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Evaluation of Fire Disaster Preparedness in Selected Universities in Osun State Nigeria: A Qualitative Study

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Abstract. Buildings are susceptible to fire disasters all over the world, university buildings are frequently used by lots of students, staff and faculty members, this is in addition to the volume of combustible materials in the classes, offices, laboratories and students' hostels. This makes the buildings prone to fire incidents. This study investigated fire disaster preparedness in selected university buildings in Osun state, Nigeria. The study assessed firefighting equipment and facilities, training/education of building users, awareness of fire disaster preparedness, availability of water for firefighting, supply of firefighting equipment and facilities, introduction of new technology and firefighting operations, evacuation drills for building users, availability of evacuation plans, fire doors, consideration of fire disaster preparedness during the design and post-construction stages of the buildings and factors influencing fire disaster preparedness. The research adopted the qualitative method, using in-depth interview (IDI) to collect data from 15 interviewees. Manual thematic analysis was used in analysing the data. Findings revealed that fire disaster preparedness was low in the selected university buildings in Osun state, Nigeria. The study concluded that there were inadequate firefighting equipment and facilities, unavailability of evacuation plans, inadequate training of building users, low awareness, lack of new technology and firefighting operations, lack of fire doors in the buildings. The study suggested that more firefighting equipment and facilities should be provided in the buildings, inclusion of fire doors and fire exit doors, evacuation plans in the buildings, increase awareness and training of users of buildings in universities, introduce new technology in firefighting operations.

Keywords: Fire disaster preparedness, evacuation, interviewees, firefighting, thematic analysis

1. Introduction

From time immemorial, buildings have suffered from fire disasters all over the world, buildings are now being designed and built with increased complexity and with modern gadgets to aid fire prevention, fire protection, detection, suppression and evacuation from the buildings (Pu & Zlatanova, 2005). Although fire disasters are inevitable, the level of preparedness will determine the severity of the fire disaster. In spite of a lot of plans put in place for preparedness and recovery, fire still causes a lot of economic and social destruction to the fabric of the society (Nasimiyu *et al.,* 2017). The materials and technology used in constructing buildings have changed over the years. Buildings should be safe for all users whether they are designed and built with prescriptive fire codes or performance- based codes (Larusdottir & Dederichs, 2011).

University buildings are one of the type of buildings that are highly populated, possess much electrical equipment with complicated wiring and circuits, a high fire load which leaves students, staff, visitors in an arduous evacuation in case of a fire incident (Mufeng *et al.,* 2022). Universities produce professionals and specialists in different disciplines and are regarded throughout the globe to be crucial to both personal and community's aspirations. (Oyenuga *et al.,* 2012 & Subhi, 2017). The buildings depict the cultural inheritance and values of the people, host community and these buildings are used by lots of visitors, students, staff and faculty members (Xiao *et al.,* 2021).

Ogunleye & Olusola (2019) stated that FDP is a methodical process of using administrative actions, rules, effective skills and knowledge to apply techniques, laws and enhanced capacities in order to reduce detrimental effects of accidents and diminish the chances for starting a fire outbreak in institutions. Preparedness is pivotal in effective disaster mitigation and it entails appropriate planning, earmarking resources, and simulation of disaster response exercises.

Lessons from previous fire incidents have shown that the best plans against fire disasters are useless if the building users are not prepared to accept, understand and practice them. FDP is a crucial factor in averting fires in University buildings, and to make sure the University carries out its core functions, firefighting equipment and facilities help in preventing fire from spreading thereby curbing damages to the buildings and outbreaks. It is therefore important to have functional firefighting equipment and facilities in these buildings (Tozun *et al*., 2022).

Universities are also involved in community services, apart from their regular teaching and research mandates, they bring about core partnerships for their host communities, so any fire incident will also affect the communities. It is essential for universities to invest in and also develop a fire disaster preparedness plan in order to increase their readiness in case of a fire outbreak (Kapucu & Khosa, 2015).

The University of Nottingham experienced a fire disaster in September 2014, at the £20m GlaxoSmithKline Carbon Neutral Laboratory for Sustainable Chemistry (British Broadcasting Corporation, 2015). In April, 2021, a massive wildfire spread to the University of Cape Town, South Africa, destroying the Institution's library and other buildings (Wroughton, 2021). In Nigeria, 3 fire incidents occurred in Obafemi Awolowo University (OAU), Ile-Ife, Osun State in the year 2018 (Olufemi, 2018). These indicate a lack of adequate FDP in the institutions, which presents a challenge. Obasa *et al*. (2020) and Adeleye *et al*. (2020) studied FDP in commercial buildings in Imo state and Oyo state respectively, Nimlyat *et al.* (2017) worked on fire safety in high- rise buildings in Jos, there is a dearth of studies on FDP in Nigerian Universities, against this backdrop, this study will investigate fire disaster preparedness in Universities in Osun State, Nigeria.

2. Literature Review

Fire disaster happens to be one of the global, widespread, calamitous disasters. It has been a worrisome challenge to curb in developing nations (Nimlyat *et al.,* 2017). If fire is not carefully controlled, it can turn out to be noxious to the building users, the building itself and the environmental fabric at large, fire incidents in buildings have caused irreparable losses to assets and population (Moushtakim *et al.,* 2018).

Firefighting equipment and facilities like fire extinguishers, fire hydrants, fire hose reel system, automatic fire sprinkler system, fire sand buckets, wet risers, dry risers, smoke, flame, thermal, gas detectors and alarm systems, firefighting drones and robots, fire blankets, drenchers are necessary in a building. New technology like AI and inventions like firefighting sticks, fire extinguishing balls and firestop used in preventing fire from spreading between ducts, pipes, ceilings, walls and floors in buildings are very important in compartmentalising the building and fighting fire in the building are also needed (Ulu & Sahin, 2021; Okon & Njoku, 2018; Moushtakim *et al.,* 2018; Babatunde *et al.,* 2020; Dong & Lin, 2017; Gan *et al.,* 2021 & Vasanthkumar *et al.,* 2021).

Fire statistics in University buildings, particularly in students' hostels all over world is frightening and should be given rapt attention. These high fire risk facilities portray harm and expose students to grave danger (Shittu *et al.,* 2016). This is partly due to the students' low level of resilience/maturity and culture of preparedness, the high risk can also be attributed to the nature of fire load available in student's rooms (books, mattresses, shelves, cupboards, gas cookers, hot plates), inadequate means of fire emergency evacuation, cooking equipment capable of causing fire, increase in student population and the nonchalant attitude of some students regarding fire safety (Tanner & Doberstein, 2015; Shittu *et al.,* 2016 & Asigri *et al.,* 2021).

For instance, an average of 4,100 fires were reported in students' hostels in the USA between 2011 and 2015 resulting in an annual average of 35 injuries and $14,000,000 loss in assets. In China, a postdoctoral researcher died from an explosion that happened in a University Laboratory in 2015, another 3 students lost their lives in another explosion in 2018 (Engelhardt *et al.,* 2013; Asigri *et al.,* 2021 & Zhang *et al.,* 2022).

In Nigeria, Obafemi Awolowo University, Ile-Ife, Usman Dan Fodio University, Sokoto, Rivers State University, Port Harcourt, University of Calabar, Calabar, University of Maiduguri, Maiduguri, University of Lagos, Akoka, University of Nigeria, Nsukka and the University of Uyo, Uyo have experienced fire incidents in their hostels (Tijani,

2014; Joseph, 2015; Odu, 2015; Olufemi, 2018; Oby, 2021; Bitrus, 2021 & Okafor, 2022). On the 10th of December, 2021, a student of Taraba State University lost her life in a fire outbreak in the female hostel of the Institution, the fire was caused by a spark from an electrical socket (Mohammed, 2021).

The rates and levels at which fire outbreaks have affected tertiary institutions vary. It was reported that 3 fire incidents occurred in Obafemi Awolowo University (OAU), Ile-Ife in the year 2018 (Olufemi, 2018), also 3 fire incidents were also recorded at the University of Nigeria, Nsukka in 2015 (Joseph, 2015). In the same vein, the University of Calabar witnessed 3 fire outbreaks in 2022 (Okafor, 2022). In the University of Lagos, 2 fire incidents were recorded in 2014 (Tijani, 2014). The level of fire disaster preparedness as recorded by Ogunleye & Olusola (2019) shows that more than half of the students surveyed in the research showed that they had never been taught anything regarding FDP. Awareness is not made about FDP and in order for awareness to be increased, we need to tell people about FDP in order to increase their level of knowledge. Results from Ogunleye & Olusola (2019) revealed that many of the students indicated that they didn't know what to do when there is a fire outbreak, meaning that students are still ignorant and FDP is low, fire drills which are supposed to be part of school activities are not done at all.

Mugamu (2018) studied the level of FDP in South Africa and found that schools were unprepared for fire disaster. Schools do not carry out simulated fire drills as stipulated by South African Laws and some staff in school were unaware of fire preventive methods necessary to protect students in the event of a fire. The unpreparedness for fire outbreaks is as a result of their low level of fire risk perception. The school administration has, however, partly attributed their unpreparedness to insufficient funds as finances are not allocated for FDP.
The work of Zakaria *et al.* (2019) showed high level of awareness for firefighting equipment and facilities by students in Malaysian Universities. The low level of skills to combat fire by students in Universities were documented by Gong (2019); Hasan and Younos (2020); Aidoo *et al.* (2020) and Zhang *et al.* (2022) in China, Bangladesh, Ghana and the Republic of Korea respectively.

FDP in Universities can prevent, protect, detect, suppress fires, and reduce the damages, injuries and deaths likely to be caused by fire disasters. This can be achieved by ensuring necessary equipment and facilities are provided in the University buildings (Nestory, 2017). Ayonga (2016); Agyekum *et al.* (2016); Ogunleye & Olusola (2019); defined FDP as pre-fire disaster measures adopted to fortify the building and its occupants against fire. These measures and activities aim to reduce the impact of fire disasters by preparing and responding adequately. To buttress this, Njuru (2015); Ayonga (2016) and Agyekum *et al.* (2016) averred that FDP is the continuous process of planning, integrating, educating, supplying, operating, appraising and updating techniques to ensure efficacious collaboration and improvement of skills to respond to, recover from and alleviate the effects of fire disasters. It is the ability to be well prepared for, respond to, and equally reduce the harmful effects of a fire outbreak.

Agyekum *et al.* (2016) stated that FDP is aimed at increasing willingness and enhancing operating capacity for responding to fire disaster. Preparedness is very critical because the level of preparedness will go a long way to determine the capability of the institution to forestall and lessen the implication of fire disasters on the staff, students, resources, equipment, facilities and infrastructure. Ayoung *et al.* (2015); Ugwuanyi *et al.* (2015) described FDP as a document that is meticulously prepared which contains practices and procedures explicitly designed to prevent and prepare for fire disasters and respond to, recover from and palliate fire disaster when it happens. This document should be made available for all students and staff to read and assimilate and each institution must have their unique plan which will be influenced by the geographical location of the institution, size of the institution and nature of the buildings had.

Fire suppression, prevention, detection and protection systems are very important in dealing with fires (Ugwuanyi *et al.,* 2015). FDP enables various stakeholders to react properly and swiftly in terms of recovery. FDP requires making sure that the needed plans, apparatus, expertise and wherewithal for attending adequately to a fire disaster are readily available. FDP also envelopes coping when the fire disaster is over, in order to properly recover and surmount challenges after the fire disaster (Stikova, 2016; Wanjala & Onyango, 2018).

Current trends on FDP includes using Artificial Intelligence (AI), Building Information Modelling (BIM) and Internet of Things (IoT), these smart technologies are applied in FDP (fire detection, fire protection, fire prevention, fire suppression and evacuation) in buildings, as well as fire safety design, firefighters training, maintenance of firefighting equipment and facilities (Wehbe & Shahrour, 2021; Zhu *et al.,* 2020 & Perera *et al.,* 2022).

3. Methodology

This study investigated fire disaster preparedness in selected university buildings in Osun state. Qualitative research design was used in this study. Three universities were selected in Osun state, they are; Obafemi Awolowo University, Ile-Ife (federal government owned), Osun State University, Osogbo (state government owned) and Adeleke University, Ede (privately owned). Two buildings (classes/offices and hostels) in each of the universities were selected for the study, making a total of 6 buildings. In OAU, Awolowo Hall (Block 1) and Humanities II building were selected. In OSU, Science, Engineering and Technology (SET) building and Amorit hostel were selected. In AU, the Male hostel and the Faculty of Engineering were selected. These buildings were purposively selected because they were some of the oldest structures in these universities and based on their regular rate of use. The population of this study comprises students and academic staff using these buildings.

Purposive sampling was used to draw samples from the buildings selected from the universities. Purposive sampling was used because it helps in getting information from a subset of a population that share certain similar characteristics (students using a faculty building or hostel block, academic staff using classrooms, labs), purposive sampling also aims at increasing the depth of understanding the subject under investigation (Campbell *et al.,* 2020). For this study, students in their final years were considered because they have been using these buildings for a few years and can adequately provide the needed information for the study. The qualitative data was collected via interview from 15 participants (staff and final year students) in the selected three universities. Five (5) interviews were conducted in each university. The in-depth interview was conducted in English language. The interviews were recorded using a phone and the average duration of the interviews was 12 minutes. Thematic analysis was used to analyse the interviews conducted.

4. Results and Discussion of Findings

This section presents the findings of the collected qualitative data through interviews. Table 4.1 shows the background characteristics of the interviewees. Results indicated that eleven of the interviewees were male, while four were female. It can as well be observed that nine of the interviewees were within the age range 21 to 30 years, three of them were within the age range 31 to 40 years, and two still belonged to age group 51 years and above, while only one person was within age group 41 to 50 years. Additionally, OSU, OAU and AU produced five interviewees each, and out of the 15 interviewees, 6 were staff and 9 were students.

Table 4.1 Background Characteristics of the Interviewees

Interviewees	Age	Sex	Institution
1	21-30 years	Male	Obafemi Awolowo University
2	21-30 years	Male	Obafemi Awolowo University
3	21-30 years	Male	Obafemi Awolowo University
4	51 years and above	Male	Obafemi Awolowo University
5	51 years and above	Male	Obafemi Awolowo University
6	21-30 years	Female	Osun State University
7	21-30 years	Male	Osun State University
8	21-30 years	Male	Osun State University
9	31-40 years	Male	Osun State University
10	31-40 years	Male	Osun State University
11	41-50 years	Male	Adeleke University
12	21-30 years	Male	Adeleke University
13	21-30 years	Female	Adeleke University
14	21-30 years	Male	Adeleke University
15	31-40 years	Female	Adeleke University

4.1 Firefighting Facilities or Equipment

73.3% of the interviewees had at least one or more of firefighting facilities or equipment provided in their buildings. Three of the interviewees reported that no firefighting facilities and equipment were available in their buildings. Out of the eleven interviewees who had at least one or more of firefighting facilities or equipment provided in their buildings, nine of them reported they had sand bucket provided in their buildings. All the eleven interviewees who indicated that they had one or more facilities available in their buildings had fire extinguishers. Also, five of the eleven interviewees had fire hose reels available in their buildings, while five had fire alarms as well. Other available firefighting facilities listed by some of the interviewees included smoke detectors and fire blankets. In addition, six of the interviewees had about

three firefighting facilities provided in their buildings; three had four firefighting facilities, while only an interviewee had about five of firefighting facilities and equipment provided in his building. One of the interviewees who had no firefighting facilities gave the following response:

"There are no firefighting equipment and facilities in this building; it is as if there has not been any equipment or facility in this building as regards to fire. There is nothing here at all, if there is a fire incident here, there will be a serious problem."

One may not be able to say that having about three or more firefighting facilities in one's building are sufficient enough to put off a fire in case of fire outbreak. However, it should help to a reasonable extent in putting out a fire in case of any outbreak. One of the interviewees put it thus:

"Yes, there are fire extinguishers, fire sand buckets, hose reels in this building, I think the firefighting equipment and facilities are okay."

4.2 Training (drills) or education organised for building users

The skills of the respondents were determined by the training or education organised for the interviewees, a good number of them have not had any training or drills on FDP. A very few of the interviewees only referred back to the theoretical orientation always given to new students when they came into the institutions. One of the interviewees commented thus:

"There is no training or seminar being done here, nothing has happened apart from the orientation about fire safety which took place in my first year. No drill, seminar or training is organised for us here. I believe the school can do more about creating awareness, the training should be intensified and not just for first year students"

Another interviewee put it this way:

"Apart from the orientation for the new students about fire disaster preparedness, nothing new, or nothing else, the orientation was just theoretical, not practical."

Although, two of the interviewees still referred to the few instructions being given to them as students in their science laboratories about fire. This differed from the orientation given generally to all part-one students. Another interviewee responded thus:

"No training is done, apart from the orientation in year one and the training or I instruction we get at the laboratory about fire, nothing else."

However, two of the interviewees who happened to be staff consented with the fact that they received trainings or education regarding fire disaster. One of them put it like this:

"There was a training in 2018 and there was another training in 2021. The 2018 training was organised by the Federal Fire Service. It was theoretical and practical, and for staff in works, maintenance and planning, and also academic and other non-academic staff. The 2021 training was planned and organised by the Osun State Fire Service, for staff and students. It was both practical and theoretical. Year 1 students were trained."

4.3 Awareness about Fire Disaster Preparedness

Awareness about FDP is very critical in fire safety. However, many of the interviewees reported no form of awareness was created to intimate them, the users of their buildings about fire disaster preparedness. One of the interviewees gave the following response:

"No awareness about preparedness for fire, there has never been any since I was here, no training about fire disaster preparedness, maybe they believe fire can't happen here."

Supportively, another interviewee responded thus:

"Awareness isn't created about fire disaster preparedness in this building. Awareness is zero here."

Several of the interviewees who accepted the fact that awareness about fire disaster preparedness was created talked about the orientation programme they had when they came in as new students. They revealed that the orientation programme encompassed awareness about fire disaster preparedness. One of them said:

"Awareness, yes, but not so much, during the orientation in year 1, awareness was created, I believed so, after that, nothing else."

4.4 Availability of water for firefighting

Almost all the interviewees reported that water was always available in enough quantity to attack any fire outbreak. Availability of water seems or appeared not to be a main challenge. Although, there was one or two exceptions to the above. One interviewee said:

"The water is not always available in this building, but outside this building, there is a reservoir we can get to fetch water with buckets."

4.5 Frequency of supply of firefighting equipment and facilities

A good number of the interviewees revealed that supply of firefighting equipment and facilities to their buildings were not always done. Few were of the opinion that a supply of firefighting equipment or facilities could be made when the need arise or when the former ones got damaged. An interviewee said:

"No firefighting equipment has been supplied here since I've been here. Nothing at all, maybe there was before I got here, but since I came around, nothing at all."

4.6 Introduction of new technology and operations

Concerning the introduction of new technology and operations to aid building users in case of fire disasters, none of the interviewees said there was anything new. This means that no new technology, equipment or operations had been introduced to support the interviewees regarding their buildings in case of fire outbreak. One of the interviewees spoke out thus:
"No new technology or gadgets in firefighting or firefighting operations, nothing like that. No updating on the gadgets here."

4.7 Organisation of evacuation drills or training for building users

Virtually all the interviewees had never witnessed any evacuation drills or training organised for them in their buildings. One of the interviewees said thus:
"No training on evacuation in this building, there are exit routes but no training on evacuation processes."
However, only one of the interviewees reported to had witnessed such as he put it thus:
"Yes, during the fire safety trainings in 2018 and 2021, evacuation drills were covered and it was done, but I believe more can be done. Additionally, ensuring that water is always available, dialing the emergency number, and evacuating the building immediately."

4.8 Availability of evacuation plans

The importance of evacuation plans in a building in case of fire disaster cannot be over emphasized. All of the interviewees revealed that no evacuation plans was available in their buildings. This implies that the level of evacuation plans for the buildings of the interviewees was at zero level. One of the interviewees expressed himself thus:
"There are no evacuation plans in this building, nothing to indicate or show the movement of the building users during a fire outbreak. We are told to leave the building during any fire incident. But there is no plan."

4.9 Availability of fire doors

Level of availability of fire doors in the buildings of the interviewees is at zero level because none of them reported to have it in his or building. An interviewee said:
"Fire doors are not available in this building; we have glass door, wooden doors, pvc doors. There are no fire doors here."

4.10 Consideration of fire disaster preparedness during the design and post-construction stages

This part addressed the second objective of this study which was evaluating the extent of preparedness for fire disaster in the design and post construction stages of the buildings in the study area. Consideration of fire disaster preparedness during the design and post-construction stages of buildings are very pertinent to the safety of the users and relevant properties. Almost all the interviewees reported that FDP was not given utmost consideration in both design and post-construction stages of their buildings. In terms of frequency, eleven out of the fifteen interviewees revealed that FDP was considered during the design and post-construction stages of their buildings. However, a lot still needs to be done in this aspect. One of the interviewees had reported that:
"Yes there is consideration for fire disaster preparedness in the design stage and in the post-construction; the availability of these equipment and facilities (hose reels and extinguishers) is a proof of that. But we need other equipment like detectors and alarms"
Another interviewee said:
"I believed fire disaster preparedness was considered in the design and in the post-construction stages of the buildings. It is considered; you can see that from the equipment and facilities available, the pipes providing water to the hose reels."
However, two of the interviewees believed that fire disaster preparedness was only considered in the stage of the design of their buildings and not in the post-construction stage. One of the two interviewees with this opinion said that:
"I believed fire safety or fire disaster preparedness was considered during the design of this building because we can see corridors and staircases to escape or leave the building during an emergency. But in the post construction stage, there is nothing at all, no equipment or facilities to fight fires."
In addition, only one of the interviewees opted for the fact that fire disaster preparedness was never considered in the design and post-construction stages of his building.

4.11 Factors influencing fire disaster preparedness

The level of FDP of any user of a building mainly lingered on the factors influencing it. All of the

interviewees had highlighted one or more factors affecting FDP in their buildings. The factors mentioned by the interviewees are explained under the following themes.

Negligence and nonchalant attitude of the management and building users

Several of the interviewees reported that the level of nonchalant attitude of the management towards FDP is high. One of the interviewees put it thus:

"Nonchalant attitude of the management, may be because they think a fire outbreak can't occur here. That is why there are no facilities here."

Also, negligence or lackadaisical behaviour of the users of the buildings needed to be checked. Many students have poor attitude in terms of level of preparedness towards fire disaster. Both the management and building users (students) have strong role to play regarding their attitude or behaviour towards FDP. Another interviewee reiterated:

"The Nigerian culture of 'I don't care' or nonchalant attitude is a factor influencing fire disaster preparedness, and it is really affecting us negatively."

This factor explained above was one major factor influencing FDP expressed in different forms by the interviewees.

Lack of awareness and knowledge

Lack of awareness was also second main factor influencing FDP highlighted by the interviewees. Many of the building users were not aware of the available firefighting facilities or equipment in their buildings, or lack enough knowledge about the usage. An interviewee gave the following response:

"Some users of the building are not knowledgeable about the use of the equipment and facilities.

III Finance and corruption

Paucity of funds to purchase adequate firefighting equipment or facilities, and the misappropriation of the available funds meant for the upkeep and financing or catering for fire disaster preparedness in terms of skills and facilities accumulation, were third major factors noted by some of the interviewees. One of the interviewees said the following in response to the issue of finance:

"Finance, may be finance reason why there is no equipment and facilities here. It is an important factor"

IV. Poor maintenance culture

Few of the interviewees noted that several of the building users and university management lacked good maintenance culture. Some of the building users vandalize the available facilities and faulty, old and worn out firefighting facilities or equipment are not replaced. One interviewee responded that:

"Lack of maintenance culture in Nigeria, maybe there were facilities and equipment and the building users vandalized them or misused them. However, even the bad ones here are not replaced"

Other factors revealed by one of the interviewees as factors influencing fire disaster preparedness included lack of firefighting equipment and facilities in buildings, cost of firefighting equipment and facilities, unavailability of trained fire personnel. In addition, one other interviewee mentioned religion as a factor influencing fire disaster preparedness. He further stated that *"you hear, God forbid, God won't allow it"* from building users even when main firefighting equipment or facilities are not available in their buildings.

In this study, FDP was evaluated in selected universities in Osun state, Nigeria. Interviews from the building users depicts that FDP was ill-prepared for in the buildings studied across the 3 universities, this study corroborates Ekong et al. (2024) who studied FDP in residential buildings in Lagos and Akwa Ibom states and discovered lack of preparedness for a fire incident. These results imply that, should a fire outbreak occur, loss of lives and properties cannot be avoided.

5. Conclusion and Recommendations

This article focused on fire disaster preparedness in university buildings in Osun State, Nigeria. Using IDI, the paper assessed firefighting equipment and facilities, training/education of building users, awareness of fire disaster preparedness, availability of water for firefighting, supply of firefighting equipment and facilities, introduction of new technology and firefighting operations, evacuation drills for building users, availability of evacuation plans, fire doors, consideration of fire disaster preparedness during the design and post-construction stages of the buildings and factors influencing fire disaster preparedness. Findings revealed that fire disaster preparedness is low in the buildings surveyed. Firefighting equipment and facilities are inadequate, no evacuation plans, fire doors in the buildings, little or no training of building users. Poor maintenance culture, finance and corruption, lack of awareness and knowledge, negligence and nonchalant attitude of the management and building users are the factors identified to be influencing fire disaster preparedness in the study area. The findings of this study also have implications for the safety of the building users across the three campuses, the lack of preparedness also puts the

building at risk in the event of a fire incident. The study recommended that the universities should come up with a policy on maintenance of available firefighting equipment and facilities, retrofitting the buildings with fire doors, provision of more firefighting equipment and facilities in university buildings, introducing new technology and operations like firefighting sticks, fire extinguishing balls, and firestop used in preventing fire from spreading between ducts, pipes, ceilings, walls and floors in buildings.

This study is limited to buildings in three universities in Osun state, Nigeria. Future studies can examine more universities. Future studies can also consider a study of more than one type of building (public buildings, residential buildings, industrial buildings).

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