

RESEARCH ARTICLE

# Fire Disaster Preparedness of Public Buildings in Ibadan Metropolis, Nigeria

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## Abstract:

Fire outbreaks have risen to a worldwide attention in recent years as both an environmental and economic issue. Despite the fact that nothing could be sustainably done to completely stop the occurrence of fire disaster, something can be done to mitigate the spread. It is in line with this acuity that the study accessed the level fire preparedness in the events of fire disasters in public buildings in Ibadan Metropolis, Nigeria. Fire disaster preparedness was conceptualized in this study as the provision of fire fighting apparatus, technical knowhow to operate the apparatus by occupants and their knowledge of municipal firefighting authorities. Forty-three (43) public buildings and one hundred and eight (108) building occupants were conveniently selected and sampled. The cross-sectional survey gathered data through direct observation of the buildings and questionnaire administration. Questionnaires elicited responses on fire safety provisions in buildings, occupants' abilities to operate fire fighting installations by building occupants and their knowledge of municipal firefighting authorities. These indicators were holistically considered to ascertain the level of fire disaster preparedness of buildings in the study area. General situation indicated that only banks, leisure and health public buildings were well prepared in the event of fire disaster – as evident in their commitment to provide and maintain fire safety equipments while administrative, educational and religious buildings are not well prepared to manage fire outbreaks. according with the law. Also imperative is the compulsion of public building occupants to participate in training on fire disaster safety, first aid and evacuation procedure.

A majority (73.1%) of the occupants of public buildings lack knowledge of evacuation plan for their building in the event of a fire, thus signifying that in the event of fire, occupants might not only be exposed to the direct dangers from the fire but also to potential pandemonium which might arise due to an uncoordinated evacuation. The results from the study suggests that it is imperative for fire safety provisions in building codes to be reviewed and implemented with defaulters punished in according with the law. Also imperative is the compulsion of public building occupants to participate in training on fire disaster safety, first aid and evacuation procedure.

**Keywords:** Fire disaster, Preparedness, Mitigation, Metropolis, Fire safety installation, Safety Provision

## Introduction

Fire outbreaks have risen to a worldwide attention in recent years as both an environmental and economic issue (Agyekum et al., 2016). Wahab (2015) expressed that a complete protection of life and property from fire in the built environment is unachievable, and even if achievable, it is prohibitively expensive. The complexity of fire as capture by Iyaji et al. (2016) is that its occurrence is mostly inevitable due to inherent human complexity, particularly man's attitude to handling things. In a world with cities constantly experiencing growth of varying proportion where there are fast growth in urban places of all sizes from small market centres to mega-cities, Wahab (2015) perceived that this increased developments and interaction heightens the potentiality of fire occurrences, consequently causing fire disasters. Globally, many fire incidences have been reported. Most devastating as document in literature include among others the – fire disaster that befell Sweden in 1998 claiming 63 lives (Cassuto and Tarnow 2003), collapse of the World Trade Centre in 2001 (Cowlard et al., 2013), Greenfell Tower Fire, London in 2017 and Mumbai Kamala Mill fire in 2017 (The Indian Express, 2017). Sadly, Nigeria like many other countries has over the years experienced its fair share of fire disaster. In Lagos, National Emergency Management Agency (NEMA) reported the average number of deaths between 2009 and 2014 due to fire disaster in buildings to be 98.4.

Izuora (2017) noted that incessant fire in Nigeria has cost the National economy about N6 trillion in the last 5 years, also noting cities like Lagos, Kano, Port Harcourt and Abuja as the major cities seriously affected. Even though Iyaji et al. (2016) stressed that though the likelihood of fire disasters in buildings are not preventable, technical measures could be employed to abate the spread, unfortunately, according to Kihila (2017) many buildings in cities of developing countries are not equipped with the necessary firefighting facilities, which suggests that the enforcement of building codes is still a challenge. This viewpoint has been upheld in earlier studies on fire disaster in buildings such as Kachenje et al. (2010), Makachia et al. (2014), Amoako, (2014), among others which educe that lack of availability of facilities, poor conditions of the available

facilities and lack of awareness among users are among the factors for high fire risks. Nevertheless, earmarking derisory resources for or expending too little on fire safety may perhaps bring about loss of lives and properties that are inexcusable, thus, the need for striking a balance between safe and resource expenditure.

Despite the importance of fire disaster preparedness, Makanjuola, Aiyetan and Oke (2009) noted that fire safety preparedness has been a thing of neglect in most public buildings in Nigeria and this has been a contributing factor to the never-ending fire incidents. This issue has continued to generate a lot of concern among the public as well as construction professionals. Whether humans learn from history remains a subject of enormous cogitating. Unfortunately, existing literature suggest that only a little has been recorded on the levels of preparedness for specific types of disasters, particularly in developing countries like Nigeria. This therefore forms the crux of this study. It is against this backdrop, the study specifically assesses fire preparedness and mitigation provisions in the events of fire disaster in public buildings within Ibadan Metropolis, Nigeria. It is important to state at this point that public building in this study refers to buildings that are accessible to the public; this includes both the buildings funded from public and private sources.

## Conceptual framework and literature review

### *Disaster preparedness*

Disaster Preparedness provides the conceptual underpinning for this study with a view to create an entry point for the subject matter. Sutton and Tierney (2006) described the concept of disaster preparedness as measures designed to improve the capacity to carry out emergency actions so as to ensure the protection of lives and properties, and control disaster damages and disruption as well as undertake post-disaster restoration and early recovery activities. The concept according to Sutton and Tierney (2006) also includes actions aimed at improving safety of life in the face of a disaster. In their attempt to expound on disaster preparedness, Sutton and Tierney (2006) remarked that preparedness is commonly seen as consisting of activities meant for enhancing response actions and coping abilities. In light of this, this paper conceptualizes disaster preparedness as a pre-emptive action in the event of a disaster. The foregoing statement thus validates the adoption of Disaster Preparedness as the conceptual substructure upon which this study rests.

As a way of summary, fire disaster preparedness was conceptualized in this study as dependent on fire safety awareness, provision of fire safety apparatus and the knowledge of municipal firefighting authorities (see Fig.1). Fire disaster preparedness was viewed in this study as: the provision of fire fighting equipments like fire extinguisher, smoke detector, fire alarm system, sprinklers, fire extinguisher hose reel and sand-fill buckets; knowledge on how to operate the installed facilities and general fire safety and; possession of municipal of appropriate contact of municipal firefighting authority. Additional indicators for Fire Disaster Preparedness in this study include escape routes for easy evacuation in case of fire outbreaks. These indicators were therefore considered holistically to ascertain and make inferences on fire disaster preparedness of buildings in the study area.



**Figure 1:** Conceptual Framework for Indicators of Fire Disaster Preparedness  
Source: Authors' Conception (2019)

### *Literature review*

Despite the importance of disaster preparedness, Paton (2003) observed that global, only a little has been done to improve the levels of preparedness. Ejeta et al. (2015) aptly described disaster preparedness as an essential component in disaster risk reduction and it comprises of community awareness, promptness to provide appropriate responses and speedy recovery. Unfortunately, existing literature suggest that only a little has been recorded on the levels of preparedness for specific types of disasters, particularly in developing countries like Nigeria. Ayabei (2016) emphasized that buildings and other infrastructure require fire safety to aid their steady functioning, service delivery and protection of users. Sadly, Kihila (2017) noted that many buildings in cities of developing countries are not well fitted with essential firefighting paraphernalia, thus precipitating the suggestion that enforcement of building codes and bylaws still constitutes a major challenge in developing countries. This is in addition to the assertion by Ayabei (2016) that even where building codes and bylaws exist, they do not compel building managers or owners to conduct fire outbreak drills for building users so as to gain and in some cases increase their knowledge on the use of firefighting apparatuses.

Earlier studies conducted in Tanzania (Kachenje et al., 2010), Nigeria (Sankey et al., 2014), Ghana (Amoako, 2014) and Kenya (Makachia et al., 2014), all avowed that the lack of availability or inadequacy of facilities, poor states of available facilities combined with a general lack of awareness among building users are among the factors for high fire risks. Ayabei (2016) lent credence to the assertions of these earlier studies by expounding that the lack of firefighting paraphernalia, the lack of awareness on how to use the firefighting apparatuses and means against fire hazards could render attempts to control fire occurrence at their preliminary stage more or less impossible. In a study on the assessment

of fire safety practices in public buildings in western Nigeria by Makanjuola et al. (2009), they concluded that most of the public buildings are without sufficient fire fighting installation and apparatus, and oftentimes even where available, they are not operational or the building users uncertain of their functionality. Consolidating on their avowal, they noted that many occupants of public buildings not once received fire safety training, first aid fire fighting and evacuation procedure, thus concluding that their fire safety awareness incline toward zero. In a similar study by Ajao and Ijadunola (2013) on fire safety practice in Ile-Ife, Nigeria, revelations were made that less than 10% of workspace premises had fire safety apparatus such as smoke detector, fire alarm, and emergency lighting system and fire exits. As a result, concluding that there is a poor practice of fire safety in the workplaces. In another study, Consequent on this, buildings, especially those generally accessed by the public must make necessary provision for fire dousing paraphernalia as well as enrich all stakeholders, particularly the users and managers in some cases, with adequate knowledge on how best to prevent and react to fire outbreaks.

### *Policy provisions for fire disaster in buildings in Nigeria*

In Nigeria, the major fire safety regulations for buildings are provided in the Nigerian National Building Code of 2006. The safety provisions contained in Building Code includes among others the following: safety measures such as structural fire resistance, detection, alarm, and extinguishing apparatus; measures of egress encompassing configuration features and support characteristics and; general safety such as safety and means of egress parameters. Some of the other provisions in the Code include smoke detector installation at elevator lobby, provision of designated main floor level for emergency personnel for firefighting or rescue purpose (Nigerian National Building Code, 2006). Expressing its unambiguous understanding of the significance of fire safety awareness, the code highlighted the need for fire safety awareness campaign and life safety education to the general public within the jurisdiction of the Nigeria NBC scope.

No law is without criticisms. The criticisms could be in the technicalities of the law or in the apparatus of its enforcement. Substantiating this contention, Nimlat et al. (2017) explained that even though Nigerian federal laws police safety practices in the country, every so often, the effects of these laws are not felt and this is due largely to poor enforcement. Citing an instance, Nimlat et al. (2017) noted that more often than not, manufacturing industries in Nigeria see government safety standards as an attempt to increase production costs. Consequently, this sets in motion a practice of pseudo-adherence to the provisions of the law at the expense of people's safety. Ogbonna and Nwaogazie (2015) highlighting that developing nations often adopt standards modeled after technologically advanced countries, thus, making the standards complex and difficult for the developing nations like Nigeria to implement. Consequently, there is need for strict adherence with safety provisions especially fire safety in buildings by owners and users.

## Study area and methodology

Ibadan, the capital of Oyo state is a city located in the south-western part of Nigeria. The city is located approximately on longitude 3°5'E to 4°36'E of the Greenwich Meridian, and latitude 7°23'N to 7°55'N of the Equator. Ibadan region comprises of the six local government areas called Outer Local Governments or 'Greater Ibadan' or 'Peri-urban' and Ibadan metropolis – comprising of five Urban Local Government Areas (LGAs). However, the focus of this study is on Ibadan metropolis which consists of Ibadan North, Ibadan South, Ibadan Northwest, Ibadan Southwest and Ibadan Northeast LGAs. According to the 2006 census, the population of Ibadan metropolis was 1.34 million (National Population Commission, 2006).

The samples for this cross-sectional survey were public buildings as defined by the researchers in Ibadan Metropolis. Forty three (43) public buildings and one hundred and eight (108) building users were conveniently selected and sampled from the five LGAs as illustrated in Fig. 2. The selected buildings were considered to be a representation of educational, commercial, health, religious, administrative, transportation and social institutions. Using the geographical coordinates obtained from the position of the recorded using Geographical Positioning System (GPS), ArcGIS was used to ascertain whether or not the public buildings were random, clustered or dispersed. This was done to ensure that all samples taken cuts across all the local governments in Ibadan Metropolis and not concentrated in a location. Consequently, providing a validation for the samples used. Data were gathered through a one-time visitation to the field with zero attempts at variable manipulation. Consent to conduct physical observations in the buildings were sought from the appropriate authorities. Data for this study were gathered from both primary and secondary sources. Relevant literature reviews and conceptual review on fire disaster preparedness constituted the secondary data used. Primary data were gathered through checklist and structured questionnaire administrations. The checklist was used to confirm the presence of fire fighting installations such as fire extinguishers, smoke detectors, fire alarm system, water sprinklers, fire reel hose and emergency exit as entry and exits, in the public buildings as well as record of fire history while the questionnaires elicited responses from the building occupants and managements on fire safety training, technical know-how on the usage of installed fire safety equipments, knowledge of safety evacuation plan and municipal authorities. Visitors were excluded in the questionnaire administration. The collective responses from these indicators brought forth the level of fire preparedness of public buildings in the study. Finally, frequency distribution in table and chart representation was used to present the result of findings.

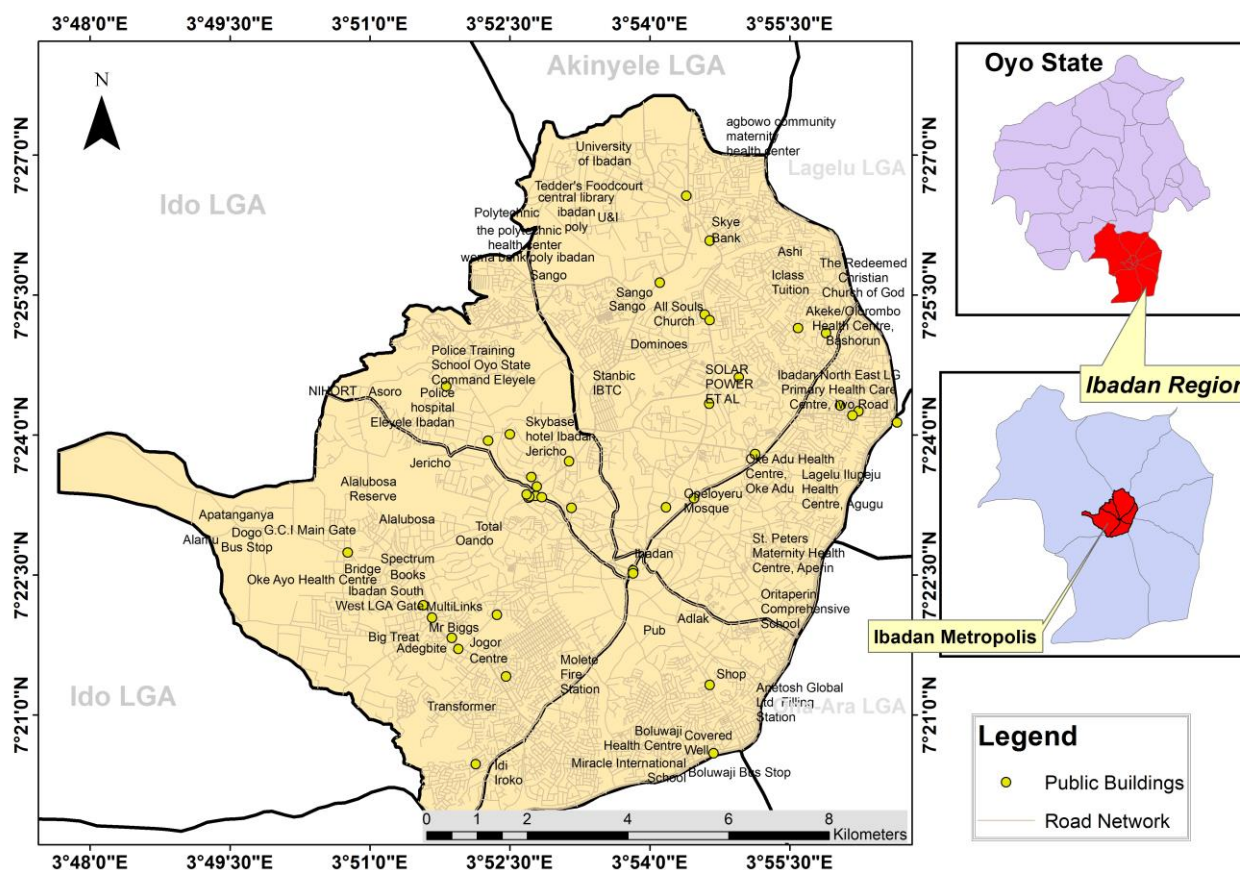


Figure. 2: Sampled Public Buildings in Ibadan Metropolis

Source: Ministry of Lands and Housing, Ibadan, 2009 (and researcher’s construct, 2019).

## Results and discussions

The results of this study are discussed under two major subheadings namely: physical observation and questionnaire elicited responses.

### *Physical observation*

A summary of the public buildings sampled in this study is illustrated in Table 1. The characteristics of the sampled buildings shows that this study attempted an inclusive survey, thus, providing a holistic perspective into fire preparedness in public buildings of varying size and height in the study area.

**Table 1:** Summary of the Public Buildings Sampled

Use of Public Building	Number of Buildings			Percentage (%)		
Administrative/Office	13			30.2		
Educational	3			7.0		
Health (Hospitals)	3			7.0		
Commercial (Banks)	14			32.6		
Leisure/Social	6			14.0		
Religious	4			9.3		
<b>Total</b>	<b>43</b>			<b>100</b>		
Use of Public Building	Characteristic of Building			High Rise (Number of Floors)		
	Bungalow	High rise	Stadia	2-3	4-5	≥ 6
Administrative/Office	3	10		7	3	-
Educational	-	3		3	-	-
Health (Hospitals)	-	3		2	-	1
Commercial (Banks)	1	13		12	1	-
Leisure/Social	-	4	2	3	1	-
Religious	-	4		4	-	-
<b>Total</b>	<b>4 (9.3%)</b>	<b>37 (86.0%)</b>	<b>2(4.7%)</b>	<b>31</b>	<b>5</b>	<b>1</b>

The result of findings from the observation is summarized in Table 2. This study revealed that 90.6% of the public buildings were fitted with emergency exits however; further observation revealed that most of the emergency exits were either bolted tight or had loads piled near them. This implies that the security of buildings from unruly intrusion is heightened at the expense of people's safety in the event of a fire outbreak. This observation is consistent with Makanjuola et al. (2009), who in their study observed that fire exits in some buildings observed in their study were locked in chains, thus, the preference for security over the main use which the exit door were meant for. Hence, in cases of fire, escaping from such building becomes difficult.

In this study, fire extinguisher ranked the second highest of the facilities installed, after emergency exits, in public buildings. More specifically, Table 2 and 3 shows that commercial, health and leisure buildings were religiously fitted with fire extinguishers while administrative, educational and religious public buildings were among those without fire extinguishers. Despite their appreciable presence, only installed extinguishers in 64.7% of the buildings were in good condition. Remarkably, commercial buildings (banks) constituted the majority with installed extinguishers in good condition. In contrast, the study observed that fire extinguishers where they were present in administrative buildings were mostly in bad conditions – conditions which ranged from expiration to missing nozzles. This observation presents an irony since a bad fire extinguisher is as good as not providing at all. This finding suggests that, many public buildings still neglect the installation and maintenance of fire extinguishers in the area under consideration.

Furthermore, Table 2 shows that the provision and installation of fire safety sign, smoke detector, fire alarm system, water sprinklers, and fire reel hose in the public buildings surveyed ranked 3<sup>rd</sup>, 4<sup>th</sup>, 5<sup>th</sup>, 6<sup>th</sup>, and 7<sup>th</sup> respectively behind fire extinguishers. The results from this observation makes obvious that even though 86.0% of the sampled buildings are multistory, fire reel hose was the least installed firefighting apparatus. This suggests that that fire reel hose is rarely considered for firefighting in the study area. A possible justification for its rare



installation could be the risk of injury or death to untrained building occupants through incorrect use. Remarkably, commercial (banks), from the physical observation carried out and the results recorded, were religious in both provision and maintenance of fire-fighting installations when compared with administrative, educational, health and religious buildings. Investigation during the research elicited that in some of the religious buildings spiritual sentiments were justification for the absence of fire fighting facilities.

**Table 2:** Public Buildings with Fire-fighting Installations

S/No	Firefighting Installations	Number of Public Buildings						Total	Percentage (%)
		Administrative	Education	Health (Hospitals)	Commercial (Banks)	Leisure/Social	Religious		
1	Fire extinguisher								
	Yes	9	1	3	14	6	1	34	79.1
	No	4	2	-	-	-	3	9	20.9
2	Fire alarm system								
	Yes	2	-	-	14	3	-	19	44.2
	No	11	3	3	-	3	4	24	55.8
3	Smoke detector								
	Yes	2	-	1	14	3	-	20	46.5
	No	11	3	2	-	3	4	23	53.5
4	Water sprinkler								
	Yes	-	-	-	2	2	-	4	9.3
	No	13	3	3	12	4	4	39	90.7
5	Fire reel hose								
	Yes	1	-	1	-	3	-	5	11.6
	No	12	3	2	14	3	4	38	89.4
6	Fire safety sign								
	Yes	2	1	2	14	4	1	24	55.8
	No	11	2	1	-	2	3	19	44.2
7	Emergency Exit								
	Yes	10	2	3	14	6	4	39	90.6
	No	3	1	-	-	-	-	4	9.4

**Table 3:** Condition of the Fire-fighting Installations

S/No	Firefighting Installations	Condition	Number of Public Buildings						Total	Percentage (%)
			Administrative	Education	Health (Hospitals)	Commercial (Banks)	Leisure/Social	Religious		
1	Fire extinguisher	Good	2	-	2	14	3	1	22	64.7
		Fair	1	1	1	-	2	-	5	14.7
		Bad	6	-	-	-	1	-	7	20.6
2	Fire alarm	Good	1	-	-	14	3	-	18	94.7

	System	Fair	-	-	-	-	-	-	-	5.3
		Bad	1	-	-	-	-	-	1	-
3	Smoke Detector	Good	1	-	1	14	3	-	19	95.0
		Fair	1	-	-	-	-	-	1	5.0
		Bad	-	-	-	-	-	-	-	-
		Good	-	-	-	2	2	-	4	100.0
4	Water Sprinkler	Fair	-	-	-	-	-	-	-	-
		Bad	-	-	-	-	-	-	-	-
5	Fire reel Hose	Good	1	-	1	-	-	-	2	40.0
		Fair	-	-	-	-	3	-	3	60.0
		Bad	-	-	-	-	-	-	-	-
		Good	2	1	2	14	3	-	22	91.6
6	Fire safety Sign	Fair	-	-	-	-	1	1	2	8.4
		Bad	-	-	-	-	-	-	-	-

As revealed in Table 4, only 5 (11.6%) – 3 commercial banks, a hospital and a religious centre (mosque), of the 43 sampled buildings have had fire disaster occurrence in the past. Further enquiries revealed that the cause of fire in all 5 cases were a result of electrical defects due to power fluctuation. As with fire disasters, their occurrences were unannounced but fortunately, the buildings were fitted with fire fighting installations thus lessening the severity of their effects though substantial loss of properties were still recorded. This further stresses the importance of fire disaster preparedness.

**Table 4:** History of Fire Occurrence

Use of Public Building	Number of Buildings	Percentage(%)
Health (Hospitals)	1	33.3
Commercial (Banks)	3	21.4
Religious	1	25.0
Total	5	100.0

## Building occupant response analysis

The descriptive summary of the respondents' demographic data is shown in Table 5. Male respondents dominated the respondents for this research. Further shown in the table was that majority of the respondents were security officers (30.6%). A possible rationale for this is that security operatives were often the first point of contact with the organizations/institutions as well as the notion that matters of fire disaster are majorly a concern of security officers. Other respondents were clerical staff; account officers and other public building occupants. Majority of the respondents were between 31-40years with varied level of academic qualification ranging from primary to post graduate education. This age group, in addition with their level of education, suggested that the research respondents possessed the capacity to understand the subject matter for which they were interviewed and administered questions on.

**Table 5:** Demography of Respondents

Demography	Respondents N=108	Percentage (%)
Sex		
Male	79	73.1
Female	29	26.9
Age		
21-30years	21	19.4
31-40years	51	47.2
≥ 41years	36	33.3
Level of Education		
SSCE	19	17.6
NCE/OND	40	37.0
First Degree	45	41.7
Post Graduate	4	3.7
Designation in building		
Security Officer	33	30.6
Clerical Staff	25	23.1
Account Officer	19	17.6
Others	31	28.7

Table 6 suggests that the level of awareness on fire safety measures by the occupants of the 43 sampled buildings is far from appreciable. As the table indicates, 68.5% of the respondents agreed that there is need for fire safety measures in buildings to ensure protection of lives and properties during fire incidence. This implies that 68.5% of the respondents are of the view that fire safety measures should be a major concern for all parties (building designers, property managers and occupants) concerns. Nimlyat et al. (2017) noted that a good level of occupants' awareness is in itself a precautionary fire safety measure. Thus, this finding can be considered as encouraging. Ironically, only 40.7% of the respondents agreed that there is need to possess knowledge on fire safety measures This presents a disturbing scenario because not only does it reflect the willingness of respondents (occupants) to commit to learning fire safety measures, it also translates to an abysmal awareness of fire safety measures among the respondents. The irony therefore lies in the fact that majority of the respondents (occupants) understand the need for fire safety measures in buildings but fail to see the need to possess knowledge, as individuals, on fire safety measures. Knowledge on fire safety measures when possessed will to a large degree increase ones chances of survival in the event of a fire outbreak.

In addition, 41.6% of respondents indicated to having an adequate knowledge on how to use installed fire safety apparatuses. This implies that 74.9% of the respondents possess knowledge on how to use one or more fire safety installation. Also from the results in Table 6, 48.1% of the respondents have received at one point in time, fire safety enlightenment in seminars organized by their management while a majority (51.9%) had never. Thus, it can be deduced that a fraction of the 74.9% respondents with fire safety operation knowledge gained their knowledge through other channels not related to the public building where they are occupants. This finding clearly shows that most of the managements of public buildings in the study area fail to instill in their personnel, the knowledge of fire safety practices, consequently, endangering their lives as well as the lives of prospective visitors to the building. Additionally, majority of the respondents

(73.1%) do not have knowledge of their buildings' safety evacuation plan in the event of a fire. This suggests that in the event of fire outbreaks, occupants of most of the public buildings will be presented with a situation where their reaction will be impulsive and this might affect their chances of possible survival. Finally, only 36.1% of the respondents indicated that they possess contact information of fire fighting service in charge of the municipality where their building is sited. A possible justification for this low percentage is the general but perfidious believe that matters of safety and security are limited to security officers alone.

**Table 6:** Awareness of Fire Safety Measures

Item	Description	Frequency	Percentage %
<b>1.0</b>	Awareness on fire safety measures		
<b>1.1</b>	There is need to possess knowledge of fire safety measure		
	Agree	44	40.7
	Unsure	25	23.2
	Disagree	39	36.1
<b>1.2</b>	There is need for fire safety measures in all buildings	74	68.5
	Agree	26	24.1
	Unsure	8	7.4
	Disagree		
<b>1.3</b>	Enlightenment through Seminars by management.	52	48.1
	Yes	56	51.9
	No		
<b>1.4</b>	Knowledge of fire safety evacuation plans in the building.	29	26.9
	Yes	79	73.1
	No		
<b>1.5</b>	Knowledge of how to use installed fire equipments.	45	41.6
	Adequate knowledge	36	33.3
	Fair knowledge	27	25.1
	Lack of knowledge		
<b>2.0</b>	Possess contact of Municipal fire fighting service	39	36.1
	Yes	69	63.9
	No		

## Conclusion

From the results in this study, the following result summary can be drawn:

1. Most of the public buildings (90.6%) was fitted with emergency exits even though the exits were either bolted tight or had loads piled near them.
2. Majority (79.1%) of the public buildings have fire extinguishers of varying sizes installed within them, however, only the installed extinguishers in 64.7% of the buildings where available were in good condition.
3. The study makes obvious that there is a poor acceptance of fire reel hose in multistory public buildings in the study area
4. Commercial (banks), leisure (social) and health public buildings were more committed to providing and maintaining fire safety equipment.
5. Many occupants (51.9%) of the public buildings have at no time received any form of training on fire safety measures, operation of fire

safety equipment and evacuation procedures. Hence, culminating in poor fire safety awareness.

6. Only a 36.1% of occupants possess the contact information of firefighting service in charge of the municipality where their building is located in the event of a fire occurrence.

Inferentially, the finding as suggested by the frequency distribution results generally suggest that: many public buildings still neglect the installation and maintenance of fire fighting equipments in the study area; many occupants and management personnel of public buildings lack the technical expertise and knowledge to operate firefighting installations as well as any knowledge of evacuation plan in the event of a fire; occupants of public buildings do not border to make it a point of safety duty to possess directly, the contact details of firefighting authorities, particularly in a country where there are no specified phone numbers for firefighters. This clearly shows that fire safety culture and practices still remains a thing of neglect in most public buildings in most public buildings in Ibadan metropolis.

## Recommendation

Peoples' safety in public building is not only the duty of the designers and builders of the structures, the building managers, users and occupiers are also presented with a role to play so as to ensure the highest possible level of fire disaster preparedness in the buildings. To achieve this, the study recommends the following:

1. Public building owners, users and occupiers should make certain that their building is well fitted with firefighting equipment.
2. Firefighting installations available in public buildings should be maintained frequently and adequately to avoid failure when needed.
3. Existing fire safety provisions in building codes should be reviewed periodically and implemented. Enforcement of the laws through punishment of defaulters from the safety provisions should be improved. Such punishment could be in the form hefty fine. This will ensure compulsory compliance by public building owner, users and occupiers.
4. Fire safety certificate should be issued annually from the completion of public buildings and all through their life span to ensure strict adherence to fire safety standards.

Public building occupants should be compelled to participate in regular training on fire safety, fire disaster first aid and evacuation procedure.

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