IPS Journal of Engineering and Technology
ISSN: 3115-5669
IPS J. Engr. & Tech., 2(1): 203-208 (2026)
DOI: https://doi.org/10.54117/2y267a41

Students' Awareness of Fire Safety Measures in a University Building: A Case Study of a Clinical Hostel

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Abstract

This study investigated students' knowledge of fire safety measures in a university hostel building in Nigeria, aiming to identify lapses in effective fire safety management through user involvement in educational environments. The research is a case study that adopted quantitative and qualitative research approaches. Data were gathered from 165 randomly selected students using a closed-ended, structured questionnaire. Descriptive and inferential statistical analyses of the data were used, which included frequency counts and percentages. Generally, the results indicated that most of the students' lacked knowledge of some basic fire prevention and protection measures. More than half of the students (52.3%) reported high and very high awareness of the possibility of a fire outbreak in their hostel. However, in the event of evacuation during a fire accident, a relatively low percentage of the students (32.8%) showed high and very high awareness of evacuation procedures. Only 29.7% indicated high and very high awareness of the use of fire equipment. Recommendations include enhanced training programs, regular fire drills, improved signage, and strategic architectural modifications to reduce bottlenecks and improve emergency egress. The findings provide valuable insights for architects, policymakers, hostel administrators, and educational institutions, and underscore the need for a paradigm shift from reactive to proactive fire safety planning in student housing design.

Keywords: Architects, case study, educational institution, students' knowledge, university hostel

Article History
Received: 15 Nov 2025
Accepted: 08 Dec 2025
Published: 17 Jan 2026

Scan the QR code to view•

How to cite this paper: Enelichi, M., Munonye, C. C., & Udomiaye, E. (2026). Students' awareness of fire safety measures in a university building: A case study of a clinical hostel. *IPS Journal of Engineering and Technology*, 2(1), 203–208. https://doi.org/10.54117/2y267a41

1. Introduction

Fire outbreaks in student hostels continue to be a recurring challenge in Nigeria and worldwide, often resulting in loss of life, property damage, and disruption of academic activities. As these facilities become increasingly complex in design and occupancy, ensuring fire safety is paramount for the protection of human life and property. Recent incidents and empirical studies have raised concerns about the adequacy of existing fire safety measures in student hostels. A fire outbreak is defined by Babatunde et al (2020) as an uncontrolled and frequently unexpected fire event.

The occurrence of fire outbreaks is experienced in school buildings in several countries around the world, resulting in scores of lives and properties being lost (Ndetu & Kaluyu, 2016). A public building is essentially part of the economy and often seen as driver of economic growth, particularly in developing countries. Student hostels are considered among the most valuable building types due to their high occupancy density (Adebayo & Onuoha, 2021). Therefore, the design and construction of buildings that house students must give top priority to the safety and general well-being of the students. Residential facilities like student hostels should be designed and constructed with strict compliance with established fire safety standards to safeguard life and property of the occupants. Research shows that fatality that arises from fire outbreaks in public buildings is often higher than in many other building types, due to the high occupancy and the visitors to the buildings on a daily basis (Kaseem et al, 2021). There has been incidents of fire outbreak in some academic environments in Nigeria and other African countries (Sholanke et al, 2024. According to Thomas (2017), effective fire safety design starts with spatial planning, ensuring that escape routes are short, direct, and clearly marked. However, in developing countries, implementing these strategies often faces obstacles such as cost constraints, lack of knowledge, and weak enforcement of building codes (Olanrewaju & Adebayo, 2020).

Fire safety in student dormitories is a critical public health and safety issue, particularly in developing countries such as Nigeria (Ameh, 2020). There exists international fire safety standards, such as the National Fire Protection Association (NFPA) and American Society of Testing and Materials (ASTM) (Hierschler, 2017), applicable to the USA. These are some examples of fire protection regulatory authorities. In

Nigeria, the National Building Code (NBC) and the National Fire Safety Code (NFSC) specify fire safety measures, such as minimum exit widths, smoke compartmentation, signs, and equipment that must be met in buildings. Therefore, the fatality that arises from fire outbreaks in public buildings is higher than in many other types of buildings due to the high occupancy and the visitors to the buildings on a daily basis (Kaseem et al, 2021; Sholanke et al, 2024). Frequent occurrences of fire accidents in public buildings have raised concerns about the adequacy of existing fire safety measures in public buildings. These tragedies reveal a troubling disconnect between architectural design and fire safety compliance. As the built environment continues to evolve, architects now carry a greater responsibility beyond construction—they must ensure the safety and well-being of occupants. Their design decisions, from choosing building materials to planning corridor and staircase layouts, can significantly influence how quickly and safely people can evacuate during a fire emergency. This becomes especially important in student hostels, where residents may not always be alert or prepared for emergencies due to exhaustion from daily activities or unfamiliarity with fire protocols.

Clinical student hostels serve as a vital component of the medical education ecosystem, bridging the gap between clinical environments and living quarters. Clinical students face particular vulnerability to fire hazards due to their demanding schedules, long hours, and frequent night duties. Their hostels are not merely sleeping quarters—they serve as secondary homes where students rest, study, and prepare for their professional responsibilities. Therefore, the safety of these environments must be ensured not only through sound design but also through comprehensive compliance with national and international fire safety codes. However, in many parts of Nigeria and other developing nations, these hostels frequently lack effective fire protection, creating serious risks to both life and property (Adebayo & Onuoha, 2021). For clinical students especially, who face unique pressures including high stress levels, unpredictable schedules, and overnight shifts at hospitals, their living spaces must balance everyday functionality with readiness for emergencies. Fire incidents in student housing worldwide have raised serious concerns about whether safety standards are being met. A 2020 assessment in the UK revealed that numerous student accommodation facilities failed to meet fire safety requirements, particularly regarding alarm systems and escape routes (National Student Housing Survey, 2020). Research shows that most university residence halls in Nigeria fall short of basic fire safety standards, with students often unaware of evacuation procedures (Olanrewaju & Adebayo, 2020). Introduction to Fire Safety in the Built Environment. Fire safety in architecture refers to integrating preventive, protective, and responsive measures into building design to reduce fire risk, safeguard lives, and protect property. According to the National Fire Protection Association (NFPA, 2019), fire safety is not only about responding to fire emergencies but also about embedding proactive strategies into architectural design to minimize the likelihood of ignition and ensure swift evacuation if fire occurs. In the architectural context, aesthetics and functionality must always be balanced with life safety, since a building lacking fire safety is ultimately unfit for people to live in (Lawal, 2015). Reports have shown that many university hostels lack fire exits, functioning alarm systems, and clear evacuation plans (Adewunmi & Lawal, 2019). The consequences of poor fire safety were illustrated in the 2020 fire incident at a student hostel in Anambra State, Nigeria, which resulted in casualties and significant property loss (Okonkwo & Salami, 2021). According to Olanrewaju and Adebayo (2020), many developers consider fire safety as an afterthought due to its non-aesthetic nature and perceived cost. A study by Lawal (2018) found that most Nigerian universities do not conduct routine fire drills or maintain their alarm systems. Additionally, the lack of coordination between architects and fire engineers undermines holistic safety integration (Thomas & Shittu, 2016).

Despite the existing fire safety standards and building codes in Nigeria, studies have revealed very low levels of compliance and awareness of fire safety in public buildings. It is against this background that this research seeks to extend the value of knowledge, by way of information, on the level of awareness and compliance to fire safety in public buildings using clinical hostels as a case study. If the regular users of a building have adequate information on how to deal with fire, there is a likelihood that in the case of a fire emergency, they will know what to do to be safe and safeguard others. To this end, it is necessary to investigate how well users of public buildings, especially learning environments, understand basic fire safety protocols, fire protection measures provided in public buildings, and how to operate them, towards promoting effective fire safety management in public environments, especially academic settings.

2. Literature Review

2.1 Overview

Fire safety is a critical concern in school hostels due to the high concentration of occupants, the potential for rapid fire spread, and the devastating consequences that can result from fire incidents. About 90% of people spend about 90% of their daily time inside buildings, be it residential, commercial, industrial, religious, or educational buildings (Munonye, 2020). School hostels, being residential facilities, require strict adherence to fire safety regulations to safeguard the lives of students, staff, and property. Fire safety is a critical concern in school hostels due to the high concentration of occupants. While fire safety laws like the Nigerian Building Code and international standards such as NFPA 101 (National Fire Protection Association, 2018) exist to protect occupants, compliance rates remain shockingly low. Fires in many student dormitories stem from a range of preventable causes—from faulty wiring and unattended cooking to poor maintenance and absence of essential safety equipment like smoke alarms and emergency exits. Studies have shown that compliance levels in student accommodations often vary due to inadequate enforcement, poor maintenance of fire safety systems, and lack of awareness among residents (Al-Saadi, Rahman, & Khan, 2021)

Creating comfortable learning environments is crucial for effective education (Maduabum & Munonye, 2025). Also, providing a safety working place is one of the factors that creates a comfortable learning environment. Numerous college and university residence halls in Nigeria have experienced devastating fires that resulted in significant property losses and, in tragic cases, loss of life. The increase in fire disasters in buildings in Nigeria is worrisome (Service,

2018). Studies have shown that occupants of buildings do sometimes help in spreading the fire due to ignorance and panic, sometimes causing loss of life and destruction of property (Kaseem, 2021). Studies have further revealed gaps in compliance, particularly in hostels operated by private landlords or institutions (Adebayo & Olagunji, 2019). A study conducted to determine the fire disaster preparedness of public buildings in Ibadan metropolis revealed that 51.9% of the occupants have poor knowledge of the operation of fire safety installations (Adeleye, 2020). Research also showed that most university residence halls in Nigeria fall short of basic fire safety standards, with students often unaware of evacuation procedures (Olanrewaju & Adebayo, 2020). A study at Caleb University found that more than 70% of residents did not know about alarm systems or fire escape routes, and regular fire drills simply were not happening (Adewunmi & Lawal, 2019). Studies have also shown that despite these provisions, compliance is often limited due to inadequate infrastructure, poor enforcement, and lack of awareness (Alao, 2020; Onyekwere, 2024; Omunagbe & Alao, 2023). Fire safety risks are particularly acute in school hostels where occupants are densely housed, and emergency responses are often delayed (Sholanke, Ekhaese, & Ekundayo, 2024).

Research in Nigerian universities shows that many students have low fire safety awareness and lack training on evacuation procedures (Oladokun, 2018). In Nigeria, the National Building Code (2006) provides a framework for fire safety, including specifications for means of escape, fire alarms, extinguishers, and access for firefighting operations. However, compliance is limited due to poor monitoring, corruption, and a lack of professional training (Adebayo & Onuoha, 2021).

2.2 Fire Safety Regulations

Fire safety encompasses a range of practices, regulations, and systems designed to prevent fires, minimize their impact, and ensure the safety of people and property. It includes fire prevention, preparedness, response strategies, and compliance with established regulations. Fire safety is particularly critical in residential and institutional buildings such as school hostels, where the risk of fire can be heightened due to high occupancy, electrical overload, and improper storage of combustible materials. Fire safety is built on three core principles:

Fire Prevention: Measures taken to reduce the likelihood of a fire occurring, such as proper electrical installations, controlled use of flammable substances, and adherence to safety regulations (Smith, 2020).

Fire Protection: The use of fire detection, suppression, and containment systems like smoke detectors, sprinklers, and fire extinguishers (Jones & Lee, 2019)

Fire Safety Management: Policies and training programs that ensure individuals know how to respond effectively to fire emergencies, including evacuation procedures and fire drills (Brown, 2018).

2.3 Fire Safety Requirement for the hostel:

The regulations here apply to any building which is used as a hostel and is of two or more story.

a. There shall be at least two staircases, one opposite the other, in addition to an enclosed staircase.

b. An alternative power system for emergency lighting shall be provided.

c. All exit doors shall be illuminated with exit signs.

d. All circulation areas of the building shall be constructed with fire-resistant materials.

e. Fire extinguishers, fire blankets shall be provided and placed at easily accessible areas in the building for use in the event.

f. Where the building is of five floors above, wet or dry risers, hose reels, and a sprinkler system shall be provided.

g. A fire alarm system, manual or automatic, for warning guests of a fire outbreak shall be provided.

h. A reasonable space be provided within the building for assembly of all persons in the building in the event of an outbreak of fire.

i. In the case of high-rise buildings, all doors to the bedrooms in the circulation areas of the hotel shall be fitted with fire-resistant doors.

2.4 Control of Fire

There are three basic methods for controlling fire hazards in the building, i.e., prohibition, isolation, and protection.

Prohibition: Prohibition is the removal of a hazard from a building. If a material or activity is likely to cause serious fires, it should not be permitted in a building. The dispensing of gasoline, for example, is considered to be a dangerous operation.

Isolation: Hazard isolation is the one more often used. Isolation may take two forms. The first requires cutting off the hazard from the remainder of the building to minimize its effects.

Protection: Controlling a fire hazard by isolation assumes that its worst effects will be contained. This method of controlling the hazard is to minimize these effects, to counteract the hazard, and thereby protect the building.

3. Methodology

3.1 Location and climate

The study was carried out to determine the level of fire safety awareness and practices among students using Alex Ekwueme Federal University Ndufu Alike (AE-FUNAI) clinical female hostel (Fig. 1) as a case study. The study area is situated in Ikwo Local Government Area of Ebonyi State with Abakaliki as the capital. Abakaliki lies between Latitude 06° 25 N and longitude 08° 3' E, it experiences a tropical climate that is characterized by hot and wet conditions associated with the movement of the inter-tropical convergence zone both North and South of the equator (Obi et al, 2025). The mean monthly temperature during the hottest months is 29.0^{o}C while the mean monthly temperature during the coldest months is 26.0^{o}C. The mean annual precipitation is between 1700-2100 mm. (Munonye et al, 2023).

Figure 1: Clinical female hostel block AE-FUNAI

3.2 Sample size

The primary data were collected by means of observations, interviews, and questionnaires administration to randomly selected students in the hostel.

The sample size was determined using Yamane's (1967) formula for finite populations at a 95% confidence level. (Israel, 2013). Yamane's formula (shown in equation 1) is a statistical formula used to determine sample size for a finite population, especially when the total population size (N) is known. It is widely applied in research to ensure that a sample accurately represents the population without being unnecessarily large.

A sample size of 165 respondents were determined from the population of approximately 321 students residing in the hostel using the equation below derived from Yamane's formula. The sample size was subsequently randomly selected from this sample size. Random sampling technique can be adopted in social science research (Munonye et al, 2021).

$$n = \frac{N}{1 + Ne^2} \quad (1)$$

Where:

n = required sample size

N = total population size

e = margin of error (precision level), set here at 0.09 (9%) corresponding to a 91% confidence level

Approximately 165 questionnaires, representing 92.6% were successfully filled and retrieved. The data is analyzed and presented using tables, charts, and descriptive statistics to address the research questions.

4. Results and Discussion

A total of 178 questionnaires were distributed to the respondents, with 165 successfully completed and returned, representing a response rate of 92.6%. Table 1 presents the results of the field work on the various levels of fire level awareness among clinical students at AE-FUNAI.

An assessment of the level of fire safety awareness of the clinical students, rated from very low to very high, indicated that more than half of the participants (52.3%) indicated high and very high awareness of the possibility of fire outbreak in their hostel block. Only 12.8% of the respondents indicated low and very low awareness. The awareness of the level of awareness to evacuation procedures showed that 32.8% of the respondents indicating high and very high awareness to evacuation procedures, while 15.7% indicated very low and low awareness levels. Approximately 32.7% of the participants indicated moderate understanding of fire usage equipment. A good number (37.6%) indicated low and very low understanding of fire equipment usage. The level of awareness to the available emergency contacts indicate that a significant number (64.9%) indicated low and very low awareness of the available emergency contacts.

Table 1. Level of Fire Safety Awareness among Clinical Students

Awareness Indicator	Very High	High	Moderate	Low	Very Low
Possibility of fire occurring	32 (18.4%)	56 (33.9%)	56 (33.9%)	16 (9.7%)	5 (3.1%)
Evacuation procedures	15 (9.1%)	39 (23.7%)	83 (51.5%)	18 (10.9%)	8 (4.8%)
Fire equipment usage	10 (6.1%)	39 (23.6%)	54 (32.7%)	44 (26.7%)	18 (10.9%)
Emergency contacts	11 (6.6%)	17 (10.3%)	30 (18.2%)	48 (29.1%)	59 (35.8%)

The awareness of the possibility of fire outbreak, the evacuation procedures, and the levels the usage of fire equipment are understood together with knowledge of emergency contacts are discussed under this section.

Awareness of Fire Outbreak Possibility

In the area of assessment, more than half of the students demonstrated high to very high awareness. This is a good sign because awareness of the possibility of a fire outbreak can significantly help to prevent fire outbreaks. Initial preventive measures such as reporting potential hazards, taking appropriate measures in the use of electrical appliances, placing combustible items away from fire etc. By being aware of the risks and taking steps to mitigate them, students can reduce the likelihood of fires occurring in the first place. The high percentage of the students (52.3%) who indicated high to very high awareness of the possibility of fire outbreaks in their hostel is a good development. A good percentage (33.9%) are moderately aware. These levels can be increased by proper orientation of the students on fire safety. Students with high awareness are more likely to take more proactive measures to prevent fires, such as reporting potential hazards or avoiding risky behaviors. By being aware of the risks and taking steps to mitigate them, students can reduce the likelihood of fires occurring in the first place.

Awareness of Evacuation Procedures

Evacuation procedures entail the quick location of proper exits from the building, ability to easily locate the nearest escape route, and fire assembly points. The low percentage of students' awareness of evacuation procedures is worrisome. This suggests that many of the students may not be adequately prepared to respond effectively in such situations. This

shortfall calls for regular fire safety drills and training sessions for them. Students who do not know what to do when there is a fire are more likely to be confused, which may lead to poor decision-making, thereby increasing risk. The relatively low percentage of students (32.8%) with high to very high awareness of evacuation procedures is concerning. In the event of a fire, knowing the proper evacuation procedures can be lifesaving. The study suggests that many students may not be adequately prepared to respond effectively in such situations. This gap in knowledge highlights the need for regular fire safety drills and training sessions. Proper evacuation procedures can help students escape from the building quickly and safely, reducing the risk of injury or death. When students know what to do in case of a fire, they are less likely to panic, which can lead to poor decision-making and increased risk. Students who are aware of evacuation procedures can respond effectively, helping to minimize damage and prevent further harm.

Understanding of Fire Equipment Usage

Fire safety equipment refers to a broad range of tools, devices, and materials specifically designed to detect, prevent, or mitigate the effects of a fire. Fire safety equipment includes fire extinguishers, fire alarms, emergency lights, exit signs, and smoke alarms. Fire extinguishers and other equipment are critical in controlling small fires before they spread. For instance, without proper training, students may use fire extinguishers incorrectly, potentially making the fire worse. The findings in this work reveal that only 32.7% had a moderate understanding of fire equipment usage, while 37.6% reported low to very low understanding of fire extinguisher usage. Without proper training on the use of fire safety equipment, students may demonstrate poor response to fire outbreaks. Without proper knowledge of how to use these tools, students may inadvertently exacerbate a fire emergency.

Awareness of Emergency Contacts

The awareness level to emergency contacts in case of fire is significantly low, as only 16.9% of the participants voted high and very high to awareness of emergency contacts. Only 18.2% were moderately aware of emergency contacts. In emergency situations, every second counts, and knowing who to contact can make a significant difference. It was, however, observed during the survey that the majority of the participants who voted high and very high to awareness of emergency contacts reported that they would only be able to contact the security. There is a need for a clear knowledge of emergency contacts as this will help to speed up response when there is a fire outbreak.

Implications and Recommendations

Findings indicate that while basic fire safety measures (e.g., presence of fire extinguishers and emergency exits) are in place, significant gaps persist in terms of student awareness, equipment maintenance, and overall design adequacy. Recommendations include enhanced training programs, regular fire drills, improved signage, and strategic architectural modifications to reduce bottlenecks and improve emergency egress. Ultimately, the study underscores the need for ongoing monitoring and proactive management to align hostel designs with national and international fire safety standards. This paper presents these recommendations:

1. Regular Training and Drills: Educational institutions should implement regular fire safety training and drills to ensure students are well-prepared in case of a fire emergency. Regular training raises awareness about fire safety, prevention, and response. Students learn how to respond effectively in case of a fire, reducing panic and confusion. Drills provide students with hands-on experience, helping them understand evacuation procedures and emergency protocols. By knowing what to do, students can reduce the risk of injury or property damage.

2. Targeted Education: Specific programs should be developed to address the identified gaps in knowledge, particularly regarding evacuation procedures, fire equipment usage, and emergency contacts.

3. Accessibility of Information: Emergency contact information should be prominently displayed and easily accessible to all students.

4. Collaboration with Fire Safety Experts: Institutions could benefit from collaborating with fire safety experts to provide specialized training and ensure compliance with safety standards.

By addressing these areas, educational institutions can enhance the safety and preparedness of their students, ultimately creating a safer environment for everyone.

5. Conclusion

The findings reveal the level of awareness of fire safety among university students in their hostel block. Generally, the assessment reveals various areas of deficiency in fire safety compliance and awareness. The findings align with previous studies by Sholanke et al (2024), who found in their various studies that students' knowledge of fire safety measures is low**.** While basic elements such as fire extinguishers, emergency exits, and alarm systems are present, their effectiveness is substantially diminished by maintenance deficiencies, inadequate coverage, and a lack of integration into a comprehensive fire safety management system. The most critical finding is the severe deficit in fire safety awareness and training among both residents and staff.

The research was conducted as a case study, which implies that the results cannot be generalized. Therefore, there is a need for similar studies to cover other academic buildings on the university campus. Such studies can also be conducted in other institutions of learning in Nigeria and around the world. Such studies will be useful feedback resources for building professionals towards the development of buildings with adequate built-in fire emergency safety provisions.

References

Adebayo, S., & Onuoha, A. (2021). Fire safety compliance in Nigerian tertiary institutions: A case study of student hostels. *Journal of Architecture and Built Environment*, 9(1), 33–44.

Adewunmi, T. & Lawal, T. (2019). An assessment of fire safety knowledge among university hostel occupants. *Journal of Environmental Design*, 5(2), 52–60.

Adepoju, O. O. (2016). Fire prevention strategies in Nigerian institutional buildings. *Journal of Building Technology*, 12(1), 45-58.

Adewunmi, T., & Lawal, T. (2019). An assessment of fire safety knowledge among university hostel occupants. *Journal of Environmental Design*, 5(2), 52-60.

Al-Saadi, M., Rahman, A., & Khan, S. (2021). Fire safety preparedness in student accommodations. *A global review. International Journal of Disaster Risk Reduction*, 54.

Babatunde, S A; Oche, A G; & Paul, O (2020). Fire Emergency Safety Preparedness in the College of Leadership Development Studies Building in Covenant University, Ota, Nigeria Civil Engineering and Architecture 8(6): 1463-1480, 2020 http://www.hrpub.org DOI: 10.13189/cea.2020.080628.

Brown, T. (2018). Institutional Fire Safety Management. London: Academic Press.

Bryman, A. (2016). Social research method (5th Ed.). Oxford University Press.

Creswell, J. W. (2014). Research design: Qualitative, quantitative, and mixed methods approaches (4th Ed.). Sage Publications.

Creswell, J. W., & Plano Clark, V. L. (2018). Designing and conducting mixed methods research (3rd Ed.). Sage Publications.

Federal Fire Service of Nigeria. (2018). National Fire Safety Policy. Abuja: Federal Government Press.

Flick, U. (2018). An introduction to qualitative research (6th Ed.). Sage Publications.

Foster, J. S. (2010). Structure and fabric, Part 2 (7th Ed.). Pearson Education Limited.

International Building Code. (2021). International Code Council. ICC Publications.

Israel, G. D. (2013). Determining sample size. University of Florida IFAS Extension, PEOD6, 1-5.

Jones, M., & Lee, S. (2019). Emergency Preparedness in Educational Institutions. *Journal of Education Safety*, 12(1), 56-70.

Lawal, A. F. (2015). Architectural design and public safety in Nigeria. Lagos: Malthouse Press.

Lawal, K. O. (2018). Fire safety management in Nigerian universities: Challenges and prospects. *Educational Facilities Journal*, 7(3), 112-125.

Maduabum, A.I.V & Munonye, C C (2025). Effects of Wall Material Type on Temperature Variation in Primary Schools in Anambra State, Nigeria *African Journal of Environmental Research* Vol 6, No. 1 2025. pp 73-88.

Munonye, C.C. (2020) 'Thermal Comfort Assessment of Primary School Children in a Warm and Humid Climate (A case study of Imo State, Nigeria)', A thesis submitted to the University of Salford.

Munonye, C. C., Ezeji, K. E., Umeora, C. O., & Onwuzuligbo, C. C. (2021). Assessing thermal performance in two classroom building types in warm humid climate Imo State, Nigeria. COOU *African Journal of Environmental Research*, 3(1). http://ajer.coou.edu.ng/index.php/journal

Munonye J. O., Munonye C. C & Esiegwu AC (2023). Assessment of Thermal Comfort of Broiler Birds in Warm - Humid Climate, *Tropical Agricultural Research & Extension 26* (3).

National Building Code of Nigeria. (2006). Nigerian Building Code. Lagos: Lexis Nexis.

National Fire Protection Association. (2018). NFPA 101: Life Safety Code. Quincy, MA: NFPA Press.

National Fire Protection Association. (2019). Fire protection handbook (21st Ed.). NFPA Press.

National Student Housing Survey. (2020). Fire safety compliance in UK student accommodations. London: NSHS Publications.

Ndetu, K. D & Kaluyu, V (2016). Factors Influencing Fire Disaster Management Preparedness: A Case Study of Primary Schools in Makueni County, Kenya. European Journal of Education studies, Vol. , No. 6, 63-77

Nigerian Institute of Architects. (2015). Architects' code of conduct and responsibilities. Lagos: NIA Publications.

Nigerian Institute of Architects. (2018). Guidelines for fire safety in institutional buildings. Lagos: NIA Publications.

Obi, C. C; Munonye, C. C, Udomiaye, E & Maduabum, A. I. (2025). Post-Occupancy Evaluation of Users' Perception of Thermal Environment in an Office Building in a Tropical Climate. *IPS Journal of Engineering and Technology*, 1(4), 195-202.

Okeke, F. O. (2017). Emergency egress design in multi-story buildings: Nigerian context. *Architecture and Planning Journal*, 8(1), 34-49.

Okonkwo, A., & Salami, R. (2017). Compliance with fire safety regulations in Nigerian educational institutions. *Safety Science*, 98, 145-156.

Okonkwo, A., & Salami, R. (2021). Fire risk awareness and readiness among students in Nigerian universities. *Safety and Environment Journal*, 6(3), 18-26.

Oladokun, T. T. (2018). Fire safety compliance and enforcement in Lagos State. *West African Journal of Building and Environment*, 4(1), 23-37.

Olanrewaju, M., & Adebayo, T. (2020). Challenges of enforcing fire safety regulations in Nigerian student hostels. *International Journal of Safety Research*, 12(1), 44-55.

Olaoye, O., & Ajayi, M. (2019). Research methods in environmental sciences. Ibadan: University Press.

Patel, R., & Chen, L. (2021). Building Information Modelling (BIM) for fire safety design. *International Journal of Architectural Computing*, 19(2), 234-251.

Smith, J. (2020). Understanding Fire Safety Regulations. New York: Safety First Publishers.

Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International Journal of Medical Education*, 2, 53-55.

Thomas, M., & Shittu, A. (2016). Fire safety integration in architectural design practice. *Journal of Building Safety*, 8(1), 23-31.

Thomas, O. (2017). Architectural design strategies for enhancing fire safety in residential buildings. *Built Environment Review*, 11(2), 17-28.

World Health Organization. (2018). Health worker safety: A priority for patient safety. Geneva: WHO Publications.

Yamane, T. (1967). Statistics: An introductory analysis (2nd Ed.). Harper and Row.

Yin, R. K. (2014). Case study research: Design and methods (5th Ed.). Sage Publications.

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