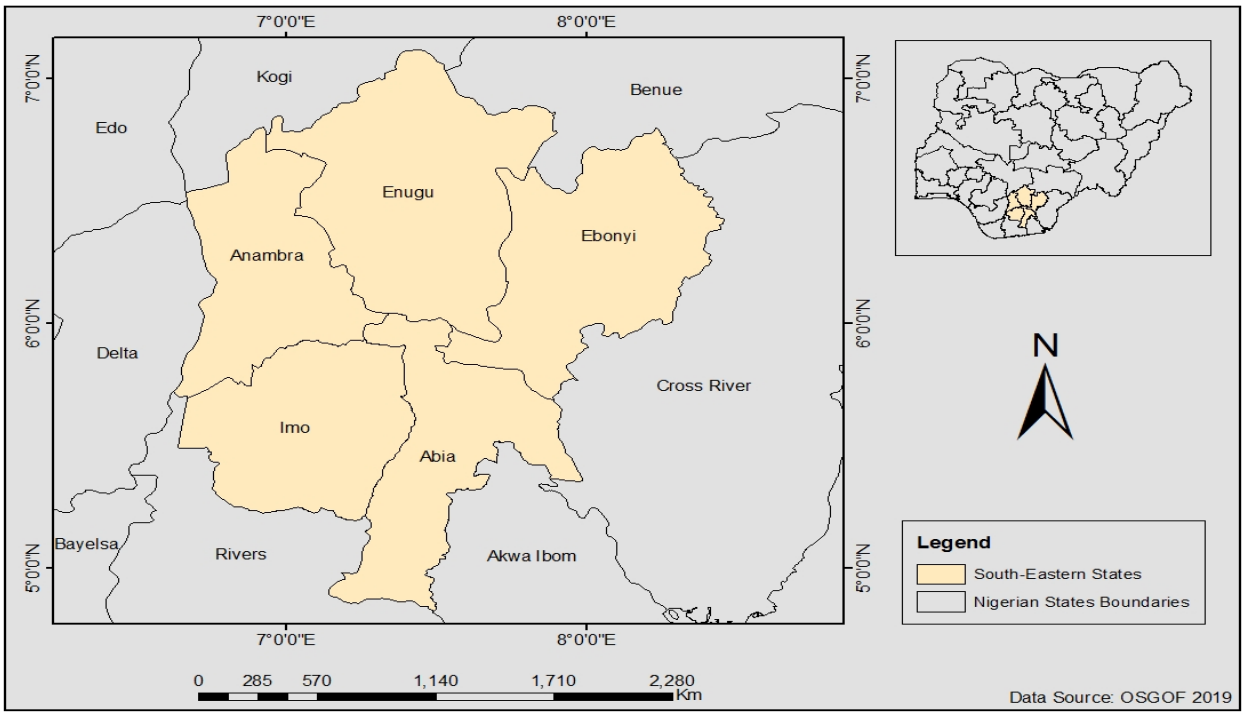

Figure 1: South-Eastern Nigeria

The area lies roughly between latitudes $5^0$and 6^0 north of the equator and between longitudes 7° and 8^0East of Greenwich. It is bordered in the South by the Atlantic Ocean. Delta State lies to the West, the north Savanna States of Benue and Kogi to the North, and the sub-equatorial Cameroon Republic to the East. The population of Igbo land stated here is an accumulation of the five (5) states Abia, Anambra, Ebonyi, Enugu, and Imo only. The total population is about 40 million with the population density of 400km^2 (1,000/sq mi), with highest elevation of 1,000m (3,300ft) and lowest elevation of 0m (0ft) (population census estimate, 2015).

4 Materials and Methodology

This study adopted a descriptive survey design. The study population consisted 31557 of male and female traders (i.e., shop owners) in the three selected states of the South-eastern Nigeria which includes Anambra, Abia, and the Imo States with nine major markets purposively chosen by the researcher. The choice of male and female traders is based on the fact that the variables under investigation were particular to them and no other party could provide this information.

To determine the appropriate sample size, the Taro Yamane method is adopted. A sample size of 400 respondents was drawn from 9 selected markets using a stratified random sampling technique. The instrument used was a questionnaire developed by the researchers. The questionnaire was validated and the reliability was tested test-retest method, calculated with Pearson's product-moment correlation. This yielded a reliability index of 0.81. Mean scores.

The data generated were analyzed using SPSS. The research questions were answered using both mean and standard deviation and simple percentages. The results of the data analyses are presented below.

5 Result and Discussion

Stakeholders' perception and awareness level on fire disaster preparedness

The analysis here dealt with items on the Level of fire disaster preparedness awareness in the markets. An evaluation of the awareness level of fire disaster preparedness of the various markets across the three states was carried out with the result of the analysis of the respondent perception are as shown in Table 1

Table 1 Respondents awareness level on fire disaster preparedness

Statement	Respondents Per State											
	Anambra=125				Abia=110				Imo=93			
	Yes		No		Yes		No		Yes		No	
	F	%	F	%	F	%	F	%	F	%	F	%
I am aware of the disaster management plan available in the market	32	26	93	74	18	16	92	84	17	18	76	82
I have access to the disaster management plan	45	36	80	64	43	39	67	61	28	30	65	70
There has been adequate campaign program organized to increase fire awareness level of traders	39	31	86	69	28	25	82	75	21	23	72	77
Do you think awareness Education promotes a degree of culture of safety among traders?	105	84	20	16	80	73	30	27	62	67	31	33
Does the awareness campaign carry out regularly in the market?	27	22	98	78	23	21	87	79	21	23	72	77

Source: Researchers Fieldwork, 2020

The table result reveals the opinion of traders on disaster preparedness awareness level in the markets. Item 1 on whether traders are aware of the disaster management plan available in the market attracted disagreement responses of the respondents across the states with their percentage scores of 74% for Anambra, 84% for Abia, and Imo 82%. From item 2, the responses of the respondents on access to the disaster management plan, hence the disagreement responses by traders of the three states with percentage scores of 64% for Anambra, 61% for Abia, and 70% for Imo. Item 3 equally attracted disagreement by the traders across the states that there has been an adequate campaign program organized to increase the fire awareness level of traders, with Anambra 69%, Abia 75%, and Imo 77%. In item 4, it was agreed by traders of these markets across states that the awareness Education promotes a degree of culture of safety among traders, with the percentage scores of Anambra 84% which ranked 1^{ST}, Abia 73% ranked 2^{ND} and that of Imo 67% ranked 3^{RD}. Item 5 was also disagreed by most respondents which means

that the awareness campaign carried out are not regular in the markets, with 78% for Anambra, Abia 79%, and Imo 77% respectively.

Table 2 Variation in disaster preparedness across the study area

Statement	Respondents Per State											
	Anambra=125				Abia=110				Imo=93			
	SA	A	D	SD	SA	A	D	SD	SA	A	D	SD
The market has well-trained manpower to handle fire emergencies	10	23	35	57	6	11	30	63	7	27	29	30
	8%	18%	28%	46%	5%	10%	27%	57%	8%	29%	31%	32%
I am well trained to handle any fire-related incidences in my market	4	18	27	76	7	20	24	59	3	22	31	37
	3%	14%	22%	61%	6%	18%	22%	54%	3%	24%	33%	40%
There are good refresher courses and drills offered in my market to enable me to handle any fire emergencies	11	29	36	49	9	24	30	47	4	13	28	48
	9%	23%	29%	39%	8%	22%	27%	43%	5%	14%	30%	52%
My market has facilities to handle any fire related incidence	17	22	39	47	8	23	37	42	5	21	33	34
	14%	18%	31%	38%	7%	21%	34%	38%	5%	23%	35%	37%
Are there key roles of your market in fire disaster preparedness	18	23	31	53	12	25	36	37	9	19	29	36
	14%	18%	25%	42%	11%	23%	33%	34%	10%	20%	31%	39%

Source: Researchers Fieldwork, 2020

Table 2 reveals the opinion of the respondents on spatial variation of disaster preparedness across the study area. From item 1, respondents' responses on whether markets have well-trained manpower to handle fire emergencies attracted disagreement responses from the respondents across the three-state with percentage scores of 74% for Anambra which ranked 2^{ND}, Abia with 85% ranked $1^{ST}$and Imo ranked 3^{RD} with 63%. Items 2, 3,4, and 5 were disagreed by the respondents across states which includes: I am well trained to handle any fire-related incidences in my market with the following percentage scores of 83% for Anambra, Abia 76%, and Imo 73%; There are good refresher courses and drills offered in my market to enable me to handle any fire emergencies, Anambra 68%, Abia 70% and Imo 81%; My market has facilities to handle any fire-related incidence with 69% for Anambra, 72% for Abia and 72% Imo and item 5 on whether market traders have any key role to play in fire disaster preparedness with Anambra mean 67%, Abia 67% and Imo 70% respectively.

Table 3: Fire protection measures in the market

Statement	Respondents Per State											
	Anambra=125				Abia=110				Imo=93			
	Yes		No		Yes		No		Yes		No	
	F	%	F	%	F	%	F	%	F	%	F	%
Fire escape routes in the market	20	16	105	84	28	25	82	75	29	31	64	69
Means of emergency communication in the market	35	28	90	72	25	23	85	77	12	13	81	87
Fire alarm and detection system in the market	18	14	107	86	30	27	80	73	10	11	83	89
Fire evacuation drills in the market	10	8	115	92	23	21	87	79	26	28	67	72
Fire assembly points or Muster points in the markets	24	19	101	81	20	18	90	82	23	25	70	75

Source: Researchers Fieldwork, 2020

Table 3 shows the perceptions of respondents from Anambra, Abia, and Imo regarding the equipment available in the markets for fire protection in various states. The respondents agreed that fire escape routes in the market buildings are inadequate. This attracted the percentage responses of 84%, 75%, and 69% by the respondents of Anambra, Abia, and Imo respectively. Findings revealed that the respondents from the three states strongly disagree with the rest of the items i.e. items 2, 3, 4, and 5. Means of emergency communication in the market attracted scores of 72% for Anambra, Abia 77%, and Imo 87%; Fire alarm and detection system in the market with 86% Anambra, 73% Abia, and 89% Imo; Fire evacuation drills in the market Anambra 92%, Abia 79% and Imo 72% and Fire assembly points or Muster points in the markets with percentage scores of 81% Anambra, 82% Abia and Imo 75% respectively.

Table 4 Fire suppression facilities are available in the market

Statement	Respondents Per State											
	Anambra=125				Abia=110				Imo=93			
	Yes		No		Yes		No		Yes		No	
	F	%	F	%	F	%	F	%	F	%	F	%
There is the availability of Firefighting equipment or appliances in the market	12	18	96	90	31	28	79	72	28	30	65	70
Maintenance and testing of fire extinguishers	48	38	77	62	17	15	93	85	24	26	69	74
Maintenance of fixed water system in the market	18	14	107	86	10	9	100	91	34	37	59	63
Sufficient water storage in the market	27	22	98	78	26	24	84	76	20	22	73	78

Source: Researchers Fieldwork, 2020

Analysis of table 4 shows the perceptions of the participants on fire suppression facilities available in their markets. Based on the perceptions of the respondents, they disagree on item 1 which means no availability of Firefighting equipment or appliances in the market. This item attracted the percentage responses of 77%, 72%, and 70% by the respondents from Anambra which ranked 3RD, Abia ranked 1STand Imo ranked2NDrespectively. Respondents across the three states also disagree on items 2,3 and 4 which includes: Maintenance and testing of fire extinguishers with Anambra percentage rating of 62%, Abia 85% and Imo 74%; Maintenance of fixed water system in the market attracting the following scores of 86% for Anambra, Abia with 91% and Imo 63% and Sufficient water storage in the market with78% for Anambra, 76% for Abia and Imo 78% showing the respondents level of disagreement to the items.

Table 5 Management control mechanisms in the market

Statement	Respondents Per State											
	Anambra=125				Abia=110				Imo=93			
	SA	A	D	SD	SA	A	D	SD	SA	A	D	SD
Fire safety policy is available in the market	9 7%	24 19%	39 31%	53 42%	13 12%	21 19%	31 28%	45 41%	9 10%	24 26%	29 31%	31 33%
There is the availability of Trained firefighting team in the market	23 18%	25 20%	32 26%	45 36%	5 5%	12 11%	33 30%	60 55%	10 11%	14 15%	29 31%	40 43%
Good housekeeping in the market	11 9%	7 6%	42 34%	65 52%	3 3%	5 5%	30 27%	72 65%	19 20%	20 22%	21 23%	33 35%
Fire evacuation procedures available in the market	8 6%	21 17%	22 18%	74 59%	11 10%	22 20%	29 26%	48 44%	12 13%	16 17%	19 20%	46 49%

Source: Researchers Fieldwork, 2020

Data in table 5 presents the percentage scores of Anambra respondents, Abia and Imo on the various ways of safety management control of markets in the three selected states. The respondents disagree on all the items in the table. Therefore, the various ways of managing safety in markets include: Fire safety policy is available in the market; availability of trained firefighting team in the market; good housekeeping in the market; and fire evacuation procedures availability in the market.

Table 6 Opinion of traders on Risk reduction strategies

Statement	Respondents Per State											
	Anambra=125				Abia=110				Imo=93			
	SA	A	D	SD	SA	A	D	SD	SA	A	D	SD
There is a fire disaster preparedness and reduction strategies plan in the market	11 9%	18 14%	36 29%	60 48%	9 8%	16 15%	22 20%	63 57%	6 6%	13 14%	30 32%	44 47%
The disaster preparedness and reduction strategies plan are effective	15 12%	18 14%	40 32%	52 42%	10 9%	23 21%	31 28%	46 42%	7 8%	13 14%	27 29	46 49%
Has there been appropriate adaptation and mitigation strategies to fire disasters risk adopted by the market traders	17 14%	21 17%	35 28%	52 42%	12 11%	27 25%	32 29%	39 35%	14 15%	17 18%	20 22%	42 45%
There is a working document on fire programs being adopted by your market	19 15%	21 17%	32 26%	53 42%	10 9%	18 16%	23 21%	59 54%	8 9%	14 15%	27 29%	44 47%
The following are the fire emergency programs available in the markets, fire drill, weekly sensitization, disaster preparedness club	18 14%	29 23%	33 26%	45 36%	11 10%	17 15%	28 25%	54 49%	9 10%	20 22%	23 25%	41 44%

Source: Researchers Fieldwork, 2019

Data in table 6 presents the mean scores and standard deviation of Anambra, Abia, and Imo respondents on the differences in Risk Reduction across the Study Area for ensuring markets safety for service delivery. The respondents disagree on items 1-5 in the table below. Therefore, the differences in Risk Reduction across the Study Area for ensuring markets safety for service delivery include: There is fire disaster preparedness and reduction strategies plan in the market, The disaster preparedness and reduction strategies plan are effective, Has there been appropriate adaptation and mitigation strategies to fire disasters risk adopted by the market traders, There is a working document on fire programs being adopted by your market, and The following are the

fire emergency programs available in the markets, fire drill, weekly sensitization, disaster preparedness club.

6 Conclusion and Recommendation

Based on the findings of the study, it can be concluded that: Fire disaster occurs frequently in these markets. In addition, fault electricity was reported as one of the major causes of fire outbreak in the markets as well as Fire ignition and Renovation.

Little or low compliance to safety standards by traders leading to poor storage of inflammable substances and handling of electrical equipment in the markets.

Based on data collected and analyzed the researcher recommends that:

1. A study to establish the level of risk of fire disasters in markets should also be carried out.
2. Traders and the general public should be careful in handling flammable materials that could cause fire outbreaks, managing faulty electrical equipment and appliances should be seen as enemies as these make our shops more vulnerable to fire.
3. Market buildings should from time-to-time conduct vulnerability assessments to identify potential threats, and the recommendations of the assessment should be implemented.
4. Traders should comply with safety standards, rules, to help avert the incidence of fire outbreaks.

7. References

Tacconi, L. (2013). Fires in Indonesia: Causes, Costs and Policy Implications. Center for International Forestry Research.

Adamu, M. (2013, 26 February). Fire disasters, possible way forward. Managing Emergencies in Nigeria. pp. 5-7.

Ogunmosunle, S. (2013, January 30). Stemming the tide of fire disasters. Daily trust newspapers, p. 2.

National Population Cesus (NPC) (1991): The 1991 Census report

NEMA (2006) State of the Environment Report for Uganda, 2000/2001, National Environment Management Authority, http://www.nemaug.org.

Ayonga, I. N. (2016). An investigation of fire emergency preparedness in Kenyan schools: a case study of public secondary schools in Nairobi.

Gichuru, J. N. (2013). Fire disaster preparedness strategies in secondary schools in Nyeri central district, Kenya.

Kukali, A. N. (2009). An Evaluation of the State of Fire Safety Policy Implementation in Girls Boarding Secondary Schools in Bungoma East District. Unpublished Med thesis, Kenyatta University, Kenya.

Kihila, J. (2017). Fire disaster preparedness and situational analysis in higher learning institutions of Tanzania', Jàmbá:.'Journal of Disaster Risk Studies, 9(1), a311.

Lucheli, I. &Masese, W. (2009). Schools' disaster preparedness poor. Nairobi: Standard digital.

Mwangi, P. K. (2014). Factors influencing implementation of fire disaster risk reduction in public secondary schools in Nyandarua south district, Kenya.

Mwenga, S. (2008). Safety preparedness of secondary schools in Kyuso District, Kenya. M.Ed Thesis, K.U.

Mutua, E. M. (2016). School-based factors influencing fire safety preparedness in public secondary schools in Kenya.