

## Investigation of Fire Safety Effectiveness of Markets Building in Bauchi Metropolis Bauchi State Nigeria

Umar Muhammad

*Department Of Building, Abubakar Tafawa Balewa University Bauchi, Nigereria*

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**ABSTRACT** The research aimed to investigate fire safety effectiveness in Wunti market building in Bauchi Metropolis. In order to determine its effectiveness in markets building, the research problem overtime there are numerous fire incidences that occur frequently in Wunti market which resulted to loss of lives, properties, rased down shops and worth millions of naira. The research gap is to ensure enabling environment where equipment provision, effectiveness and safety is adequate. Data were collected through the use of questionnaires and field survey to analysed the results by using SPSS 5 -Likert scale, descriptive statistic i.e. the frequency, percentage, standard deviation, mean and tables was used in analysing the results collected, each questions from questionaired were three hundred and forty six questionnaire was distributed. Two hundred and eighty were able to accessed and returned where sixty six were not returned which one hundred and eighty goes to male and one hundred goes to the female i.e. 52% and 28.9% respectively. The research results found that there is least adequate of firefighting equipment provision in markets building in Bauchi metropolis, it was concluded that half of the respondents has witness fire incidence frequently in the markets and no adequate provision is made to address the issue. In conclusion the identify equipment availability were found some present and absent. Hence, some that were absent and not functions, further researcher should include some were not functions and absent to see that they are performing in the future. We recommended that the fire safety effectiveness should not be ignore for any reason because fire may occur at any time. The fire service should organized fire safety training for both shops — owner and shop — occupants and make it compulsory for everybody to attend so that in the event of emergency they will be able to escape from risk of injuries, loss of life and properties. However when this and other measures are put in place by the shops -owners and properly managed the results of fire incidences will no hand reduce.

**Keywords:** firefigting equipment awareness,

effectiveness and enabling safety environment of Wunti market for shops occupants.

### I. INTRODUCTION

Fire is often described as the greatest servant but worst master; difficult to control when it turns into inferno- as it wrath on, burning and scorching everything in its path. It has no respect for man; rich and poor alike (Foatei, 2019).

Fire requires an ignition source and a combination of oxygen and fuel to sustain the fire John & Semen (2017), the fuel in this case is anything flammable or combustible stored or kept in a markets building or in an open space including furniture, curtains, clothing, beddings, paper, and inflammable liquid. The more combustible these are and the more of them you have in the room or in an open space, the more severe the resulting fire (Ohemeng, 2016).

In Nigeria, some possible incidences of fire outbreak could be as a result of several factors to include frequent power outages, power surge, electrical sparks, illegal connection of electricity, improper electrical fittings, substandard materials, defective or indoor use of generators, and negligence of shop-occupiers leaving minors at markets without supervision, storing up adulterated fuel at markets building, Arson and ignorance (Aqua group, 2016).

According to Jones (2016) the rise in fire outbreak could be traced to intense harmattan, overloading of electrical appliance on the same fuse and improper electrical installation in markets places. Jones (2016) continues that illegal, improper and old wiring system as well as using gas cylinder for cooking in markets building or naked fire is some of the major causes of frequent fire outbreaks. Another cause of fire disasters is ignorance. Poor awareness of what fire is and how it can be prevented has led to a lot of fire outbreak (2017) ignorant of firefighting gadgets will make you to ignore gadgets that can save your property during a fire outbreak. Another cause of fire disasters is ignorance. Poor awareness of what fire is and how it can be prevented has led to a lot of

fire outbreak (Susan 2017).

According to Hassan (2016) in the Nigeria Fire Service identified and implemented some best practices in fire prevention, the best practices were classified into eight major categories, namely, identifying and analyzing high risk of shopkeepers and customers, increasing staffing and training on fire prevention programs, making markets safety places to shopkeepers and customers and securing properties, conducting extensive safety culture of shop-occupiers programs, directing programs to the high-risk elderly population, developing safer consumer products, increasing the use of fire stations for community fire safety programs, and coordinating national and local fire safety campaigns. In the category of fire safety campaigns, according to Bauchi fire service (2020) identified and used some selected local radio stations and newspapers to spread fire safety messages to ethnic populations who were the prime target for those media. The campaigns were intended to raise awareness of the fire problem, increase smoke alarm ownership, and change fire safety behaviors. In this regard, ability to recognize the danger of fire outbreaks, ability to know what to do to prevent fire outbreaks as well as what action to take in case a fire outbreak occurs aids effectiveness fire safety management.

All fire outbreak disaster preparedness is based on the knowledge about fire hazards, the likelihood of different causes of fire outbreaks and the likely effects on the built and natural environment Comolotti (2017), argued that people with knowledge about fire disasters will acquire equipments such as fire extinguishers, fire blankets and smoke detectors among others to support response activities. They also prepare their families and employees to take immediate action to prevent deaths, injuries and destruction of Life and properties whenever fire disaster strikes. According to Semen (2015), Safety regulations in United Kingdom impose mandatory fire safety trainings to all Shopkeepers, a construction area or any other busy area which helps provide shopkeepers with crucial information, develop skills such as those used in operating fire extinguishers and proper escape behaviors, unfortunately, this is not the practice in developing countries of the world like Nigeria where ignorance and lack of knowledge of what fire is and how it and lack of awareness can be prevented is the order of the day.

Effectiveness of fire safety requires recognizing all the potential risks associated with the premises and effectively carrying out an assessment of the adequacy of the measures provided or needed to combat the risk Maxwell

(2009).According to Buchanan (2018), a risk analysis indicates the proneness to fire outbreak and spread of fire and thus decide what measures must be taken to provide suitable arrangements for protecting people in the premises from fire, and should ensure that the risk of fire occurring is reduced to the absolute minimum as well as the risk of fire spreading is minimized.

According to experts, fire safety is considered to be dependent on: How individuals behave, how organizations behave, the vulnerability of the people exposed to the fire, the fire properties of products, the technical fire safety in the building, the fire services ability to respond to a fire (Jennings, 2017). Focusing on any one of these points and neglecting the others will lead to suboptimal safety Charles( 2018), Over recent decades public buildings have become larger and more complex, fire compartments have increased greatly in size and more people can be taken in than before (Patrick & Oscar 2019).

The great danger with fires in public buildings is if fire gases spread to corridors, stairwells and other open spaces, this makes evacuation more difficult and allows the fire to spread to other parts of the building, the rapid rate at which fires develop means that people often fail to realize how quickly they must respond to a fire, The division of responsibility among those involved is also a problem, visitors rely on those responsible for the activities in the building, However, personnel in a building often lack proper training on how to deal with a fire (Kelvin & Adeoti 2020).

Fire protection in public buildings is dependent on organizational factors and technical measures. The fire fighters play more important role for life saving in public buildings than in homes, the early detection of any fire is clearly vital in public buildings. and information are also important so that personnel can deal with a fire in the initial stage of development (Olaoye and Ahmed 2019).

A fire can be defined as a potentially damaging physical event, phenomenon or human activity which may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation. Fire can include hidden conditions that may represent future threats and can have different origins.

Risk is usually associated with the inability of men to manage fire events that may eventually lead to negative consequences like destruction of the environment, socio-economic activities, properties and losses of lives Niekerk (2002), risk in terms of disaster management has a

specific focus (UN, 1992), It can be defined as the probability of harmful consequences (ISDR, 2002), or expected losses (lives lost, persons injured, damage to property and/or the environment, livelihoods lost, disruption of economic activity or social systems) due to the interaction between humans, hazards and vulnerable conditions.

The Aim of the study is to investigate the fire safety effectiveness of Wunti market in Bauchi metropolis with a view to propose strategy for preventing fire incidences.

The research aimed at investigate the fire safety effectiveness and performance of markets building in Bauchi metropolis Bauchi State Nigeria. The research is propelled to investigate and find answers to the following questions:

1. To identify the availability of equipment provision by shop - owners in Wunti market Bauchi metropolis
2. To investigate the level of shop-occupiers awareness on fire prevention in the study area
3. To determine the fire safety equipment effectiveness in the study area
4. To examine the relationship between fire safety effectiveness and shop-occupiers awareness in the study area.

## II. FIRE SAFETY AWARENESS AND MANAGEMENT

Woon & C.O (2015), reiterated that the Part B of schedule 1 to the building regulation 1985 is concerned with means of escape from building and fire spread within and between building must therefore be constructed so that in the event of fire:

- i. Occupants are able to reach a place of safety.
- ii. They will resist collapse for a sufficient period to allow evacuation of the occupants or prevent further rapid fire spread.
- iii. The spread within building is spread to a minimal level.

The first requirement is met by providing an adequate number of exits and protected escape routes, the second is met by setting reasonable standards of fire resistance for the structural elements of the building, and the third is met by dividing the building into components and requiring higher standards of fire resistance of the walls and floor bounding a component.

Many a times, when this entire are put in place, the advent of fire also wreak havoc because of ignorance of occupants and users of buildings. The havoc wreck by fire is often blamed on the inefficiency of the federal or state fire service; lack of equipments, ineffective communication, lack of water supply and competent fire fighter was earmarked as the possible problem of fire incident

at the domestic wing of the Muritala Mohammed Airport Lagos on May 10, 2000 (Arnold & Jim. 2005). He also attributed the same cause to the razed down Clean John House on same date. Nevertheless, the author fails to enumerate what the occupants of the buildings were able to put in place before fire incident went out of hand. Generally except in case of willful act or arson, fire usually start from a point and spread to other part of the building. The Aqua group (2005), highlighted that the understanding of combustion will help in understanding how fire spread, and also the major fuel of fire is provided by the building contents, when there is adequate fire safety awareness, the tendency of fire outbreak can be greatly reduced, or even in case of fire, the occupant will know what to do in other to escape from the building and also how to initiate a firefighting approach before the fire service men will arrive at the scene.

Fire safety awareness can be achieved by employing necessary training of building occupants about the possible causes of fire, use of firefighting equipment in the building, the evacuation procedure, and possible fire attack procedure (Semen 2018). All these are part of major activities of fire service department in the developed country. Websites were developed and monthly e-news letter is always available to educate the people about fire occupants training and other relevant information, example is the monthly e newsletter of division of fire safety, Vermont Department of public safety; fire and evacuation guideline publication of Queens Land Government, department of emergency services; this publications are aimed at bringing fire and safety awareness to the public (Bruckner & Jan K, 2018). Reports that the clearest finding of their research is that training and orientation of workers and managers in safe working practices reduces accidents.

The designer must have an understanding of the necessity and problem of management. The manager in turn must have a detail knowledge and understanding of the building, its services and its safeguards, to assist not only in the day-to-day running of the building but also to help in any emergency that may arise fire safety management entails:

- i. Regular maintenance of the warning system
- ii. Regular maintenance of the direction and escape signs.
- iii. Regular maintenance of fire appliances.
- iv. Maintenance of unimpeded escape routes.
- v. Training of staff and occupant in evacuation on procedures and

vi Training of staff and occupants in first aid firefighting ( Aqua group 1984 ).

### III. METHODOLOGY

The method employed for this study involved the use of relevant literatures related to the study such text books, journals, magazine and the use of internet. The sampling frame is the shop-occupiers living in wunti market were the shops arranged with established serial reference numbers

of about three thousand five hundred (3,500). The sample size would be 346 according to the Krejcie and Morgan table, (1970). The total number of questionnaire distributed is 346 and the number questionnaires return is 280 representing 80.9%. The result was analysis using statistic packages for social science SPSS where frequency mean and standard deviation were used to interpret the result

### IV. RESULT AND DISCUSSION

**Table 2: Age group of the Respondent**

Age group	Frequency	Percent	Valid Percent	Cumulative Percent
Under 20 years	26	9.3	9.3	9.3
21 to 30 years	130	46.4	46.4	55.7
Over 30 years	124	44.3	44.3	100.0
Total	280	100.0	100.0	

The table 2: shows the demographic information profile of the respondents which indicates that majority of the respondents age group ranges between 21 to 30 years with the highest frequency and percentage of 130(46.4%) followed by the respondents with over 30 years with the frequency and percentage of 124(44.3%) respectively.

**Table 3: Gender of the Respondent**

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Male	180	64.3	64.3	64.3
Female	100	35.7	35.7	100.0
Total	280	100.0	100.0	

The table 3: shows the demographic information profile of the respondents which indicates that majority of the respondents gender is male with the highest frequency and percentage of 180(64.3%).

**Table 4: Level of Education of the Respondent**

Qualification	Frequency	Percent	Valid Percent	Cumulative Percent
Primary/Islamiyya	52	18.6	18.6	18.6
SSCE	78	27.9	27.9	46.4
Certificate	78	27.9	27.9	74.3
Diploma	48	17.1	17.1	91.4
HND/NCE	24	8.6	8.6	100.0
Total	280	100.0	100.0	

The table 4: shows the demographic information profile of the respondents which indicates that majority of the respondents obtained SSCE and certificate qualification with the frequency and percentage of 78(27.9%) each followed by the respondents with Primary/Islamiyya qualification with the frequency and percentage of 52(18.6%).

**Table 5: Period been in the Market**

Period	Frequency	Percent	Valid Percent	Cumulative Percent
Under 10 years	130	46.4	46.4	46.4
11-20years	78	27.9	27.9	74.3

21-30 years	48	17.1	17.1	91.4
Above 30 years	24	8.6	8.6	100.0
Total	280	100.0	100.0	

The table 5: shows the period in which the respondent been in the market which indicates that majority of the respondent have been in the market for not up to 10 years because is having the highest frequency and percentage of 130(46.4%), then followed by the respondents who have been in the market for 11 — 20 years with 78(27.9%) respectively.

**Objective one: availability of equipment provision and functionality**

**Table 6: Equipment Provision**

S/N	Equipment	Availability	Functionality	Remarks on Functionality
1	Smoke detector	0	0	Not available
2	Heat detector	0	0	Not available
3	Sprinkler	0	0	Not available
4	Fire alarm	50	30	Not well function
5	Portable fire extinguisher	100	50	Mostly intact and visible
6	Fire exit	50	20	Mostly locked
7	Fire hydrant	0	0	Not available
8	Fire buckets	20	10	Mostly Old
9	Fire hose reel	15	5	Very old and unlabeled
10	Emergency lightly system	0	0	Not available

The table 6: Result shows that smoke detector, heat detector, sprinkler, fire hydrant and Emergency lightly system. Therefore, sprinkler and fire hydrant are not available in the market.

On other side buckets are available in the market, portable fire extinguisher, fires exist and fire alarm is also prominent in some areas in the market. In term of functionality, fire alarm and portable fire extinguisher are rated functional in the market but not enough to curtail the spread of fire. The fire alarms are not intact and not enough to draw attention in time of fire outbreak. The fire exist are locked and most of the areas are without fire exits, so in case of fire, there will be a collateral damage.

**V. DISCUSSION OF RESULT FOR AVAILABILITY OF EQUIPMENTS PROVISION AND STANDARD IN WUNTI MARKET BULDINGS BAUCHI METROPOLIST:**

Table 6: shows that there is no available smoke detector, heat detector, and sprinkler in the market

base on the checklist found in the market. The result also found that there fifty (50) fire alarm in the market thirty (30) out of 50 were not well function, there are one hundred portable fire extinguisher available in the market but fifty are not functional, they are mostly intact and visible, the fire exit available in the market are fifty (50) and twenty (20) are not well functioning, they mostly locked, there is no any fire hydrant in the which not available, twenty fire bucket were found in market but ten were not functioning which is mostly old. The implication of this result indicate that whenever there is fire outbreak I will result to loss of properties and even life because there is not available firefighting equipment in the market and some of the exit were locked. The result indicates that there is least adequate to support this finding.

**Objective two: Level of awareness on fire prevention**

**Table7: Level of awareness on fire prevention**

	Mean	Std. Dev	Rank	Decision
Fire Exits	4.0214	1.12621	1	Excellent

Common causes of fire	3.7714	1.40324	2	Excellent
How fire and smoke spread in building	3.7571	1.42115	3	Excellent
Types and classification of fire	3.5786	1.14264	4	Excellent
Fire safety features within the building	3.2214	1.39157	5	Good
Human behavior	3.1929	1.39583	6	Good
Action on discovering fire	2.9714	1.03656	7	Good
How to use fire extinguisher	2.6000	1.13466	8	Good
Emergency evaluation procedures	2.4429	.98934	9	Fair
Halon gas system	2.2643	1.21290	10	Fair
Fire Buckets	2.0500	1.29141	11	Fair

(N = 280)

Table 7: The result above shows the mean scores and the standard deviation of level of awareness on fire prevention the Fire Exits with a mean score of 4.0214 and standard deviation of 1.12621 which is rank 1<sup>st</sup>, a mean score of 3.7714 and standard deviation of 1.40324 represents the common causes of fire and is rank 2<sup>nd</sup>. How fire and smoke spread in building with a mean score of 3.7571 and Standard deviations of 1.42115 is rank 3<sup>rd</sup>. Types and classification of fire with a mean 3.5786 and standard deviations of 1.14264 and is rank 4<sup>th</sup> which are agreed to be excellent. Fire safety features within the building with a mean of 3.2214 and standard deviations of 1.39157 is rank 5<sup>th</sup>. Human behavior 3.1929 and standard deviations of 1.39583 is rank 6<sup>th</sup>, Action on discovering fire with a mean of 2.9714 and standard deviations of 1.03656 and is rank 7<sup>th</sup>, How to use fire extinguisher with a mean of 2.6000 and standard deviations of 1.13466 which are agreed to be good. Emergency evaluation procedures with a mean of 2.4429 and standard deviations of 0.98934 and is rank 9<sup>th</sup>, Calling and liaison with the fire service with a mean of 2.2643 and standard deviations of 1.21290 and rank 10<sup>th</sup> and Fire Buckets with a mean of 2.0500 and standard deviations of 1.29141 and rank 11<sup>th</sup> which are agreed to be Fair.

**DISCUSSION OF RESULT FOR LEVEL OF AWARENESS ON FIRE PREVENTION:**

The Table 7: The result above shows that fire exits with a mean of 4.0214 rank 1<sup>st</sup> which excellent, common causes of fire with a mean of

3.7714 rank 2<sup>nd</sup> which also excellent, how fire and smoke spread in building with a mean of 3.7571 rank 3<sup>rd</sup> which excellent, and types and classification of fire with a mean of 3.5786 rank 4<sup>th</sup> which also excellent. Fire safety features within the building with a mean of 3.2214 rank 5<sup>th</sup> which good, human behavior with a mean of 3.1929 rank 6<sup>th</sup> which good, action of discovering fire with a mean of 2.9714 rank 7<sup>th</sup> which is good and how to use fire extinguisher with a mean of 2.6000 rank 8<sup>th</sup> which also good. Emergency evaluation procedures with a mean of 2.4429 rank 9<sup>th</sup> which fair, halon gas system with a mean of 2.2643 rank 10<sup>th</sup> which is fair and fire buckets with a mean of 2.0500 rank 11<sup>th</sup> which is also fair base on the respondents opinion.

Comparing with previous researched there is similarity based on what was been discovered that majority of the respondent have aware on how to used equipment as regard to fire. Despite the fact that there are many of the respondent with technical background, this has little or no effect on the level of training received by the respondent. This is also in line with the Ayeni and Hassan (2014) analyzed that building occupants in markets, residential are not ignorant of the use of common fire extinguisher, and the issues is that most of the firefighting equipment are not enough to fix the fire incidences. Where the implication of this researched some equipment indicates that some where not functioning well and some are not available like dry riser, sprinkler system, fire hydrant, fusible link door, wet riser and halon gas system

**Objective three: Equipment effectiveness**

Table8: Equipment effectiveness

	Mean	Std. Deviation	Rank	Decision
Fire investigation	4.2714	1.14749	1	Excellent
Fire Alarm	3.6786	1.35079	2	Excellent
Portable Fire Extinguisher	3.6786	1.35079	2	Excellent

Fire Hose Reel	3.1929	1.39583	3	Good
Emergency response	2.6000	1.13466	4	Good
Fusible link door	2.6000	1.13466	4	Good
Heat Detector	2.4429	.98934	5	Fair
Sprinkler system	2.2500	1.29030	6	Fair
Fire hydrant	2.2429	1.19660	7	Fair

(N = 280)

Table 8: The result above shows the mean scores and the standard deviation of the equipment effectiveness. Fire investigation with a mean score of 4.2714 and standard deviation of 1.14749 which is rank 1<sup>st</sup> and agree to be excellent equipment effectiveness in the study area. A mean score of 3.6786 and standard deviation of 1.35079 represents the Fire Alarm is rank 2<sup>nd</sup>, and Portable Fire Extinguisher and is rank 2<sup>nd</sup> which are excellent equipment effectiveness. Fire hose reel with a mean score of 3.1929 and standard deviations of 1.39583 is rank 3<sup>rd</sup>, a mean score of 2.60000 and standard deviation of 1.13466 represent Emergency response, and, Fusible link door which are rank 4<sup>th</sup> each and agree to be good equipment effectiveness. Heat detector with a mean score of 2.4429 and standard deviation of 0.98934 is rank 5<sup>th</sup>, a mean score of 2.2500 and standard deviation of 1.29030 represent Sprinkler system and is rank as the 6<sup>th</sup>, Fire hydrant with a mean score of 2.2429 and standard deviation of 1.19660 is rank the 7<sup>th</sup> which are agreed to be fair equipment effectiveness.

**DISCUSSION OF RESULT FOR EQUIPMENT EFFECTIVENESS:**

The Table 8: The result above shows that Fire investigation with a mean score of 4.2714 rank 1<sup>st</sup> and agreed to be excellent equipment effectiveness in the study area. Fire Alarm with a mean of 3.6786 rank 2<sup>nd</sup> which is excellent,

portable fire extinguisher with a mean score 3.6786 rank 2<sup>nd</sup> which is excellent. Fire hose reel with a mean score of 3.1929 rank 3<sup>rd</sup> which is good, emergency response with a mean score of 2.6000 rank 4<sup>th</sup> which is good, fusible link door with a mean score of 2.6000 rank 4<sup>th</sup> which is good. Heat detector with a mean score of 2.4429 rank 5<sup>th</sup> which fair, sprinkler system with a mean score of 2.2500 rank 6<sup>th</sup> and fire hydrant with a mean score of 2.2429 rank 7<sup>th</sup> which fair equipment effectiveness. Comparing with previous researched there is similarity based on what was been discovered that majority of the respondent have aware on how to used Firefighting equipment which are provided in market buildings to provide means of controlling fires at the initial stages even before personnel from the fire departments are called unto the scene of the incident. Such equipment provides first-aid means to extinguish flames before the situation is aggravated. A list of commonly used first aid firefighting equipment were listed in the questionnaire for the respondents to indicate whether such equipment were available in their respective hostels or otherwise. An option was also provided for those who could not confirm the existence of these equipment (Hassan, 2017). Where the implication of this research some equipment indicates they are not available like dry riser, sprinkler system, fire hydrant, fusible link door, and wet riser halon and gas system.

**Objective four: To examine the relationship between equipment of fire safety effectiveness and shop-occupiers awareness in the study area.**

Table 9: Relationship between equipment of fire safety effectiveness and shop-occupiers awareness

		Equipment effectiveness	Shop occupiers level of awareness
Equipment effectiveness	Pearson Correlation	1	.433**
	Sig. (2-tailed)		.000
	N	280	280
Shop occupiers level of awareness	Pearson Correlation	.433**	1
	Sig. (2-tailed)	.000	
	N	280	280

		Equipment effectiveness	Shop occupiers level of awareness
Equipment effectiveness	Pearson Correlation	1	.433**
	Sig. (2-tailed)		.000
	N	280	280
Shop occupiers level of awareness	Pearson Correlation	.433**	1
	Sig. (2-tailed)	.000	
	N	280	280

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

According to Dancy and Reidy (2007), correlation coefficient is a statistical measure of the strength of a monotonic relationship between paired data; which can be interpreted base on the closer is to  $\pm 1$  the stronger the monotonic relationship. Dancy and Reidy (2007) proposes a class interval of: 0.00 — 0.19 = Very weak; 0.2 — 0.39 = Weak; 0.4 —

0.59 = Moderate; 0.60 — 0.79 = Strong; 0.80 — 0.1.0 = Very strong.

Table 9: shows the relationship influence of fire safety effectiveness and shop-occupiers awareness. The influence reveals that the equipment of fire safety effectiveness on shop-occupiers awareness is moderate significance ( $r = 0.433^{**}$ ;  $0.00 < p < 0.05$ ; 28

## VI. SUMMARY

The research results clearly indicate that the availability of equipment provision and functionality base on the result found smoke detector, heat detector, sprinkler, fire hydrant and emergency lighting system were totally not found in the market. Fifty Fire alarm was found but thirty were not well functioning, one hundred portable fire extinguisher were found in the market but fifty were mostly intact and visible, also fifty fire exit were located in the market but twenty are mostly locked, twenty fire buckets were found on the market but ten are mostly old, fifteen fire hose reel were found but five were found to be very old and unlabeled.

The result found on the level of awareness on fire prevention base on the respondent those that are found to be excellent were fire exits, common causes of fire, how fire and smoke spread in building and types and classification of fire. Those that are found to good are fire safety features within the building, human behavior, action on discovering fire and how to use fire extinguishers. These that are found to be fair are emergency evaluation procedures, halon gas system and fire buckets.

The result found on the equipment effectiveness those that found to be excellent were fire investigation, fire alarm and portable fire extinguishers. Those found to be good are fire hose reel, emergency response, and fusible link door and those found to be fair are heat detector, sprinkler system and fire hydrant.

The relationship between fire safety effectiveness and shop-occupiers awareness is

moderate significance ( $r = 0.433^{**}$ ;  $0.00 < p < 0.05$ ; 280).

## VII. CONCLUSION

The identify availability of equipment provided by the shop-occupiers in the study area are: Smoke detector, Heat detector, Sprinkler, Fire alarm, Portable fire extinguisher, Fire exit, Fire hydrant, Fire buckets, Fire hose reel and Emergency lightly system

The level of awareness on fire prevention base on the respondent those that are found to be excellent were fire exits, common causes of fire, how fire and smoke spread in building and types and classification of fire. Those that are found to good are fire safety features within the building, human behavior, action on discovering fire and how to use fire extinguishers. These that are found to be fair are emergency evaluation procedures, halon gas system and fire buckets.

The fire safety equipment effectiveness those that found to be excellent were fire investigation, fire alarm and portable fire extinguishers. Those found to be good are fire hose reel, emergency response, and fusible link door and those found to be fair are heat detector, sprinkler system and fire hydrant.

The relationship between fire safety effectiveness and shop-occupiers awareness is moderate significant ( $r = 0.433^{**}$ ;  $0.00 < p < 0.05$ ; 280).

## VIII. RECOMMENDATIONS

1. Government or market leaders should provide available and well-functioning firefighting



equipment to the market

2. Government and market leaders should organized a training to train the shops occupiers on how use the fire firefighting equipment
3. There should be enough fire exit in the market as means of escape whenever there is fire outbreaks within the market as the present fire exits are not enough in market and some were locked.
4. Government through market leaders should organized and trained the shops occupiers the awareness on fire prevention so that they can be able prevent there self and there properties whenever there is fire out breaks in the market.
5. At least each shops occupier should provide one fire extinguisher attached to their shops for easy way attacking fire when it break
6. Well-functioning firefighting equipment should be provided to the market

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