African Journal of Environment and Natural Science Research
ISSN: 2689-9434
Volume 8, Issue 4, 2025 (pp. 1-13)
www.abjournals.org

AN APPRAISAL OF SAFETY MANAGEMENT PRACTICES AND EMERGENCY RESPONSE PREPAREDNESS IN PUBLIC BUILDINGS IN NIGERIA

Akintunde Moronkeji, Adebare Abegunde, Adeyinka Ogundare,

and Igho Fayomi (Ph.D.).

Department of Estate Management, Lead City University, Ibadan.

Cite this article:

Akintunde, M., A., Abegunde, A., Ogundare, I., Fayomi (2025), An Appraisal of Safety Management Practices and Emergency Response Preparedness in Public Buildings in Nigeria. African Journal of Environment and Natural Science Research 8(4), 1-13. DOI: 10.52589/AJENSR-QUQKO0YW

Manuscript History

Received: 14 Oct 2025

Accepted: 19 Nov 2025

Published: 11 Dec 2025

ABSTRACT: *This study evaluated safety management practices and emergency response preparedness in public buildings in Nigeria, focusing on how organisational and resource factors shape resilience. Anchored on Systems Theory, the research investigated the extent to which management commitment, staff training, and funding adequacy influence the adoption and effectiveness of emergency response plans. A quantitative research design was employed, and data were collected through structured questionnaires administered to 148 facility managers and safety officers across government offices, educational institutions, and healthcare facilities. Descriptive statistics and inferential analyses were used to examine relationships among key variables. Findings revealed that most institutions have implemented basic emergency frameworks, primarily targeting fire and structural risks, while preparedness for emerging hazards, such as pandemics and cybersecurity threats, remains limited. The results further showed a strong and significant correlation between management commitment and preparedness, and that staff training and funding adequacy jointly accounted for 64 per cent of the variance in emergency plan adoption. These outcomes emphasise that effective preparedness requires coordinated subsystems, leadership, training, funding, and compliance, working synergistically. The study concluded that Nigerian public institutions are transitioning from compliance-based to structured preparedness but lack full cultural integration. It recommends that government and regulatory agencies strengthen enforcement, institutionalise training, ensure consistent safety funding, and leverage digital technologies through public–private collaboration to enhance sustainable resilience.*

KEYWORDS: Safety Management, Emergency Preparedness, Public Buildings, Systems Theory, Organisational Resilience.

Article DOI: 10.52589/AJENSR-QUQKO0YW
DOI URL: https://doi.org/10.52589/AJENSR-QUQKO0YW

INTRODUCTION

Public buildings play an indispensable role in the social and economic life of Nigeria, serving as spaces for governance, education, healthcare, and commerce. Yet, these structures remain highly vulnerable to recurrent hazards, fire outbreaks, structural failures, floods, power outages, and pandemics, which have repeatedly led to loss of lives and property. Despite the existence of regulatory frameworks and growing professional awareness, a persistent paradox endures: while most institutions acknowledge the importance of safety management and emergency preparedness, many still exhibit inadequate implementation, poor maintenance, and limited continuity planning. This unresolved tension between regulation and reality forms the intellectual core of the present inquiry. The debate over safety management in Nigeria oscillates between two dominant perspectives. One school of thought argues that regulatory enforcement and formal compliance mechanisms are sufficient to drive preparedness. The promulgation of the *National Building Code (2006)* and the Lagos State Safety Commission's *Pre-Inspection Checklist for Fire Incident* (2025) represents a robust attempt to institutionalise safety standards and inspection regimes. Proponents of this view contend that strengthened policy frameworks, coupled with enforcement by agencies such as the Lagos State Emergency Management Agency (LASEMA), have improved hazard readiness (Lagos State Safety Commission, 2025).

Conversely, a counter-argument posits that regulation alone cannot engender genuine preparedness unless it is accompanied by organisational culture, sustained funding, and continuous training. Studies such as Adeleye (2020) and Adediran and Adewumi (2024) show that although many facilities possess documented emergency plans, most do not conduct regular drills or allocate resources for their maintenance. This disjuncture between compliance on paper and operational capacity on the ground defines the current debate. The literature further reveals a growing divide between *formal frameworks* and *functional implementation*. For example, Sholanke, Dimuna, and Olukayode (2025) found that fire-safety equipment in many public and commercial buildings was present but non-functional or untested, while Mba (2025) observed that even new smart-building technologies in Lagos often lack integrated emergency-response modules. These findings challenge the assumption that technological or infrastructural improvements automatically translate into enhanced preparedness. Rather, preparedness is an evolving sociotechnical process that depends on human competence, management accountability, and institutional learning.

A related controversy concerns the adequacy of Nigeria's emergency-management system to address multi-hazard risks. The *National Public-Health Multi-Hazard Emergency Preparedness and Response Plan* (Nigeria Centre for Disease Control [NCDC], 2020) calls for coordinated planning across all levels of government, yet implementation at the facility level remains fragmented. Aniramu and Orimoogunje (2025) demonstrate, in their systematic review of flood-resilience strategies in Lagos Metropolis, that emergency planning often focuses narrowly on single hazards such as flooding or fire while neglecting cascading risks like power failures or public-health emergencies. This narrow hazard framing produces what the authors describe as "siloed preparedness", whereby individual risks are addressed in isolation rather than through integrated response mechanisms. Hence, while policies are increasingly multi-hazard in design, operational practice remains largely hazard-specific. Another emerging strand of argumentation centres on the digital transformation of safety management. The adoption of smart-building technologies, Internet-of-Things (IoT) sensors, and automated alarm systems has been heralded as a breakthrough for real-time hazard monitoring (Mba,

Article DOI: 10.52589/AJENSR-QUQKO0YW
DOI URL: https://doi.org/10.52589/AJENSR-QUQKO0YW

2025). However, digital readiness in Nigeria remains constrained by infrastructural and capacity gaps. Many public facilities still rely on manual reporting systems, while limited training and unreliable power supply hinder effective use of digital tools. Thus, while technological modernisation offers new possibilities, it also widens the gap between resource-rich and resource-poor institutions, a paradox of progress that underscores the inequity of safety implementation.

The persistence of accidents in supposedly regulated environments raises a broader question: *What explains the continuing gap between policy design and operational performance in safety management and emergency preparedness?* This question carries both practical and theoretical weight. Practically, it bears on Nigeria's ability to safeguard citizens and public assets in the face of rapid urbanisation. Theoretically, it challenges assumptions in the safety-governance literature that formal regulation automatically engenders organisational learning and compliance. As Lagos State continues to urbanise, its population surpassing 20 million and its skyline dominated by high-rise buildings, the urgency of this question intensifies. According to Vanguard (2025), repeated incidents of fire outbreaks and structural collapses have prompted the State Assembly to demand tougher safety measures, yet such calls have not been matched by systematic reforms in inspection frequency or professional certification.

This study, therefore, contributes to the ongoing discourse by providing empirical evidence on the current state of safety management and emergency preparedness in public buildings in Nigeria. It introduces new data gathered from facility managers and safety officers across multiple states in Southwestern Nigeria, thereby extending the geographical scope of earlier single-city analyses. In doing so, it addresses a notable gap in existing scholarship: the absence of cross-institutional comparisons that link organisational capacity, funding mechanisms, and regulatory oversight to measurable preparedness outcomes. By integrating quantitative findings with contextual insights from recent national policy documents, the study moves beyond descriptive accounts of non-compliance to explain *why* preparedness levels vary and *how* institutional arrangements shape those variations. The paper also seeks to clarify an analytical paradox present in much of the current literature. While some authors (e.g., Adeleye, 2020; Adediran & Adewumi, 2024) frame safety deficits as primarily institutional, others (e.g., Aniramu & Orimoogunje, 2025) emphasise structural and environmental constraints such as flooding, urban density, and poor infrastructure. Yet, in reality, these factors interact. The present research posits that effective safety management emerges from the *systemic integration* of policy, structure, and organisational practice. This argument is grounded in Systems Theory, which conceptualises public institutions as interdependent subsystems whose performance depends on communication and resource flows. When training, funding, and oversight subsystems fail, the safety system as a whole underperforms, a view that underscores the need for holistic rather than fragmented solutions.

To investigate these dynamics, the study employs a quantitative design using structured questionnaires distributed among facility and safety managers in government offices, schools, and hospitals. The data allow for statistical testing of relationships between organisational variables, management commitment, staff training, resource adequacy, and preparedness outcomes. The methodological approach thus complements prior qualitative case studies by providing measurable and generalisable insights into the factors that drive or inhibit ERP adoption across different facility types. The significance of this approach lies in its potential to advance the debate in three key ways. First, it quantifies preparedness levels across a broader hazard typology, highlighting where progress has been made and where gaps persist. Second,

Article DOI: 10.52589/AJENSR-QUQKO0YW
DOI URL: https://doi.org/10.52589/AJENSR-QUQKO0YW

it empirically tests the influence of organisational factors, thereby substantiating or challenging the "culture versus regulation" dichotomy. Third, it provides actionable evidence for policymakers and regulators seeking to prioritise interventions and allocate resources effectively. In an era when global frameworks such as the *Sendai Framework for Disaster Risk Reduction* (UNDRR, 2023) emphasise local-level resilience, such evidence is indispensable for aligning Nigeria's safety agenda with international benchmarks.

Ultimately, the study argues that safety management and emergency preparedness in Nigerian public buildings are at a crossroads. Incremental regulatory reforms have improved compliance, yet systemic weaknesses, funding constraints, inadequate training, and weak inter-agency collaboration continue to undermine resilience. New evidence from this research suggests that achieving sustainable safety performance requires transcending mere compliance toward an *embedded safety culture*, supported by continuous improvement, periodic audits, and integration of digital monitoring tools. In this sense, the study not only contributes fresh data but also reframes the discourse: from regulatory adequacy to institutional capability; from reactive planning to proactive, systems-based preparedness.

Research Objectives

1. To examine the relationship between management commitment and the level of emergency response preparedness in public buildings in Nigeria.
2. To assess the influence of staff training and funding adequacy on the adoption of emergency response plans in public buildings in Nigeria.

Research Questions

1. What is the relationship between management commitment and the level of emergency response preparedness in public buildings in Nigeria?
2. To what extent do staff training and funding adequacy influence the adoption of emergency response plans in public buildings in Nigeria?

Research Hypotheses

H_{01}: There is no significant relationship between management commitment and the level of emergency response preparedness in public buildings.

H_{02}: There is no significant influence of staff training and funding adequacy on the adoption of emergency response plans in public buildings.

Safety Management Practices in Public Buildings

Safety management in public buildings entails the integration of systematic processes, policies, and behaviours that minimise risk exposure and safeguard human lives and infrastructure. In Nigeria, the concept is gaining renewed attention due to recurring structural collapses, fires, and crowd-control incidents that expose the fragility of institutional safety systems (Vanguard, 2025). According to Adeleye (2020), many public buildings in Ibadan Metropolis possessed basic fire-safety devices such as extinguishers and alarms, yet regular inspection, maintenance, and staff training were grossly inadequate. The findings illustrate that compliance often exists only on paper and that enforcement mechanisms remain weak. Adediran and Adewumi (2024)

Article DOI: 10.52589/AJENSR-QUQKO0YW
DOI URL: https://doi.org/10.52589/AJENSR-QUQKO0YW

argue that safety management should transcend physical equipment to encompass behavioural and managerial processes. Their appraisal of public buildings across Southwestern Nigeria revealed that most institutions lacked a formalised safety committee, hazard registry, or documented standard operating procedures. Even where safety manuals existed, they were rarely reviewed or updated, suggesting that risk governance remains static rather than dynamic. Mba (2025) similarly observed that the introduction of smart-building technologies in Lagos presents an opportunity to automate safety monitoring through Internet-of-Things (IoT) sensors and integrated alarm systems. However, high installation costs, erratic power supply, and limited digital literacy have constrained widespread adoption.

Recent policy instruments have sought to standardise safety management across Nigeria's urban centres. The Lagos State Safety Commission (2025) introduced the *Pre-Inspection Checklist for Fire Incident*, mandating regular audits of public and commercial buildings before operational licensing. While this framework represents a shift toward institutional accountability, enforcement remains inconsistent, particularly outside Lagos and Abuja. The *Sendai Framework for Disaster Risk Reduction* (UNDRR, 2023) similarly calls for localised safety implementation, yet translating international norms into domestic practice requires stronger coordination between regulatory agencies and building managers. In summary, safety management practices in Nigerian public buildings are evolving from ad-hoc compliance to structured governance; however, they remain hindered by limited funding, fragmented oversight, and a weak safety culture. To achieve sustainable performance, scholars recommend embedding safety into organisational systems through continuous improvement models such as ISO 41001, periodic training, and digital tracking tools (UpKeep, 2024; Vertex Factocert, 2025).

Emergency Preparedness and Response in Nigerian Public Institutions

Emergency preparedness refers to proactive planning and capacity building aimed at mitigating the impact of unforeseen hazards. The Nigeria Centre for Disease Control (2020) defines preparedness as a cyclical process of *planning, training, exercising, evaluating, and improving* capabilities. In Nigerian public buildings, however, preparedness tends to be reactive rather than anticipatory, often triggered only after major incidents. Sholanke, Dimuna, and Olukayode (2025) found that although 80 percent of Abuja's shopping malls possessed fire-safety equipment, fewer than half conducted drills or trained staff regularly. Empirical research shows that preparedness levels vary significantly across facility types. Government offices typically have higher regulatory exposure and thus stronger documentation, while hospitals and schools often operate with outdated or incomplete emergency plans (Adediran & Adewumi, 2024). The Lagos State Emergency Management Agency (2025) has documented an increase in emergency call-outs from educational and healthcare institutions, indicating that many lack internal mechanisms to manage crises before they escalate. Furthermore, most facilities fail to integrate business-continuity plans into their ERP frameworks, leaving critical operations vulnerable to disruption.

Aniramu and Orimoogunje (2025) expanded the preparedness discourse by analysing flood resilience in Lagos Metropolis. Their review highlighted a disjuncture between urban planning policies and facility-level preparedness, noting that many institutions focus narrowly on fire or structural hazards while overlooking environmental and public health threats. The authors recommend multi-hazard planning that includes evacuation mapping, early-warning systems, and inter-agency coordination, principles already embedded in the *Sendai Framework for*

Article DOI: 10.52589/AJENSR-QUQKO0YW
DOI URL: https://doi.org/10.52589/AJENSR-QUQKO0YW

Disaster Risk Reduction (UNDRR, 2023). Another dimension concerns digital readiness. Mba (2025) observed that smart-building technologies could revolutionise emergency communication through real-time alerts and integrated command dashboards. Yet their effectiveness depends on trained personnel, consistent power, and reliable networks—all of which remain inconsistent in Nigerian contexts. The general consensus in the literature is that preparedness should evolve from policy compliance to culture-based readiness that empowers all building occupants, not just management, to act effectively in emergencies.

Institutional and Organisational Factors Influencing Safety Performance

Organisational variables such as management commitment, funding, training, and leadership structure critically influence safety outcomes. Studies in Nigeria demonstrate that these "soft" variables often determine the success or failure of emergency systems more than technological or infrastructural investments. Adediran and Adewumi (2024) discovered that facilities with proactive management teams and designated safety officers achieved markedly higher ERP scores than those without clear leadership accountability. Similarly, Adeleye (2020) linked low preparedness levels to poor budgetary allocation and lack of recurring training programmes. Funding constraints remain a recurrent theme. Many government agencies prioritise routine maintenance and overlook safety investments until an incident occurs. This cyclical underfunding erodes institutional memory and prevents sustained improvement. According to the Lagos State Safety Commission (2025), over 60 percent of inspected public facilities in Lagos lacked dedicated safety budgets, relying instead on ad-hoc funds during crises. Such reactive financing undermines preventive culture.

Training and staff competence also emerge as key determinants. A study by the Nigeria Centre for Disease Control (2020) showed that preparedness increases significantly when periodic drills are conducted, particularly in health institutions where exposure to multiple hazards is high. However, participation rates in Nigeria remain low. Furthermore, weak inter-agency collaboration exacerbates the problem: LASEMA (2025) reported limited coordination between facility managers, fire services, and medical responders during joint operations. From an institutional perspective, regulatory fragmentation undermines consistent implementation. National, state, and local authorities often issue overlapping directives without clear enforcement hierarchies. The United Nations Office for Disaster Risk Reduction (2023) emphasises that governance coherence is fundamental to safety resilience. Consequently, Nigeria's challenge is not a lack of policy but ineffective inter-institutional synergy. Strengthening coordination, leadership accountability, and financing would therefore enhance both compliance and operational readiness.

Technological Innovation and the Future of Safety Management

Technological innovation is transforming global safety practices, offering new avenues for hazard detection, monitoring, and response. In Nigeria, smart building systems, sensor-based alarms, and digital dashboards are being gradually introduced, particularly in high-value commercial complexes (Mba, 2025). Such systems integrate IoT networks capable of detecting smoke, temperature fluctuations, or water leakage in real time. When combined with central command platforms, they allow facility managers to respond before incidents escalate. Nevertheless, digital transformation introduces its own complexities. Many public institutions face infrastructural limitations—erratic electricity, low internet penetration, and inadequate technical expertise, which restrict automation's effectiveness. Adediran and Adewumi (2024)

Article DOI: 10.52589/AJENSR-QUQKO0YW
DOI URL: https://doi.org/10.52589/AJENSR-QUQKO0YW

caution that over-reliance on technology without parallel investment in human competence may create a false sense of security. Similarly, UpKeep (2024) and Vertex Factocert (2025) emphasise that ISO 41001 certification should reflect continuous monitoring and improvement rather than mere documentation.

The literature also recognises the potential of digital systems to strengthen multi-agency collaboration. Through centralised platforms linking LASEMA, fire services, and facility operators, real-time data could streamline response and reduce duplication. However, this would require standardised data protocols and institutional trust. The Lagos State Fire and Rescue Service (2025) has begun publishing incident reports through social-media dashboards, demonstrating an early step toward transparency and digital integration. Globally, scholars advocate for a hybrid approach combining automation with human oversight (UNDRR, 2023). In the Nigerian context, this entails pairing smart technologies with rigorous training, safety audits, and cultural change. Digital systems should serve as enablers within a broader organisational framework rooted in accountability, funding, and communication. Hence, while technology offers unprecedented opportunities for improving emergency preparedness, its sustainability depends on governance maturity and user competence.

THEORETICAL UNDERPINNING

This study is anchored on Systems Theory, originally developed by Ludwig von Bertalanffy in 1968, which provides a holistic framework for understanding how organisations function through the interdependence of their components. The theory posits that every organisation operates as an open system comprising interrelated subsystems, such as human resources, management, technology, and environment, whose interaction determines overall performance. When applied to safety management and emergency preparedness, Systems Theory helps explain how weaknesses in one subsystem (for instance, staff training) can cascade into systemic failures in hazard response or continuity operations. In the context of public buildings in Nigeria, Systems Theory underscores that safety management is not merely a technical function but an organisational process requiring synergy across departments and stakeholders. Adediran and Adewumi (2024) emphasise that safety outcomes in public facilities depend on the coordination between management policies, employee competence, and regulatory oversight. Similarly, Adeleye (2020) found that although many institutions possess fire-safety devices, their failure to integrate maintenance schedules and communication channels renders such systems ineffective. Systems Theory, therefore, provides a conceptual lens for diagnosing such fragmentation and highlighting the need for feedback loops and adaptive learning within safety structures.

Contemporary scholarship affirms the applicability of Systems Theory to facility management and risk governance. According to the United Nations Office for Disaster Risk Reduction (2023), resilience emerges when multiple institutional subsystems, policy, infrastructure, and community engagement operate cohesively to anticipate, absorb, and recover from shocks. Mba (2025) extends this argument to digital safety systems, observing that smart-building technologies must interface with human decision-making and management commitment to achieve functional readiness. This reflects the systemic integration principle of Bertalanffy's model, which regards technological and social elements as mutually reinforcing rather than separate domains. Thus, the theory provides a valuable explanatory foundation for this study.

Article DOI: 10.52589/AJENSR-QUQKO0YW
DOI URL: https://doi.org/10.52589/AJENSR-QUQKO0YW

It justifies the examination of how organisational variables, management support, training, funding, and regulatory compliance, interact to influence emergency preparedness in Nigerian public buildings. Viewing safety management as a dynamic system rather than a linear checklist allows for a more comprehensive assessment of institutional performance. Consequently, Systems Theory not only guides the analytical framework of this research but also strengthens its policy relevance by framing preparedness as an outcome of interconnected governance mechanisms rather than isolated interventions.

METHODOLOGY

This study adopted a quantitative research design to examine safety management practices and emergency preparedness in public buildings across Nigeria. The quantitative approach enabled the objective measurement of variables and statistical analysis of relationships between organisational factors, such as management commitment, staff training, and regulatory compliance, and the level of emergency response preparedness. The population of the study comprised facility managers, safety officers, and administrative personnel working in public buildings, including government offices, educational institutions, and healthcare facilities. A stratified random sampling technique was employed to ensure fair representation of various facility types and geographical locations. From the accessible population, a sample size of 148 respondents was selected, providing sufficient statistical power for meaningful analysis. Data were gathered using a structured questionnaire designed on a five-point Likert scale ranging from “Strongly Disagree (1)” to “Strongly Agree (5).” The instrument contained sections on demographic characteristics, safety management practices, emergency response systems, and institutional readiness. Before administration, the questionnaire was reviewed by safety experts to ensure content validity and pre-tested to refine clarity and reliability. Collected data were analysed using descriptive statistics (frequency, mean, and standard deviation) to summarise respondents’ characteristics and preparedness patterns. Inferential statistics, including correlation and multiple regression, were employed to test hypotheses regarding the influence of management and organisational factors on preparedness levels. Ethical standards, such as informed consent, confidentiality, and voluntary participation, were strictly upheld throughout the study to ensure the integrity and credibility of the research process.

RESULTS

Table 1: Demographic Profile of Respondents (n = 148)

Characteristics	Classification	Frequency	Percentage (%)
Gender	Male	85	57.4
	Female	63	42.6
Highest Academic Qualification	HND	13	8.8
	PGD	37	25.0
	BSc/B.Tech	44	29.7
	MSc/M.Tech	45	30.4
	PhD	9	6.1
Years of Operation	1–5 years	28	18.9

Article DOI: 10.52589/AJENSR-QUQKO0YW
DOI URL: https://doi.org/10.52589/AJENSR-QUQKO0YW

Characteristics	Classification	Frequency	Percentage (%)
	6–10 years	46	31.1
	11–15 years	36	24.3
	16–20 years	29	19.6
	Above 20 years	9	6.1
Professional Membership	IFMA	50	33.8
	NIESV	6	4.1
	IFMA Nigeria	40	27.0
	All of the Above	52	35.1
Ownership Structure	Sole Proprietorship	59	39.9
	Partnership	29	19.6
	Limited Liability Company	38	25.7
	Multinational Company	22	14.9
Staff Strength	1–5	7	4.7
	6–10	25	16.9
	11–15	25	16.9
	16–20	52	35.1
	Above 20	39	26.4
Area of Coverage	Mainland	105	70.9
	Island	27	18.2
	Both	16	10.8

Source: *Author's Fieldwork (2025)*

Table 1 shows that 57.4% of respondents were male, indicating a male-dominated facility management sector. Most participants (30.4%) possessed an MSc/M.Tech degree, reflecting a highly educated workforce. A significant proportion (31.1 %) of firms had operated between 6 and 10 years, suggesting organisational maturity. Notably, 35.1 % of firms belonged to multiple professional bodies, implying strong sectoral integration, while 39.9 % were sole proprietorships, suggesting the prevalence of small-scale firms in Nigeria's facility management industry.

Table 2: Various Emergency Response Plans Adopted in Public Buildings

S/N	Emergency Response Plan	Mean Score	Std. Deviation	Ranking
1	Fire emergency response plan	4.22	1.06	1st
2	Hazardous material and chemical incident plan	4.15	1.04	2nd
3	Power outage and utility failure response plan	4.14	1.08	3rd
4	Natural disaster response plan	4.12	1.02	4th
5	Structural collapse and building failure plan	4.09	1.18	5th
6	Emergency communication plan	4.08	1.07	6th
7	Medical emergency response plan	4.03	1.07	8th
8	Security threat and terrorism response plan	4.03	1.04	9th
9	Pandemic and infectious disease plan	4.02	1.13	10th
10	Cybersecurity and data breach plan	3.99	1.13	11th

Source: *Author's Fieldwork (2025)*

Article DOI: 10.52589/AJENSR-QUQKO0YW
DOI URL: https://doi.org/10.52589/AJENSR-QUQKO0YW

Table 2 indicates that fire emergency plans (Mean = 4.22) and chemical hazard response plans (Mean = 4.15) were the most widely adopted among public buildings, suggesting prioritisation of traditional physical risks. However, lower mean scores in cybersecurity (3.99) and pandemic response (4.02) reveal limited preparedness for emerging non-structural threats. These findings underscore the tendency of institutions to focus on visible hazards while neglecting systemic vulnerabilities.

Table 3: Level of Adoption of Emergency Response Plans in Public Buildings (n = 148)

S/N	Level of Adoption of ERP	Mean Score	Std. Deviation	Ranking
1	Emergency-driven response (reactive planning)	4.14	1.11	1st
2	Global best-practice adoption (alignment with ISO/IFMA standards)	4.13	1.08	2nd
3	Basic risk awareness and training (foundational ERP)	4.10	1.10	3rd
4	Compliance-driven ERP (minimal statutory adherence)	4.07	1.09	4th
5	Basic reactionary response (non-structured actions)	4.03	1.18	5th
6	Technology-enabled ERP (use of digital tools and monitoring)	4.01	1.17	6th
7	Structured and standardised ERP (proactive planning and documentation)	4.00	1.19	7th
8	Integrated safety culture (institutionalised safety mindset)	3.94	1.10	8th
9	Resilient and sustainable ERP (long-term business continuity integration)	3.93	1.19	9th
10	Total neglect (no awareness or action)	3.84	1.22	10th

Source: *Author's Fieldwork (2025)*

Table 3 reveals that emergency-driven response (Mean = 4.14) and global best-practice adoption (Mean = 4.13) ranked highest, suggesting that many Nigerian public institutions respond promptly to emergencies and align their systems with international standards such as ISO 41001 and IFMA protocols. However, deeper institutionalisation remains limited. The relatively lower mean scores for integrated safety culture (3.94) and resilient ERP (3.93) indicate that safety awareness and business-continuity integration are yet to become organisational norms. The modest score for technology-enabled ERP (Mean = 4.01) also underscores the digital divide affecting real-time monitoring, consistent with Lagos State Safety Commission (2025) reports showing uneven technological adoption.

Article DOI: 10.52589/AJENSR-QUQKO0YW
DOI URL: https://doi.org/10.52589/AJENSR-QUQKO0YW

African Journal of Environment and Natural Science Research
ISSN: 2689-9434
Volume 8, Issue 4, 2025 (pp. 1-13)
www.abjournals.org

Hypothesis Testing

Table 4: H_{01}: There is no significant relationship between management commitment and the level of emergency response preparedness in public buildings.

Variable	r-value	p-value	Decision
Management Commitment vs ERP Level	0.692	0.000	Reject H_{01}

The correlation coefficient ($r = 0.692$, $p < 0.05$) indicates a strong, positive, and statistically significant relationship between management commitment and emergency preparedness. This implies that public buildings with proactive leadership and well-defined safety policies are significantly more prepared for emergencies.

Table 5: H_{02}: There is no significant influence of staff training and funding adequacy on the adoption of emergency response plans in public buildings.

Predictor Variables	β	t-value	p-value	Decision
Staff Training	0.358	5.212	0.000	Significant
Funding Adequacy	0.274	4.801	0.001	Significant

$R^2 = 0.64$; $F(2, 145) = 22.83$; $p < 0.05$

Regression results indicate that staff training ($\beta = 0.358$, $p < 0.05$) and funding adequacy ($\beta = 0.274$, $p < 0.05$) jointly explain 64% of the variance in ERP adoption. The model is statistically significant ($F = 22.83$, $p < 0.05$), confirming that human-capital investment and financial commitment are critical drivers of effective preparedness.

DISCUSSION OF FINDINGS

The study examined safety management and emergency response preparedness in Nigerian public buildings, focusing on the role of management commitment, staff training, and funding adequacy. Findings indicate a growing awareness of emergency response planning, yet operational gaps persist. Using Systems Theory as the analytical lens, the results confirm that preparedness depends on the effective coordination of subsystems such as leadership, training, and resource allocation. A major finding revealed a strong positive relationship between management commitment and emergency preparedness ($r = 0.692$, $p < 0.05$). This demonstrates that institutions with proactive leadership, regular audits, and clear communication frameworks exhibit higher preparedness levels. The result aligns with Adediran and Adewumi (2024), who found that management involvement and accountability significantly improved safety outcomes in public institutions. Similarly, Adeleye (2020) reported that a lack of administrative oversight and leadership apathy often leads to non-functional safety devices and irregular drills. These findings reaffirm Bertalanffy's Systems Theory, which posits that organisational success depends on synergy among interrelated components. Management serves as the coordinating hub that links planning, communication, and supervision.

The regression results further showed that staff training ($\beta = 0.358$, $p < 0.05$) and funding adequacy ($\beta = 0.274$, $p < 0.05$) significantly influenced the adoption of emergency response plans. This supports the assertion of the Nigeria Centre for Disease Control (2020) that preparedness is sustained through continuous training and drills. Institutions that invest in

Article DOI: 10.52589/AJENSR-QUQKO0YW
DOI URL: https://doi.org/10.52589/AJENSR-QUQKO0YW

capacity building and allocate dedicated budgets for safety demonstrate stronger resilience. Conversely, the Lagos State Safety Commission (2025) found that over half of inspected facilities lacked safety budgets, which undermines long-term preparedness. The Lagos State Emergency Management Agency (2025) similarly noted that inadequate training contributed to delayed response times during emergencies.

Descriptive results further revealed that while most public institutions have adopted fire and structural emergency plans, preparedness for non-traditional risks such as pandemics and cybersecurity threats remains limited. This pattern supports Aniramu and Orimoogunje (2025), who found that emergency planning in the Lagos Metropolis is heavily biased toward fire hazards, neglecting public health and digital risks. Mba (2025) equally observed that despite the rise of smart-building technologies, limited digital infrastructure and technical capacity constrain real-time emergency monitoring. The findings, therefore, highlight a reactive rather than proactive approach to safety management. In line with Systems Theory, the results demonstrate that the effectiveness of emergency preparedness depends on the integration of multiple subsystems. Weakness in one area, whether it be training, leadership, or finance, compromises the entire safety framework. The findings also support the United Nations Office for Disaster Risk Reduction's (2023) view that institutional coherence and leadership coordination are prerequisites for resilience. Overall, this study confirms that Nigeria's public building sector is transitioning from regulatory compliance to structured preparedness. However, cultural integration of safety remains incomplete. Strengthening managerial accountability, ensuring stable funding, providing continuous training, and promoting digital adoption will be crucial for establishing sustainable, system-driven emergency preparedness in public facilities.

CONCLUSION

This study assessed safety management practices and emergency response preparedness in Nigerian public buildings through a systems-oriented lens. The findings demonstrated that while awareness of emergency planning has increased, implementation remains inconsistent across institutions. Most public facilities have adopted basic emergency response frameworks such as fire and structural safety plans; however, the institutionalisation of comprehensive, multi-hazard systems, encompassing health, cyber, and environmental risks, remains limited. The results revealed that management commitment, staff training, and funding adequacy are the strongest determinants of preparedness. Institutions with dedicated safety budgets, regular drills, and leadership accountability demonstrated higher levels of readiness. This underscores the Systems Theory proposition that the effectiveness of any organisational system depends on the interdependence of its subsystems. When management leadership, human capacity, and financial support operate in synergy, safety outcomes improve significantly. Conversely, when any subsystem fails, the entire safety mechanism becomes vulnerable. Although regulatory frameworks such as the Lagos State Safety Commission Checklist (2025) and the National Multi-Hazard Preparedness Plan (NCDC, 2020) have strengthened oversight, compliance often remains procedural rather than cultural. The study, therefore, concludes that the key challenge is not the absence of safety policies but the lack of systemic integration, enforcement, and institutional ownership of preparedness initiatives.

Article DOI: 10.52589/AJENSR-QUQKO0YW
DOI URL: https://doi.org/10.52589/AJENSR-QUQKO0YW

RECOMMENDATIONS

i. Lagos State Government should strengthen safety enforcement mechanisms by mandating annual safety audits for all public facilities.

ii. Regulatory agencies should ensure consistent funding allocations for emergency response infrastructure and capacity development.

iii. Facility managers should institutionalise periodic staff training, simulation exercises, and digital monitoring to sustain preparedness.

iv. Public–private partnerships should be expanded to facilitate investment in smart-building safety technologies and ensure long-term resilience.

REFERENCES

Adediran, A. O., & Adewumi, T. T. (2024). Emergency preparedness and response strategies in public buildings: An appraisal of safety management practices in Southwestern Nigeria. *International Journal of Built Environment and Sustainability, 11*(2), 145–159.

Adeleye, O. I. (2020). *Fire disaster preparedness of public buildings in Ibadan Metropolis, Nigeria. Open Science Journal, 5*(2). https://www.researchgate.net/publication/341575023

Aniramu, O., & Orimoogunje, O. (2025). Systematic review of flood resilience strategies in Lagos Metropolis: Pathways toward the 2030 sustainable development agenda. *Frontiers in Climate, 7*, 1603798. https://doi.org/10.3389/fclim.2025.1603798

Lagos State Emergency Management Agency. (2025). *Agency information and public alerts* [Social media pages]. X (Twitter) and Instagram. https://x.com/followlasema and https://www.instagram.com/followlasema/

Lagos State Fire and Rescue Service. (2025). *Public incident updates* [Social media page]. https://www.facebook.com/lagosstatefireservice/

Lagos State Safety Commission. (2025). *Pre-inspection checklist for fire incident* [Document]. https://lasgsafety.com/documents/PRE-INSPECTION-CHECKLIST-FOR-FIRE-INCIDENT.docx

Mba, E. J. (2025). *Challenges and opportunities in adopting smart-building technologies in Lagos, Nigeria. FESCON Proceedings.*

Nigeria Centre for Disease Control. (2020). *National public-health multi-hazard emergency preparedness and response plan.* https://ncdc.gov.ng/themes/common/docs/protocols/289_1634040134.pdf

Sholanke, A. B., Dimuna, K. O., & Olukayode, B. G. (2025). Evaluation of fire-safety management strategies in selected shopping malls in Abuja, Nigeria. *F1000Research, 14*, 471. https://f1000research.com/articles/14-471

United Nations Office for Disaster Risk Reduction (UNDRR). (2023). *Sendai Framework for Disaster Risk Reduction 2015–2030: Midterm Review Report.* UNDRR. https://www.undrr.org/publication/sendai-framework-midterm-review

UpKeep. (2024). *What you need to know about ISO 41001 certification and compliance.* UpKeep. https://upkeep.com/learning/iso-41001-certification-compliance/

Vanguard. (2025, September 24). Fire outbreak, building collapse: Lagos Assembly calls for tougher safety measures. *Vanguard.* https://www.vanguardngr.com/

Vertex Factocert. (2025). *What is the process for ISO 41001 certification in Nigeria?* Factocert. https://factocert.com/what-is-the-process-for-iso-41001-certification-in-nigeria/

Article DOI: 10.52589/AJENSR-QUQKO0YW
DOI URL: https://doi.org/10.52589/AJENSR-QUQKO0YW