Users' Perception of Safety and Security of College Buildings in Public Universities in Rivers State, Nigeria

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***Abstract*: This study examines the critical considerations of safety and security in the design of educational facilities at public universities in Rivers State, Nigeria. It aims to explore the perceptions of staff and students regarding the effectiveness of safety and security measures in their university environments. Data were collected through questionnaires distributed to randomly selected faculties at Rivers State University of Science and Technology (RSUST) and the University of Port Harcourt. A total of 141 responses were analysed using descriptive statistical methods. The findings indicate that a significant majority of respondents acknowledge the importance of incorporating safety and security measures into building designs, with 66% agreeing that safety is a fundamental aspect and 64% emphasising the necessity of security detailing. The study highlights the vital role of user perceptions in informing architectural practices and underscores the need for ongoing dialogue between university management, staff, and students to enhance safety and security protocols. Based on these findings, the study recommends greater engagement of users in the design process, the implementation of advanced security technologies, and the promotion of awareness campaigns to foster a culture of safety and security within the university community. Ultimately, this research contributes to the body of knowledge on safety and security in educational settings and provides practical insights for improving the design and management of university buildings.**

***Keywords*: Building, Safety, Security, User Perception.**

1. Introduction

The safety and security of buildings, especially within educational institutions, have garnered increasing attention in recent years. College buildings in public universities, as vital components of the built environment, are not just architectural structures but spaces where students and staff live, learn, and work [1]. Therefore, the perceptions of users—both staff and students—regarding the safety and security of these buildings are critical to their overall well-being. Safety, in this context, refers to the prevention of harm from accidental risks such as fires, structural collapses, and natural disasters, while security relates to protecting individuals and property from deliberate threats such as theft, vandalism, and terrorism [2].

The built environment, comprising structures and modified landscapes, plays an essential role in supporting human life and activities [3]. In the context of educational institutions, ensuring a secure and safe environment is paramount for fostering productive learning. The need for protection against adverse environmental conditions has always driven humans to seek shelter, and this need has evolved into the broader responsibility of ensuring that buildings are designed to eliminate hazards and risks throughout their lifecycle [4]. In public universities, where large populations of students and staff congregate daily, the design and implementation of safety and security measures are crucial in mitigating risks and ensuring the well-being of the university community [5].

Rivers State, Nigeria, is home to two prominent public universities—the Rivers State University of Science and Technology (RSUST), established in 1980, and the University of Port Harcourt (Uniport), which gained university status in 1977. Both institutions play significant roles in the region's educational and technological development. However, like many public universities in Nigeria, they face challenges related to the safety and security of their facilities. The design and maintenance of college buildings within these universities are critical for ensuring that both staff and students feel protected from both natural and human-made threats [6]. Perceptions of these users regarding safety and security measures can provide valuable insights into areas of improvement and policy development.

Building safety typically involves addressing natural and unintentional threats, such as earthquakes, hurricanes, and accidental incidents, through compliance with building codes and standards [7]. On the other hand, building security focuses on intentional threats, such as criminal activities and terrorism, and is often addressed at the discretion of the building's operators [8]. However, as Knoop [8] notes, these two concepts should not be viewed in isolation but rather as complementary factors that together enhance the overall safety and security of buildings. Hence, this paper aims to explore the perceptions of users—staff and students—at RSUST and Uniport regarding the safety and security measures incorporated into their college buildings.

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2. Literature Review

Safety and security in educational institutions are fundamental to creating a conducive learning environment. University buildings should not only be functional but also provide a safe space where students and staff can thrive. Safety relates to the protection against natural and accidental hazards such as fires, structural failures, and environmental risks, while security focuses on preventing deliberate threats like theft, vandalism, and violence [9]. Addressing both aspects is crucial because they directly influence the sense of well-being and productivity within these environments. Understanding the users' perceptions of these measures is essential, as their awareness and comfort with the implemented systems significantly affect how they interact with the space [10].

A.　The Built Environment and its Impact on Safety and Security

The built environment significantly impacts human activities, particularly in educational settings where students and staff rely on physical spaces to carry out their daily tasks. Effective design of these spaces can either enhance or hinder safety and security measures. Research indicates that well-designed university buildings that integrate safety features are better at mitigating risks and fostering a secure atmosphere [11]. Hughes and Ferrett [12] suggest that universities incorporating natural surveillance, well-lit areas, and robust structural integrity report fewer safety-related incidents. Key factors influencing the implementation of these safety and security features include funding, institutional policies, and adherence to national or international construction standards [13]. Prioritising these elements in the planning stages ensures that educational facilities are better equipped to handle both expected and unforeseen threats. Effective safety measures begin at the design phase and should be adaptable throughout the lifecycle of the building, ensuring protection against both environmental and human-made risks [14].

B.　Building Safety Considerations

Building safety encompasses measures designed to prevent or mitigate risks from natural and unintentional threats such as fires, structural damages, and natural disasters. Adherence to building codes and standards is critical in ensuring that educational institutions comply with safety regulations to protect occupants [15]. These standards often dictate the minimum requirements for construction materials, fire protection systems, and emergency exit strategies. Best practices for incorporating safety measures in university buildings include conducting hazard assessments, ensuring robust structural designs, and regularly maintaining safety equipment to minimise potential risks [16].

C.　Building Security Considerations

Security measures in educational institutions aim to prevent and manage intentional threats like vandalism, theft, and potentially violent incidents. Unlike safety measures, which are largely mandated by building codes, security protocols are often customised based on the specific needs of the institution [17].

Strategies to enhance security include the use of surveillance technologies, access control systems, and the deployment of trained security personnel. Universities with higher levels of visible security presence tend to experience fewer security breaches, as potential offenders are deterred by heightened monitoring [18]. Additionally, security measures should be seamlessly integrated into the design of the building to ensure both functionality and safety without impeding academic activities. Moreover, fostering a security-conscious culture among staff and students through training and awareness programmes can significantly reduce vulnerability to intentional threats [19].

D.　Users' Perception of Safety and Security in College Buildings

Understanding users' perceptions of safety and security is vital in designing and managing educational facilities. Studies show that students and staff are more likely to feel secure in environments where safety and security measures are visible and easily accessible [20]. Factors such as past experiences, the visibility of security personnel, and the perceived responsiveness of campus authorities play significant roles in shaping these perceptions. Evidence suggests that when users feel that the institution prioritises their safety, their overall satisfaction and engagement with the learning environment increase, leading to a more productive academic atmosphere [21].

E.　Case Study: University of Ibadan

The University of Ibadan, established in 1948, is Nigeria's oldest university, renowned for its academic excellence and extensive campus facilities. Over the years, the university has implemented various safety measures, including smoke detectors, fire alarms, and well-marked emergency exits, to enhance building safety. In terms of security, the institution has invested in CCTV systems, perimeter fencing, and regular security patrols to monitor and deter criminal activities. However, a recent study by Ogunleye et al. [22] indicated that despite these efforts, some students still feel vulnerable, especially in less-monitored areas of the campus, highlighting the need for more comprehensive security coverage.

F.　Gaps in the Literature

While existing research has made significant progress in exploring safety and security measures in educational settings, there is a noticeable gap in understanding the nuanced perceptions of users, particularly in developing countries like Nigeria. Most studies focus on the technical aspects of safety and security without sufficiently addressing how socio-cultural factors influence users' perceptions of these measures. More research is needed to explore how these perceptions can be integrated into the design and operational strategies of educational institutions to create environments that truly meet the needs of their users [23]

3. Methodology

Data for the study was collected from two prominent

Table 1
Respondents' socio-economic and demographic characteristics for public universities in Rivers State

Respondents Characteristic	Category	Frequency N=141	Percentage
Ethnic Group	Others	42	29.8%
	Igbo	75	53.2%
	Yoruba	12	8.5%
	Hausa	12	8.5%
Gender	Female	57	40.4%
	Male	84	59.6%
Age	20 below	30	21.3%
	21 – 30	87	61.7%
	31 – 40	15	10.6%
	41 – 50	3	2.1%
	51 – 60	3	2.1%
	Above 60	3	2.1%
Marital status	Single	114	80.9%
	Divorced	0	0%
	Separated	0	0%
	Widowed	0	0%
	Married	27	19.1%
Educational Qualification	Primary	0	0%
	O' Level	27	19.1%
	ND/DC, A' Level, NCE	21	14.9%
	HND/HNC, B.A/B.Sc.	45	31.9%
	PGD	24	17.0%
	M.A/M.Sc. or Ph.D.	24	17.0%
	Others	0	0%
Year(s) of Stay in Institution	1	6	4.3%
	2	30	21.3%
	3	48	34.0%
	4	42	29.8%
	Above 4	15	10.6%

Source: Field survey, 2024

institutions in Rivers State, Nigeria: Rivers State University of Science and Technology (RSUST) and the University of Port Harcourt. RSUST has a staff strength of 1,870 and an average student population of 15,000, comprising eleven faculties: Agriculture, Engineering, Environmental Sciences, Law, Management Sciences, Science, Education, Humanities, Social Sciences, Basic Medical Sciences, and the College of Medical Science. The University of Port Harcourt, on the other hand, has a larger average student population of about 35,000, and twelve faculties, which include Humanities, Social Sciences, Education, Engineering, Management Sciences, Health Sciences, Science, Dentistry, Pharmacy, Agriculture, and Law, as well as a Postgraduate School. English is the primary language of instruction at both institutions.

To gather data for the study, questionnaires were distributed by hand to staff and students in randomly selected faculties at both universities during working hours. The selected faculties were the Faculty of Environmental Sciences, the Faculty of Social Sciences, and the Faculty of Humanities. In total, 200 questionnaires were distributed, with 100 given to each university. A total of 141 questionnaires were successfully retrieved: 91 from the University of Port Harcourt and 50 from RSUST.

The collected quantitative data was analysed using descriptive statistical methods with the aid of the Statistical Package for the Social Sciences (SPSS) software. The data was systematically assessed, arranged, and presented in tabular form to facilitate clear interpretation and understanding of the findings.

4. Findings

A. Socioeconomic Characteristics of Residents

Table 1 displays the socio-economic characteristics of the respondents within the study area. The majority of respondents identified as Igbo (53%) and Ekwerre (30%), while the Yoruba and Hausa ethnic groups comprised a smaller percentage of the sample, each representing 9%. This demographic distribution is likely attributed to the study area's proximity to the Igbo and Ekwerre communities, resulting in a higher representation of these ethnic groups among the staff and students at the universities.

In terms of gender, 60% of the respondents were male, whereas 40% were female. Age distribution showed that 21% of respondents were below 20 years, while 62% fell within the 21 to 30 age brackets. Additionally, 10% of the respondents were aged between 31 and 40 years, and 6% were 41 years or older.

A significant majority of respondents, accounting for 81%, were single, while 19% were married. Regarding educational qualifications, 32% of the sample population held higher degrees, and 17% reported having second and third degrees. Notably, the largest proportion of respondents (34%) possessed qualifications such as O'Level, ND/NC, A'Level, and NCE certificates, which primarily comprised undergraduate students at the universities.

B. Security Consideration in Design

In terms of the inclusion of security in the building design process, Table 2 presents pertinent information regarding security considerations in the design of buildings, as derived

from the study population, which includes staff and students at public universities in Rivers State, Nigeria. The results indicate that a significant majority of respondents believe that security detailing is essential in architectural design, with a total of 64% affirming this view—comprising 14% who agree and 50% who strongly agree. Conversely, only 1% of respondents disagreed with the notion of security being a vital consideration in design, while 35% remained undecided.

Table 2
Security consideration in design

		RSUST	
Variable	**Range**	**Frequency N=50**	**Percentage**
Safety	Strongly Disagree	0	0%
	Disagree	1	2%
	Undecided	18	36%
	Agree	6	12%
	Strongly Agree	25	50%
		Uniport	
Variable	**Range**	**Frequency N=91**	**Percentage**
Safety	Strongly Disagree	0	0%
	Disagree	1	1%
	Undecided	32	35%
	Agree	13	14%
	Strongly Agree	45	50%
	Public Universities in Rivers State		
Variable	**Range**	**Frequency N=141**	**Percentage**
Security	Strongly Disagree	0	0%
	Disagree	2	1%
	Undecided	50	35%
	Agree	19	14%
	Strongly Agree	70	50%

Source: Field survey, 2024

The findings suggest that incorporating security considerations into building design is not merely advantageous but a crucial requirement for architectural practices in public universities. This alignment of perceptions among respondents shows the importance of prioritising security in the architectural design process to ensure the safety and well-being of all users within educational institutions.

C. Safety Consideration in Design

Table 3
Safety consideration in design

		RSUST	
Variable	**Range**	**Frequency N=50**	**Percentage**
Safety	Strongly Disagree	0	0%
	Disagree	1	2%
	Undecided	17	34%
	Agree	10	20%
	Strongly Agree	22	44%
Variable	**Range**	**Frequency N=91**	**Percentage**
		Uniport	
Safety	Strongly Disagree	0	0%
	Disagree	1	1%
	Undecided	30	33%
	Agree	12	13%
	Strongly Agree	48	53%
	Public Universities in Rivers State		
Variable	**Range**	**Frequency N=141**	**Percentage**
Safety	Strongly Disagree	0	0%
	Disagree	2	1%
	Undecided	47	33%
	Agree	22	16%
	Strongly Agree	70	50%

Source: Field survey, 2024

Table 3 highlights the data regarding the importance of safety considerations in building design. Among the 141 respondents, a total of 96 individuals (70 who strongly agreed and 22 who agreed) acknowledged that safety is a critical factor in the design process, resulting in a cumulative agreement rate of 68%. This reflects a strong consensus that prioritising safety in building design is essential. With only 1% of respondents opposing the notion that safety is important, it can be concluded that safety considerations are paramount in architectural practices within public universities in Rivers State. This finding shows the necessity for architects and planners to incorporate user perceptions of safety to enhance the overall safety and effectiveness of educational facilities

5. Recommendations

1. *Incorporate User Feedback*: Architectural firms and university management should engage staff and students in the design process to gather insights on their perceptions of safety and security. This participatory approach can lead to more effective design solutions tailored to the needs of the users.
2. *Enhance Training for Staff*: Universities should provide training for faculty and administrative staff on safety and security protocols, ensuring they are equipped to respond to emergencies and can effectively communicate these measures to students.
3. *Conduct Regular Safety Audits*: Public universities should implement regular safety and security audits to evaluate the effectiveness of existing measures and identify areas for improvement. This proactive approach will help maintain a safe environment and ensure compliance with relevant standards.
4. *Integrate Technology in Safety Measures*: Universities should consider investing in advanced security technologies, such as surveillance systems, access control systems, and emergency notification systems, to enhance safety measures and deter potential threats.
5. *Promote Awareness Campaigns*: Implementing awareness campaigns to educate staff and students about safety protocols and security measures can foster a culture of vigilance and responsibility within the university community.
6. *Review and Update Design Standards*: Architects and planners need to review and update design standards regularly to reflect current safety and security best practices, ensuring that newly constructed or renovated facilities meet contemporary expectations.

6. Conclusion

The study investigated the safety and security considerations in the design of educational facilities within public universities in Rivers State, Nigeria. The findings revealed a significant consensus among respondents regarding the importance of both safety and security measures in building design. Specifically, the data demonstrated that a majority of staff and students recognise the need for these considerations to create a

conducive learning environment. The results highlighted that safety measures, including structural integrity and adherence to building codes, are crucial for mitigating natural and unintentional risks. Furthermore, security measures are essential for protecting educational institutions from intentional threats such as vandalism and theft. Overall, this study underscores the vital role of user perceptions in informing design practices that prioritise the well-being of the university community.

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